HABITAT CONSERVATION PLAN

BIOLOGICAL MONITORING PROGRAM

Comal Springs/River Aquatic Ecosystem

ANNUAL REPORT

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TABLE OF CONTENTS

List of Figures

List of Tables

EXECUTIVE SUMMARY

The Edwards Aquifer Habitat Conservation Plan (EAHCP) Biological Monitoring Program continued to track biota and habitat conditions of the Comal Springs/River ecosystem in 2025 through a series of routine and Critical Period monitoring activities outlined in this report. Monitoring in the Comal system consisted of routine surveys specific to EAHCP Covered Species: fountain darter (*Etheostoma fonticola*), Comal Springs salamander (*Eurycea* sp.), and multiple Comal Springs invertebrates. Community-level monitoring data were also collected on aquatic vegetation, fish, and benthic macroinvertebrates. In addition to routine monitoring, Critical Period and multiple species-specific low-flow sampling events were triggered as 2025 included the lowest springflows observed since the start of biological monitoring in 2000. Results from 2025 biological monitoring provided valuable data to further assess spatiotemporal trends of aquatic biota in the Comal Springs/River ecosystem, as well as a unique opportunity to better understand ecological responses under sustained low-flow conditions.

Central Texas continued to experience drought conditions with low precipitation and higher ambient temperatures in 2025. The low-flow conditions that the Comal Springs/River System experienced in fall 2024 extended into the beginning of 2025 when a Critical Period full sampling event occurred. Discharge remained well below long-term 10th percentile conditions through May when mean daily discharge declined below 50 cubic feet per second (cfs) for one day. Although not unprecedented, this is a rare flow condition in the Comal System. Historically, flows below 50 cfs occurred in 1956, 1984, 1990, 1995, and 1997. The full system habitat evaluation at 50 cfs demonstrated elevated water temperatures across most stations, though temperatures in the Old Channel remained below the fountain darter optimal reproductive thresholds. Furthermore, notable habitat degradations were observed at upper spring reaches and spring runs. Wetted habitat availability declined at Upper Spring Run, Spring Island, and the spring runs. Despite this, spring upwellings were still observed around Spring Island and Landa Lake. More filamentous algae and less bryophytes were observed during this time and typically submerged aquatic macrophytes (e.g., *Sagittaria*, *Ludwigia*) became emergent in some areas, resulting in increased formation of surface vegetation mats.

While the lowest minimum discharge since 1997 occurred in 2025, the highest maximum daily discharge over the past five years also occurred in 2025 (2,180 cfs). On June 12th, river discharge quickly peaked around 7,000 cfs during an intense rainfall event. A second, smaller flood pulse occurred in July with maximum mean daily discharge increasing to 642 cfs. These flood pulses occurring in quick succession scoured out much of the bryophytes in the Old Channel. Additionally, total vegetation coverage plummeted at the Upper and Lower New Channel reaches, though it generally recovered by fall. On the other hand, bryophytes did not recover by fall and were largely absent throughout the system, most notably at the Old Channel where they have typically been common in recent years. Although these two major rainfall events did increase the aquifer level by ~10 feet, it was a brief respite. Median discharge decreased for the remainder of the year and the system was below 10th percentile flow conditions by October. As such, 2025 represented a third consecutive year under the lowest flow conditions documented over the course of the 24-year biological monitoring program. When compared to previous drought years, median and minimum daily mean discharge were lower in 2025 (84 cfs and 48 cfs, respectively) than in 2024 (125 cfs and 55 cfs, respectively) and 2023 (121 and 55 cfs, respectively), and all three years were lower than the previous monitoring program minimum

observed in 2014 (135 and 65 cfs, respectively) and considerably lower than other drought years in 2009, 2011, and 2013.

As flows remained low in 2025, atypically higher water temperatures were relatively common in the spring and summer near Upper Spring Run and Spring Island. Upper Spring Run vegetation coverage was dominated by the slackwater tolerant macroalgae *Chara,* which was utilized by adult fountain darters in the area. Wetted surface habitat in spring areas was greatly reduced, leaving Spring Run 1, Spring Run 2, and the spring run at Spring Island completely dry for a majority of the year. Furthermore, the majority of salamander sampling areas at Spring Island Outfall and Spring Run 3 were dewatered with poor conditions (i.e., algae, silt) characterizing the remaining wetted area. Similar to 2024, the extent and duration of desiccation observed throughout spring areas resulted in obvious impacts to surface habitat for salamanders and spring-associated invertebrates. Salamanders were documented at wetted sites (Spring Island Outfall and Spring Run 3) in spring but only observed at Spring Island Outfall in summer and fall. *Eurycea* salamanders are known to use subsurface habitats and genomics data suggests that migration events are occurring between various spring locations within the Edwards Aquifer region (Devitt et al. 2019). Given their ability to occupy subsurface habitats and previous monitoring data showing surface recolonization after spring run desiccation events (e.g., 2014), it is assumed that salamanders will recolonize these areas as surface flow returns. However, recolonization of spring habitats is likely influenced by duration of desiccation events, and additional monitoring is needed to confirm recolonization and evaluate rates and population responses.

Abundance estimates for *Stygobromus* sp. from drift-net sampling and Comal Springs riffle beetle from cotton-lure surveys were both down compared to historical data. Across sites and seasons, a temporal decline in the number of Comal Springs riffle beetles observed per lure was noted when comparing 2025 data to 5-year and long-term datasets. Beetle relative abundance has only been consistent with long-term averages in spring at Spring Island and has rarely approached the long-term median at Western Shoreline and Spring Run 3. Low relative abundance estimates observed since 2021 suggest population abundance has been impacted by persistently low springflows the past four years. However, like the *Eurycea* salamanders described above, Comal Springs riffle beetles are capable of using sub-surface habitats. Therefore, reduced abundance on cotton lures set near spring surface habitats may not reflect a true population-level decline. A low-flow habitat utilization investigation conducted by BIO-WEST researchers as part of the species-specific triggered monitoring in fall 2023 suggested that Comal Springs riffle beetles follow water levels sub-surface when spring surface habitats dry up. Additional monitoring and targeted research is needed to further understand the population level effect of the continued drought conditions on this species.

The influence of extremely low springflows was also evident on abiotic habitat and aquatic vegetation conditions across all study reaches and resulted in an overall decline among fountain darter population metrics by fall. fountain darter population condition appeared to be healthy in spring as supported by median density, CPUE, and occurrence, which were similar to or slightly below long-term expectations. By fall, however, all metrics declined below long-term medians. Recruitment rates deviated from typical years and were higher than long-term expectations in spring and fall but meaningfully lower in summer. Lower recruitment during the summer was likely due to a combination of elevated water temperatures, displacement from high flow events, and reductions in suitable habitat due to extreme flow conditions.

The pattern of declining bryophyte coverage and increasing filamentous algae coverage, which has emerged in recent years across several study reaches, was exacerbated by continued low flows in 2025. In the beginning of the year, algae covered large areas at Upper Spring Run, Upper New Channel, and Lower New Channel, with little to no bryophytes observed. Bryophytes were initially present at Landa Lake and the Old Channel in January but were largely scoured out after the two flood events. By fall, no bryophytes were observed in the Old Channel and filamentous algae reached the highest coverage of the year. Additionally, the bryophytes that remained at Landa Lake in fall were not discrete patches but intermixed with filamentous algae. Changes in suitable vegetation at these two reaches likely influenced the increased seasonal oscillations in Fountain Darter densities. Measures of spring recruitment and population condition aligned with expectations from long-term data, but lower densities in fall could suggest the survival of spring recruits declined or that late spring/early summer reproduction was limited. This consistent pattern of increased seasonal population fluctuations in recent drought years could indicate these reaches are characterized by over-compensatory dynamics.

At a community scale, fish and macroinvertebrate community-level responses to low flows were not as evident as those within Covered Species populations. In general, no long-term temporal trends in overall or spring-associated fish diversity, richness, and relative density are evident from fish community monitoring data. Macroinvertebrate Index of Biotic Integrity (IBI) scores did show slight declines at Upper Spring Run, suggesting that low flows may have led to habitat homogenization and reduction in abundance of fluvial specialists in this area. Besides these minor deviations, fish and macroinvertebrate community data were generally comparable to historical data.

Overall, 2025 biological monitoring provided insights into the current condition of the EAHCP Covered Species in the Comal Springs/River System, as well as flow-ecology relationships related to the broader aquatic community. Spring discharge in 2025 was lower than the previous two years and the lowest observed since initiation of biological monitoring in 2000, despite two high flow events. As a result, acute impacts to Covered Species habitats and resulting responses of population metrics were noted. Nevertheless, all Covered Species are still present at multiple habitats within the system and show potential to persist and rebound upon return of more typical flow conditions. Subsequent monitoring will be critical to assess the ultimate response of species populations to these unique, persistent, and at present, continuing stressors.

INTRODUCTION

The Edwards Aquifer Habitat Conservation Plan (EAHCP) is intended to provide assurance of suitable habitat for threatened and endangered species (i.e., Covered Species) (Table 1) in both the San Marcos and Comal Springs. Established in 2012, the EAHCP supports the issuance of an Incidental Take Permit that allows the "incidental take" of Covered Species from otherwise lawful activities in the Comal Springs system. Section 6.3.1 of the HCP established a continuation of biological monitoring in the Comal Springs/River. This biological monitoring program was first established in 2000 (formerly known as the Edwards Aquifer Authority [EAA] Variable Flow Study), and its original purpose was to evaluate the effects of variable flow on the biological resources of the Comal Springs/River, with an emphasis on threatened and endangered species. However, the utility of the HCP biological monitoring program has surpassed its initial purpose (EAHCP 2012). The biological data collected now serves as the cornerstone for several underlying sections in the HCP including the determination of annual incidental take, and supporting core adaptive-management activities for triggered monitoring and adaptive-management response actions. Additionally, biological monitoring program data, in conjunction with other available information, are essential to adaptive management as the EAHCP proceeds. Current and future data collection will continue to help assess the effectiveness and efficiency of certain EAHCP mitigation and restoration activities conducted in the Comal Springs/River.

Table 1. Covered Species sampled for under the Edwards Aquifer Habitat Conservation Plan in the Comal springs and river ecosystem.

SCIENTIFIC NAME	COMMON NAME	ESA STATUS
Insects		
Haideoporus texanus	Edwards Aquifer Diving Beetle	Petitioned
Heterelmis comalensis	Comal Springs Riffle Beetle	Endangered
Stygoparnus comalensis	Comal Springs Dryopid Beetle	Endangered
Crustaceans		
Lirceolus smithii	Texas Troglobitic Water Slater	N/A
Stygobromus pecki	Peck's Cave Amphipod	Endangered
Amphibians		
Eurycea sp.	Comal Springs Salamander	N/A
Fish		
Etheostoma fonticola	Fountain Darter	Endangered

This report provides the methodology and results for biological monitoring activities conducted in 2025 within the Comal Spring/River ecosystem. In addition to routine monitoring, Critical Period and species-specific low-flow sampling were triggered. The results include summaries of current physiochemical conditions, as well as current conditions of floral and faunal communities, encompassing routine and low-flow sampling. For all aquatic organisms, historic observations (BIO-WEST 2001–2024a) are also used to provide context to current conditions.

METHODS

Study Location

The Comal Springs System is the largest spring complex in Texas. It is fed by the Edwards Aquifer (Brune 2002) and encompasses an extensive headsprings system and the Comal River (New Braunfels, Comal County, Texas). Dam construction and channelization during the late-1800s modified headspring habitats (Odgen et al. 1986; Crowe and Sharpe 1997) and drainage patterns of the river (Ottmers 1987). Impoundment of Comal Springs resulted in the formation of Landa Lake (Linam et al. 1993), which is fed by four spring runs of variable size (Ogden et al. 1986; Crowe and Sharpe 1997). From the headwaters, the river flows about 5 kilometers (km) before its confluence with the Guadalupe River. Under typical springflow conditions (>150 cfs), the majority of water that exits Landa Lake flows through the "New Channel", an engineered diversion that was originally created to act as a cooling system for a power generation plant. Under typical conditions, approximately 55-60 cfs are diverted to the original river channel, known as the "Old Channel," that rejoins the New Channel about 2.5 km downstream (Ottmers 1987). As springflow declines (<100 cfs), the flow split shifts, and proportionally more water is diverted to the Old Channel to maximize protection of habitat and maintain suitable water temperatures. For example, when total Comal springflow was approximately 60 cfs, ~35 cfs was sent down the Old Channel with the remainder sent down the New Channel.

The watershed is dominated by urban landcover and is subjected to recreational use. Spring inputs from the Edwards Aquifer provide stable physiochemical conditions, and springflow conditions are dictated by aquifer recharge and human water use (Sung and Li 2010). In the 1950s, Comal Springs temporarily ceased flowing (Schneck and Whiteside 1976; Brune 2002). Despite this, the Comal Springs System maintains diverse assemblages of floral and faunal communities (Bowles and Arsuffi 1993; Crowe and Sharpe 1997) and includes multiple endemic aquatic organisms.

Sampling Strategy

Based on the long-term biological goals (LTBGs) and management objectives outlined in the HCP, study areas were established to conduct long-term monitoring and quantify population trends of the Covered Species (EAHCP 2012). The sampling locations selected are designed to cover the entire extent of Covered Species habitats, but they also allow for holistic ecological interpretation while maximizing resources (Figures 1–3).

Comprehensive sampling within the established study area varies temporally and spatially among Covered Species. The current sampling strategy includes five spatial resolutions:

1. System-wide sampling
   a. Aquatic vegetation mapping: 5-year intervals (winter)
2. Select longitudinal locations
   a. Water temperature monitoring: year-round at permanent monitoring stations
   b. Discharge measurements: 2 events/year (spring, fall)
3. Reach sampling
   a. Aquatic vegetation mapping: 2 events/year (spring, fall)

   b. Fountain darter drop-net sampling: 2 events/year (spring, fall)
   c. Fountain darter random-station dip-net surveys: 3 events/year (spring, summer, fall)
4. Springs Sampling
   a. Endangered Comal invertebrate sampling: 2 events/year (spring, fall)
   b. Comal salamander surveys: 2 events/year (spring, fall)
   c. Fountain darter visual surveys: 2 events/year (spring, fall)
5. River section/segment
   a. Fountain darter timed dip-net surveys: 3 events/year (spring, summer, fall)
   b. Fish community sampling: 2 events/year (spring, fall)
   c. Macroinvertebrate community sampling: 2 events/year (spring, fall)

In addition to annual comprehensive sampling outlined above, low-flow sampling may also be conducted, but is dependent on HCP flow triggers, which include Critical Period Low-Flow Sampling and species-specific sampling (EAHCP 2012). Discharge in January approximated 63 cfs and a Critical Period full sampling event was conducted. Critical Period water grab sampling results are presented in Appendix B. Species-specific monitoring was conducted in January, February, May, and August for the fountain darter (Appendix A). Comal Springs riffle beetle species-specific monitoring was conducted in January through March, May, August, September, and November (Appendix A). Habitats were assessed at approximately every 10 cfs decline (Appendix B), and thermistors were downloaded at regular intervals to monitor Covered Species habitat availability and abiotic conditions.

The remaining methods sections provide brief descriptions of the procedures utilized for comprehensive sampling efforts, which include details on all Critical Period and species-specific sampling efforts. A more-detailed description of the gear types used, methodologies employed, and specific GPS coordinates can be found in the Standard Operating Procedures Manual for the HCP biological monitoring program for the Comal Springs/River ecosystem (EAA 2017).

Comal River Discharge and Springflow

River hydrology in 2025 was assessed using US Geological Survey (USGS) stream gage data from January 1 to October 31. Mean daily discharge expressed in cubic feet per second (cfs) was acquired from USGS gage #08169000, which represents cumulative river discharge that encompasses springflow and local runoff contributions. It should be noted that some of these data are provisional and are subject to revision at a later date (USGS 2025). The annual distribution of mean daily discharge was compared for the past 5-years using boxplots. The distribution of 2025 mean daily discharge was summarized by month using boxplots. Monthly discharge levels were compared with long-term (1928–present) 10th, 50th (i.e., median), and 90th percentiles.

Discharge was also measured in spring and fall at five cross-section stations (Upper Spring Run, Spring Run 1, Spring Run 2, Spring Run 3, and Old Channel) using a flowmeter and adjustable wading rod. Flow measurements were not conducted at Spring Run 1 and Spring Run 2 in the fall due to lack of surface flow. Additional discharge measurements were conducted at all cross-section stations during the Critical Period event triggered in January (n = 1), February (n =1), and August (n=1). Additionally, discharge was measured at four M9 stations (Spring Island Upper Far, Spring Island Lower Near, Spring Island Lower Far, Landa Lake Cable) by EAA personnel using a SonTek RiverSurveyor Acoustic Doppler Profiler (Figure 3). M9 station measurements were conducted during the same periods as cross-section stations, as well as during an additional event in August. EAA personnel also measured discharge at Spring Run 1–3 cross-section stations in June and August.

To quantify the contribution of each station to total system discharge, percent total discharge ([discharge(station *x*)/cumulative river discharge]*100) was calculated. Cumulative river discharge was based on the mean daily discharge value on the day of each measurement. Discharge and percent total discharge were summarized for spring, summer, and fall measurements, which were compared to 5-year and long-term (cross-section stations: 2003–present; M9 stations: 2014–present) averages ±95% confidence intervals using bar graphs. Results for cross-section stations are presented in the main body of the report and includes M9 measurements conducted in June (spring) and August (summer). Results for M9 stations can be found in Appendix E.

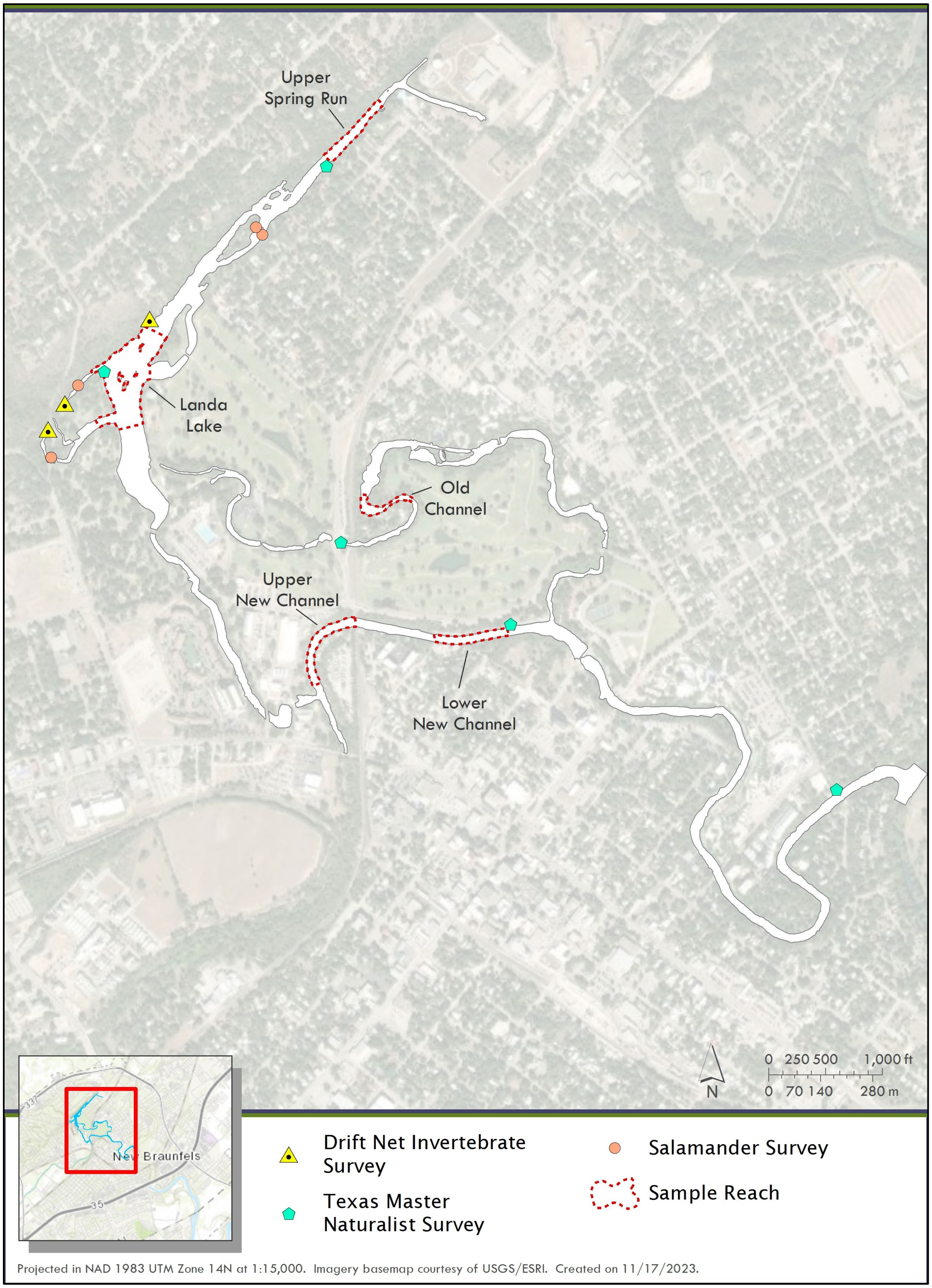

Figure 1. **Locations of drift-net invertebrate, Comal Springs salamander, Texas Master Naturalist, and biomonitoring (includes aquatic vegetation mapping, drop-net sampling, presence/absence dip-net sampling, and macroinvertebrate community sampling) sample areas within the Comal Springs/River study area.**

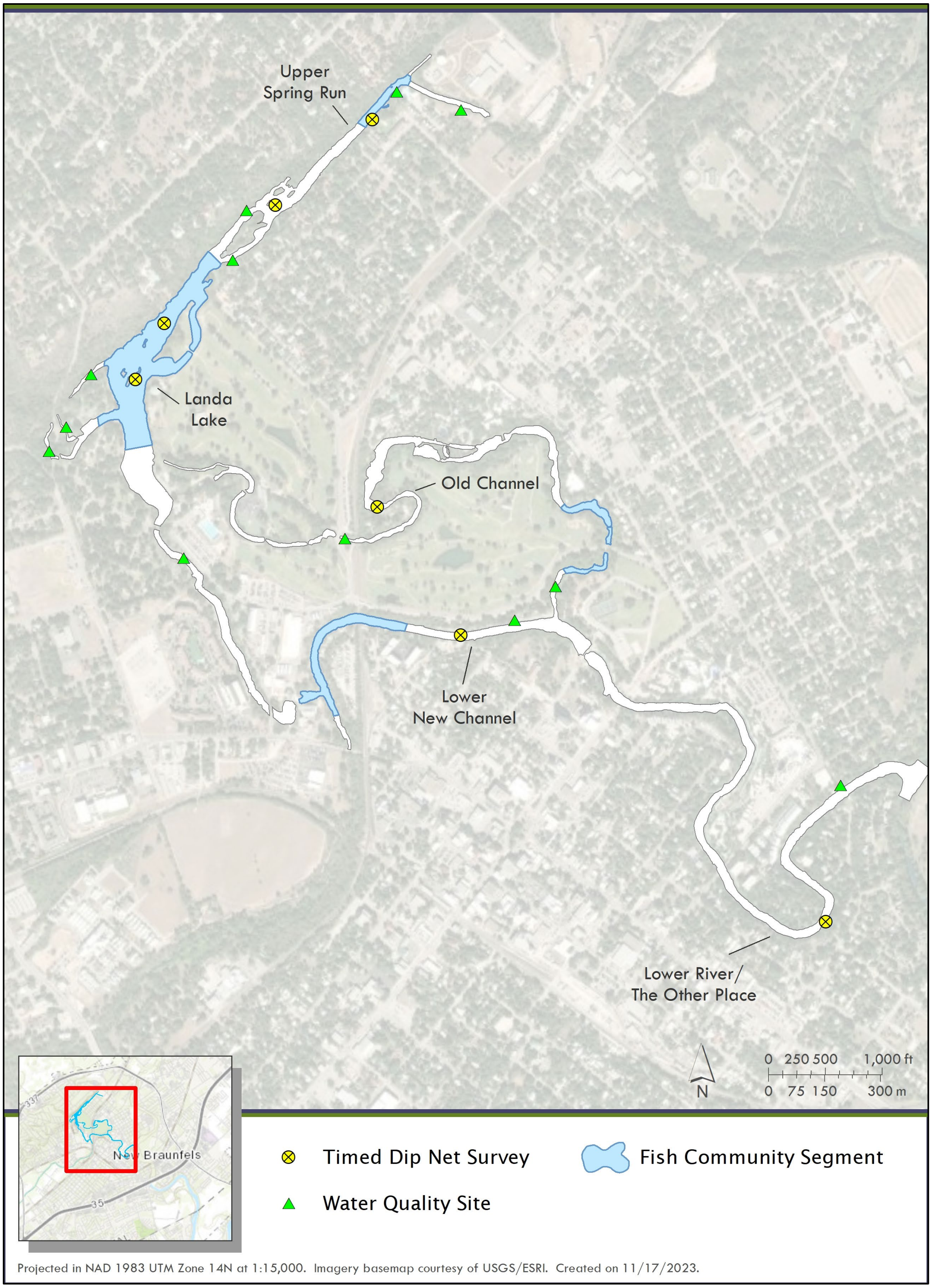

Figure 2. Locations of fish community, water quality, and fountain darter timed dip-net surveys within the Comal Springs/River study area.

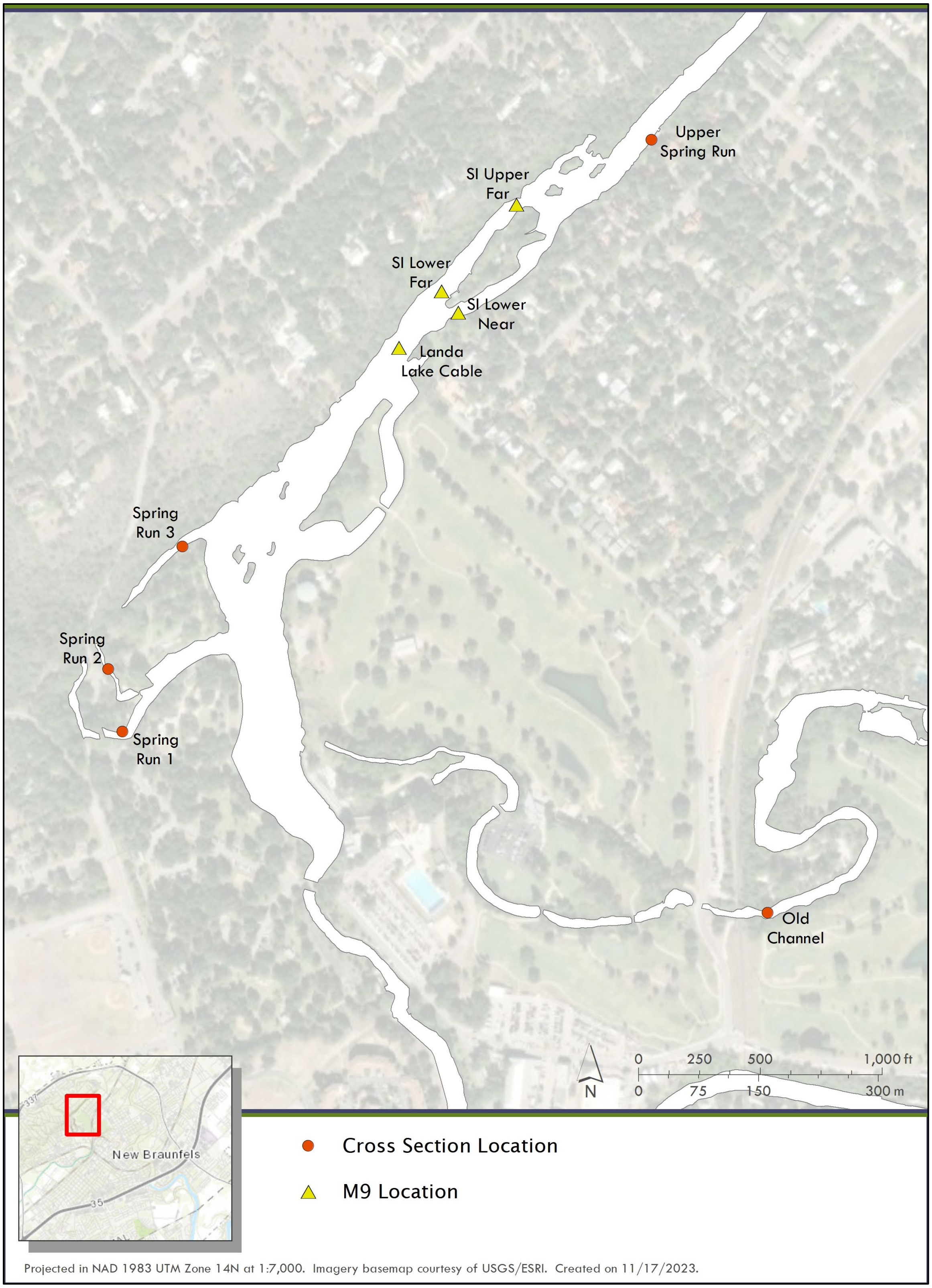

Figure 3. Cross-section and M9 discharge collection locations in the Comal Springs/River study area.

Water Temperature

Spatiotemporal trends in water temperature were assessed using temperature data loggers (HOBO Tidbit v2 Temp Loggers) at the 13 previously established permanent monitoring stations. Stations were grouped as either spring (Blieders, Heidelberg, Booneville Near, Booneville Far, Landa Lake Upper, Landa Lake Lower, Spring Run 1, Spring Run 2, and Spring Run 3) or riverine (Old Channel, New Channel Upstream, New Channel Downstream, and Other Place). Data loggers recorded water temperature every 10 minutes and were downloaded at regular intervals. Prior to analysis, data processing was conducted to locate potential data logger errors per station by comparing time-series for the current year with previous years. Timeframes displaying temperatures that deviated substantially from historical data and did not exhibit ecologically rational trends (e.g., discontinuities, ascending drift) were considered unreliable and omitted from the dataset. For analysis, the distribution of water temperatures for the current year was assessed among stations based on 4-hour intervals and summarized using boxplots. Data from the current year were also compared to their 5-year and long-term trends. Water temperatures were also compared with maximum optimal temperature requirements for fountain darter larval (≥25 °C) and egg (≥26 °C) production (McDonald et al. 2007). Further, 25 °C is also the designated threshold within the HCP fountain darter LTBGs study reaches (Upper Spring Run [Heidelberg], Landa Lake, New Channel, Old Channel) (EAHCP 2012). In the case of stations that surpassed either water temperature threshold during the year, the general timeframes in which those exceedances occurred are discussed in the text.

Texas Master Naturalist Monitoring

Volunteers with the Texas Master Naturalist program continued their monitoring efforts in 2025 at select locations along the Comal system. Volunteers collected water quality and recreation data at the following five sites: (1) Houston Street site within the Upper Spring Run reach, (2) Gazebo site within the Landa Lake reach, (3) Elizabeth Avenue site upstream of the Old Channel reach, (4) New Channel site within the New Channel reach, and (5) the downstream-most Union Avenue site (Figure 1). Volunteer monitoring was performed on a weekly basis, with surveys conducted primarily on Friday afternoons between 1200 and 1500 hours. At each site, an Oakton Waterproof EcoTester pH 2 was used to measure pH, and a LaMotte Carbon Dioxide Test Kit was used to measure carbon dioxide (CO_2) concentrations in the water column. In addition to water-quality measurements, recreational-use data were collected at each site by counting the number of tubers, kayakers, anglers, etc., within the survey site at the time of sampling. Volunteers also took photographs at each site during each sampling event and occasionally made additional notes on recreational use or the condition of the river. Results from this monitoring effort can be found in Appendix D.

Aquatic Vegetation

Mapping

The team used a sit-in kayak to complete aquatic vegetation mapping in each sample reach during the January Critical Period, spring, May, July, and fall monitoring events (Figure 1). A Trimble GPS unit and external Tempest antenna set on the bow of the kayak was used to collect high-accuracy (10–60 centimeter [cm]) geospatial data. A data dictionary with pre-determined attributes was loaded into the GPS unit for data collection in the field. Discrete patch dimensions and the type and density of vegetation were recorded from the kayak. In some instances, an accompanying free diver was used to provide additional detail and to verify surface observations. The discreteness of an individual vegetation patch was determined by the dominant species located within the patch compared to surrounding vegetation. Once a patch of vegetation was visually delineated, the kayak was maneuvered around the perimeter of the vegetation patch to collect geospatial data with the GPS unit, thus creating a vegetation polygon. Attributes assigned to each polygon included species type and percent cover of each of the four most-dominant species. The type of substrate (silt, sand, gravel, cobble, organic) was identified if open substrate was a dominant feature within the patch. Rooted aquatic vegetation, floating aquatic vegetation, bryophytes, and algae were mapped as separate features. Only aquatic vegetation patches 1 meter (m) in diameter or larger were mapped as polygons.

Data Processing and Analysis

During data processing, Microsoft pathfinder was used to correct spatial data and create shapefiles. Spatial data were projected using the Projected Coordinate System NAD 1983 Zone 14N. Post processing was conducted to clean polygon intersections, check for and correct errors, and calculate cover for individual discrete polygons as well as totals for all encountered aquatic plant species.

Vegetation types are described in the Results and Discussion section by genus. Vegetation community composition among taxa are grouped by native vs. invasive taxa and compared for the last five years using stacked bar graphs. Total surface area of aquatic vegetation, measured in square meters (m^2), is presented for each season using bar graphs and is compared with long-term averages (2001–present) from spring, fall, high-flow events, and low-flow events. High-flow and low-flow averages were calculated from Critical Period and species-specific events. These events are based on predetermined river discharge triggers (Appendix A), which result in additional mapping events to assess flow-related impacts to the vegetation community.

Fountain Darter

Drop-Net Sampling

Drop-net sampling was utilized to quantify fountain darter densities and evaluate habitat utilization during the January Critical Period, spring, and fall monitoring events (Figure 1). Sample stations were selected using a random-stratified design. In each study reach, two sample stations per vegetation strata were randomly selected based on dominant aquatic vegetation (including open areas) mapped prior to sampling (see Aquatic Vegetation Mapping for details). At each sample station, all organisms were first trapped using a 2 m^2 drop-net. Organisms were then collected by sweeping a 1 m^2 dip net along the river bottom within the drop-net. If no fish were collected after the first 10 dip-net sweeps, the station was considered complete, and if fish were collected, an additional 5 sweeps were conducted. If fountain darters were collected on sweep 15, additional sweeps were conducted until no fountain darters were collected.

Most fishes collected were identified to species and enumerated. Two morphologically similar species, Western Mosquitofish (*Gambusia affinis*) and Largespring Gambusia (*Gambusia geiseri*), which are known to hybridize, were classified by genus (*Gambusia* sp.). Larval and juvenile fishes too small to confidently identify to species in the field were also classified by genus. All fountain darters and the first 20 individuals of other fish taxa were measured (total length in millimeters [mm]).

Physiochemical habitat data were collected at each drop-net location. Water depth in feet (ft) and velocity in feet per second (ft/s) were collected at the upstream end of drop-net samples using a flowmeter and adjustable wading rod. Water-velocity measurements were collected at 15 cm above the river bottom to characterize flows that directly influence fountain darters. Mean-column velocity was measured at 60% of water depth at depths of less than three feet. At depths of three feet or greater, water velocities were measured at 20% and 80% of depth and averaged to estimate mean column velocity. Water quality was measured within each drop-net using a multiprobe, which included water temperature (degrees Celsius [°C]), pH, dissolved oxygen (milligrams per liter [mg/L], percent saturation), and specific conductance (microsiemens per centimeter [µs/cm]). Mid-column water quality was measured at water depths of less than three feet, whereas bottom and surface values were measured and averaged at depths of three feet or greater. Lastly, vegetation composition (%) was visually estimated and dominant substrate type was recorded within and around each drop-net sample.

Dip-Net Sampling

Dip-net sampling was used to provide additional metrics for assessing funtain darter population trends and included qualitative timed surveys and random-station presence/absence surveys. All sampling was conducted using a 40x40-cm (1.6-mm-mesh) dip-net, and surveys for both methods were conducted in spring, summer, and fall. Additional surveys for both methods were conducted during a Critical Period event in January. Random-station presence/absence surveys for low-flow species specific monitoring also occurred in February, May, and August.

Timed dip-net sampling was conducted to examine patterns in fountain darter abundance and size structure along a more extensive longitudinal gradient compared to drop-net sampling. Surveys were conducted within established monitoring sites for a fixed amount of search effort (Upper Spring Run: 0.5 hour, Spring Island: 0.5 hour, Landa Lake: 1 hour, Old Channel: 1.0 hour, New Channel: 1.0 hour, Lower River: 1.0 hour) (Figure 2). In each study reach, a single surveyor used a dip-net to collect fountain darters in a downstream to upstream fashion. Collection efforts mainly focused on suitable fountain darter habitat, specifically in areas with dense aquatic vegetation. Non-wadeable habitats (>1.4 m) were not sampled. All fountain darters collected were enumerated, measured (mm), and returned to the river at point of collection.

Random-station presence/absence surveys were implemented to assess fountain darter occurrence. During each monitoring event, sampling stations were randomly selected within the vegetated area of each sample reach (Upper Spring Run: 5, Landa Lake: 20, Old Channel: 20, New Channel: 5) (Figure 1). At each random station, presence/absence was recorded during four independent dips. To avoid recapture, collected fountain darters were returned to the river in areas adjacent to the random station being sampled. Habitat variables recorded at each station included dominant aquatic vegetation, and presence/absence of bryophytes and algae.

Visual Surveys

Visual surveys with the aid of SCUBA gear were conducted at Landa Lake in areas too deep for implementing the fountain darter sampling methods described above (Figure 1). Sampling occurred during the spring and fall monitoring events. To standardize data relative to any potential diel patterns in behavior, observations were conducted in early afternoon during each sampling event. A specially designed grid (7.8 m^2) was used to quantify the number of fountain darters using these deeper habitats. During each survey, all fountain darters within the grid were counted and the percentage of bryophyte coverage within the grid was recorded. Results of visual surveys are presented in Appendix E.

Data Analysis

Key demographic parameters used to evaluate fountain darter observations included population performance, size structure, and recruitment. Population performance was assessed using drop-net, timed dip-net, and random dip-net data. Counts of darters per drop-net sample were standardized as density (darters/m^2). Data collected in winter are not presented in Figure 9 which depicts annual, 5-year and long-term observations because sampling in winter only occurs under low flow conditions. Data from winter are instead described in the text. Timed dip-net total darter counts per study reach were standardized as catch-per-unit-effort (CPUE; darters/person-hour [p-h]) for each sampling event. Random dip-net occurrence per station was based on whether or not a fountain darter was observed during any of the four dips and percent occurrence was calculated per sampling event at each reach as: (sum[darter presence]/sum[random stations])*100. fountain darter density, CPUE, and percent occurrence were compared among seasons using boxplots. In addition, most seasonal observations were compared to observations from the past five years and long-term observations (2001–present). Lastly, temporal trends in fountain darter density were assessed per sampling event for each study reach over the past five years using boxplots and compared to their respective long-term (2001–present) medians and quartiles (25th and 75th percentile).

Size structure and recruitment were assessed among seasons. Fall and spring were assessed by combining drop-net and timed dip-net data, and summer was assessed only using timed dip-net data. Boxplots coupled with violin plots were used to display the distribution of darter lengths per sampling event during each season for the past five years. Boxplots show basic length-distribution statistics (i.e., median, quartiles, range) and violin plots visually display the full distribution of lengths relative to each sampling event using kernel probability density estimation (Hintze and Nelson 1998). Recruitment was quantified as the percent of darters ≤20 mm during each sampling event. Based on a linear model built by Brandt et al. (1993) that looked at age-length relationships of laboratory-reared fountain darters, individuals of this size are likely less than 3 months old and not sexually mature (Brandt et al. 1993; Schenck and Whiteside 1976). Percent recruitment ±95% confidence intervals (i.e., beta distribution quantiles; McDonald 2014) were shown for the past five years by season and compared to their respective long-term averages.

Habitat use was assessed based on population performance and size structure among vegetation strata using drop-net and random-station dip-net observations. fountain darter density by vegetation taxa was compared based on current, five-year, and long-term (2001–present) observations using boxplots. Proportion of occurrence was also calculated among vegetation types sampled during random-station dip-netting for the current year. Lastly, boxplots coupled with violin plots were used to display the distribution of darter lengths by vegetation taxa using drop-net data to examine habitat use among size classes for the current year.

Habitat suitability was quantified to examine reach-level changes in habitat quality for fountain darters through time. First, Habitat Suitability Criteria (HSC) ranging from 0 (unsuitable habitat) to 1 (most suitable habitat) were built based on occurrence data for all vegetation types (including open habitat) that have been sampled using logistic regression (Manly et al. 1993). Resulting HSC were then multiplied by the areal coverage of each vegetation strata mapped during a biomonitoring event, and results were summed across vegetation strata to calculate a weighted usable area for each reach. To make data comparable between reaches of different sizes, the total weighted usable area of each reach was then divided by the total area of the reach, resulting in an Overall Habitat Suitability Index (OHSI) for each reach during each sampling event. Following this method, temporal trends of fountain darter OHSI ±95% CI were calculated per sampling event for each study reach (Upper Spring Run, Landa Lake, Old Channel, Upper New Channel, Lower New Channel) for the past five years. Long-term (2003–present) OHSI and 95% CI averages were also calculated to provide historical context to recent OHSI observations. Data analyses were modified from previous calculations of OHSI for Upper Spring Run and included the addition of green algae (i.e., *Chara*, *Nitella*) due to *Chara* representing as much as ~50% of the vegetation community. Specific details on the analytical framework used for developing OHSI and evaluating its efficacy as a fountain darter habitat index, including methods to build HSC, can be found in Appendix H.

Fish Community

Mesohabitat, Microhabitat, and Seine Sampling

Fish community sampling was conducted in the spring and fall to quantify fish assemblage composition/structure and to assess fountain darter population performance in river segments and habitats (e.g., deeper areas) not sampled during drop-net and timed dip-net surveys. The following four monitoring segments were sampled: Upper Spring Run, Landa Lake, Old Channel, and New Channel (Figure 2). Deeper habitats were sampled using visual transect surveys, and shallow habitats were sampled via seining.

A total of three mesohabitat transects were sampled at each segment during visual surveys. At each transect, four divers swam from bank-to-bank at approximately mid-column depth, enumerating all fishes observed and identifying them to the lowest possible taxonomic level. After each mesohabitat transect was completed, microhabitat sampling was also conducted along four, 5-meter-long PVC pipe segments (micro-transect pipes) placed on the stream bottom, spaced evenly along the original transect. Divers started at the downstream end and swam up the pipe searching through the vegetation, if present, and substrate within approximately 1 m of the pipe. All fishes observed were identified to species and enumerated. For both surveys, any individuals that could not be identified to species were classified by genus. At each micro-transect pipe, total area surveyed (m^2), aquatic vegetation composition (%), and substrate composition (%) were recorded. Water depth (ft) and velocity (ft/s) data were collected in the middle of each micro-transect pipe using a portable flowmeter and adjustable wading rod. Water-velocity measurements were taken 15 cm from the bottom, mid-column, and at the surface.

Standard water-quality parameters were also recorded once at each mesohabitat transect using a handheld water-quality sonde.

In shallow habitats, at least three seining transects were sampled within each monitoring segment (except for Landa Lake). At each of these, multiple seine hauls were pulled until the entire wadable area had been covered. After each seine haul, fish were identified, measured (mm), and enumerated. Total area surveyed (m^2) was visually estimated for each seining transect. Habitat data from each seine haul location included substrate and vegetation composition (%); water depth (ft); and velocity (ft/s) measured at 15 cm above the river bottom, at mid-column, and at the surface. Fish taxonomy herein follows the most recent guide published by the American Fisheries Society (AFS 2023).

Data Analysis

To evaluate fish community results, all analyses were conducted using fishes identified to species; fishes identified to genus or family were excluded. Total counts of species from independent samples were first quantified as density (fish/m^2) to standardize abundance among the three gear types used.

Based on microhabitat sampling, temporal trends in fountain darter density were assessed per sampling event for each study reach for the past five years using boxplots and compared to their respective long-term (2014–present) medians and quartiles. Overall species richness and diversity using the Shannon's diversity index (Spellerberg and Fedor 2003) for each study segment was assessed for the past five years and plotted with bar graphs. Richness and relative density (%; [sum(species *x* density)/sum(all species density)]*100) of spring-associated fishes (Table 2) were also quantified and presented in the same manner as species richness and diversity.

Table 2. Spring-associated fishes within the Comal Springs System based on Craig et al. (2016).

SCIENTIFIC NAME	COMMON NAME
Dionda nigrotaeniata	Guadalupe Roundnose Minnow
Notropis amabilis	Texas Shiner
Astyanax argentatus	Texas Tetra
Gambusia geiseri	Largespring Gambusia
Etheostoma fonticola	Fountain Darter
Etheostoma lepidum	Greenthroat Darter
Percina apristis	Guadalupe Darter
Percina carbonaria	Texas Logperch

Comal Springs Salamander Surveys

In spring and fall, biologists performed timed visual surveys for Comal Springs salamanders within the four following established sampling areas: Spring Run 1, Spring Run 3, Spring Island Spring Run, and Spring Island East Outfall (Figure 1). One additional Critical Period sampling event occurred in January and two low-flow species specific events occurred in February (n=1) and August (n=1). Timed surveys involved sampling from downstream to upstream within the extent of the sampling area. Biologists inspected under rocks within the top 5 cm of the substrate surface and within aquatic vegetation to quantify salamanders while moving upstream toward the main spring orifice. A dive mask and snorkel were utilized to view organisms, as depth permitted. Locations of all Comal Springs salamander observations were recorded using pin flags. Following survey completion, and water depth (ft) and presence/absence of vegetation were noted to potentially serve as a baseline assessment of habitat parameters should the salamander population change significantly in subsequent sampling years. To account for any potential diel patterns in behavior, all surveys were initiated in the morning and completed by early afternoon.

Survey effort was previously fixed during routine sampling. Within Spring Run 1, a one-hour survey was conducted from the Landa Park Drive Bridge upstream to just below the head spring orifice. Spring Run 3 was surveyed for one hour from the pedestrian bridge closest to Landa Lake upstream to the second pedestrian bridge. Surveys in the Spring Island area were divided into the following two sections: (1) one 30-minute survey of Spring Island Run and (2) one 30-minute survey of the east outfall upwelling area on the east side of Spring Island near Edgewater Drive. Based on this, effort across all sites represents a total of 6 person-hours (p-h) under the established monitoring methodology. However, reduced habitat availability associated with low-flow conditions experienced from 2022-2025 required modification in search times. Specifically, total survey effort at each site was adjusted relative to the percent of wetted habitats available for salamanders at a given sampling event. For example, if wetted habitats were reduced by 50% at Spring Run 1, a 50% reduction in survey time was implemented (i.e., 30 minutes).

Data Analysis

Comal Springs salamander counts and CPUE (salamanders/p-h) were used to assess seasonal and five-year trends, respectively. Data from all sampling events in 2025 were used for analysis despite varied search effort at each site. Since adjustments in search time were scalable, varied effort offset differences in total survey area, providing statistically valid comparisons in catch rates. Salamander counts were presented for each season using bar graphs and are compared with long-term (2001–present) spring, fall, high-flow event, and low-flow event averages. High-flow and low-flow event averages were calculated from Critical Period and species-specific low flow events. These events are based on predetermined river discharge triggers (Appendix A), which result in additional survey events to assess flow-related impacts to the Comal Springs salamander population. Temporal trends in salamander density were also assessed per sampling event for each sampling area for the past five years using bar graphs.

Macroinvertebrates

Drift-net Sampling and Data Analysis

Macroinvertebrate samples were collected via drift-net at three sites in the Comal system. During each routine comprehensive sampling event, drift-nets were placed over the major spring openings of Comal Spring Runs 1 and 3 and a moderate-sized spring upwelling (Spring 7) along the western shoreline of Landa Lake; alternate locations were used in Spring Run 1 when no water was observed at the major opening (Figure 1). Drift-nets were anchored into the substrate directly over each spring opening, with the net facing perpendicular to the direction of flow. Net openings were circular with a 0.45-m diameter, and the mesh size was 100 micrometers (μm). The tail of the drift-net was connected to a detachable, 0.28-m-long cylindrical bucket (200 μm mesh), which was removed at 6-hour intervals during sampling, after which cup contents were sorted and invertebrates removed in the field. The remaining bulk samples were preserved in ethanol and sorted later in the laboratory, where minute organisms that had been overlooked in the field were removed. All Comal Springs fiffle beetles, Peck's cave amphipods, and Comal Springs dryopid beetles captured via drift-net were returned to their spring of origin, with the exception of voucher organisms (fewer than 20 living specimens of each species identifiable in the field). All non-endangered invertebrates were preserved in 70% ethanol. Additionally, water-quality measurements (temperature, pH, conductivity, dissolved oxygen, and current velocity) were taken at each drift-net site using a water-quality meter and handheld flow meter.

The total numbers of endangered species at each site are presented in the results and a summary of total numbers for all taxa can be found in Appendix E. Temporal trends in *Stygobromus pecki* per cubic meter were assessed per sampling event for each sampling area over the past five years using boxplots and compared to their respective long-term (2003–present) medians and quartiles (25th and 75th percentile).

Comal Springs Riffle Beetle Sampling and Data Analysis

Comal Springs riffle beetles were collected from three areas in the Comal River system during two routine sampling events in spring and fall. Seven additional species-specific sampling events occurred in January, February, March, May, August, September. Routine sampling followed the methods of the Cotton Lure standard operating procedure developed for the HCP (EAA 2017). This methodology consists of placing lures of 15x15 cm pieces of 60% cotton/40% polyester cloth into spring openings/upwellings in the Comal system, where they remain in situ for approximately 30 days. During this time, they become inoculated with local organic and inorganic matter, biofilms, and invertebrates, including Comal Springs riffle beetles. These lures were placed in sets of 10 in the following three areas: (1) Spring Run 3, (2) along the western shoreline of Landa Lake ("Western Shoreline"), and (3) near Spring Island. Due to declines in wetted habitats in the summer, alternate sampling methods were implemented during low-flow sampling events to limit disturbance from over sampling. Lures lost, disturbed, or buried by sedimentation were not included in subsequent analyses. Numbered tags placed on the banks of Spring Run 3 and Western Shoreline were utilized, when possible, to identify lure locations.

Comal Springs riffle beetles collected with cotton lures were identified, counted, and larvae were returned to their spring of origin during each sampling effort. A dissecting scope with a maximum magnification of 90x was used to correctly identify riffle beetles in the field. The sampling crew also recorded counts of *Microcylloepus pusillus*, Comal Springs dryopid beetle, Peck's cave amphipod, and *Lirceolus* pp. collected on lures. Some adult Comal Springs riffle beetles, Comal Springs dryopid beetles, and Peck's cave amphipods were retained by SMARC personnel for incorporation into the refugia program. Any other spring invertebrates collected on the lures were also placed back into their spring of origin. Crews utilized a mask and snorkel to place and remove lures in areas with deeper water depths.

Adult Comal Springs riffle Bbetle relative abundance (beetles/lure) were compared among seasons for each area using boxplots. In addition, seasonal observations were compared to five-year and long-term observations (2004–present). Temporal trends in relative abundance were also assessed per sampling event for each area for the past five years using boxplots and compared to their respective long-term (2004–present) medians and quartiles (25th and 75th percentile). Data collected during the seven low-flow sampling with alternate methods were omitted from all analyses. Due to variation in sampling sites and methodology, these data were not directly comparable to routine biomonitoring events, and were instead summarized for each event separately, based on total adult Comal Springs riffle beetle counts per site.

Rapid Bioassessment Sampling and Data Analysis

Rapid bioassessment protocols (RBPs) are tools for evaluating biotic integrity and overall habitat health based on the community of organisms present (Barbour et al. 1999). Macroinvertebrates are the most frequently used biological units for RBPs because they are ubiquitous, diverse, and there is an acceptable working knowledge of their taxonomy and life histories (Poff et al. 2006, Merritt et al. 2008).

BIO-WEST performed sampling and processing of freshwater benthic macroinvertebrates, following Texas RBP standards (TCEQ 2014). Macroinvertebrates were sampled with a D-frame kick net (500 µm mesh) by disturbing riffle or run habitat (consisting primarily of cobble-gravel substrate) for five minutes while moving in a zig-zag fashion upstream. Invertebrates were then haphazardly distributed in a tray and subsamples were taken by scooping out haphazard portions of material and placing them into a separate sorting tray.

All macroinvertebrates were picked from the tray before another subsample was taken. This process was continued until a minimum of 140 individuals were picked to represent a sample. If the entire sample did not contain 140 individuals, the process was repeated again until this minimum count was reached. Macroinvertebrates were collected in this fashion from Upper Spring Run, Landa Lake, Old Channel, New Channel, and the Lower River (Other Place) reaches (Figure 1).

Picked samples were preserved in 80% denatured ethanol, returned to the laboratory, and identified to established taxonomic levels (TCEQ 2014), usually genus. Members of the family Chironomidae (non-biting midges) and class Oligochaeta (worms) were retained at those taxonomic levels. The 12 ecological metrics of the Texas RBP benthic index of biotic integrity (B-IBI) were calculated for each sample. Each metric represents a functional aspect of the macroinvertebrate community related to ecosystem health, and sample values are scored from 1 to 4 based on benchmarks set by reference streams for the state of Texas. The aggregate of all 12 metric scores for a sample represent the B-IBI score for the reach that sample was taken from. The B-IBI point-scores for each sample are compared to benchmark ranges and are described as having aquatic-life-uses of "Exceptional", "High", "Intermediate", or "Limited". In this way, point-scores were calculated and the aquatic-life-use for each sample reach was evaluated. Temporal trends in B-IBI scores were assessed per sampling event for each reach during the past five years using bar graphs.

RESULTS and DISCUSSION

River Discharge and Springflow

Low-flow conditions continued to persist in 2025. Over the last five years, median annual mean daily discharge decreased from 2021 (276 cfs) to 2025 (84 cfs), representing a decline from ~38th to 3rd percentile of long-term median daily discharge (1928-2025), respectively. Minimum discharge also decreased from 2020 (197 cfs) to 2025 (48 cfs), with 2025 being the first time that mean daily discharge fell below 50 cfs (1st percentile magnitude) since 1997. However, river discharge was only less than 50 cfs for one day in 2025. Previous low flow events of longer duration have occurred, with the system below 50 cfs for 266 days in 1956, 89 days in 1984, 3 days in 1990, 10 days in 1995, and 27 days in 1997. Despite continued low flows over the past five years, maximum annual mean daily discharge was highest in 2025 (2,180 cfs), representing a > 99th percentile event, and was lowest in 2023 (259 cfs). Maximums in 2021 (1,850 cfs) and 2025 represent the only two mean daily high flow pulse events >1,000 cfs that have occurred in the past five years. The maximum flow in 2025 occurred during an intense rainfall event on June 12th where instantaneous (15-minute) discharge was measured at nearly 7,000 cfs (USGS 2025). In addition to median discharge declining, variation in discharge (i.e., interquartile range) has also decreased from 2022 (132 cfs) to 2025 (29 cfs) (Figure 4A). That said, it's worth mentioning that variation in 2025 was based on discharge data from January through October and does not capture flow conditions in November and December, which are historically wetter months. In comparison and as presented in the 2024 annual report, variation in discharge in 2024 was ~50 cfs, but increased to 75 cfs when November and December were incorporated into the current analysis (BIO-WEST 2025a; Figure 4A).

Monthly median discharge was below the long-term median across all months for the entirety of 2025. Monthly medians ranged from 68-75 cfs from January–May and increased above 100 cfs in June (140 cfs) and July (144 cfs) due to precipitation events. Median discharge declined the remainder of the year and was 65 cfs in October. Median discharge was about 22% (May, October) to 50% (July) of monthly long-term medians. Further, median discharge approximated the long-term 10th percentile during four months (June–September) and was 50% or less of the 10th percentile the remaining months. Minimum monthly discharge was only greater than 100 cfs in July (114 cfs) and was lowest in May (48 cfs). Maximum mean daily discharge was highest in June (2,180 cfs) and July (642 cfs). Mean daily river discharge also only exceeded 90th percentile magnitudes in June (>407 cfs; n = 1 day) and July (>382 cfs; n = 3 days). Maximum discharge for the remaining months either approximated long-term 10th percentile flows (n = 3 months) or were lower (n = 5 months). Lastly, flow variability was highest from May–July (28–40 cfs) and lowest in February (4 cfs) (Figure 4B).

Measured discharges in spring habitats were below historical means for the majority of measurements in 2025. Discharge at Spring Run 1 was 0 cfs for all of 2025. In the winter Critical Period Event (not shown in Figure 5 due to lack of long-term data), Upper Spring Run (mean = 0.08 cfs) and Spring Run 2 (mean = 0.18 cfs) were still flowing, but decreased to 0 cfs the remainder of the year. In contrast, discharge at Spring Run 3 increased from winter (mean = 2.8 cfs) to fall (5.88 cfs). Discharge at the Old Channel was consistent in 2025, ranging from 43 to

51 cfs (Figure 5). Despite zero-flow conditions occurring for most (or all) of the year at Upper Spring Run, Spring Run 1, and Spring Run 2, these spring runs likely exceeded 0 cfs for at least part of June when full-system discharge exceeded 1,000 cfs and rainfall within the recharge zone increased the aquifer level about 8–10 ft (Well J-17; EAA 2025) (Figure 4). Regardless, this period of zero-flow relief would have been very brief. Similar to results from 2023 and 2024, the percent total discharge at Old Channel in 2025 was higher than expected and directly related to lower contributions from spring runs (Figure 5) and EAHCP flow split management.

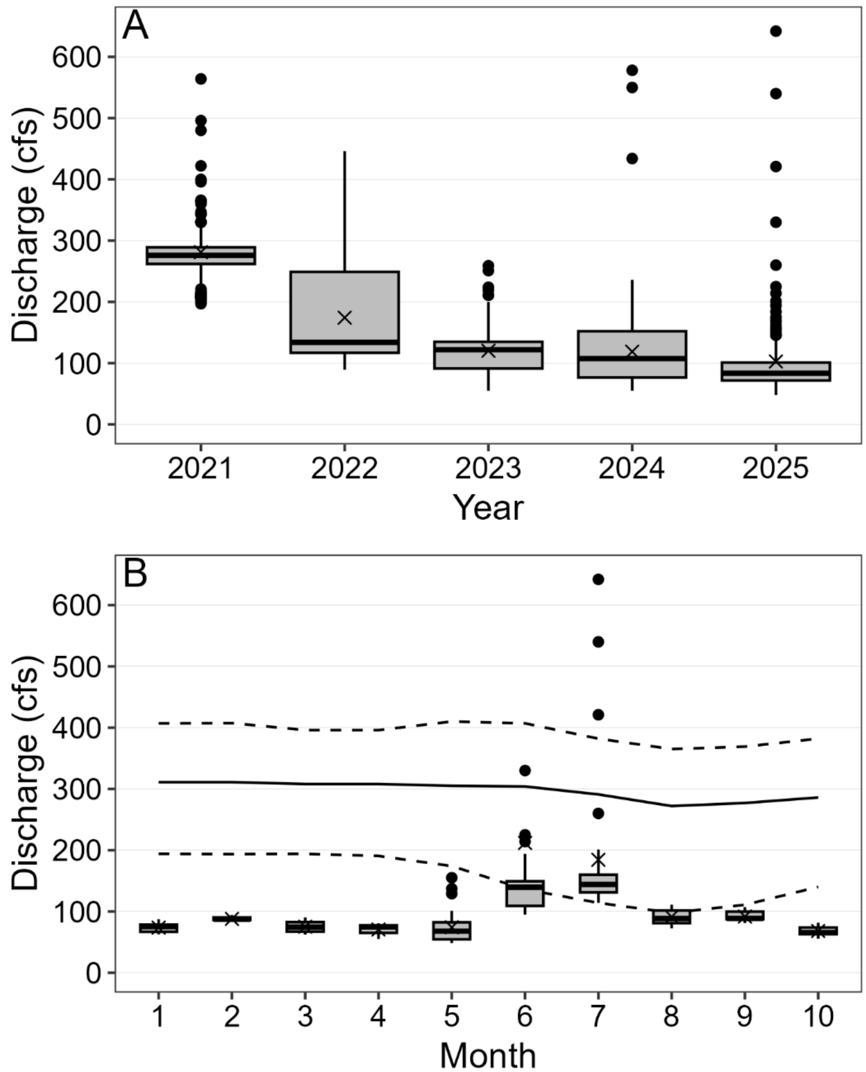

Figure 4. Boxplots displaying Comal River mean daily discharge annually from 2021–2025 (A) and among months (January–October) in 2025 (B). Each month is compared to the 10th percentile (lower dashed line), median (solid line), and 90th percentile (upper dashed line) of their long-term (1956–2025) daily means. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range, and outliers beyond this are designated with solid black circles. Two outliers are not shown in panel A for 2021 (1,850 cfs) and in both panels for 2025 (2,180 cfs).

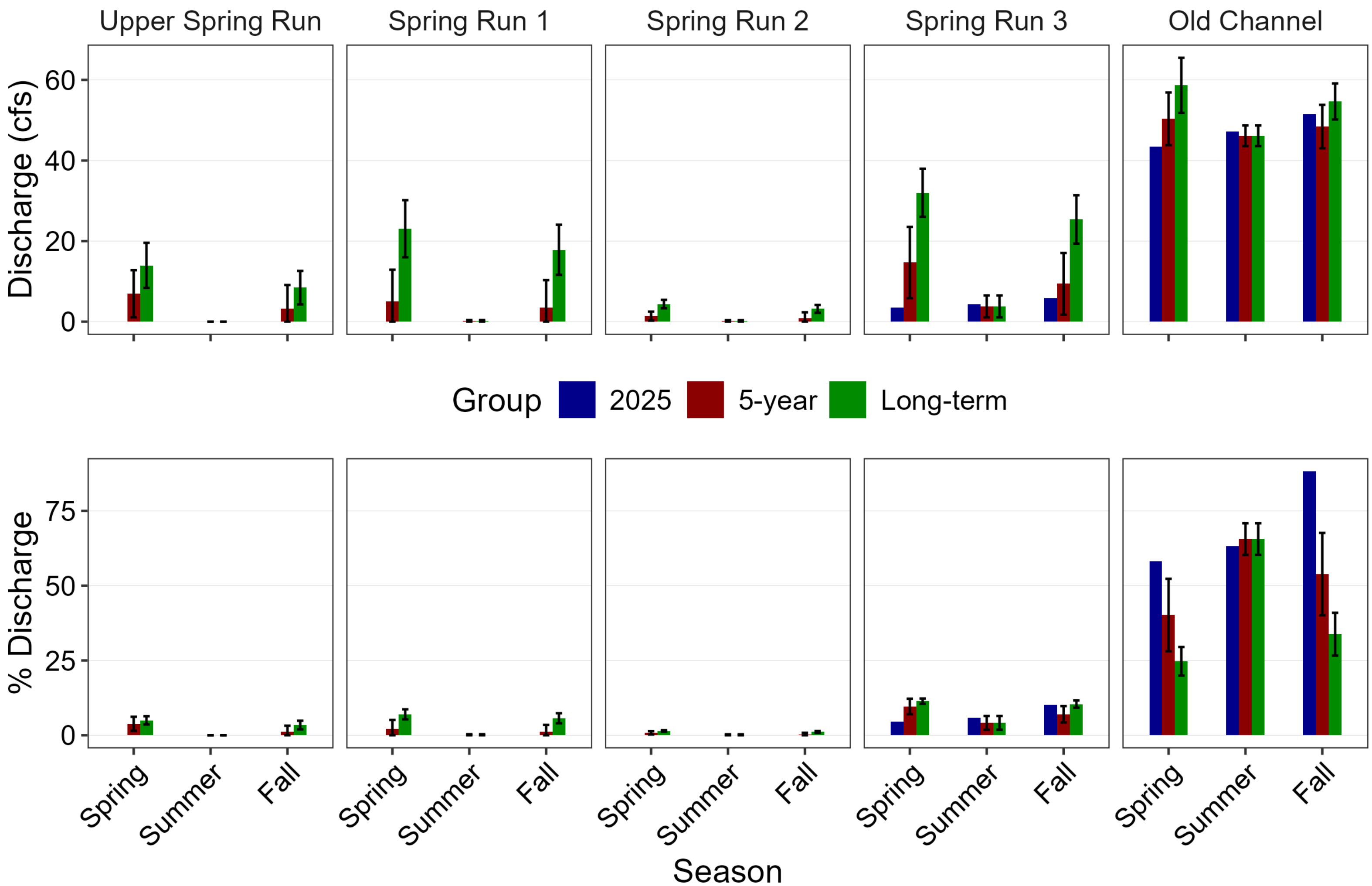

Figure 5. **Current (blue bars), five-year (2021–2025; red bars), and long-term (2003–2025; green bars) discharge and percent total discharge based on spring and fall cross-section measurements in the Comal Springs/River. Five-year and long-term values are represented as means and error bars denote 95% confidence intervals.**

Water Temperature

Water temperature regimes in Comal Springs were mostly similar among stations, though several deviations were observed. Median water temperature ranged from 23.3–24.6 °C at all stations except Booneville Far (29.1 °C). Upper quartiles (75th percentile) were highest at Blieders (25.7 °C), Heidelberg (24.9 °C), and Booneville Far (29.7 °C). Within spring environments, variation in water temperature (i.e., interquartile range) was also greatest at these most upstream stations, decreasing in a downstream direction from 4.7–1.9 °C. Variability was less than 1 °C for the remaining stations within spring habitats, all of which did not have maximums exceeding 25 °C except for Spring Run 2 (27.2 °C).

Spatial patterns in water temperature at riverine stations illustrated a discontinuous trend similar to spring habitats. Median water temperature ranged from 24.0–24.5 °C at all stations except New Channel Upstream (28.6 °C). Similarly, maximum water temperature was much higher at New Channel Upstream (33.1 °C) compared to other riverine station (27.2–28.0 °C). As usual, water temperature trends were consistently more variable in riverine environments compared to the springs, ranging from 2.0–3.4 °C (Figure 6).

Discontinuous longitudinal trends in water temperatures illustrated in 2025 did not align with expectations in spring-associated systems, where water temperatures typically increase in magnitude and variation farther downstream from spring inputs (Groeger et al. 1997, Kollaus and Bonner 2012). Mainly, 2025 water temperature regimes did not align with expectations at Booneville Far and New Channel Upstream, with both stations illustrating much higher temperatures compared to historical data. This aligned with 2024 observations for Booneville Far but not New Channel Upstream. While median water temperature at Heidelberg was similar to historical data, measurements > 25 °C were more frequent in the current year. Water temperature measurements > 25 °C were also more numerous at Other Place compared to historical data (Figure 6). Atypical spatial patterns in water temperature can be attributed to greatly reduced springflow during the ongoing drought. It should also be noted that the observed measurements at New Channel Upstream are likely influenced by decreases in water depth at the location of the data logger (bank habitat), and may not be representative of the reach-level thermal regime. For example, during drop-netting at the New Channel in 2025, water temperatures at sample sites with water depths ≥ 2 ft ranged from 19.4 to 24.5 °C, suggesting thermal refugia still persist in this reach.

Fountain darter larval (25 °C) and egg (26 °C) production thresholds were exceeded from January–October across eight stations in both spring and riverine habitats. The larval threshold was exceeded >50% of days per month at Blieders for most months, whereas the egg threshold showed less frequent exceedances, peaking in June (97%) and August (94%). At Heidelberg, percent of days with water temperature exceedances decreased from April (67%) to July (10%), then increased to a percent frequency of 61–84% the rest of the year. Daily percent frequency for exceedance of the egg threshold at Heidelberg was higher from April–May (~67%) and August–October (~50–68%), but was low from June–July (0–7%) due to the short-term increases in springflow. Booneville Far exceeded either the larval or egg production thresholds most days per month all year. In contrast, Spring Run 2 rarely exceeded either threshold criteria. Typical larval threshold exceedance per day within spring habitats was either ~17% (Heidelberg, Spring Run 2) or ~30% (Blieders, Booneville Far). For the egg threshold, exceedance per day was typically ~17% (Heidelberg, Spring Run 2), ~42% (Blieders), or 100% (Booneville Far).

For all riverine stations except New Channel Upstream, larval production exceedance increased in percent frequency from spring (~40–70%) to summer (~67–97%). At New Channel Upstream, larval threshold exceedance declined in frequency per month, and similar to Booneville Far, temperatures were mostly above the egg production criteria, ranging from 45–100% of days each month. Exceedance of the egg production threshold at Old Channel increased from March (16%) to August (97%), then decreased again by October (23%). Other Place illustrated a similar increasing trend from May (48%) to June (93%), followed by a decreasing trend from August (94%) to October (16%). This same bell-shaped trend also applied to New Channel Downstream but for a shorter duration, fluctuating between 45–52% of days per month from May–July. For the larval threshold, typical exceedance per day was ~17% (Old Channel) or ~30% (both new channel stations, Other Place). Typical egg production exceedance per day was ~17% at Old Channel, 100% at New Channel Upstream, ~30% at New Channel Downstream, and ~40% at Other Place.

In summary, exceedances of these early life stage water temperature thresholds were common throughout spring and riverine habitats during the spring and summer in 2025. Additional discussion on the potential effects of elevated water temperature on population performance of fountain darters is provided in subsequent sections.

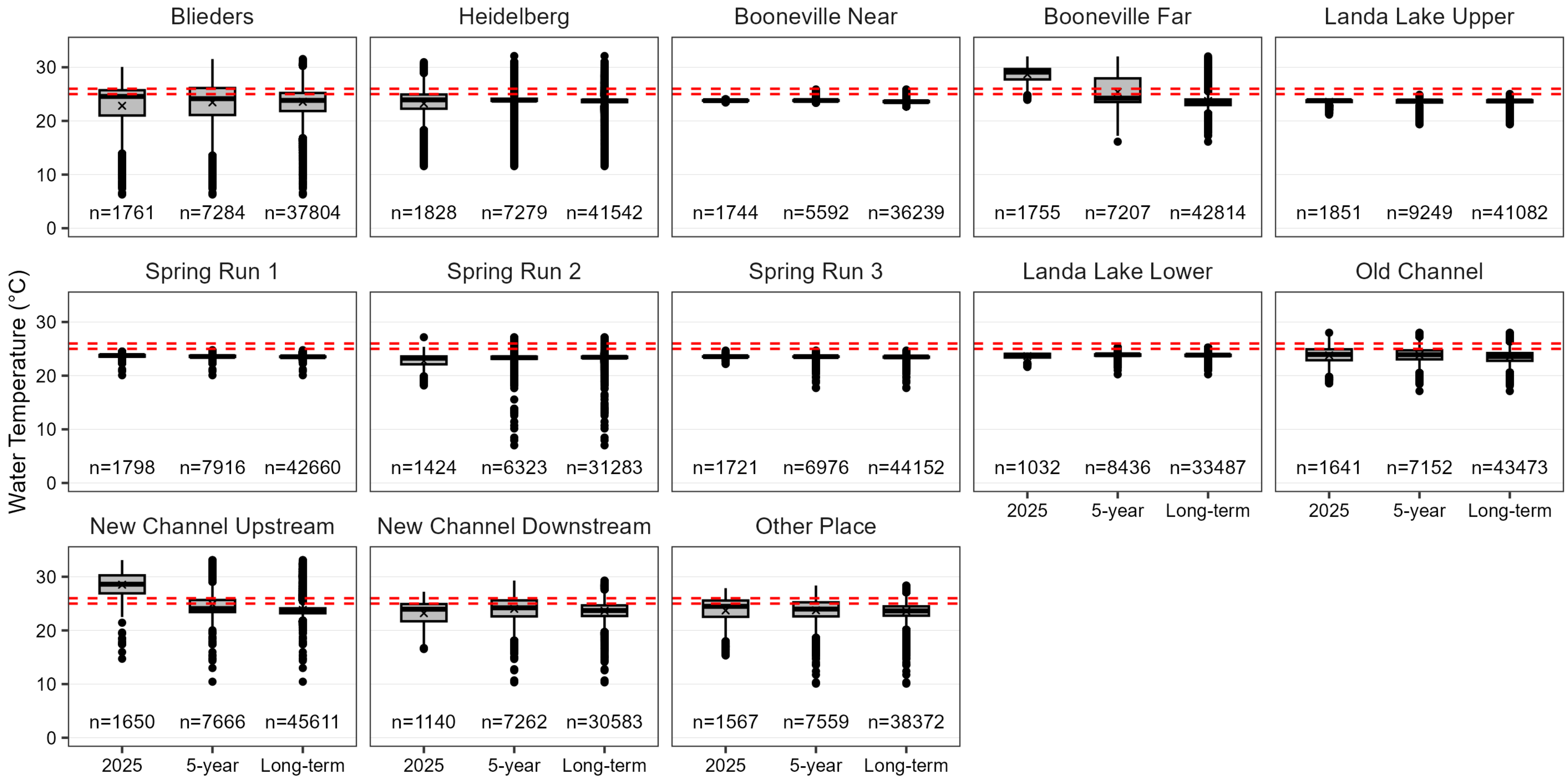

Figure 6. **Boxplots displaying 2025, 5-year (2021–2025), and long-term (2001–2025) water temperature data in the Comal Springs/River. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range, and outliers beyond this are designated with solid black circles. The "n" values along the x-axis represent the number of individual temperature measurements in each category. The lower and upper red dashed lines indicate maximum optimal temperatures for Fountain Darter larval (≥25 °C) and egg (≥26 °C) production (McDonald et al. 2007), respectively.**

Aquatic Vegetation

Long-term Biological Goal Reach Mapping

Mapping of long-term biological goal reaches occurred in spring and fall, as well as low-flow events in January, May, and July. The first low-flow event in January occurred as part of the Critical Period sampling event when flow was ~63 cfs. Flow increased slightly in February and was ~80 cfs during the spring mapping event. The May low-flow mapping event represented the lowest flow conditions of the year (~50 cfs). After a brief increase in flow following the rain event on June 12th, flow declined again below the 120 cfs trigger which initiated the third low-flow mapping event in early July. The final mapping event occurred during routine fall sampling when flows were ~70 cfs.

Upper Spring Run Reach

Total vegetation coverage was greatest at Upper Spring Run during the January low-flow event (2,505 m^2; Figure 7). Coverage declined throughout the year reaching the lowest total of 1,438 m^2 in fall. Spring total coverage was similar to the spring long-term average (2,374 m^2) and all three low-flow events were greater than the long-term low flow average (1,585 m^2), whereas fall total coverage was less than expected (1,817 m^2). Diversity at Upper Spring Run has declined in recent years with only two taxa dominating the assemblage throughout 2025. Similar to recent low flow years, the macroalgae *Chara* was the most dominant taxa followed by *Sagittaria* (Figure 8). The dominance of *Chara* can be attributed to increased silt accumulation experienced under low flows which facilitates establishment and expansion. A small patch of *Cabomba* was initially present (9 m^2) in January but was absent from the spring, May, and July events. A larger patch (55 m^2) of *Cabomba* re-established by fall. Filamentous algae was present in spring, May, and July, though was not as prominent as previous years. Although bryophytes were once common in this reach, and were observed in January and spring in small amounts (63 m^2), they were absent during the remainder of the year.

Landa Lake Reach

Vegetation coverage at Landa Lake increased from January (14,978 m^2) through May (16,027 m^2), then decreased to the lowest coverage in the July low-flow event (14,280 m^2; Figure 7). However, vegetation coverage increased to the largest total in fall (16,952 m^2). Vegetation coverage was lower than historical averages across all events. Dominant taxa were *Vallisneria* followed by *Sagittaria* (Figure 8). *Vallisneria* typically accounts for greater than 50% of the vegetation assemblage, and both species remained consistent in coverage throughout the year. *Vallisneria* expanded in deeper areas where water levels remained consistent but retreated in some portions of the lake due to low flow conditions, lower water levels, and buildup of vegetation mats. Areas from which *Vallisneria* retreated included below the Landa Lake islands and along the eastern edge of the lake. As *Vallisneria* retreated, taxa more tolerant to slower moving water expanded. For example, *Cabomba* and *Ludwigia* both expanded to their highest coverages observed in Landa Lake to date. Bryophytes were present throughout most of the year with the highest coverage in January (499 m^2). Most bryophytes were scoured from Landa Lake after rain events in May, June, and July. Although bryophytes were observed in fall, the coverage did not fully recover after the large June and July flood pulses.

Old Channel Reach

In 2025, rooted vegetation in the Old Channel was considerably below the long-term averages for all events. The lowest rooted vegetation coverage occurred in January (301 m^2) and was similar to the total coverages in spring and May (334 m^2; Figure 7). The highest rooted vegetation coverage (448 m^2) occurred in fall. *Ludwigia* expanded throughout the Old Channel reach and maintained over 200 m^2 of coverage across all events (Figure 8). *Cabomba* maintained presence throughout 2025, though in lower amounts than in 2022 and 2023. Rooted vegetation coverages in the past several years being well below long-term averages were due to *Hygrophila* historically dominating the reach prior to restoration activities in 2013. Since restoration activities removed *Hygrophila* in this reach, the dominant taxa from year to year are typically bryophytes, epiphytic filamentous algae, and *Ludwigia*. As such, lower overall coverages relative to the pre-HCP timeframe should not be interpreted as an indicator of degraded conditions but instead typically represents an improvement in fountain darter habitat conditions within this reach. This reach characteristically maintains an abundance of bryophytes even when conditions system-wide are not optimal. Bryophyte coverage was not represented in the total areal coverage calculations in Figure 7 which exclusively quantify rooted vegetation. Bryophyte coverage was similar from January (427 m^2) to July (597 m^2); however, bryophytes were absent by fall (Figure 8). This reduction is in part due to multiple flood pulses in June and July which scoured bryophytes, followed by a return of low-flows, making it difficult for them to recover the remainder of the year. Additionally, filamentous algae maintained consistent presence throughout 2025 and was more prevalent than bryophytes in fall (Figure 8). This concerning pattern of declining bryophytes and increased filamentous algae continued from 2024 and warrants future monitoring.

Upper New Channel Reach

The Upper New Channel experienced drastic changes in vegetation throughout 2025. In the January low-flow event, vegetation coverage was 2,370 m^2 and increased to 2,759 m^2 in spring which was the highest coverage observed in 2025 (Figure 7). The dominant taxa was *Hygrophila* which accounted for 85% of the vegetation assemblage in January and 69% in spring (Figure 8). *Cabomba* was also abundant throughout this reach and accounted for the majority of vegetation coverage increase from the January to spring events. As spring transitioned to summer, local rain events and recreation increased turbidity in this reach, making it difficult to map vegetation in the May low-flow event. A major flood pulse in June resulted in a significant decline in total vegetation coverage to 214 m^2 in early July. This was followed by a second large flood pulse in July. Progress toward the recovery of vegetation coverage was noted in fall as total coverage increased to 1,016 m^2. This increase in total coverage was mostly attributed to the expansion of *Cabomba* which increased by 829 m^2. Prior to 2025, aquatic vegetation in this reach has benefitted from the prolonged absence of flood pulses along Dry Comal Creek which reduced scouring. In 2025, multiple flood pulses in June and July increased scouring and turbidity which likely slowed vegetation recovery. Despite the flood pulses, low-flow conditions persisted through the remainder of the year which facilitated the expansion of *Cabomba* by fall.

Lower New Channel Reach

Similar to Upper New Channel, Lower New Channel experienced drastic changes in vegetation in 2025. Vegetation coverage increased from January (2,589 m^2) to spring (3,137 m^2) with both events exceeding their respective long-term averages (Figure 7). Local rain events and recreation increased turbidity in this reach preventing vegetation mapping in the May low-flow event. The June flood pulse greatly reduced vegetation coverage to 133 m^2 by the July low-flow event, which was then followed by a second large flood pulse. However, *Cabomba* began to recover after the July flood pulse and increased to 2,610 m^2 by fall. It was also the only taxa observed in the fall mapping event (Figure 8). Expansion of *Cabomba* was facilitated by the reduced recreation that occurred by the time vegetation began to recover after the flood pulses. Although recreation typically has an impact on vegetation coverage in this reach, the two large flood pulses played a larger role in 2025.

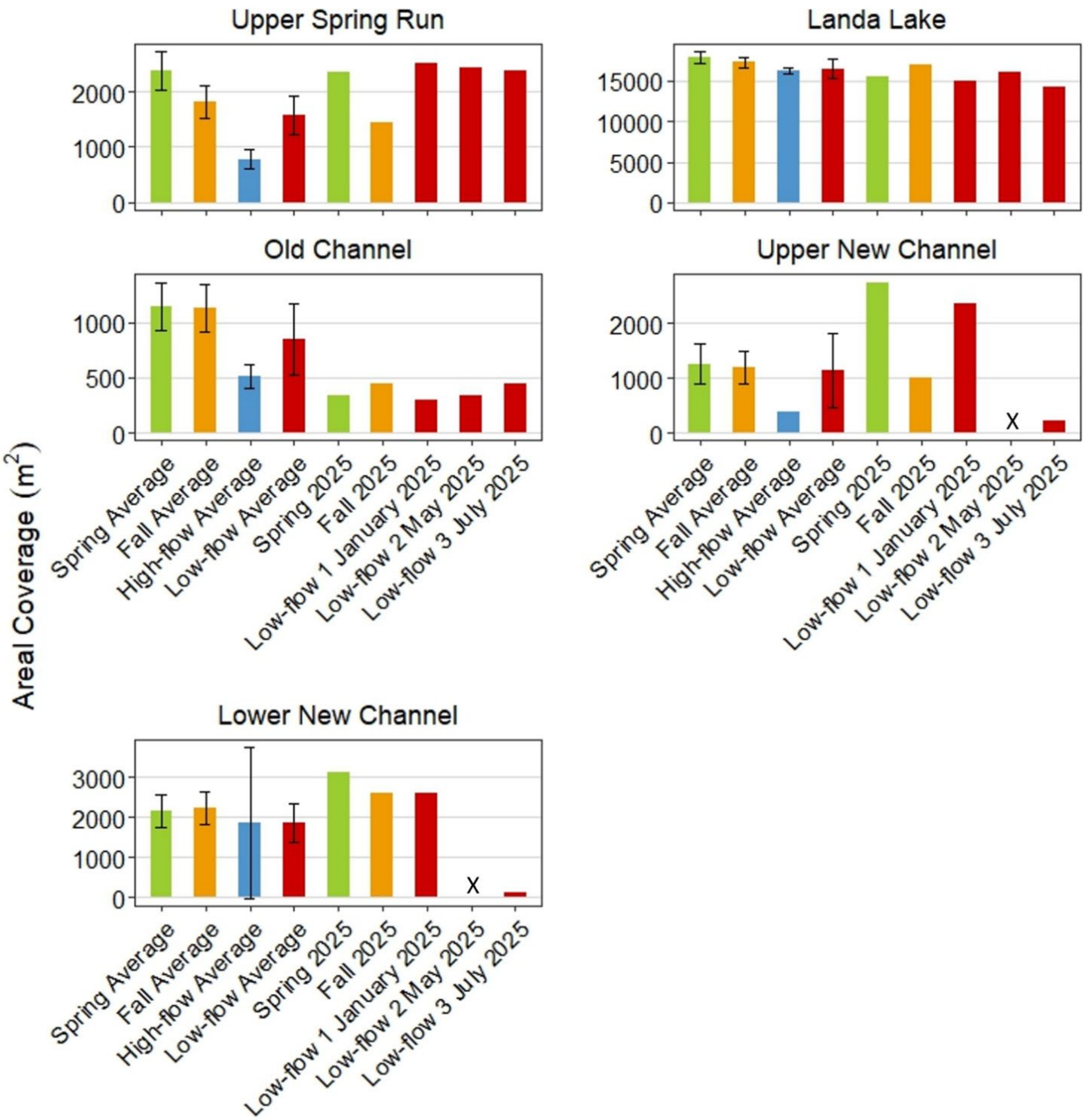

Figure 7. **Areal coverage (m[2]) of rooted aquatic vegetation among study reaches in the Comal Springs/River. Long-term (2001–2025) study averages are provided with error bars representing 95% confidence intervals. "X" at Upper and Lower New Channel reaches in Low-flow 2 (May 2025) denote lack of mapping due to turbid conditions.**

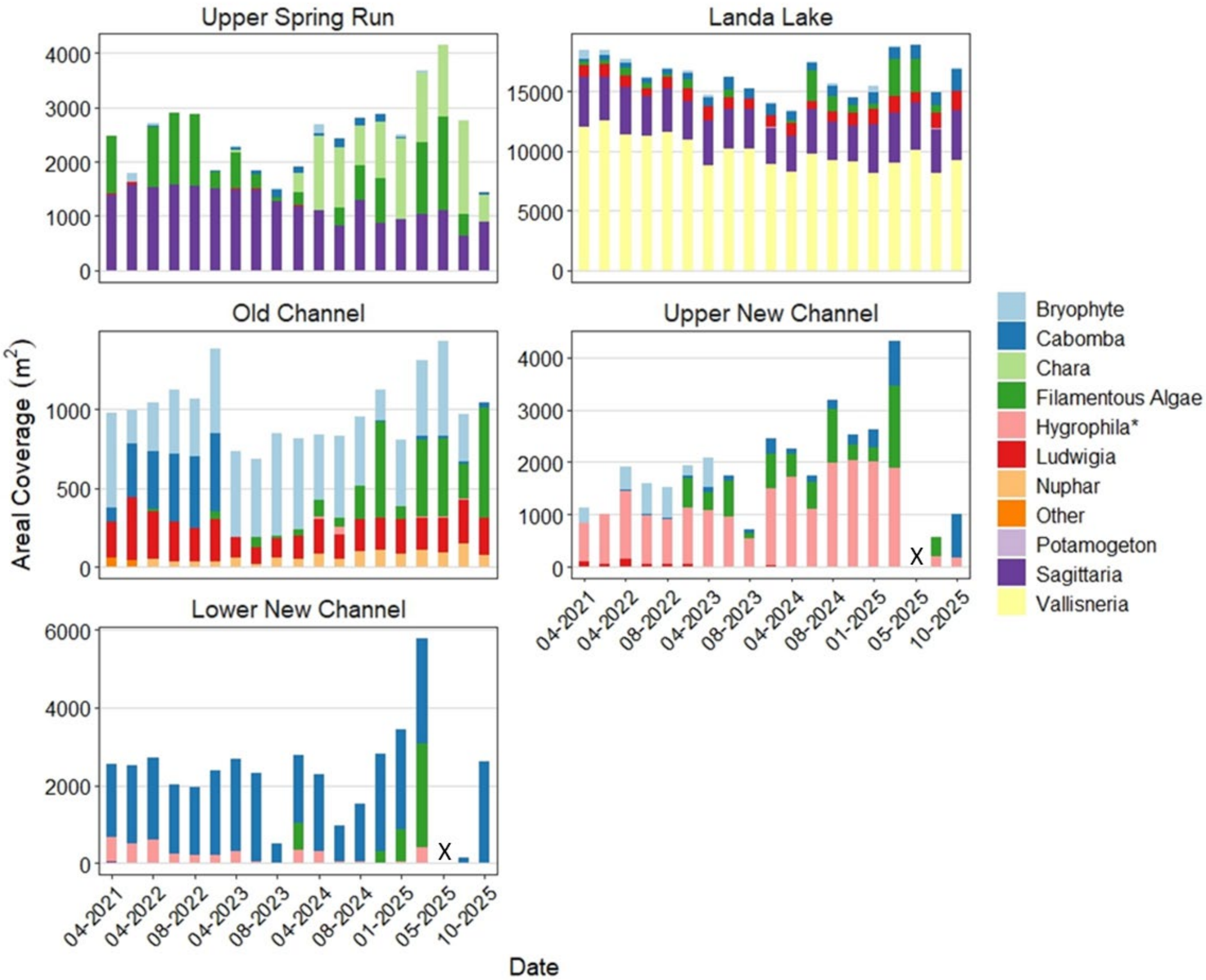

Figure 8. **Aquatic vegetation coverage (m²) among taxa from 2021–2025 in the Comal Springs/River. (*) in the legend denotes non-native taxa. "X" at Upper and Lower New Channel reaches in Low-flow 2 (May 2025) denote lack of mapping due to turbid conditions.**

Fountain Darter

A total of 1,797 fountain darters were observed at 98 drop-net samples in 2025. Drop-net densities ranged from 0.00–95.00 darters/m^2. Community summaries and raw drop-net data are included in appendices E and G, respectively. Summaries of habitat conditions observed during drop-netting can be found in Table 3.

Table 3. Habitat conditions observed during 2025 drop-net sampling in the Comal Springs/River. Physical habitat parameters include counts of dominant vegetation (median % composition) and dominant substrate type sampled. Depth/velocity and water quality parameters include medians (min-max) of each variable among all drop-net samples.

HABITAT PARAMETERS	USR	LL	OC	NC
Vegetation				
Bryophyte[1]	4 (65%)	6 (50%)	4 (100%)	0
Cabomba[1]	2 (80%)	6 (100%)	4 (90%)	6 (98%)
Chara[1]	6 (100%)	0	0	0
Hygrophila[1]	0	0	0	6 (100%)
Ludwigia[1]	0	6 (100%)	6 (100%)	0
Open	6 (100%)	6 (100%)	6 (100%)	6 (100%)
Sagittaria[2]	6 (100%)	6 (100%)	0	0
Vallisneria[2]	0	6 (100%)	0	0
Substrate				
Cobble	8	2	4	0
Gravel	8	8	7	7
Sand	0	7	1	0
Silt	8	19	8	11
Depth-velocity				
Water depth (ft)	2.2 (0.4–2.7)	1.7 (0.4–2.9)	2.3 (1.6–3.0)	1.5 (0.3–3.0)
Mean column velocity (ft/s)	0.0 (0.0–0.2)	0.0 (0.0–0.4)	0.3 (0.0–0.8)	0.0 (0.0–0.3)
15-cm column velocity (ft/s)	0.0 (0.0–0.2)	0.0 (0.0–0.4)	0.1 (0.0–0.5)	0.0 (0.0–0.3)
Water quality				
Water temperature (°C)	20.0 (17.1–25.0)	23.7 (20.2–25.6)	21.6 (20.8–25.5)	20.3 (18.8–24.5)
DO (mg/L)	6.9 (5.5–8.6)	8.0 (3.6–12.0)	9.5 (8.2–10.1)	8.8 (7.9–9.5)
DO % saturation	77.3 (70.4–99.4)	95.4 (41.7–146.7)	107.9 (92.6–121.4)	98.9 (85.4–108.4)
pH	7.8 (7.5–8.2)	7.7 (7.4–7.8)	7.9 (7.7–8.1)	8.0 (7.8–8.2)
Specific conductance (µs/cm)	572 (521–600)	588 (576–891)	584 (571–587)	579 (575–595)

[1]Denotes ornate vegetation taxa with complex leaf structure
[2]Denotes long broad or ribbon-like, austere-leaved vegetation taxa

Timed dip-netting resulted in a total of 724 fountain darters during 20 person-hours (p-h) of effort. Site CPUE ranged from 2–158 darters/p-h. For random dip-netting, fountain darters were detected at 179 out of 350 (51.1%) stations and reach-level percent occurrence ranged from 0.0–90.0% throughout the year. Summaries of patterns in occurrence per reach and vegetation taxa can be found in Table 4. Visual surveys in Landa Lake resulted in 28 darters observed and density estimates ranged from 1.54–2.05 darters/m^2 (bryophyte coverage = 0–10%) (Appendix E, Figure E11).

Table 4. Summary of vegetation types sampled among reaches during 2025 random-station surveys in the Comal Springs/River and the percent occurrence of Fountain Darters in each vegetation type and reach. Raw numbers represent the sum of detections per reach-vegetation type combination and '-' denotes that the vegetation type was not sampled.

Vegetation Type	USR	LL	OC	NC	Total Detections	Total Samples	Occurrence (%)
Bryophyte[1]	-	1	10	-	**10**	**11**	**90.9**
Cabomba[1]	-	16	5	33	**29**	**54**	**53.7**
Chara[1]	16	-	-	-	**9**	**16**	**56.3**
Filamentous algae[1]	2	-	-	2	**3**	**4**	**75.0**
Hygrophila[1]	-	-	1	-	**1**	**1**	**100.0**
Ludwigia[1]	-	33	100	-	**83**	**133**	**62.4**
Nuphar[2]	-	-	24	-	**8**	**24**	**33.3**
Sagittaria[2]	17	46	-	-	**18**	**63**	**28.6**
Vallisneria[2]	-	44	-	-	**18**	**44**	**40.9**
Total Detections	**11**	**73**	**84**	**11**	**179**	**350**	**51.1**
Total Samples	**35**	**140**	**140**	**35**	**-**	**-**	**-**
Occurrence (%)	**31.4**	**52.1**	**60.0**	**31.4**	**-**	**-**	**-**

[1]Denotes ornate vegetation taxa with complex filamentous or leaf structure
[2]Denotes long broad or ribbon-like, austere-leaved vegetation taxa

Population Demography

Seasonal population trends

Median fountain darter density in 2025 increased from winter (0.50 darters/m^2) to spring (6.75 darters/m^2), then decreased in fall (1.00 darters/m^2). Upper quartile density and variability (i.e., interquartile range) were also higher in spring (34.50 and 33.88 darters/m^2, respectively) compared to winter (both 3.13 darters/m^2) and fall (both 5.50 darters/m^2) (Figure 9A). Timed and random dip-netting illustrated similar seasonal trends. Median CPUE and percent occurrence increased from winter (32 darters/p-h and 40.0%, respectively) to spring (60 darters/p-h and 80.0%, respectively) and decreased by fall (30 darters/p-h and 10.0%, respectively) (Figure 9B, 9C). Seasonal patterns observed in 2025 approximated historical trends, with each population index highest in spring and lowest in fall/winter. Median density and CPUE were similar or slightly below 5-year and long-term trends across seasons. Median occurrence was similar to historical data in spring and summer but was much lower in fall. Other descriptive statistics from 2025 data deviated from historical data. Upper quartile density was higher than long-term data in spring 2025, but upper quartiles for CPUE and percent occurrence were lower than long-term data in all seasons (Figure 9).

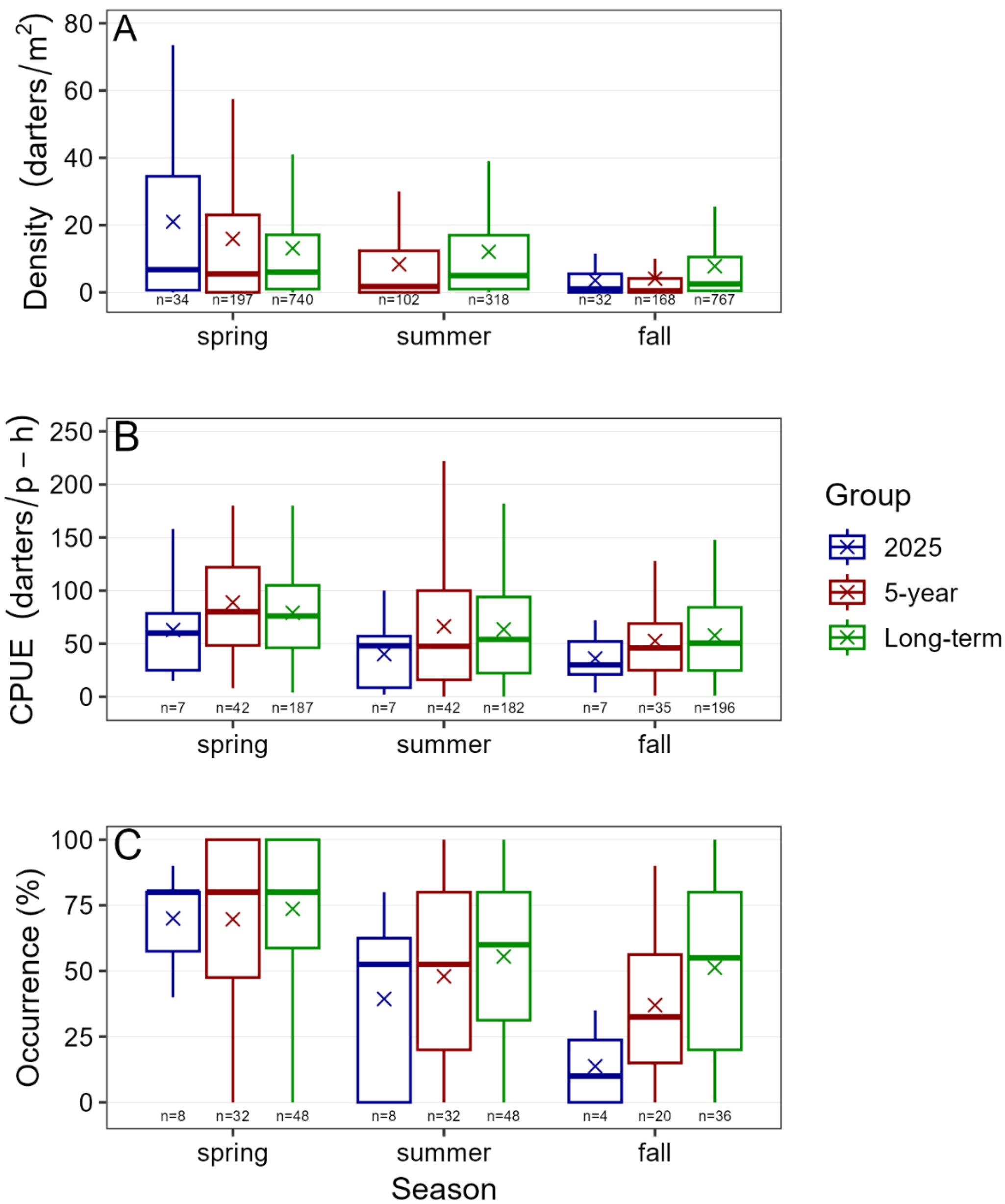

Figure 9. **Boxplots comparing fountain darter density from drop-net sampling (A), catch-per-unit-effort (CPUE) from timed dip-netting (B), and percent occurrence from random-station dip-netting (C) among seasons in the Comal Springs/River. Temporal groups include 2025, 5-year (2021–2025), and long-term (2001–2025) observations. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. The "n" values along the x-axes represent the number of samples per category.**

Based on these results in aggregate, population condition appeared to be typical in spring, which has been a consistent finding over the past five years despite drought conditions. This suggests that the stable low-flow conditions observed provide suitable conditions for late winter/early spring reproduction and early-life-stage recruitment. Progressing through the rest of the year, each index declined precipitously from one season to the next, and higher values of each index were notably less frequent compared to expectations from 5-year and long-term datasets. While differences in upper quartiles for CPUE and occurrence in the current year may be influenced by a smaller sample size compared to historical data, the upper quartile for occurrence in fall were notably low. Given what is known about temporal patterns in reproductive activity, this provides evidence to suggest that summer and fall survival rates of fountain darters recruited in spring were lower in 2025, or that late spring and summer reproductive activity was negatively influenced by elevated water temperatures and poor habitat conditions. Differences between 5-year and long-term data suggest that this is a multiyear pattern influenced by the persistent and ongoing drought.

Drop-net sampling density trends

Temporal trends in fountain darter density from 2021–2025 varied across reaches. Median densities over time were weakly correlated ($r < 0.50$) between reaches, suggesting spatially variable central tendencies. Upper quartile densities at Landa Lake were moderately correlated with Upper Spring Run ($r = 0.56$) and strongly correlated with Old Channel ($r = 0.75$). This indicated some spatial synchrony within high density habitats. At Upper Spring Run, median density was most frequently 0.00 darters/m^2, which is below the long-term median (1.00 darters/m^2) for most events and did not illustrate any strong trends. Median density most frequently exceeded 0.00 darters/m^2 in the spring following the peak reproductive season. Trends at Landa Lake also showed no strong directionality and instead illustrated regular seasonal oscillations. Median density typically increased above Landa Lake's long-term median (10.50 darters/m^2) in spring and decreased below this threshold by fall. Interestingly, median densities that were above the long-term expectation in spring were followed by much lower densities in fall. Spring to fall fluctuations also increased in magnitude in recent drought years, with the largest difference occurring in 2025 (34.75–3.25 darters/m^2) (Figure 10).

Trends at Old Channel also displayed regular seasonality, with higher densities in spring and lower densities in summer and fall. In contrast to Landa Lake, median density displayed a declining trend from 2021–2025. During this time, median density decreased from 14.25–1.00 darters/m^2. In addition, median density dropped below the long-term median at Old Channel (3.50 darters/m^2) more frequently from 2024–2025, though exceeded it in spring 2025 (6.25 darters/m^2). Upper quartile density also declined over time but was notably higher in spring 2025 (33.75 darters/m^2). At New Channel, density trends resembled semi-annual cycles with moderate seasonality. Median density was low and showed limited directionality from 2021–2022 (0.00–4.50 darters/m^2). This was followed by a large increase in 2023 (8.00–23.50 darters/m^2), greatly exceeding its long-term median (2.00 darters/m^2), then declined again to lower densities in 2024 (0.00–2.25 darters/m^2). By 2025, median density increased again (1.75–7.50 darters/m^2). Indications of strong seasonality were more evident based on upper quartile densities, which were higher in spring (median = 11.13 darters/m^2) compared to fall (median = 2.13 darters/m^2) (Figure 10).

General reach-level differences in temporal patterns may be best explained by differences in habitat stability, and specifically due to changes in areal coverage of highly suitable vegetation types. Discontinuous trends observed at Upper Spring Run were probably a result of greater variability in overall environmental conditions relative to other reaches. Since 2023, zero-flow conditions have been common at Upper Spring Run, resulting in decreased coverages of vegetation taxa with complex structure (e.g., bryophyte, *Ludwigia*). That said, darters were consistently observed in *Chara* samples during 2025 (see Habitat Use and Suitability for more details). Although less suitable compared to other complex taxa, *Chara* appears to be an important habitat type during periods of drought for fountain darters in Upper Spring Run.

Temporal patterns at Landa Lake and Old Channel illustrated more regular seasonal oscillations. Seasonal cycling is a common phenomenon in stable environments, with changes in abundance typically driven by timing of reproduction (Berryman 2002). That said, changes in density from spring to fall have increased in magnitude through time at both reaches. Early spring spawning still clearly occurs at a high success rate at Landa Lake and Old Channel, but the large decreases in density suggest survival of recent recruits may have decreased recently or that late spring and summer reproduction has declined. Decreases in survival may be related to losses of suitable vegetation, mainly bryophytes in both reaches and *Cabomba* at Old Channel. As such, the consistency of these large seasonal changes indicates population instability as a result of over-compensatory dynamics (May and Oster 1976; Rose et al. 2001; Berryman 2002). It would be reasonable to anticipate that these large seasonal swings in density would curtail when normal flow conditions resume and more suitable vegetation expands. Potential explanations for the semi-annual cycles in density observed at New Channel are less clear. Density trends don't align with changes in coverage of suitable taxa, but may instead have been driven by changes in other environmental factors, such as water temperature or flow conditions.

Patterns observed at the New Channel may alternatively be a result of losses in vegetation possibly influencing the sampling process. Given that *Hygrophila* decreased in coverage by fall 2025, fountain darter densities may be lower than demonstrated by the sampling data, because they are more clustered within smaller patches. On a similar note, the large differences between densities in the spring versus fall at Landa Lake and Old Channel also emphasize the importance of sampling the population multiple seasons per year. If drop-net sampling was only conducted in the spring, results would illustrate an increasing trend within these reaches, but would show the inverse if exclusively conducted in the fall. By performing temporally representative sampling, time-series trends at finer resolutions, such as seasonality, can be adequately captured, thus providing better estimates of overall trends through time (Yoccoz et al. 2001; Hyndman and Athanasopoulos 2021). This emphasizes that multi-season sampling will be necessary for accurately monitoring fountain darter populations in the future. That said, appropriate spatial representation of the habitats available within each reach is also crucial and warrants consideration for future monitoring efforts (Yoccoz et al. 2001; Albert et al. 2010).

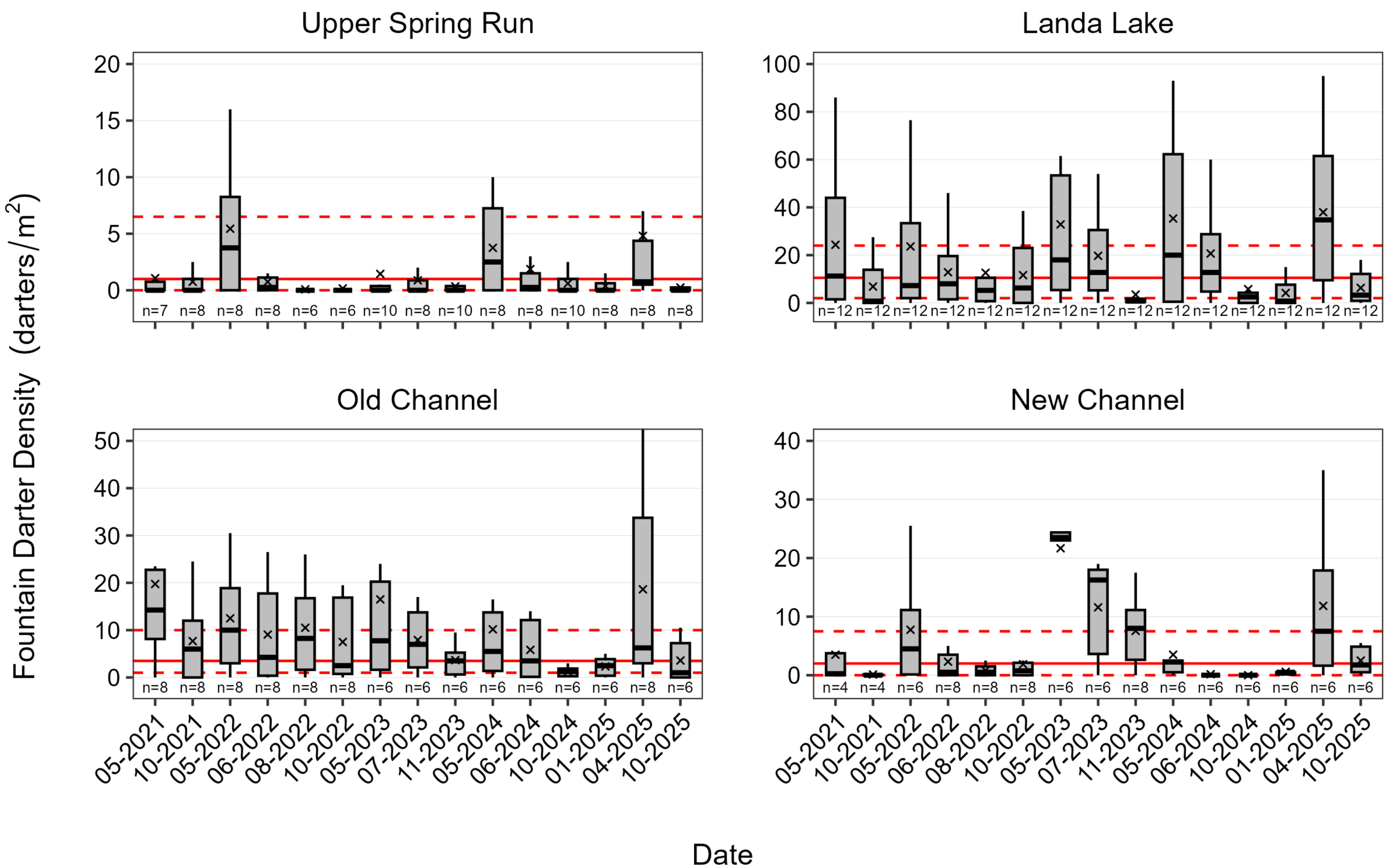

Figure 10. **Boxplots displaying temporal trends in fountain darter density (darters/m^2) among study reaches from 2021–2025 during drop-net sampling in the Comal Springs/River. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. The "n" values along the x-axes represent the number of drop-net samples in each category. Solid and dashed red lines denote long-term (2001–2025) medians and interquartile ranges, respectively.**

Size structure and recruitment trends

Seasonal differences in size structure and recruitment from 2021–2025 were mostly consistent in spring but illustrated unexpected patterns in summer and fall. Spring generally demonstrated lower median lengths and higher recruitment rates (20–21 mm and 37.1–53.5%, respectively) compared to summer (17–23 mm and 12.4–35.5%, respectively) and fall (23–27 mm and 18.1–45.2%, respectively). Violin plots also illustrated a greater proportion of smaller darters in spring relative to other seasons. That said, fountain darter recruitment deviated from long-term expectations for several years in spring[1] (49.6%), summer (21.9 %) and fall (19.9%). Moreover, recruitment rates illustrated direction trends in summer and fall. Recruitment in summer declined from 2021 to 2025, with the 2025 estimate being below the lower bound of its 95% confidence interval (18.3%), suggesting a meaningful decline. Fall recruitment in contrast illustrated a reciprocal trend and exceeded the upper bound of its 95% confidence interval (23.1%) the past four years, three of which did not overlap with the long-term trend, indicating a meaningful increase. (Figure 11).

Recruitment patterns observed in 2025 may be attributed to several factors. Exceedance of optimal temperature thresholds for egg and larval production likely partially explains suppressed recruitment in summer 2025 (McDonald et al. 2007), particularly within Upper Spring Run and riverine reaches. However, Fountain Darter density at Landa Lake exhibited a large decrease from spring to fall despite maintaining optimal water temperatures, suggesting that survival of recent recruits or summer reproduction might also be influenced by other resource limitations. For example, Old Channel experienced both higher water temperatures and reductions in suitable habitat, yet had the highest recruitment rate in summer 2025 (19% vs. 0–12%). Also, given that a large flood pulse occurred in June, lower survival of recruits could alternatively be due to young-of-year darters being displaced by higher flows (Katz and Freeman 2015).

Despite results from summer, recruitment in fall 2025 was higher than expected. Recent data on fall recruitment in the Comal and San Marcos systems during the ongoing drought align with 2025 observations and further supports that stable and/or low flows increases young-of-year survival (BIO-WEST 2023a,b; BIO-WEST 2024a; BIO-WEST 2025a,b), which has been suggested to be potential resistance mechanism against reduced flows (McCargo and Peterson 2010, Katz and Freeman 2015). Further, based on what was described above regarding the potential negative response to the flood pulse in June, fountain darter's protracted spawning behavior may provide a resilience mechanism against high flows (Fitzhugh et al. 2012). Although considered an adaptation that manifested from living in stenothermal spring environments (Schenck and Whiteside 1977), their protracted spawning season may enhance population persistence following local or regional disturbance events. Regardless of these potential resistance and resilience mechanisms, ubiquitous recruitment failure did not occur in 2025, despite the Comal system experiencing a dynamic flow disturbance regime.

[1]Percent recruitment presented in Figure 11 for spring 2024 differs from what was presented in BIO-WEST (2025a) due the omission of 213 darters from the analysis. Despite this error, both results were qualitatively similar and illustrated lower recruitment than expected.

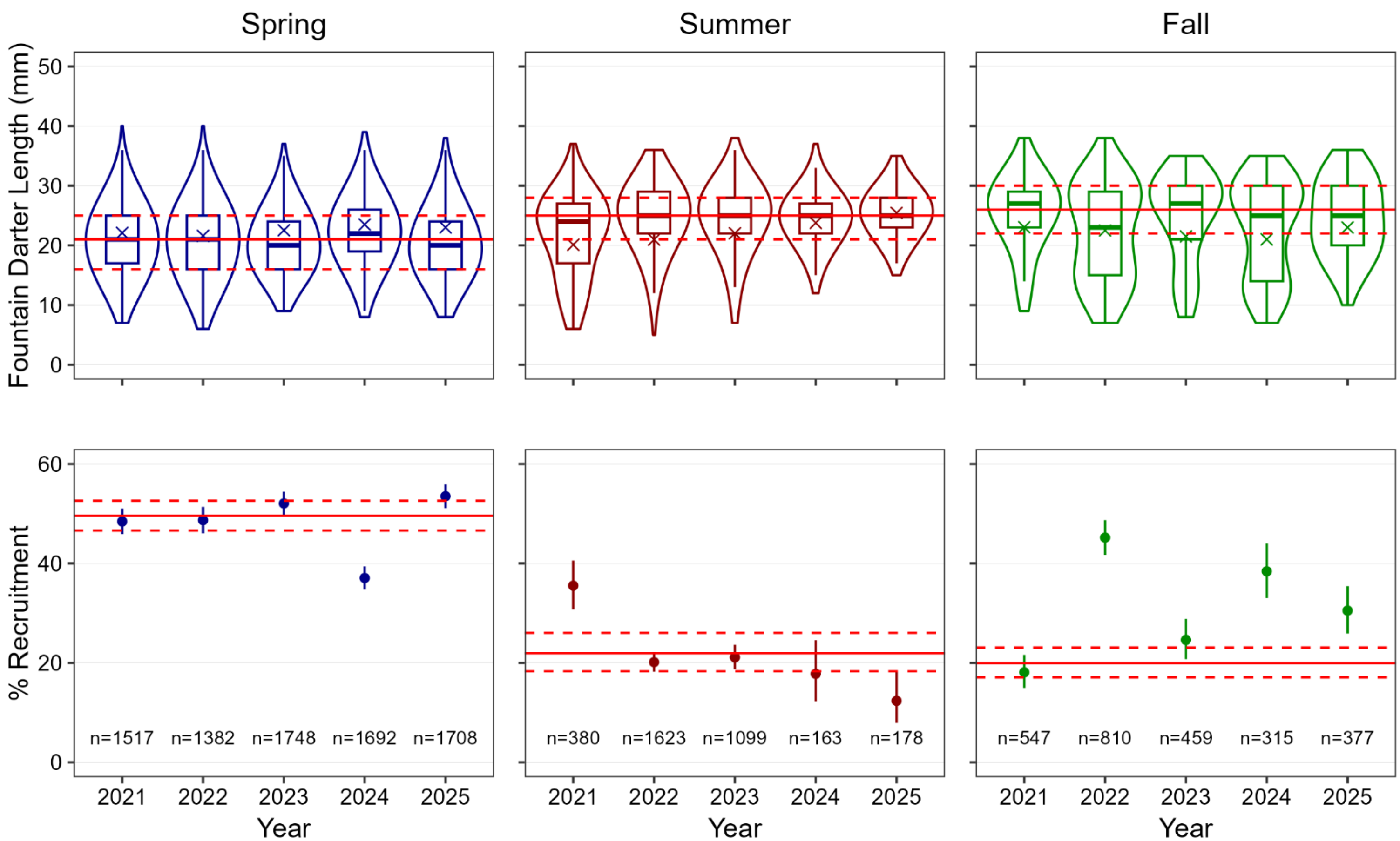

Figure 11. **Seasonal trends of fountain darter size structure (mm; top row) and percent recruitment (bottom row) in the Comal River from 2021–2025. Spring and fall trends are based on drop-net and timed dip-net data in aggregate, whereas summer trends are based on timed dip-net data only. Size structure is displayed with boxplots (median, quartiles, range) and violin plots (probability density; polygons outlining boxplots). The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. The "n" values along the x-axis of the top row represent the number of fountain darter length measurements in each distribution. Recruitment is the percent relative abundance (± 95% CI) of darters ≤20 mm. Long-term (2001–2025) trends in size structure are represented by median (solid red line) and interquartile range (dashed red lines). Recruitment is compared to the long-term mean percentage (solid red line) and 95% CI (dashed red lines).**

Habitat Use and Suitability

Density trends among vegetation taxa

Among submerged aquatic vegetation taxa sampled in 2025, median density was highest in *Cabomba* (9.75 darters/m^2) and bryophytes (7.00 darters/m^2), intermediate in *Hygrophila* (4.25 darters/m^2) and *Ludwigia* (4.25 darters/m^2), and lower in the remaining taxa (including open; 0.00–1.50 darters/m^2). Median estimates approximated 5-year and long-term trends for all taxa except bryophytes. The 2025 and the 5-year (11.75 darters/m^2) bryophyte medians were lower than the long-term trend (17.50 darters/m^2). That said, upper quartiles for bryophytes (27.25–33.88 darters/m^2) were similar between time periods. Upper quartiles in contrast were lower in 2025 compared to historical data for *Cabomba* (15.00 darters/m^2), *Hygrophila* (6.25 darters/m^2), and *Ludwigia* (8.38 darters/m^2) (Figure 12). Maximum densities not shown in Figure 12 (i.e., outliers) occurred in a bryophyte (95.00 darters/m^2) and *Ludwigia* (73.50–88.00 darters/m^2) drop-net sample in Landa Lake.

Greater densities within ornate taxa aligned with expectations based on historical data and research on fountain darter habitat associations (Alexander and Phillips 2012, Edwards and Bonner 2022; Sullivan et al., *in review*). That said, patterns in density were lower than expected in several taxa that typically provide high quality habitat. Lower median density within bryophytes the past five years is likely explained by the general decreasing trend in coverage of this taxon and the increasing coverage of filamentous algae that often intermix. Reduced prevalence of bryophytes within other taxa may similarly explain why upper quartile densities were lower than historically observed for *Cabomba*, *Hygrophila*, and *Ludwigia*. It is not uncommon for bryophyte coverage within these macrophyte patches to range between 50–100%, while coverage of bryophytes within other taxa rarely exceeded 30% in the Comal system this year. Based on visual observations, *Ludwigia* patches throughout the system also appeared to be degraded in quality, and thus, may not harbor all the resources necessary for fountain darters to fulfill their life history requirements. Low densities in *Cabomba* are also likely attributed to reach-level differences in current environmental conditions. Mainly, zero darters were collected in *Cabomba* samples at Upper Spring Run, which could be due to zero-flow conditions and elevated water temperatures experienced in this reach.

Size structure among vegetation taxa

Boxplot summary statistics and violin plots showed that fountain darter size structure varied among vegetation taxa sampled in 2025. The lowest median lengths occurred in bryophyte (19 mm) and ranged from 20–22 mm for the remaining taxa except *Chara* (25 mm). Recent recruits were observed in all habitat types, with minimum total lengths ranging from 8–15 mm. Size structure distributions for bryophyte, *Sagittaria*, and *Vallisneria* were right-skewed, suggesting they were important habitat for recent recruits in 2025. In contrast, *Chara* and open mostly provided habitat for adults, illustrating left-skewed size distributions. Length distributions for the remaining taxa were approximately symmetrical or slightly skewed, indicating they provided habitat for both recent recruits and adults. *Sagittaria* and *Vallisneria* are typically considered less suitable habitat for darters in general, and juveniles in particular. Yet, a greater proportion of younger darters were observed in these taxa compared to previous years, which can be attributed to some drop-net samples containing bryophytes intermixed within, increasing habitat suitably for juveniles by providing complex structure (Figure 13) (Edwards and Bonner 2022; BIO-WEST 2025a).

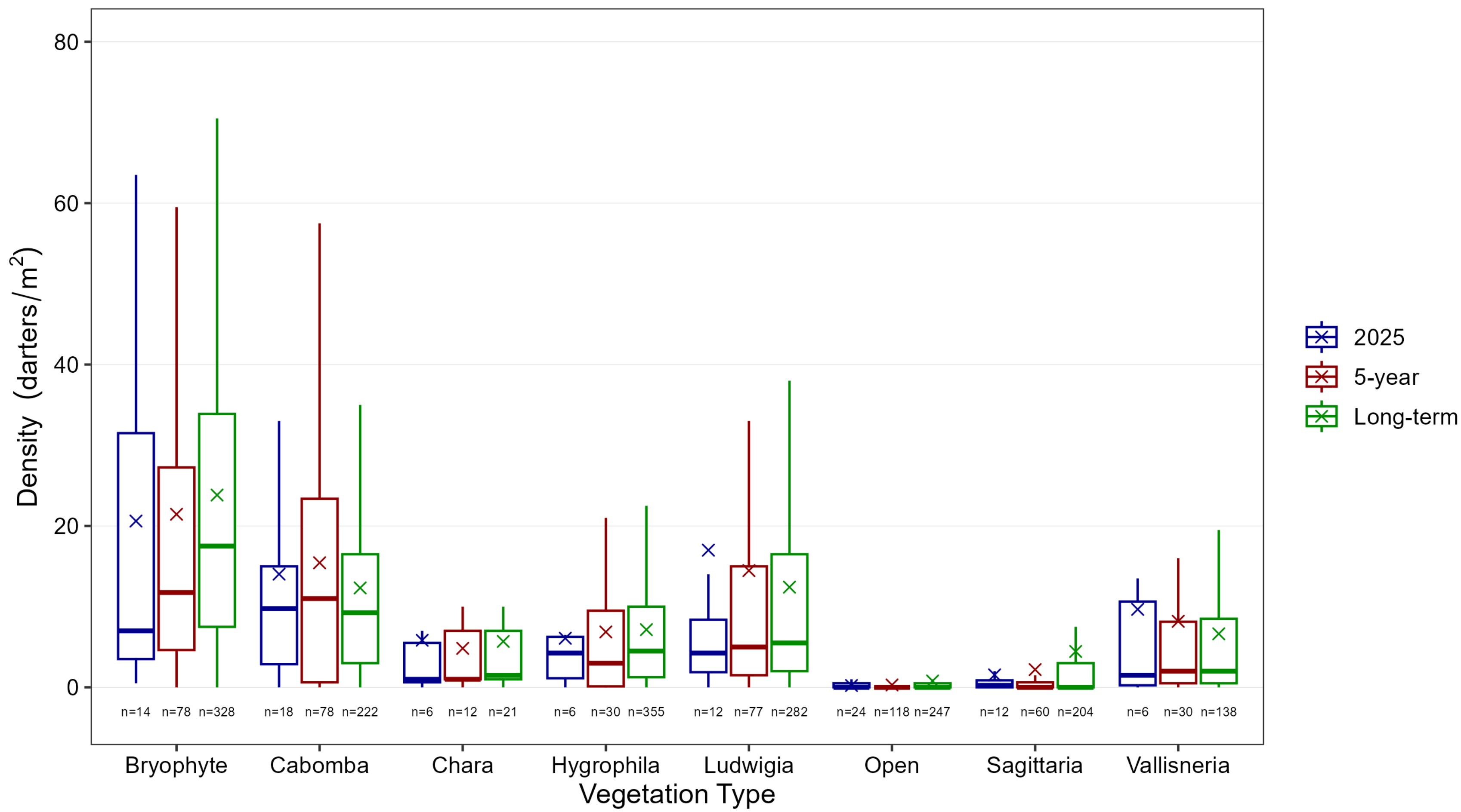

Figure 12. **Boxplots displaying 2025, 5-year (2021–2025), and long-term (2001–2025) drop-net fountain darter density (darters/m^2) among vegetation types in the Comal Springs/River. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. The "n" values along the x-axes represent drop-net sample sizes per group.**

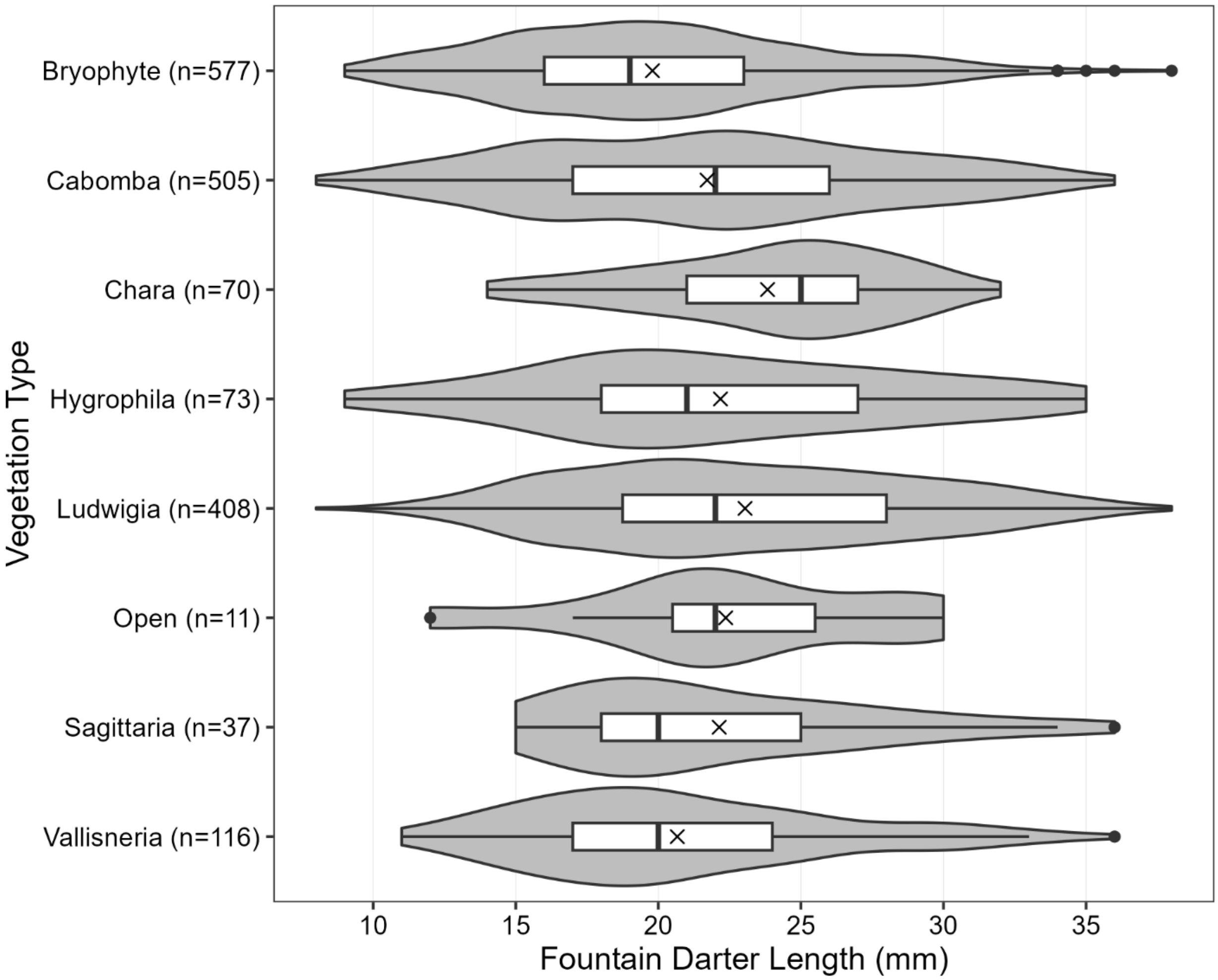

Figure 13. Boxplots and violin plots (grey polygons) displaying fountain darter lengths among dominant vegetation types during 2025 drop-net sampling in the Comal Springs/River. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range, and outliers beyond this are designated with solid black circles. The "n" values represent the number of fountain darter length measurements per vegetation type.

Habitat suitability

Temporal trends in the fountain darter Overall Habitat Suitability Index (OHSI) from 2021–2025 varied among reaches. Patterns in OHSI estimates were weakly correlated ($r < 0.52$) between reaches, except for new channel reaches, which demonstrated a strong positive correlation ($r = 0.73$). This general asynchrony among reaches indicated spatial variability in habitat conditions. Patterns in OHSI at Upper Spring Run and both new channel reaches displayed more variation compared to Landa Lake and Old Channel, demonstrating regular cycles with an increasing trend from summer 2023 to spring 2025. In summer 2025, OHSI decreased in all three reaches, with a more substantial drop at new channel reaches compared to Upper Spring Run. OHSI in fall 2025 decreased further at Upper Spring Run, showed minimal change at Upper New Channel, and increased greatly at Lower New Channel. At Landa Lake and Old Channel, OHSI has decreased over time, with distinct shifts to lower, but relatively stable OHSI trends starting in 2022 and 2023, respectively. OHSI estimates and 95% confidence intervals overlapped with long-term 95% confidence intervals for the majority of the time series in all reaches except Lower New Channel, where habitat conditions have been widely variable since 2023 (Figure 14).

Variable trends in OHSI observed the past five years are driven by changes in vegetation coverage. In other words, changes in total vegetation coverage, regardless of taxa, has a large impact on reach-level habitat suitability for fountain darters. In addition, changes in OHSI were also generally affected most by dominant taxa within each study reach. At Upper Spring Run, changes in OHSI were influenced by filamentous algae and Chara. At Upper New Channel, filamentous algae and *Hygrophila* coverage were the main drivers. Habitat suitability at Landa Lake was most influenced by changes in coverage of its two dominant vegetation types (*Sagittaria*, *Vallisneria*) and bryophytes. Changes in OHSI at Lower New Channel were related were associated with areal coverage of *Cabomba*.

Observed trends in habitat suitability help partially explain the positive and negative population responses of fountain darters across the Comal system. They also highlight that the stability of habitat conditions at Landa Lake and Old Channel in comparison to other reaches. Future assessments may benefit from incorporating other relevant habitat factors to provide more complete realizations of habitat suitability. Integration of other environmental factors into compositive suitability scores could better represent spatial variation in habitat suitability, both within and among reaches. For example, a recent population study on Comal Springs riffle beetle derived estimates of local discharge at different localities within Comal Springs to examine how changes in springflow influence their relative abundance (Pintar and Sullivan 2025). A similar analysis could potentially describe the influence of flow or water temperature conditions on overall habitat suitability for fountain darters in the Comal Springs and River ecosystem.

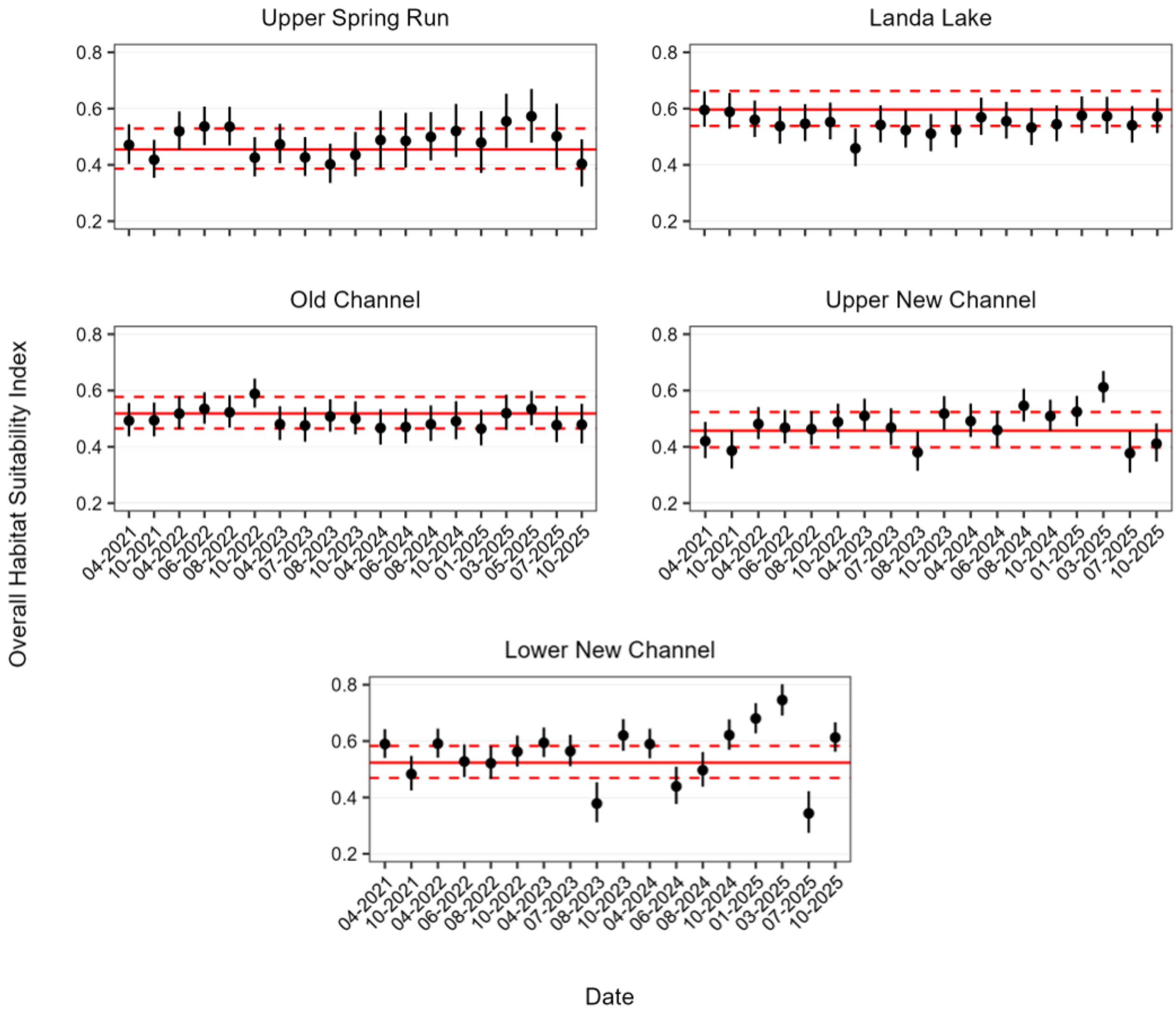

Figure 14. Overall Habitat Suitability Index (OHSI) (±95% CI) from 2021–2025 among study reaches in the Comal Springs/River. Solid and dashed red lines denote means of long-term (2003–2025) OHSI and 95% CI, respectively.

Fish Community

A total of 6,616 fishes represented by nine families and 23 unique species were observed during seining or scuba activities in spring and fall 2025. Complete summaries of segment-level community composition can be found in Appendix E. Percent relative abundance varied from spring-influenced to riverine areas, though differences were less apparent than previous years. Across all segments, Guadalupe Roundnose Minnow (*Dionda nigrotaeniata*) was among the most abundant species, ranging from 25.6% at New Channel to 40.5% at Landa Lake (Appendix E, Table E2). fountain darter was the second most abundant species at Upper Spring Run (18.9%) and the third most abundant at Landa Lake (11.7%). Texas Tetra (*Astyanax argentatus*) was the most abundant species at Old Channel (38%) and the second most abundant species at Landa Lake (28.1%) and New Channel (19.5%) (Appendix E, Table E2).

Temporal trends in fish communities varied between and within study segments. Similar to previous years, species richness and diversity were lowest at Landa Lake, intermediate at Upper Spring Run, and higher at Old Channel and New Channel, though both metrics were variable across events with no apparent patterns (Figure 15). Diversity at Landa Lake was generally higher from 2020-2024 but declined in 2025 to values similar to 2014-2019 (Appendix E, Figure E20). Diversity at Old Channel over the past five years has been higher which could suggest a more heterogeneous community composition.

Spring fishes species richness ranged from 4–6 species across all segments and did not vary by more than one species from one event to the next (Figure 16). Species richness of spring fishes has only occasionally varied by more than one species between events and has remained between 4–6 species over the past five years. In 2025, spring fishes relative density was stable at Landa Lake and Old Channel but declined from spring to fall at Upper Spring Run and New Channel (Figure 16). This aligns with data from the previous five years in which spring fishes relative density has been the most stable at Landa Lake and Old Channel and the most variable at Upper Spring Run.

Temporal trends in fountain darter density from 2021–2025 were based on microhabitat sampling data. Median density of fountain darters decreased from spring to fall across all segments (Figure 17). Despite this decrease, median microhabitat density approximated the long-term median at all segments except Old Channel where fall median density approximated the lower bound of the long-term interquartile range. Across all segments, Landa Lake demonstrated the largest change in median density in 2025. Spring median density was well above the long-term upper bound of the interquartile range, but by fall median density decreased and approximated the long-term median. The decrease in density from spring to fall aligns with fountain darter density estimates from drop-net sampling. Furthermore, the large seasonal decline in density at Landa Lake is similar to the large seasonal oscillation observed in the drop-net data.

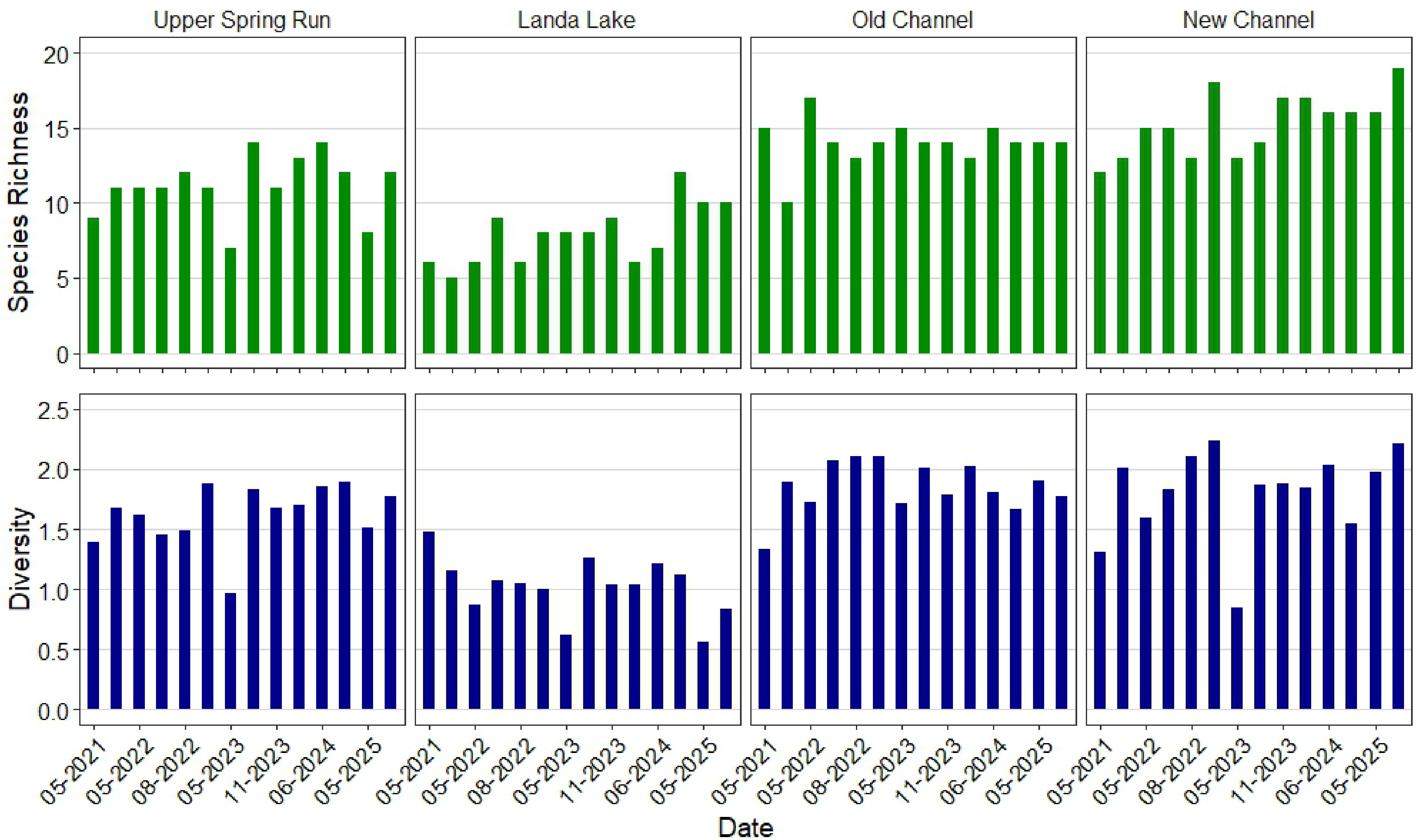

Figure 15. Bar graphs displaying species richness (top row) and diversity (bottom row) from 2021–2025 based on all three fish community sampling methods in the Comal Springs/River.

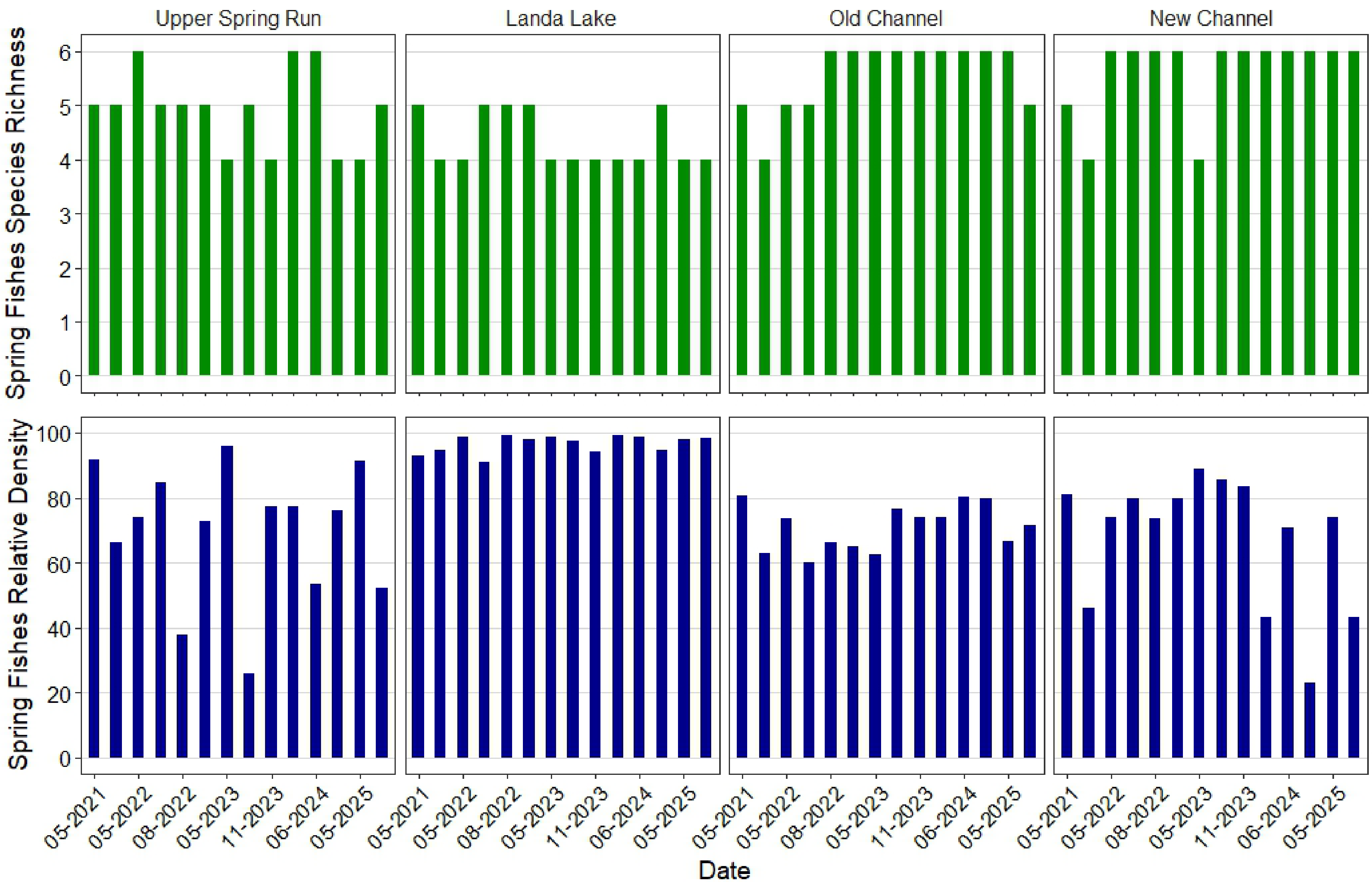

Figure 16. **Bar graphs displaying spring fish richness (top row) and relative density (RD; %) (bottom row) from 2021–2025 based on all three fish community sampling methods in the upper Comal Springs/River.**

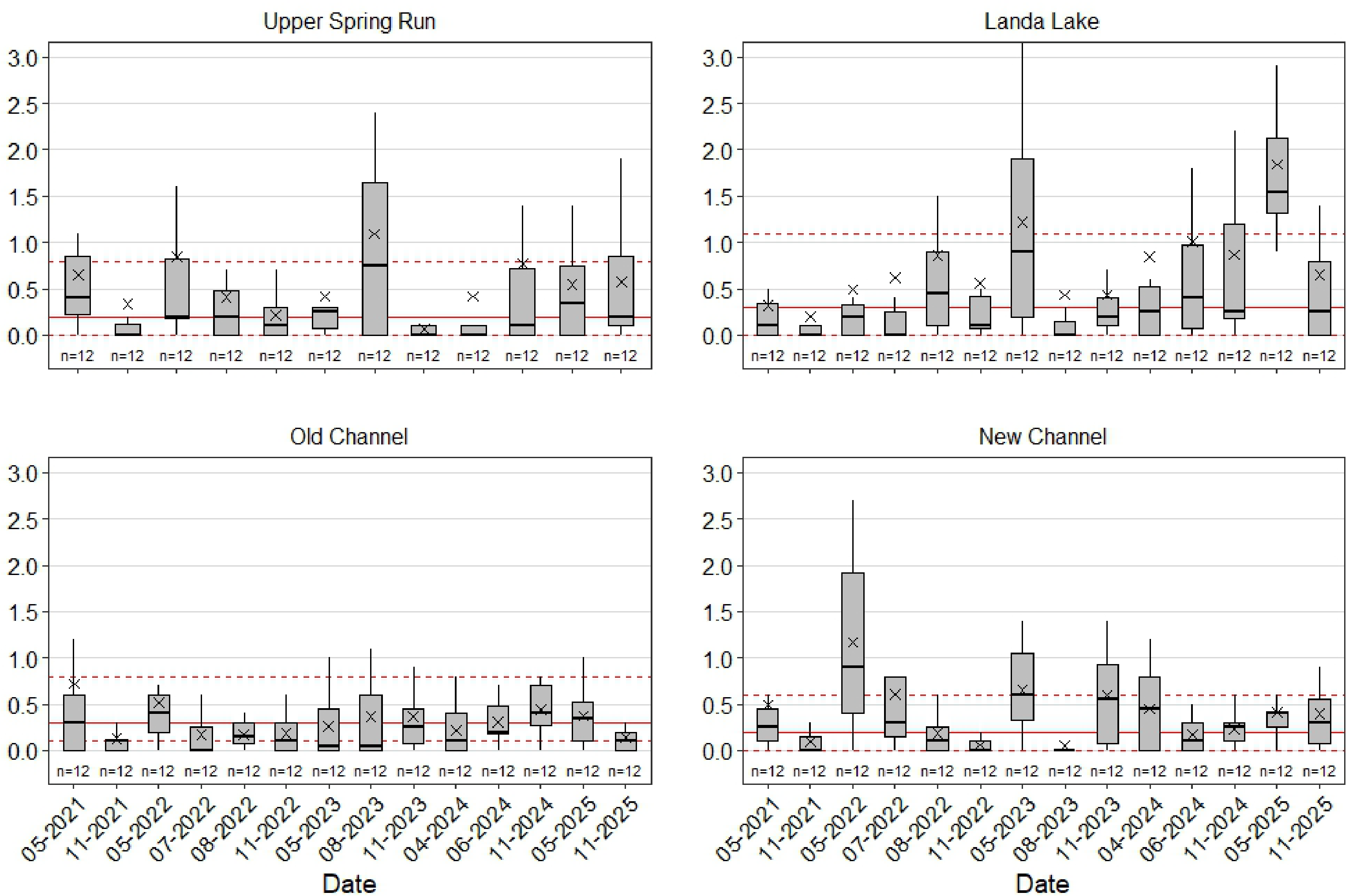

Figure 17. **Boxplots displaying temporal trends in fountain darter density (darters/m²) among study segments from 2021–2025 during fish community microhabitat sampling in the Comal Springs/River. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. The "n" values along the x-axes represent the number of microhabitat samples per category. Solid and dashed red lines denote long-term (2014–2023) medians and interquartile ranges, respectively.**

Comal Springs Salamander

Low springflows in 2025 resulted in substantial reductions to surface salamander habitat similar to 2023 and 2024. A total of 26 Comal Springs salamanders were observed during five survey efforts. Sampling was not conducted at Spring Island Run and Spring Run 1 during any event in 2025 because these sites were completely desiccated. A fourth consecutive year of ongoing drought with reduced springflow and desiccated conditions resulted in lower than average counts in 2025 across all sites (Figure 18). Flow remained well below the median for the entirety of the year and resulted in reduced wetted habitat (e.g., 30% watered at Spring Run 3), contributing to consistently lower salamander numbers at Spring Island Outfall and Spring Run 3.

Over the past five years, Spring Island Run has been desiccated for 25 out of 34 total events. CPUE generally varied about 1 to 3 salamanders/p-h during the events in which wetted habitat was available (Figure 19). Although salamanders were observed in spring 2024 after several months of desiccated conditions, catch rates were lower than previous years. Desiccated conditions returned in June 2024 and remained through fall 2025. Spring Island Outfall has varied from 2 salamanders/p-h to over 30 salamanders/p-h between 2021 and 2025. Catch rates were consistently high from spring 2021 to fall 2022 but have been variable since then. Catch rates began declining in 2024 with 2025 consisting of the lowest catch rates over the past five years. Similar to Spring Island Run, Spring Run 1 has experienced more desiccation over the past five years with 17 out of 34 events characterized as desiccated. Among events in which wetted habitat was available, the lowest observed catch rates occurred in spring 2024. Flows did not return to Spring Run 1 to see if typical catch rates would return. At Spring Run 3, salamander CPUE was generally above 20 salamanders/p-h until August 2023 when CPUE began decreasing. However, the catch rate of 49 salamanders/p-h in October 2023 was the second highest recorded over the past five years. This increase was temporary as catch rates decreased throughout 2024 and zero salamanders were observed in January 2025. Catch rates in February and April 2025 were among the lowest observed over the past five years and were the only events in 2025 in which salamanders were observed. Continued monitoring will provide further insight into how catch rates are affected once more typical springflow conditions return.

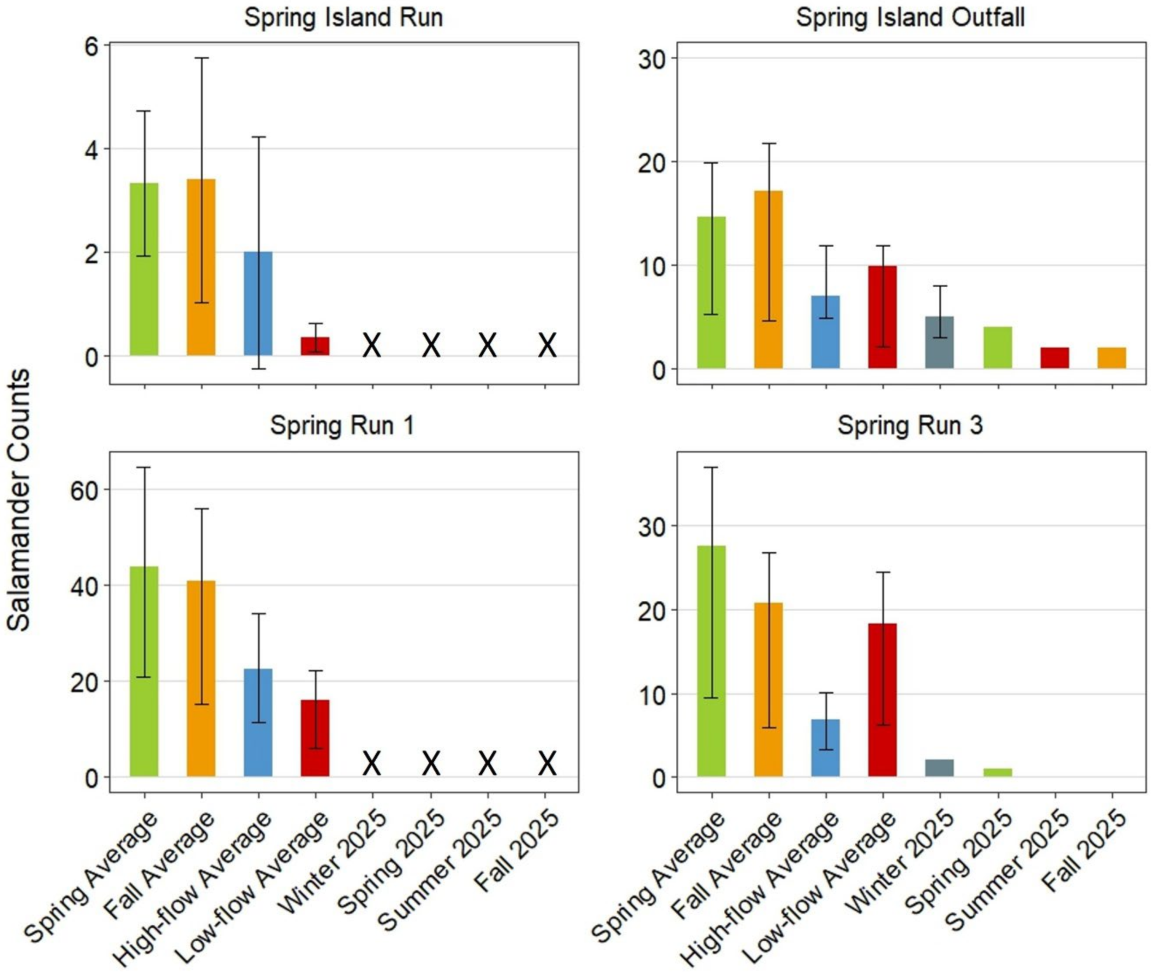

Figure 18. **Comal Springs salamander counts among Comal Springs survey sites in 2025, with the long-term (2001–2025) average for each sampling event. Error bars for long-term averages represent 95% confidence intervals. No bar within dates at Spring run 3 denotes zero salamanders observed. X within dates at Spring Island Run and Spring Run 1 denotes lack of sampling due to dry conditions.**

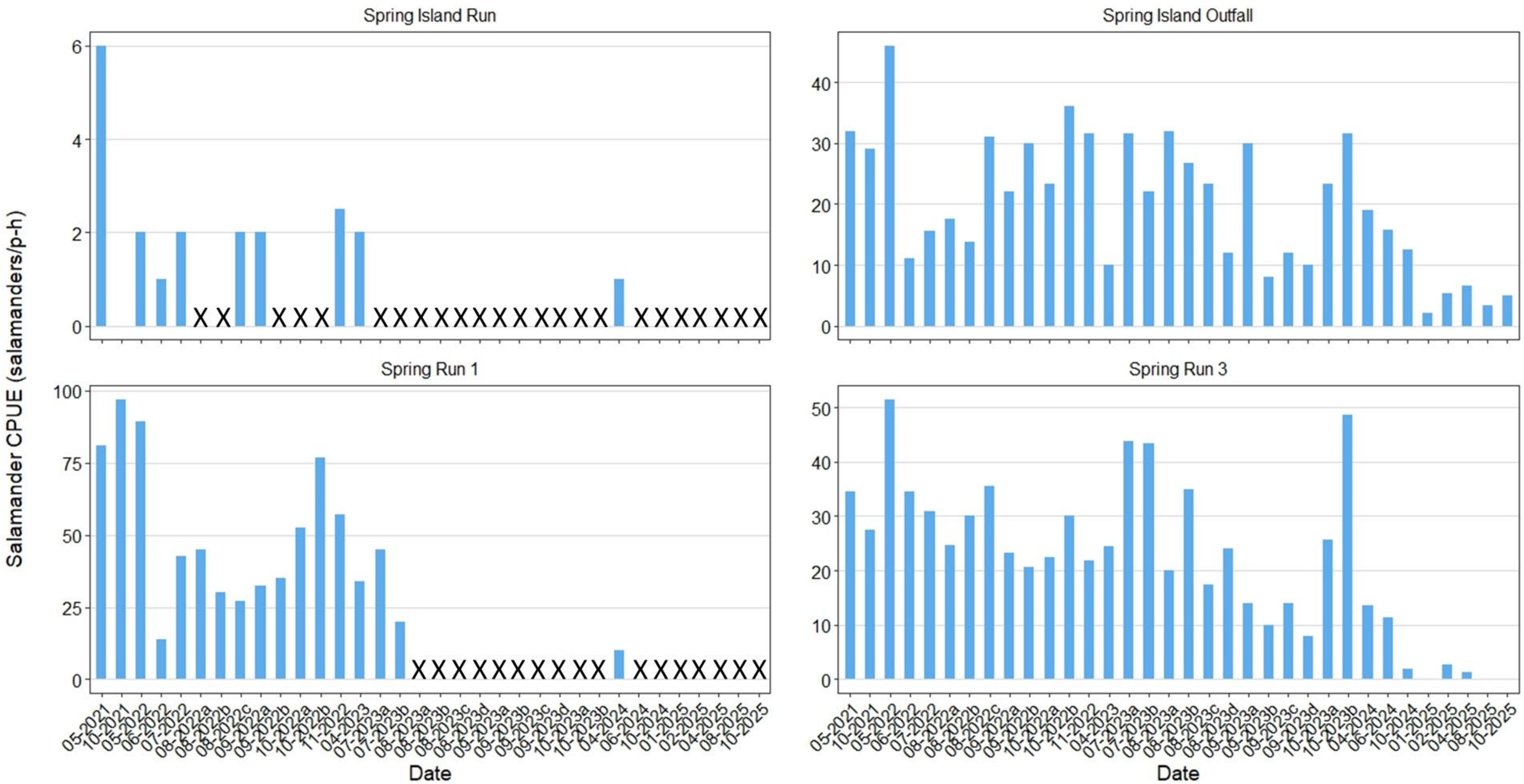

Figure 19. **Comal Springs salamander catch-per-unit-effort (CPUE; salamanders/person-hr) among sites from 2021–2025 in the Comal Springs. No bar within dates at Spring Island Run and Spring run 3 denotes zero salamanders observed. X within dates at Spring Island Run and Spring Run 1 denotes lack of sampling due to dry conditions.**

Macroinvertebrates

Drift-Net Sampling

A total of 259 macroinvertebrates represented by 9 families and 14 taxa were collected during 120 drift-net hours. The total number of individuals collected was lower at Spring Run 1 (n = 21) than Spring Run 3 (n = 110) and Western Upwelling (n = 128). All three locations had fewer invertebrates than they have historically which can likely be attributed to reduced springflows in 2025. For example, alternate drift net locations have been used in Spring Run 1 since fall 2022 (Figure 20), but flows were so low in fall 2025 that no samples were collected. In fall 2025, an alternate location was sampled in Spring Run 3 for the first time. Across all sampling efforts, dominant taxa included amphipods (*Stygobromus* spp., 22.8%), ostracods (*Comalcandona tressleri*, 20.8%), and water slaters (*Lirceolus* spp., 18.1%). The remaining taxa each represented 3% or less of the total catch. Of the Covered Species, only 1 Peck's cave amphipod (*Stygobromus pecki*) was positively identified out of 59 total *Stygobromus* spp. and 6 larval Comal Springs riffle beetles were observed in 2025 (Table 5). Full drift-net results are presented in Appendix E. Over the past 5 years, the median counts of *Stygobromus* spp. per cubic meter of water filtered aligned with the long-term median from 2021 to spring 2022 (0.02 *Stygobromus*/m^3). Since fall 2022 median counts have been lower than the long-term, with lowest values occurring since fall 2024 (Figure 21). Desiccated conditions at Spring Runs 1 and 3 and reduced springflow at the Western Upwelling throughout 2025 have likely contributed to the low counts.

Figure 20. Photos displaying the habitat conditions at the alternate site in Spring Run 1 during spring (A), the alternate site in Spring Run 3 during fall (B), and at the typically sampled site at the Western Shoreline (C).

Table 5. Total numbers of endangered species collected at each site during drift-net sampling in May and October 2025. Full drift-net results are presented in Appendix E.

	SITE (TOTAL DRIFT-NET HOURS)		
TAXA	**RUN 1 (48)**	**RUN 3 (48)**	**UPWELLING (48)**
Crustaceans			
Amphipoda			
Crangonyctidae			
Stygobromus pecki	0	0	1
Insects			
Coleoptera			
Elmidae			
Heterelmis comalensis	6 (larvae)	0	0

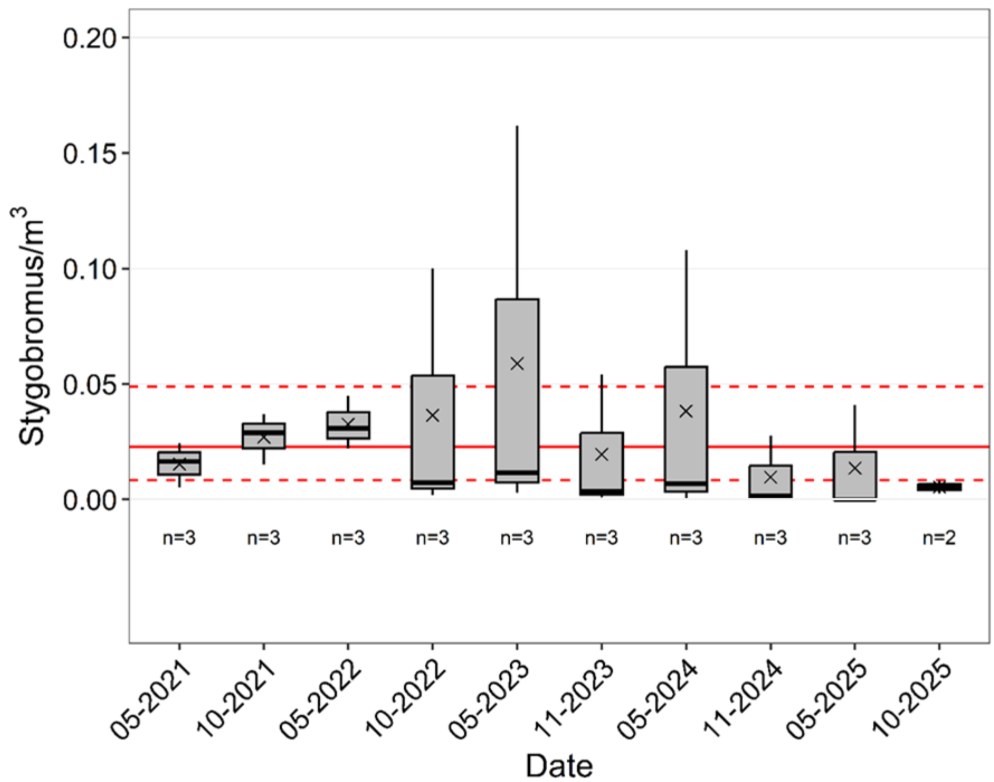

Figure 21. **Boxplots displaying *Stygobromus* spp. counts per cubic meter of water (*Stygobromus*/m^3) at Western Upwelling, Spring Run 1, and Spring Run 3 from 2021–2025. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. Solid and dashed red lines denote long-term (2003–2025) medians and interquartile ranges, respectively.**

Comal Springs Riffle Beetle

During spring and fall sampling efforts in 2025, a total of 122 adult Comal Springs riffle beetles (CSRB) were observed on 48 lures with counts ranging from 0–38 beetles/lure. Twelve lures were dry during fall biomonitoring due to a decline in water levels over the sampling period. Adult beetles occupied 16.7% of lures across spring and fall. The seven CSRB low-flow sampling events yielded 27 adult CSRB on 20 lures at Spring Island, 10 CSRB on 19 lures at Western Shoreline, and 0 CSRB on 20 lures at Spring Run 3.

For spring and fall routine sampling, only 8 of 48 lures had adult CSRB, and the median abundances for both seasons across all three areas were zero beetles/lure (Figure 22). Mean beetles per lure at Spring Island were similar during spring (6.8 beetles/lure) and fall (6.5 beetles/lure); the fall mean was heavily affected by one lure with 38 beetles. Only two beetles were observed on one lure at Western Shoreline during spring (mean = 0.2 beetles/lure) and none were found during fall. No beetles have been observed at Spring Run 3 since May 2024 (Figure 23). During low-flow sampling, beetles were found on one or two lures per sampling period at Spring Island, with the exception of October, when no beetles were found (mean = 1.35

beetles/lure). Low-flow sampling at the Western Shoreline produced one beetle in January and nine beetles on one lure during September; beetles were otherwise not observed at the Western Shoreline during low-flow sampling (mean = 0.53 beetles/lure).

When analyzed in conjunction with the long-term dataset, a general temporal decline in the number of beetles per lure is evident across sites and seasons (Figure 23). Over the past five years, beetles per lure have rarely approached long-term medians at the Western Shoreline or Spring Run 3, while counts at Spring Island have only been consistent with long-term averages during spring. Medians and means across all areas have been low for the past five years relative to the entire 22-year dataset. The short-term (5-yr) CSRB average across Comal Springs is the lowest observed during 22 years of monitoring. This suggests that extended low-flow conditions during 2022–2025 are contributing to sustained and continued declines of CSRB near-surface populations. Although monitoring suggests declines in near-surface populations with recent reductions in springflow, the species has persisted through previous droughts of comparable intensity and duration. Continued targeted research related to this species is critical in understanding the relationship between population dynamics and springflow.

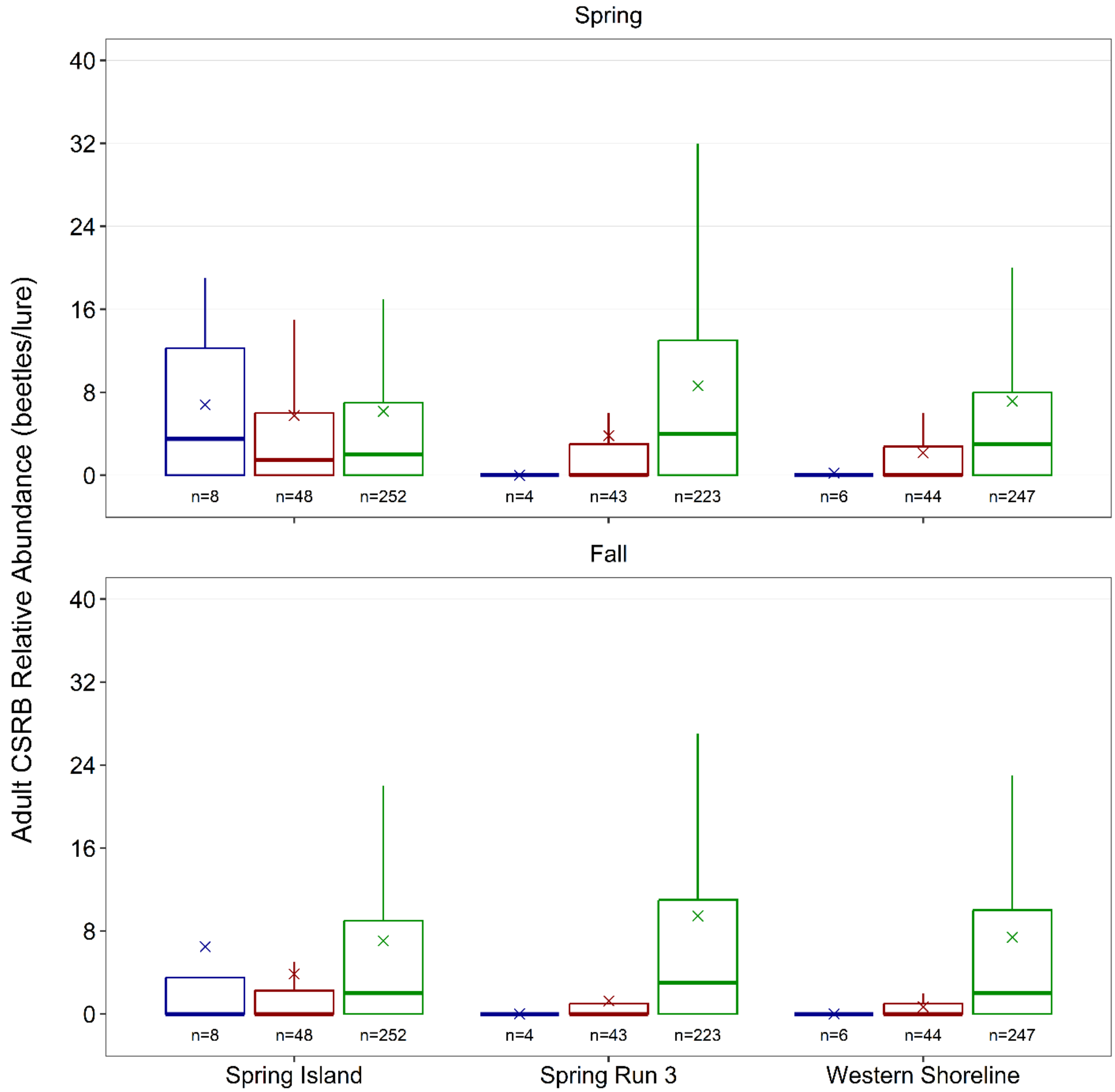

Figure 22. **Boxplots displaying 2025, 5-year (2021–2025), and long-term (2004–2025) trends in adult Comal Springs riffle beetle abundance per retrieved lure by season across sites in the Comal Springs during spring and fall biomonitoring. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. The "n" values along the x-axes represent the number of lures included in each category.**

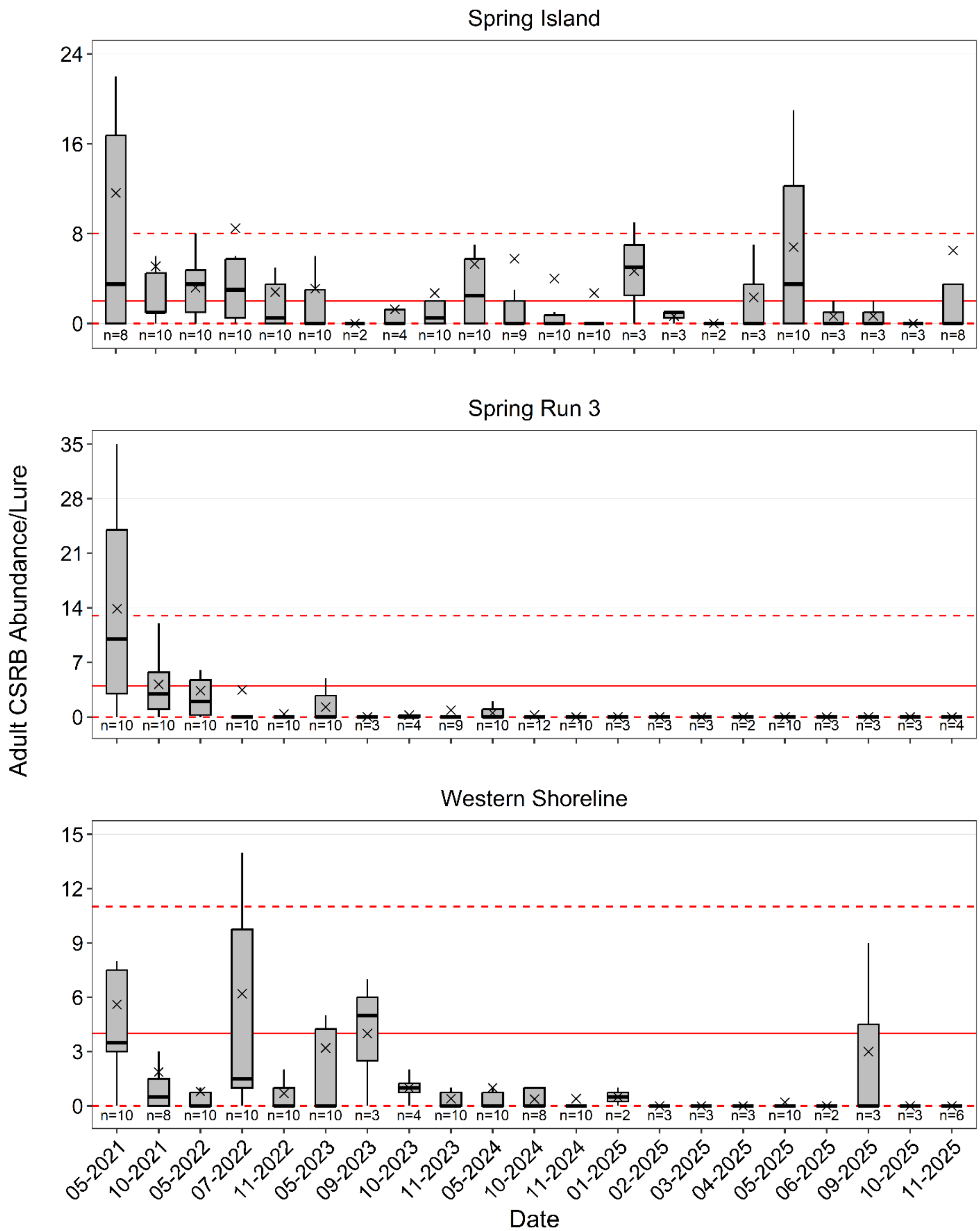

Figure 23. Boxplots displaying temporal trends in adult CSRB abundance per retrieved lure among study reaches from 2021–2025 during lure sampling in Comal Springs. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. The "n" values along the x-axes represent the number of lures in each category. Solid and dashed red lines denote long-term (2004–2025) medians and interquartile ranges, respectively.

Benthic Macroinvertebrate Rapid Bioassessment

Benthic macroinvertebrate rapid bioassessment data was collected during both the spring and fall sampling events in 2025 (raw data presented in Appendix F). All samples in 2025 consisted of kick samples with suitable cobble-gravel habitat. In addition, organic material was also sampled at each site, either in the form of debris jams or root wads. Cumulative scores and corresponding aquatic-life-use designations are displayed in Figure 24, while metric scores for calculating the B-IBI can be found in Table 6. A total of 786 and 793 individual macroinvertebrates, representing 34 and 54 unique taxa were sampled in spring and fall, respectively. Altogether, 61 unique taxa were represented among all samples from 2025.

Table 6. Metric value scoring ranges for calculating the Texas RBP B-IBI (TCEQ 2014).

METRIC	SCORING CRITERIA			
	4	3	2	1
Taxa richness	>21	15–21	8–14	<8
EPT taxa abundance	>9	7–9	4–6	<4
Biotic index (HBI)	<3.77	3.77–4.52	4.56–5.27	>5.27
% Chironomidae	0.79–4.10	4.11–9.48	9.49–16.19	<0.79 or >16.19
% Dominant taxon	<22.15	22.15–31.01	31.02–39.88	>39.88
% Dominant FFG	<36.50	36.50–45.30	45.31–54.12	>54.12
% Predators	4.73–15.20	15.21–25.67	25.68–36.14	<4.73 or >36.14
Ratio of intolerant: tolerant taxa	>4.79	3.21–4.79	1.63–3.20	<1.63
% of total Trichoptera as Hydropsychidae	<25.50	25.51–50.50	50.51–75.50	>75.50 or no Trichoptera
# of non–insect taxa	>5	4–5	2–3	<2
% Collector–gatherers	8.00–19.23	19.24–30.46	30.47–41.68	<8.00 or >41.68
% of total number as Elmidae	0.88–10.04	10.05–20.08	20.09–30.12	<0.88 or >30.12

Benthic IBI scores ranged from 17 during spring at the Upper Spring Run resulting in “Limited” designation, to 36 during fall at the New Channel resulting in a “High” designation. Lower scores observed at Upper Spring Run compared to riverine sites were likely due to differences in mesohabitats available for sampling. Specifically, these communities are naturally different compared to the “least-disturbed reference streams”, which contain swifter riffle habitats. As such, higher scores would be expected at riverine sites due to a higher likelihood of supporting more fluvial specialists, resulting in greater taxa diversity overall. It should also be noted that most reference streams do not exhibit the stenothermal conditions present within the Comal Springs/River System and this may result in differing community composition. Based on this, the value of the score is less important in this spring-associated system than the consistency or trends in results per reach over time.

Aquatic-life-use designations in 2025 generally aligned with years prior, although patterns were evident in some reaches that may be influenced by current habitat conditions (Figure 24). For example, since fall 2024, the Upper Spring Run has had lower scores (“Limited”) compared to the previous three years, potentially corresponding to lower water levels and lack of flow in this area exacerbated by the ongoing drought. In contrast, scores in the New Channel have been consistent over the past five years, scoring “High” in all but one sampling event (“Exceptional” in spring 2022). The Old Channel was described as “Intermediate” for both seasons, with scores similar to those observed since 2023. Aquatic-life-use at Landa Lake was ranked as “Intermediate” during both sampling events in 2025, but has varied over the past five years as water levels along the banks have varied between deeper lake-like conditions and shallower conditions with noticeable flow closer to the substrate. Reduced water levels observed in Landa Lake during fall sampling periods since 2022 might have increased velocity near the substrate in some areas, which in turn supported greater habitat diversity and resulted in higher scores than were observed historically when lake levels were higher. The Other Place ranked as “Limited” during spring and “Intermediate” during fall with scores notably lower since the drought started in fall 2022. Reduced flows and lower water depths at this riverine reach may have resulted in homogenization of habitats, and thus a reduction in fluvial specialists. Additional monitoring will be needed to see if observed trends continue at Landa Lake and Other Place, as well as to generate a robust reference dataset for the development of scoring criteria specific to this unique ecosystem, providing a more accurate realization of ecological health.

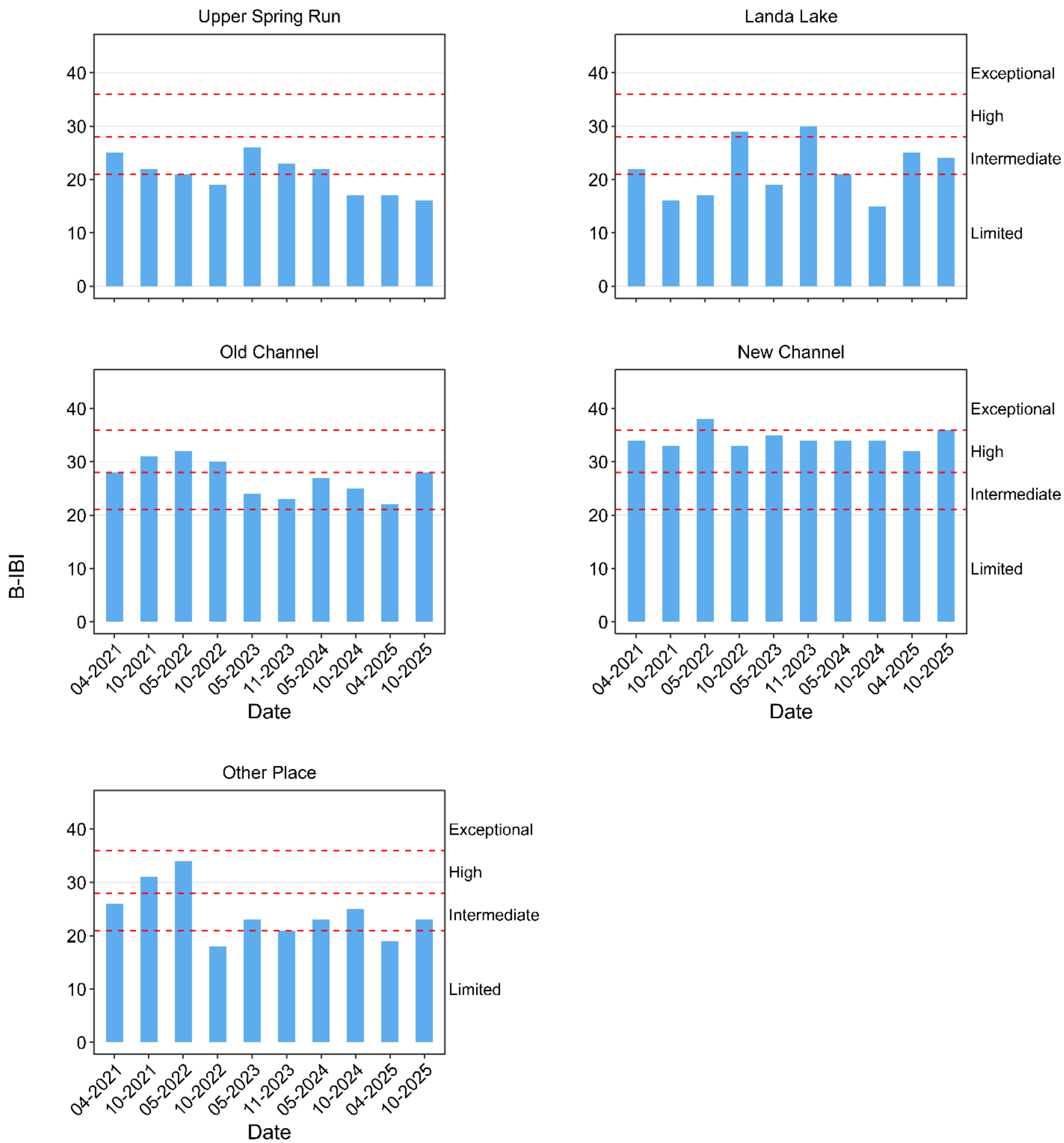

Figure 24. Benthic macroinvertebrate Index of Biotic Integrity (B-IBI) scores and aquatic-life-use designations from 2021–2025 in the Comal Springs/River.

CONCLUSION

Results from 2025 biological monitoring in the Comal Springs/River system indicated continued declining trends in discharge from ongoing drought conditions and subsequent declines in some Covered Species population metrics. Despite the highest maximum discharge observed in recent years, median annual mean daily discharge was low in 2025 (84 cfs) and the system was below 10^{th} percentile flows for all but two months. Spatial patterns in water temperature fluctuation were atypical, with greater variation at upstream stations (e.g., Heidelberg and Booneville Far) as flow from higher elevation springs declined or ceased all together. Temperature exceedance of fountain darter larval and egg production thresholds increased in frequency and duration compared to previous years. Additionally, thresholds were exceeded as early as January at multiple stations including several near spring habitats.

Degraded habitat conditions were noted throughout the system with upper spring reaches and new channel reaches demonstrating declines in wetted habitat. Where wetted surface habitat was available for Comal Springs salamanders, counts and catch rates from all events were much lower than historical observations. Salamander monitoring following previous drought years suggests that Comal Springs salamanders populations will return to spring runs when surface flows return; however, continued monitoring is necessary to confirm this and document how quickly recolonization occurs. Degraded habitat conditions at upper spring reaches and spring runs also influenced spring macroinvertebrates (i.e., *Stygobromus* sp., Comal Springs riffle beetle). Compared to historical observations, Comal Springs riffle beetle counts have been low for the past five years suggesting the current extended drought may have resulted in reduced near-surface abundance. However, subsurface habitat utilization by both salamanders and riffle beetles may result in reductions in counts that are not accurate representations of true population abundance.

Vegetation mapping demonstrated that seasonal patterns in total aquatic vegetation coverage varied spatially. Coverages at Upper Spring Run and both New Channel reaches were higher than long-term averages in the beginning of the year; whereas, coverages at Landa Lake and Old Channel were lower than expected. The large flood events in June scoured most of the vegetation in the new channel reaches, though coverage increased by fall and was greater than long-term fall expectations at Lower New Channel. Habitat suitability indices were variable at Upper Spring Run and the new channel reaches but remained similar or slightly below long-term averages at Landa Lake and Old Channel. Reductions in bryophyte and *Cabomba* coverage (at Old Channel) contributed to the declines in suitable habitat. These habitat changes likely contributed to the large seasonal oscillations in fountain darter densities at these two reaches. Across all reaches, fountain darter populations appeared healthy in spring, but elevated water temperatures, lower summer recruitment, displacement of recent recruits during the flood events, and declines in suitable habitat resulted in lower survival into fall. Overall lower densities, catch rates, and occurrence rates observed in fall 2025 indicate potential negative effects of four consecutive years of low flow in Comal Springs.

Evidence of detectable temporal trends in fish communities varied among the selected metrics, as well as between and within study segments. Similar to previous years, species richness and diversity were typically higher in riverine areas and lowest at Landa Lake. Relative density of spring fishes remained stable at Landa Lake and Old Channel and varied substantially more at Upper Spring Run and New Channel. fountain darter densities among microhabitats sampled during fish community activities followed similar patterns as drop-net data in which densities declined from spring to fall.

In summary, 2025 biological monitoring provided insights into the current condition of the EAHCP Covered Species in the Comal Springs/River System and documented important flow-ecology relationships driving population dynamics. Results indicated variability in aquatic habitat conditions among reaches and subsequent reductions in population metrics of multiple Covered Species. Overall, declines in system stability have become more apparent after four consecutive years of extremely low flows. Historical data indicates that ecological conditions will likely improve when typical flows return. However, continued biological monitoring efforts are critical at this juncture and will provide opportunities to better understand the dynamics of this complex ecological system and how it responds to future hydrologic conditions.

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APPENDIX A: CRITICAL PERIOD MONITORING SCHEDULES

COMAL RIVER/SPRINGS
Critical Period Low-Flow Sampling – Schedule and Parameters

FLOW TRIGGER (+ or - 10 cfs)	PARAMETERS
200 cfs	Full Sampling Event
150 cfs	Full Sampling Event
120 - 80 cfs	Riffle Beetles and spring discharge – Every 10 cfs decline (maximum weekly)
100 cfs	Full Sampling Event
100 - 50 cfs	Habitat Evaluations - Every 10 cfs decline (maximum weekly)
50 cfs	Full Sampling Event
50 - 0 cfs	Habitat Evaluations - Every 10 cfs decline (maximum weekly)
10 - 0 cfs	Full Sampling Event
RECOVERY	
25 - 100 cfs	Full Sampling Event (dependent on flow stabilization)
100 - 200 cfs	Full Sampling Event (dependent on flow stabilization)

PARAMETER DESCRIPTION

Full Sampling Event	Aquatic Vegetation Mapping Fountain Darter Sampling Drop Net, Dip net (Presence/Absence), and Visual Parasite evaluations Fish Community Sampling Salamander Sampling - Visual Riffle Beetle – Cotton lure sampling Fish Sampling - Exotics/Predation (100 cfs and below) Water Quality - Suite I and Suite II
Riffle Beetle Monitoring	Spring discharge and wetted perimeter measurements
Habitat Evaluations	Photographs

COMAL RIVER/SPRINGS
Species-Specific Triggered Sampling

FLOW RATE (+ or - 5 cfs)	SPECIES	FREQUENCY	PARAMETERS
≤150 or ≥80 cfs	Fountain Darter	Every other month	Aquatic vegetation mapping to include Upper Spring Run reach, Landa Lake, Old Channel reach, and New Channel reach
≤150 or ≥80 cfs	Fountain Darter	Every other month	Conduct Dip net sampling/visual parasite evaluations at five (5) sites in the Upper Spring Reach; twenty (20) sites in Landa Lake; twenty (20) sites in the Old Channel reach and; at five (5) sites in the New Channel reach.
≤60 cfs	Fountain Darter	Weekly	Conduct Dip net sampling/visual parasite evaluations at five (5) sites in the Upper Spring Reach; twenty (20) sites in Landa Lake; twenty (20) sites in the Old Channel reach and; at five (5) sites in the New Channel reach.
≤60 cfs	Fountain Darter	Monthly	Aquatic vegetation mapping at Upper Spring Run reach, Landa Lake, Old Channel reach, and New Channel reach
≤120 cfs	Comal Springs Riffle Beetle	Every 2 weeks	Monitoring via cotton lures at Spring Run 3, western shore of Landa Lake, and Spring Island upwelling
≤120 cfs or ≥80 cfs	Comal Springs Salamander	Every other week	Salamander snorkel surveys will be conducted at three sites (Spring Runs 1 and 3 and the Spring Island area)
≤80 cfs	Comal Springs Salamander	Weekly	Salamander snorkel surveys will be conducted at three sites (Spring Runs 1 and 3 and the Spring Island area)

APPENDIX B: LOW-FLOW CRITICAL PERIOD WATER QUALITY SAMPING

Water Quality Sampling Results

Table B1. **Water quality sampling at select stations during Low-flow Critical Period Monitoring in January 2025. Measurements were taken at the middle of the water-column.**

Site	Date	Time	Temp (oC)	SpCond (us/cm)	pH	D.O. (mg/L)	Depth (ft)	Velocity (ft/s)	Weather Conditions
Blieder's Creek	1/8/2025	8:16	8.9	557	--	9.00	1.3	0.00	Cloudy, 32(F), clear water
Heidelberg (B-1)	1/8/2025	8:26	12.7	552	--	10.05	2.0	0.00	Cloudy, 33(F), clear water
Island Park Far	1/8/2025	9:12	20.1	573	--	7.68	0.8	0.04	Cloudy, 34(F), clear water
Island Park Near	1/8/2025	9:19	21.5	578	--	6.90	2.9	0.01	Cloudy, 34(F), clear water
Landa Lake (Union/D-1)	1/8/2025	9:50	22.0	581	--	7.85	1.4	0.19	Cloudy, 38(F), clear water
Spring Run 3	1/8/2025	9:56	22.3	581	--	7.11	0.3	1.13	Cloudy, 38(F), clear water
Spring Run 2	1/8/2025	9:46	20.1	561	--	9.15	0.4	0.00	Cloudy, 38(F), clear water
Spring Run 1	1/8/2025	9:42	13.5	567	--	9.60	1.1	0.00	Cloudy, 38(F), clear water
SR1/SR2 Confluence	1/8/2025	10:59	15.5	569	--	10.11	0.5	0.01	Cloudy, 38(F), clear water
New Channel US	1/8/2025	10:03	19.0	575	--	8.14	4.8	0.29	Cloudy, 38(F), clear water
Old Channel US	1/8/2025	9:35	19.4	576	--	8.52	2.4	0.39	Cloudy, 35(F), clear water
Old Channel DS	1/8/2025	8:55	17.1	575	--	8.38	1.4	0.08	Cloudy, 34(F), clear water
New Channel DS	1/8/2025	9:00	17.3	571	--	8.33	3.7	0.07	Cloudy, 34(F), clear water

Table B2. **Lab results from water quality grab samples collected at select stations during Low-flow Critical Period Monitoring on January 8, 2025. The unit for each parameter is milligrams per liter (mg/L). ND for each parameters denotes that it was not detectable.**

Site	Nitrate as N	Total N	Ammonia	Total P	Alkalinity	Total Suspended Solids
Blieder's Creek	1.12	<1.15U	<0.0400U	<0.0100U	226	1.79
Heidelberg Main Channel	1.51	1.51	<0.0400U	<0.0100U	230	<1.00U
Island Park Far	1.70	1.70	<0.0400U	<0.0100U	237	<1.00U
Island Park Near	1.73	1.73	<0.0400U	<0.0100U	236	1.16
Landa Lake	1.72	1.72	<0.0400U	<0.0100U	232	<1.00U
Spring Run 3	1.77	1.77	<0.0400U	<0.0100U	234	<1.00U
Spring Run 2	1.67	1.67	<0.0400U	<0.0100U	233	4.95
Spring Run 1	1.66	1.66	<0.0400U	0.0317	238	1.21
New Channel Upstream	1.64	1.64	<0.0400U	<0.0100U	238	<1.00U
Old Channel Upstream	1.65	1.65	<0.0400U	<0.0100U	234	1.27
Old Channel Downstream	1.59	1.59	<0.0400U	<0.0100U	239	1.37
New Channel Downstream	1.52	1.52	<0.0400U	0.164	231	2.63

Table B3. **Water quality sampling at select stations during Low-flow Critical Period Monitoring in January 2025. Measurements were taken at the middle of the water-column.**

Site	Date	Time	Temp (°C)	SpCond (µs/cm)	pH	D.O. (mg/L)	Depth (ft)	Velocity (ft/s)	Weather Conditions
Blieder's Creek	04/21/2025	8:13	22.4	545	7.80	3.53	1.0	0.00	Sunny, 61(F), murky water
Heidelberg (B-1)	04/21/2025	8:20	22.6	529	7.79	8.71	1.9	0.02	Sunny, 61(F), clear water
Island Park Far	04/21/2025	8:35	22.1	591	7.49	6.29	0.9	0.12	Sunny, 63(F), clear water
Island Park Near	04/21/2025	8:42	23.1	588	7.37	5.50	3.8	0.01	Sunny, 63(F), clear water
Landa Lake (Union/D-1)	04/21/2025	10:14	23.6	590	7.32	6.73	2.2	0.46	Sunny, 73(F), 10 mph winds, clear water
Spring Run 3	04/21/2025	10:08	23.2	590	7.41	6.41	0.3	0.18	Sunny, 72(F), clear water
Spring Run 2	04/21/2025	9:52	21.4	586	7.42	5.14	0.7	0.00	Sunny, 70(F), clear water
Spring Run 1	04/21/2025	9:44	18.0	538	7.60	2.56	0.8	0.03	Sunny, 70(F), tannic water
SR1/SR2 Confluence	04/21/2025	9:59	19.5	591	7.67	6.20	0.6	0.04	Sunny, 70(F), clear water
Old Channel US	04/21/2025	8:52	22.0	586	7.67	7.08	1.5	0.59	Sunny, 65(F), clear water
Old Channel DS	04/21/2025	9:04	21.9	567	7.86	6.65	2.4	0.37	Sunny, 66(F), clear water
New Channel US	04/21/2025	9:31	22.1	588	7.28	4.44	5.0	0.33	Sunny, 69(F), clear water
New Channel DS	04/21/2025	9:09	23.1	567	7.86	6.58	2.5	0.02	Sunny, 66(F), clear water

Table B4. **Lab results from water quality grab samples collected at select stations during Low-flow Critical Period Monitoring on January 8, 2025. The unit for each parameter is milligrams per liter (mg/L). ND for each parameters denotes that it was not detectable.**

Site	Nitrate as N	Total N	Ammonia	Total P	Alkalinity	Total Suspended Solids
Blieder's Creek	<0.0500U	<1.15U	0.280	0.0240	221	29.60
Heidelberg Main Channel	<0.0500U	1.15	0.048	0.0129	215	4.00
Island Park Far	<0.0500U	1.68	<0.0400U	<0.0100U	240	2.45
Island Park Near	<0.0500U	1.75	<0.0400U	<0.0100U	235	1.70
Landa Lake	<0.0500U	1.79	<0.0400U	<0.0100U	236	<1.00U
Spring Run 3	<0.500U	1.80	<0.0400U	<0.0100U	234	3.33
Spring Run 2	<0.0500U	1.71	<0.0400U	0.0100	230	<1.00U
Spring Run 1	0.236	<1.15	0.139	0.0985	221	5.27
New Channel Upstream	<0.0500U	1.56	<0.0400U	<0.0100U	234	<1.00U
Old Channel Upstream	<0.0500U	1.60	<0.0400U	<0.0100U	235	1.79
Old Channel Downstream	<0.0500U	1.55	<0.0400U	<0.0100U	228	2.00
New Channel Downstream	<0.0500U	1.39	0.063	0.0171	231	1.89

MEMORANDUM

TO:	Chad Furl, Kristy Kollaus
FROM:	Christa Kunkel (BIO-WEST)
DATE:	**May 30, 2025**
SUBJECT:	EAHCP Critical Period Habitat Evaluations – Comal River System

COMAL RIVER SYSTEM: 70, 60, 50 cfs Habitat Evaluations

The 70 cfs Habitat Evaluation was completed on March 19th due to declining springflow conditions. Springflow continued to decrease and the 60 cfs Habitat Evaluation was completed as part of the Spring 2025 Comprehensive Biological Monitoring effort in April. Flows further declined beginning May 14th and the 50 cfs Habitat Evaluation was completed on May 21st. Rain events on May 26th and May 28th have since bumped the aquifer level and increased flows in the system. As of this memorandum, the total system discharge in the Comal Springs system is approximately 90 cfs (Figure 1).

Figure 1. Total Comal River discharge from March 1 to May 29, 2025 (USGS 08169000 Comal River at New Braunfels, Texas).

Seven-day trends in water temperature (°C) for multiple habitat evaluations in spring 2025 were assessed using temperature data loggers (HOBO Tidbit v2 Temp Loggers) at 13 permanent monitoring stations in the Comal Springs/River. Data for each monitoring station are based on all 10-minute measurements available for March 18-24 (~70 cfs), April 15-21 (~60 cfs), and May 18-24 (~50 cfs). Data from New Channel Upstream were omitted from analysis for April and May due to water temperatures closely aligning with air temperature trends during these timeframes, suggesting this logger was desiccated or in extremely shallow water. Similarly, data were also omitted from analysis for Blieders from May 22-24 and Booneville Far from May 20-24 when water temperatures began aligning with air temperature trends. For the two stations in the deepest portion of Landa Lake (upper and lower), trends were not assessed in May because water temperature logger data were last uploaded in April. Lastly, water temperature trends at Booneville Near and New Channel Downstream were not assessed in May due to desiccation (Booneville Near) and inaccessibility (New Channel Downstream). At all stations, data were compared to long-term water temperature data measured at 4-hour intervals for each month from 2000 – 2024 or to the greatest temporal extent available. For analysis, 7-day trends were compared with long-term data using boxplots to visualize differences in central tendency (i.e., median) and variation (e.g., interquartile range). Tables 1-3 summarize the descriptive statistics associated with each boxplot for each figure. Figures 2-4 present boxplots comparing recent 7-day trends with long-term data for the months of March, April, and May.

Overall, results suggest that between 60 to 70 cfs median water temperatures were generally stable and similar to long-term medians across all stations except Booneville Far. At 50 cfs, however, 7-day median water temperatures were greater than long-term medians across all stations that were downloaded, though the Old Channel remained below Fountain Darter larval (≥25°C) and egg (≥26°C) reproductive thresholds. Maximum water temperatures were elevated above these optimal temperature requirements, ranging from 26.8°C at Spring Run 1 to 33.99°C at Heidelberg. This was the only area in which maximum water temperatures approached the Fountain Darter mean critical thermal maximum of 34.8°C (Brandt et al. 1993).

Table 1. Summary of boxplot descriptive statistics comparing recent 7-day (March 18-24) and long-term trends in water temperature (°C) at 13 monitoring stations in the Comal Springs/River for the month of March, 2025.

Station	Period	Minimum	Lower Whisker	Lower Box	Median	Upper Box	Lower Whisker	Maximum	Interquartile Range
Blieders	7-day	16.32	16.32	18.73	20.56	21.36	24.70	24.70	2.63
Blieders	Long-term	16.19	18.62	21.39	22.36	23.24	25.98	26.99	1.85
Heidelberg	7-day	16.80	16.80	19.87	21.65	22.99	25.36	25.36	3.13
Heidelberg	Long-term	19.86	22.83	23.40	23.71	23.79	24.36	24.96	0.39
Booneville Near	7-day	23.79	23.79	23.81	23.83	23.83	23.86	23.91	0.02
Booneville Near	Long-term	22.88	23.42	23.52	23.57	23.64	23.81	24.21	0.12
Booneville Far	7-day	25.55	25.55	27.38	27.90	28.82	30.90	31.28	1.44
Booneville Far	Long-term	20.42	21.83	22.84	23.20	23.52	24.54	25.68	0.68
Landa Lake Upper	7-day	22.37	23.04	23.50	23.79	23.81	23.83	23.83	0.31
Landa Lake Upper	Long-term	20.13	23.04	23.52	23.75	23.85	24.28	24.38	0.33
Spring Run 1	7-day	22.85	22.85	23.18	23.33	23.47	23.57	23.57	0.29
Spring Run 1	Long-term	23.26	23.38	23.47	23.50	23.53	23.62	23.71	0.06
Spring Run 2	7-day	20.94	20.94	22.08	22.59	22.87	23.42	23.42	0.78
Spring Run 2	Long-term	18.31	22.98	23.31	23.44	23.52	23.84	23.94	0.22
Spring Run 3	7-day	23.30	23.33	23.47	23.52	23.57	23.71	24.27	0.10
Spring Run 3	Long-term	23.20	23.20	23.38	23.47	23.54	23.79	24.10	0.16
Landa Lake Lower	7-day	22.61	22.61	23.45	23.71	24.07	24.22	24.22	0.63
Landa Lake Lower	Long-term	22.63	23.61	23.76	23.85	23.86	24.00	25.23	0.10
Old Channel	7-day	20.72	20.72	22.15	22.82	24.10	25.77	25.77	1.94
Old Channel	Long-term	19.41	20.89	22.52	23.06	23.60	25.21	25.94	1.09
New Channel Upstream	7-day	23.79	23.79	25.99	26.76	27.58	28.94	28.94	1.59
New Channel Upstream	Long-term	20.93	22.00	23.06	23.35	23.77	24.81	25.45	0.71
New Channel Downstream	7-day	19.84	19.84	21.91	22.71	23.48	24.48	24.48	1.57
New Channel Downstream	Long-term	17.70	20.48	22.41	23.03	23.71	25.60	26.01	1.30
Other Place	7-day	19.18	19.18	21.40	22.37	23.23	24.63	24.63	1.84
Other Place	Long-term	19.25	20.75	22.44	23.04	23.58	25.23	25.53	1.14

Table 2. **Summary of boxplot descriptive statistics comparing recent 7-day (April 15-21) and long-term trends in water temperature (°C) at 13 monitoring stations in the Comal Springs/River for the month of April, 2025.**

Station	Period	Minimum	Lower Whisker	Lower Box	Median	Upper Box	Lower Whisker	Maximum	Interquartile Range
Blieders	7-day	22.51	22.51	23.45	24.15	24.65	26.01	26.01	1.21
Blieders	Long-term	17.06	19.60	22.26	23.28	24.07	26.76	27.74	1.81
Heidelberg	7-day	22.32	22.32	23.47	24.20	25.55	27.70	27.70	2.08
Heidelberg	Long-term	21.89	23.19	23.58	23.74	23.84	24.23	25.09	0.26
Booneville Near	7-day	23.76	23.81	23.81	23.81	23.83	23.86	23.86	0.02
Booneville Near	Long-term	22.88	23.34	23.52	23.57	23.64	23.81	24.38	0.12
Booneville Far	7-day	26.79	26.79	28.00	28.42	29.59	31.84	31.84	1.59
Booneville Far	Long-term	21.25	22.13	23.09	23.40	23.74	24.70	26.04	0.65
Landa Lake Upper	7-day	23.16	23.16	23.55	23.79	23.83	23.86	23.86	0.29
Landa Lake Upper	Long-term	19.79	23.20	23.59	23.75	23.86	24.13	24.13	0.26
Spring Run 1	7-day	20.65	23.33	23.52	23.59	23.67	23.71	23.71	0.14
Spring Run 1	Long-term	23.21	23.39	23.48	23.52	23.55	23.64	23.71	0.07
Spring Run 2	7-day	20.82	20.82	22.08	22.71	23.18	24.80	25.70	1.10
Spring Run 2	Long-term	19.13	23.02	23.33	23.44	23.55	23.88	23.96	0.22
Spring Run 3	7-day	21.75	21.94	22.90	23.42	23.55	24.51	25.65	0.65
Spring Run 3	Long-term	23.01	23.16	23.38	23.47	23.55	23.74	23.74	0.17
Landa Lake Lower	7-day	23.35	23.35	23.71	23.93	24.10	24.22	24.22	0.38
Landa Lake Lower	Long-term	22.63	23.58	23.79	23.86	23.93	24.14	24.82	0.14
Old Channel	7-day	22.15	22.15	23.06	23.62	24.53	26.40	26.40	1.47
Old Channel	Long-term	19.20	21.49	23.00	23.43	24.02	25.54	26.30	1.02
New Channel Upstream	7-day	-	-	-	-	-	-	-	-
New Channel Upstream	Long-term	20.91	22.18	23.27	23.54	24.00	25.09	25.96	0.73
New Channel Downstream	7-day	22.03	22.03	23.32	23.81	24.53	25.53	25.53	1.21
New Channel Downstream	Long-term	19.03	20.98	22.97	23.53	24.30	26.26	26.60	1.33
Other Place	7-day	21.99	21.99	23.35	23.91	24.41	25.67	25.67	1.06
Other Place	Long-term	18.25	21.15	22.92	23.45	24.10	25.87	27.36	1.18

Table 3. Summary of boxplot descriptive statistics comparing recent 7-day (May 18-24) and long-term trends in water temperature (°C) at 13 monitoring stations in the Comal Springs/River for the month of May, 2025.

Station	Period	Minimum	Lower Whisker	Lower Box	Median	Upper Box	Lower Whisker	Maximum	Interquartile Range
Blieders	7-day	25.84	25.84	27.85	28.49	29.27	30.34	30.34	1.42
Blieders	Long-term	18.60	21.62	23.75	24.46	25.17	27.29	29.77	1.42
Heidelberg	7-day	24.90	24.90	26.67	28.00	29.14	32.77	33.99	2.47
Heidelberg	Long-term	22.15	23.47	23.74	23.83	23.92	24.19	26.28	0.18
Booneville Near	7-day	-	-	-	-	-	-	-	-
Booneville Near	Long-term	23.28	23.31	23.52	23.55	23.67	23.88	24.17	0.15
Booneville Far	7-day	28.30	28.30	29.29	29.58	30.24	31.41	31.41	0.95
Booneville Far	Long-term	21.20	22.34	23.38	23.63	24.08	25.13	30.39	0.70
Landa Lake Upper	7-day	-	-	-	-	-	-	-	-
Landa Lake Upper	Long-term	20.20	23.31	23.64	23.76	23.86	24.18	24.22	0.22
Spring Run 1	7-day	21.08	23.40	24.22	24.45	24.77	25.60	26.82	0.56
Spring Run 1	Long-term	23.21	23.40	23.50	23.54	23.57	23.68	23.97	0.07
Spring Run 2	7-day	20.96	23.35	24.61	25.09	25.45	26.72	27.53	0.85
Spring Run 2	Long-term	19.65	23.02	23.38	23.45	23.62	23.98	24.17	0.24
Spring Run 3	7-day	21.56	23.09	24.59	24.97	25.60	26.97	26.97	1.01
Spring Run 3	Long-term	23.01	23.16	23.36	23.47	23.52	23.69	23.69	0.16
Landa Lake Lower	7-day	-	-	-	-	-	-	-	-
Landa Lake Lower	Long-term	23.18	23.57	23.79	23.86	23.93	24.15	24.63	0.15
Old Channel	7-day	22.94	22.94	24.03	24.56	25.80	28.02	28.02	1.77
Old Channel	Long-term	21.13	21.93	23.45	23.79	24.48	26.01	27.51	1.03
New Channel Upstream	7-day	-	-	-	-	-	-	-	-
New Channel Upstream	Long-term	21.60	22.49	23.50	23.71	24.19	25.22	26.79	0.69
New Channel Downstream	7-day	-	-	-	-	-	-	-	-
New Channel Downstream	Long-term	19.96	21.54	23.47	24.02	24.80	26.79	27.33	1.33
Other Place	7-day	24.27	24.27	25.38	26.16	26.87	28.02	28.02	1.49
Other Place	Long-term	19.71	21.84	23.47	23.91	24.57	26.20	27.14	1.10

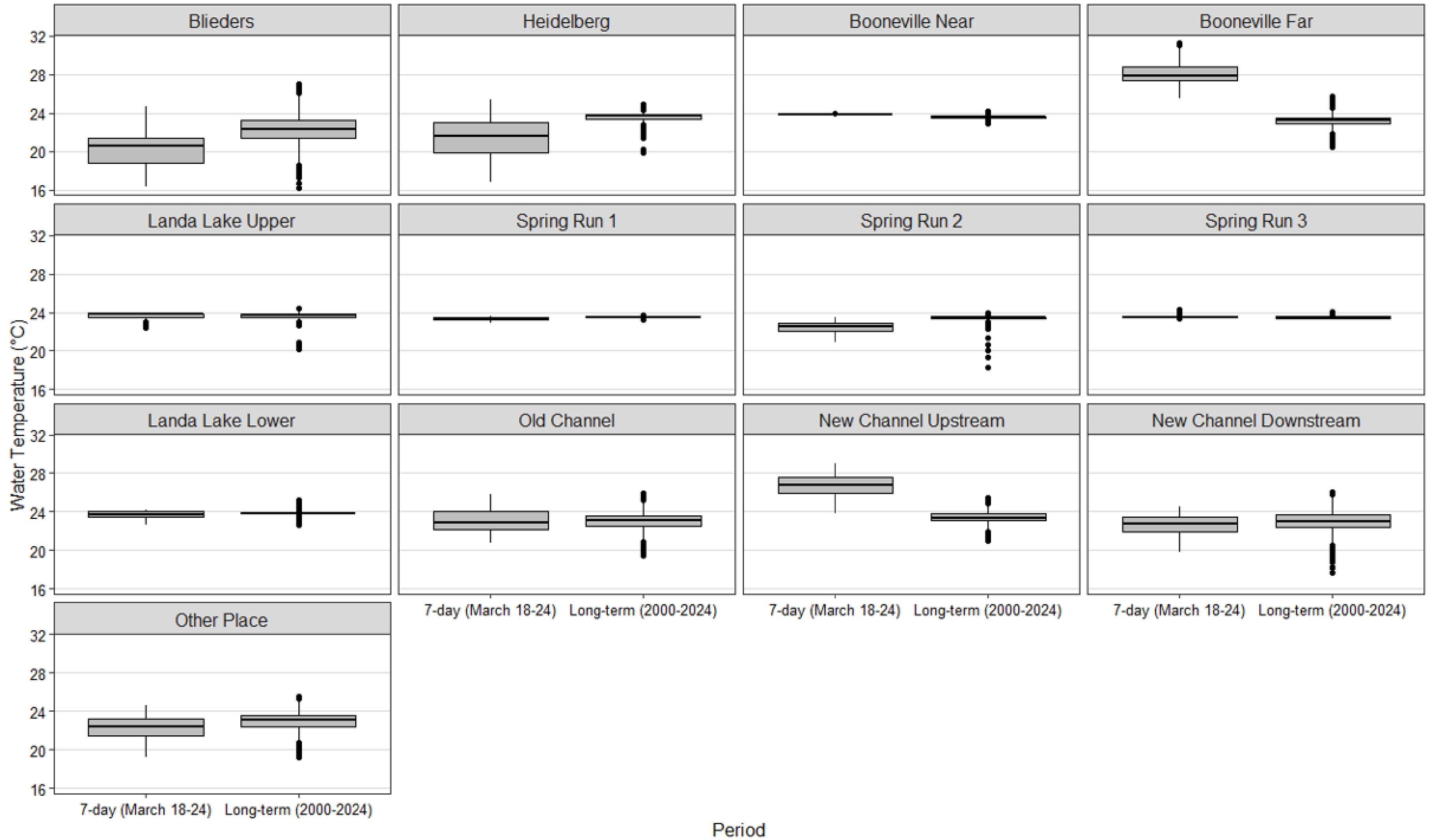

Figure 2. **Boxplots statistics comparing recent 7-day (March 18-24) and long-term (2000-2024) trends in water temperature (°C) at 13 monitoring stations in the Comal Springs/River for the month of March, 2025. The thick horizontal line in each box is the median and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range, and outliers beyond this are designated with solid black circles.**

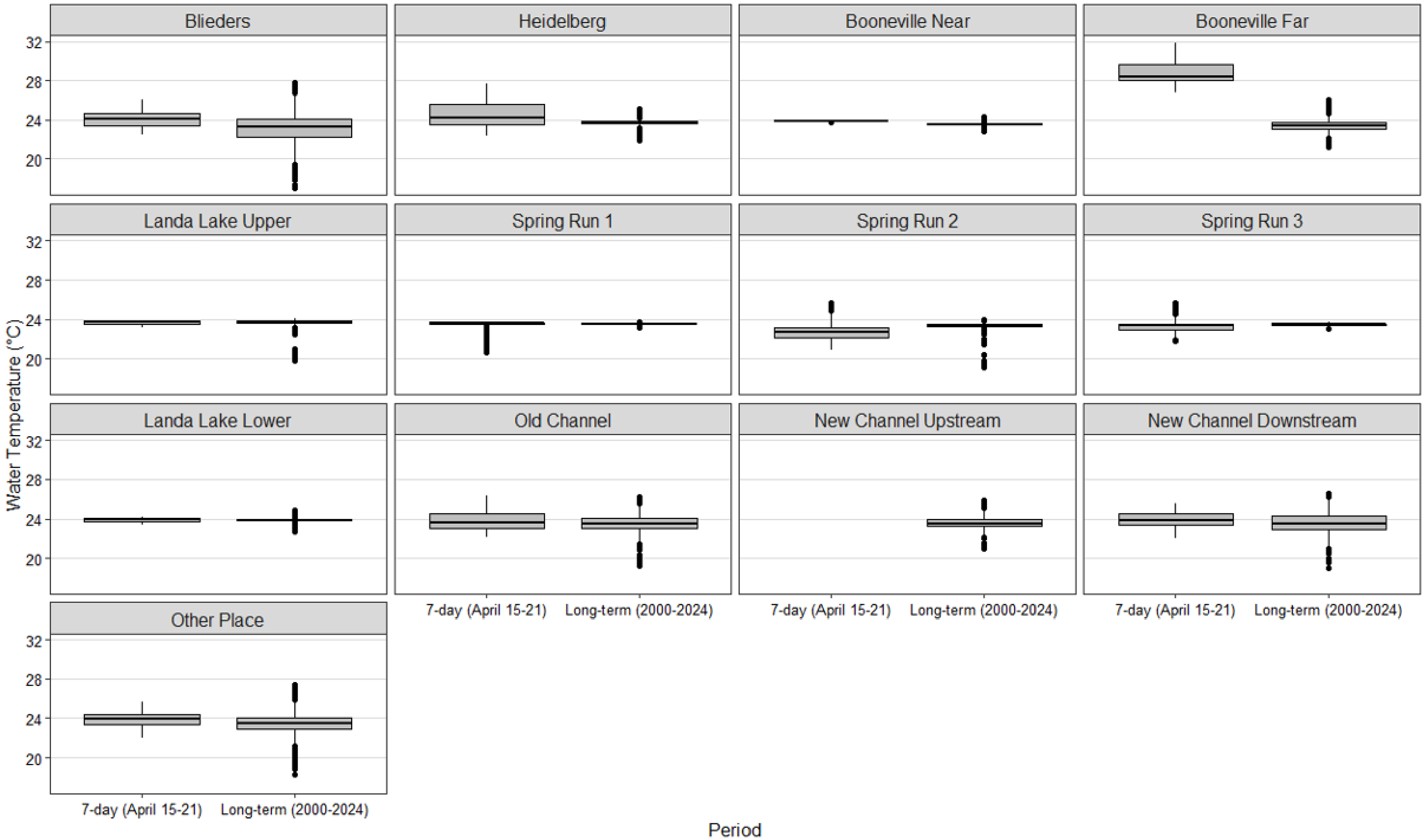

Figure 3. **Boxplots statistics comparing recent 7-day (April 15-21) and long-term (2000-2024) trends in water temperature (°C) at 13 monitoring stations in the Comal Springs/River for the month of April, 2025. The thick horizontal line in each box is the median and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range, and outliers beyond this are designated with solid black circles.**

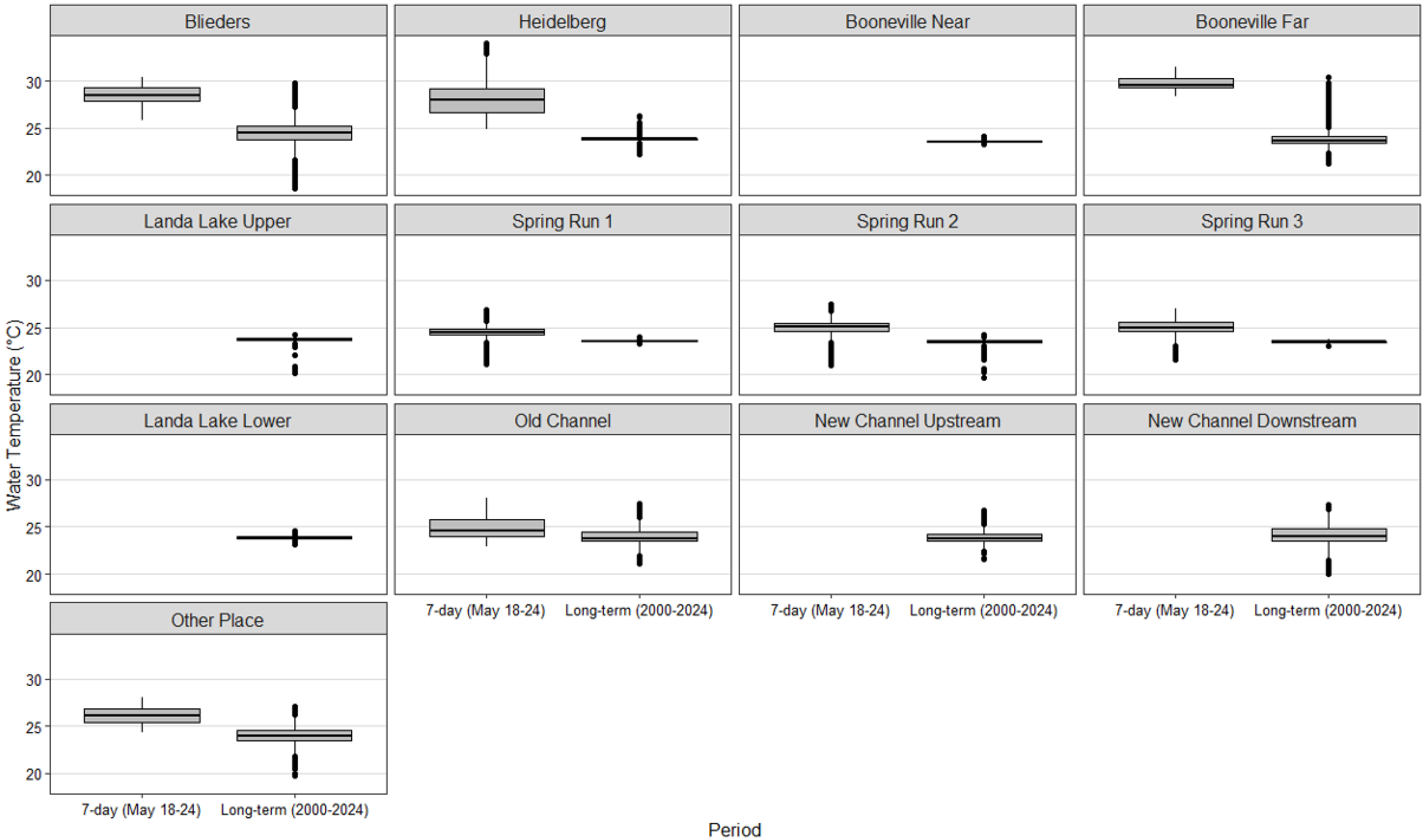

Figure 4. **Boxplots statistics comparing recent 7-day (May 18-24) and long-term (2000-2024) trends in water temperature (°C) at 13 monitoring stations in the Comal Springs/River for the month of May, 2025. The thick horizontal line in each box is the median and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range, and outliers beyond this are designated with solid black circles.**

As total system discharge declined from 70 to 60 cfs, wetted area at Upper Spring Run near the Heidelberg cabins decreased. At these flows, Fountain Darter habitat was limited to an algae/bryophyte mix and *Sagittaria*. However, by 50 cfs, *Sagittaria* was emergent through much of the study reach (Figure 5). *Chara* continued to expand under these low flow conditions, now representing a dominant taxon in this reach (Figure 6). Habitat also declined at Spring Island and the spring runs. Between 70 and 50 cfs, wetted area decreased along the fringes of Spring Island (Figure 7). Despite this decrease in wetted area, spring upwellings were still observed throughout Spring Island area at 50 cfs. Furthermore, Spring Island had the highest number of Comal Springs Riffle Beetles (68 adults) during the Spring Comprehensive Biomonitoring survey when total system discharge was approximately 60 cfs. In contrast, only two adult beetles were observed at Western Shoreline and no adult beetles were observed at Spring Run 3. More algae was observed in the Comal Springs Salamander sampling area and covered submerged aquatic vegetation around Spring Island. Although few salamanders were observed during the Spring Comprehensive Biomonitoring survey, they were still present at Spring Island, Spring Run 3, and Landa Lake near the Fountain Darter dive area. Salamander and beetle habitat were mostly dry at Spring Run 1 and greatly reduced at Spring Run 3, though Spring Run 3 was still flowing at 70 and 60 cfs. By 50 cfs, Spring Run 1 was completely dry and Spring Run 3 did not support visible surface flow.

Figure 5. Exposed river bed and emergent *Sagittaria* at Upper Spring Run (May 21st).

Figure 6. Dense stand of *Chara* expanding into a stand of *Sagittaria* at Upper Spring Run (May 21st).

Figure 7. Exposed dry bed on the far side of Spring Island (May 21st).

Landa Lake continued to maintain aquatic vegetation between 70-50 cfs. As expected, algal mats built up on the surface as flow decreased. More filamentous algae was observed during drop-netting activities at ~60 cfs; however, bryophytes were still present in discrete patches and intermixed with other taxa throughout the lake. By 50 cfs, the Landa Lake islands became exposed with surrounding vegetation (e.g., *Ludwigia* and *Sagittaria*) emergent. The Old Channel continued to operate as expected during these flow conditions and averaged ~37 cfs from March through May 22nd. Optimal Fountain Darter habitat was maintained as bryophytes and *Ludwigia* dominated the vegetation assemblage. In contrast, the New Channel exhibited noticeable declines in wetted area between 70 and 50 cfs. Around 70 cfs, much of the bank along river right was exposed and vegetation consisted only of *Cabomba* and *Hygrophila*. During drop-netting activities at ~60 cfs, increased filamentous algae was observed within the *Hygrophila*. Wetted area continued to decrease as flows approached 50 cfs with some patches of *Hygrophila* becoming emergent.

Although the system experienced habitat changes as flows declined, drop-netting during the Spring Comprehensive Biomonitoring survey in April demonstrated high Fountain Darter densities and typical spring recruitment. A total of 976 Fountain Darters were observed among the four study reaches ranging in size from 8 to 38 mm. Mean densities across all reaches were higher than in fall 2024 and similar to previous spring events. The highest densities occurred in bryophytes at Landa Lake and Old Channel, though densities were also high in *Ludwigia* and *Cabomba*. Dip-netting is an important criterion for Fountain Darter refugia salvage activities prescribed in the EAHCP. Section 6.4.3 (Comal Springs and River Ecosystem Adaptive Management Activities) in the EAHCP. Fountain Darter dip netting results from the April and May surveys are as follows:

April

Percent darter abundance – 78%

May

Percent darter abundance – 68%

In summary, total system discharge in the Comal System declined below 70 cfs on March 18th, below 60 cfs on April 15th, and approximated 50 cfs beginning May 14th. Water temperature conditions were generally stable throughout the system until 50 cfs when 7-day median temperatures were higher than previously observed system-wide, although data from Landa Lake were not examined. Despite these elevated springtime water temperatures in some areas, Fountain Darter recent recruits were observed during April drop-netting activities, and dip-netting in April and May indicated high overall presence. As flows declined, habitat conditions deteriorated in several locations. Reductions in wetted area were most exacerbated in upper spring areas and around Spring Island, and surface flow ceased in all spring runs by 50 cfs. This was the first time during the 24-year biomonitoring program that Spring Run 3 stopped flowing, leaving a majority of the spring run dry. Emergent vegetation and increased algae were observed throughout all reaches and were most noticeable at Upper Spring Run, around the Landa Lake Islands, and at Upper New Channel. In contrast, high quality Fountain Darter habitat still remains at Old Channel and through portions of Landa Lake. Figures 8-25 highlight the habitat conditions observed on March 19th (70 cfs) and May 21st (50 cfs) throughout the Comal System starting at the upper springs and moving downstream. It remains important to continue tracking the system-wide Fountain Darter and the surface-dwelling invertebrate's habitat conditions and species responses as these low discharge conditions persist into the summer.

Please reach out if you have any questions.

Thank you,
Christa

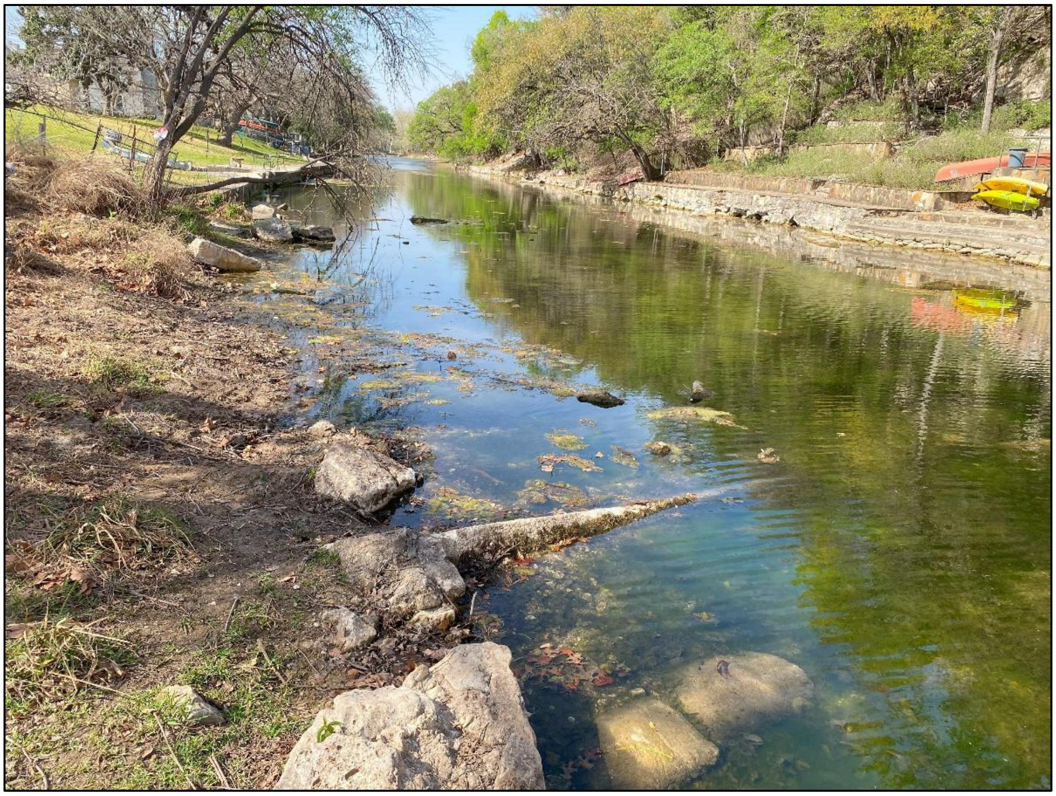

Figure 8. Upper Spring Run at 70 cfs (March 19th).

Figure 9. Exposed dry area and surface film in Upper Spring Run at 50 cfs (May 21st).

Figure 10. Spring Island looking upstream at 70 cfs (March 19th).

Figure 11. Spring Island looking upstream at 50 cfs (May 21st).

Figure 12. Spring Island looking downstream at 70 cfs (March 19th).

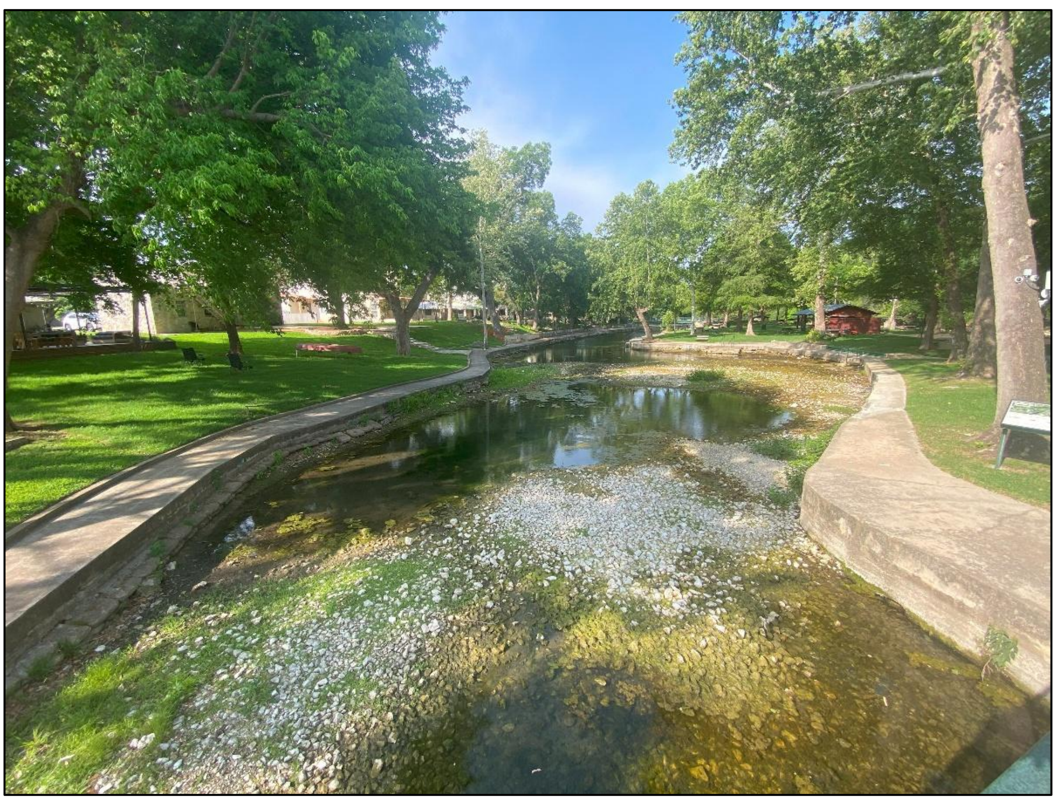

Figure 13. Spring Island looking downstream at 50 cfs (May 21st).


Figure 14. Landa Lake at 70 cfs (March 19th).


Figure 15. Emergent *Sagittaria* around the islands at Landa Lake at 50 cfs (May 21st).


Figure 16. Spring Run 1 at 70 cfs (March 19th).


Figure 17. Spring Run 1 completely dry at 50 cfs (May 21st).

Figure 18. Spring Run 3 looking upstream at 70 cfs (March 19th).

Figure 19. Spring Run 3 looking downstream at 50 cfs with some small puddles of water (May 21st).


Figure 20. Old Channel ERPA at 70 cfs (March 19th).


Figure 21. Old Channel ERPA at 50 cfs (May 21st).

Figure 22. Water flowing over the weir dam in the New Channel at 70 cfs (March 19th).

Figure 23. Weir dam holding water in the New Channel at 50 cfs. Water was still flowing through the culvert (May 21st).

Figure 24. Dewatered area at Upper New Channel at 70 cfs (March 19th).

Figure 25. Dewatered area at Upper New Channel at 50 cfs (May 21st).

APPENDIX C: AQUATIC VEGETATION MAPS

Long-term Biological Goals Study Reaches

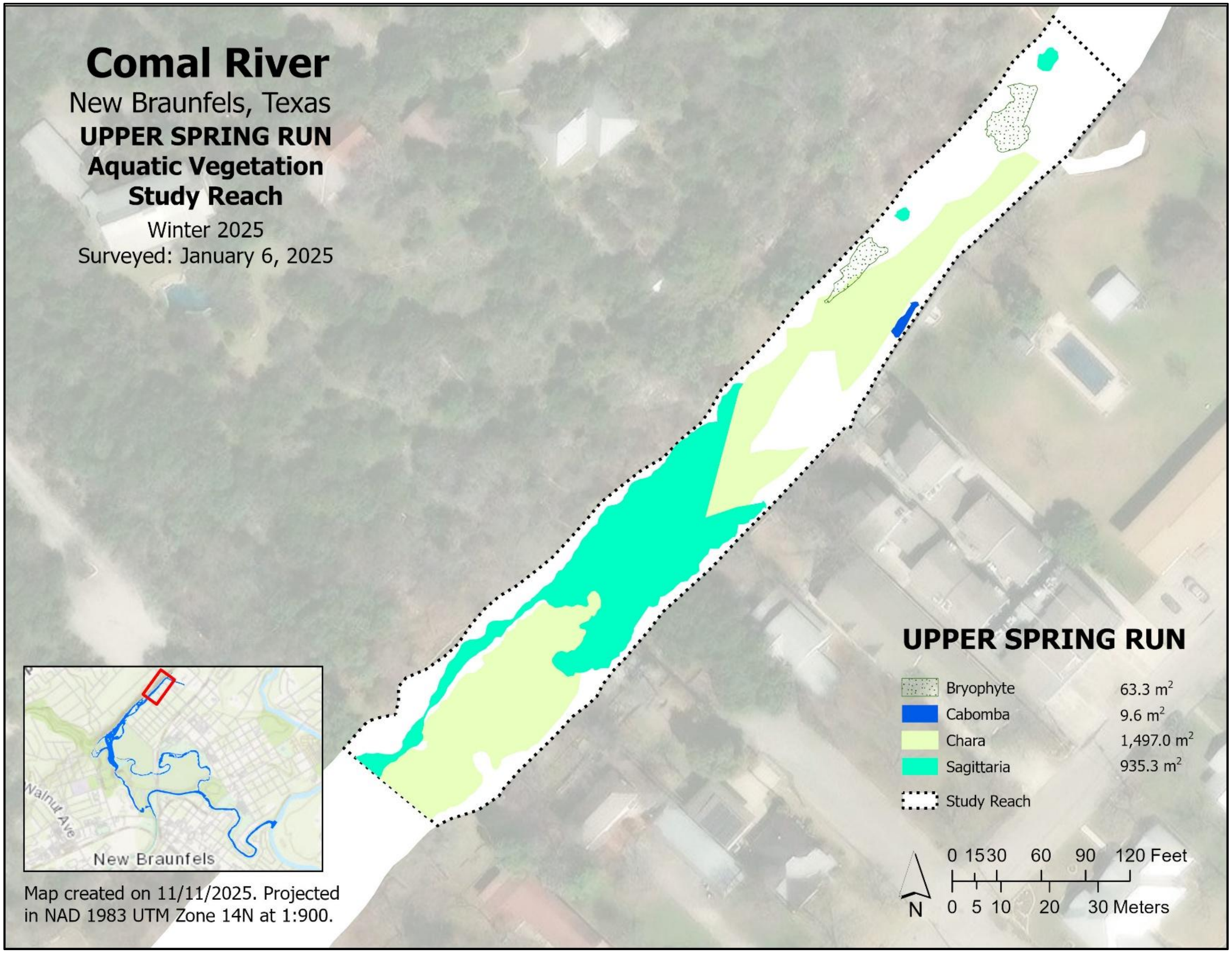

Figure C1. Map of aquatic vegetation coverage at Upper Spring Run Study Reach in January 2025 during the first low-flow sampling event.

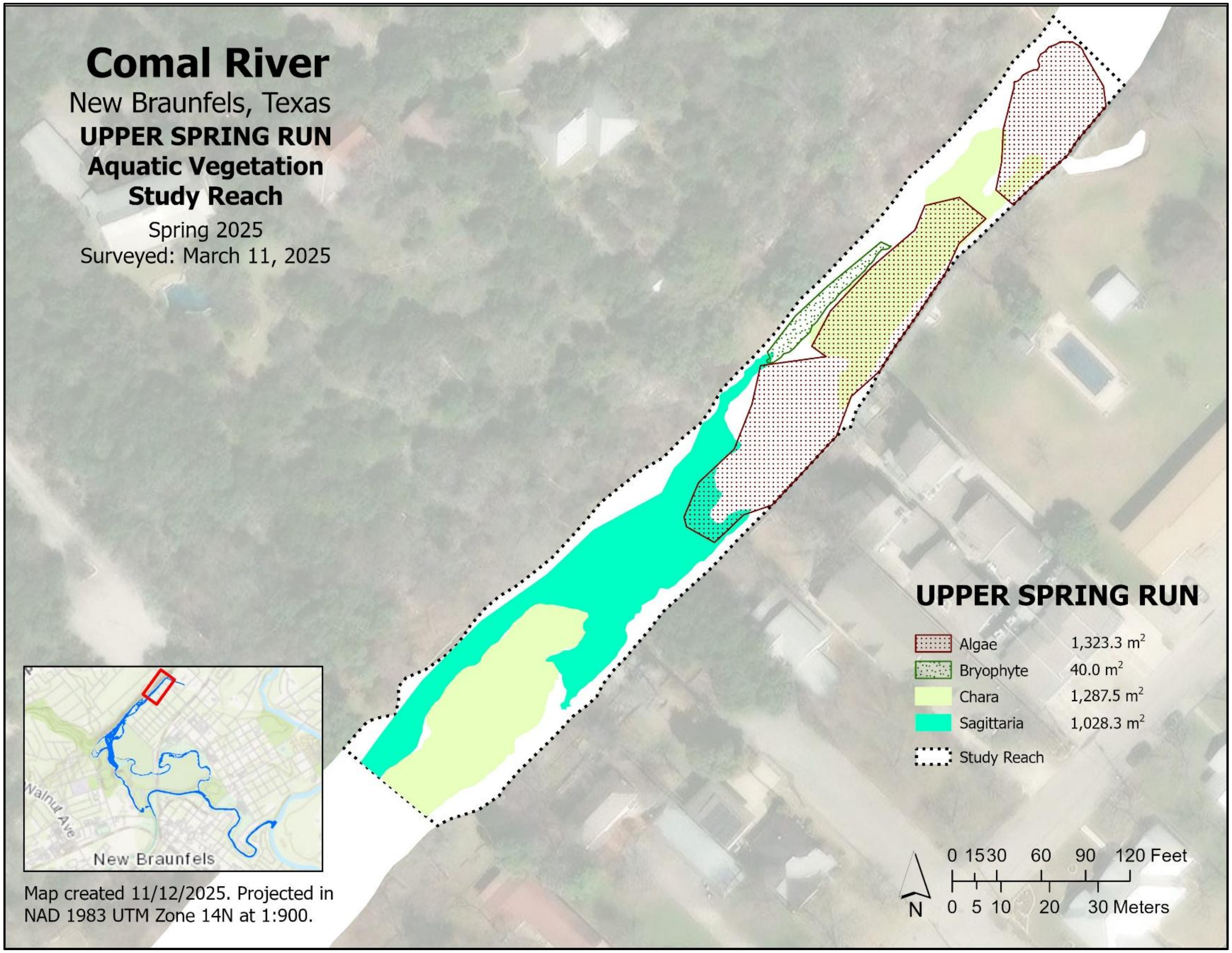

Figure C2. **Map of aquatic vegetation coverage at Upper Spring Run Study Reach in spring 2025.**

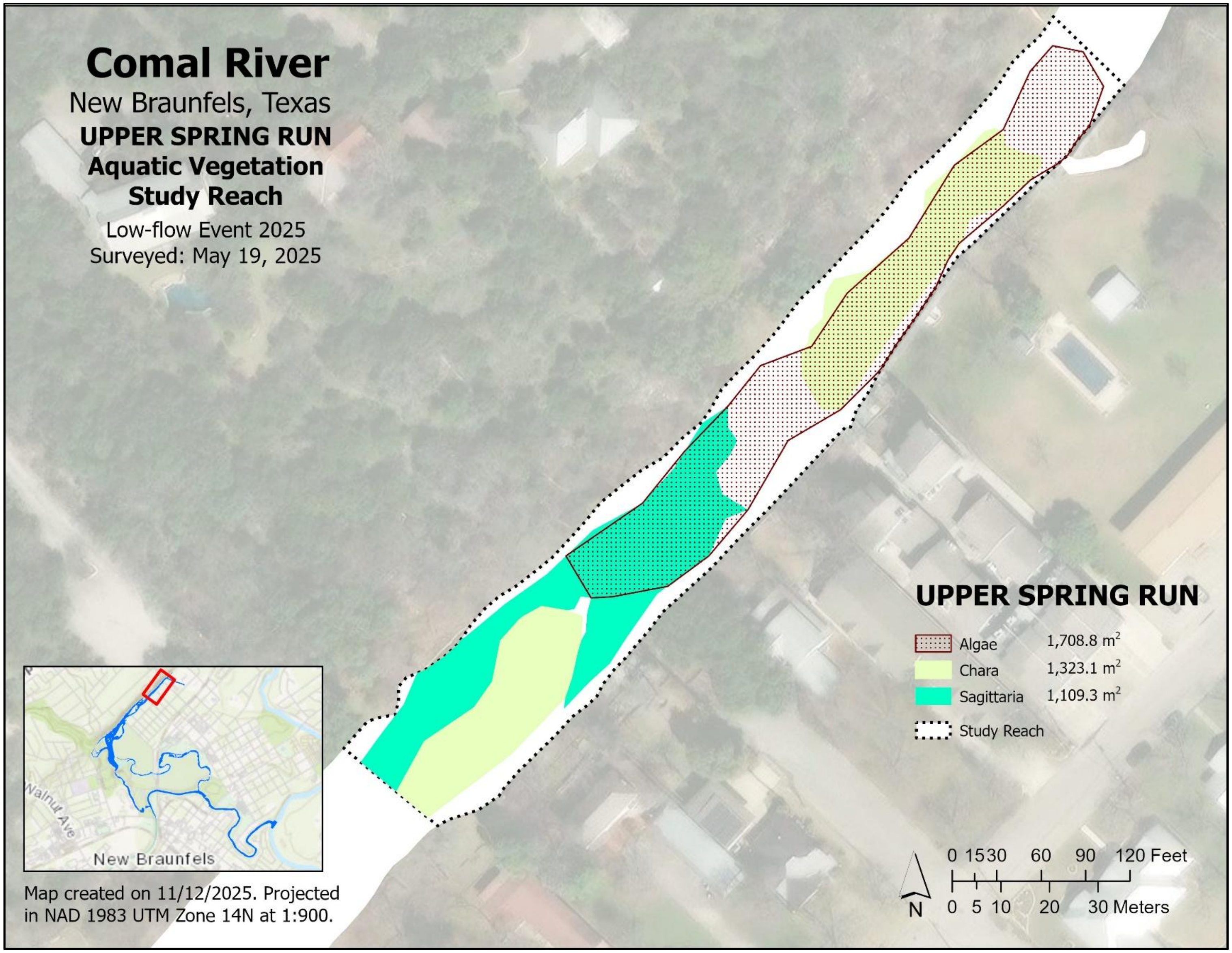

Figure C3. Map of aquatic vegetation coverage at Upper Spring Run Study Reach in May 2025 during the second low-flow sampling event.

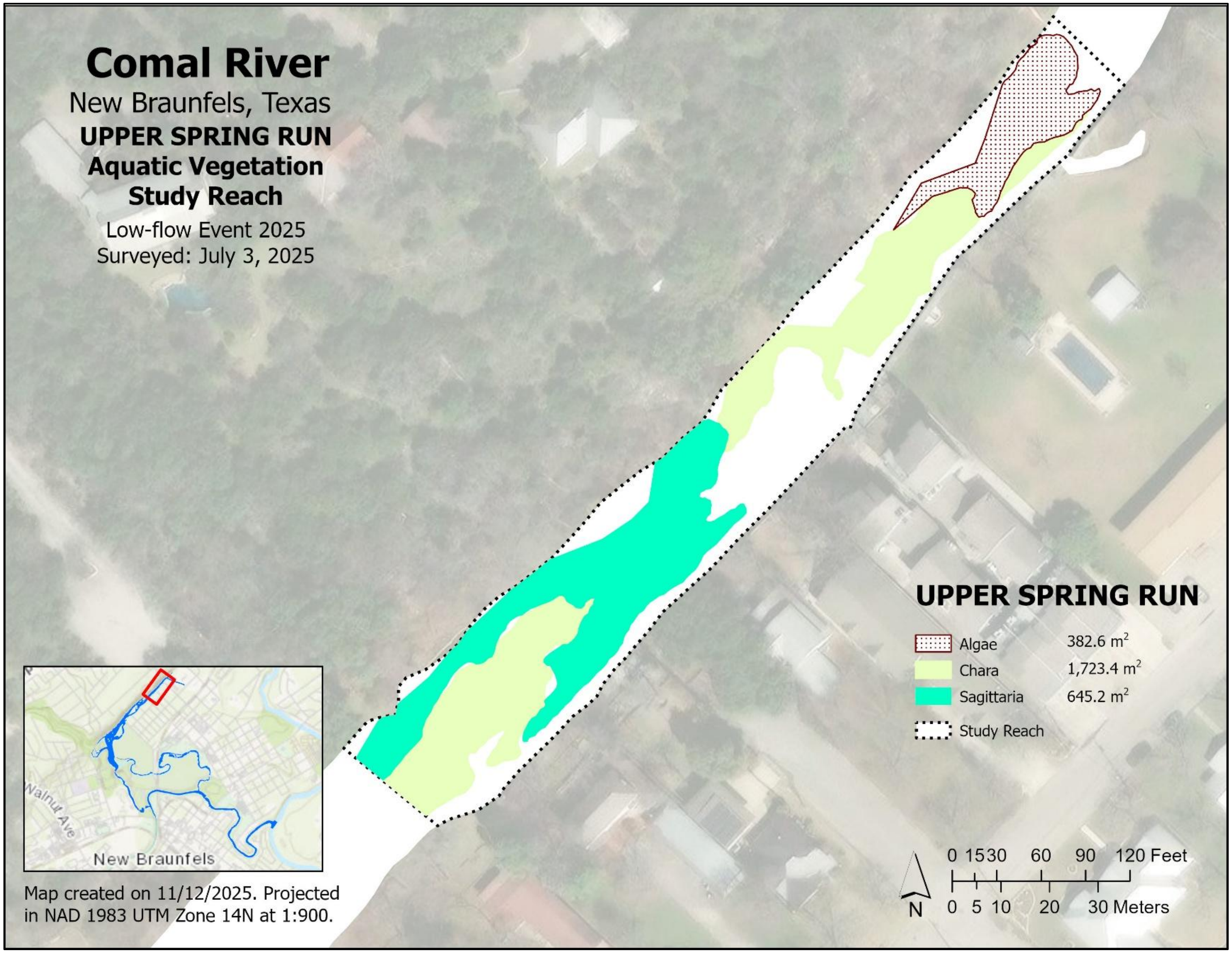

Figure C4. Map of aquatic vegetation coverage at Upper Spring Run Study Reach in July 2025 during the third low-flow sampling event.

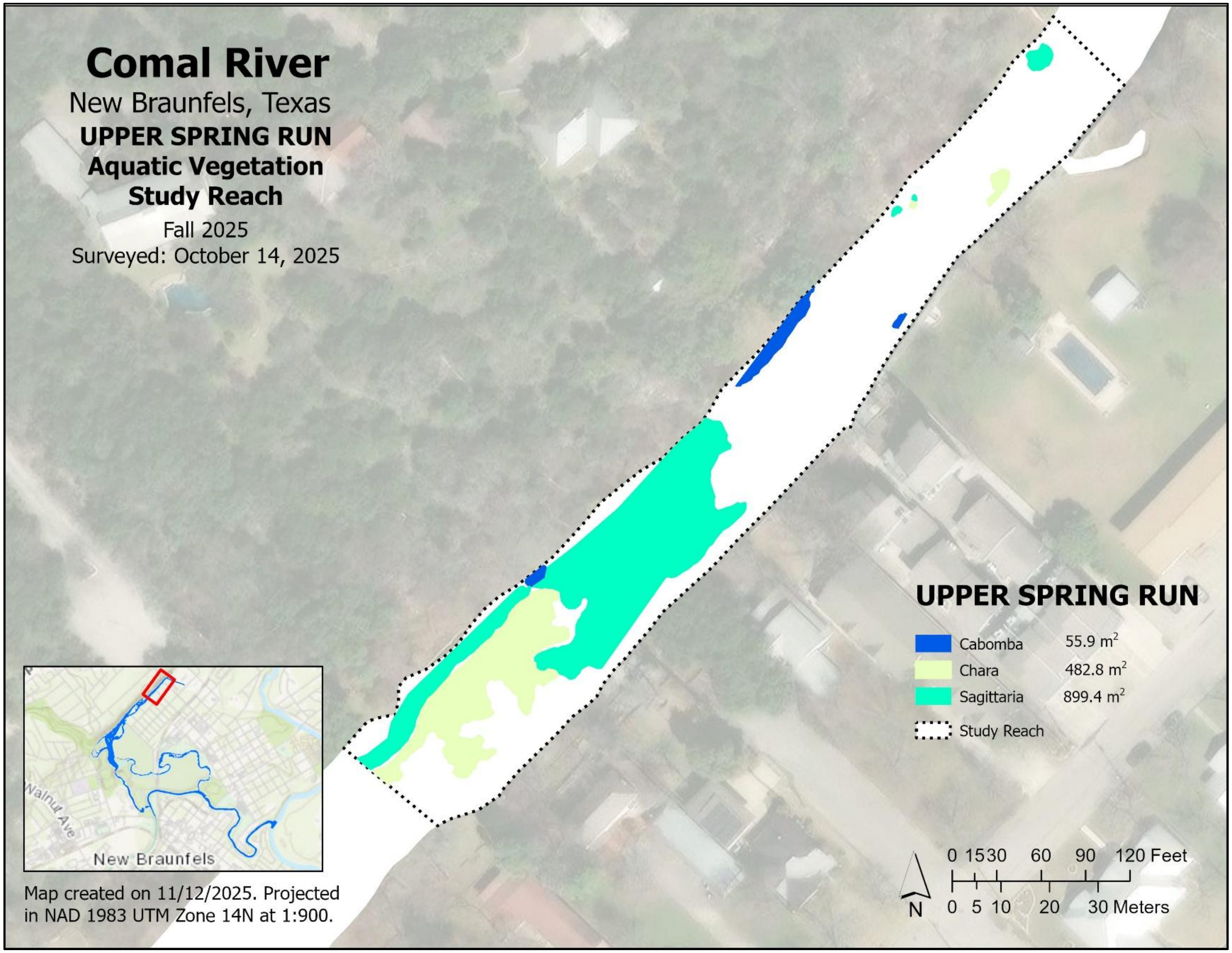

Figure C5. Map of aquatic vegetation coverage at Upper Spring Run Study Reach in fall 2025.

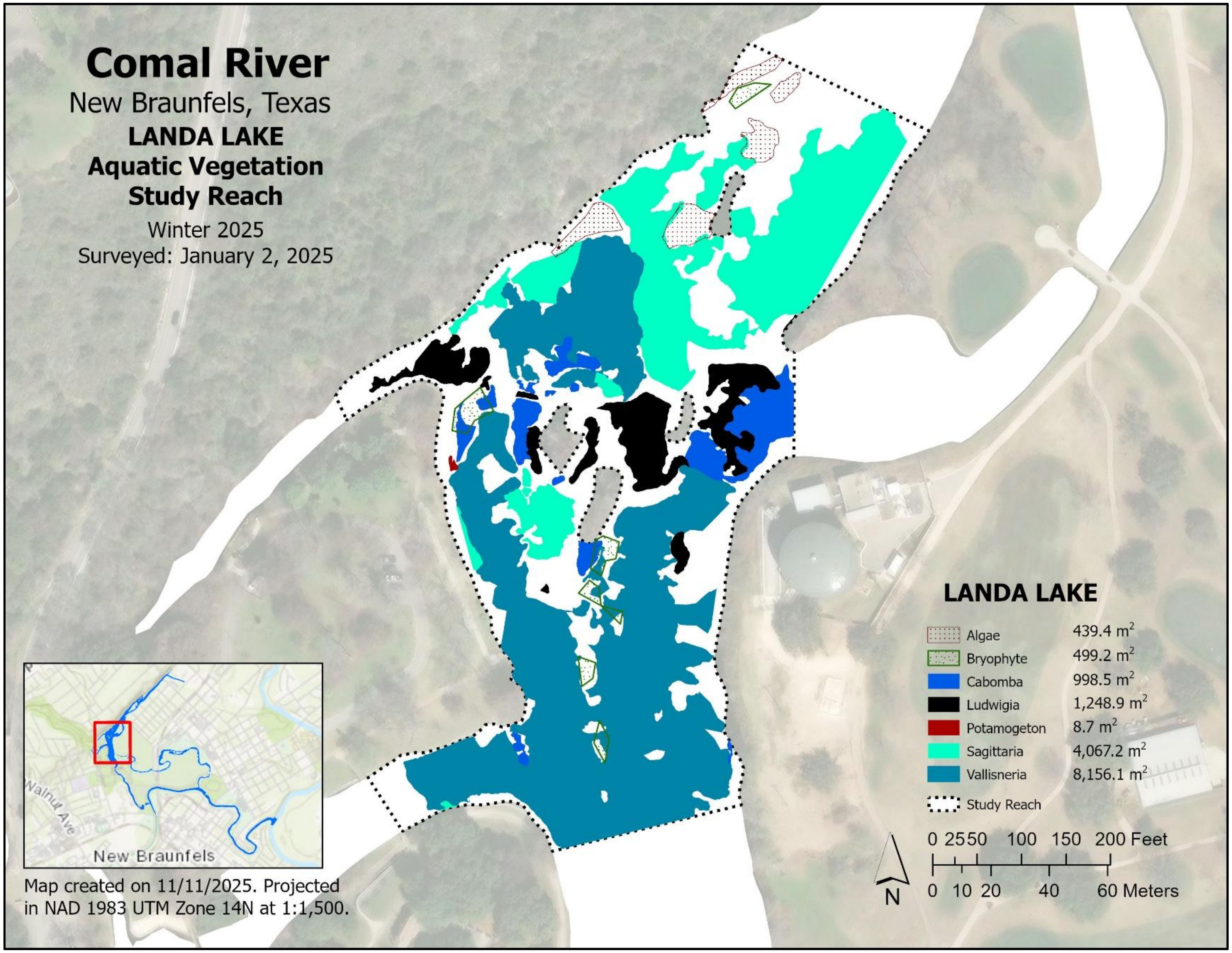

Figure C6. Map of aquatic vegetation coverage at Landa Lake Study Reach in January 2025 during the first low-flow sampling event.

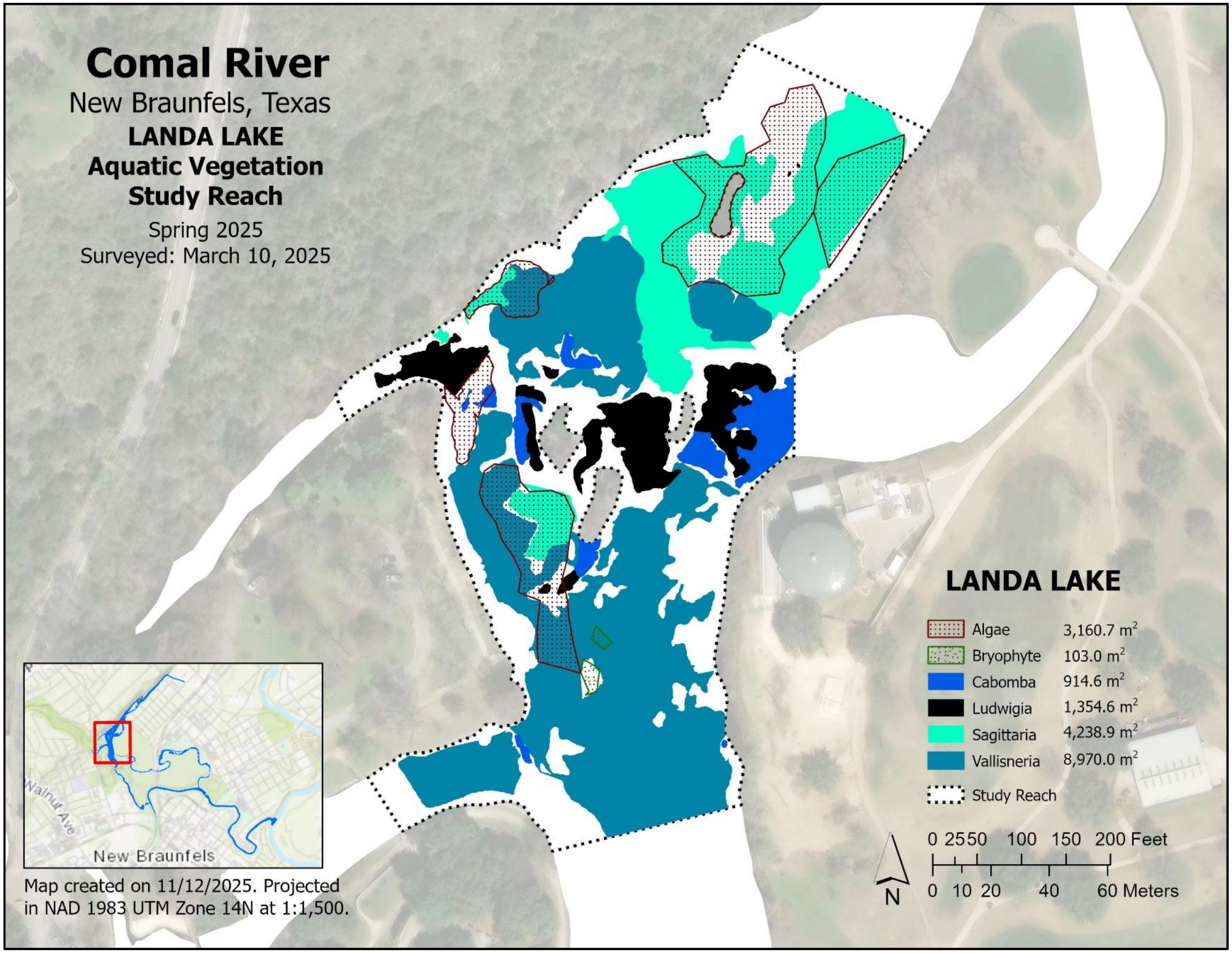

Figure C7. Map of aquatic vegetation coverage at Landa Lake Study Reach in spring 2025.

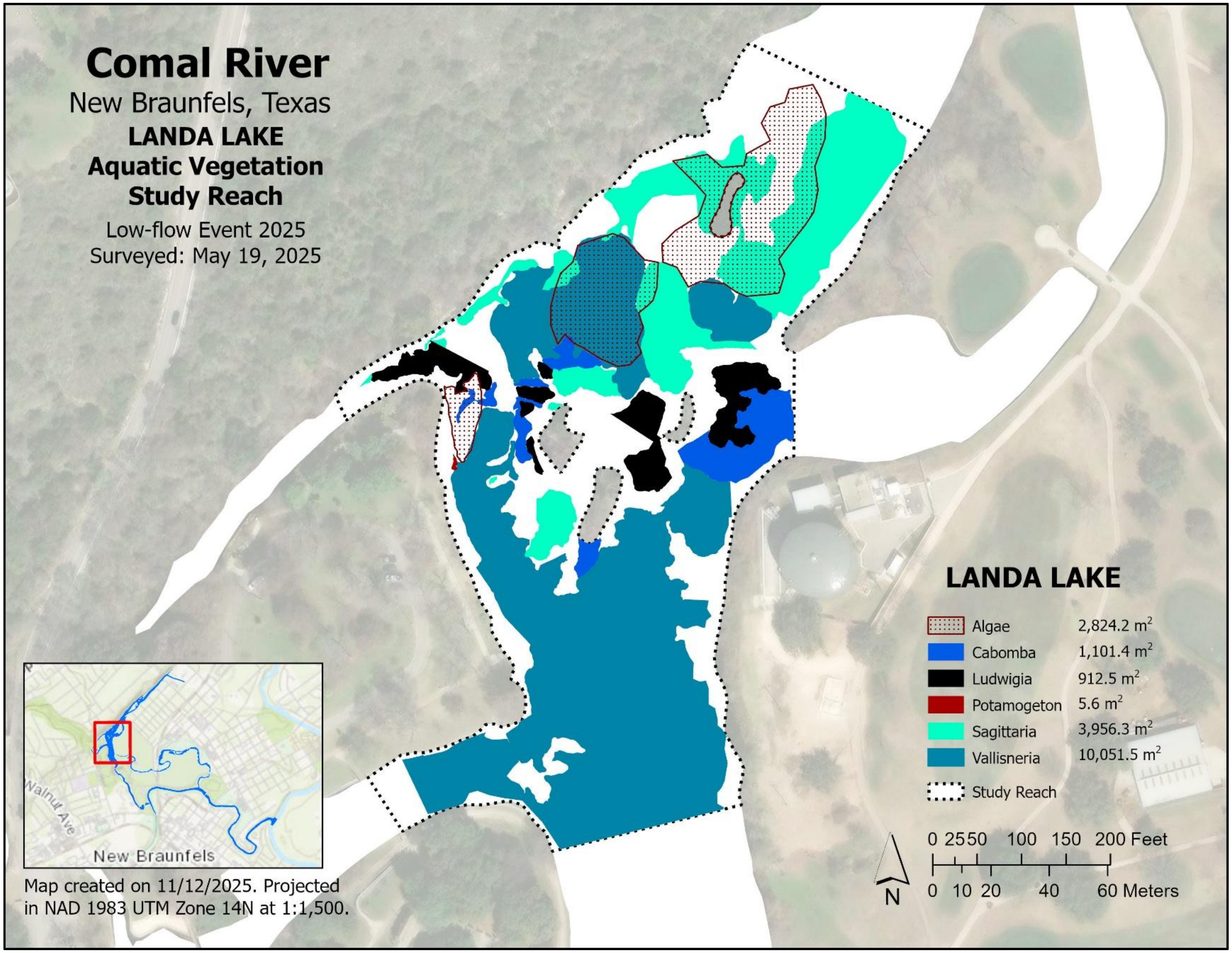

Figure C8. Map of aquatic vegetation coverage at Landa Lake Study Reach in May 2025 during the second low-flow sampling event.

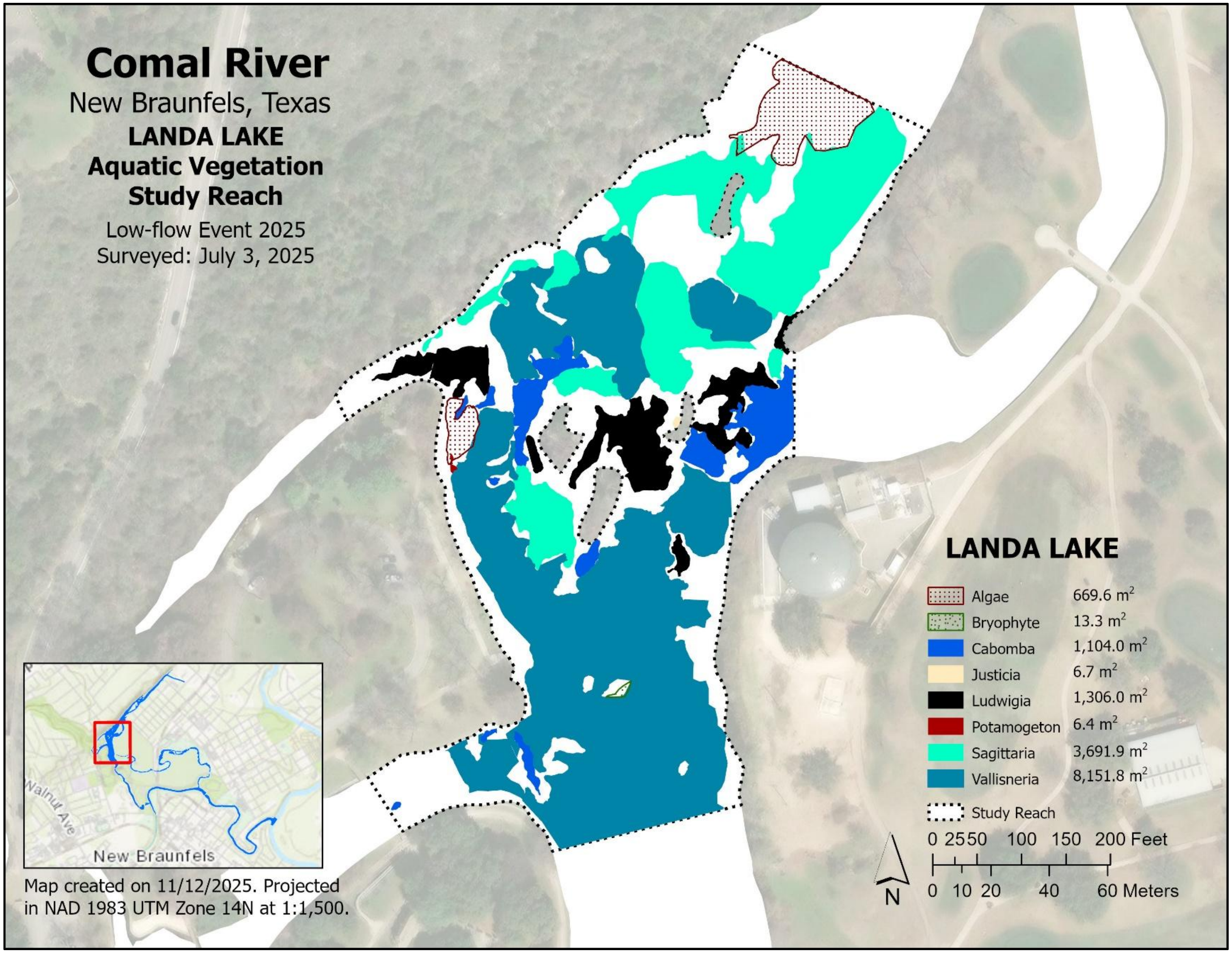

Figure C9. Map of aquatic vegetation coverage at Landa Lake Study Reach in July 2025 during the third low-flow sampling event.

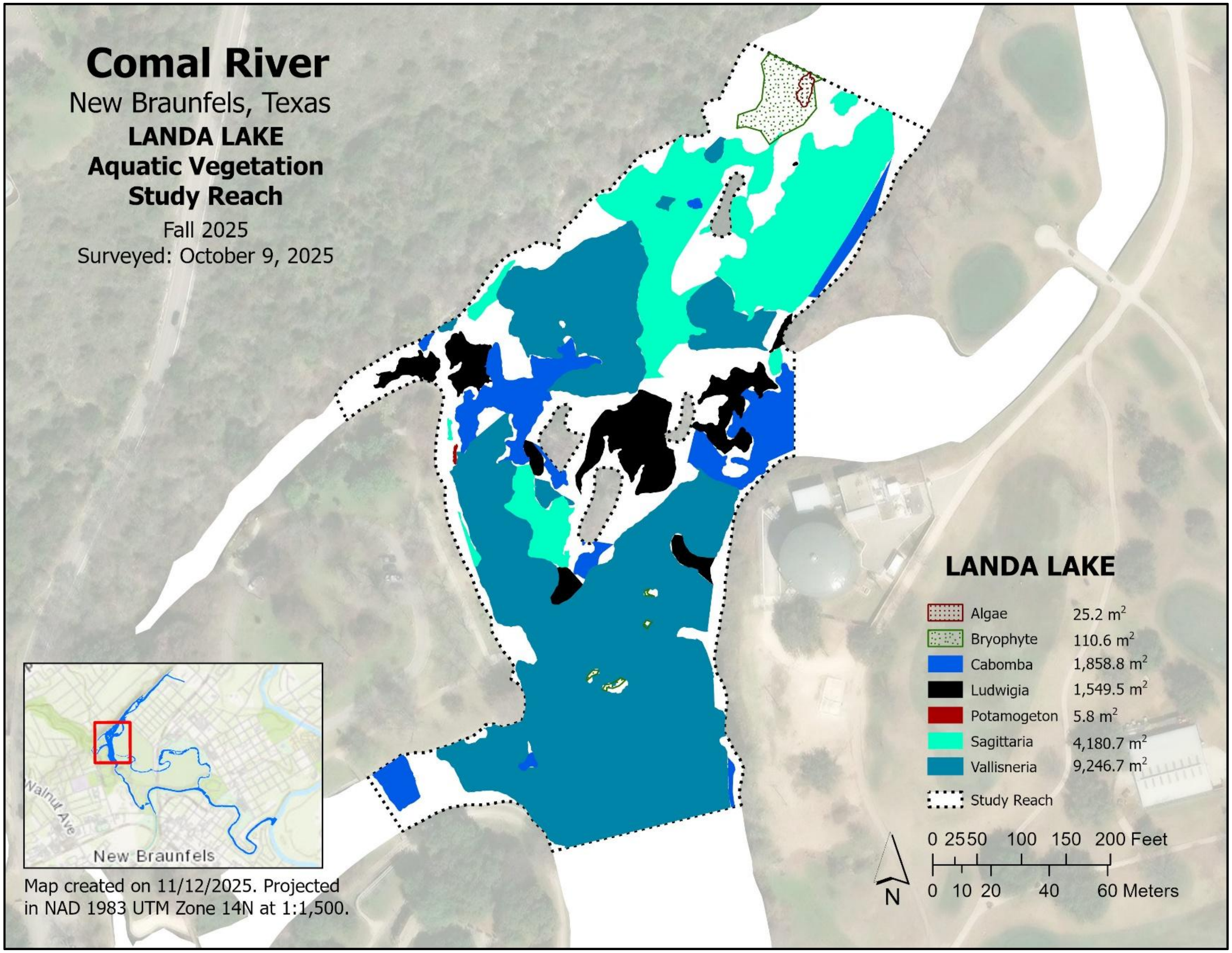

Figure C10. Map of aquatic vegetation coverage at Landa Lake Study Reach in fall 2025.

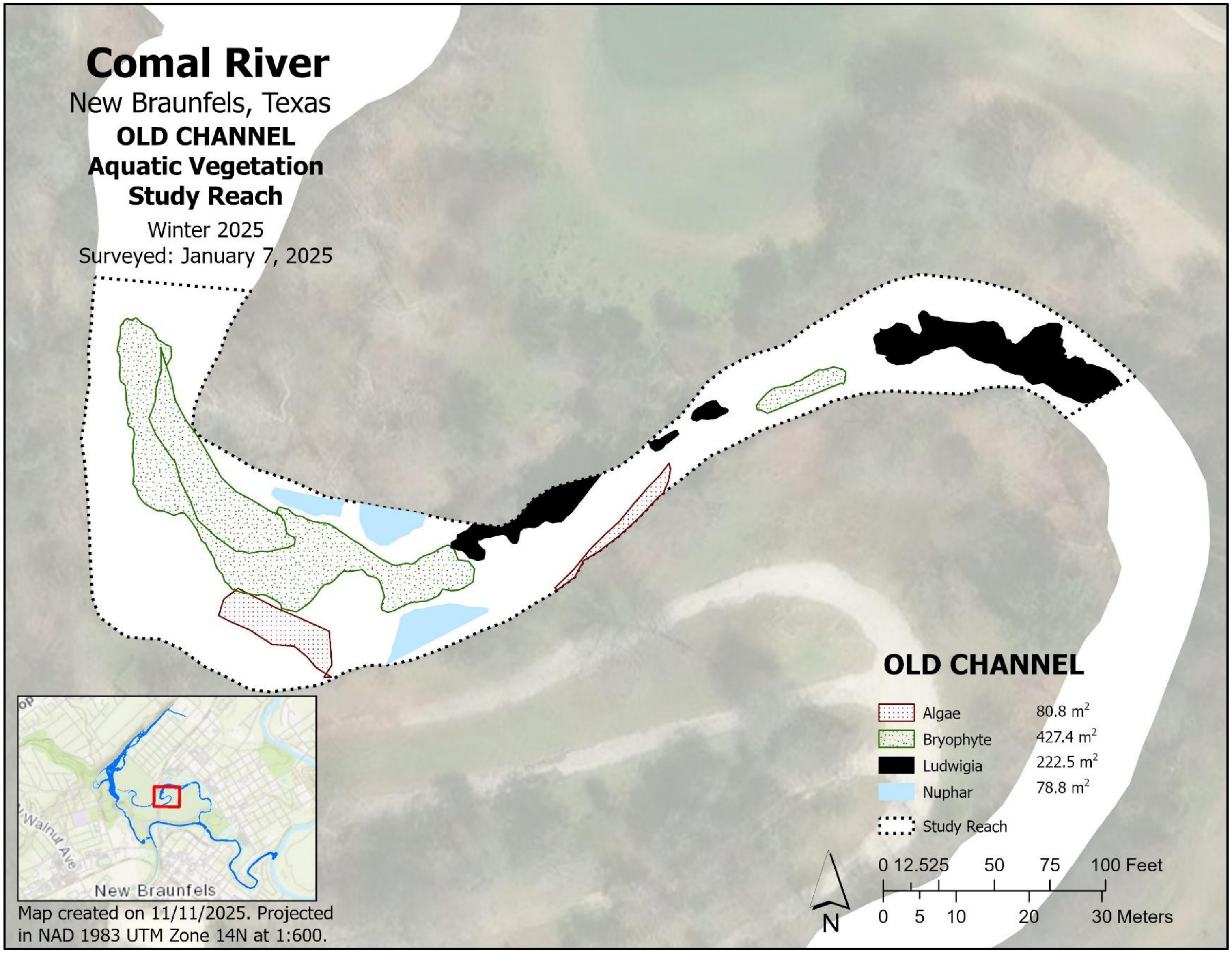

Figure C11. Map of aquatic vegetation coverage at Old Channel Study Reach in January 2025 during the first low-flow sampling event.

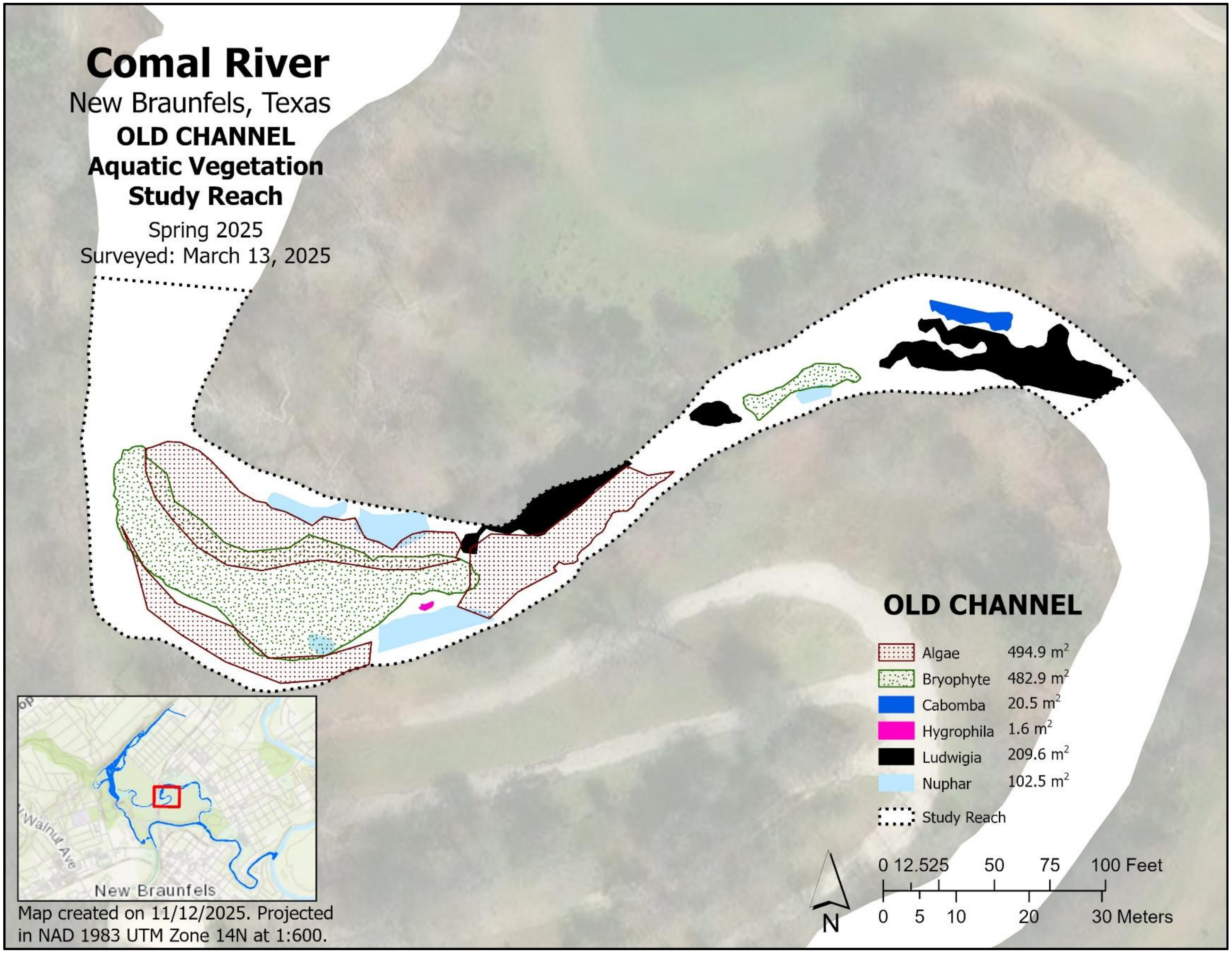

Figure C12. Map of aquatic vegetation coverage at Old Channel Study Reach in spring 2025.

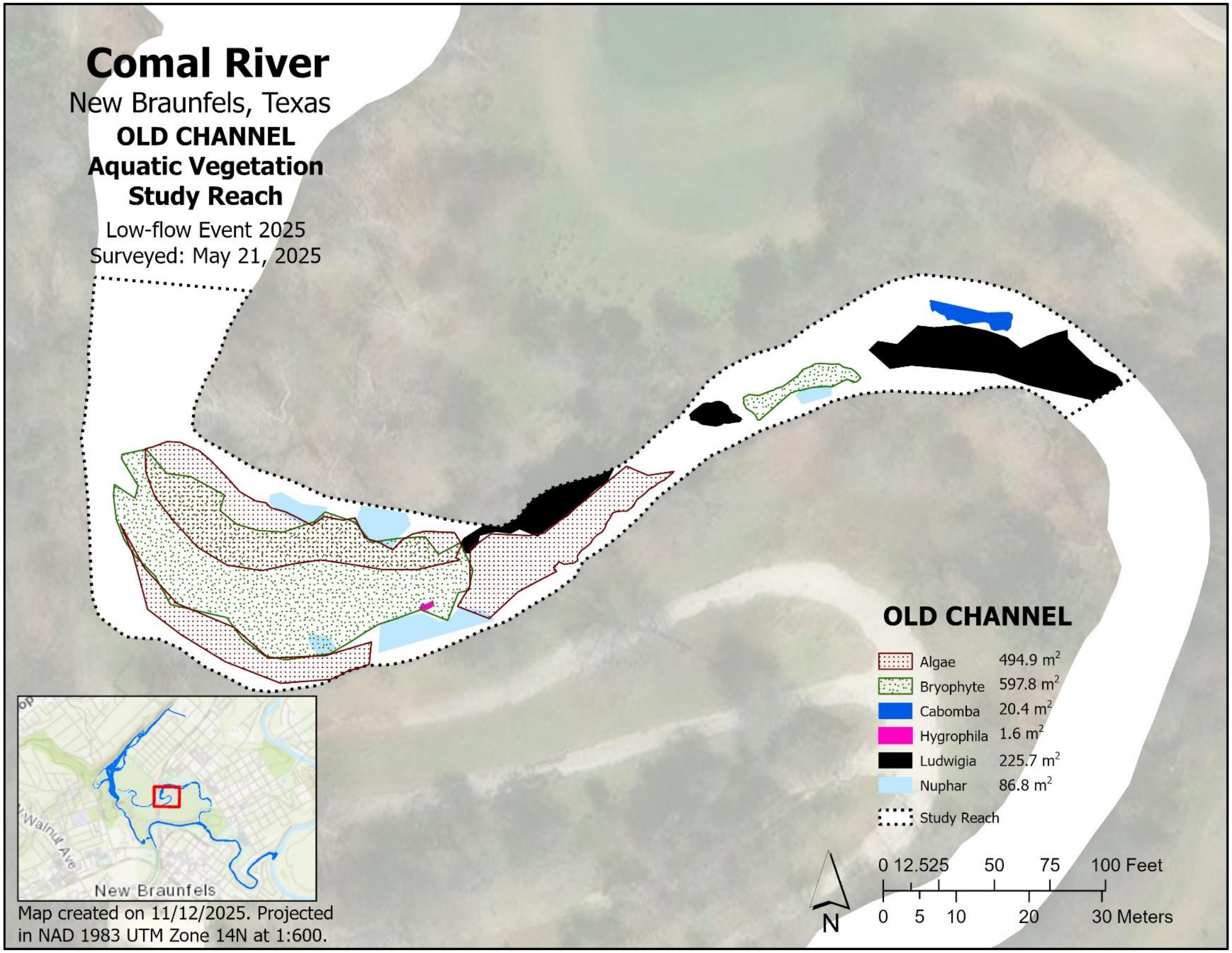

Figure C13. Map of aquatic vegetation coverage at Old Channel Study Reach in May 2025 during the second low-flow sampling event.

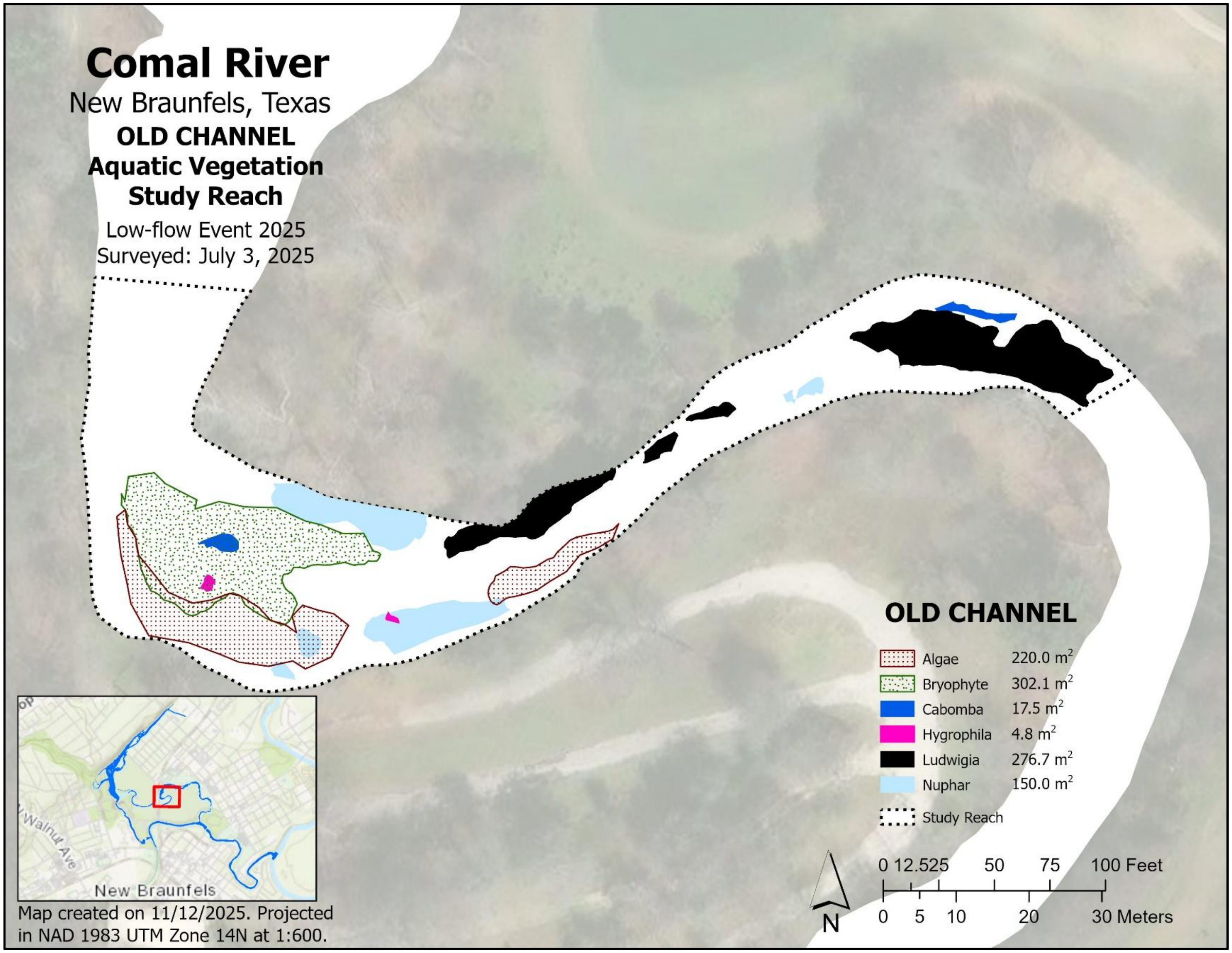

Figure C14. Map of aquatic vegetation coverage at Old Channel Study Reach in July 2025 during the third low-flow sampling event.

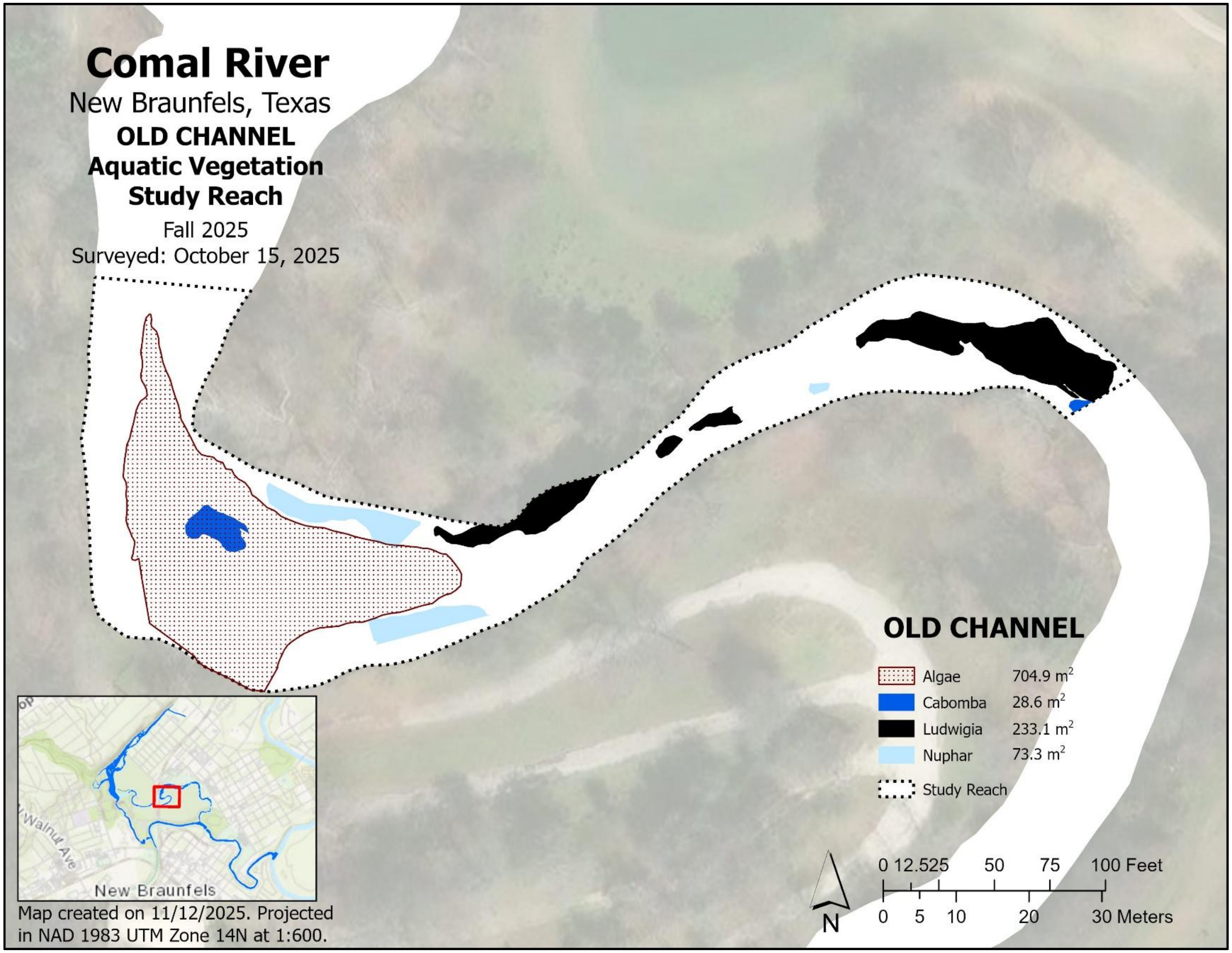

Figure C15. Map of aquatic vegetation coverage at Old Channel Study Reach in fall 2025.

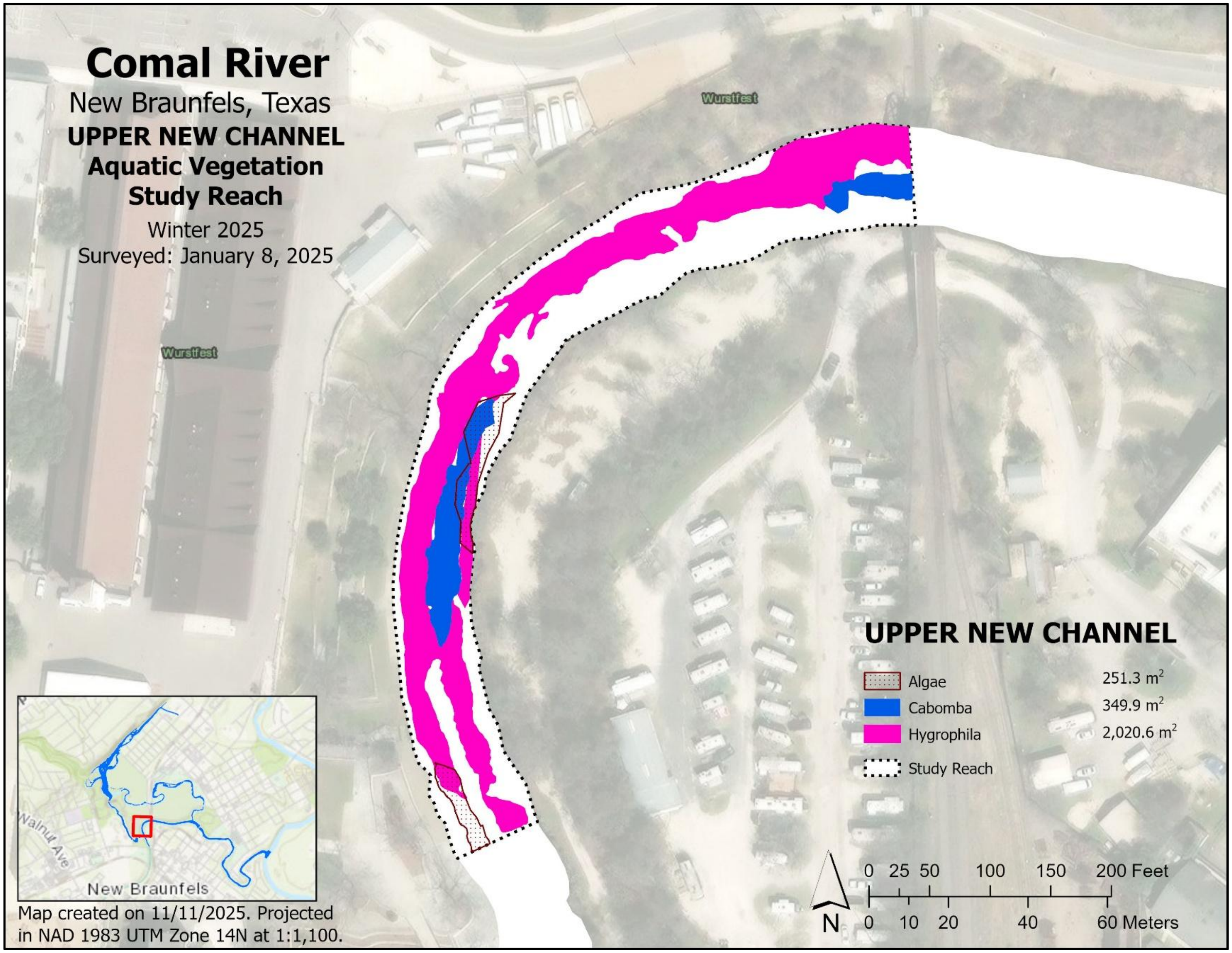

Figure C16. Map of aquatic vegetation coverage at Upper New Channel Study Reach in January 2025 during the first low-flow sampling event.

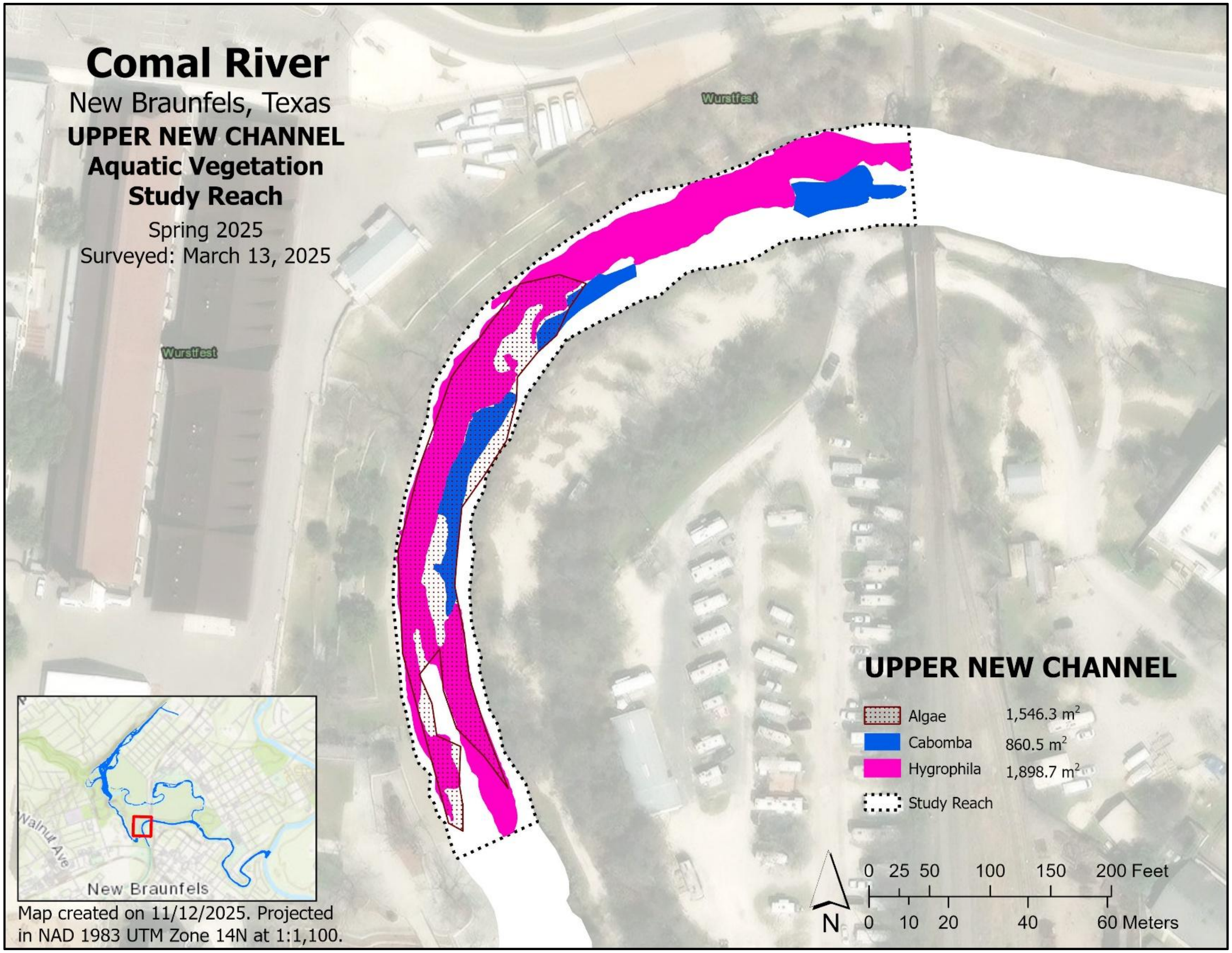

Figure C17. Map of aquatic vegetation coverage at Upper New Channel Study Reach in spring 2025.

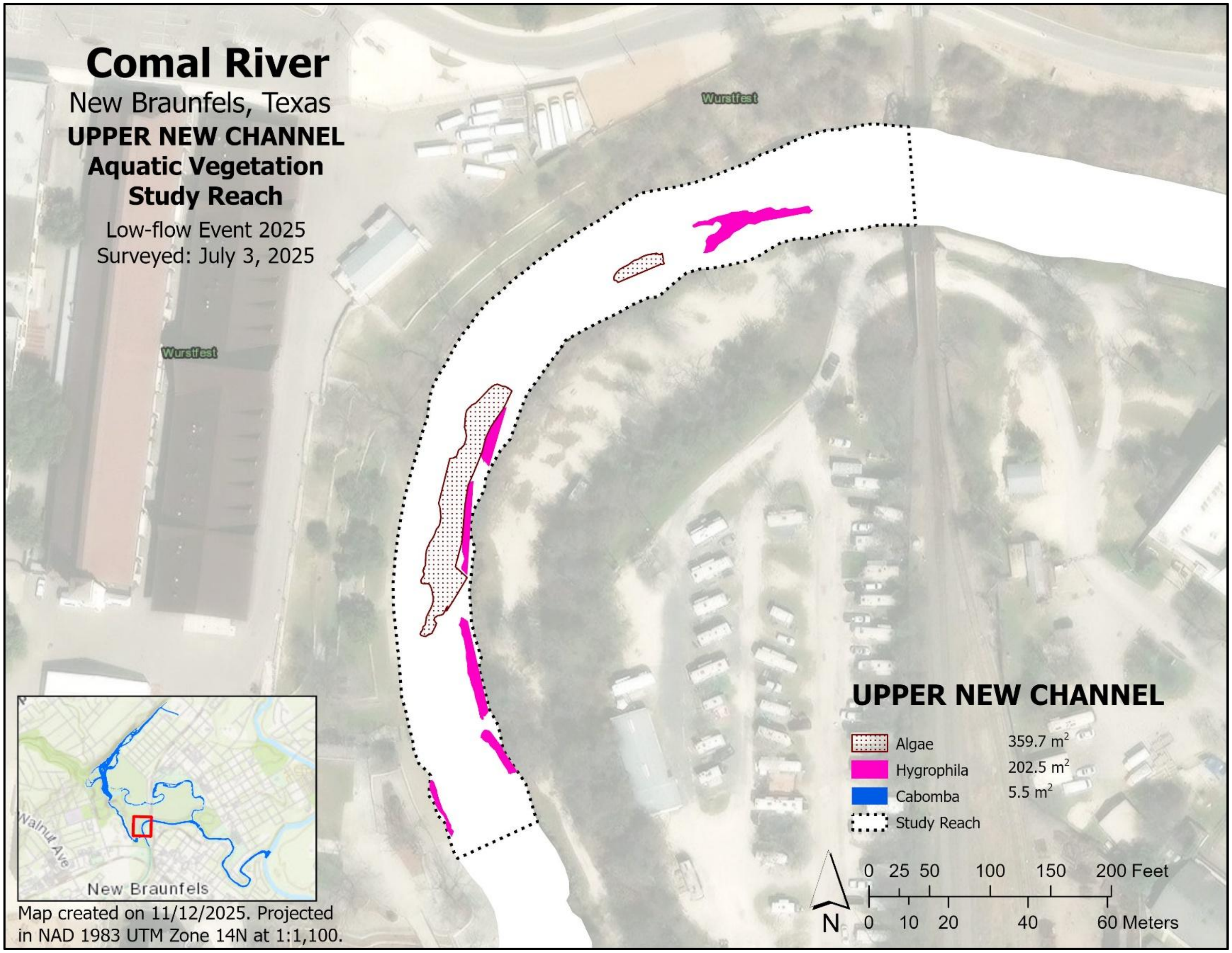

Figure C18. Map of aquatic vegetation coverage at Upper New Channel Study Reach in July 2025 during the third low-flow sampling event.

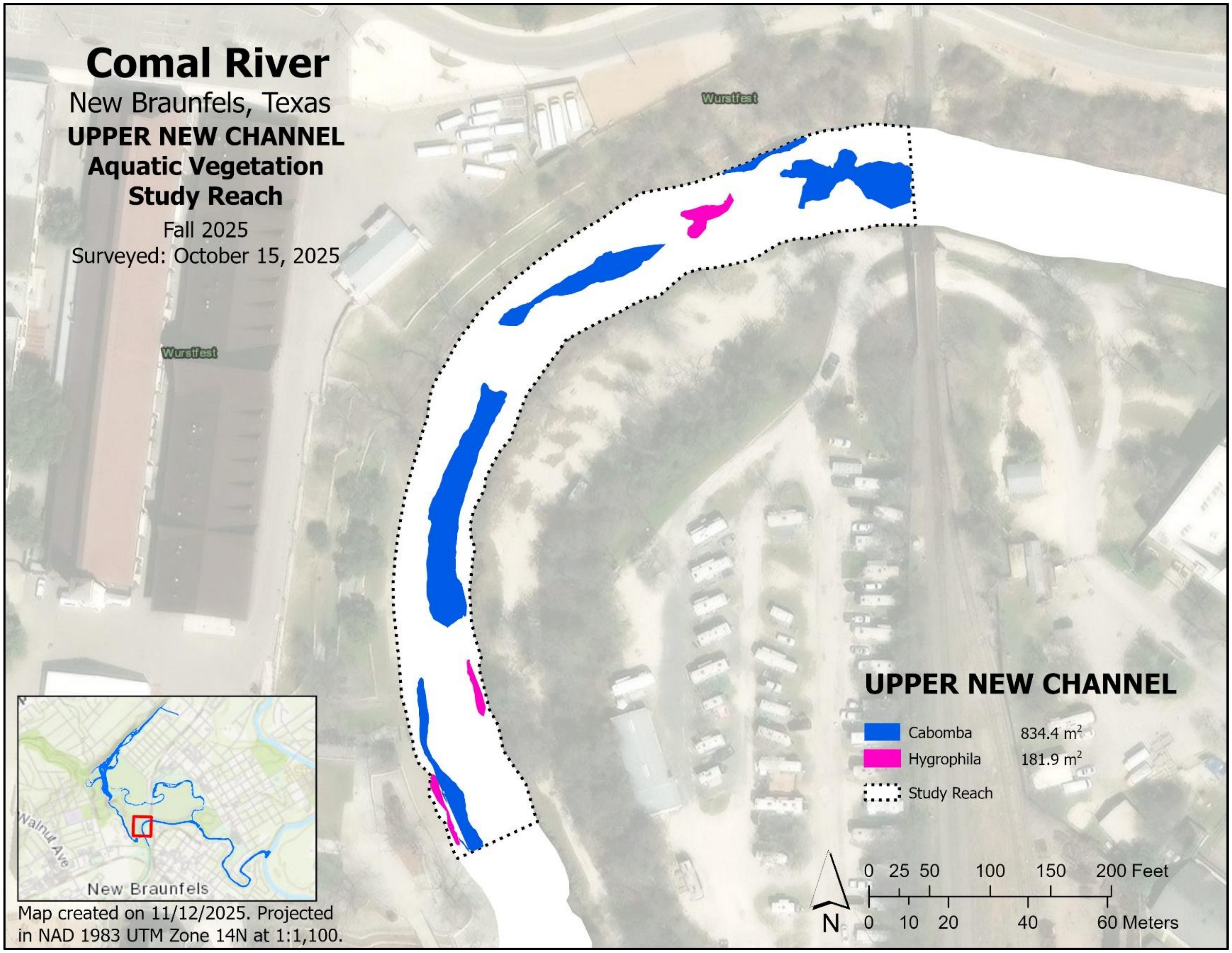

Figure C19. Map of aquatic vegetation coverage at Upper New Channel Study Reach in fall 2025.

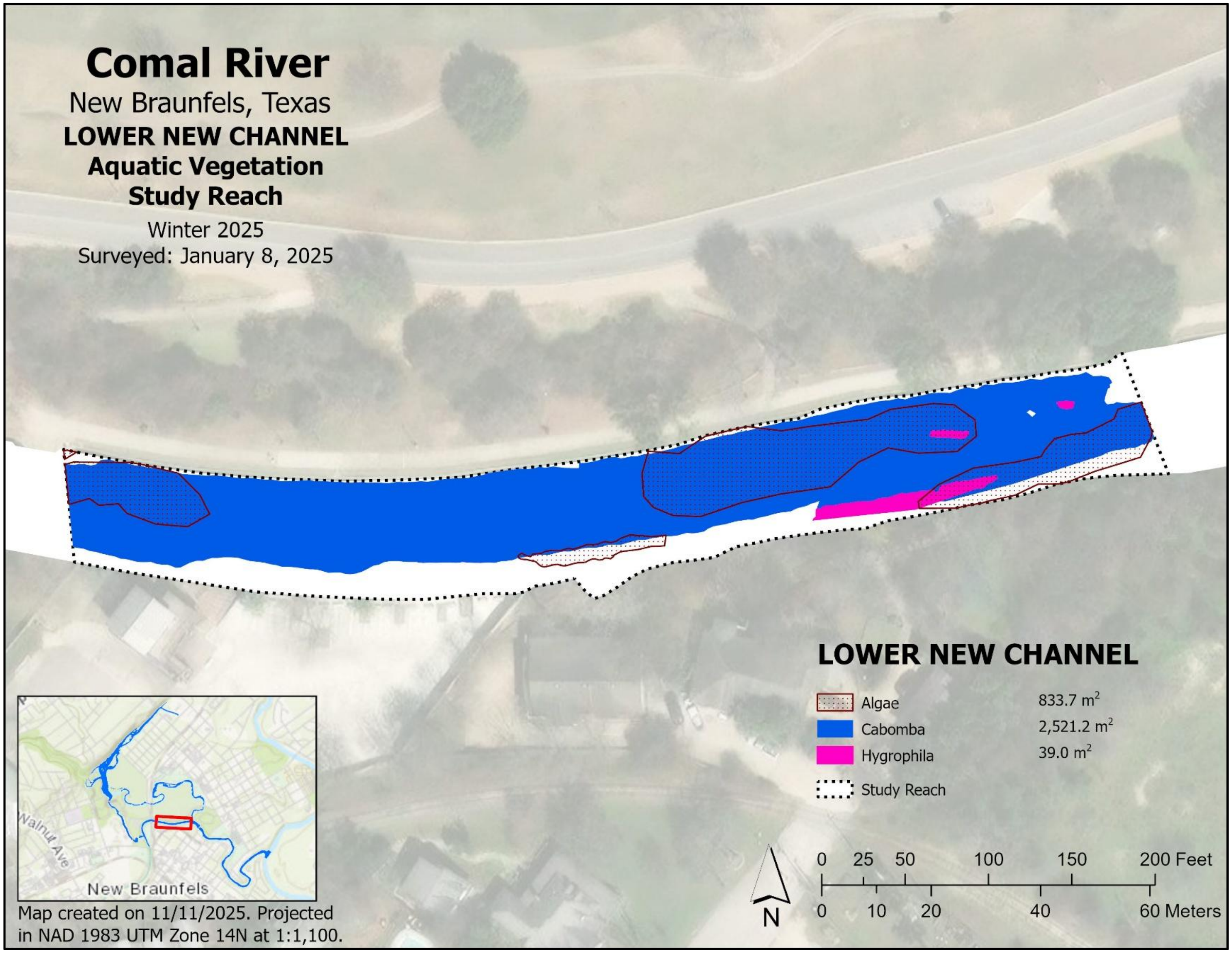

Figure C20. Map of aquatic vegetation coverage at Lower New Channel Study Reach in January 2025 during the first low-flow sampling event.

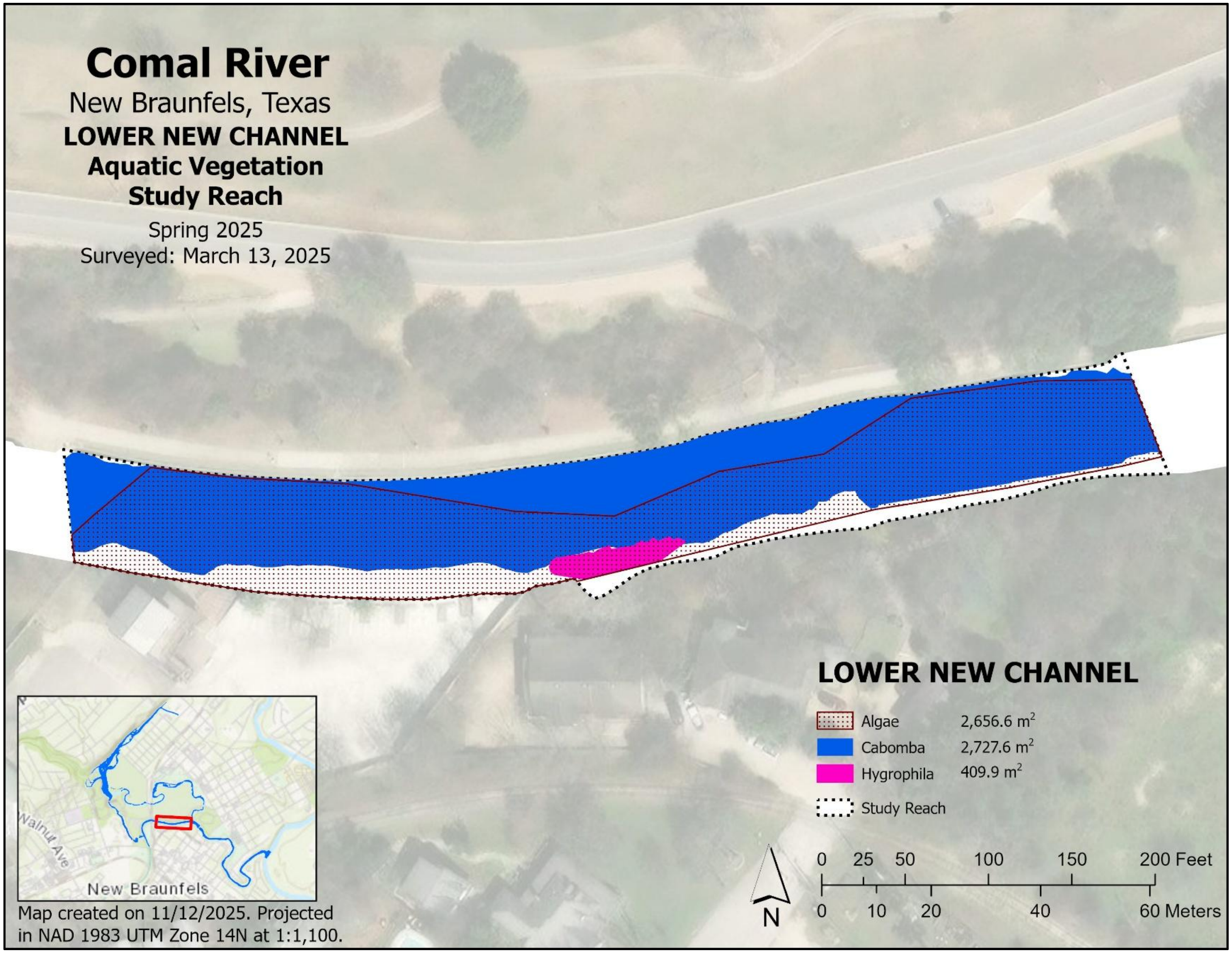

Figure C21. Map of aquatic vegetation coverage at Lower New Channel Study Reach in spring 2025.

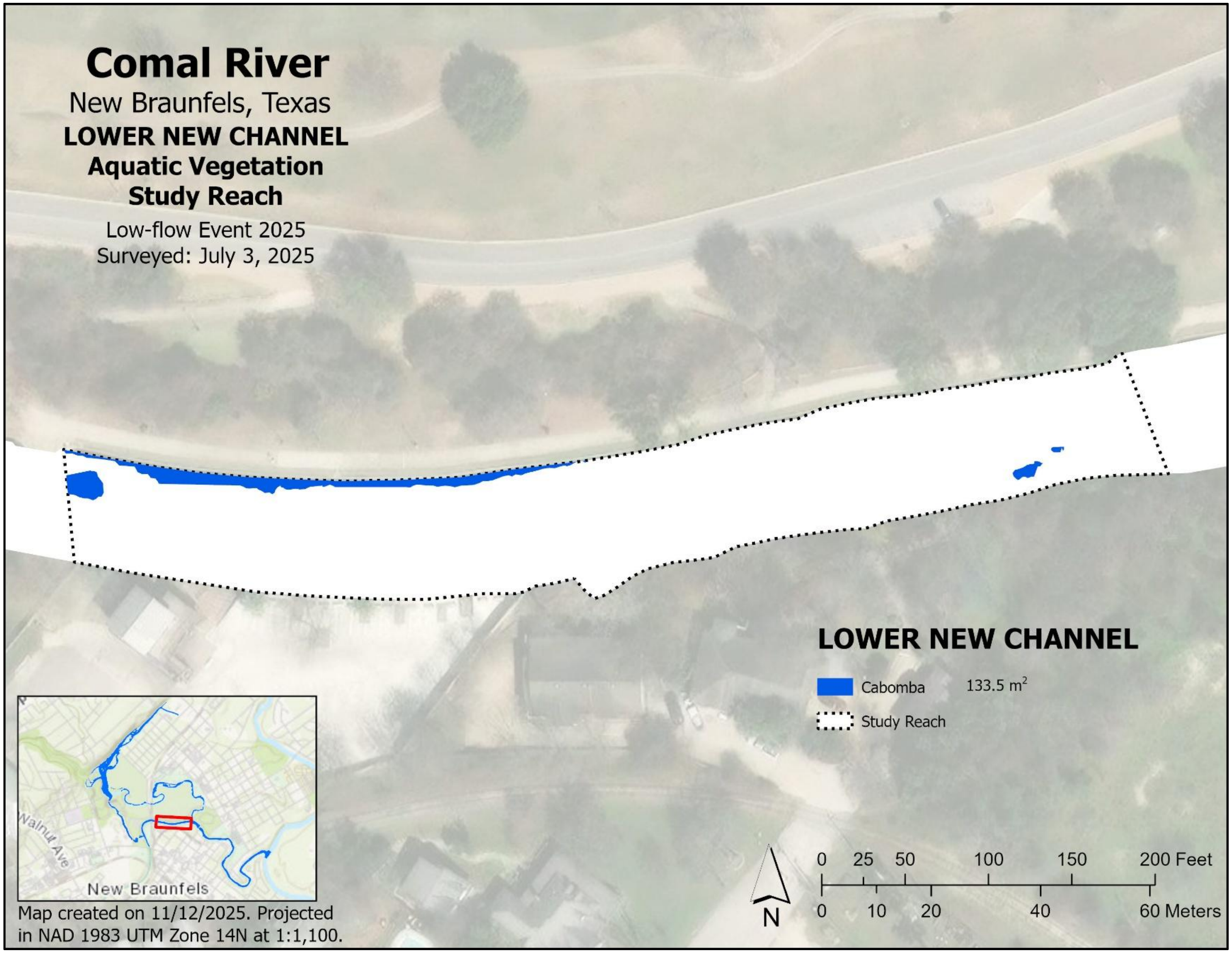

Figure C22. Map of aquatic vegetation coverage at Lower New Channel Study Reach in July 2025 during the third low-flow sampling event.

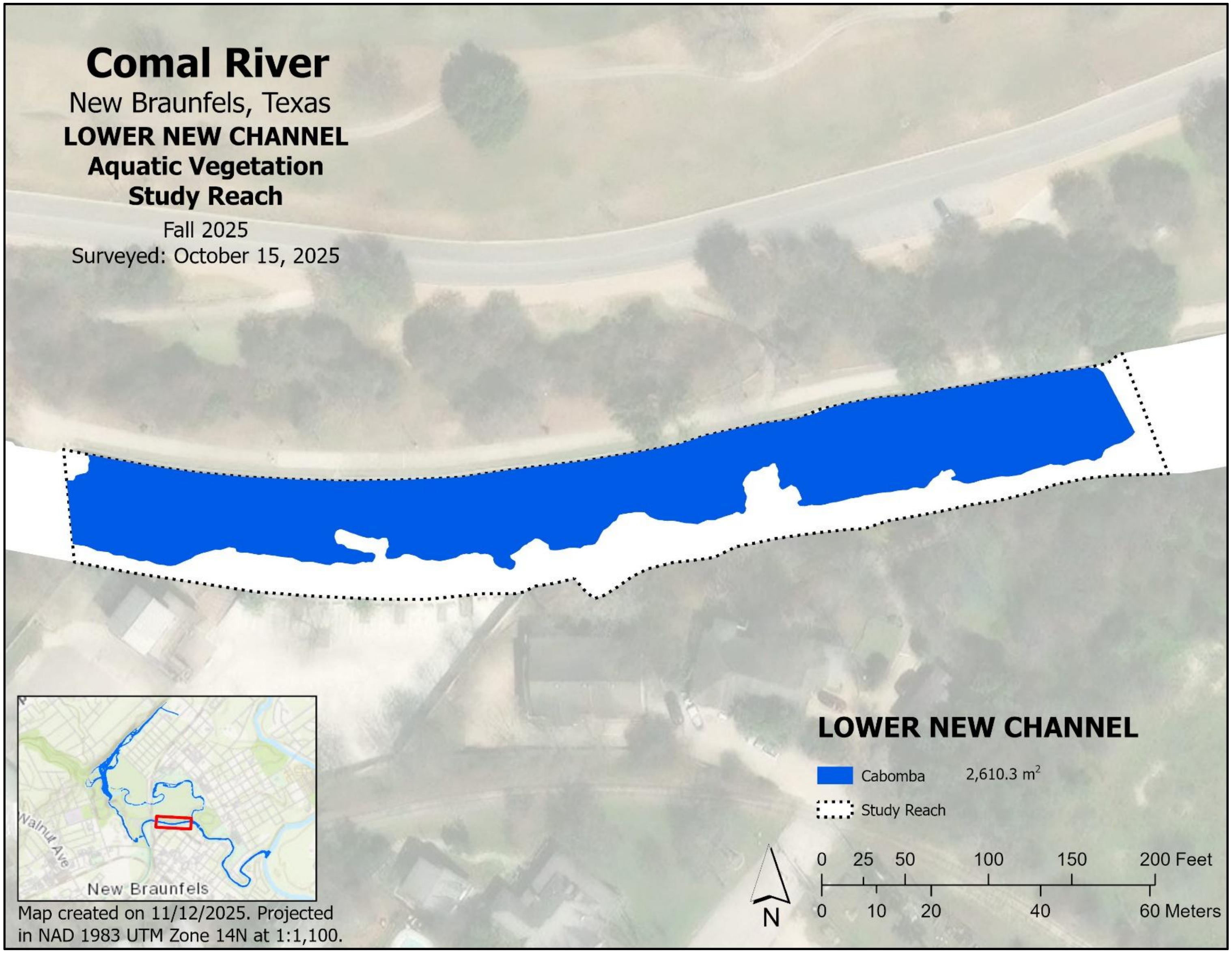

Figure C23. Map of aquatic vegetation coverage at Lower New Channel Study Reach in fall 2025.

APPENDIX D: TEXAS MASTER NATURALIST MONITORING RESULTS

Site locations are shown in Figure 2 of the report and are listed from upstream (Houston Street) to downstream (Union Avenue). Water quality data collected by Master Naturalist volunteers in 2025 were similar to previous years. CO_2 concentrations were highest at sites near springs, such as the Houston Street (Upper Spring Run Reach) and Gazebo (Landa Lake/Spring Run 3) sample sites (Figure D1). Also continuing with past trends, pH measurements increased with increased distance from the springs (Figure D2). The inverse relationship between CO_2 and pH is directly related to greater concentrations of carbonic acid in spring waters. As CO_2 concentrations decline going downstream, pH rises in the system. In 2025, pH values at all sites except Houston Street were lower than during the previous five years, though not by a substantial margin, and not beyond previous historical averages (Figure D2). Within sites, year-to-year variation was relatively limited in both pH and CO2 concentrations.

To compare recreational use at the various sites, weekly counts of recreation users collected by the Texas Master Naturalist volunteers were converted to monthly averages and plotted over a long-term survey period (Figures D3–D7). In 2025, the New Channel continued to be the most recreated area in the system. Union Avenue had the second highest amount of recreation, though at much lower values than those observed at the New Channel site. As in previous years, recreational use at Elizabeth Street (Old Channel) was low because this site is not located within a city park or advertised for recreational use (Figures D3–D7).

The New Channel site has received the most recreation pressure throughout the Texas Master Naturalist monitoring (2006–2025). The peak of recreational use is typically during the summer months of June through September (Figure D6). During these warmer months, the New Channel site becomes a popular destination for tubers and others seeking relief from the heat in the cooler spring-fed water. However, in 2025, levels at these peak times were lower than in the past (Figure D6). A decrease in recreational activity might have been due to the lower flows in the system which remained below the long-term median throughout 2025. Additionally, two large flood events occurred during the peak recreational use on June 12^{th} and July 4^{th} which likely contributed to less recreational activity. There was a brief decrease in activity during the lockdowns associated with the COVID-19 pandemic in early 2020; however, activity at the New Channel site has since returned to levels similar to historical trends. Much like the New Channel site, recreation pressure at the Union Avenue site can also be substantial during summer because this is a take-out site for many tubers floating the river (Figure D7).

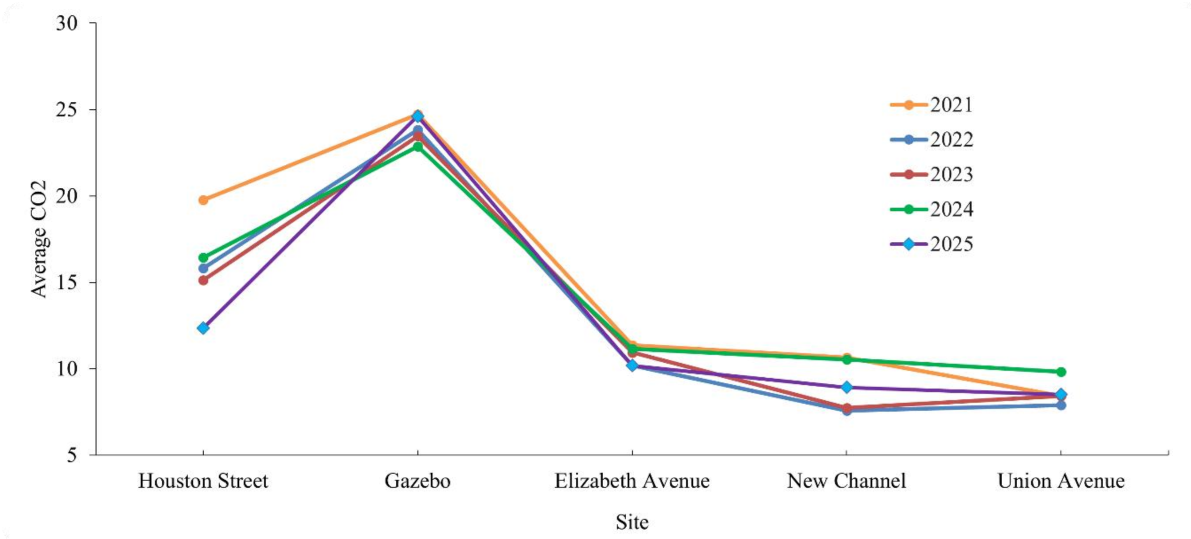

Figure D1. **Annual average dissolved carbon dioxide (CO_2) concentrations at five sites on the Comal River system (2021–2025).**

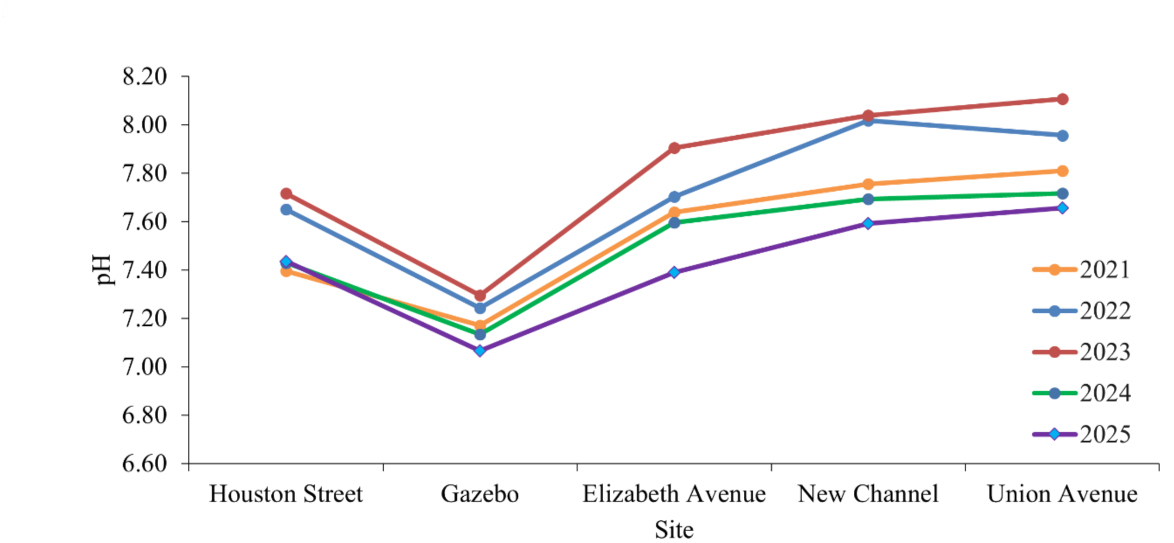

Figure D2. **Annual average pH values at five sites on the Comal River system (2021–2025).**

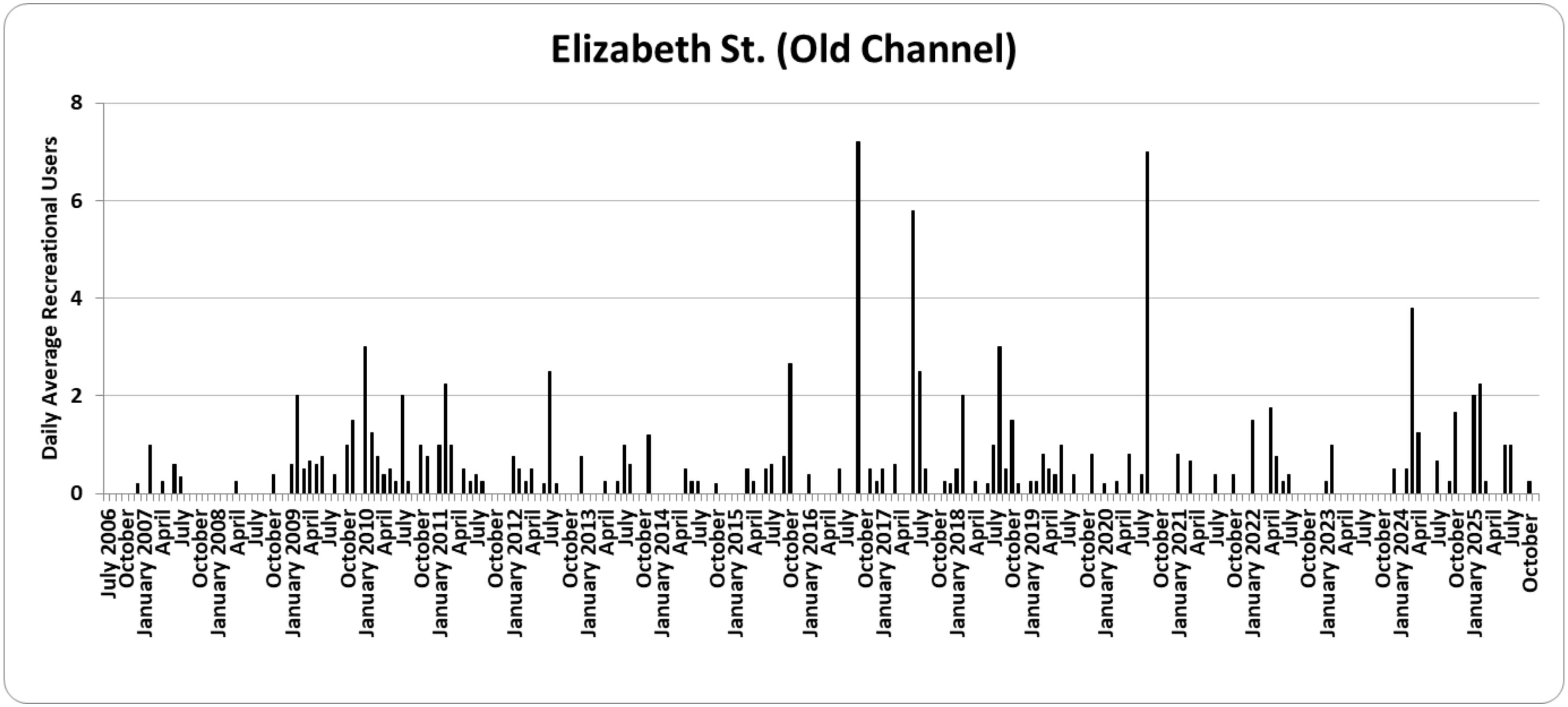

Figure D3. **Average daily recreational user counts at the Elizabeth Avenue site (2006–2025).**

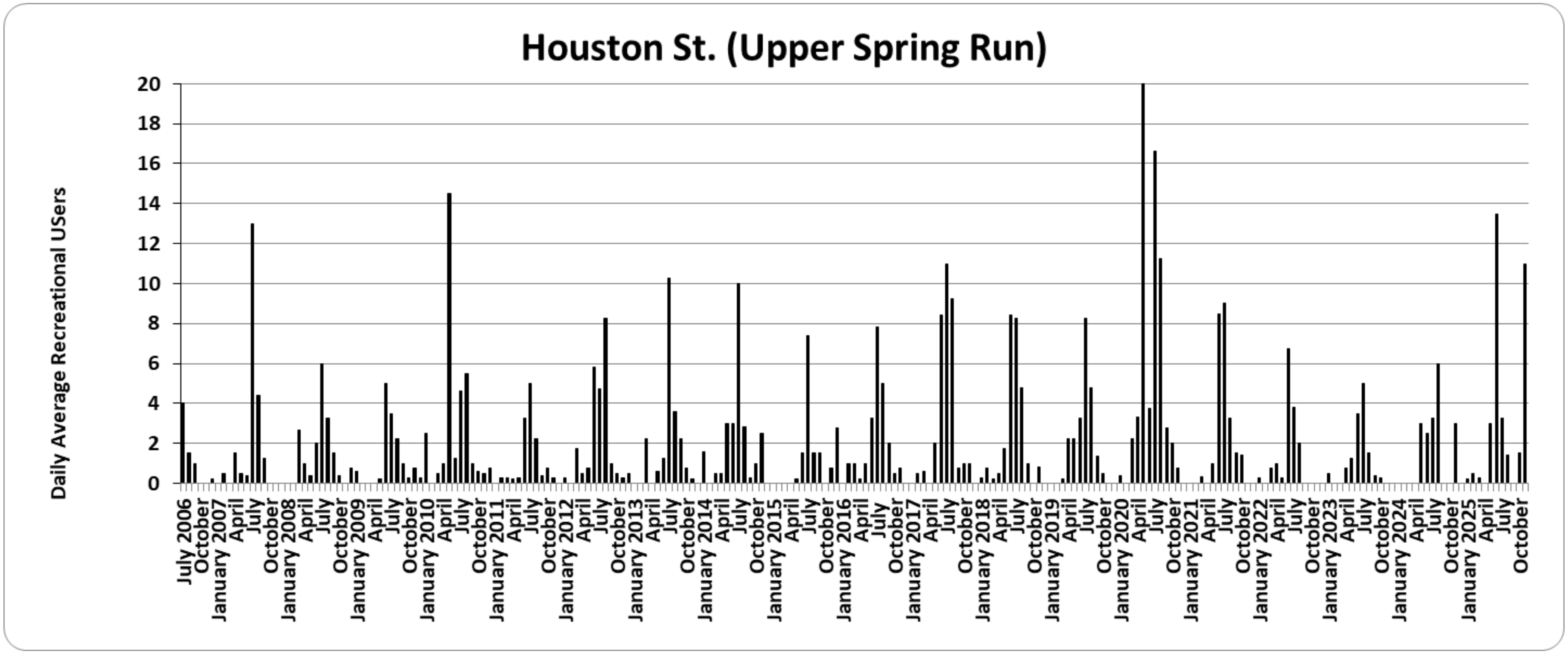

Figure D4. **Average daily recreational user counts at the Upper Spring Run site (2006–2025).**

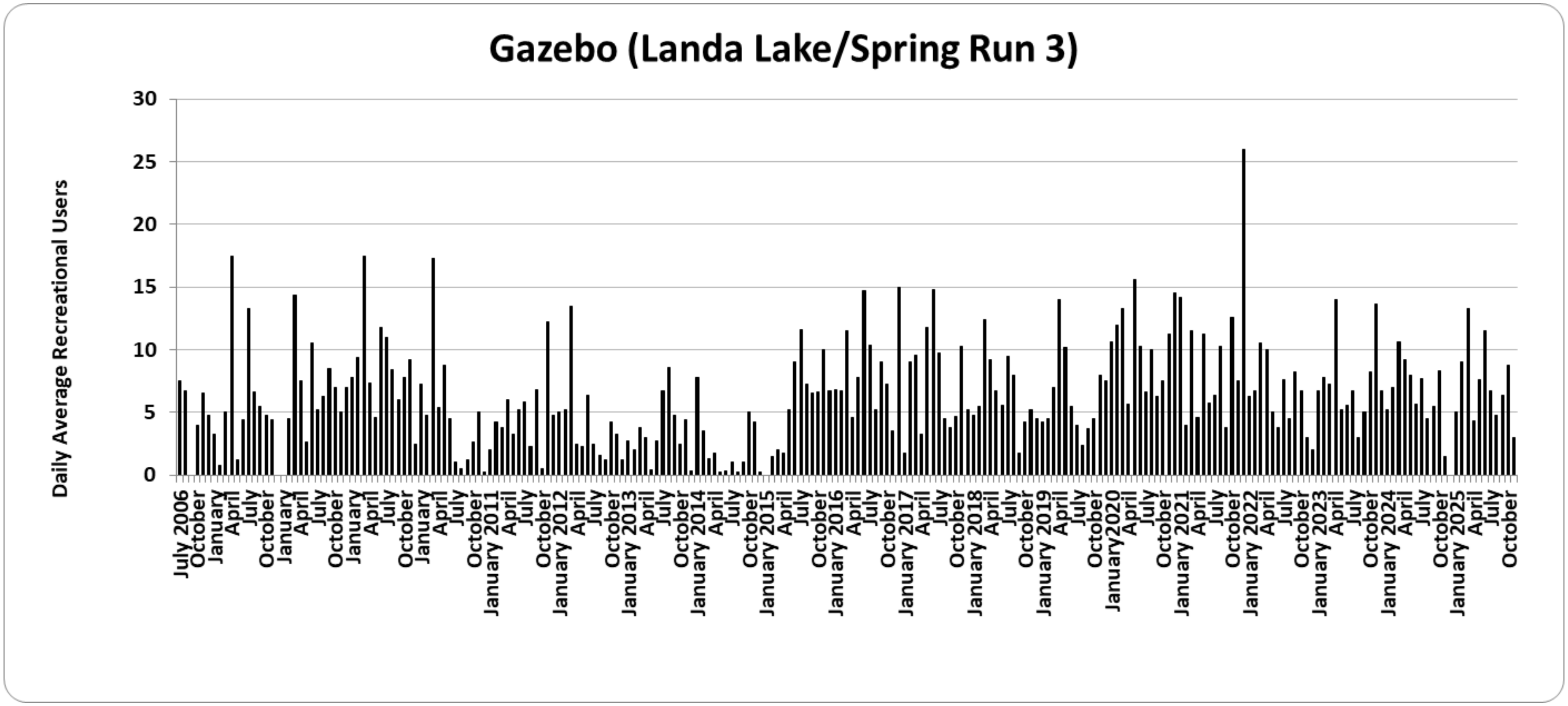

Figure D5. **Average daily user counts at the Landa Lake Park Gazebo site (2006–2025).**

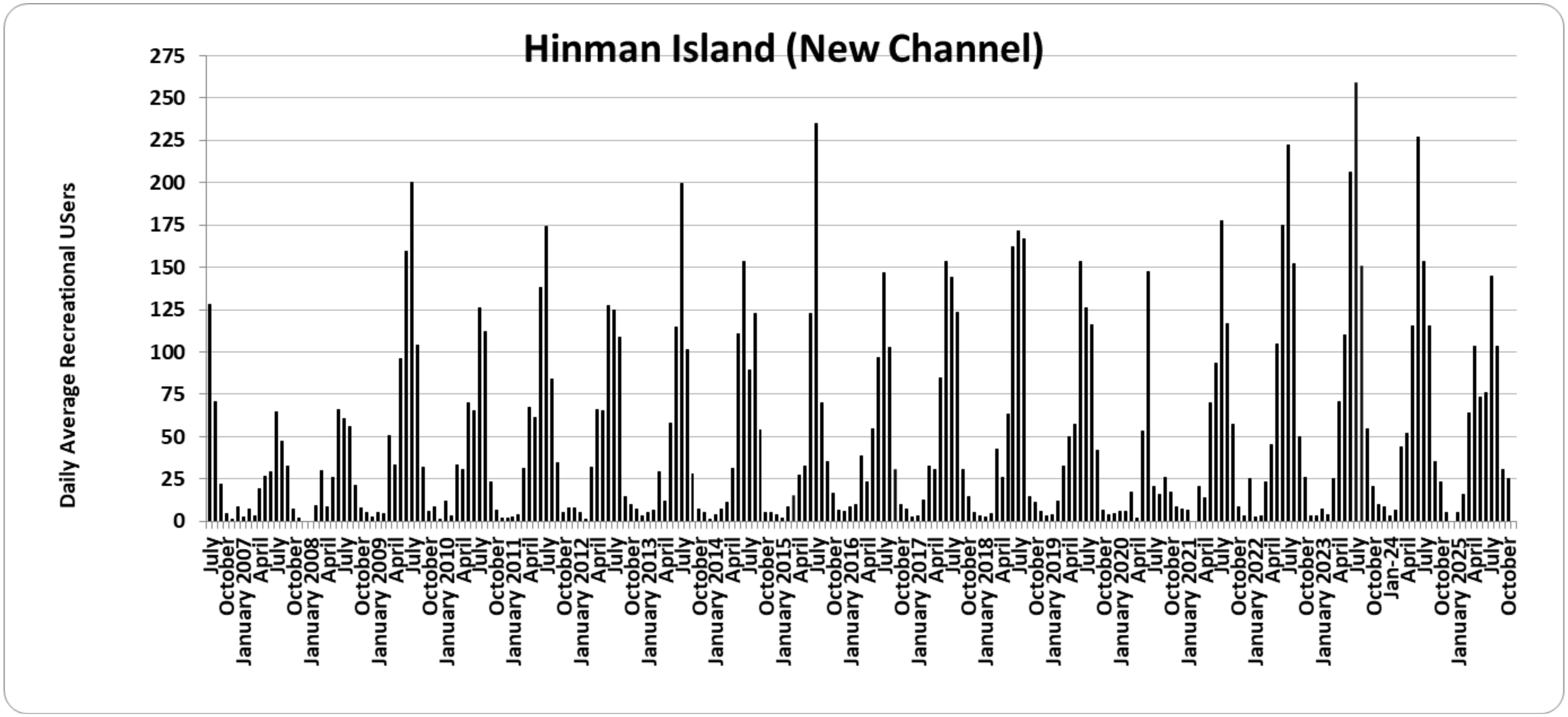

Figure D6. **Average daily user counts at the New Channel site (2006-2025).**

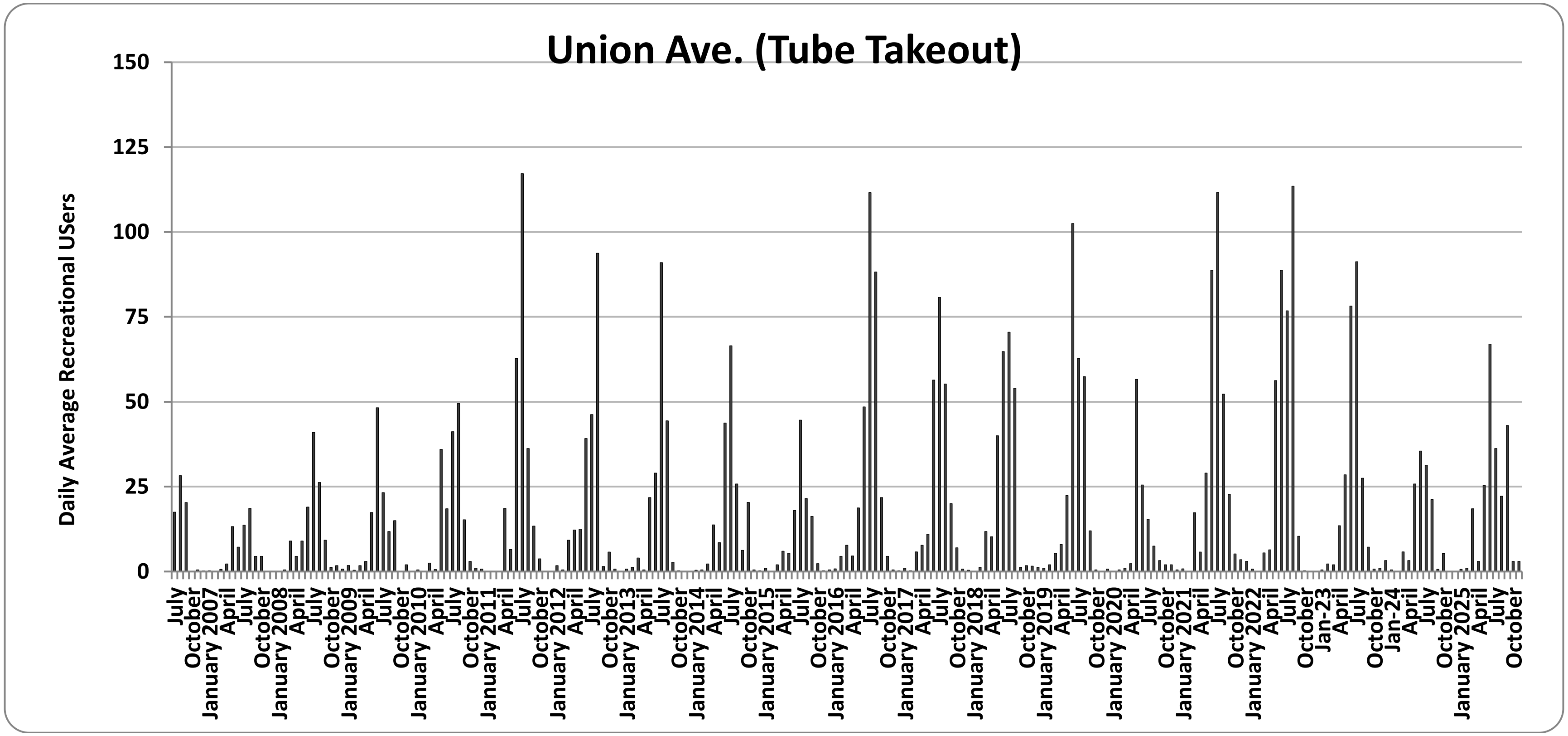

Figure D7. **Average daily recreational user counts at the Union Avenue site (2006–2025).**

APPENDIX E: TABLES AND FIGURES

TABLES

Fish Assemblage Results:
Drop-Net and Fish Community Sampling

Table E1. **Overall number (#) and percent relative abundance (%) of fishes collected from the three long-term biological goals study reaches during drop-net sampling in 2025.**

TAXA	UPPER SPRING RUN		LANDA LAKE		OLD CHANNEL		NEW CHANNEL	
	#	%	#	%	#	%	#	%
Leuciscidae								
Dionda nigrotaeniata	32	7.22	20	1.26	0	0.00	26	4.47
Characidae								
*Astyanax argentatus**	116	26.19	49	3.09	6	1.02	48	8.25
Ictaluridae								
Ameiurus natalis	1	0.23	6	0.38	1	0.17	0	0.00
Poeciliidae								
Gambusia sp.	24	5.42	161	10.16	3	0.51	122	20.96
Poecilia latipinna	0	0.00	27	1.70	0	0.00	41	7.04
Centrarchidae								
Lepomis aquilensis	0	0.00	0	0.00	0	0.00	1	0.17
Lepomis auritus	1	0.23	0	0.00	1	0.17	0	0.00
Lepomis cyanellus	0	0.00	0	0.00	0	0.00	5	0.86
Lepomis gulosus	0	0.00	0	0.00	0	0.00	10	1.72
Lepomis macrochirus	14	3.16	0	0.00	0	0.00	0	0.00
Lepomis miniatus	114	25.73	98	6.19	27	4.59	71	12.20
Lepomis sp.	29	6.55	30	1.89	4	0.68	37	6.36
Micropterus salmoides	8	1.81	13	0.82	2	0.34	3	0.52
Percidae								
Etheostoma fonticola	87	19.64	1162	73.36	369	62.76	179	30.76
Etheostoma lepidum	3	0.68	0	0.00	0	0.00	0	0.00
Cichlidae								
*Herichthys cyanoguttatus**	14	3.16	10	0.63	175	29.76	36	6.19
*Oreochromis aureus**	0	0.00	8	0.51	0	0.00	3	0.52
Total	**443**		**1584**		**588**		**582**	

Asterisks (*) denotes introduced species

Table E2. Overall number (#) and percent relative abundance (%) of fishes collected during fish community sampling in 2025.

TAXA	UPPER SPRING RUN		LANDA LAKE		OLD CHANNEL		NEW CHANNEL	
	#	%	#	%	#	%	#	%
Leuciscidae								
Cyprinella venusta	0	0.0	0	0.0	2	0.2	0	0.0
Dionda nigrotaeniata	470	33.8	1,036	40.5	83	8.3	425	25.6
Notropis amabilis	0	0.0	0	0.0	52	5.2	36	2.2
Paranotropis volucellus	0	0.0	0	0.0	74	7.4	60	3.6
Characidae								
*Astyanax argentatus**	77	5.5	717	28.1	382	38.0	324	19.5
Ictaluridae								
Ictalurus punctatus	0	0.0	0	0.0	0	0.0	2	0.1
Loricariidae								
Loricariidae sp.	0	0.0	0	0.0	4	0.4	1	0.1
Fundulidae								
Fundulus notatus	0	0.0	0	0.0	0	0.0	7	0.4
Poeciliidae								
Gambusia affinis	63	4.5	0	0.0	27	2.7	128	7.7
Gambusia geiseri	14	1.0	0	0.0	12	1.2	110	6.6
Gambusia sp.	93	6.7	225	8.8	81	8.1	0	0.0
*Poecilia latipinna**	1	0.1	18	0.7	0	0.0	79	4.8
Centrarchidae								
*Amboplites rupestris**	0	0.0	0	0.0	0	0.0	1	0.1
*Lepomis auritus**	43	3.1	28	1.1	60	6.0	90	5.4
Lepomis cyanellus	0	0.0	0	0.0	0	0.0	1	0.1
Lepomis gulosus	0	0.0	0	0.0	0	0.0	1	0.1
Lepomis macrochirus	2	0.1	0	0.0	0	0.0	0	0.0
Lepomis aquilensis	0	0.0	2	0.1	3	0.3	5	0.3
Lepomis microlophus	0	0.0	0	0.0	0	0.0	1	0.1
Lepomis miniatus	50	3.6	8	0.3	16	1.6	66	4.0
Lepomis sp.	21	1.5	0	0.0	12	1.2	25	1.5
Micropterus salmoides	94	6.8	118	4.6	29	2.9	33	2.0
Percidae								
Etheostoma fonticola	263	18.9	299	11.7	70	7.0	170	10.2
Etheostoma lepidum	115	8.3	15	0.6	8	0.8	23	1.4
Etheostoma sp.	52	3.7	79	3.1	13	1.3	17	1.0
Cichlidae								
*Herichthyes cyanoguttatus**	34	2.4	4	0.2	75	7.5	57	3.4
Oreochromis aureus	0	0.0	7	0.3	2	0.2	1	0.1
Total	**1,392**		**2,556**		**1,005**		**1,663**	

Asterisks (*) denote introduced species.

Table E3. **Total numbers of stygobitic and endangered species collected at each site (24 hours per event) during spring and fall 2025. Federally endangered species are designated with (E). A = adults; L = larvae.**

TAXA	RUN 1	RUN 3	UPWELLING	TOTAL
Crustaceans				
Amphipoda				
Crangonyctidae				
Stygobromus pecki (E)			1	1
Stygobromus russelli	1		3	4
Stygobromus bifurcatus				0
Stygobromus flagellatus				0
Stygobromus spp.		10	48	58
All *Stygobromus*	1	10	52	63
Hadziidae				
Mexiweckelia hardeni	0	0	0	0
Sebidae				
Seborgia relicta			8	8
Bogidiellidae				
Artesia subterranea				0
Parabogidiella americana				0
Ingolfiellidae				
Ingolfiella n. sp				0
Isopoda				
Asellidae				
Lirceolus spp.	0	44	3	47
Cirolanidae				
Cirolanides texensis			0	0
Cirolanides wassenichae				0
Microceberidae				
Texicerberus sp.				0
Ostracoda				
Candonidae				
Cavernocypris sp.				0
Comalcandona tressleri	3	34	16	53
Comalcandona gibsoni	3	1		4
Rugosuscandona scharfi				0
Lacromacanadona sp.?		1	1	2
Ufocandona hannaleeae				0
Thermosbaenacea				
Monodellidae				
Tethysbaena texana				0
Bathynellacea				

Parabathynellidae				
Texanobathynella bowmani				0
Bathynellidae				
Hobbsinella edwardensis				0
<u>Turbellaria</u>				
Kenkiidae				
Sphalloplana mohri				0
<u>Mollusca</u>				
Gastropda				
Cochliopidae				
Phreatodrobia conica		1		1
Phreatodrobia micra				0
Phreatodrobia nugax	1	1		2
Phreatodrobia plana				0
Phreatodrobia rotunda				0
Phreatodrobia spica				0
Vitropyrgus lillianae	1	6		7
<u>Annelids</u>				
Lumbriculata				
Lumbriculidae				
Eremidrilus sp.			1	1
Haplotaxis sp.				0
<u>Arachnids</u>				
Hydrachnoidea				
Hydryphantidae				
Almuerzothyas comalensis	2	1		3
<u>Insects</u>				
Coleoptera				
Dytiscidae				
Comaldessus stygius				0
Haideoporus texanus				0
Dryopidae				
Stygoparnus comalensis (E)				0
Elmidae				
Heterelmis comalensis (E)	1	5		6

FIGURES

Springflow: M9 Measurements

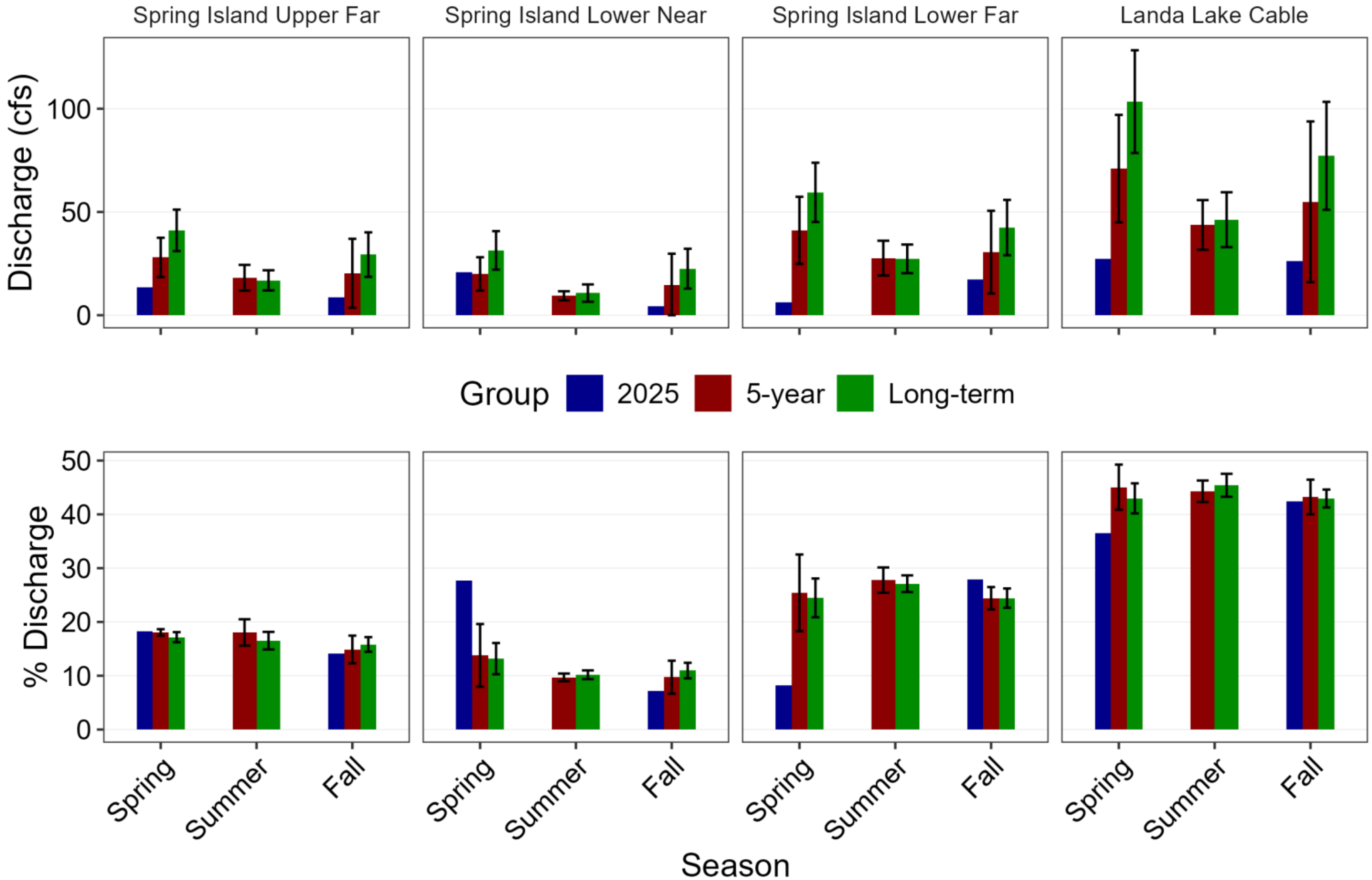

Figure E1. **Current (blue bars), five-year (2021–2025; red bars), and long-term (2014–2025; green bars) discharge and percent total discharge based on spring and fall M9 measurements in the Comal Springs/River. Five-year and long-term values are represented as means and error bars denote 95% confidence intervals.**

Aquatic Vegetation

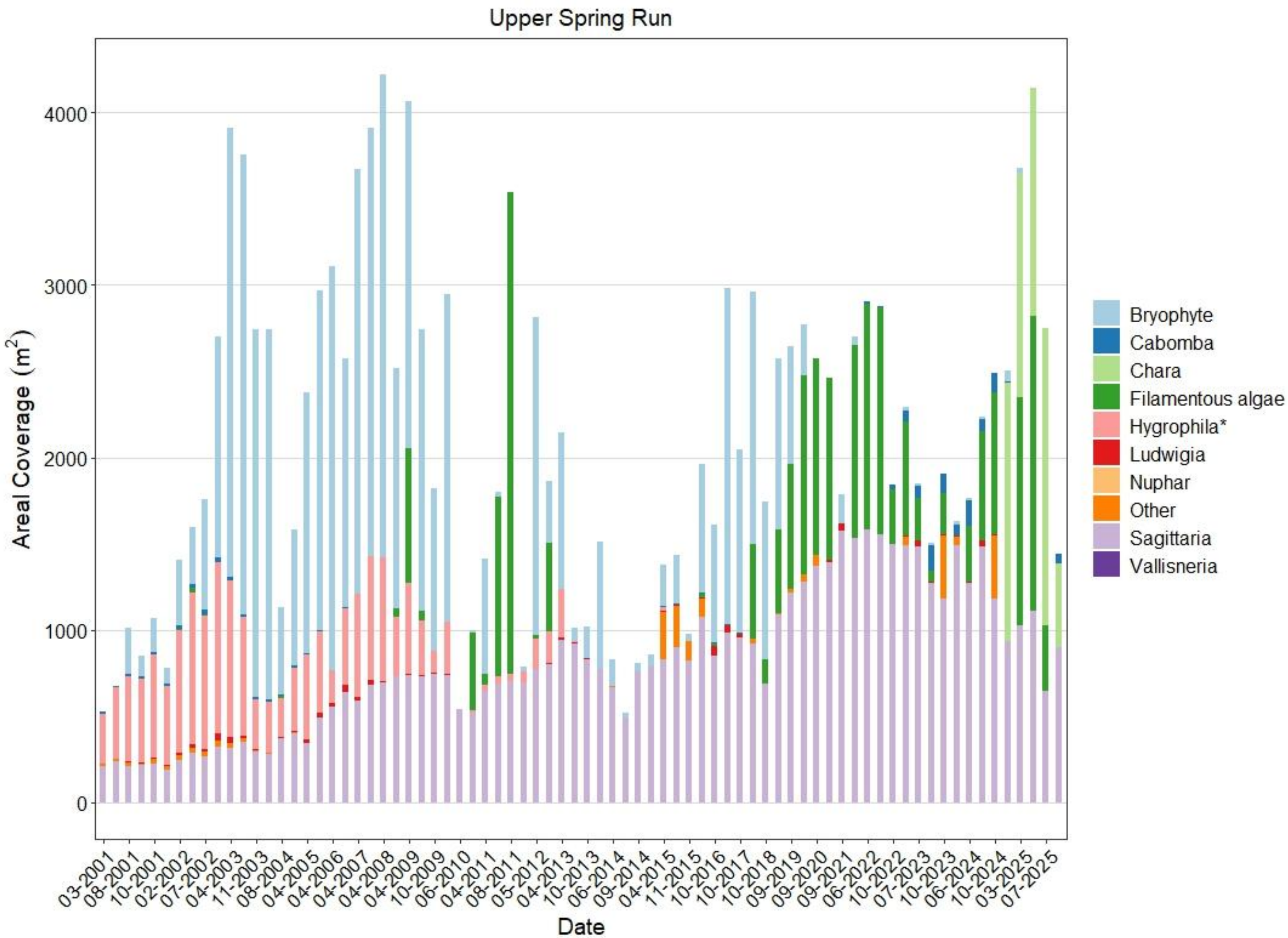

Figure E2. **Aquatic vegetation composition (m^2) among select taxa from 2001–2025 at the Upper Spring Run.**

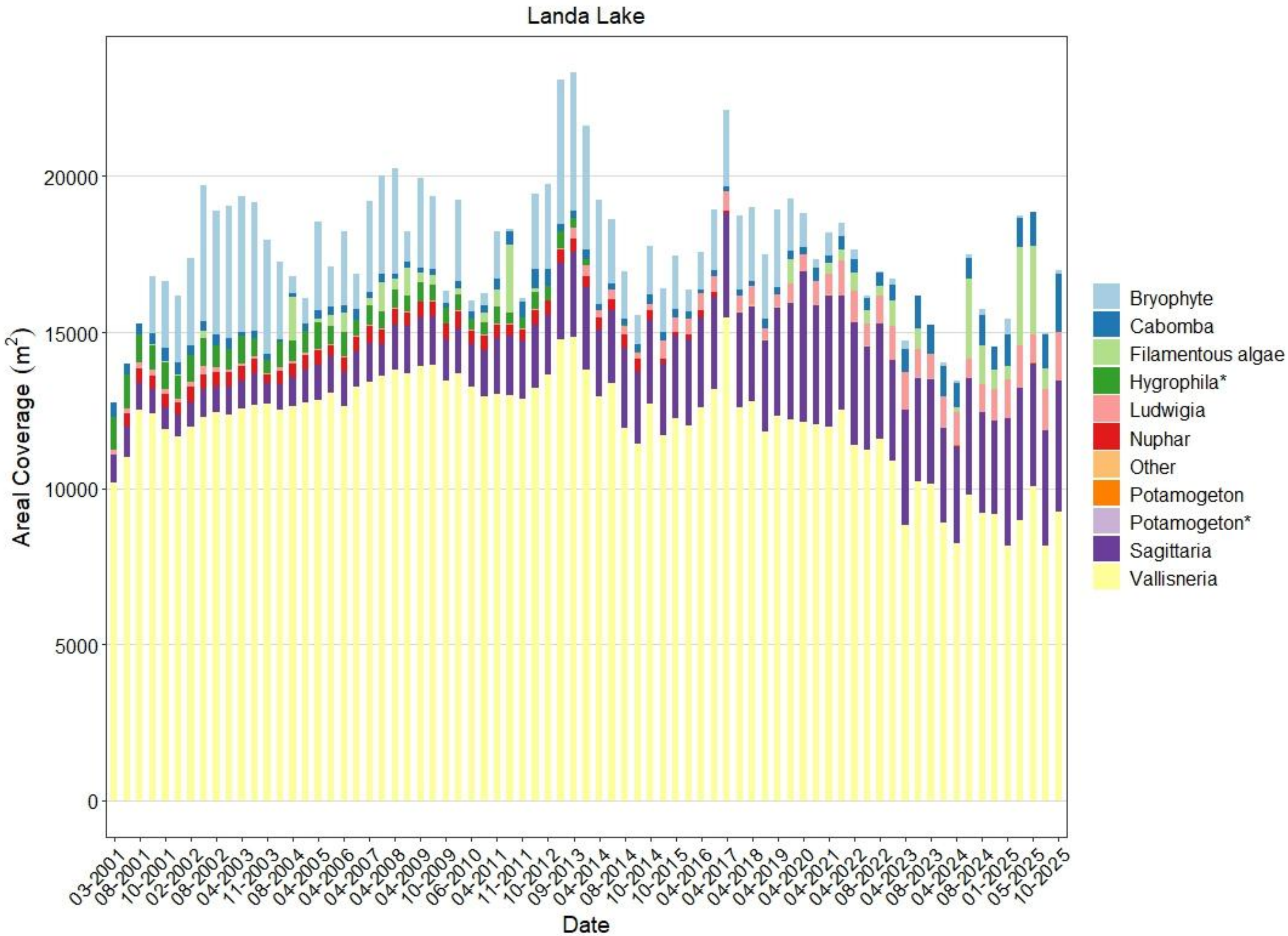

Figure E3. **Aquatic vegetation composition (m^2) among select taxa from 2001–2025 at Landa Lake.**

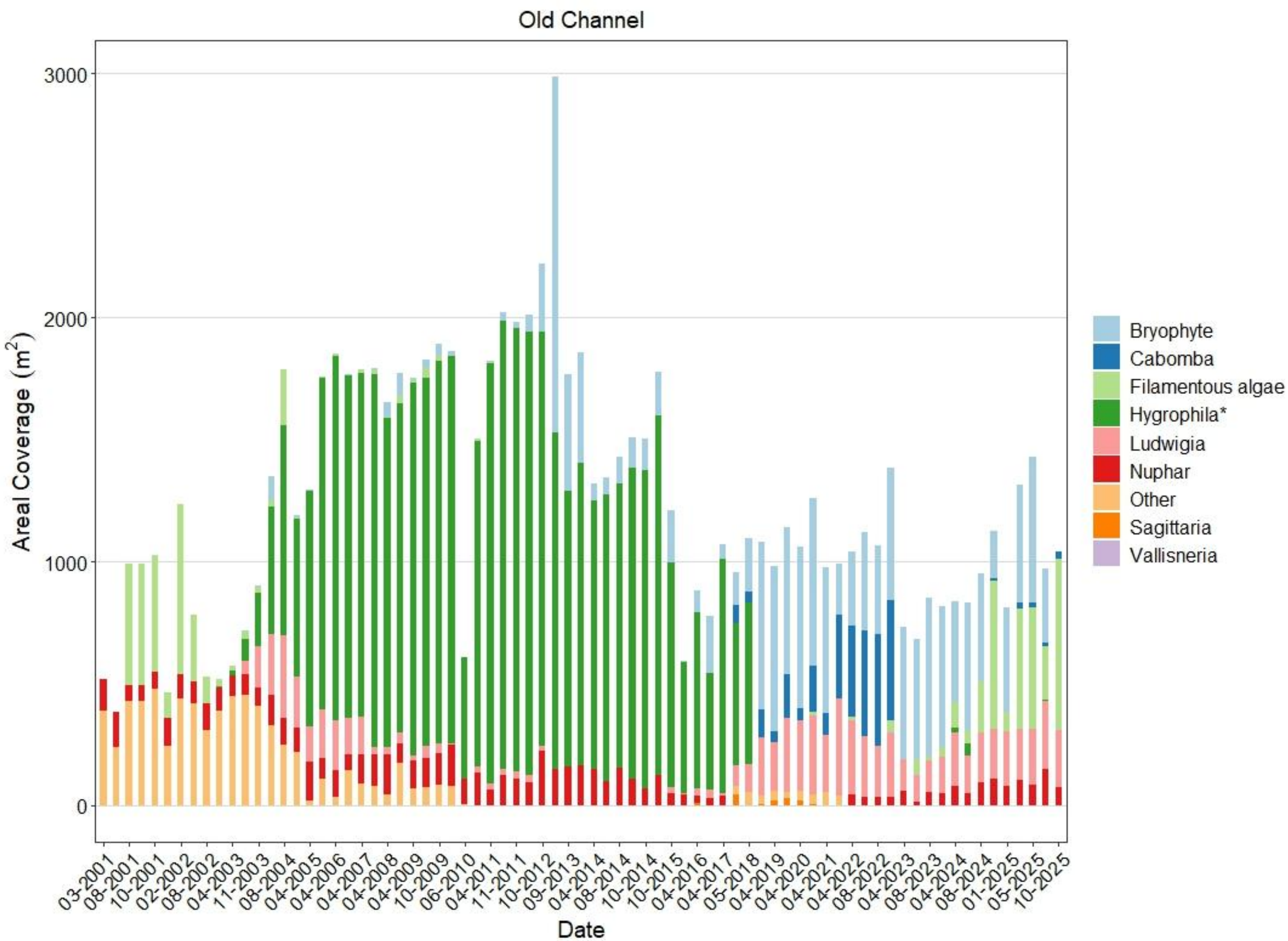

Figure E4. **Aquatic vegetation composition (m^2) among select taxa from 2001–2025 at the Old Channel.**

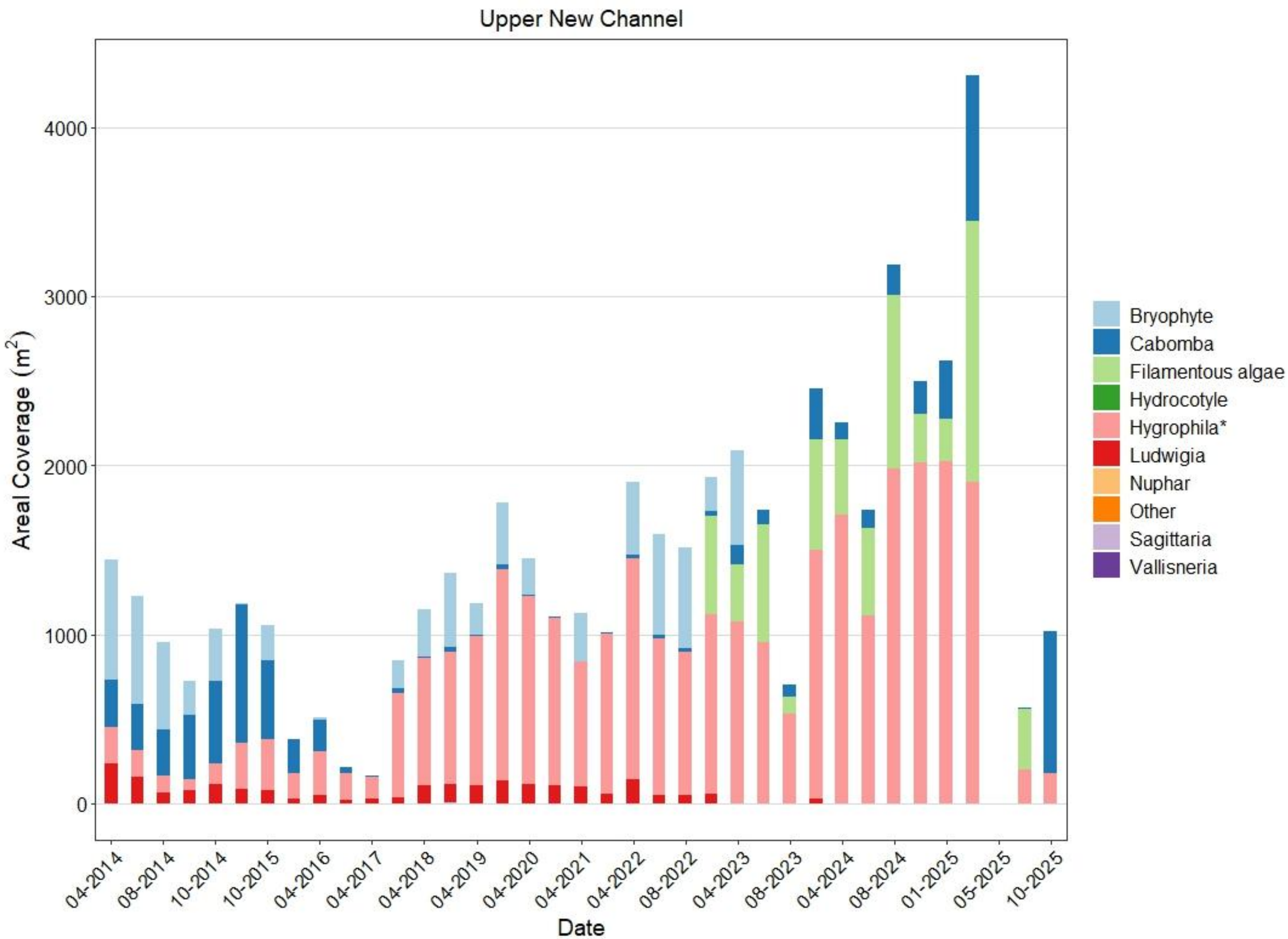

Figure E5. **Aquatic vegetation composition (m^2) among select taxa from 2014–2025 at the Upper New Channel.**

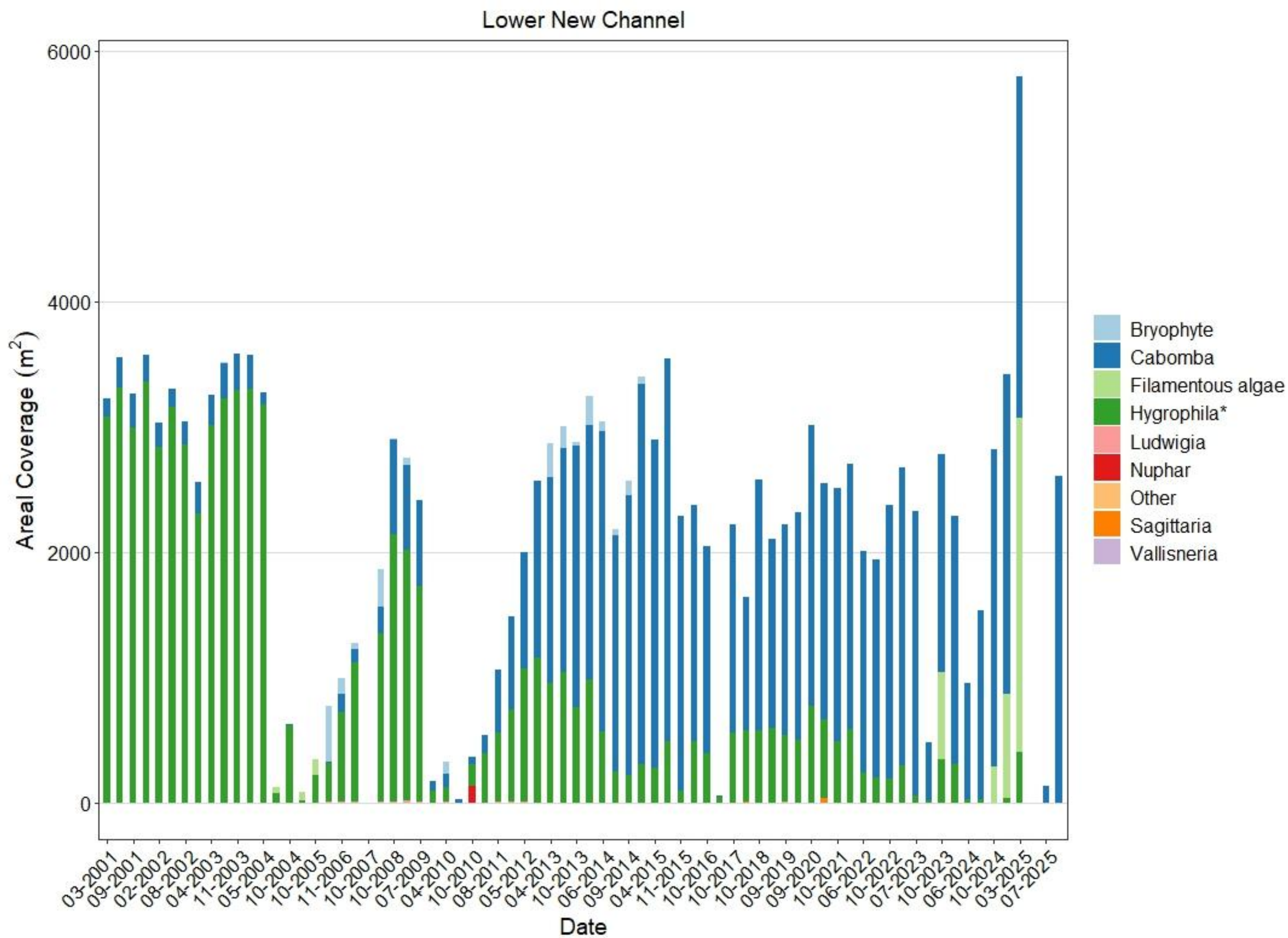

Figure E6. **Aquatic vegetation composition (m^2) among select taxa from 2001–2025 at the Lower New Channel. (*) in the legend denotes non-native taxa.**

Fountain Darter

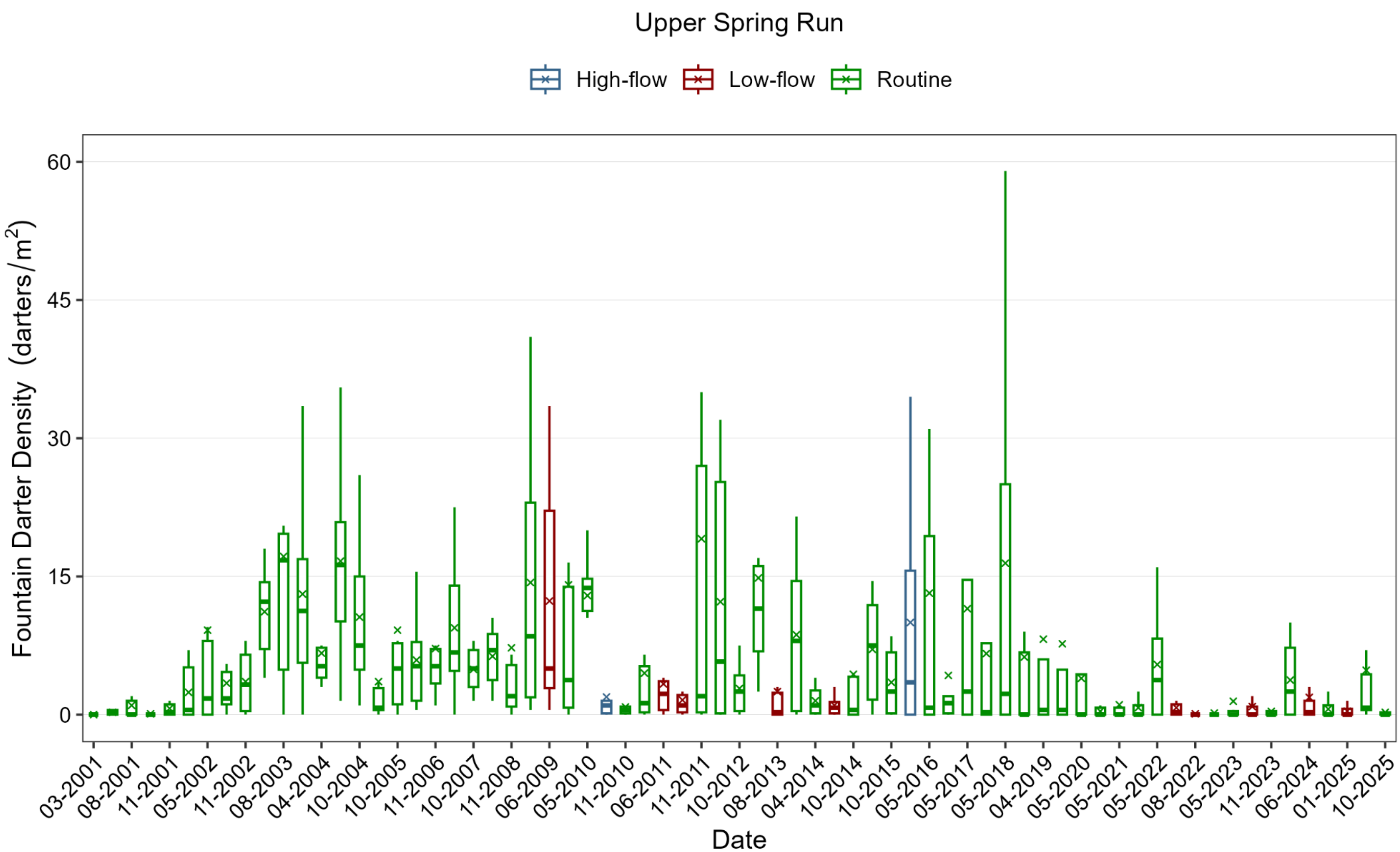

Figure E7. **Boxplots displaying temporal trends in Fountain Darter density (darters/m^2) from 2001–2025 during drop-net sampling at Upper Spring Run. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range.**

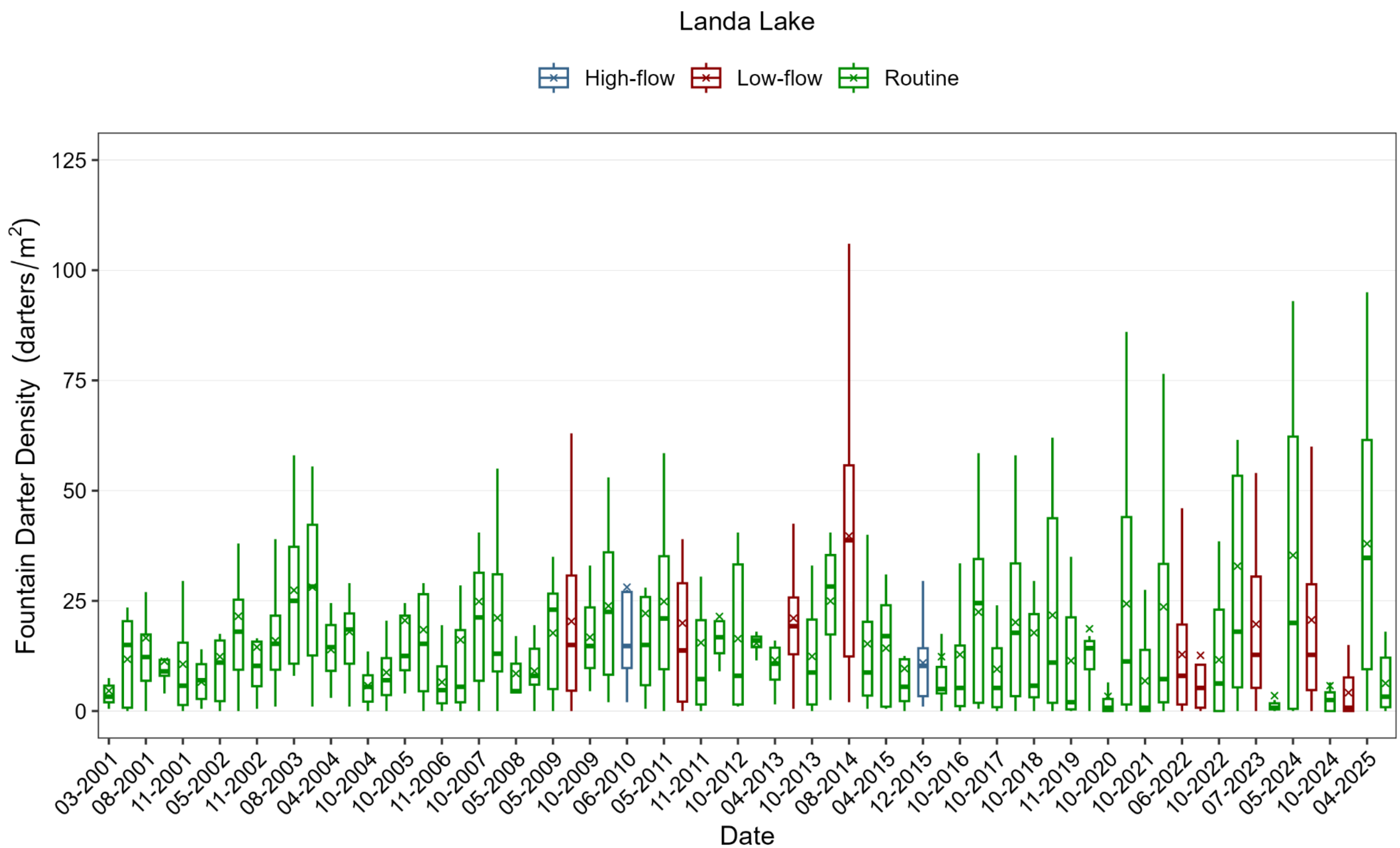

Figure E8. **Boxplots displaying temporal trends in Fountain Darter density (darters/m^2) from 2001–2025 during drop-net sampling at Landa Lake. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range.**

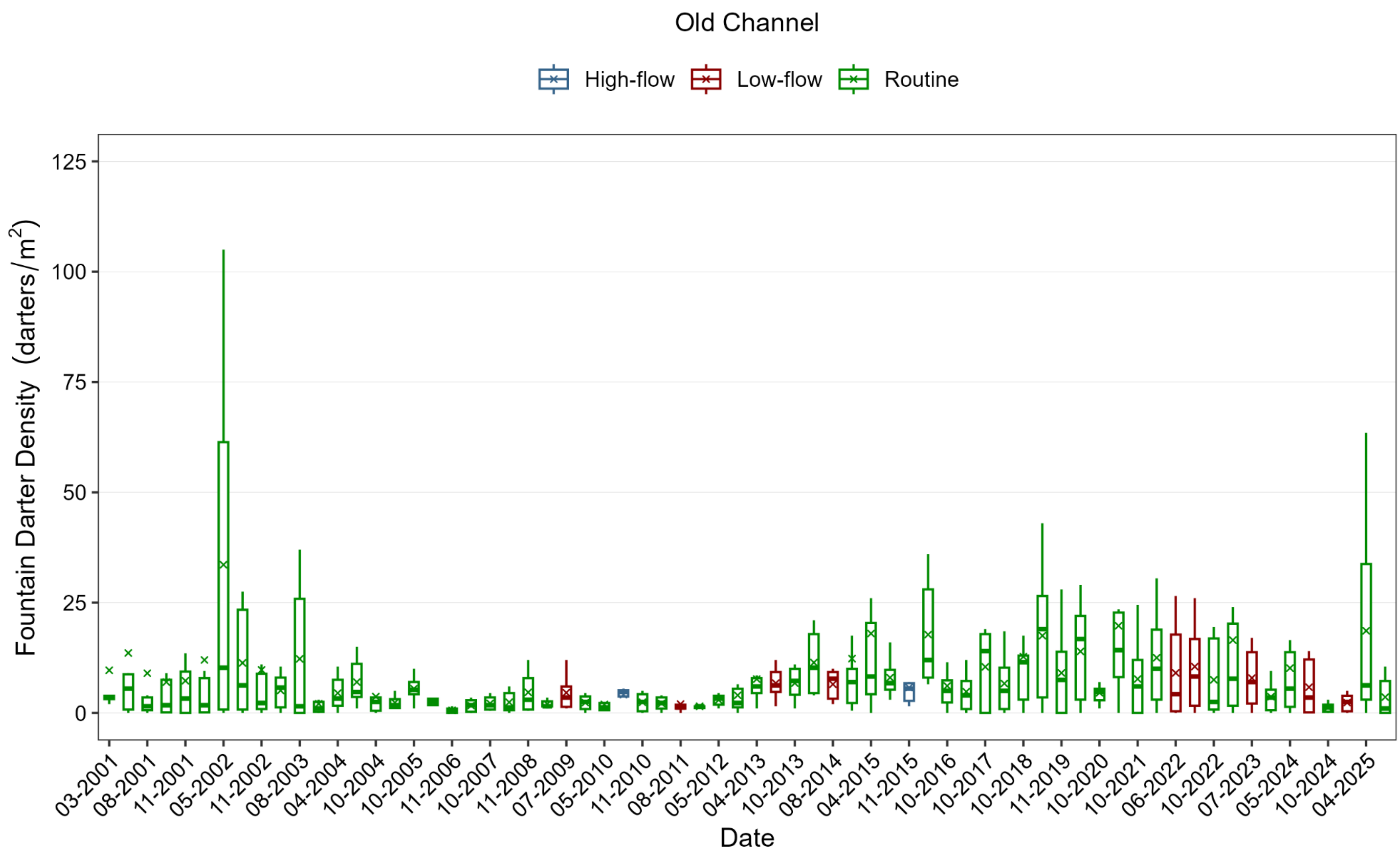

Figure E9. **Boxplots displaying temporal trends in Fountain Darter density (darters/m^2) from 2001–2025 during drop-net sampling at Old Channel. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range.**

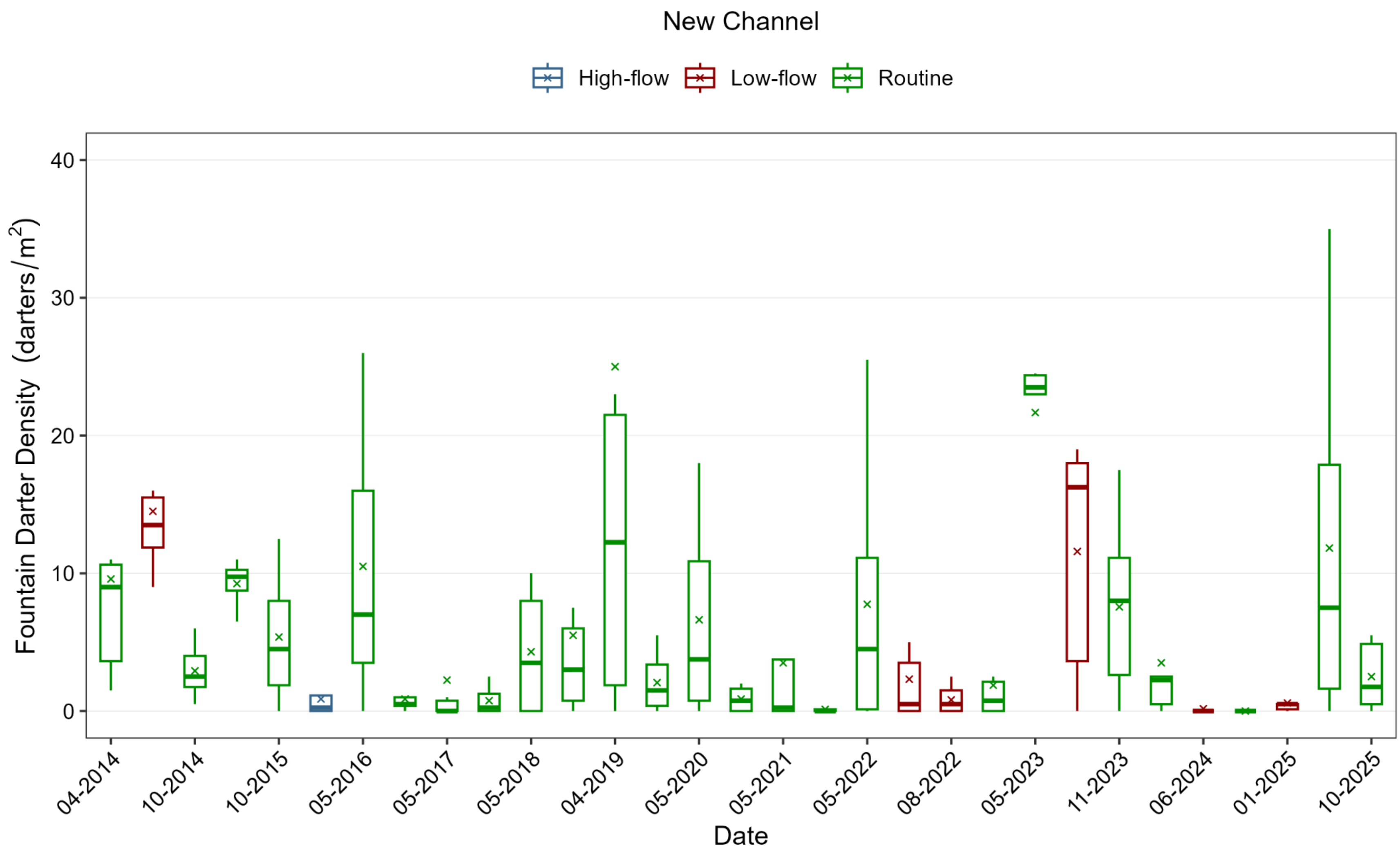

Figure E10. **Boxplots displaying temporal trends in Fountain Darter density (darters/m²) from 2014–2025 during drop-net sampling at New Channel. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range.**

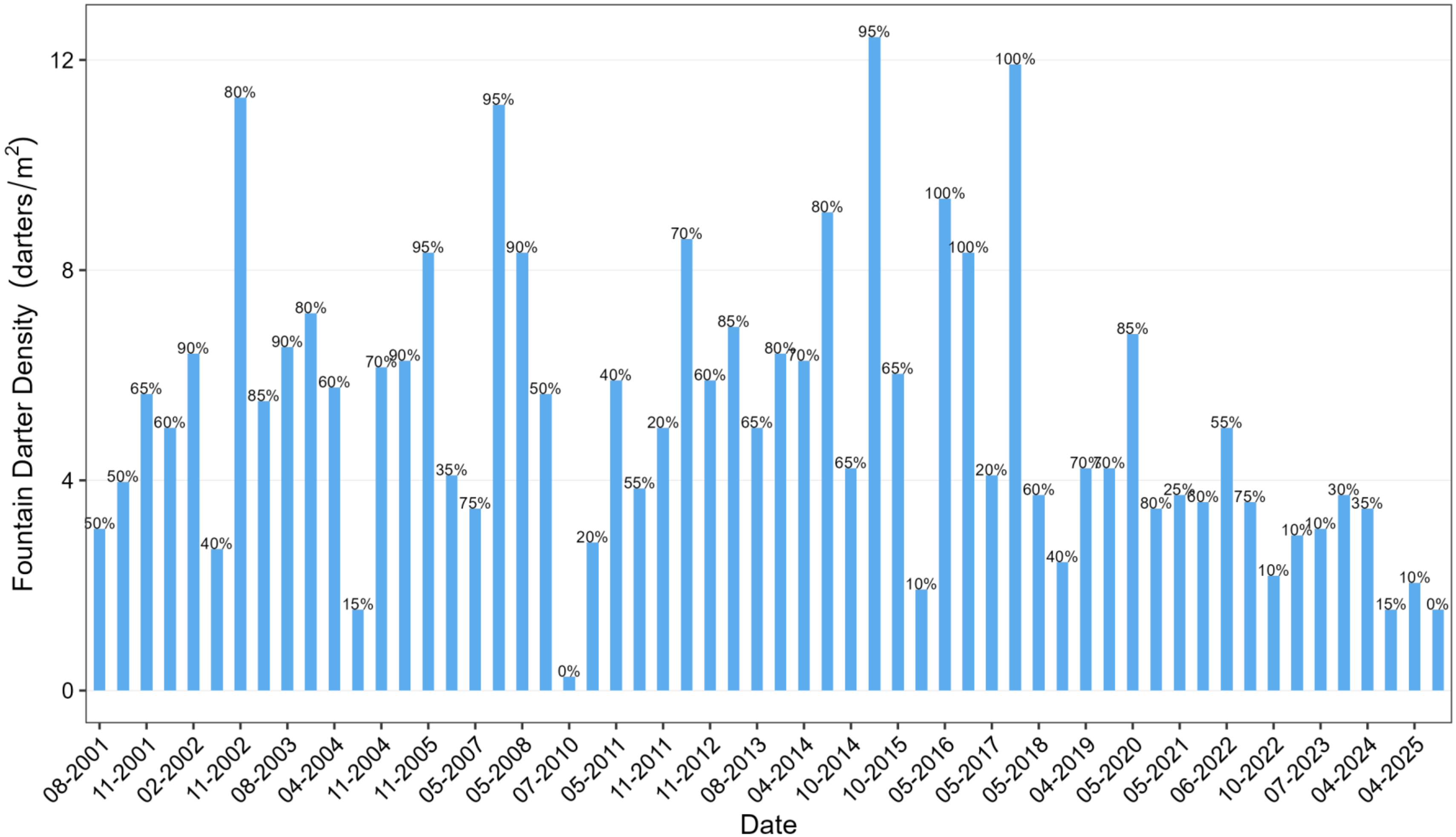

Figure E11. **Boxplots displaying temporal trends in Fountain Darter density (darters/m²) from 2001–2025 during visual surveys at Landa Lake. Percentages above the bars represent bryophyte coverage observed during each survey event.**

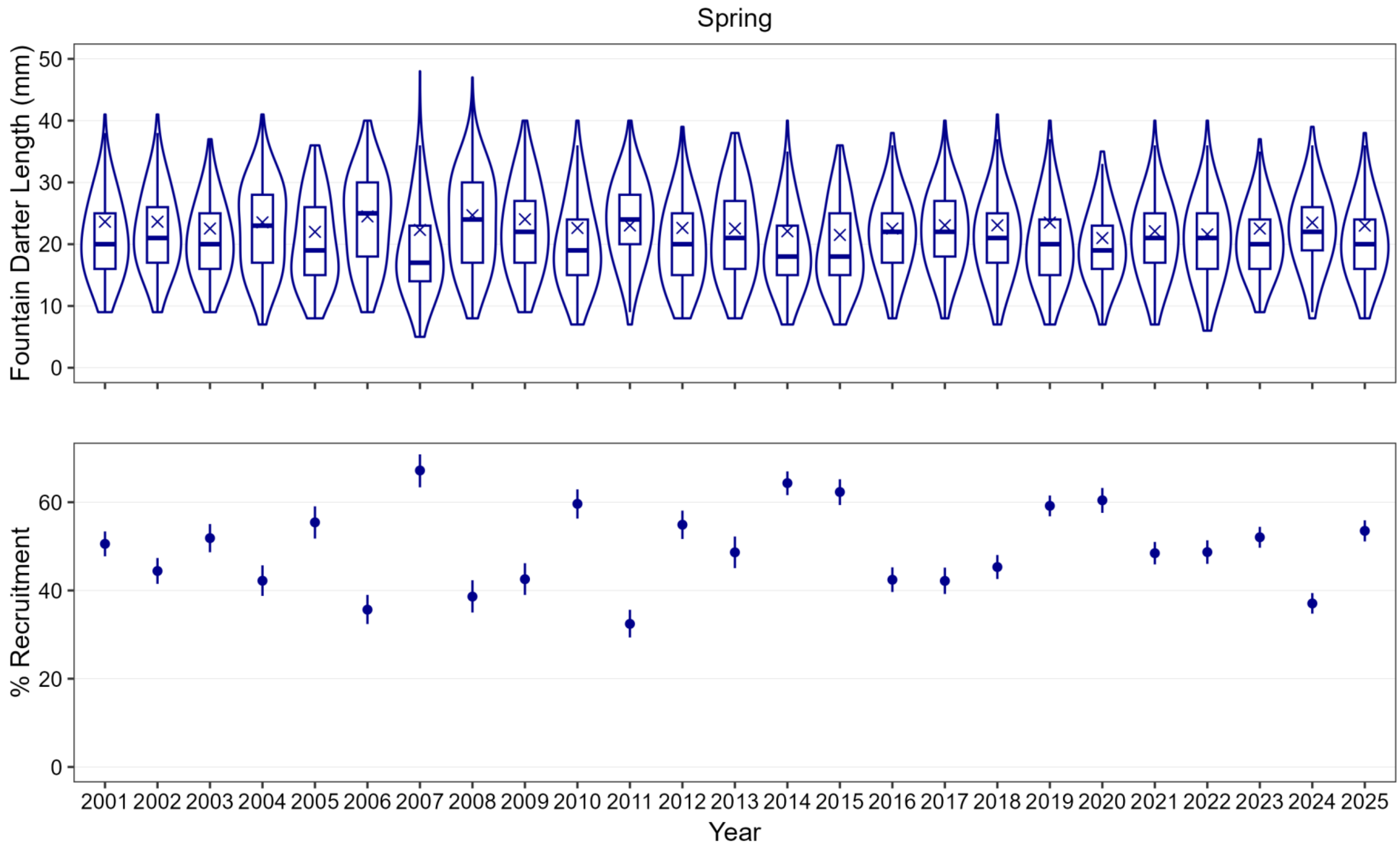

Figure E12. Fountain Darter size structure (mm; top row) and percent recruitment (bottom row) in the Comal Springs and River during spring sampling (i.e., drop-net and timed dip-net data) events from 2001–2025. Size structure is displayed with boxplots (median, quartiles, range) and violin plots (probability density; polygons outlining boxplots). The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. Recruitment is the percent relative abundance (± 95% CI) of darters ≤20 mm

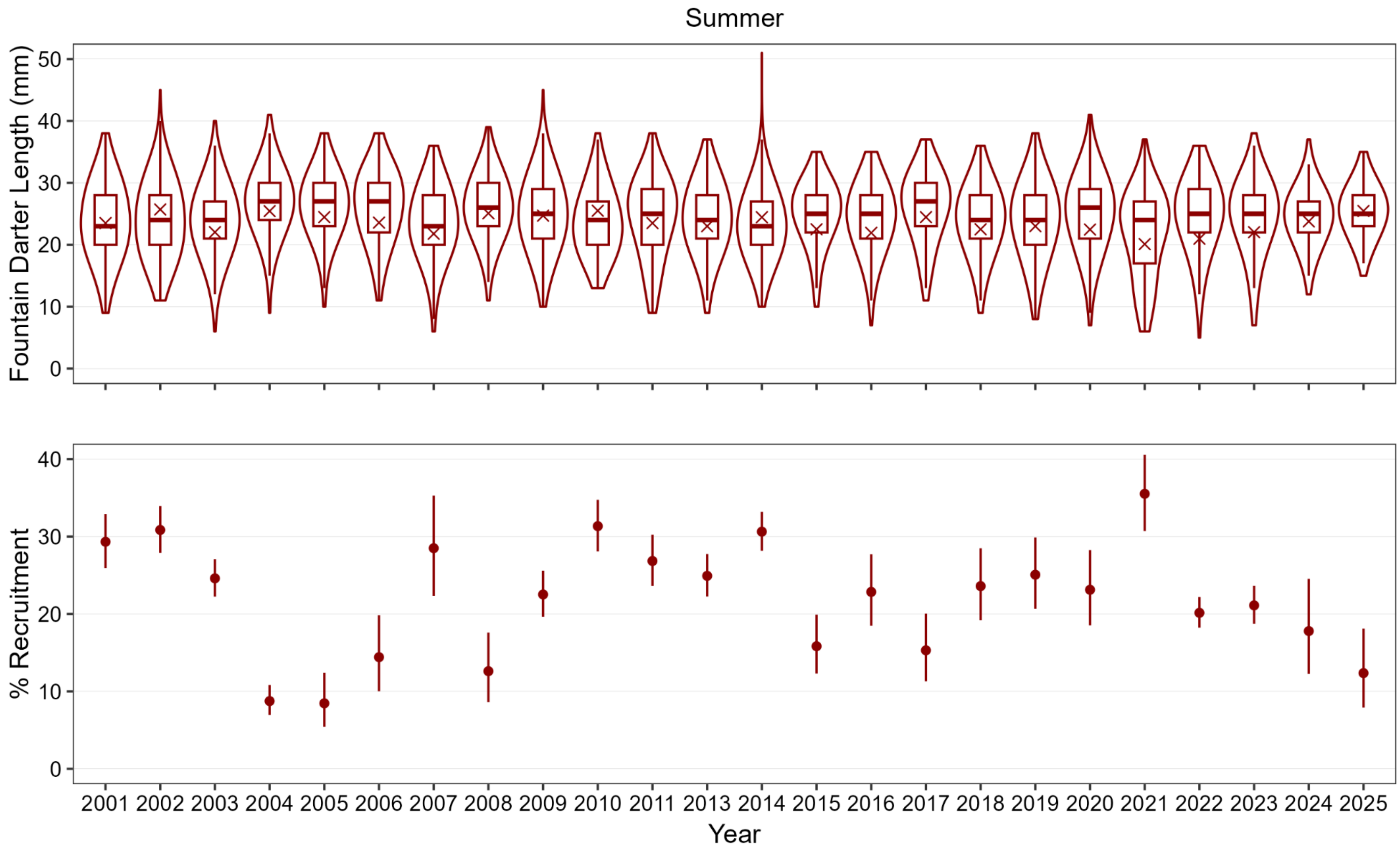

Figure E13. **Fountain Darter size structure (mm; top row) and percent recruitment (bottom row) in the Comal Springs and River during summer sampling (i.e., drop-net and timed dip-net data) events from 2001–2025. Size structure is displayed with boxplots (median, quartiles, range) and violin plots (probability density; polygons outlining boxplots). The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. Recruitment is the percent relative abundance (± 95% CI) of darters ≤20 mm.**

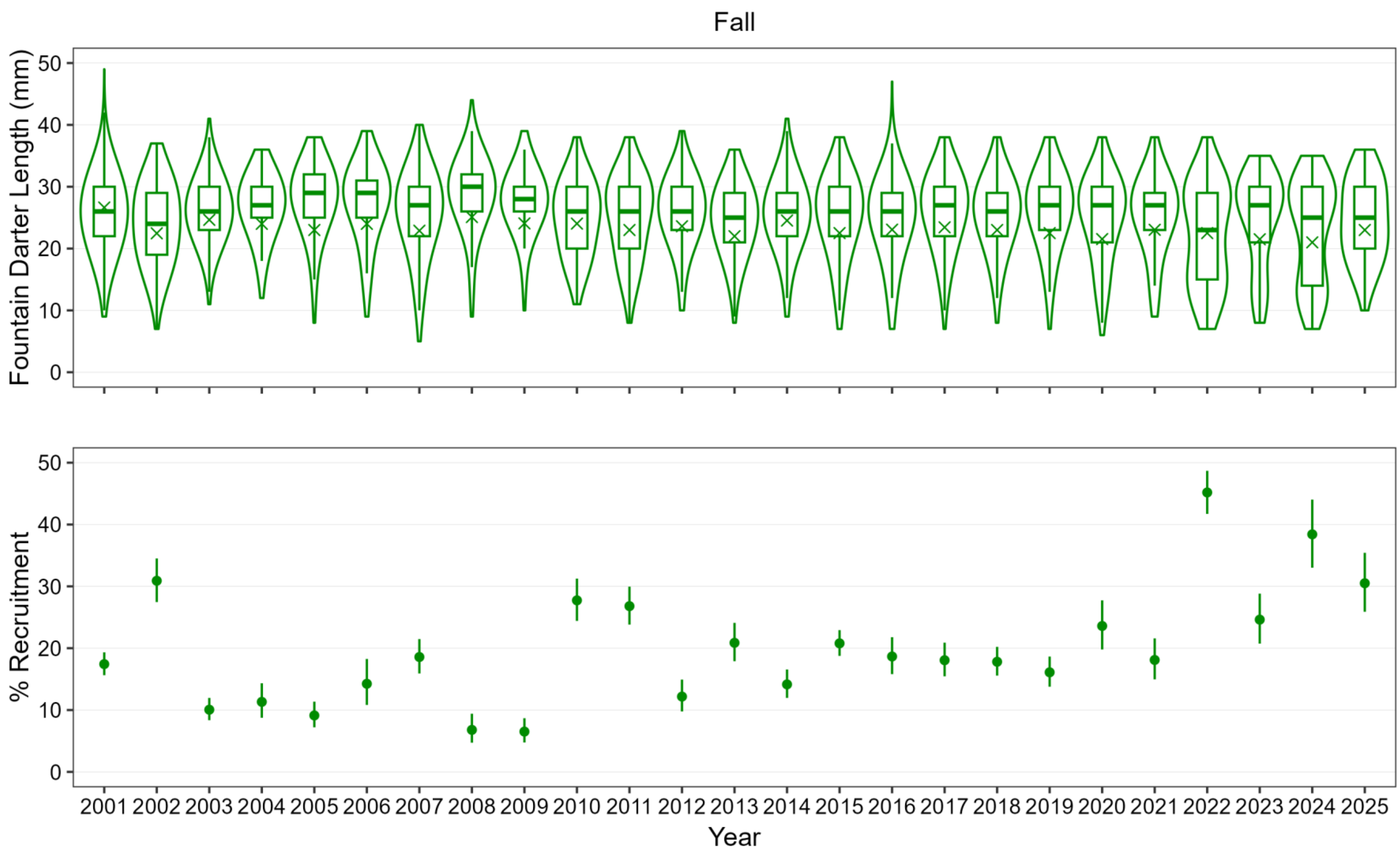

Figure E14. **Fountain Darter size structure (mm; top row) and percent recruitment (bottom row) in the Comal Springs and River during fall sampling (i.e., drop-net and timed dip-net data) events from 2001–2025. Size structure is displayed with boxplots (median, quartiles, range) and violin plots (probability density; polygons outlining boxplots). The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range. Recruitment is the percent relative abundance (± 95% CI) of darters ≤20 mm.**

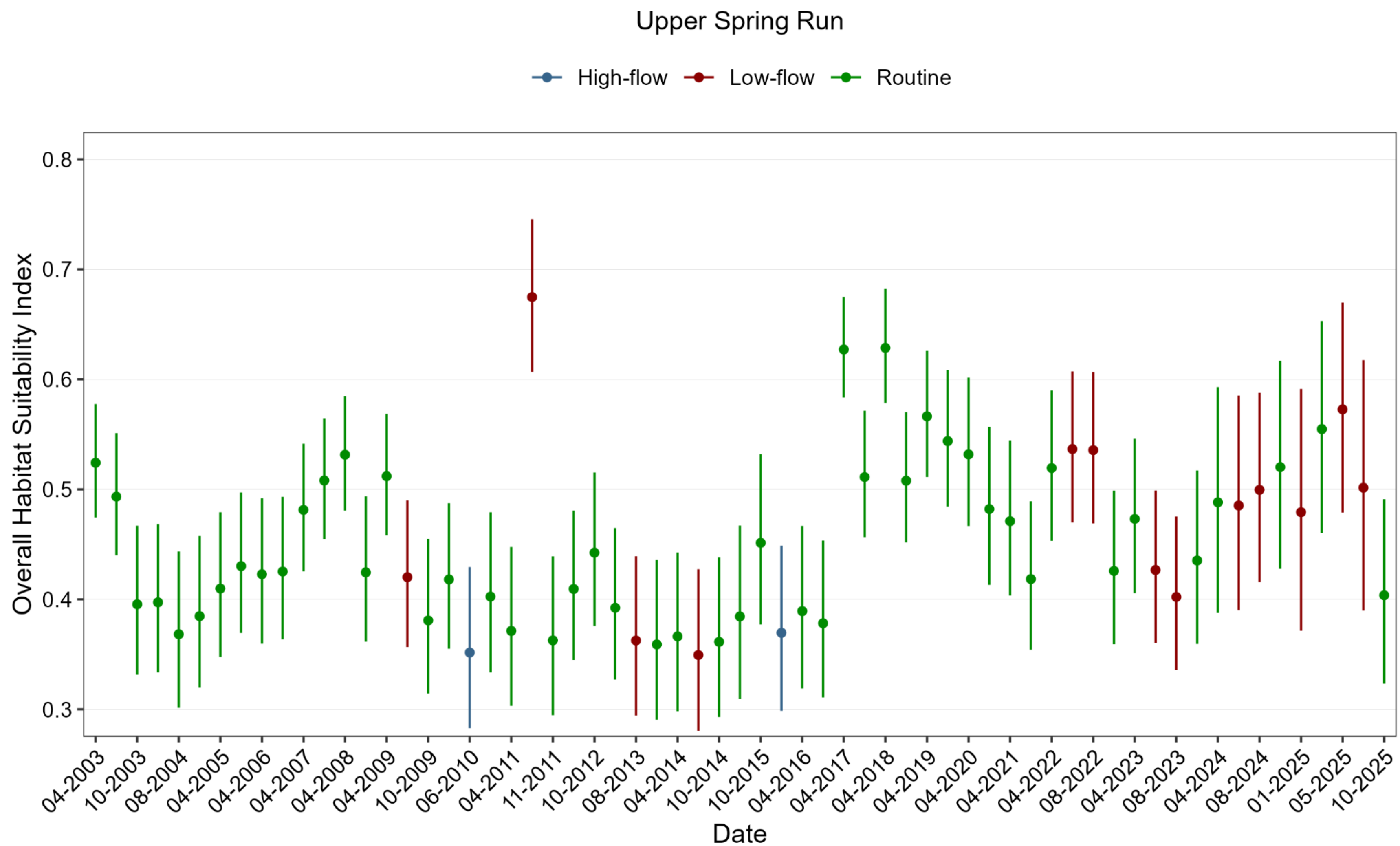

Figure E15. Overall Habitat Suitability Index (OHSI) (±95% CI) from 2003–2025 at Upper Spring Run.

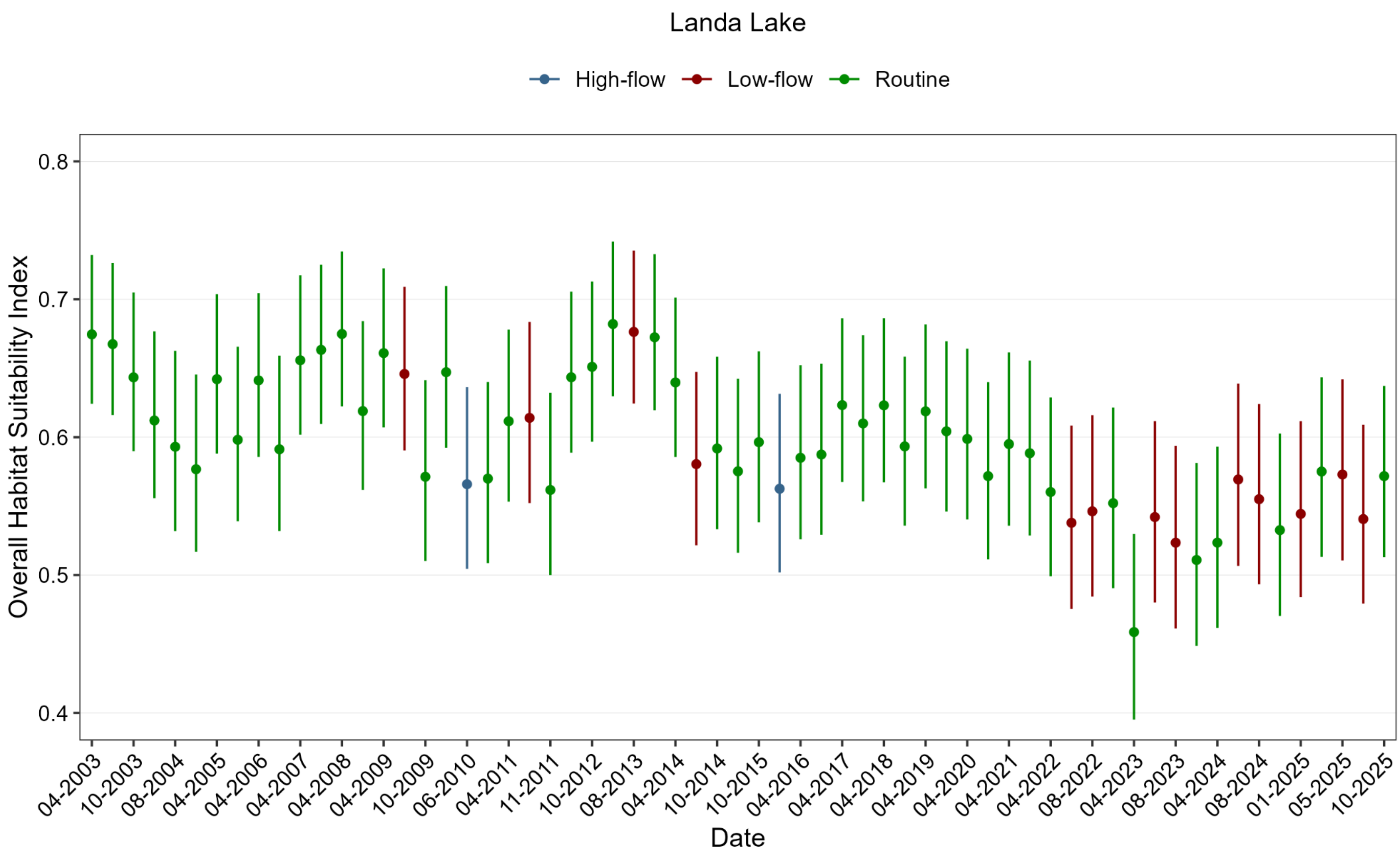

Figure E16. Overall Habitat Suitability Index (OHSI) (±95% CI) from 2003–2025 at Landa Lake.

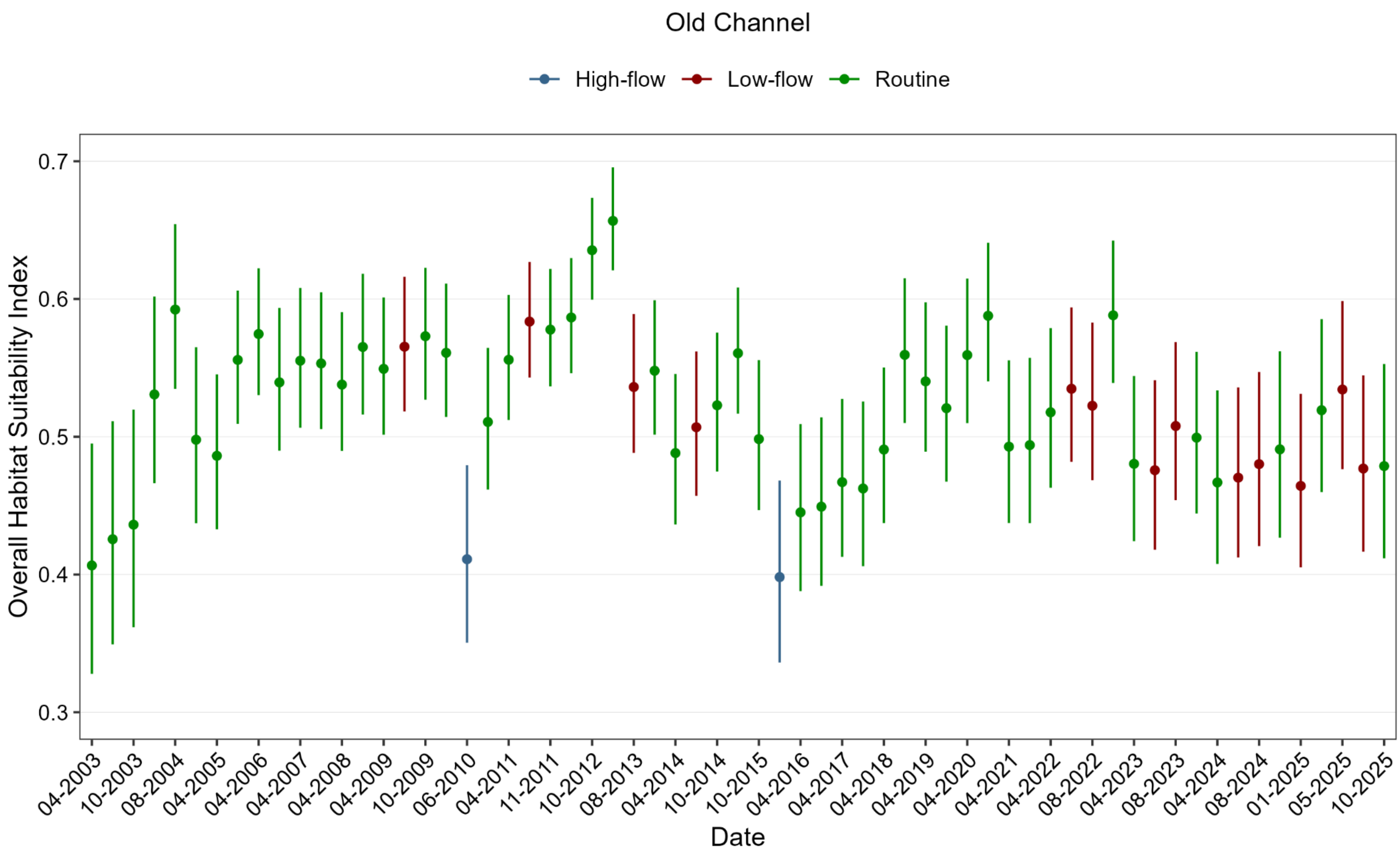

Figure E17. Overall Habitat Suitability Index (OHSI) (±95% CI) from 2003–2025 at Old Channel.

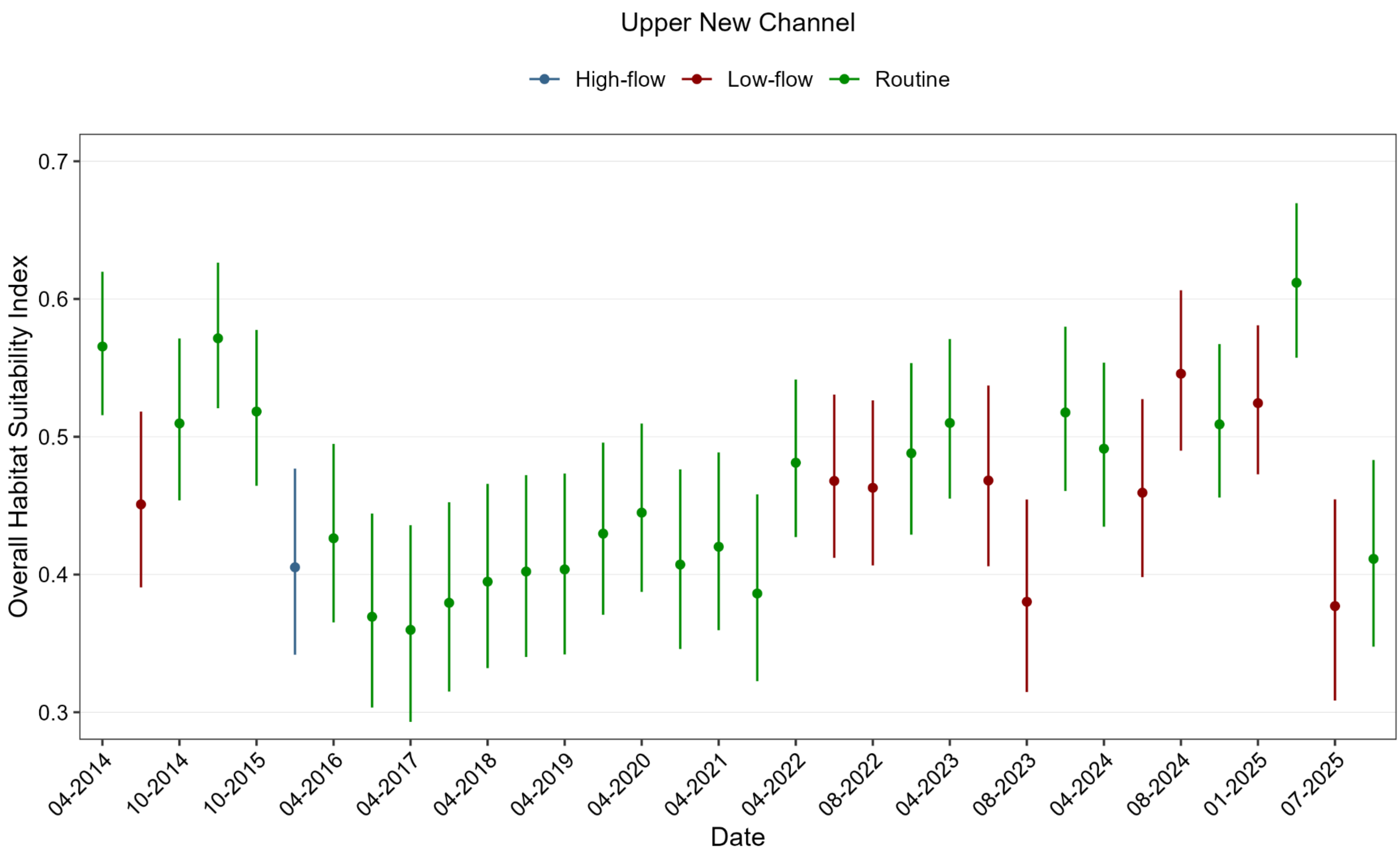

Figure E18. Overall Habitat Suitability Index (OHSI) (±95% CI) from 2014–2025 at Upper New Channel.

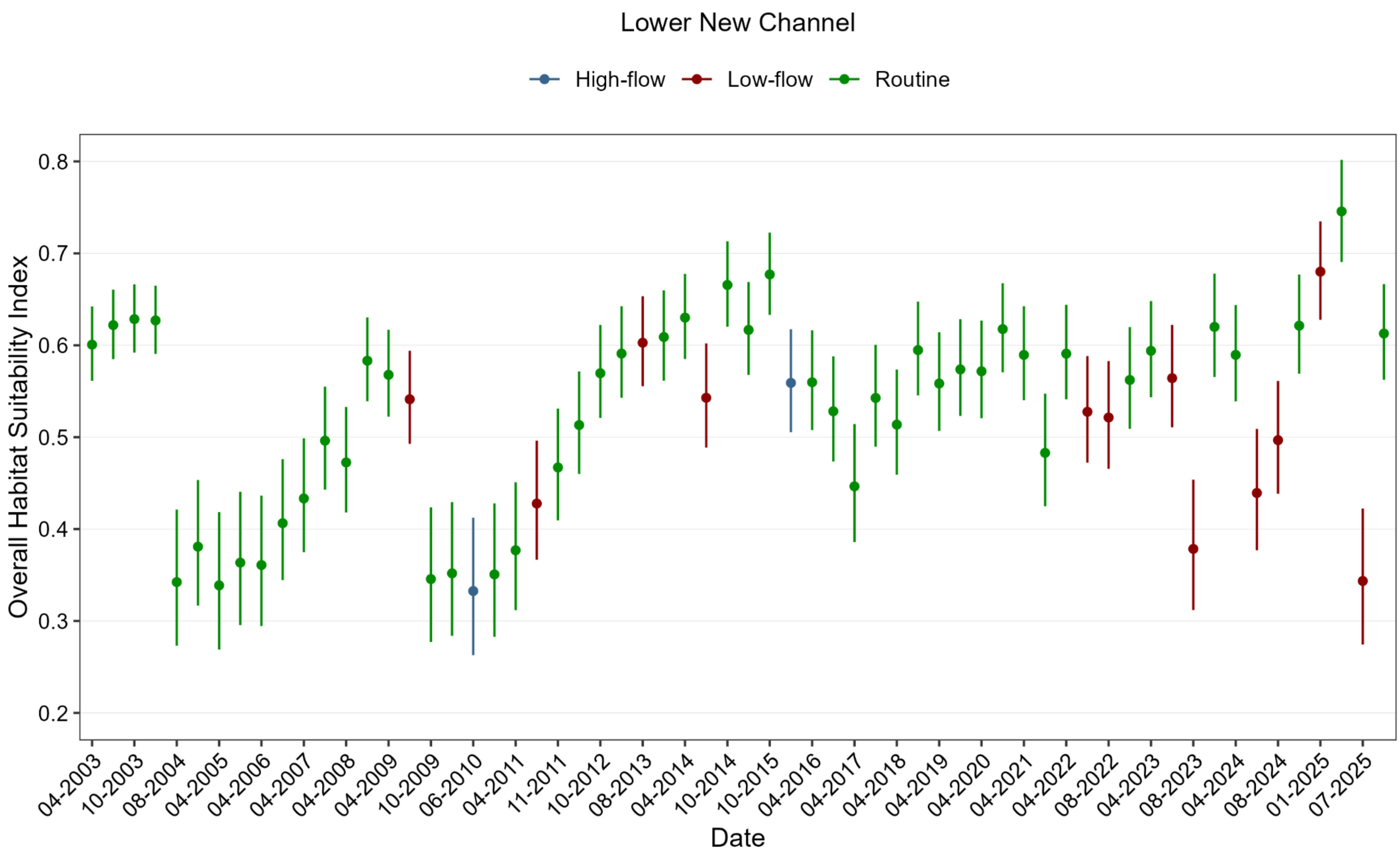

Figure E19. Overall Habitat Suitability Index (OHSI) (±95% CI) from 2003–2025 at Lower New Channel.

Fish Community

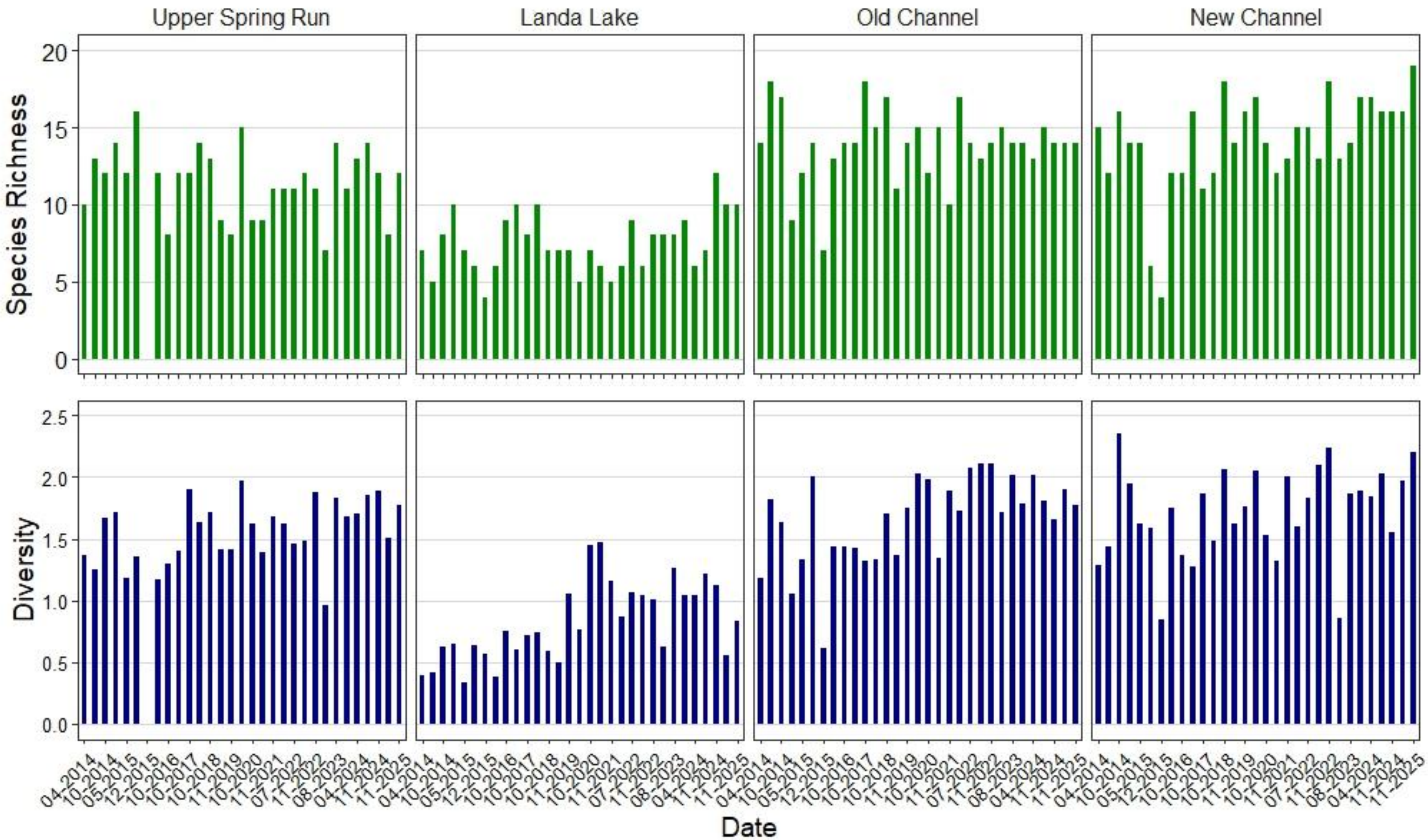

Figure E20. **Bar graphs displaying temporal trends in species richness and diversity among study reaches from 2014–2025 during fish community sampling in the Comal Springs/River.**

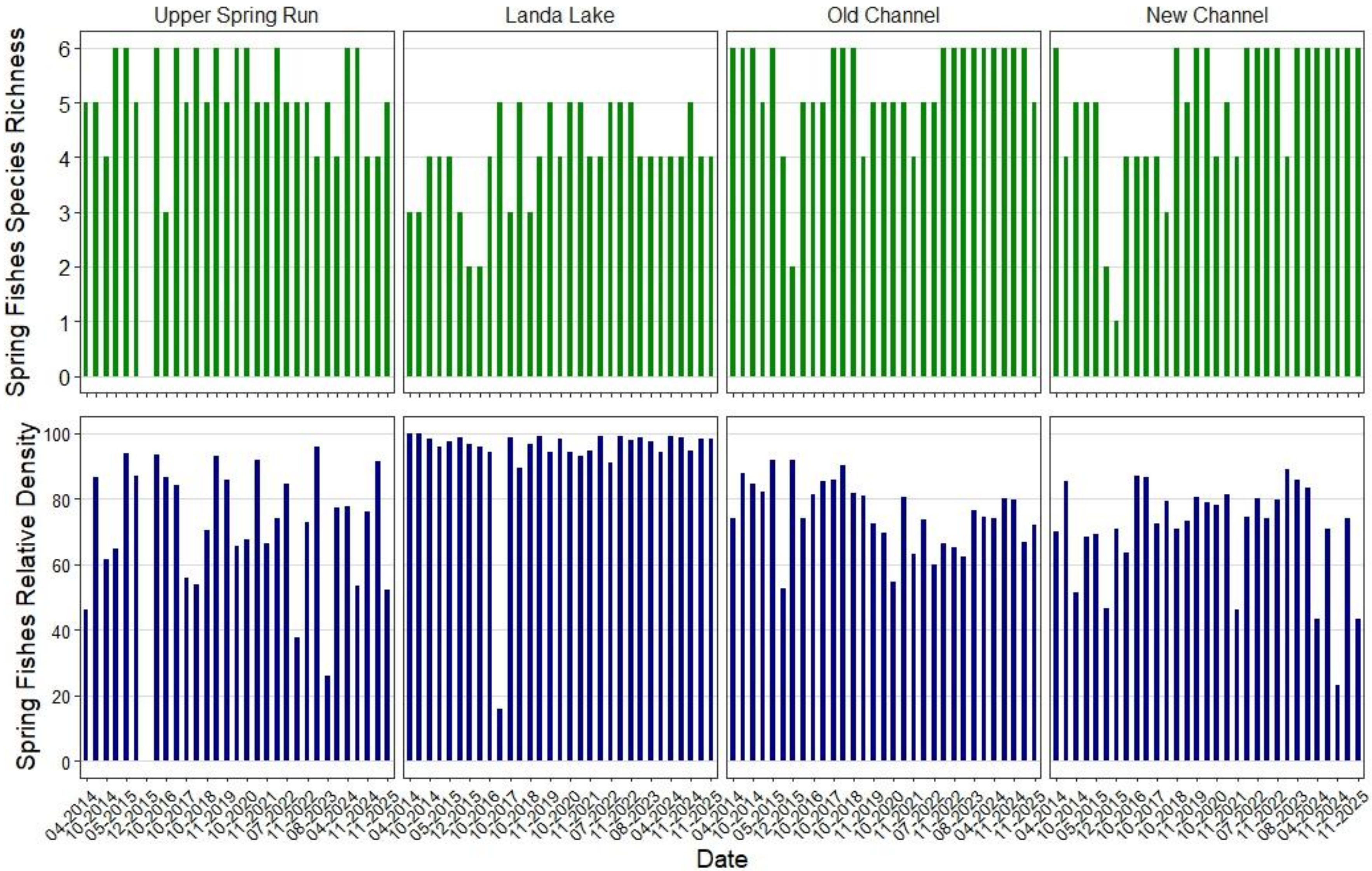

Figure E21. **Bar graphs displaying temporal trends in spring fishes species richness and percent relative density among study reaches from 2014–2025 during fish community sampling in the Comal Springs/River.**

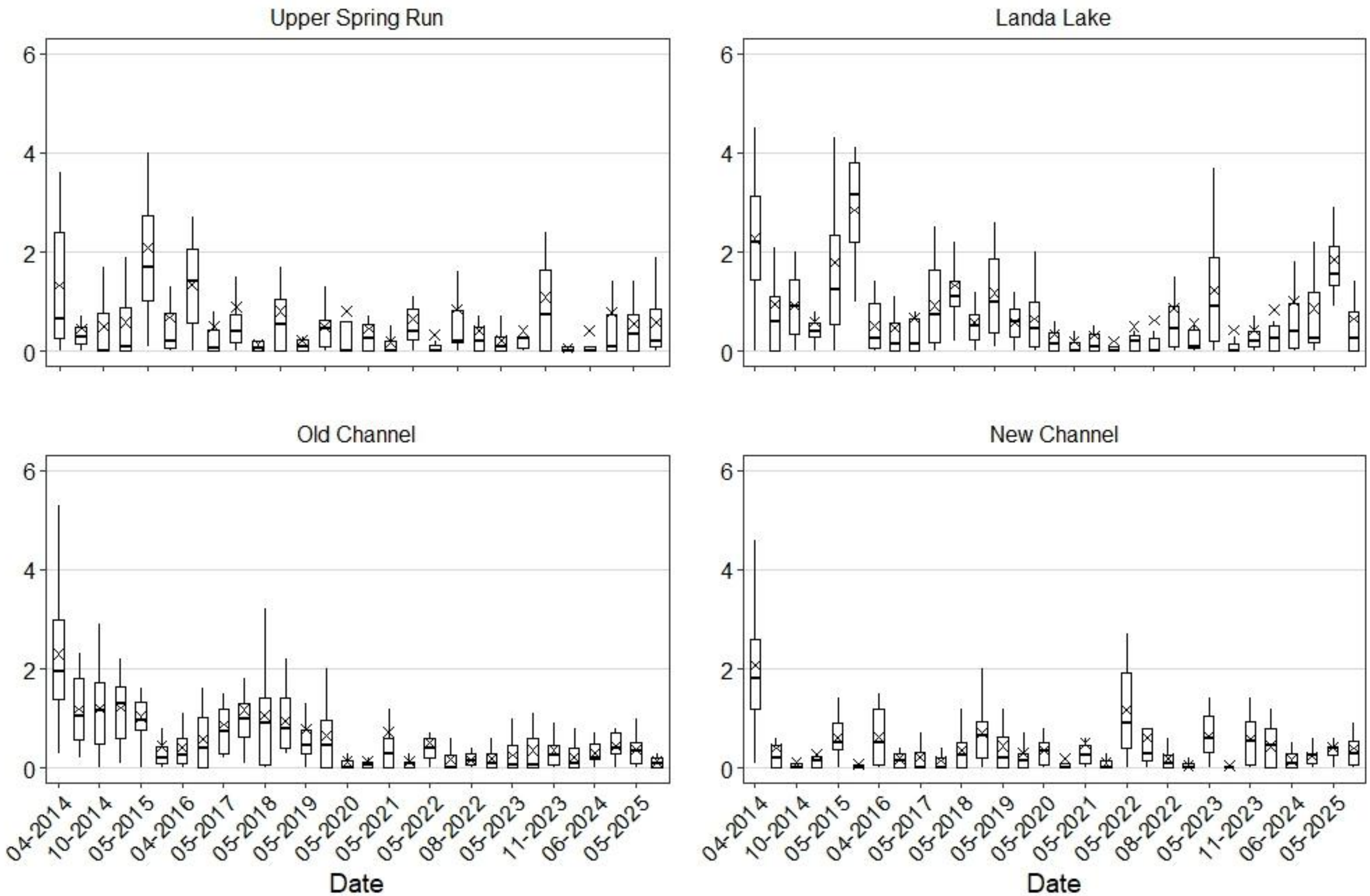

Figure E22. Boxplots displaying temporal trends in Fountain Darter density (darters/m^2) among study reaches from 2014–2025 during fish community microhabitat sampling in the Comal Springs/River. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range.

Comal Springs Salamander

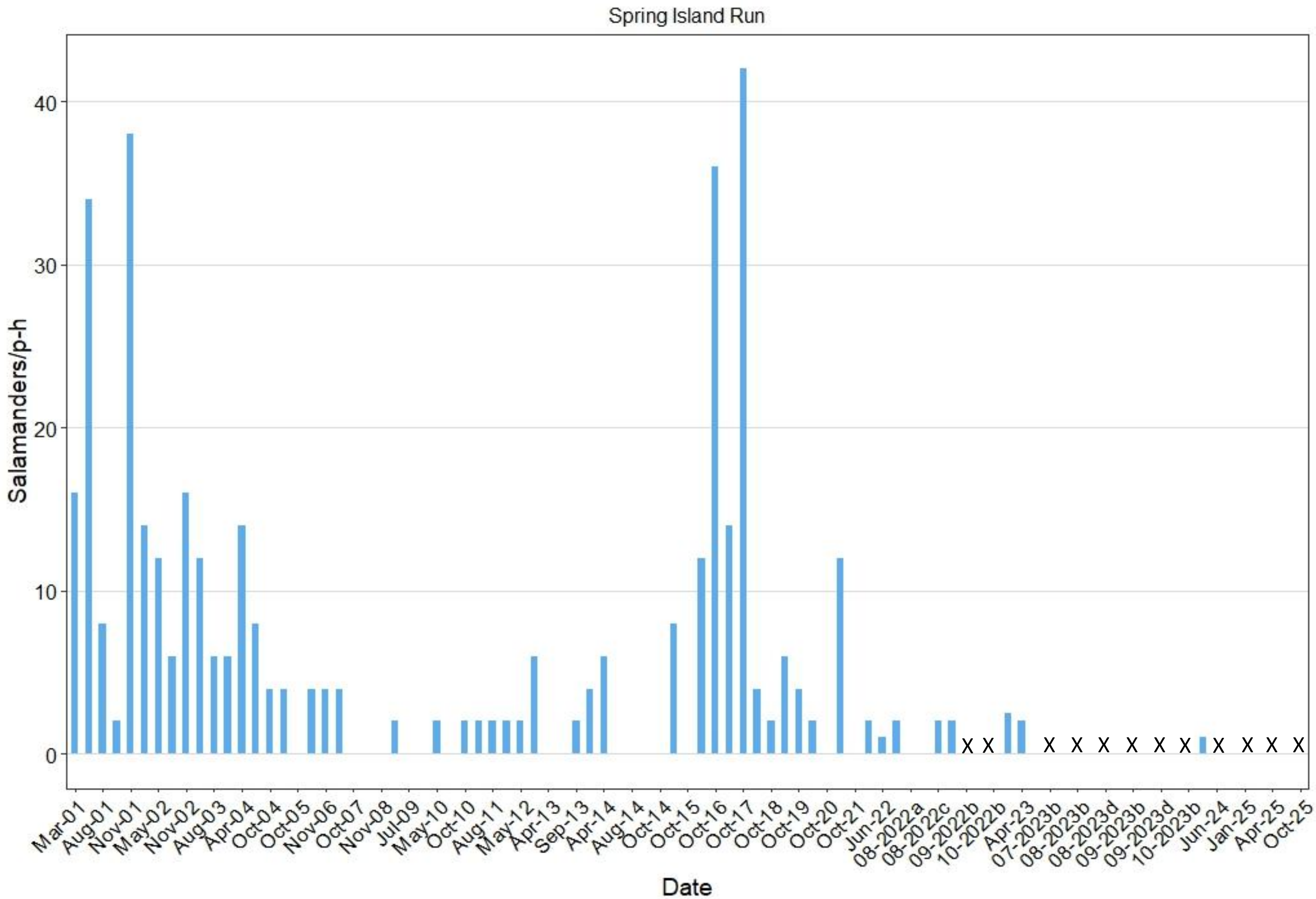

Figure E23. **Comal Springs Salamander catch-per-unit-effort (CPUE; salamanders/person-hr) from 2001–2025 at Spring Island Run. No bars within dates denotes zero salamanders observed. X within dates denotes lack of sampling due to dry conditions.**

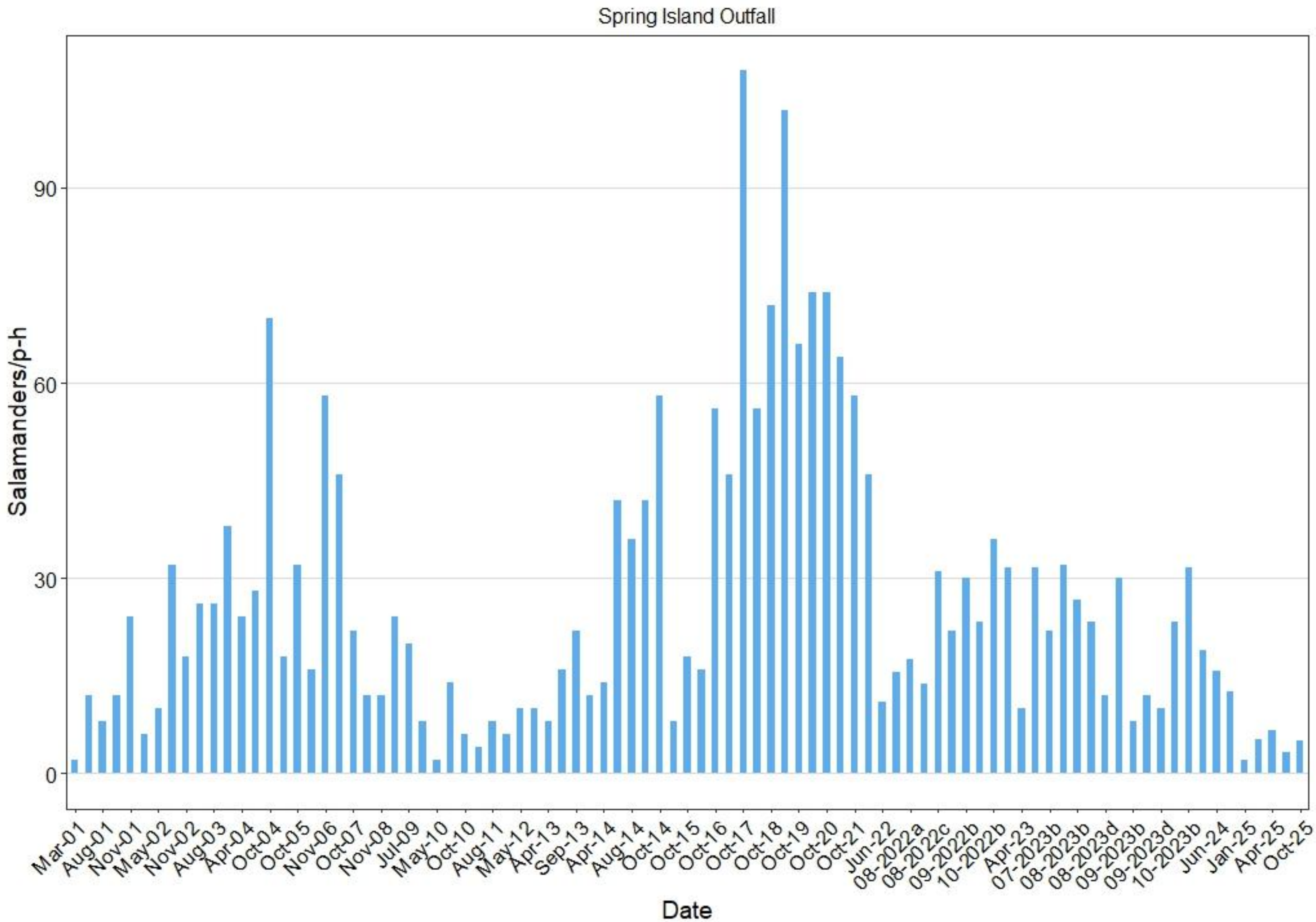

Figure E24. **Comal Springs Salamander catch-per-unit-effort (CPUE; salamanders/person-hr) from 2001–2025 at Spring Island Outfall.**

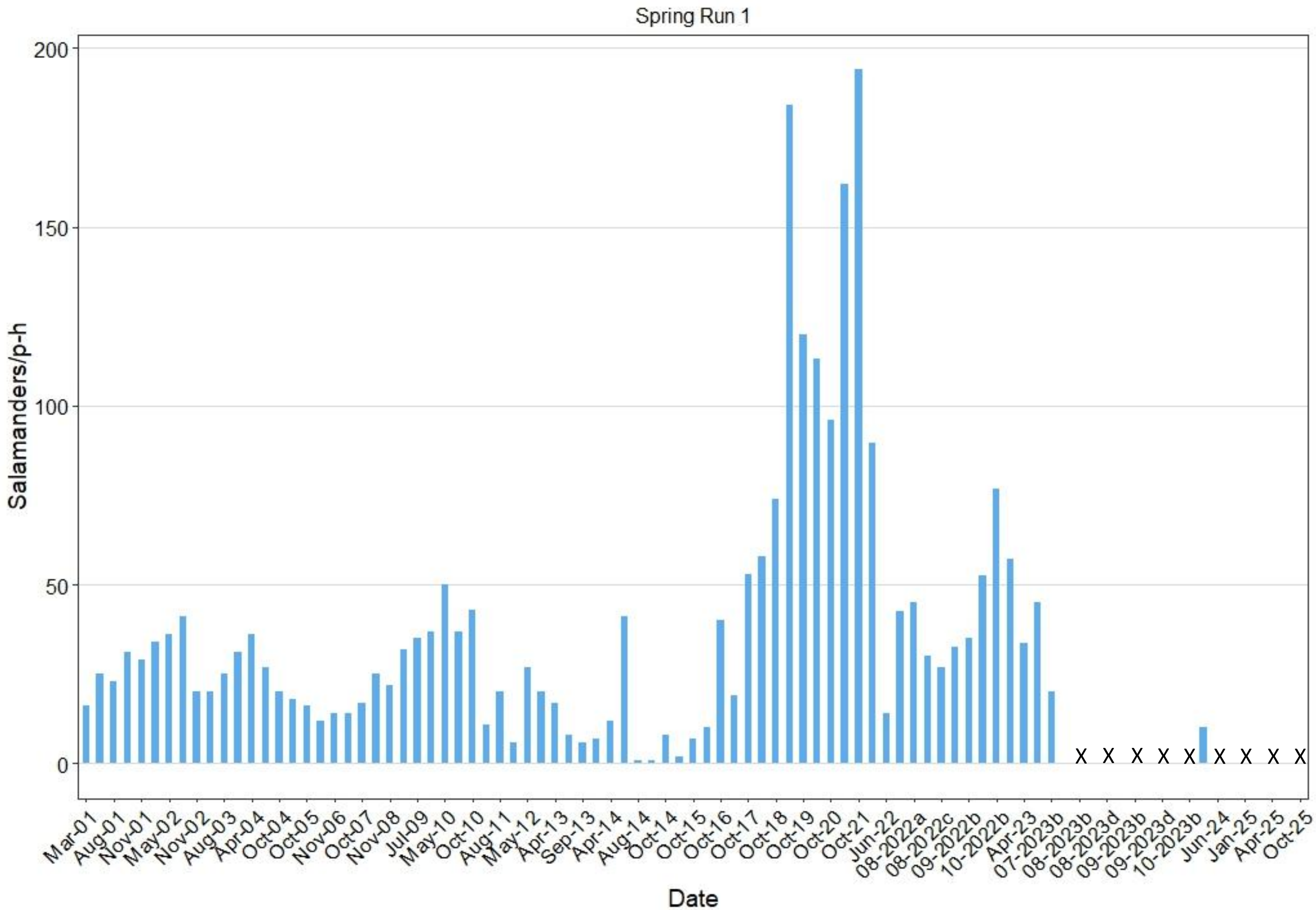

Figure E25. **Comal Springs Salamander catch-per-unit-effort (CPUE; salamanders/person-hr) from 2001–2025 at Spring Run 1. X within dates denotes lack of sampling due to dry conditions.**

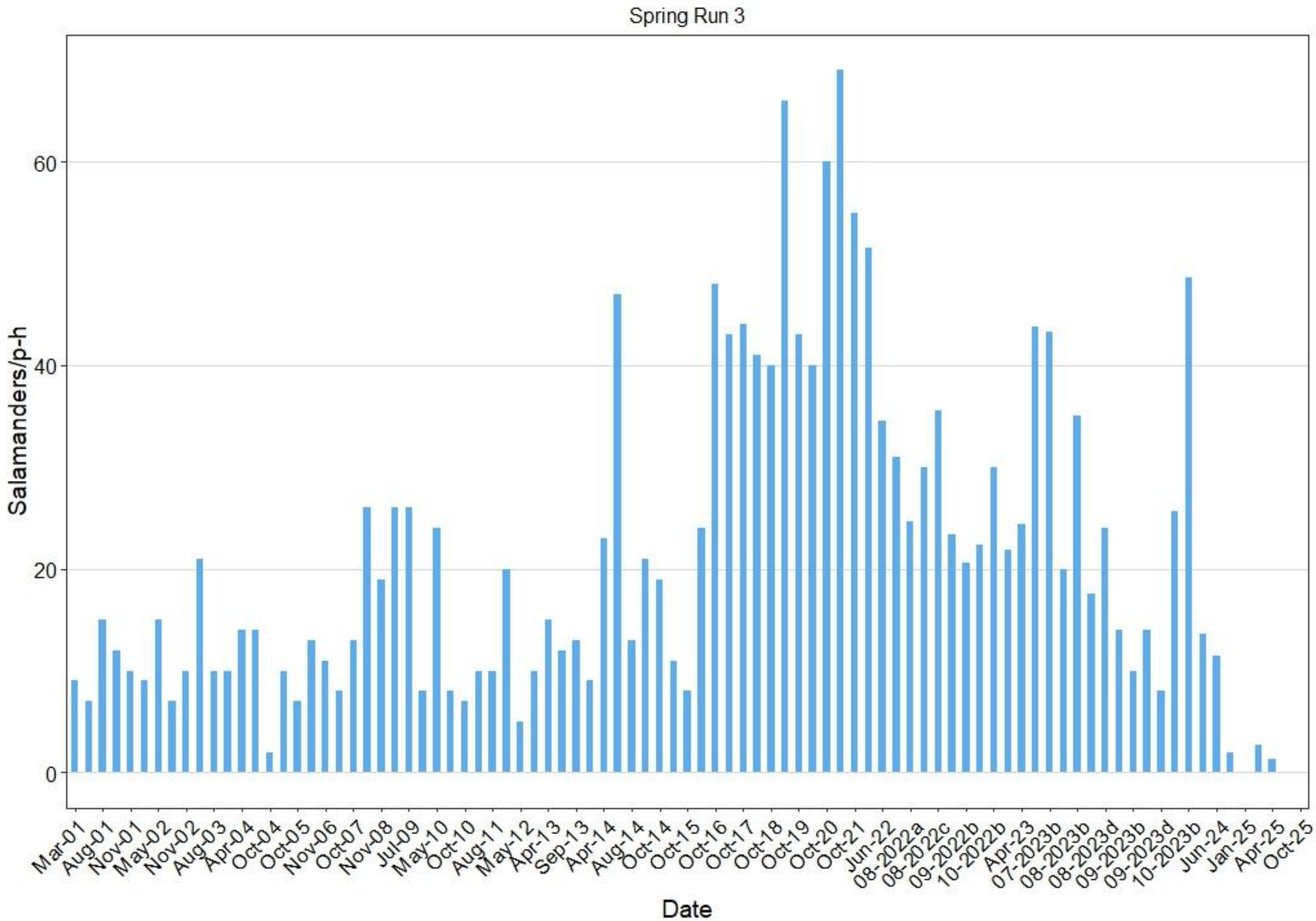

Figure E26. **Comal Springs Salamander catch-per-unit-effort (CPUE; salamanders/person-hr) from 2001–2025 at Spring Run 3. No bars within dates denotes zero salamanders observed.**

Macroinvertebrates

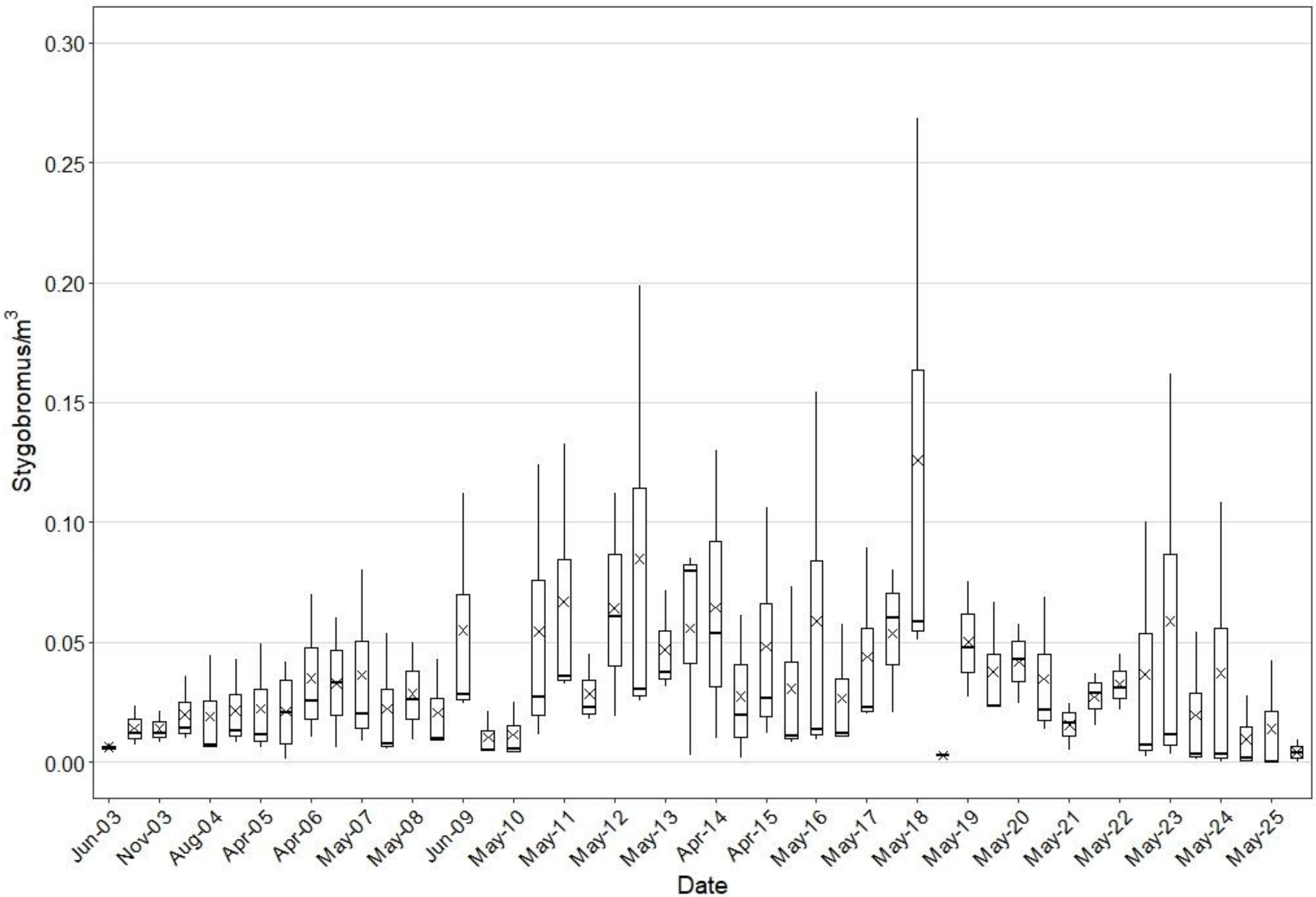

Figure E27. **Boxplots displaying *Stygobromus* sp. per cubic meters of water at Western Upwelling, Spring Run 1, and Spring Run 3 from 2003–2025. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range.**

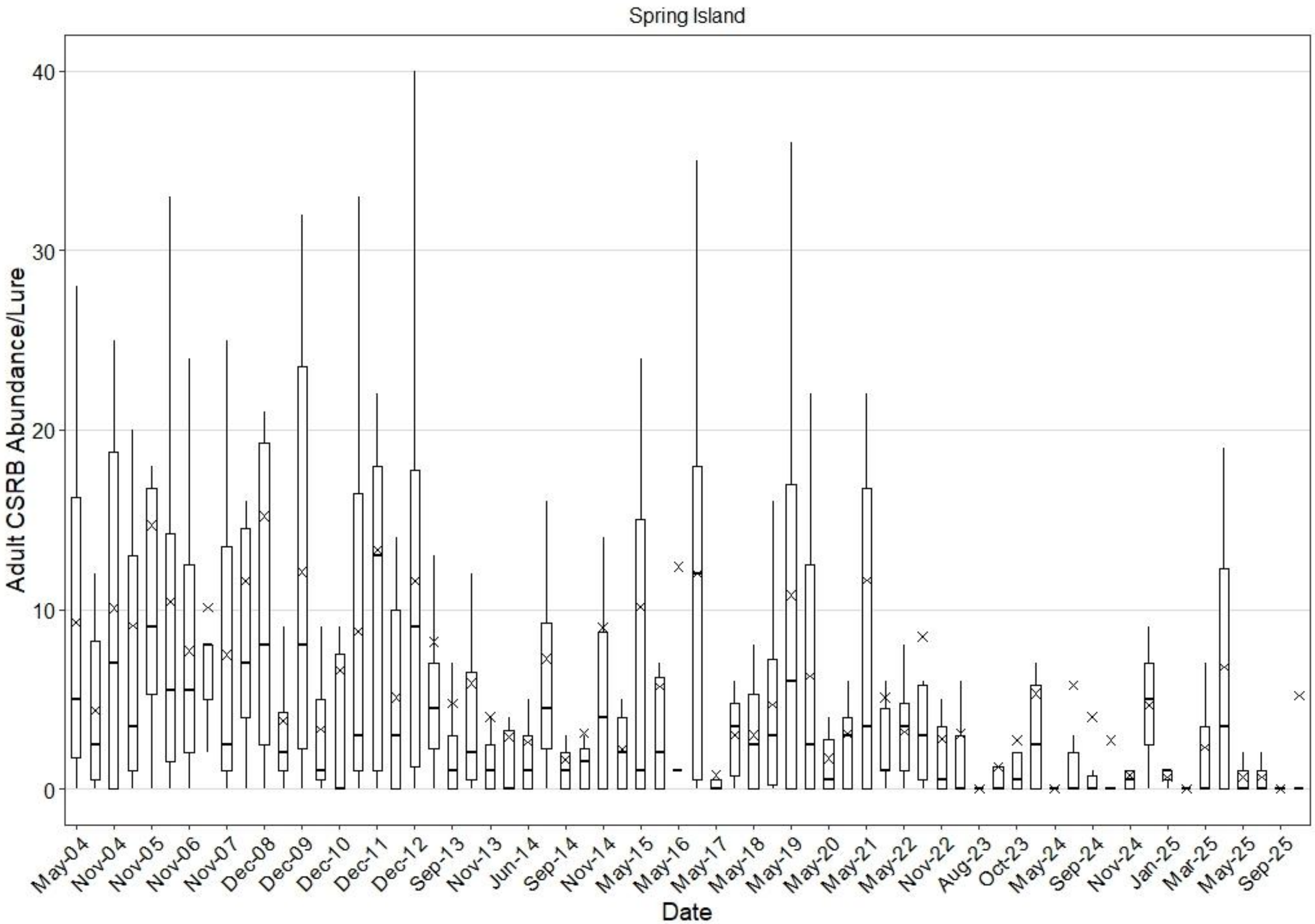

Figure E28. **Boxplots displaying temporal trends in adult CSRB abundance per retrieved at Spring Island from 2004–2025 during lure sampling in Comal Springs. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range.**

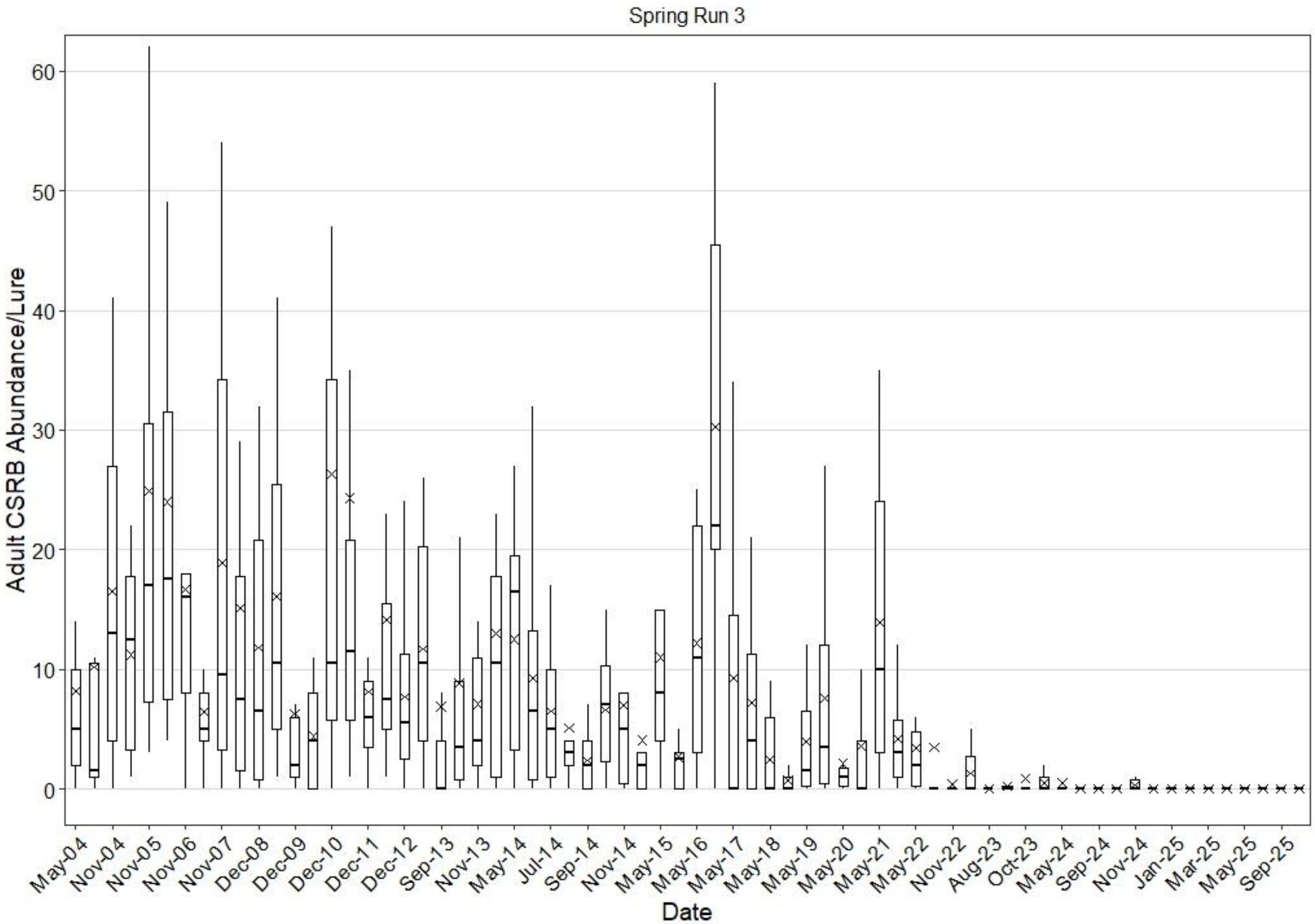

Figure E29. **Boxplots displaying temporal trends in adult CSRB abundance per retrieved at Spring Run 3 from 2004–2025 during lure sampling in Comal Springs. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range.**

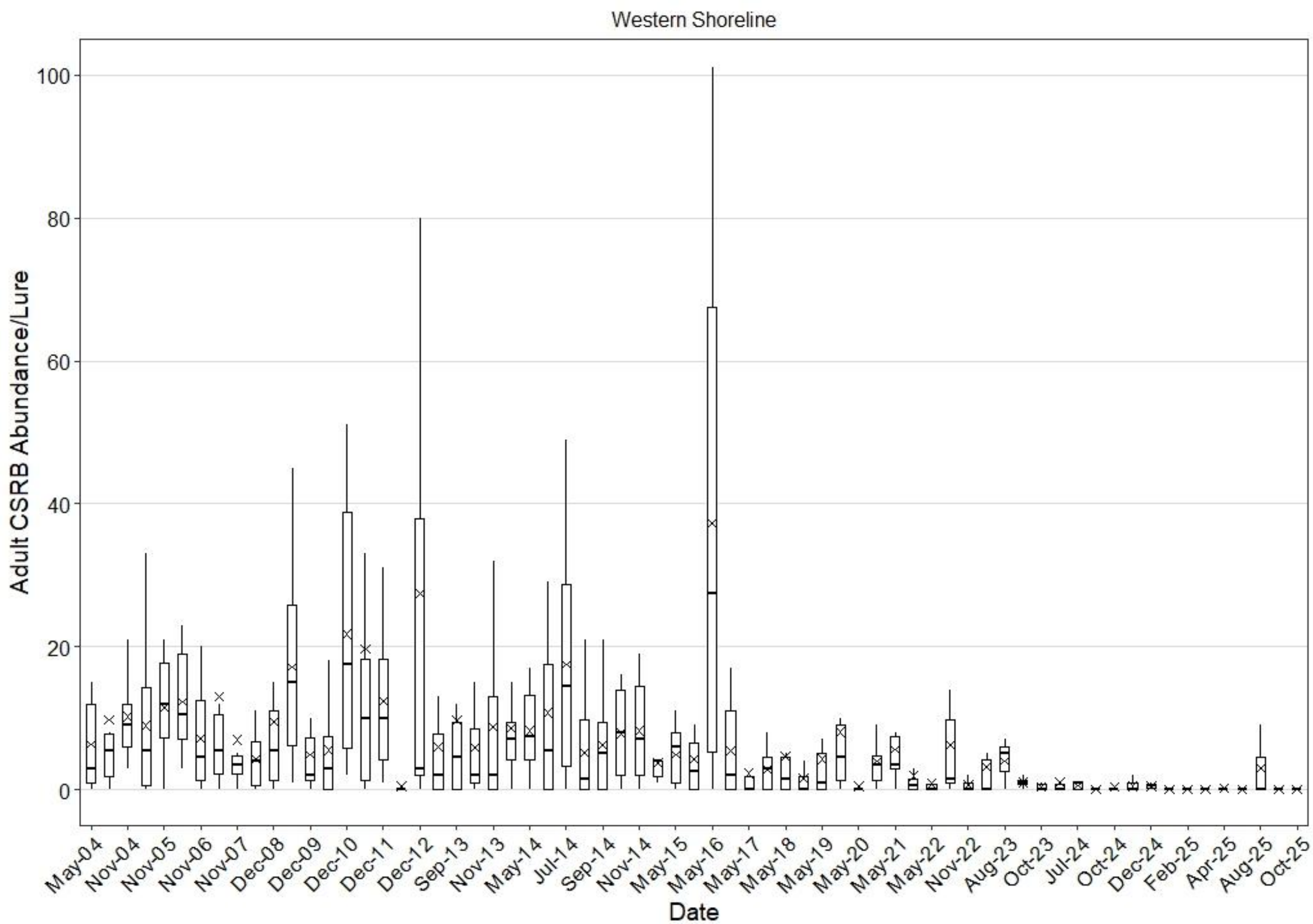

Figure E30. Boxplots displaying temporal trends in adult CSRB abundance per retrieved at the Western Shoreline from 2004–2025 during lure sampling in Comal Springs. The thick horizontal line in each box is the median, x represents the mean, and the upper/lower bounds of each box represents the interquartile range. Whiskers represent minimum/maximum values up to 1.5 times the interquartile range.

APPENDIX F: MACROINVERTEBRATE RAW DATA

Site	Date	Season	Class	Order	Family	FinalID	Counts
Landa Lake	4/23/2024	Spring	Clitellata			Hirudinea	4
Landa Lake	4/23/2024	Spring	Gastropoda		Physidae	Physella	2
Landa Lake	4/23/2024	Spring	Gastropoda		Thiaridae	Melanoides tuberculata	20
Landa Lake	4/23/2024	Spring	Insecta	Coleoptera	Dytiscidae	Neoclypeodytes discretus	1
Landa Lake	4/23/2024	Spring	Insecta	Coleoptera	Hydrophilidae	Helochares	2
Landa Lake	4/23/2024	Spring	Insecta	Diptera	Ceratopogonidae	Bezzia complex	2
Landa Lake	4/23/2024	Spring	Insecta	Diptera	Chironomidae	Chironomidae	2
Landa Lake	4/23/2024	Spring	Insecta	Diptera	Culicidae	Anopheles	1
Landa Lake	4/23/2024	Spring	Insecta	Diptera	Stratiomyidae	Euparyphus	1
Landa Lake	4/23/2024	Spring	Insecta	Ephemeroptera	Baetidae	Callibaetis	3
Landa Lake	4/23/2024	Spring	Insecta	Ephemeroptera	Leptohyphidae	Tricorythodes	2
Landa Lake	4/23/2024	Spring	Insecta	Hemiptera	Corixidae	Trichocorixa	3
Landa Lake	4/23/2024	Spring	Insecta	Hemiptera	Naucoridae	Pelocoris	1
Landa Lake	4/23/2024	Spring	Insecta	Odonata	Coenagrionidae	Enallagma	1
Landa Lake	4/23/2024	Spring	Insecta	Trichoptera	Helicopsychidae	Helicopsyche	4
Landa Lake	4/23/2024	Spring	Malacostraca	Amphipoda	Hyalellidae	Hyalella	118
Landa Lake	4/23/2024	Spring	Malacostraca	Decapoda	Cambaridae	Cambaridae	1
Lower New Channel	4/23/2024	Spring	Bivalvia	Veneroida	Corbiculidae	Corbicula	2
Lower New Channel	4/23/2024	Spring	Gastropoda		Thiaridae	Melanoides tuberculata	36

Lower New Channel	4/23/2024	Spring	Insecta	Diptera	Chironomidae	Chironomidae	6
Lower New Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Baetidae	Callibaetis	3
Lower New Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Leptohyphidae	Tricorythodes	24
Lower New Channel	4/23/2024	Spring	Insecta	Odonata	Coenagrionidae	Argia	3
Lower New Channel	4/23/2024	Spring	Insecta	Trichoptera	Helicopsychidae	Helicopsyche	1
Lower New Channel	4/23/2024	Spring	Malacostraca	Amphipoda	Hyalellidae	Hyalella	66
Old Channel	4/23/2024	Spring	Clitellata			Hirudinea	2
Old Channel	4/23/2024	Spring	Clitellata			Oligochaeta	7
Old Channel	4/23/2024	Spring	Gastropoda		Thiaridae	Melanoides tuberculata	5
Old Channel	4/23/2024	Spring	Insecta	Coleoptera	Psephenidae	Psephenus texanus	4
Old Channel	4/23/2024	Spring	Insecta	Diptera	Ceratopogonidae	Bezzia	1
Old Channel	4/23/2024	Spring	Insecta	Diptera	Chironomidae	Chironomidae	7
Old Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Baetidae	Callibaetis	1
Old Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Caenidae	Caenis	4
Old Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Ephemeridae	Hexagenia	4
Old Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Heptageniidae	Stenonema	1
Old Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Leptohyphidae	Tricorythodes	31
Old Channel	4/23/2024	Spring	Insecta	Odonata	Coenagrionidae	Argia	2
Old Channel	4/23/2024	Spring	Insecta	Odonata	Macromiidae	Didymops	1
Old Channel	4/23/2024	Spring	Insecta	Trichoptera	Helicopsychidae	Helicopsyche	2

Old Channel	4/23/2024	Spring	Malacostraca	Amphipoda	Hyalellidae	Hyalella	81
Upper New Channel	4/23/2024	Spring	Clitellata			Hirudinea	2
Upper New Channel	4/23/2024	Spring	Clitellata			Oligochaeta	3
Upper New Channel	4/23/2024	Spring	Gastropoda		Physidae	Physella	2
Upper New Channel	4/23/2024	Spring	Gastropoda		Thiaridae	Melanoides tuberculata	13
Upper New Channel	4/23/2024	Spring	Insecta	Coleoptera	Elmidae	Macrelmis	13
Upper New Channel	4/23/2024	Spring	Insecta	Coleoptera	Psephenidae	Psephenus texanus	9
Upper New Channel	4/23/2024	Spring	Insecta	Diptera	Chironomidae	Chironomidae	5
Upper New Channel	4/23/2024	Spring	Insecta	Diptera	Simuliidae	Simulium	2
Upper New Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Baetidae	Callibaetis	12
Upper New Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Leptohyphidae	Tricorythodes	2
Upper New Channel	4/23/2024	Spring	Insecta	Ephemeroptera	Leptophlebiidae	Thraulodes	2
Upper New Channel	4/23/2024	Spring	Insecta	Hemiptera	Naucoridae	Ambrysus lunatus	8
Upper New Channel	4/23/2024	Spring	Insecta	Odonata	Coenagrionidae	Argia	4
Upper New Channel	4/23/2024	Spring	Insecta	Odonata	Coenagrionidae	Enallagma	1
Upper New Channel	4/23/2024	Spring	Insecta	Trichoptera	Helicopsychidae	Helicopsyche	12
Upper New Channel	4/23/2024	Spring	Insecta	Trichoptera	Leptoceridae	Nectopsyche	3
Upper New Channel	4/23/2024	Spring	Insecta	Trichoptera	Philopotamidae	Chimarra	10
Upper New Channel	4/23/2024	Spring	Malacostraca	Amphipoda	Hyalellidae	Hyalella	35
Upper New Channel	4/23/2024	Spring	Malacostraca	Decapoda	Cambaridae	Cambaridae	1

Upper New Channel	4/23/2024	Spring		Tricladida	Dugesiidae	Dugesia	11
Upper Spring Run	4/23/2024	Spring	Clitellata			Oligochaeta	1
Upper Spring Run	4/23/2024	Spring	Gastropoda		Planorbidae	Planorbella	1
Upper Spring Run	4/23/2024	Spring	Gastropoda		Thiaridae	Melanoides tuberculata	8
Upper Spring Run	4/23/2024	Spring	Insecta	Coleoptera	Psephenidae	Psephenus texanus	1
Upper Spring Run	4/23/2024	Spring	Insecta	Diptera	Ceratopogonidae	Bezzia complex	5
Upper Spring Run	4/23/2024	Spring	Insecta	Diptera	Chironomidae	Chironomidae	9
Upper Spring Run	4/23/2024	Spring	Insecta	Ephemeroptera	Baetidae	Callibaetis	7
Upper Spring Run	4/23/2024	Spring	Insecta	Ephemeroptera	Caenidae	Caenis	4
Upper Spring Run	4/23/2024	Spring	Insecta	Ephemeroptera	Ephemeridae	Hexagenia	1
Upper Spring Run	4/23/2024	Spring	Malacostraca	Amphipoda	Hyalellidae	Hyalella	133
Upper Spring Run	4/23/2024	Spring	Malacostraca	Decapoda	Cambaridae	Cambaridae	4
Landa Lake	10/15/2025	Fall	Clitellata	Hirudinida	Glossophiidae	Helobdella	1
Landa Lake	10/15/2025	Fall	Clitellata			Oligochaeta	1
Landa Lake	10/15/2025	Fall	Gastropoda	Basommatophora	Planorbidae	Helisoma	2
Landa Lake	10/15/2025	Fall	Gastropoda	Neotaenioglossa	Hydrobiidae	Hydrobiidae	1
Landa Lake	10/15/2025	Fall	Gastropoda		Physidae	Physella	3
Landa Lake	10/15/2025	Fall	Gastropoda		Thiaridae	Melanoides tuberculata	13
Landa Lake	10/15/2025	Fall	Insecta	Coleoptera	Hydrophilidae	Helochares	1
Landa Lake	10/15/2025	Fall	Insecta	Coleoptera	Hydrophilidae	Paracymus	1

Landa Lake	10/15/2025	Fall	Insecta	Coleoptera	Scirtidae	Contacyphon	1
Landa Lake	10/15/2025	Fall	Insecta	Diptera	Chironomidae	Chironomidae	4
Landa Lake	10/15/2025	Fall	Insecta	Ephemeroptera	Baetidae	Callibaetis	15
Landa Lake	10/15/2025	Fall	Insecta	Ephemeroptera	Caenidae	Caenis	1
Landa Lake	10/15/2025	Fall	Insecta	Ephemeroptera	Leptohyphidae	Tricorythodes	4
Landa Lake	10/15/2025	Fall	Insecta	Hemiptera	Belostomatidae	Belostoma lutarium	1
Landa Lake	10/15/2025	Fall	Insecta	Hemiptera	Naucoridae	Pelocoris	1
Landa Lake	10/15/2025	Fall	Insecta	Odonata	Aeshnidae	Coryphaeschna	1
Landa Lake	10/15/2025	Fall	Insecta	Odonata	Calopterygidae	Hetaerina	1
Landa Lake	10/15/2025	Fall	Insecta	Odonata	Coenagrionidae	Argia	2
Landa Lake	10/15/2025	Fall	Insecta	Odonata	Coenagrionidae	Enallagma	1
Landa Lake	10/15/2025	Fall	Insecta	Odonata	Coenagrionidae	Neoneura	7
Landa Lake	10/15/2025	Fall	Insecta	Odonata	Libellulidae	Erythemis	3
Landa Lake	10/15/2025	Fall	Insecta	Odonata	Libellulidae	Libellula	1
Landa Lake	10/15/2025	Fall	Insecta	Odonata	Libellulidae	Perithemis	2
Landa Lake	10/15/2025	Fall	Malacostraca	Amphipoda	Hyalellidae	Hyalella	97
Landa Lake	10/15/2025	Fall	Malacostraca	Decapoda	Cambaridae	Cambaridae	4
Landa Lake	10/15/2025	Fall	Malacostraca	Decapoda	Palaemonidae	Palaemon	9
Lower New Channel	10/15/2025	Fall	Clitellata			Oligochaeta	4
Lower New Channel	10/15/2025	Fall	Gastropoda		Thiaridae	Melanoides tuberculata	51

Lower New Channel	10/15/2025	Fall	Insecta	Diptera	Ceratopogonidae	Bezzia complex	3
Lower New Channel	10/15/2025	Fall	Insecta	Diptera	Chironomidae	Chironomidae	3
Lower New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Baetidae	Callibaetis	19
Lower New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Caenidae	Caenis	1
Lower New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Heptageniidae	Stenonema	1
Lower New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Leptohyphidae	Leptohyphes	35
Lower New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Leptohyphidae	Tricorythodes	1
Lower New Channel	10/15/2025	Fall	Insecta	Odonata	Coenagrionidae	Argia	3
Lower New Channel	10/15/2025	Fall	Insecta	Trichoptera	Leptoceridae	Nectopsyche	1
Lower New Channel	10/15/2025	Fall	Malacostraca	Amphipoda	Hyalellidae	Hyalella	21
Old Channel	10/15/2025	Fall	Clitellata	Hirudinida	Glossophiidae	Helobdella	2
Old Channel	10/15/2025	Fall	Clitellata			Oligochaeta	1
Old Channel	10/15/2025	Fall	Gastropoda		Thiaridae	Melanoides tuberculata	3
Old Channel	10/15/2025	Fall	Insecta	Coleoptera	Psephenidae	Psephenus texanus	2
Old Channel	10/15/2025	Fall	Insecta	Diptera	Chironomidae	Chironomidae	6
Old Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Baetidae	Callibaetis	3
Old Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Baetidae	Fallceon	6
Old Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Caenidae	Caenis	17
Old Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Ephemeridae	Hexagenia	2
Old Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Heptageniidae	Stenonema	1

Old Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Leptohyphidae	Leptohyphes	1
Old Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Leptohyphidae	Tricorythodes	34
Old Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Leptophlebiidae	Thraulodes	3
Old Channel	10/15/2025	Fall	Insecta	Hemiptera	Naucoridae	Limnocoris lutzi	1
Old Channel	10/15/2025	Fall	Insecta	Odonata	Aeshnidae	Abasiaeschna	1
Old Channel	10/15/2025	Fall	Insecta	Odonata	Calopterygidae	Hetaerina	1
Old Channel	10/15/2025	Fall	Insecta	Odonata	Coenagrionidae	Argia	6
Old Channel	10/15/2025	Fall	Insecta	Odonata	Gomphidae	Phyllogomphoides	1
Old Channel	10/15/2025	Fall	Insecta	Odonata	Libellulidae	Dythemis	2
Old Channel	10/15/2025	Fall	Insecta	Trichoptera	Hydrobiosidae	Atopsyche	1
Old Channel	10/15/2025	Fall	Malacostraca	Amphipoda	Hyalellidae	Hyalella	46
Old Channel	10/15/2025	Fall	Malacostraca	Decapoda	Cambaridae	Cambaridae	1
Upper New Channel	10/15/2025	Fall	Clitellata	Hirudinida	Glossiphoniidae	Placobdella	2
Upper New Channel	10/15/2025	Fall	Clitellata	Hirudinida	Glossophiidae	Helobdella	1
Upper New Channel	10/15/2025	Fall	Clitellata			Oligochaeta	5
Upper New Channel	10/15/2025	Fall	Gastropoda	Basommatophora	Ancylidae	Ferrissia	1
Upper New Channel	10/15/2025	Fall	Gastropoda	Neotaenioglossa	Hydrobiidae	Hydrobiidae	6
Upper New Channel	10/15/2025	Fall	Gastropoda		Physidae	Physella	3
Upper New Channel	10/15/2025	Fall	Gastropoda		Pleuroceridae	Elimia	5
Upper New Channel	10/15/2025	Fall	Gastropoda		Thiaridae	Melanoides tuberculata	34

Upper New Channel	10/15/2025	Fall	Insecta	Coleoptera	Elmidae	Macrelmis	1
Upper New Channel	10/15/2025	Fall	Insecta	Coleoptera	Elmidae	Microcylloepus pusillus	1
Upper New Channel	10/15/2025	Fall	Insecta	Coleoptera	Psephenidae	Psephenus texanus	1
Upper New Channel	10/15/2025	Fall	Insecta	Diptera	Chironomidae	Chironomidae	6
Upper New Channel	10/15/2025	Fall	Insecta	Diptera	Culicidae	Anopheles	2
Upper New Channel	10/15/2025	Fall	Insecta	Diptera	Simuliidae	Simulium	9
Upper New Channel	10/15/2025	Fall	Insecta	Diptera	Stratiomyidae	Euparyphus	1
Upper New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Baetidae	Callibaetis	4
Upper New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Baetidae	Fallceon	34
Upper New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Leptohyphidae	Leptohyphes	1
Upper New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Leptohyphidae	Tricorythodes	4
Upper New Channel	10/15/2025	Fall	Insecta	Ephemeroptera	Leptophlebiidae	Thraulodes	3
Upper New Channel	10/15/2025	Fall	Insecta	Odonata	Calopterygidae	Hetaerina	1
Upper New Channel	10/15/2025	Fall	Insecta	Odonata	Coenagrionidae	Argia	1
Upper New Channel	10/15/2025	Fall	Insecta	Odonata	Coenagrionidae	Neoneura	8
Upper New Channel	10/15/2025	Fall	Insecta	Odonata	Libellulidae	Brechmorhoga	1
Upper New Channel	10/15/2025	Fall	Insecta	Odonata	Libellulidae	Libellulidae	1
Upper New Channel	10/15/2025	Fall	Insecta	Trichoptera	Helicopsychidae	Helicopsyche	5
Upper New Channel	10/15/2025	Fall	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	2
Upper New Channel	10/15/2025	Fall	Insecta	Trichoptera	Leptoceridae	Nectopsyche	3

Upper New Channel	10/15/2025	Fall	Insecta	Trichoptera	Philopotamidae	Chimarra	1
Upper New Channel	10/15/2025	Fall	Malacostraca	Amphipoda	Hyalellidae	Hyalella	25
Upper New Channel	10/15/2025	Fall	Malacostraca	Decapoda	Palaemonidae	Palaemon	2
Upper New Channel	10/15/2025	Fall		Tricladida	Dugesiidae	Dugesia	4
Upper Spring Run	10/15/2025	Fall	Clitellata			Oligochaeta	19
Upper Spring Run	10/15/2025	Fall	Gastropoda		Physidae	Physella	1
Upper Spring Run	10/15/2025	Fall	Insecta	Coleoptera	Dytiscidae	Neoclypeodytes discretus	6
Upper Spring Run	10/15/2025	Fall	Insecta	Coleoptera	Psephenidae	Psephenus texanus	1
Upper Spring Run	10/15/2025	Fall	Insecta	Diptera	Chironomidae	Chironomidae	18
Upper Spring Run	10/15/2025	Fall	Insecta	Ephemeroptera	Baetidae	Callibaetis	25
Upper Spring Run	10/15/2025	Fall	Insecta	Ephemeroptera	Caenidae	Caenis	2
Upper Spring Run	10/15/2025	Fall	Malacostraca	Amphipoda	Hyalellidae	Hyalella	78
Upper Spring Run	10/15/2025	Fall	Malacostraca	Decapoda	Cambaridae	Cambaridae	3

APPENDIX G: DROP-NET RAW DATA

SiteCode	Reach	Site_No	Date	Dip_Net	Species	Length	Count
3255	Upper Spring Run	Chara-1	2025-01-14	1	Lepomis miniatus	62	1
3255	Upper Spring Run	Chara-1	2025-01-14	1	Lepomis miniatus	108	1
3255	Upper Spring Run	Chara-1	2025-01-14	1	Astyanax argentatus	30	1
3255	Upper Spring Run	Chara-1	2025-01-14	2	No fish collected		
3255	Upper Spring Run	Chara-1	2025-01-14	3	Herichthys cyanoguttatus	103	1
3255	Upper Spring Run	Chara-1	2025-01-14	3	Lepomis miniatus	65	1
3255	Upper Spring Run	Chara-1	2025-01-14	3	Procambarus sp.		2
3255	Upper Spring Run	Chara-1	2025-01-14	4	Astyanax argentatus	39	1
3255	Upper Spring Run	Chara-1	2025-01-14	4	Lepomis miniatus	110	1
3255	Upper Spring Run	Chara-1	2025-01-14	4	Lepomis miniatus	65	1
3255	Upper Spring Run	Chara-1	2025-01-14	4	Lepomis miniatus	76	1
3255	Upper Spring Run	Chara-1	2025-01-14	4	Procambarus sp.		3
3255	Upper Spring Run	Chara-1	2025-01-14	5	Lepomis miniatus	80	1
3255	Upper Spring Run	Chara-1	2025-01-14	5	Procambarus sp.		1
3255	Upper Spring Run	Chara-1	2025-01-14	6	Lepomis miniatus	125	1
3255	Upper Spring Run	Chara-1	2025-01-14	6	Lepomis miniatus	55	1
3255	Upper Spring Run	Chara-1	2025-01-14	7	Lepomis miniatus	96	1
3255	Upper Spring Run	Chara-1	2025-01-14	7	Lepomis miniatus	70	1
3255	Upper Spring Run	Chara-1	2025-01-14	7	Lepomis miniatus	64	1
3255	Upper Spring Run	Chara-1	2025-01-14	7	Lepomis miniatus	58	1
3255	Upper Spring Run	Chara-1	2025-01-14	7	Lepomis macrochirus	74	1
3255	Upper Spring Run	Chara-1	2025-01-14	7	Procambarus sp.		1
3255	Upper Spring Run	Chara-1	2025-01-14	8	Lepomis miniatus	89	1
3255	Upper Spring Run	Chara-1	2025-01-14	8	Lepomis miniatus	129	1
3255	Upper Spring Run	Chara-1	2025-01-14	8	Lepomis miniatus	55	1
3255	Upper Spring Run	Chara-1	2025-01-14	9	Lepomis miniatus	113	1
3255	Upper Spring Run	Chara-1	2025-01-14	9	Lepomis miniatus	64	1
3255	Upper Spring Run	Chara-1	2025-01-14	10	Etheostoma lepidum	50	1
3255	Upper Spring Run	Chara-1	2025-01-14	10	Lepomis miniatus	50	1

3255	Upper Spring Run	Chara-1	2025-01-14	10	Lepomis miniatus	60	1
3255	Upper Spring Run	Chara-1	2025-01-14	10	Lepomis miniatus	80	1
3255	Upper Spring Run	Chara-1	2025-01-14	11	Procambarus sp.		1
3255	Upper Spring Run	Chara-1	2025-01-14	12	Lepomis miniatus	131	1
3255	Upper Spring Run	Chara-1	2025-01-14	13	No fish collected		
3255	Upper Spring Run	Chara-1	2025-01-14	14	No fish collected		
3255	Upper Spring Run	Chara-1	2025-01-14	15	Procambarus sp.		1
3256	Upper Spring Run	Sag-1	2025-01-14	1	No fish collected		
3256	Upper Spring Run	Sag-1	2025-01-14	2	Procambarus sp.		1
3256	Upper Spring Run	Sag-1	2025-01-14	3	Procambarus sp.		1
3256	Upper Spring Run	Sag-1	2025-01-14	4	No fish collected		
3256	Upper Spring Run	Sag-1	2025-01-14	5	No fish collected		
3256	Upper Spring Run	Sag-1	2025-01-14	6	Procambarus sp.		2
3256	Upper Spring Run	Sag-1	2025-01-14	7	No fish collected		
3256	Upper Spring Run	Sag-1	2025-01-14	8	No fish collected		
3256	Upper Spring Run	Sag-1	2025-01-14	9	No fish collected		
3256	Upper Spring Run	Sag-1	2025-01-14	10	No fish collected		
3257	Upper Spring Run	Sag-2	2025-01-14	1	Procambarus sp.		1
3257	Upper Spring Run	Sag-2	2025-01-14	2	No fish collected		
3257	Upper Spring Run	Sag-2	2025-01-14	3	No fish collected		
3257	Upper Spring Run	Sag-2	2025-01-14	4	No fish collected		
3257	Upper Spring Run	Sag-2	2025-01-14	5	No fish collected		
3257	Upper Spring Run	Sag-2	2025-01-14	6	No fish collected		
3257	Upper Spring Run	Sag-2	2025-01-14	7	No fish collected		
3257	Upper Spring Run	Sag-2	2025-01-14	8	No fish collected		
3257	Upper Spring Run	Sag-2	2025-01-14	9	Procambarus sp.		1
3257	Upper Spring Run	Sag-2	2025-01-14	10	No fish collected		
3258	Upper Spring Run	Open-1	2025-01-14	1	No fish collected		
3258	Upper Spring Run	Open-1	2025-01-14	2	No fish collected		
3258	Upper Spring Run	Open-1	2025-01-14	3	No fish collected		

3258	Upper Spring Run	Open-1	2025-01-14	4	No fish collected		
3258	Upper Spring Run	Open-1	2025-01-14	5	No fish collected		
3258	Upper Spring Run	Open-1	2025-01-14	6	No fish collected		
3258	Upper Spring Run	Open-1	2025-01-14	7	No fish collected		
3258	Upper Spring Run	Open-1	2025-01-14	8	No fish collected		
3258	Upper Spring Run	Open-1	2025-01-14	9	No fish collected		
3258	Upper Spring Run	Open-1	2025-01-14	10	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	1	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	2	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	3	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	4	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	5	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	6	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	7	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	8	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	9	No fish collected		
3259	Upper Spring Run	Open-2	2025-01-14	10	No fish collected		
3260	Upper Spring Run	Chara-2	2025-01-14	1	Palaemonetes sp.		4
3260	Upper Spring Run	Chara-2	2025-01-14	1	Astyanax argentatus	32	1
3260	Upper Spring Run	Chara-2	2025-01-14	2	Palaemonetes sp.		2
3260	Upper Spring Run	Chara-2	2025-01-14	2	Procambarus sp.		4
3260	Upper Spring Run	Chara-2	2025-01-14	3	Procambarus sp.		2
3260	Upper Spring Run	Chara-2	2025-01-14	3	Palaemonetes sp.		1
3260	Upper Spring Run	Chara-2	2025-01-14	4	Lepomis miniatus	55	1
3260	Upper Spring Run	Chara-2	2025-01-14	4	Lepomis miniatus	30	1
3260	Upper Spring Run	Chara-2	2025-01-14	4	Lepomis miniatus	72	1
3260	Upper Spring Run	Chara-2	2025-01-14	4	Lepomis miniatus	60	1
3260	Upper Spring Run	Chara-2	2025-01-14	4	Astyanax argentatus	26	1
3260	Upper Spring Run	Chara-2	2025-01-14	4	Procambarus sp.		2
3260	Upper Spring Run	Chara-2	2025-01-14	5	Lepomis miniatus	35	1

3260	Upper Spring Run	Chara-2	2025-01-14	5	Palaemonetes sp.		2
3260	Upper Spring Run	Chara-2	2025-01-14	5	Procambarus sp.		2
3260	Upper Spring Run	Chara-2	2025-01-14	6	No fish collected		
3260	Upper Spring Run	Chara-2	2025-01-14	7	Palaemonetes sp.		1
3260	Upper Spring Run	Chara-2	2025-01-14	8	Procambarus sp.		1
3260	Upper Spring Run	Chara-2	2025-01-14	9	Lepomis miniatus	84	1
3260	Upper Spring Run	Chara-2	2025-01-14	9	Lepomis miniatus	39	1
3260	Upper Spring Run	Chara-2	2025-01-14	9	Etheostoma fonticola	29	1
3260	Upper Spring Run	Chara-2	2025-01-14	10	No fish collected		
3260	Upper Spring Run	Chara-2	2025-01-14	11	Procambarus sp.		2
3260	Upper Spring Run	Chara-2	2025-01-14	12	Procambarus sp.		2
3260	Upper Spring Run	Chara-2	2025-01-14	13	Palaemonetes sp.		1
3260	Upper Spring Run	Chara-2	2025-01-14	14	Lepomis miniatus	62	1
3260	Upper Spring Run	Chara-2	2025-01-14	15	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	1	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	2	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	3	Etheostoma fonticola	15	1
3261	Upper Spring Run	Bryo-1	2025-01-14	3	Etheostoma fonticola	9	1
3261	Upper Spring Run	Bryo-1	2025-01-14	4	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	4	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	5	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	6	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	7	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	8	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	9	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	10	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	11	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	12	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	13	No fish collected		
3261	Upper Spring Run	Bryo-1	2025-01-14	14	No fish collected		

3261	Upper Spring Run	Bryo-1	2025-01-14	15	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	1	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	2	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	3	Etheostoma fonticola	14	1
3262	Upper Spring Run	Bryo-2	2025-01-14	4	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	5	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	6	Etheostoma fonticola	32	1
3262	Upper Spring Run	Bryo-2	2025-01-14	6	Procambarus sp.		1
3262	Upper Spring Run	Bryo-2	2025-01-14	7	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	8	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	9	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	10	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	11	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	12	Etheostoma fonticola	11	1
3262	Upper Spring Run	Bryo-2	2025-01-14	13	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	14	No fish collected		
3262	Upper Spring Run	Bryo-2	2025-01-14	15	No fish collected		
3263	Landa Lake	Bryo-1	2025-01-15	1	Etheostoma fonticola	26	1
3263	Landa Lake	Bryo-1	2025-01-15	1	Etheostoma fonticola	26	1
3263	Landa Lake	Bryo-1	2025-01-15	1	Etheostoma fonticola	13	1
3263	Landa Lake	Bryo-1	2025-01-15	1	Etheostoma fonticola	28	1
3263	Landa Lake	Bryo-1	2025-01-15	1	Etheostoma fonticola	21	1
3263	Landa Lake	Bryo-1	2025-01-15	1	Procambarus sp.		4
3263	Landa Lake	Bryo-1	2025-01-15	2	Procambarus sp.		2
3263	Landa Lake	Bryo-1	2025-01-15	3	Etheostoma fonticola	18	1
3263	Landa Lake	Bryo-1	2025-01-15	4	Procambarus sp.		1
3263	Landa Lake	Bryo-1	2025-01-15	5	Etheostoma fonticola	20	1
3263	Landa Lake	Bryo-1	2025-01-15	5	Procambarus sp.		3
3263	Landa Lake	Bryo-1	2025-01-15	6	Etheostoma fonticola	28	1
3263	Landa Lake	Bryo-1	2025-01-15	7	No fish collected		

3263	Landa Lake	Bryo-1	2025-01-15	8	Etheostoma fonticola	30	1
3263	Landa Lake	Bryo-1	2025-01-15	8	Etheostoma fonticola	25	1
3263	Landa Lake	Bryo-1	2025-01-15	9	Etheostoma fonticola	19	1
3263	Landa Lake	Bryo-1	2025-01-15	9	Etheostoma fonticola	30	1
3263	Landa Lake	Bryo-1	2025-01-15	9	Etheostoma fonticola	20	1
3263	Landa Lake	Bryo-1	2025-01-15	10	No fish collected		
3263	Landa Lake	Bryo-1	2025-01-15	11	No fish collected		
3263	Landa Lake	Bryo-1	2025-01-15	12	Etheostoma fonticola	19	1
3263	Landa Lake	Bryo-1	2025-01-15	13	Etheostoma fonticola	30	1
3263	Landa Lake	Bryo-1	2025-01-15	14	No fish collected		
3263	Landa Lake	Bryo-1	2025-01-15	15	No fish collected		
3264	Landa Lake	Bryo-2	2025-01-15	1	Procambarus sp.		1
3264	Landa Lake	Bryo-2	2025-01-15	1	Palaemonetes sp.		1
3264	Landa Lake	Bryo-2	2025-01-15	1	Etheostoma fonticola	23	1
3264	Landa Lake	Bryo-2	2025-01-15	2	Procambarus sp.		3
3264	Landa Lake	Bryo-2	2025-01-15	2	Etheostoma fonticola	26	1
3264	Landa Lake	Bryo-2	2025-01-15	2	Etheostoma fonticola	33	1
3264	Landa Lake	Bryo-2	2025-01-15	2	Etheostoma fonticola	18	1
3264	Landa Lake	Bryo-2	2025-01-15	2	Etheostoma fonticola	18	1
3264	Landa Lake	Bryo-2	2025-01-15	3	Etheostoma fonticola	25	1
3264	Landa Lake	Bryo-2	2025-01-15	3	Procambarus sp.		1
3264	Landa Lake	Bryo-2	2025-01-15	4	Procambarus sp.		2
3264	Landa Lake	Bryo-2	2025-01-15	5	Etheostoma fonticola	30	1
3264	Landa Lake	Bryo-2	2025-01-15	5	Etheostoma fonticola	21	1
3264	Landa Lake	Bryo-2	2025-01-15	5	Procambarus sp.		1
3264	Landa Lake	Bryo-2	2025-01-15	6	Etheostoma fonticola	29	1
3264	Landa Lake	Bryo-2	2025-01-15	6	Etheostoma fonticola	20	1
3264	Landa Lake	Bryo-2	2025-01-15	6	Procambarus sp.		2
3264	Landa Lake	Bryo-2	2025-01-15	7	Etheostoma fonticola	23	1
3264	Landa Lake	Bryo-2	2025-01-15	7	Etheostoma fonticola	25	1

3264	Landa Lake	Bryo-2	2025-01-15	8	Etheostoma fonticola	12	1
3264	Landa Lake	Bryo-2	2025-01-15	8	Procambarus sp.		3
3264	Landa Lake	Bryo-2	2025-01-15	9	No fish collected		
3264	Landa Lake	Bryo-2	2025-01-15	10	Procambarus sp.		3
3264	Landa Lake	Bryo-2	2025-01-15	10	Etheostoma fonticola	26	1
3264	Landa Lake	Bryo-2	2025-01-15	10	Etheostoma fonticola	33	1
3264	Landa Lake	Bryo-2	2025-01-15	10	Etheostoma fonticola	24	1
3264	Landa Lake	Bryo-2	2025-01-15	11	No fish collected		
3264	Landa Lake	Bryo-2	2025-01-15	12	No fish collected		
3264	Landa Lake	Bryo-2	2025-01-15	13	No fish collected		
3264	Landa Lake	Bryo-2	2025-01-15	14	No fish collected		
3264	Landa Lake	Bryo-2	2025-01-15	15	No fish collected		
3265	Landa Lake	Sag-1	2025-01-15	1	No fish collected		
3265	Landa Lake	Sag-1	2025-01-15	2	No fish collected		
3265	Landa Lake	Sag-1	2025-01-15	3	Dionda nigrotaeniata	31	1
3265	Landa Lake	Sag-1	2025-01-15	3	Dionda nigrotaeniata	28	1
3265	Landa Lake	Sag-1	2025-01-15	3	Dionda nigrotaeniata	27	1
3265	Landa Lake	Sag-1	2025-01-15	4	Dionda nigrotaeniata	36	1
3265	Landa Lake	Sag-1	2025-01-15	4	Dionda nigrotaeniata	30	1
3265	Landa Lake	Sag-1	2025-01-15	4	Dionda nigrotaeniata	32	1
3265	Landa Lake	Sag-1	2025-01-15	4	Dionda nigrotaeniata	29	1
3265	Landa Lake	Sag-1	2025-01-15	4	Dionda nigrotaeniata	26	1
3265	Landa Lake	Sag-1	2025-01-15	4	Dionda nigrotaeniata	32	1
3265	Landa Lake	Sag-1	2025-01-15	5	Dionda nigrotaeniata	32	1
3265	Landa Lake	Sag-1	2025-01-15	5	Dionda nigrotaeniata	36	1
3265	Landa Lake	Sag-1	2025-01-15	5	Dionda nigrotaeniata	27	1
3265	Landa Lake	Sag-1	2025-01-15	6	Dionda nigrotaeniata	31	1
3265	Landa Lake	Sag-1	2025-01-15	7	No fish collected		
3265	Landa Lake	Sag-1	2025-01-15	8	Dionda nigrotaeniata	36	1
3265	Landa Lake	Sag-1	2025-01-15	9	No fish collected		

3265	Landa Lake	Sag-1	2025-01-15	10	Dionda nigrotaeniata	37	1
3265	Landa Lake	Sag-1	2025-01-15	11	No fish collected		
3265	Landa Lake	Sag-1	2025-01-15	12	No fish collected		
3265	Landa Lake	Sag-1	2025-01-15	13	No fish collected		
3265	Landa Lake	Sag-1	2025-01-15	14	No fish collected		
3265	Landa Lake	Sag-1	2025-01-15	15	No fish collected		
3266	Landa Lake	Val-1	2025-01-15	1	Lepomis miniatus	75	1
3266	Landa Lake	Val-1	2025-01-15	1	Gambusia sp.	30	1
3266	Landa Lake	Val-1	2025-01-15	1	Gambusia sp.	16	1
3266	Landa Lake	Val-1	2025-01-15	1	Gambusia sp.	32	1
3266	Landa Lake	Val-1	2025-01-15	2	Gambusia sp.	49	1
3266	Landa Lake	Val-1	2025-01-15	2	Gambusia sp.	47	1
3266	Landa Lake	Val-1	2025-01-15	2	Gambusia sp.	41	1
3266	Landa Lake	Val-1	2025-01-15	2	Gambusia sp.	11	1
3266	Landa Lake	Val-1	2025-01-15	2	Gambusia sp.	12	1
3266	Landa Lake	Val-1	2025-01-15	2	Gambusia sp.	26	1
3266	Landa Lake	Val-1	2025-01-15	2	Gambusia sp.	9	1
3266	Landa Lake	Val-1	2025-01-15	3	Gambusia sp.	11	1
3266	Landa Lake	Val-1	2025-01-15	3	Gambusia sp.	10	1
3266	Landa Lake	Val-1	2025-01-15	4	No fish collected		
3266	Landa Lake	Val-1	2025-01-15	5	No fish collected		
3266	Landa Lake	Val-1	2025-01-15	6	Gambusia sp.	30	1
3266	Landa Lake	Val-1	2025-01-15	7	Procambarus sp.		1
3266	Landa Lake	Val-1	2025-01-15	8	No fish collected		
3266	Landa Lake	Val-1	2025-01-15	9	Gambusia sp.	28	1
3266	Landa Lake	Val-1	2025-01-15	9	Procambarus sp.		1
3266	Landa Lake	Val-1	2025-01-15	10	No fish collected		
3266	Landa Lake	Val-1	2025-01-15	11	No fish collected		
3266	Landa Lake	Val-1	2025-01-15	12	No fish collected		
3266	Landa Lake	Val-1	2025-01-15	13	No fish collected		

3266	Landa Lake	Val-1	2025-01-15	14	No fish collected		
3266	Landa Lake	Val-1	2025-01-15	15	No fish collected		
3266	Landa Lake	Val-1	2025-01-15	2	Palaemonetes sp.		1
3267	Landa Lake	Sag-2	2025-01-15	1	Procambarus sp.		4
3267	Landa Lake	Sag-2	2025-01-15	1	Palaemonetes sp.		2
3267	Landa Lake	Sag-2	2025-01-15	2	Lepomis miniatus	120	1
3267	Landa Lake	Sag-2	2025-01-15	2	Procambarus sp.		2
3267	Landa Lake	Sag-2	2025-01-15	2	Etheostoma fonticola	36	1
3267	Landa Lake	Sag-2	2025-01-15	3	Procambarus sp.		6
3267	Landa Lake	Sag-2	2025-01-15	4	Procambarus sp.		4
3267	Landa Lake	Sag-2	2025-01-15	4	Lepomis miniatus	54	1
3267	Landa Lake	Sag-2	2025-01-15	5	Procambarus sp.		9
3267	Landa Lake	Sag-2	2025-01-15	5	Palaemonetes sp.		1
3267	Landa Lake	Sag-2	2025-01-15	6	Procambarus sp.		2
3267	Landa Lake	Sag-2	2025-01-15	7	Procambarus sp.		1
3267	Landa Lake	Sag-2	2025-01-15	8	Procambarus sp.		2
3267	Landa Lake	Sag-2	2025-01-15	9	Palaemonetes sp.		1
3267	Landa Lake	Sag-2	2025-01-15	9	Procambarus sp.		1
3267	Landa Lake	Sag-2	2025-01-15	10	Procambarus sp.		1
3267	Landa Lake	Sag-2	2025-01-15	11	No fish collected		
3267	Landa Lake	Sag-2	2025-01-15	12	Procambarus sp.		3
3267	Landa Lake	Sag-2	2025-01-15	13	Procambarus sp.		2
3267	Landa Lake	Sag-2	2025-01-15	14	Procambarus sp.		2
3267	Landa Lake	Sag-2	2025-01-15	15	Procambarus sp.		1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	80	1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	75	1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	55	1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	82	1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	54	1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	65	1

3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	40	1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	86	1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	70	1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	56	1
3268	Landa Lake	Val-2	2025-01-15	1	Lepomis miniatus	56	1
3268	Landa Lake	Val-2	2025-01-15	2	Lepomis miniatus	33	1
3268	Landa Lake	Val-2	2025-01-15	3	Lepomis miniatus	78	1
3268	Landa Lake	Val-2	2025-01-15	3	Lepomis miniatus	60	1
3268	Landa Lake	Val-2	2025-01-15	3	Lepomis miniatus	47	1
3268	Landa Lake	Val-2	2025-01-15	4	Astyanax argentatus	77	1
3268	Landa Lake	Val-2	2025-01-15	4	Lepomis miniatus	64	1
3268	Landa Lake	Val-2	2025-01-15	5	No fish collected		
3268	Landa Lake	Val-2	2025-01-15	6	Herichthys cyanoguttatus	83	1
3268	Landa Lake	Val-2	2025-01-15	7	No fish collected		
3268	Landa Lake	Val-2	2025-01-15	8	No fish collected		
3268	Landa Lake	Val-2	2025-01-15	9	Lepomis miniatus	85	1
3268	Landa Lake	Val-2	2025-01-15	10	No fish collected		
3268	Landa Lake	Val-2	2025-01-15	11	No fish collected		
3268	Landa Lake	Val-2	2025-01-15	12	No fish collected		
3268	Landa Lake	Val-2	2025-01-15	13	No fish collected		
3268	Landa Lake	Val-2	2025-01-15	14	No fish collected		
3268	Landa Lake	Val-2	2025-01-15	15	No fish collected		
3269	Landa Lake	Lud-1	2025-01-15	1	Lepomis miniatus	80	1
3269	Landa Lake	Lud-1	2025-01-15	1	Lepomis miniatus	36	1
3269	Landa Lake	Lud-1	2025-01-15	1	Palaemonetes sp.		1
3269	Landa Lake	Lud-1	2025-01-15	2	Micropterus salmoides	110	1
3269	Landa Lake	Lud-1	2025-01-15	2	Palaemonetes sp.		3
3269	Landa Lake	Lud-1	2025-01-15	2	Lepomis miniatus	34	1
3269	Landa Lake	Lud-1	2025-01-15	3	No fish collected		
3269	Landa Lake	Lud-1	2025-01-15	4	Palaemonetes sp.		1

3269	Landa Lake	Lud-1	2025-01-15	4	Procambarus sp.		1
3269	Landa Lake	Lud-1	2025-01-15	4	Lepomis miniatus	80	1
3269	Landa Lake	Lud-1	2025-01-15	4	Lepomis miniatus	90	1
3269	Landa Lake	Lud-1	2025-01-15	5	Procambarus sp.		1
3269	Landa Lake	Lud-1	2025-01-15	6	Palaemonetes sp.		1
3269	Landa Lake	Lud-1	2025-01-15	7	Palaemonetes sp.		1
3269	Landa Lake	Lud-1	2025-01-15	7	Lepomis miniatus	89	1
3269	Landa Lake	Lud-1	2025-01-15	7	Lepomis miniatus	58	1
3269	Landa Lake	Lud-1	2025-01-15	8	Etheostoma fonticola	30	1
3269	Landa Lake	Lud-1	2025-01-15	9	Palaemonetes sp.		1
3269	Landa Lake	Lud-1	2025-01-15	10	No fish collected		
3269	Landa Lake	Lud-1	2025-01-15	11	No fish collected		
3269	Landa Lake	Lud-1	2025-01-15	12	Procambarus sp.		1
3269	Landa Lake	Lud-1	2025-01-15	13	Etheostoma fonticola	29	1
3269	Landa Lake	Lud-1	2025-01-15	14	No fish collected		
3269	Landa Lake	Lud-1	2025-01-15	15	No fish collected		
3270	Landa Lake	Lud-2	2025-01-15	1	Dionda nigrotaeniata	80	1
3270	Landa Lake	Lud-2	2025-01-15	1	Etheostoma fonticola	34	1
3270	Landa Lake	Lud-2	2025-01-15	1	Etheostoma fonticola	12	1
3270	Landa Lake	Lud-2	2025-01-15	1	Palaemonetes sp.		5
3270	Landa Lake	Lud-2	2025-01-15	2	Etheostoma fonticola	34	1
3270	Landa Lake	Lud-2	2025-01-15	2	Lepomis miniatus	37	1
3270	Landa Lake	Lud-2	2025-01-15	2	Palaemonetes sp.		2
3270	Landa Lake	Lud-2	2025-01-15	3	Palaemonetes sp.		1
3270	Landa Lake	Lud-2	2025-01-15	4	No fish collected		
3270	Landa Lake	Lud-2	2025-01-15	5	Palaemonetes sp.		2
3270	Landa Lake	Lud-2	2025-01-15	5	Etheostoma fonticola	19	1
3270	Landa Lake	Lud-2	2025-01-15	6	Dionda nigrotaeniata	65	1
3270	Landa Lake	Lud-2	2025-01-15	6	Lepomis miniatus	32	1
3270	Landa Lake	Lud-2	2025-01-15	6	Etheostoma fonticola	21	1

3270	Landa Lake	Lud-2	2025-01-15	7	Dionda nigrotaeniata	90	1
3270	Landa Lake	Lud-2	2025-01-15	7	Etheostoma fonticola	33	1
3270	Landa Lake	Lud-2	2025-01-15	7	Etheostoma fonticola	35	1
3270	Landa Lake	Lud-2	2025-01-15	8	Lepomis miniatus	17	1
3270	Landa Lake	Lud-2	2025-01-15	8	Palaemonetes sp.		1
3270	Landa Lake	Lud-2	2025-01-15	9	Lepomis miniatus	73	1
3270	Landa Lake	Lud-2	2025-01-15	9	Lepomis miniatus	39	1
3270	Landa Lake	Lud-2	2025-01-15	9	Dionda nigrotaeniata	64	1
3270	Landa Lake	Lud-2	2025-01-15	9	Procambarus sp.		1
3270	Landa Lake	Lud-2	2025-01-15	9	Palaemonetes sp.		1
3270	Landa Lake	Lud-2	2025-01-15	10	Etheostoma fonticola	31	1
3270	Landa Lake	Lud-2	2025-01-15	10	Etheostoma fonticola	32	1
3270	Landa Lake	Lud-2	2025-01-15	11	No fish collected		
3270	Landa Lake	Lud-2	2025-01-15	12	Procambarus sp.		3
3270	Landa Lake	Lud-2	2025-01-15	12	Dionda nigrotaeniata	76	1
3270	Landa Lake	Lud-2	2025-01-15	13	No fish collected		
3270	Landa Lake	Lud-2	2025-01-15	14	No fish collected		
3270	Landa Lake	Lud-2	2025-01-15	15	Lepomis miniatus	30	1
3270	Landa Lake	Lud-2	2025-01-15	15	Etheostoma fonticola	20	1
3270	Landa Lake	Lud-2	2025-01-15	15	Palaemonetes sp.		2
3270	Landa Lake	Lud-2	2025-01-15	16	Procambarus sp.		1
3270	Landa Lake	Lud-2	2025-01-15	16	Lepomis miniatus	33	1
3271	Landa Lake	Open-1	2025-01-15	1	No fish collected		
3271	Landa Lake	Open-1	2025-01-15	2	No fish collected		
3271	Landa Lake	Open-1	2025-01-15	3	No fish collected		
3271	Landa Lake	Open-1	2025-01-15	4	No fish collected		
3271	Landa Lake	Open-1	2025-01-15	5	No fish collected		
3271	Landa Lake	Open-1	2025-01-15	6	No fish collected		
3271	Landa Lake	Open-1	2025-01-15	7	No fish collected		
3271	Landa Lake	Open-1	2025-01-15	8	No fish collected		

3271	Landa Lake	Open-1	2025-01-15	9	No fish collected		
3271	Landa Lake	Open-1	2025-01-15	10	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	1	Etheostoma fonticola	30	1
3272	Landa Lake	Open-2	2025-01-15	2	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	3	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	4	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	5	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	6	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	7	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	8	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	9	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	10	No fish collected		
3272	Landa Lake	Open-2	2025-01-15	11	No fish collected		
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	30	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	17	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	32	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	23	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	33	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	15	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	11	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	16	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	18	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	16	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	8	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	13	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	11	1
3273	Landa Lake	Cab-1	2025-01-15	1	Etheostoma fonticola	20	1
3273	Landa Lake	Cab-1	2025-01-15	1	Procambarus sp.		2
3273	Landa Lake	Cab-1	2025-01-15	1	Palaemonetes sp.		2
3273	Landa Lake	Cab-1	2025-01-15	2	Etheostoma fonticola	14	1

3273	Landa Lake	Cab-1	2025-01-15	2	Etheostoma fonticola	16	1
3273	Landa Lake	Cab-1	2025-01-15	2	Procambarus sp.		5
3273	Landa Lake	Cab-1	2025-01-15	2	Palaemonetes sp.		3
3273	Landa Lake	Cab-1	2025-01-15	3	No fish collected		
3273	Landa Lake	Cab-1	2025-01-15	4	Etheostoma fonticola	18	1
3273	Landa Lake	Cab-1	2025-01-15	4	Etheostoma fonticola	22	1
3273	Landa Lake	Cab-1	2025-01-15	4	Etheostoma fonticola	12	1
3273	Landa Lake	Cab-1	2025-01-15	4	Etheostoma fonticola	14	1
3273	Landa Lake	Cab-1	2025-01-15	5	Etheostoma fonticola	17	1
3273	Landa Lake	Cab-1	2025-01-15	5	Procambarus sp.		1
3273	Landa Lake	Cab-1	2025-01-15	6	Etheostoma fonticola	16	1
3273	Landa Lake	Cab-1	2025-01-15	7	Procambarus sp.		1
3273	Landa Lake	Cab-1	2025-01-15	7	Etheostoma fonticola	15	1
3273	Landa Lake	Cab-1	2025-01-15	8	Procambarus sp.		1
3273	Landa Lake	Cab-1	2025-01-15	9	No fish collected		
3273	Landa Lake	Cab-1	2025-01-15	10	No fish collected		
3273	Landa Lake	Cab-1	2025-01-15	11	No fish collected		
3273	Landa Lake	Cab-1	2025-01-15	12	Procambarus sp.		1
3273	Landa Lake	Cab-1	2025-01-15	12	Palaemonetes sp.		1
3273	Landa Lake	Cab-1	2025-01-15	13	No fish collected		
3273	Landa Lake	Cab-1	2025-01-15	14	Etheostoma fonticola	15	1
3273	Landa Lake	Cab-1	2025-01-15	14	Etheostoma fonticola	22	1
3273	Landa Lake	Cab-1	2025-01-15	15	Procambarus sp.		1
3274	Landa Lake	Cab-2	2025-01-15	1	Etheostoma fonticola	28	1
3274	Landa Lake	Cab-2	2025-01-15	1	Etheostoma fonticola	34	1
3274	Landa Lake	Cab-2	2025-01-15	1	Etheostoma fonticola	21	1
3274	Landa Lake	Cab-2	2025-01-15	1	Etheostoma fonticola	20	1
3274	Landa Lake	Cab-2	2025-01-15	1	Etheostoma fonticola	34	1
3274	Landa Lake	Cab-2	2025-01-15	1	Etheostoma fonticola	21	1
3274	Landa Lake	Cab-2	2025-01-15	1	Gambusia sp.	16	1

3274	Landa Lake	Cab-2	2025-01-15	1	Gambusia sp.	15	1
3274	Landa Lake	Cab-2	2025-01-15	1	Gambusia sp.	11	1
3274	Landa Lake	Cab-2	2025-01-15	1	Gambusia sp.	14	1
3274	Landa Lake	Cab-2	2025-01-15	1	Palaemonetes sp.		4
3274	Landa Lake	Cab-2	2025-01-15	1	Procambarus sp.		1
3274	Landa Lake	Cab-2	2025-01-15	2	Procambarus sp.		3
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	33	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	19	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	26	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	20	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	18	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	25	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	22	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	25	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	23	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	24	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	14	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	17	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	28	1
3274	Landa Lake	Cab-2	2025-01-15	2	Etheostoma fonticola	12	1
3274	Landa Lake	Cab-2	2025-01-15	2	Palaemonetes sp.		9
3274	Landa Lake	Cab-2	2025-01-15	3	Procambarus sp.		1
3274	Landa Lake	Cab-2	2025-01-15	4	Palaemonetes sp.		1
3274	Landa Lake	Cab-2	2025-01-15	4	Procambarus sp.		3
3274	Landa Lake	Cab-2	2025-01-15	4	Gambusia sp.	9	1
3274	Landa Lake	Cab-2	2025-01-15	5	Etheostoma fonticola	22	1
3274	Landa Lake	Cab-2	2025-01-15	5	Gambusia sp.	13	1
3274	Landa Lake	Cab-2	2025-01-15	5	Procambarus sp.		2
3274	Landa Lake	Cab-2	2025-01-15	5	Palaemonetes sp.		2
3274	Landa Lake	Cab-2	2025-01-15	6	Palaemonetes sp.		1

3274	Landa Lake	Cab-2	2025-01-15	7	Etheostoma fonticola	21	1
3274	Landa Lake	Cab-2	2025-01-15	7	Etheostoma fonticola	19	1
3274	Landa Lake	Cab-2	2025-01-15	7	Etheostoma fonticola	33	1
3274	Landa Lake	Cab-2	2025-01-15	7	Etheostoma fonticola	10	1
3274	Landa Lake	Cab-2	2025-01-15	7	Etheostoma fonticola	11	1
3274	Landa Lake	Cab-2	2025-01-15	8	Palaemonetes sp.		1
3274	Landa Lake	Cab-2	2025-01-15	9	Etheostoma fonticola	12	1
3274	Landa Lake	Cab-2	2025-01-15	9	Palaemonetes sp.		1
3274	Landa Lake	Cab-2	2025-01-15	10	Etheostoma fonticola	17	1
3274	Landa Lake	Cab-2	2025-01-15	10	Etheostoma fonticola	29	1
3274	Landa Lake	Cab-2	2025-01-15	11	Etheostoma fonticola	24	1
3274	Landa Lake	Cab-2	2025-01-15	12	Palaemonetes sp.		1
3274	Landa Lake	Cab-2	2025-01-15	13	No fish collected		
3274	Landa Lake	Cab-2	2025-01-15	14	Procambarus sp.		1
3274	Landa Lake	Cab-2	2025-01-15	14	Palaemonetes sp.		1
3274	Landa Lake	Cab-2	2025-01-15	15	Palaemonetes sp.		1
3275	Old Channel Reach	Open-1	2025-01-14	1	No fish collected		
3275	Old Channel Reach	Open-1	2025-01-14	2	No fish collected		
3275	Old Channel Reach	Open-1	2025-01-14	3	No fish collected		
3275	Old Channel Reach	Open-1	2025-01-14	4	No fish collected		
3275	Old Channel Reach	Open-1	2025-01-14	5	No fish collected		
3275	Old Channel Reach	Open-1	2025-01-14	6	No fish collected		
3275	Old Channel Reach	Open-1	2025-01-14	7	No fish collected		
3275	Old Channel Reach	Open-1	2025-01-14	8	No fish collected		
3275	Old Channel Reach	Open-1	2025-01-14	9	No fish collected		
3275	Old Channel Reach	Open-1	2025-01-14	10	No fish collected		
3276	Old Channel Reach	Lud-1	2025-01-14	1	Procambarus sp.		1
3276	Old Channel Reach	Lud-1	2025-01-14	1	Palaemonetes sp.		7
3276	Old Channel Reach	Lud-1	2025-01-14	1	Herichthys cyanoguttatus	35	1
3276	Old Channel Reach	Lud-1	2025-01-14	2	Palaemonetes sp.		1

3276	Old Channel Reach	Lud-1	2025-01-14	3	Procambarus sp.		1
3276	Old Channel Reach	Lud-1	2025-01-14	3	Palaemonetes sp.		2
3276	Old Channel Reach	Lud-1	2025-01-14	3	Lepomis miniatus	50	1
3276	Old Channel Reach	Lud-1	2025-01-14	3	Lepomis miniatus	47	1
3276	Old Channel Reach	Lud-1	2025-01-14	5	Etheostoma fonticola	19	1
3276	Old Channel Reach	Lud-1	2025-01-14	6	No fish collected		
3276	Old Channel Reach	Lud-1	2025-01-14	7	Etheostoma fonticola	12	1
3276	Old Channel Reach	Lud-1	2025-01-14	7	Etheostoma fonticola	19	1
3276	Old Channel Reach	Lud-1	2025-01-14	7	Palaemonetes sp.		3
3276	Old Channel Reach	Lud-1	2025-01-14	8	No fish collected		
3276	Old Channel Reach	Lud-1	2025-01-14	9	Etheostoma fonticola	20	1
3276	Old Channel Reach	Lud-1	2025-01-14	10	No fish collected		
3276	Old Channel Reach	Lud-1	2025-01-14	11	Etheostoma fonticola	25	1
3276	Old Channel Reach	Lud-1	2025-01-14	11	Etheostoma fonticola	20	1
3276	Old Channel Reach	Lud-1	2025-01-14	11	Etheostoma fonticola	15	1
3276	Old Channel Reach	Lud-1	2025-01-14	12	Procambarus sp.		1
3276	Old Channel Reach	Lud-1	2025-01-14	12	Lepomis miniatus	30	1
3276	Old Channel Reach	Lud-1	2025-01-14	13	Palaemonetes sp.		1
3276	Old Channel Reach	Lud-1	2025-01-14	14	No fish collected		
3276	Old Channel Reach	Lud-1	2025-01-14	15	Palaemonetes sp.		1
3276	Old Channel Reach	Lud-1	2025-01-14	4	Etheostoma fonticola	14	1
3276	Old Channel Reach	Lud-1	2025-01-14	4	Lepomis miniatus	35	1
3276	Old Channel Reach	Lud-1	2025-01-14	4	Palaemonetes sp.		2
3277	Old Channel Reach	Bryo-1	2025-01-14	1	Palaemonetes sp.		5
3277	Old Channel Reach	Bryo-1	2025-01-14	1	Etheostoma fonticola	18	1
3277	Old Channel Reach	Bryo-1	2025-01-14	1	Etheostoma fonticola	36	1
3277	Old Channel Reach	Bryo-1	2025-01-14	1	Etheostoma fonticola	15	1
3277	Old Channel Reach	Bryo-1	2025-01-14	1	Etheostoma fonticola	25	1
3277	Old Channel Reach	Bryo-1	2025-01-14	1	Etheostoma fonticola	38	1
3277	Old Channel Reach	Bryo-1	2025-01-14	2	Procambarus sp.		1

3277	Old Channel Reach	Bryo-1	2025-01-14	2	Etheostoma fonticola	31	1
3277	Old Channel Reach	Bryo-1	2025-01-14	3	Etheostoma fonticola	26	1
3277	Old Channel Reach	Bryo-1	2025-01-14	3	Etheostoma fonticola	19	1
3277	Old Channel Reach	Bryo-1	2025-01-14	3	Lepomis miniatus	36	1
3277	Old Channel Reach	Bryo-1	2025-01-14	3	Procambarus sp.		1
3277	Old Channel Reach	Bryo-1	2025-01-14	4	Palaemonetes sp.		1
3277	Old Channel Reach	Bryo-1	2025-01-14	4	Procambarus sp.		2
3277	Old Channel Reach	Bryo-1	2025-01-14	5	No fish collected		
3277	Old Channel Reach	Bryo-1	2025-01-14	6	No fish collected		
3277	Old Channel Reach	Bryo-1	2025-01-14	7	Etheostoma fonticola	17	1
3277	Old Channel Reach	Bryo-1	2025-01-14	7	Etheostoma fonticola	17	1
3277	Old Channel Reach	Bryo-1	2025-01-14	7	Palaemonetes sp.		1
3277	Old Channel Reach	Bryo-1	2025-01-14	7	Procambarus sp.		1
3277	Old Channel Reach	Bryo-1	2025-01-14	8	Procambarus sp.		2
3277	Old Channel Reach	Bryo-1	2025-01-14	9	Lepomis miniatus	40	1
3277	Old Channel Reach	Bryo-1	2025-01-14	9	Procambarus sp.		1
3277	Old Channel Reach	Bryo-1	2025-01-14	10	No fish collected		
3277	Old Channel Reach	Bryo-1	2025-01-14	11	No fish collected		
3277	Old Channel Reach	Bryo-1	2025-01-14	12	No fish collected		
3277	Old Channel Reach	Bryo-1	2025-01-14	13	Procambarus sp.		1
3277	Old Channel Reach	Bryo-1	2025-01-14	14	No fish collected		
3277	Old Channel Reach	Bryo-1	2025-01-14	15	No fish collected		
3278	Old Channel Reach	Bryo-2	2025-01-14	1	Etheostoma fonticola	15	1
3278	Old Channel Reach	Bryo-2	2025-01-14	1	Etheostoma fonticola	22	1
3278	Old Channel Reach	Bryo-2	2025-01-14	1	Procambarus sp.		2
3278	Old Channel Reach	Bryo-2	2025-01-14	2	Etheostoma fonticola	26	1
3278	Old Channel Reach	Bryo-2	2025-01-14	2	Etheostoma fonticola	26	1
3278	Old Channel Reach	Bryo-2	2025-01-14	2	Procambarus sp.		2
3278	Old Channel Reach	Bryo-2	2025-01-14	3	Procambarus sp.		1
3278	Old Channel Reach	Bryo-2	2025-01-14	4	Procambarus sp.		3

3278	Old Channel Reach	Bryo-2	2025-01-14	5	No fish collected		
3278	Old Channel Reach	Bryo-2	2025-01-14	6	No fish collected		
3278	Old Channel Reach	Bryo-2	2025-01-14	7	Etheostoma fonticola	31	1
3278	Old Channel Reach	Bryo-2	2025-01-14	7	Etheostoma fonticola	15	1
3278	Old Channel Reach	Bryo-2	2025-01-14	8	Procambarus sp.		1
3278	Old Channel Reach	Bryo-2	2025-01-14	9	Procambarus sp.		1
3278	Old Channel Reach	Bryo-2	2025-01-14	10	Lepomis miniatus	38	1
3278	Old Channel Reach	Bryo-2	2025-01-14	10	Etheostoma fonticola	21	1
3278	Old Channel Reach	Bryo-2	2025-01-14	11	No fish collected		
3278	Old Channel Reach	Bryo-2	2025-01-14	12	Procambarus sp.		2
3278	Old Channel Reach	Bryo-2	2025-01-14	13	No fish collected		
3278	Old Channel Reach	Bryo-2	2025-01-14	14	Procambarus sp.		4
3278	Old Channel Reach	Bryo-2	2025-01-14	15	Procambarus sp.		1
3279	Old Channel Reach	Lud-2	2025-01-14	1	Procambarus sp.		2
3279	Old Channel Reach	Lud-2	2025-01-14	1	Palaemonetes sp.		2
3279	Old Channel Reach	Lud-2	2025-01-14	1	Herichthys cyanoguttatus	40	1
3279	Old Channel Reach	Lud-2	2025-01-14	1	Lepomis miniatus	42	1
3279	Old Channel Reach	Lud-2	2025-01-14	2	Palaemonetes sp.		2
3279	Old Channel Reach	Lud-2	2025-01-14	3	Palaemonetes sp.		4
3279	Old Channel Reach	Lud-2	2025-01-14	4	Lepomis miniatus	55	1
3279	Old Channel Reach	Lud-2	2025-01-14	4	Etheostoma fonticola	32	1
3279	Old Channel Reach	Lud-2	2025-01-14	5	Herichthys cyanoguttatus	40	1
3279	Old Channel Reach	Lud-2	2025-01-14	6	No fish collected		
3279	Old Channel Reach	Lud-2	2025-01-14	7	Etheostoma fonticola	18	1
3279	Old Channel Reach	Lud-2	2025-01-14	8	Palaemonetes sp.		1
3279	Old Channel Reach	Lud-2	2025-01-14	9	No fish collected		
3279	Old Channel Reach	Lud-2	2025-01-14	10	Procambarus sp.		1
3279	Old Channel Reach	Lud-2	2025-01-14	10	Palaemonetes sp.		1
3279	Old Channel Reach	Lud-2	2025-01-14	10	Etheostoma fonticola	20	1
3279	Old Channel Reach	Lud-2	2025-01-14	11	Palaemonetes sp.		1

3279	Old Channel Reach	Lud-2	2025-01-14	12	No fish collected		
3279	Old Channel Reach	Lud-2	2025-01-14	13	No fish collected		
3279	Old Channel Reach	Lud-2	2025-01-14	14	No fish collected		
3279	Old Channel Reach	Lud-2	2025-01-14	15	Palaemonetes sp.		1
3280	Old Channel Reach	Open-2	2025-01-14	1	No fish collected		
3280	Old Channel Reach	Open-2	2025-01-14	2	No fish collected		
3280	Old Channel Reach	Open-2	2025-01-14	3	No fish collected		
3280	Old Channel Reach	Open-2	2025-01-14	4	No fish collected		
3280	Old Channel Reach	Open-2	2025-01-14	5	No fish collected		
3280	Old Channel Reach	Open-2	2025-01-14	6	No fish collected		
3280	Old Channel Reach	Open-2	2025-01-14	7	No fish collected		
3280	Old Channel Reach	Open-2	2025-01-14	8	Palaemonetes sp.		1
3280	Old Channel Reach	Open-2	2025-01-14	9	No fish collected		
3280	Old Channel Reach	Open-2	2025-01-14	10	No fish collected		
3281	Upper New Channel Reach	Hyg-1	2025-01-16	1	Herichthys cyanoguttatus	39	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	1	Herichthys cyanoguttatus	44	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	1	Gambusia sp.	12	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	1	Gambusia sp.	14	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	1	Gambusia sp.	17	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	1	Gambusia sp.	12	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	1	Gambusia sp.	9	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	1	Palaemonetes sp.		2
3281	Upper New Channel Reach	Hyg-1	2025-01-16	2	Procambarus sp.		3
3281	Upper New Channel Reach	Hyg-1	2025-01-16	2	Palaemonetes sp.		1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	2	Herichthys cyanoguttatus	82	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	2	Lepomis gulosus	101	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	2	Lepomis miniatus	56	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	2	Lepomis miniatus	43	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	3	Lepomis gulosus	102	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	4	No fish collected		

3281	Upper New Channel Reach	Hyg-1	2025-01-16	5	Palaemonetes sp.		2
3281	Upper New Channel Reach	Hyg-1	2025-01-16	6	Lepomis cyanellus	70	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	6	Lepomis miniatus	41	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	7	No fish collected		
3281	Upper New Channel Reach	Hyg-1	2025-01-16	8	Procambarus sp.		1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	9	No fish collected		
3281	Upper New Channel Reach	Hyg-1	2025-01-16	10	No fish collected		
3281	Upper New Channel Reach	Hyg-1	2025-01-16	11	Lepomis gulosus	90	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	12	Etheostoma fonticola	13	1
3281	Upper New Channel Reach	Hyg-1	2025-01-16	13	No fish collected		
3281	Upper New Channel Reach	Hyg-1	2025-01-16	14	No fish collected		
3281	Upper New Channel Reach	Hyg-1	2025-01-16	15	Procambarus sp.		1
3282	Upper New Channel Reach	Open-1	2025-01-16	1	No fish collected		
3282	Upper New Channel Reach	Open-1	2025-01-16	2	No fish collected		
3282	Upper New Channel Reach	Open-1	2025-01-16	3	No fish collected		
3282	Upper New Channel Reach	Open-1	2025-01-16	4	No fish collected		
3282	Upper New Channel Reach	Open-1	2025-01-16	5	No fish collected		
3282	Upper New Channel Reach	Open-1	2025-01-16	6	No fish collected		
3282	Upper New Channel Reach	Open-1	2025-01-16	7	No fish collected		
3282	Upper New Channel Reach	Open-1	2025-01-16	8	No fish collected		
3282	Upper New Channel Reach	Open-1	2025-01-16	9	No fish collected		
3282	Upper New Channel Reach	Open-1	2025-01-16	10	No fish collected		
3283	Upper New Channel Reach	Hyg-2	2025-01-16	1	Palaemonetes sp.		1
3283	Upper New Channel Reach	Hyg-2	2025-01-16	1	Procambarus sp.		1
3283	Upper New Channel Reach	Hyg-2	2025-01-16	2	Lepomis cyanellus	75	1
3283	Upper New Channel Reach	Hyg-2	2025-01-16	3	No fish collected		
3283	Upper New Channel Reach	Hyg-2	2025-01-16	4	Palaemonetes sp.		1
3283	Upper New Channel Reach	Hyg-2	2025-01-16	5	No fish collected		
3283	Upper New Channel Reach	Hyg-2	2025-01-16	6	Procambarus sp.		2
3283	Upper New Channel Reach	Hyg-2	2025-01-16	7	Herichthys cyanoguttatus	43	1

3283	Upper New Channel Reach	Hyg-2	2025-01-16	8	No fish collected		
3283	Upper New Channel Reach	Hyg-2	2025-01-16	9	No fish collected		
3283	Upper New Channel Reach	Hyg-2	2025-01-16	10	No fish collected		
3283	Upper New Channel Reach	Hyg-2	2025-01-16	11	No fish collected		
3283	Upper New Channel Reach	Hyg-2	2025-01-16	12	Palaemonetes sp.		1
3283	Upper New Channel Reach	Hyg-2	2025-01-16	13	No fish collected		
3283	Upper New Channel Reach	Hyg-2	2025-01-16	14	No fish collected		
3283	Upper New Channel Reach	Hyg-2	2025-01-16	15	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	1	Gambusia sp.	22	1
3284	Upper New Channel Reach	Open-2	2025-01-16	2	Etheostoma fonticola	12	1
3284	Upper New Channel Reach	Open-2	2025-01-16	3	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	4	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	5	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	6	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	7	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	8	Gambusia sp.	13	1
3284	Upper New Channel Reach	Open-2	2025-01-16	9	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	10	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	11	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	12	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	13	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	14	No fish collected		
3284	Upper New Channel Reach	Open-2	2025-01-16	15	No fish collected		
3285	Upper New Channel Reach	Cab-1	2025-01-16	1	Procambarus sp.		1
3285	Upper New Channel Reach	Cab-1	2025-01-16	2	Procambarus sp.		2
3285	Upper New Channel Reach	Cab-1	2025-01-16	2	Lepomis gulosus	84	1
3285	Upper New Channel Reach	Cab-1	2025-01-16	3	Herichthys cyanoguttatus	45	1
3285	Upper New Channel Reach	Cab-1	2025-01-16	3	Procambarus sp.		3
3285	Upper New Channel Reach	Cab-1	2025-01-16	4	Etheostoma fonticola	29	1
3285	Upper New Channel Reach	Cab-1	2025-01-16	4	Procambarus sp.		1

3285	Upper New Channel Reach	Cab-1	2025-01-16	5	Procambarus sp.		2
3285	Upper New Channel Reach	Cab-1	2025-01-16	6	Procambarus sp.		1
3285	Upper New Channel Reach	Cab-1	2025-01-16	7	Procambarus sp.		1
3285	Upper New Channel Reach	Cab-1	2025-01-16	8	No fish collected		
3285	Upper New Channel Reach	Cab-1	2025-01-16	9	Procambarus sp.		1
3285	Upper New Channel Reach	Cab-1	2025-01-16	10	No fish collected		
3285	Upper New Channel Reach	Cab-1	2025-01-16	11	No fish collected		
3285	Upper New Channel Reach	Cab-1	2025-01-16	12	No fish collected		
3285	Upper New Channel Reach	Cab-1	2025-01-16	13	No fish collected		
3285	Upper New Channel Reach	Cab-1	2025-01-16	14	No fish collected		
3285	Upper New Channel Reach	Cab-1	2025-01-16	15	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	1	Etheostoma fonticola	34	1
3286	Upper New Channel Reach	Cab-2	2025-01-16	2	Lepomis gulosus	81	1
3286	Upper New Channel Reach	Cab-2	2025-01-16	2	Etheostoma fonticola	33	1
3286	Upper New Channel Reach	Cab-2	2025-01-16	3	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	4	Etheostoma fonticola	36	1
3286	Upper New Channel Reach	Cab-2	2025-01-16	4	Etheostoma fonticola	30	1
3286	Upper New Channel Reach	Cab-2	2025-01-16	5	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	6	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	7	Lepomis gulosus	88	1
3286	Upper New Channel Reach	Cab-2	2025-01-16	8	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	9	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	10	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	11	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	12	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	13	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	14	No fish collected		
3286	Upper New Channel Reach	Cab-2	2025-01-16	15	No fish collected		
3314	Upper Spring Run	Chara-2	2025-04-29	1	Palaemonetes sp.		5
3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	12	1

3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	31	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	29	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	28	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	24	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	23	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	18	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	14	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	20	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Astyanax argentatus	15	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Etheostoma fonticola	26	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Etheostoma fonticola	19	1
3314	Upper Spring Run	Chara-2	2025-04-29	1	Etheostoma fonticola	25	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Micropterus salmoides	45	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	28	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	31	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	20	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	15	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	40	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	15	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	20	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	17	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	25	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	13	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Astyanax argentatus	22	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Dionda nigrotaeniata	28	1
3314	Upper Spring Run	Chara-2	2025-04-29	2	Palaemonetes sp.		2
3314	Upper Spring Run	Chara-2	2025-04-29	3	Procambarus sp.		2
3314	Upper Spring Run	Chara-2	2025-04-29	3	Lepomis miniatus	114	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Lepomis miniatus	58	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Etheostoma fonticola	16	1

3314	Upper Spring Run	Chara-2	2025-04-29	3	Etheostoma fonticola	24	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Astyanax argentatus	30	1
3314	Upper Spring Run	Chara-2	2025-04-29	6	Astyanax argentatus	10	1
3314	Upper Spring Run	Chara-2	2025-04-29	6	Astyanax argentatus	12	1
3314	Upper Spring Run	Chara-2	2025-04-29	6	Astyanax argentatus	10	1
3314	Upper Spring Run	Chara-2	2025-04-29	6	Etheostoma fonticola	30	1
3314	Upper Spring Run	Chara-2	2025-04-29	7	Procambarus sp.		5
3314	Upper Spring Run	Chara-2	2025-04-29	7	Dionda nigrotaeniata	30	1
3314	Upper Spring Run	Chara-2	2025-04-29	7	Dionda nigrotaeniata	33	1
3314	Upper Spring Run	Chara-2	2025-04-29	7	Dionda nigrotaeniata	25	1
3314	Upper Spring Run	Chara-2	2025-04-29	7	Etheostoma fonticola	25	1
3314	Upper Spring Run	Chara-2	2025-04-29	7	Astyanax argentatus	16	1
3314	Upper Spring Run	Chara-2	2025-04-29	8	Procambarus sp.		1
3314	Upper Spring Run	Chara-2	2025-04-29	8	Lepomis miniatus	27	1
3314	Upper Spring Run	Chara-2	2025-04-29	8	Micropterus salmoides	40	1
3314	Upper Spring Run	Chara-2	2025-04-29	8	Astyanax argentatus	18	1
3314	Upper Spring Run	Chara-2	2025-04-29	8	Astyanax argentatus	17	1
3314	Upper Spring Run	Chara-2	2025-04-29	8	Etheostoma fonticola	28	1
3314	Upper Spring Run	Chara-2	2025-04-29	9	Astyanax argentatus	13	1
3314	Upper Spring Run	Chara-2	2025-04-29	10	Etheostoma fonticola	25	1
3314	Upper Spring Run	Chara-2	2025-04-29	10	Etheostoma fonticola	21	1
3314	Upper Spring Run	Chara-2	2025-04-29	11	Astyanax argentatus	12	1
3314	Upper Spring Run	Chara-2	2025-04-29	11	Astyanax argentatus	16	1
3314	Upper Spring Run	Chara-2	2025-04-29	11	Astyanax argentatus	10	1
3314	Upper Spring Run	Chara-2	2025-04-29	12	Lepomis miniatus	49	1
3314	Upper Spring Run	Chara-2	2025-04-29	12	Procambarus sp.		1
3314	Upper Spring Run	Chara-2	2025-04-29	12	Astyanax argentatus	8	1
3314	Upper Spring Run	Chara-2	2025-04-29	13	Procambarus sp.		1
3314	Upper Spring Run	Chara-2	2025-04-29	13	Etheostoma fonticola	22	1
3314	Upper Spring Run	Chara-2	2025-04-29	13	Etheostoma fonticola	20	1

3314	Upper Spring Run	Chara-2	2025-04-29	14	Procambarus sp.		2
3314	Upper Spring Run	Chara-2	2025-04-29	15	Procambarus sp.		1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Astyanax argentatus	18	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Astyanax argentatus	29	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Astyanax argentatus	17	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Astyanax argentatus	11	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Astyanax argentatus	10	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Astyanax argentatus	18	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Astyanax argentatus	20	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Astyanax argentatus	15	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Herichthys cyanoguttatus	55	1
3314	Upper Spring Run	Chara-2	2025-04-29	3	Micropterus salmoides	45	1
3314	Upper Spring Run	Chara-2	2025-04-29	4	Micropterus salmoides	45	1
3314	Upper Spring Run	Chara-2	2025-04-29	4	Lepomis miniatus	30	1
3314	Upper Spring Run	Chara-2	2025-04-29	4	Procambarus sp.		1
3314	Upper Spring Run	Chara-2	2025-04-29	4	Etheostoma fonticola	28	1
3314	Upper Spring Run	Chara-2	2025-04-29	4	Etheostoma fonticola	25	1
3314	Upper Spring Run	Chara-2	2025-04-29	4	Dionda nigrotaeniata	25	1
3314	Upper Spring Run	Chara-2	2025-04-29	4	Astyanax argentatus	22	1
3314	Upper Spring Run	Chara-2	2025-04-29	4	Astyanax argentatus	14	1
3314	Upper Spring Run	Chara-2	2025-04-29	4	Astyanax argentatus	15	1
3314	Upper Spring Run	Chara-2	2025-04-29	5	Micropterus salmoides	41	1
3314	Upper Spring Run	Chara-2	2025-04-29	5	Procambarus sp.		2
3314	Upper Spring Run	Chara-2	2025-04-29	5	Palaemonetes sp.		1
3314	Upper Spring Run	Chara-2	2025-04-29	5	Lepomis miniatus	58	1
3314	Upper Spring Run	Chara-2	2025-04-29	5	Astyanax argentatus	10	1
3314	Upper Spring Run	Chara-2	2025-04-29	6	Procambarus sp.		1
3314	Upper Spring Run	Chara-2	2025-04-29	6	Astyanax argentatus	15	1
3315	Upper Spring Run	Sag-1	2025-04-29	1	Procambarus sp.		1
3315	Upper Spring Run	Sag-1	2025-04-29	2	Micropterus salmoides	48	1

3315	Upper Spring Run	Sag-1	2025-04-29	2	Procambarus sp.		2
3315	Upper Spring Run	Sag-1	2025-04-29	3	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	4	Procambarus sp.		1
3315	Upper Spring Run	Sag-1	2025-04-29	5	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	6	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	7	Procambarus sp.		1
3315	Upper Spring Run	Sag-1	2025-04-29	8	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	9	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	10	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	11	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	12	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	13	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	14	No fish collected		
3315	Upper Spring Run	Sag-1	2025-04-29	15	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	1	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	2	Lepomis sp.	6	1
3316	Upper Spring Run	Sag-2	2025-04-29	3	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	4	Lepomis miniatus	58	1
3316	Upper Spring Run	Sag-2	2025-04-29	4	Lepomis miniatus	70	1
3316	Upper Spring Run	Sag-2	2025-04-29	5	Lepomis miniatus	64	1
3316	Upper Spring Run	Sag-2	2025-04-29	6	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	7	Lepomis miniatus	54	1
3316	Upper Spring Run	Sag-2	2025-04-29	8	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	9	Etheostoma fonticola	29	1
3316	Upper Spring Run	Sag-2	2025-04-29	10	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	11	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	12	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	13	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	14	No fish collected		
3316	Upper Spring Run	Sag-2	2025-04-29	15	Lepomis miniatus	58	1

3317	Upper Spring Run	Bryo-1	2025-04-29	1	No fish collected		
3317	Upper Spring Run	Bryo-1	2025-04-29	2	No fish collected		
3317	Upper Spring Run	Bryo-1	2025-04-29	3	No fish collected		
3317	Upper Spring Run	Bryo-1	2025-04-29	4	Etheostoma fonticola	28	1
3317	Upper Spring Run	Bryo-1	2025-04-29	5	No fish collected		
3317	Upper Spring Run	Bryo-1	2025-04-29	6	No fish collected		
3317	Upper Spring Run	Bryo-1	2025-04-29	7	Etheostoma fonticola	12	1
3317	Upper Spring Run	Bryo-1	2025-04-29	8	Etheostoma fonticola	14	1
3317	Upper Spring Run	Bryo-1	2025-04-29	9	Etheostoma fonticola	28	1
3317	Upper Spring Run	Bryo-1	2025-04-29	10	No fish collected		
3317	Upper Spring Run	Bryo-1	2025-04-29	11	No fish collected		
3317	Upper Spring Run	Bryo-1	2025-04-29	12	No fish collected		
3317	Upper Spring Run	Bryo-1	2025-04-29	13	Etheostoma fonticola	25	1
3317	Upper Spring Run	Bryo-1	2025-04-29	14	Etheostoma fonticola	20	1
3317	Upper Spring Run	Bryo-1	2025-04-29	14	Etheostoma fonticola	13	1
3317	Upper Spring Run	Bryo-1	2025-04-29	15	No fish collected		
3318	Upper Spring Run	Bryo-2	2025-04-29	1	No fish collected		
3318	Upper Spring Run	Bryo-2	2025-04-29	2	Etheostoma fonticola	16	1
3318	Upper Spring Run	Bryo-2	2025-04-29	3	No fish collected		
3318	Upper Spring Run	Bryo-2	2025-04-29	4	No fish collected		
3318	Upper Spring Run	Bryo-2	2025-04-29	5	No fish collected		
3318	Upper Spring Run	Bryo-2	2025-04-29	6	Astyanax argentatus	9	1
3318	Upper Spring Run	Bryo-2	2025-04-29	7	No fish collected		
3318	Upper Spring Run	Bryo-2	2025-04-29	8	Astyanax argentatus	10	1
3318	Upper Spring Run	Bryo-2	2025-04-29	8	Dionda nigrotaeniata	10	1
3318	Upper Spring Run	Bryo-2	2025-04-29	9	Astyanax argentatus	8	1
3318	Upper Spring Run	Bryo-2	2025-04-29	10	No fish collected		
3318	Upper Spring Run	Bryo-2	2025-04-29	11	Astyanax argentatus	8	1
3318	Upper Spring Run	Bryo-2	2025-04-29	12	No fish collected		
3318	Upper Spring Run	Bryo-2	2025-04-29	13	No fish collected		

3318	Upper Spring Run	Bryo-2	2025-04-29	14	No fish collected		
3318	Upper Spring Run	Bryo-2	2025-04-29	15	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	1	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	2	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	3	Etheostoma fonticola	23	1
3319	Upper Spring Run	Open-1	2025-04-29	4	Astyanax argentatus	11	1
3319	Upper Spring Run	Open-1	2025-04-29	5	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	6	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	7	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	8	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	9	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	10	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	11	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	12	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	13	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	14	No fish collected		
3319	Upper Spring Run	Open-1	2025-04-29	15	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	1	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	2	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	3	Etheostoma fonticola	22	1
3320	Upper Spring Run	Open-2	2025-04-29	3	Etheostoma fonticola	21	1
3320	Upper Spring Run	Open-2	2025-04-29	4	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	5	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	6	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	7	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	8	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	9	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	10	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	11	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	12	No fish collected		

3320	Upper Spring Run	Open-2	2025-04-29	13	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	14	No fish collected		
3320	Upper Spring Run	Open-2	2025-04-29	15	No fish collected		
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	26	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	20	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	18	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	21	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	26	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	18	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	12	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	12	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	14	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	13	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	23	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	11	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	11	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	11	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	12	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	14	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	11	1
3321	Landa Lake	Cab-1	2025-04-30	1	Etheostoma fonticola	10	1
3321	Landa Lake	Cab-1	2025-04-30	1	Procambarus sp.		1
3321	Landa Lake	Cab-1	2025-04-30	2	Etheostoma fonticola	25	1
3321	Landa Lake	Cab-1	2025-04-30	2	Etheostoma fonticola	25	1
3321	Landa Lake	Cab-1	2025-04-30	2	Etheostoma fonticola	16	1
3321	Landa Lake	Cab-1	2025-04-30	2	Etheostoma fonticola	12	1
3321	Landa Lake	Cab-1	2025-04-30	2	Etheostoma fonticola	15	1

3321	Landa Lake	Cab-1	2025-04-30	2	Micropterus salmoides	42	1
3321	Landa Lake	Cab-1	2025-04-30	3	Micropterus salmoides	48	1
3321	Landa Lake	Cab-1	2025-04-30	3	Etheostoma fonticola	14	1
3321	Landa Lake	Cab-1	2025-04-30	3	Etheostoma fonticola	12	1
3321	Landa Lake	Cab-1	2025-04-30	4	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	4	Etheostoma fonticola	18	1
3321	Landa Lake	Cab-1	2025-04-30	5	Etheostoma fonticola	21	1
3321	Landa Lake	Cab-1	2025-04-30	6	Procambarus sp.		2
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	17	1
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	14	1
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	18	1
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	18	1
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	16	1
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	19	1
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	16	1
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	17	1
3321	Landa Lake	Cab-1	2025-04-30	6	Etheostoma fonticola	16	1
3321	Landa Lake	Cab-1	2025-04-30	7	Etheostoma fonticola	12	1
3321	Landa Lake	Cab-1	2025-04-30	7	Etheostoma fonticola	27	1
3321	Landa Lake	Cab-1	2025-04-30	7	Etheostoma fonticola	18	1
3321	Landa Lake	Cab-1	2025-04-30	7	Etheostoma fonticola	14	1
3321	Landa Lake	Cab-1	2025-04-30	7	Etheostoma fonticola	23	1
3321	Landa Lake	Cab-1	2025-04-30	7	Etheostoma fonticola	16	1
3321	Landa Lake	Cab-1	2025-04-30	7	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	7	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	8	Etheostoma fonticola	24	1
3321	Landa Lake	Cab-1	2025-04-30	8	Etheostoma fonticola	12	1
3321	Landa Lake	Cab-1	2025-04-30	8	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	9	Etheostoma fonticola	13	1

3321	Landa Lake	Cab-1	2025-04-30	10	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	10	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	11	Procambarus sp.		1
3321	Landa Lake	Cab-1	2025-04-30	11	Lepomis miniatus	66	1
3321	Landa Lake	Cab-1	2025-04-30	12	Procambarus sp.		1
3321	Landa Lake	Cab-1	2025-04-30	13	Etheostoma fonticola	27	1
3321	Landa Lake	Cab-1	2025-04-30	14	Etheostoma fonticola	25	1
3321	Landa Lake	Cab-1	2025-04-30	14	Etheostoma fonticola	16	1
3321	Landa Lake	Cab-1	2025-04-30	14	Etheostoma fonticola	24	1
3321	Landa Lake	Cab-1	2025-04-30	14	Etheostoma fonticola	18	1
3321	Landa Lake	Cab-1	2025-04-30	14	Etheostoma fonticola	15	1
3321	Landa Lake	Cab-1	2025-04-30	15	No fish collected		
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	15	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	18	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	15	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	14	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	1	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	18	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	25	1

3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	28	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	31	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	17	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	23	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	31	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	2	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	3	Procambarus sp.		1
3324	Landa Lake	Bryo-6	2025-04-30	3	Etheostoma fonticola	18	1
3324	Landa Lake	Bryo-6	2025-04-30	3	Palaemonetes sp.		1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	16	1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	15	1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	24	1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	23	1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	25	1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	25	1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	25	1
3324	Landa Lake	Bryo-6	2025-04-30	4	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	5	Etheostoma fonticola	25	1
3324	Landa Lake	Bryo-6	2025-04-30	5	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	6	Etheostoma fonticola	16	1
3324	Landa Lake	Bryo-6	2025-04-30	6	Etheostoma fonticola	23	1
3324	Landa Lake	Bryo-6	2025-04-30	6	Etheostoma fonticola	30	1
3324	Landa Lake	Bryo-6	2025-04-30	6	Palaemonetes sp.		1
3324	Landa Lake	Bryo-6	2025-04-30	7	Etheostoma fonticola	16	1

3324	Landa Lake	Bryo-6	2025-04-30	7	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	7	Etheostoma fonticola	11	1
3324	Landa Lake	Bryo-6	2025-04-30	7	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	8	Etheostoma fonticola	17	1
3324	Landa Lake	Bryo-6	2025-04-30	8	Etheostoma fonticola	18	1
3324	Landa Lake	Bryo-6	2025-04-30	8	Etheostoma fonticola	25	1
3324	Landa Lake	Bryo-6	2025-04-30	8	Etheostoma fonticola	21	1
3324	Landa Lake	Bryo-6	2025-04-30	8	Etheostoma fonticola	15	1
3324	Landa Lake	Bryo-6	2025-04-30	8	Etheostoma fonticola	18	1
3324	Landa Lake	Bryo-6	2025-04-30	9	Etheostoma fonticola	21	1
3324	Landa Lake	Bryo-6	2025-04-30	9	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	9	Etheostoma fonticola	21	1
3324	Landa Lake	Bryo-6	2025-04-30	9	Etheostoma fonticola	24	1
3324	Landa Lake	Bryo-6	2025-04-30	9	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	9	Etheostoma fonticola	18	1
3324	Landa Lake	Bryo-6	2025-04-30	9	Etheostoma fonticola	21	1
3324	Landa Lake	Bryo-6	2025-04-30	9	Etheostoma fonticola	15	1
3324	Landa Lake	Bryo-6	2025-04-30	10	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	10	Etheostoma fonticola	21	1
3324	Landa Lake	Bryo-6	2025-04-30	11	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	11	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	11	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	11	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	11	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	11	Etheostoma fonticola	16	1
3324	Landa Lake	Bryo-6	2025-04-30	12	Etheostoma fonticola	18	1
3324	Landa Lake	Bryo-6	2025-04-30	13	Etheostoma fonticola	19	1
3324	Landa Lake	Bryo-6	2025-04-30	13	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	14	Etheostoma fonticola	24	1
3324	Landa Lake	Bryo-6	2025-04-30	14	Etheostoma fonticola	24	1

3324	Landa Lake	Bryo-6	2025-04-30	15	Etheostoma fonticola	20	1
3324	Landa Lake	Bryo-6	2025-04-30	15	Etheostoma fonticola	22	1
3324	Landa Lake	Bryo-6	2025-04-30	15	Etheostoma fonticola	26	1
3324	Landa Lake	Bryo-6	2025-04-30	16	No fish collected		
3325	Landa Lake	Cab-2	2025-04-30	1	Gambusia sp.	10	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	16	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	32	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	24	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	19	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	14	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	19	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	15	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	14	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	24	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	16	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	16	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	20	1

3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	18	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	20	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	20	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	14	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	13	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	9	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	26	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	25	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	17	1
3325	Landa Lake	Cab-2	2025-04-30	1	Etheostoma fonticola	25	1
3325	Landa Lake	Cab-2	2025-04-30	1	Oreochromis aureus	25	1
3325	Landa Lake	Cab-2	2025-04-30	1	Oreochromis aureus	30	1
3325	Landa Lake	Cab-2	2025-04-30	1	Oreochromis aureus	15	1
3325	Landa Lake	Cab-2	2025-04-30	1	Oreochromis aureus	15	1
3325	Landa Lake	Cab-2	2025-04-30	1	Procambarus sp.		1
3325	Landa Lake	Cab-2	2025-04-30	1	Astyanax argentatus	25	1
3325	Landa Lake	Cab-2	2025-04-30	2	Procambarus sp.		1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	27	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	13	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	20	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	20	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	26	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	19	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	16	1
3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	10	1

3325	Landa Lake	Cab-2	2025-04-30	2	Etheostoma fonticola	18	1
3325	Landa Lake	Cab-2	2025-04-30	2	Micropterus salmoides	35	1
3325	Landa Lake	Cab-2	2025-04-30	2	Palaemonetes sp.		2
3325	Landa Lake	Cab-2	2025-04-30	3	Etheostoma fonticola	18	1
3325	Landa Lake	Cab-2	2025-04-30	3	Etheostoma fonticola	25	1
3325	Landa Lake	Cab-2	2025-04-30	3	Etheostoma fonticola	30	1
3325	Landa Lake	Cab-2	2025-04-30	3	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	3	Etheostoma fonticola	20	1
3325	Landa Lake	Cab-2	2025-04-30	3	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	3	Etheostoma fonticola	17	1
3325	Landa Lake	Cab-2	2025-04-30	3	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	3	Micropterus salmoides	34	1
3325	Landa Lake	Cab-2	2025-04-30	3	Gambusia sp.	10	1
3325	Landa Lake	Cab-2	2025-04-30	4	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	4	Etheostoma fonticola	25	1
3325	Landa Lake	Cab-2	2025-04-30	5	Procambarus sp.		1
3325	Landa Lake	Cab-2	2025-04-30	5	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	5	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	6	Procambarus sp.		5
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	18	1
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	30	1
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	30	1
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	24	1
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	16	1
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	6	Etheostoma fonticola	12	1
3325	Landa Lake	Cab-2	2025-04-30	7	Etheostoma fonticola	22	1

3325	Landa Lake	Cab-2	2025-04-30	7	Etheostoma fonticola	15	1
3325	Landa Lake	Cab-2	2025-04-30	7	Etheostoma fonticola	35	1
3325	Landa Lake	Cab-2	2025-04-30	7	Etheostoma fonticola	15	1
3325	Landa Lake	Cab-2	2025-04-30	7	Etheostoma fonticola	18	1
3325	Landa Lake	Cab-2	2025-04-30	8	Procambarus sp.		1
3325	Landa Lake	Cab-2	2025-04-30	9	Procambarus sp.		1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	28	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	32	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	18	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	16	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	25	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	24	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	20	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	16	1
3325	Landa Lake	Cab-2	2025-04-30	9	Etheostoma fonticola	16	1
3325	Landa Lake	Cab-2	2025-04-30	9	Oreochromis aureus	18	1
3325	Landa Lake	Cab-2	2025-04-30	10	Etheostoma fonticola	28	1
3325	Landa Lake	Cab-2	2025-04-30	10	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	10	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	10	Astyanax argentatus	13	1
3325	Landa Lake	Cab-2	2025-04-30	11	Etheostoma fonticola	26	1
3325	Landa Lake	Cab-2	2025-04-30	11	Etheostoma fonticola	16	1
3325	Landa Lake	Cab-2	2025-04-30	11	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	11	Etheostoma fonticola	24	1
3325	Landa Lake	Cab-2	2025-04-30	11	Procambarus sp.		1
3325	Landa Lake	Cab-2	2025-04-30	12	Procambarus sp.		1
3325	Landa Lake	Cab-2	2025-04-30	12	Etheostoma fonticola	21	1

3325	Landa Lake	Cab-2	2025-04-30	12	Etheostoma fonticola	23	1
3325	Landa Lake	Cab-2	2025-04-30	12	Etheostoma fonticola	26	1
3325	Landa Lake	Cab-2	2025-04-30	12	Etheostoma fonticola	25	1
3325	Landa Lake	Cab-2	2025-04-30	12	Etheostoma fonticola	32	1
3325	Landa Lake	Cab-2	2025-04-30	12	Oreochromis aureus	17	1
3325	Landa Lake	Cab-2	2025-04-30	13	Procambarus sp.		1
3325	Landa Lake	Cab-2	2025-04-30	13	Etheostoma fonticola	28	1
3325	Landa Lake	Cab-2	2025-04-30	13	Etheostoma fonticola	20	1
3325	Landa Lake	Cab-2	2025-04-30	13	Etheostoma fonticola	25	1
3325	Landa Lake	Cab-2	2025-04-30	13	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	13	Etheostoma fonticola	28	1
3325	Landa Lake	Cab-2	2025-04-30	13	Oreochromis aureus	15	1
3325	Landa Lake	Cab-2	2025-04-30	14	Procambarus sp.		1
3325	Landa Lake	Cab-2	2025-04-30	14	Oreochromis aureus	19	1
3325	Landa Lake	Cab-2	2025-04-30	14	Etheostoma fonticola	25	1
3325	Landa Lake	Cab-2	2025-04-30	14	Etheostoma fonticola	24	1
3325	Landa Lake	Cab-2	2025-04-30	15	Procambarus sp.		2
3325	Landa Lake	Cab-2	2025-04-30	15	Etheostoma fonticola	26	1
3325	Landa Lake	Cab-2	2025-04-30	15	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	15	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	16	Etheostoma fonticola	26	1
3325	Landa Lake	Cab-2	2025-04-30	16	Etheostoma fonticola	21	1
3325	Landa Lake	Cab-2	2025-04-30	16	Etheostoma fonticola	17	1
3325	Landa Lake	Cab-2	2025-04-30	16	Etheostoma fonticola	22	1
3325	Landa Lake	Cab-2	2025-04-30	16	Etheostoma fonticola	19	1
3325	Landa Lake	Cab-2	2025-04-30	17	Procambarus sp.		1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	26	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	20	1

3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	26	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	28	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	27	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	11	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	27	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	28	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	27	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	28	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	13	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	26	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	23	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	18	1

3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	1	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	2	Procambarus sp.		2
3326	Landa Lake	Bryo-2	2025-04-30	2	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	2	Etheostoma fonticola	12	1
3326	Landa Lake	Bryo-2	2025-04-30	2	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	2	Etheostoma fonticola	29	1
3326	Landa Lake	Bryo-2	2025-04-30	2	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	2	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	2	Etheostoma fonticola	14	1
3326	Landa Lake	Bryo-2	2025-04-30	2	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	3	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	3	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	3	Etheostoma fonticola	14	1
3326	Landa Lake	Bryo-2	2025-04-30	3	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	3	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	3	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	3	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	3	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	3	Etheostoma fonticola	11	1

3326	Landa Lake	Bryo-2	2025-04-30	4	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	4	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	4	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	4	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	11	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	11	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	11	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	17	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	28	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	5	Astyanax argentatus	10	1

3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	30	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	14	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	17	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	10	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	6	Procambarus sp.		2
3326	Landa Lake	Bryo-2	2025-04-30	7	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	7	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	7	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	7	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	7	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	7	Palaemonetes sp.		1
3326	Landa Lake	Bryo-2	2025-04-30	8	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	8	Etheostoma fonticola	21	1

3326	Landa Lake	Bryo-2	2025-04-30	8	Etheostoma fonticola	14	1
3326	Landa Lake	Bryo-2	2025-04-30	8	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	8	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	8	Procambarus sp.		2
3326	Landa Lake	Bryo-2	2025-04-30	9	Etheostoma fonticola	29	1
3326	Landa Lake	Bryo-2	2025-04-30	9	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	9	Etheostoma fonticola	12	1
3326	Landa Lake	Bryo-2	2025-04-30	9	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	9	Etheostoma fonticola	23	1
3326	Landa Lake	Bryo-2	2025-04-30	9	Etheostoma fonticola	27	1
3326	Landa Lake	Bryo-2	2025-04-30	9	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	9	Procambarus sp.		1
3326	Landa Lake	Bryo-2	2025-04-30	10	Procambarus sp.		2
3326	Landa Lake	Bryo-2	2025-04-30	10	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	10	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	10	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	10	Etheostoma fonticola	23	1
3326	Landa Lake	Bryo-2	2025-04-30	10	Etheostoma fonticola	17	1
3326	Landa Lake	Bryo-2	2025-04-30	10	Etheostoma fonticola	17	1
3326	Landa Lake	Bryo-2	2025-04-30	10	Etheostoma fonticola	12	1
3326	Landa Lake	Bryo-2	2025-04-30	10	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	10	Etheostoma fonticola	12	1
3326	Landa Lake	Bryo-2	2025-04-30	11	Procambarus sp.		1
3326	Landa Lake	Bryo-2	2025-04-30	11	Etheostoma fonticola	17	1
3326	Landa Lake	Bryo-2	2025-04-30	11	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	11	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	11	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	11	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	11	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	11	Etheostoma fonticola	18	1

3326	Landa Lake	Bryo-2	2025-04-30	11	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	11	Etheostoma fonticola	14	1
3326	Landa Lake	Bryo-2	2025-04-30	12	Procambarus sp.		1
3326	Landa Lake	Bryo-2	2025-04-30	12	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	12	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	12	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	12	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	12	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	12	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	13	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	13	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	13	Etheostoma fonticola	11	1
3326	Landa Lake	Bryo-2	2025-04-30	13	Etheostoma fonticola	12	1
3326	Landa Lake	Bryo-2	2025-04-30	13	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	14	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	14	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	14	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	14	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	14	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	15	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	15	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	15	Etheostoma fonticola	19	1
3326	Landa Lake	Bryo-2	2025-04-30	15	Etheostoma fonticola	29	1
3326	Landa Lake	Bryo-2	2025-04-30	15	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	16	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	16	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	17	Etheostoma fonticola	29	1
3326	Landa Lake	Bryo-2	2025-04-30	17	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	17	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	17	Etheostoma fonticola	15	1

3326	Landa Lake	Bryo-2	2025-04-30	6	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	18	Procambarus sp.		1
3326	Landa Lake	Bryo-2	2025-04-30	18	Etheostoma fonticola	24	1
3326	Landa Lake	Bryo-2	2025-04-30	18	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	18	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	18	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	19	Etheostoma fonticola	22	1
3326	Landa Lake	Bryo-2	2025-04-30	19	Etheostoma fonticola	28	1
3326	Landa Lake	Bryo-2	2025-04-30	19	Etheostoma fonticola	20	1
3326	Landa Lake	Bryo-2	2025-04-30	19	Etheostoma fonticola	15	1
3326	Landa Lake	Bryo-2	2025-04-30	19	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	20	Etheostoma fonticola	16	1
3326	Landa Lake	Bryo-2	2025-04-30	20	Etheostoma fonticola	21	1
3326	Landa Lake	Bryo-2	2025-04-30	21	Etheostoma fonticola	25	1
3326	Landa Lake	Bryo-2	2025-04-30	21	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	21	Etheostoma fonticola	18	1
3326	Landa Lake	Bryo-2	2025-04-30	22	No fish collected		
3327	Landa Lake	Val-1	2025-04-30	1	Procambarus sp.		1
3327	Landa Lake	Val-1	2025-04-30	1	Etheostoma fonticola	14	1
3327	Landa Lake	Val-1	2025-04-30	1	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	1	Etheostoma fonticola	17	1
3327	Landa Lake	Val-1	2025-04-30	1	Lepomis sp.	17	1
3327	Landa Lake	Val-1	2025-04-30	2	Procambarus sp.		4
3327	Landa Lake	Val-1	2025-04-30	2	Micropterus salmoides	39	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	17	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	25	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	15	1

3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	23	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	21	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	16	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	17	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	16	1
3327	Landa Lake	Val-1	2025-04-30	2	Etheostoma fonticola	14	1
3327	Landa Lake	Val-1	2025-04-30	3	Procambarus sp.		1
3327	Landa Lake	Val-1	2025-04-30	3	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	3	Etheostoma fonticola	21	1
3327	Landa Lake	Val-1	2025-04-30	3	Etheostoma fonticola	16	1
3327	Landa Lake	Val-1	2025-04-30	4	Procambarus sp.		1
3327	Landa Lake	Val-1	2025-04-30	4	Etheostoma fonticola	33	1
3327	Landa Lake	Val-1	2025-04-30	4	Etheostoma fonticola	19	1
3327	Landa Lake	Val-1	2025-04-30	4	Etheostoma fonticola	30	1
3327	Landa Lake	Val-1	2025-04-30	4	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	4	Palaemonetes sp.		1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	16	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	19	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	16	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	30	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	17	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	21	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	14	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	12	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	22	1

3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	26	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	24	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	27	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	15	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	14	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	15	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	13	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	28	1
3327	Landa Lake	Val-1	2025-04-30	5	Etheostoma fonticola	11	1
3327	Landa Lake	Val-1	2025-04-30	5	Palaemonetes sp.		1
3327	Landa Lake	Val-1	2025-04-30	6	Etheostoma fonticola	24	1
3327	Landa Lake	Val-1	2025-04-30	6	Etheostoma fonticola	17	1
3327	Landa Lake	Val-1	2025-04-30	6	Etheostoma fonticola	25	1
3327	Landa Lake	Val-1	2025-04-30	6	Etheostoma fonticola	23	1
3327	Landa Lake	Val-1	2025-04-30	6	Etheostoma fonticola	15	1
3327	Landa Lake	Val-1	2025-04-30	6	Etheostoma fonticola	25	1
3327	Landa Lake	Val-1	2025-04-30	6	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	6	Procambarus sp.		1
3327	Landa Lake	Val-1	2025-04-30	7	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	7	Etheostoma fonticola	16	1
3327	Landa Lake	Val-1	2025-04-30	7	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	7	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	7	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	7	Procambarus sp.		1
3327	Landa Lake	Val-1	2025-04-30	8	Etheostoma fonticola	19	1
3327	Landa Lake	Val-1	2025-04-30	8	Etheostoma fonticola	19	1
3327	Landa Lake	Val-1	2025-04-30	8	Etheostoma fonticola	25	1
3327	Landa Lake	Val-1	2025-04-30	8	Etheostoma fonticola	14	1
3327	Landa Lake	Val-1	2025-04-30	8	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	8	Etheostoma fonticola	24	1

3327	Landa Lake	Val-1	2025-04-30	9	Procambarus sp.		3
3327	Landa Lake	Val-1	2025-04-30	10	Procambarus sp.		2
3327	Landa Lake	Val-1	2025-04-30	10	Etheostoma fonticola	23	1
3327	Landa Lake	Val-1	2025-04-30	10	Etheostoma fonticola	23	1
3327	Landa Lake	Val-1	2025-04-30	10	Etheostoma fonticola	17	1
3327	Landa Lake	Val-1	2025-04-30	10	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	10	Etheostoma fonticola	15	1
3327	Landa Lake	Val-1	2025-04-30	11	No fish collected		
3327	Landa Lake	Val-1	2025-04-30	12	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	12	Etheostoma fonticola	13	1
3327	Landa Lake	Val-1	2025-04-30	13	Etheostoma fonticola	22	1
3327	Landa Lake	Val-1	2025-04-30	14	Etheostoma fonticola	29	1
3327	Landa Lake	Val-1	2025-04-30	14	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	14	Etheostoma fonticola	22	1
3327	Landa Lake	Val-1	2025-04-30	14	Etheostoma fonticola	14	1
3327	Landa Lake	Val-1	2025-04-30	14	Etheostoma fonticola	12	1
3327	Landa Lake	Val-1	2025-04-30	14	Etheostoma fonticola	23	1
3327	Landa Lake	Val-1	2025-04-30	14	Etheostoma fonticola	16	1
3327	Landa Lake	Val-1	2025-04-30	14	Etheostoma fonticola	14	1
3327	Landa Lake	Val-1	2025-04-30	14	Procambarus sp.		1
3327	Landa Lake	Val-1	2025-04-30	15	Procambarus sp.		4
3327	Landa Lake	Val-1	2025-04-30	15	Etheostoma fonticola	25	1
3327	Landa Lake	Val-1	2025-04-30	15	Etheostoma fonticola	18	1
3327	Landa Lake	Val-1	2025-04-30	15	Etheostoma fonticola	20	1
3327	Landa Lake	Val-1	2025-04-30	15	Etheostoma fonticola	19	1
3327	Landa Lake	Val-1	2025-04-30	16	No fish collected		
3328	Landa Lake	Val-2	2025-04-30	1	Procambarus sp.		2
3328	Landa Lake	Val-2	2025-04-30	1	Astyanax argentatus	35	1
3328	Landa Lake	Val-2	2025-04-30	1	Astyanax argentatus	22	1
3328	Landa Lake	Val-2	2025-04-30	1	Astyanax argentatus	30	1

3328	Landa Lake	Val-2	2025-04-30	1	Astyanax argentatus	31	1
3328	Landa Lake	Val-2	2025-04-30	1	Astyanax argentatus	40	1
3328	Landa Lake	Val-2	2025-04-30	1	Astyanax argentatus	22	1
3328	Landa Lake	Val-2	2025-04-30	1	Lepomis miniatus	91	1
3328	Landa Lake	Val-2	2025-04-30	1	Gambusia sp.	25	1
3328	Landa Lake	Val-2	2025-04-30	1	Gambusia sp.	22	1
3328	Landa Lake	Val-2	2025-04-30	1	Etheostoma fonticola	25	1
3328	Landa Lake	Val-2	2025-04-30	1	Etheostoma fonticola	27	1
3328	Landa Lake	Val-2	2025-04-30	1	Etheostoma fonticola	20	1
3328	Landa Lake	Val-2	2025-04-30	2	Procambarus sp.		2
3328	Landa Lake	Val-2	2025-04-30	2	Astyanax argentatus	28	1
3328	Landa Lake	Val-2	2025-04-30	2	Astyanax argentatus	17	1
3328	Landa Lake	Val-2	2025-04-30	2	Astyanax argentatus	25	1
3328	Landa Lake	Val-2	2025-04-30	2	Astyanax argentatus	26	1
3328	Landa Lake	Val-2	2025-04-30	2	Etheostoma fonticola	29	1
3328	Landa Lake	Val-2	2025-04-30	2	Etheostoma fonticola	16	1
3328	Landa Lake	Val-2	2025-04-30	2	Lepomis miniatus	28	1
3328	Landa Lake	Val-2	2025-04-30	2	Lepomis miniatus	28	1
3328	Landa Lake	Val-2	2025-04-30	2	Palaemonetes sp.		1
3328	Landa Lake	Val-2	2025-04-30	3	Astyanax argentatus	21	1
3328	Landa Lake	Val-2	2025-04-30	3	Procambarus sp.		1
3328	Landa Lake	Val-2	2025-04-30	4	Etheostoma fonticola	22	1
3328	Landa Lake	Val-2	2025-04-30	4	Etheostoma fonticola	30	1
3328	Landa Lake	Val-2	2025-04-30	4	Etheostoma fonticola	22	1
3328	Landa Lake	Val-2	2025-04-30	4	Etheostoma fonticola	20	1
3328	Landa Lake	Val-2	2025-04-30	4	Procambarus sp.		3
3328	Landa Lake	Val-2	2025-04-30	4	Palaemonetes sp.		1
3328	Landa Lake	Val-2	2025-04-30	5	Astyanax argentatus	34	1
3328	Landa Lake	Val-2	2025-04-30	5	Astyanax argentatus	31	1
3328	Landa Lake	Val-2	2025-04-30	5	Etheostoma fonticola	20	1

3328	Landa Lake	Val-2	2025-04-30	5	Etheostoma fonticola	18	1
3328	Landa Lake	Val-2	2025-04-30	5	Etheostoma fonticola	24	1
3328	Landa Lake	Val-2	2025-04-30	5	Etheostoma fonticola	24	1
3328	Landa Lake	Val-2	2025-04-30	5	Gambusia sp.	15	1
3328	Landa Lake	Val-2	2025-04-30	5	Gambusia sp.	20	1
3328	Landa Lake	Val-2	2025-04-30	5	Lepomis sp.	15	1
3328	Landa Lake	Val-2	2025-04-30	5	Palaemonetes sp.		1
3328	Landa Lake	Val-2	2025-04-30	6	Procambarus sp.		2
3328	Landa Lake	Val-2	2025-04-30	6	Etheostoma fonticola	30	1
3328	Landa Lake	Val-2	2025-04-30	6	Etheostoma fonticola	24	1
3328	Landa Lake	Val-2	2025-04-30	7	Etheostoma fonticola	26	1
3328	Landa Lake	Val-2	2025-04-30	7	Etheostoma fonticola	20	1
3328	Landa Lake	Val-2	2025-04-30	7	Etheostoma fonticola	16	1
3328	Landa Lake	Val-2	2025-04-30	8	Procambarus sp.		1
3328	Landa Lake	Val-2	2025-04-30	8	Etheostoma fonticola	30	1
3328	Landa Lake	Val-2	2025-04-30	8	Etheostoma fonticola	25	1
3328	Landa Lake	Val-2	2025-04-30	8	Etheostoma fonticola	22	1
3328	Landa Lake	Val-2	2025-04-30	9	Procambarus sp.		
3328	Landa Lake	Val-2	2025-04-30	10	Etheostoma fonticola	21	1
3328	Landa Lake	Val-2	2025-04-30	10	Etheostoma fonticola	20	1
3328	Landa Lake	Val-2	2025-04-30	10	Etheostoma fonticola	16	1
3328	Landa Lake	Val-2	2025-04-30	10	Procambarus sp.		1
3328	Landa Lake	Val-2	2025-04-30	11	Procambarus sp.		2
3328	Landa Lake	Val-2	2025-04-30	11	Etheostoma fonticola	20	1
3328	Landa Lake	Val-2	2025-04-30	12	Astyanax argentatus	33	1
3328	Landa Lake	Val-2	2025-04-30	13	Procambarus sp.		1
3328	Landa Lake	Val-2	2025-04-30	14	Etheostoma fonticola	12	1
3328	Landa Lake	Val-2	2025-04-30	14	Lepomis sp.	15	1
3328	Landa Lake	Val-2	2025-04-30	15	Etheostoma fonticola	33	1
3328	Landa Lake	Val-2	2025-04-30	16	Procambarus sp.		1

3329	Landa Lake	Sag-1	2025-04-30	1	Gambusia sp.	21	1
3329	Landa Lake	Sag-1	2025-04-30	1	Gambusia sp.	44	1
3329	Landa Lake	Sag-1	2025-04-30	1	Gambusia sp.	25	1
3329	Landa Lake	Sag-1	2025-04-30	1	Lepomis sp.	15	1
3329	Landa Lake	Sag-1	2025-04-30	1	Lepomis sp.	15	1
3329	Landa Lake	Sag-1	2025-04-30	1	Lepomis sp.	20	1
3329	Landa Lake	Sag-1	2025-04-30	1	Lepomis sp.	14	1
3329	Landa Lake	Sag-1	2025-04-30	1	Lepomis miniatus	78	1
3329	Landa Lake	Sag-1	2025-04-30	1	Etheostoma fonticola	20	1
3329	Landa Lake	Sag-1	2025-04-30	1	Etheostoma fonticola	21	1
3329	Landa Lake	Sag-1	2025-04-30	1	Palaemonetes sp.		2
3329	Landa Lake	Sag-1	2025-04-30	2	Procambarus sp.		6
3329	Landa Lake	Sag-1	2025-04-30	2	Lepomis miniatus	88	1
3329	Landa Lake	Sag-1	2025-04-30	2	Lepomis sp.	17	1
3329	Landa Lake	Sag-1	2025-04-30	2	Gambusia sp.	25	1
3329	Landa Lake	Sag-1	2025-04-30	2	Etheostoma fonticola	19	1
3329	Landa Lake	Sag-1	2025-04-30	3	Lepomis miniatus	91	1
3329	Landa Lake	Sag-1	2025-04-30	3	Procambarus sp.		6
3329	Landa Lake	Sag-1	2025-04-30	3	Palaemonetes sp.		1
3329	Landa Lake	Sag-1	2025-04-30	3	Gambusia sp.	22	1
3329	Landa Lake	Sag-1	2025-04-30	4	Procambarus sp.		3
3329	Landa Lake	Sag-1	2025-04-30	4	Etheostoma fonticola	16	1
3329	Landa Lake	Sag-1	2025-04-30	5	Herichthys cyanoguttatus	85	1
3329	Landa Lake	Sag-1	2025-04-30	5	Procambarus sp.		2
3329	Landa Lake	Sag-1	2025-04-30	6	Procambarus sp.		2
3329	Landa Lake	Sag-1	2025-04-30	6	Etheostoma fonticola	19	1
3329	Landa Lake	Sag-1	2025-04-30	7	No fish collected		
3329	Landa Lake	Sag-1	2025-04-30	8	Procambarus sp.		3
3329	Landa Lake	Sag-1	2025-04-30	8	Etheostoma fonticola	17	1
3329	Landa Lake	Sag-1	2025-04-30	9	Procambarus sp.		1

3329	Landa Lake	Sag-1	2025-04-30	9	Etheostoma fonticola	26	1
3329	Landa Lake	Sag-1	2025-04-30	10	Lepomis miniatus	90	1
3329	Landa Lake	Sag-1	2025-04-30	10	Procambarus sp.		2
3329	Landa Lake	Sag-1	2025-04-30	11	Procambarus sp.		1
3329	Landa Lake	Sag-1	2025-04-30	12	No fish collected		
3329	Landa Lake	Sag-1	2025-04-30	13	No fish collected		
3329	Landa Lake	Sag-1	2025-04-30	14	Procambarus sp.		1
3329	Landa Lake	Sag-1	2025-04-30	15	No fish collected		
3330	Landa Lake	Sag-2	2025-04-30	1	Procambarus sp.		1
3330	Landa Lake	Sag-2	2025-04-30	1	Etheostoma fonticola	19	1
3330	Landa Lake	Sag-2	2025-04-30	1	Etheostoma fonticola	25	1
3330	Landa Lake	Sag-2	2025-04-30	1	Etheostoma fonticola	16	1
3330	Landa Lake	Sag-2	2025-04-30	1	Lepomis sp.	15	1
3330	Landa Lake	Sag-2	2025-04-30	2	Lepomis sp.	15	1
3330	Landa Lake	Sag-2	2025-04-30	2	Etheostoma fonticola	20	1
3330	Landa Lake	Sag-2	2025-04-30	2	Etheostoma fonticola	16	1
3330	Landa Lake	Sag-2	2025-04-30	2	Procambarus sp.		2
3330	Landa Lake	Sag-2	2025-04-30	3	Procambarus sp.		4
3330	Landa Lake	Sag-2	2025-04-30	3	Etheostoma fonticola	25	1
3330	Landa Lake	Sag-2	2025-04-30	3	Etheostoma fonticola	22	1
3330	Landa Lake	Sag-2	2025-04-30	3	Etheostoma fonticola	16	1
3330	Landa Lake	Sag-2	2025-04-30	3	Etheostoma fonticola	24	1
3330	Landa Lake	Sag-2	2025-04-30	4	Etheostoma fonticola	22	1
3330	Landa Lake	Sag-2	2025-04-30	4	Etheostoma fonticola	25	1
3330	Landa Lake	Sag-2	2025-04-30	4	Etheostoma fonticola	21	1
3330	Landa Lake	Sag-2	2025-04-30	4	Etheostoma fonticola	20	1
3330	Landa Lake	Sag-2	2025-04-30	4	Etheostoma fonticola	18	1
3330	Landa Lake	Sag-2	2025-04-30	4	Micropterus salmoides	42	1
3330	Landa Lake	Sag-2	2025-04-30	5	Ameiurus natalis	40	1
3330	Landa Lake	Sag-2	2025-04-30	5	Lepomis miniatus	22	1

3330	Landa Lake	Sag-2	2025-04-30	5	Etheostoma fonticola	15	1
3330	Landa Lake	Sag-2	2025-04-30	6	Micropterus salmoides	40	1
3330	Landa Lake	Sag-2	2025-04-30	6	Etheostoma fonticola	20	1
3330	Landa Lake	Sag-2	2025-04-30	6	Etheostoma fonticola	18	1
3330	Landa Lake	Sag-2	2025-04-30	6	Etheostoma fonticola	18	1
3330	Landa Lake	Sag-2	2025-04-30	7	No fish collected		
3330	Landa Lake	Sag-2	2025-04-30	8	Lepomis miniatus	28	1
3330	Landa Lake	Sag-2	2025-04-30	9	Procambarus sp.		1
3330	Landa Lake	Sag-2	2025-04-30	9	Etheostoma fonticola	27	1
3330	Landa Lake	Sag-2	2025-04-30	10	No fish collected		
3330	Landa Lake	Sag-2	2025-04-30	11	Procambarus sp.		2
3330	Landa Lake	Sag-2	2025-04-30	11	Etheostoma fonticola	20	1
3330	Landa Lake	Sag-2	2025-04-30	11	Etheostoma fonticola	26	1
3330	Landa Lake	Sag-2	2025-04-30	12	No fish collected		
3330	Landa Lake	Sag-2	2025-04-30	13	Procambarus sp.		1
3330	Landa Lake	Sag-2	2025-04-30	13	Etheostoma fonticola	23	1
3330	Landa Lake	Sag-2	2025-04-30	13	Etheostoma fonticola	19	1
3330	Landa Lake	Sag-2	2025-04-30	14	Procambarus sp.		2
3330	Landa Lake	Sag-2	2025-04-30	15	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	1	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	2	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	3	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	4	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	5	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	6	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	7	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	8	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	9	No fish collected		
3331	Landa Lake	Open-1	2025-04-30	10	No fish collected		
3322	Landa Lake	Lud-1	2025-04-30	1	Gambusia sp.	24	1

3322	Landa Lake	Lud-1	2025-04-30	1	Gambusia sp.	25	1
3322	Landa Lake	Lud-1	2025-04-30	1	Gambusia sp.	10	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	45	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	35	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	25	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	28	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	35	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	20	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	20	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	15	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	31	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	27	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	30	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	20	1
3322	Landa Lake	Lud-1	2025-04-30	1	Astyanax argentatus	15	1
3322	Landa Lake	Lud-1	2025-04-30	1	Etheostoma fonticola	19	1
3322	Landa Lake	Lud-1	2025-04-30	1	Etheostoma fonticola	12	1
3322	Landa Lake	Lud-1	2025-04-30	1	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	1	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	1	Etheostoma fonticola	15	1
3322	Landa Lake	Lud-1	2025-04-30	1	Etheostoma fonticola	27	1
3322	Landa Lake	Lud-1	2025-04-30	1	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	1	Lepomis sp.	19	1
3322	Landa Lake	Lud-1	2025-04-30	1	Lepomis sp.	20	1
3322	Landa Lake	Lud-1	2025-04-30	1	Lepomis sp.	18	1
3322	Landa Lake	Lud-1	2025-04-30	1	Lepomis sp.	18	1
3322	Landa Lake	Lud-1	2025-04-30	1	Palaemonetes sp.		68
3322	Landa Lake	Lud-1	2025-04-30	1	Procambarus sp.		1
3322	Landa Lake	Lud-1	2025-04-30	2	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	2	Etheostoma fonticola	28	1

3322	Landa Lake	Lud-1	2025-04-30	2	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	2	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	2	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	2	Etheostoma fonticola	18	1
3322	Landa Lake	Lud-1	2025-04-30	2	Lepomis miniatus	26	1
3322	Landa Lake	Lud-1	2025-04-30	2	Lepomis miniatus	25	1
3322	Landa Lake	Lud-1	2025-04-30	2	Micropterus salmoides	32	1
3322	Landa Lake	Lud-1	2025-04-30	1	Etheostoma fonticola	15	1
3322	Landa Lake	Lud-1	2025-04-30	2	Astyanax argentatus	28	1
3322	Landa Lake	Lud-1	2025-04-30	2	Astyanax argentatus	30	1
3322	Landa Lake	Lud-1	2025-04-30	2	Astyanax argentatus	18	1
3322	Landa Lake	Lud-1	2025-04-30	2	Astyanax argentatus	22	1
3322	Landa Lake	Lud-1	2025-04-30	2	Astyanax argentatus	15	1
3322	Landa Lake	Lud-1	2025-04-30	2	Gambusia sp.	8	1
3322	Landa Lake	Lud-1	2025-04-30	2	Palaemonetes sp.		30
3322	Landa Lake	Lud-1	2025-04-30	2	Lepomis sp.	15	1
3322	Landa Lake	Lud-1	2025-04-30	3	Astyanax argentatus	31	1
3322	Landa Lake	Lud-1	2025-04-30	3	Astyanax argentatus	28	1
3322	Landa Lake	Lud-1	2025-04-30	3	Astyanax argentatus	35	1
3322	Landa Lake	Lud-1	2025-04-30	3	Astyanax argentatus		1
3322	Landa Lake	Lud-1	2025-04-30	3	Astyanax argentatus		1
3322	Landa Lake	Lud-1	2025-04-30	3	Astyanax argentatus		1
3322	Landa Lake	Lud-1	2025-04-30	3	Lepomis sp.	19	1
3322	Landa Lake	Lud-1	2025-04-30	3	Lepomis sp.	22	1
3322	Landa Lake	Lud-1	2025-04-30	3	Lepomis miniatus	26	1
3322	Landa Lake	Lud-1	2025-04-30	3	Micropterus salmoides	42	1
3322	Landa Lake	Lud-1	2025-04-30	3	Gambusia sp.	13	1
3322	Landa Lake	Lud-1	2025-04-30	3	Gambusia sp.	10	1
3322	Landa Lake	Lud-1	2025-04-30	3	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	3	Etheostoma fonticola	16	1

3322	Landa Lake	Lud-1	2025-04-30	3	Palaemonetes sp.		34
3322	Landa Lake	Lud-1	2025-04-30	4	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	4	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	4	Etheostoma fonticola	24	1
3322	Landa Lake	Lud-1	2025-04-30	4	Etheostoma fonticola	18	1
3322	Landa Lake	Lud-1	2025-04-30	4	Etheostoma fonticola	19	1
3322	Landa Lake	Lud-1	2025-04-30	4	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	4	Lepomis miniatus	24	1
3322	Landa Lake	Lud-1	2025-04-30	4	Palaemonetes sp.		18
3322	Landa Lake	Lud-1	2025-04-30	5	Procambarus sp.		2
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	27	1
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	32	1
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	5	Etheostoma fonticola	19	1
3322	Landa Lake	Lud-1	2025-04-30	5	Micropterus salmoides	46	1
3322	Landa Lake	Lud-1	2025-04-30	5	Palaemonetes sp.		20
3322	Landa Lake	Lud-1	2025-04-30	5	Lepomis miniatus	25	1
3322	Landa Lake	Lud-1	2025-04-30	5	Astyanax argentatus	28	1
3322	Landa Lake	Lud-1	2025-04-30	5	Lepomis sp.	15	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	14	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	34	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	24	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	35	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	32	1

3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	17	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	18	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	24	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	19	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	6	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	6	Palaemonetes sp.		11
3322	Landa Lake	Lud-1	2025-04-30	7	Astyanax argentatus		1
3322	Landa Lake	Lud-1	2025-04-30	7	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	7	Etheostoma fonticola	21	1
3322	Landa Lake	Lud-1	2025-04-30	7	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	7	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	7	Etheostoma fonticola	17	1
3322	Landa Lake	Lud-1	2025-04-30	7	Palaemonetes sp.		11
3322	Landa Lake	Lud-1	2025-04-30	8	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	8	Etheostoma fonticola	19	1
3322	Landa Lake	Lud-1	2025-04-30	8	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	8	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	8	Etheostoma fonticola	13	1
3322	Landa Lake	Lud-1	2025-04-30	8	Etheostoma fonticola	19	1

3322	Landa Lake	Lud-1	2025-04-30	8	Lepomis sp.	20	1
3322	Landa Lake	Lud-1	2025-04-30	8	Palaemonetes sp.		4
3322	Landa Lake	Lud-1	2025-04-30	9	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	9	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	9	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	9	Lepomis miniatus	35	1
3322	Landa Lake	Lud-1	2025-04-30	9	Palaemonetes sp.		10
3322	Landa Lake	Lud-1	2025-04-30	10	Etheostoma fonticola	32	1
3322	Landa Lake	Lud-1	2025-04-30	10	Etheostoma fonticola	17	1
3322	Landa Lake	Lud-1	2025-04-30	10	Etheostoma fonticola	19	1
3322	Landa Lake	Lud-1	2025-04-30	10	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	10	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	10	Astyanax argentatus		1
3322	Landa Lake	Lud-1	2025-04-30	10	Gambusia sp.	10	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	33	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	32	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	37	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	32	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	18	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	21	1
3322	Landa Lake	Lud-1	2025-04-30	11	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	11	Palaemonetes sp.		3

3322	Landa Lake	Lud-1	2025-04-30	12	Procambarus sp.		1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	18	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	17	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	12	Palaemonetes sp.		3
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	33	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	19	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	34	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	27	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	13	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	15	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	32	1

3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	24	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	14	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	13	1
3322	Landa Lake	Lud-1	2025-04-30	13	Etheostoma fonticola	17	1
3322	Landa Lake	Lud-1	2025-04-30	14	Procambarus sp.		1
3322	Landa Lake	Lud-1	2025-04-30	14	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	14	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	14	Etheostoma fonticola	35	1
3322	Landa Lake	Lud-1	2025-04-30	14	Etheostoma fonticola	38	1
3322	Landa Lake	Lud-1	2025-04-30	14	Etheostoma fonticola	33	1
3322	Landa Lake	Lud-1	2025-04-30	14	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	14	Lepomis miniatus	24	1
3322	Landa Lake	Lud-1	2025-04-30	15	Procambarus sp.		3
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	17	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	33	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	24	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	25	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	29	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	15	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	33	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	22	1

3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	24	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	15	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	24	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	13	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	21	1
3322	Landa Lake	Lud-1	2025-04-30	15	Etheostoma fonticola	13	1
3322	Landa Lake	Lud-1	2025-04-30	15	Palaemonetes sp.		1
3322	Landa Lake	Lud-1	2025-04-30	16	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	16	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	16	Etheostoma fonticola	31	1
3322	Landa Lake	Lud-1	2025-04-30	16	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	17	Procambarus sp.		1
3322	Landa Lake	Lud-1	2025-04-30	17	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	17	Etheostoma fonticola	28	1
3322	Landa Lake	Lud-1	2025-04-30	17	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	17	Etheostoma fonticola	31	1
3322	Landa Lake	Lud-1	2025-04-30	17	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	17	Etheostoma fonticola	22	1
3322	Landa Lake	Lud-1	2025-04-30	17	Etheostoma fonticola	20	1
3322	Landa Lake	Lud-1	2025-04-30	17	Palaemonetes sp.		1
3322	Landa Lake	Lud-1	2025-04-30	18	Procambarus sp.		1
3322	Landa Lake	Lud-1	2025-04-30	18	Etheostoma fonticola	21	1
3322	Landa Lake	Lud-1	2025-04-30	19	Palaemonetes sp.		1
3322	Landa Lake	Lud-1	2025-04-30	19	Etheostoma fonticola	17	1
3322	Landa Lake	Lud-1	2025-04-30	19	Etheostoma fonticola	16	1
3322	Landa Lake	Lud-1	2025-04-30	19	Etheostoma fonticola	15	1
3322	Landa Lake	Lud-1	2025-04-30	20	Etheostoma fonticola	23	1

3322	Landa Lake	Lud-1	2025-04-30	20	Etheostoma fonticola	21	1
3322	Landa Lake	Lud-1	2025-04-30	20	Etheostoma fonticola	23	1
3322	Landa Lake	Lud-1	2025-04-30	20	Etheostoma fonticola	18	1
3322	Landa Lake	Lud-1	2025-04-30	20	Etheostoma fonticola	35	1
3322	Landa Lake	Lud-1	2025-04-30	21	Etheostoma fonticola	21	1
3322	Landa Lake	Lud-1	2025-04-30	21	Etheostoma fonticola	26	1
3322	Landa Lake	Lud-1	2025-04-30	21	Etheostoma fonticola	19	1
3322	Landa Lake	Lud-1	2025-04-30	22	No fish collected		
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	30	1
3322	Landa Lake	Lud-1	2025-04-30	12	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	30	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	18	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	17	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	12	1
3323	Landa Lake	Lud-2	2025-04-30	8	Procambarus sp.		4
3323	Landa Lake	Lud-2	2025-04-30	8	Lepomis miniatus	62	1
3323	Landa Lake	Lud-2	2025-04-30	8	Lepomis miniatus	40	1
3323	Landa Lake	Lud-2	2025-04-30	8	Lepomis miniatus	25	1
3323	Landa Lake	Lud-2	2025-04-30	8	Etheostoma fonticola	35	1
3323	Landa Lake	Lud-2	2025-04-30	8	Etheostoma fonticola	18	1
3323	Landa Lake	Lud-2	2025-04-30	8	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	8	Palaemonetes sp.		2
3323	Landa Lake	Lud-2	2025-04-30	9	Procambarus sp.		2
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	35	1
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	15	1
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	17	1
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	26	1

3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	30	1
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	24	1
3323	Landa Lake	Lud-2	2025-04-30	9	Etheostoma fonticola	17	1
3323	Landa Lake	Lud-2	2025-04-30	9	Palaemonetes sp.		1
3323	Landa Lake	Lud-2	2025-04-30	10	Procambarus sp.		2
3323	Landa Lake	Lud-2	2025-04-30	10	Palaemonetes sp.		1
3323	Landa Lake	Lud-2	2025-04-30	10	Etheostoma fonticola	32	1
3323	Landa Lake	Lud-2	2025-04-30	11	Lepomis miniatus	65	1
3323	Landa Lake	Lud-2	2025-04-30	11	Procambarus sp.		2
3323	Landa Lake	Lud-2	2025-04-30	11	Etheostoma fonticola	24	1
3323	Landa Lake	Lud-2	2025-04-30	11	Etheostoma fonticola	18	1
3323	Landa Lake	Lud-2	2025-04-30	11	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	11	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	11	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	11	Etheostoma fonticola	8	1
3323	Landa Lake	Lud-2	2025-04-30	11	Palaemonetes sp.		2
3323	Landa Lake	Lud-2	2025-04-30	12	Procambarus sp.		2
3323	Landa Lake	Lud-2	2025-04-30	12	Etheostoma fonticola	11	1
3323	Landa Lake	Lud-2	2025-04-30	12	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	12	Etheostoma fonticola	15	1
3323	Landa Lake	Lud-2	2025-04-30	12	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	13	Etheostoma fonticola	18	1
3323	Landa Lake	Lud-2	2025-04-30	13	Etheostoma fonticola	14	1
3323	Landa Lake	Lud-2	2025-04-30	13	Etheostoma fonticola	25	1
3323	Landa Lake	Lud-2	2025-04-30	13	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	13	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	13	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	13	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	14	Procambarus sp.		4

3323	Landa Lake	Lud-2	2025-04-30	14	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	14	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	14	Gambusia sp.	10	1
3323	Landa Lake	Lud-2	2025-04-30	15	Etheostoma fonticola	30	1
3323	Landa Lake	Lud-2	2025-04-30	16	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	17	No fish collected		
3323	Landa Lake	Lud-2	2025-04-30	1	Palaemonetes sp.		55
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	15	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	27	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	31	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	15	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	19	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	17	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	12	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	27	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	26	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	24	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	30	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	18	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	25	1

3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	15	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	25	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	12	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	26	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	1	Etheostoma fonticola	26	1
3323	Landa Lake	Lud-2	2025-04-30	1	Procambarus sp.		10
3323	Landa Lake	Lud-2	2025-04-30	1	Gambusia sp.	15	1
3323	Landa Lake	Lud-2	2025-04-30	1	Gambusia sp.	10	1
3323	Landa Lake	Lud-2	2025-04-30	1	Gambusia sp.	10	1
3323	Landa Lake	Lud-2	2025-04-30	1	Astyanax argentatus	18	1
3323	Landa Lake	Lud-2	2025-04-30	1	Lepomis sp.	15	1
3323	Landa Lake	Lud-2	2025-04-30	1	Lepomis sp.	20	1
3323	Landa Lake	Lud-2	2025-04-30	1	Lepomis sp.	10	1
3323	Landa Lake	Lud-2	2025-04-30	2	Lepomis miniatus	35	1
3323	Landa Lake	Lud-2	2025-04-30	2	Lepomis miniatus	38	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	19	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	30	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	32	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	32	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	19	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	18	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	27	1

3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	29	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	24	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	19	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	23	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	23	1
3323	Landa Lake	Lud-2	2025-04-30	2	Etheostoma fonticola	27	1
3323	Landa Lake	Lud-2	2025-04-30	2	Lepomis sp.	18	1
3323	Landa Lake	Lud-2	2025-04-30	2	Gambusia sp.	10	1
3323	Landa Lake	Lud-2	2025-04-30	2	Palaemonetes sp.		9
3323	Landa Lake	Lud-2	2025-04-30	3	Procambarus sp.		3
3323	Landa Lake	Lud-2	2025-04-30	3	Etheostoma fonticola	18	1
3323	Landa Lake	Lud-2	2025-04-30	3	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	3	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	3	Etheostoma fonticola	24	1
3323	Landa Lake	Lud-2	2025-04-30	3	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	3	Etheostoma fonticola	24	1
3323	Landa Lake	Lud-2	2025-04-30	3	Etheostoma fonticola	15	1
3323	Landa Lake	Lud-2	2025-04-30	3	Etheostoma fonticola	26	1
3323	Landa Lake	Lud-2	2025-04-30	3	Palaemonetes sp.		3
3323	Landa Lake	Lud-2	2025-04-30	3	Lepomis sp.	14	1
3323	Landa Lake	Lud-2	2025-04-30	3	Lepomis sp.	14	1
3323	Landa Lake	Lud-2	2025-04-30	4	Lepomis miniatus	71	1
3323	Landa Lake	Lud-2	2025-04-30	4	Lepomis miniatus	25	1
3323	Landa Lake	Lud-2	2025-04-30	4	Procambarus sp.		1
3323	Landa Lake	Lud-2	2025-04-30	4	Etheostoma fonticola	23	1
3323	Landa Lake	Lud-2	2025-04-30	4	Etheostoma fonticola	26	1
3323	Landa Lake	Lud-2	2025-04-30	4	Palaemonetes sp.		3
3323	Landa Lake	Lud-2	2025-04-30	5	Micropterus salmoides	115	1

3323	Landa Lake	Lud-2	2025-04-30	5	Lepomis miniatus	65	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	24	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	26	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	19	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	28	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	26	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	18	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	18	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	5	Etheostoma fonticola	23	1
3323	Landa Lake	Lud-2	2025-04-30	5	Procambarus sp.		3
3323	Landa Lake	Lud-2	2025-04-30	5	Palaemonetes sp.		2
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	25	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	15	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	21	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	25	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	24	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	18	1

3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	15	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	25	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	27	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	33	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	6	Etheostoma fonticola	12	1
3323	Landa Lake	Lud-2	2025-04-30	6	Procambarus sp.		1
3323	Landa Lake	Lud-2	2025-04-30	7	Procambarus sp.		1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	23	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	16	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	27	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	20	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	22	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	14	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	25	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	30	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	12	1
3323	Landa Lake	Lud-2	2025-04-30	7	Etheostoma fonticola	21	1
3332	Landa Lake	Open-2	2025-04-30	1	Etheostoma fonticola	21	1
3332	Landa Lake	Open-2	2025-04-30	1	Etheostoma fonticola	24	1
3332	Landa Lake	Open-2	2025-04-30	2	Gambusia sp.	10	1
3332	Landa Lake	Open-2	2025-04-30	2	Gambusia sp.	10	1
3332	Landa Lake	Open-2	2025-04-30	3	No fish collected		
3332	Landa Lake	Open-2	2025-04-30	4	No fish collected		
3332	Landa Lake	Open-2	2025-04-30	5	Gambusia sp.	10	1
3332	Landa Lake	Open-2	2025-04-30	5	Etheostoma fonticola	17	1
3332	Landa Lake	Open-2	2025-04-30	6	Etheostoma fonticola	29	1

3332	Landa Lake	Open-2	2025-04-30	7	No fish collected		
3332	Landa Lake	Open-2	2025-04-30	8	No fish collected		
3332	Landa Lake	Open-2	2025-04-30	9	No fish collected		
3332	Landa Lake	Open-2	2025-04-30	10	No fish collected		
3332	Landa Lake	Open-2	2025-04-30	11	Gambusia sp.	15	1
3332	Landa Lake	Open-2	2025-04-30	12	No fish collected		
3332	Landa Lake	Open-2	2025-04-30	13	No fish collected		
3332	Landa Lake	Open-2	2025-04-30	14	No fish collected		
3332	Landa Lake	Open-2	2025-04-30	15	No fish collected		
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Palaemonetes sp.		1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	21	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	19	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	23	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	17	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	22	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	12	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	10	1
3333	Old Channel Reach	Bryo-1	2025-04-29	2	Etheostoma fonticola	12	1
3333	Old Channel Reach	Bryo-1	2025-04-29	3	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	4	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	4	Etheostoma fonticola	20	1
3333	Old Channel Reach	Bryo-1	2025-04-29	5	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	5	Etheostoma fonticola	28	1
3333	Old Channel Reach	Bryo-1	2025-04-29	5	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	5	Etheostoma fonticola	17	1
3333	Old Channel Reach	Bryo-1	2025-04-29	5	Etheostoma fonticola	14	1

3333	Old Channel Reach	Bryo-1	2025-04-29	5	Procambarus sp.		1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	21	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	19	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	18	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	12	1
3333	Old Channel Reach	Bryo-1	2025-04-29	6	Etheostoma fonticola	13	1
3333	Old Channel Reach	Bryo-1	2025-04-29	7	Procambarus sp.		6
3333	Old Channel Reach	Bryo-1	2025-04-29	7	Lepomis miniatus	65	1
3333	Old Channel Reach	Bryo-1	2025-04-29	7	Lepomis miniatus	64	1
3333	Old Channel Reach	Bryo-1	2025-04-29	7	Etheostoma fonticola	12	1
3333	Old Channel Reach	Bryo-1	2025-04-29	7	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	7	Etheostoma fonticola	18	1
3333	Old Channel Reach	Bryo-1	2025-04-29	7	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Procambarus sp.		2
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	18	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	25	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	22	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	18	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	17	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	21	1

3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	31	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	28	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	28	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	19	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	21	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	20	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	19	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	29	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Etheostoma fonticola	12	1
3333	Old Channel Reach	Bryo-1	2025-04-29	8	Lepomis miniatus	87	1
3333	Old Channel Reach	Bryo-1	2025-04-29	9	Procambarus sp.		1
3333	Old Channel Reach	Bryo-1	2025-04-29	9	Etheostoma fonticola	29	1
3333	Old Channel Reach	Bryo-1	2025-04-29	9	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	10	Procambarus sp.		2
3333	Old Channel Reach	Bryo-1	2025-04-29	10	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	10	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	10	Etheostoma fonticola	19	1
3333	Old Channel Reach	Bryo-1	2025-04-29	10	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	10	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	10	Etheostoma fonticola	12	1
3333	Old Channel Reach	Bryo-1	2025-04-29	11	Etheostoma fonticola	22	1
3333	Old Channel Reach	Bryo-1	2025-04-29	12	Etheostoma fonticola	22	1
3333	Old Channel Reach	Bryo-1	2025-04-29	12	Etheostoma fonticola	15	1

3333	Old Channel Reach	Bryo-1	2025-04-29	12	Procambarus sp.		1
3333	Old Channel Reach	Bryo-1	2025-04-29	13	Etheostoma fonticola	23	1
3333	Old Channel Reach	Bryo-1	2025-04-29	14	Procambarus sp.		1
3333	Old Channel Reach	Bryo-1	2025-04-29	15	Etheostoma fonticola	28	1
3333	Old Channel Reach	Bryo-1	2025-04-29	15	Etheostoma fonticola	29	1
3333	Old Channel Reach	Bryo-1	2025-04-29	15	Etheostoma fonticola	23	1
3333	Old Channel Reach	Bryo-1	2025-04-29	15	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	15	Procambarus sp.		2
3333	Old Channel Reach	Bryo-1	2025-04-29	16	Procambarus sp.		8
3333	Old Channel Reach	Bryo-1	2025-04-29	16	Etheostoma fonticola	27	1
3333	Old Channel Reach	Bryo-1	2025-04-29	16	Etheostoma fonticola	32	1
3333	Old Channel Reach	Bryo-1	2025-04-29	16	Etheostoma fonticola	28	1
3333	Old Channel Reach	Bryo-1	2025-04-29	16	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	17	Lepomis miniatus	63	1
3333	Old Channel Reach	Bryo-1	2025-04-29	17	Procambarus sp.		6
3333	Old Channel Reach	Bryo-1	2025-04-29	17	Etheostoma fonticola	25	1
3333	Old Channel Reach	Bryo-1	2025-04-29	17	Etheostoma fonticola	17	1
3333	Old Channel Reach	Bryo-1	2025-04-29	17	Etheostoma fonticola	30	1
3333	Old Channel Reach	Bryo-1	2025-04-29	18	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	19	Etheostoma fonticola	18	1
3333	Old Channel Reach	Bryo-1	2025-04-29	20	No fish collected		
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Procambarus sp.		7
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	25	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	24	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	24	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	20	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	30	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	28	1

3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	25	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	23	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	18	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	17	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	19	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	23	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	16	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	17	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	28	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	29	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	22	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	24	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	27	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	22	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	22	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	10	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	12	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	14	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	26	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	22	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	11	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	19	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	18	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	28	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	15	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	25	1

3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	17	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	22	1
3333	Old Channel Reach	Bryo-1	2025-04-29	1	Etheostoma fonticola	25	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	17	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	20	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	14	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	29	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	14	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	18	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	16	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	17	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	21	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	16	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	10	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	11	1
3334	Old Channel Reach	Bryo-2	2025-04-29	4	Etheostoma fonticola	20	1
3334	Old Channel Reach	Bryo-2	2025-04-29	4	Etheostoma fonticola	15	1
3334	Old Channel Reach	Bryo-2	2025-04-29	4	Etheostoma fonticola	19	1
3334	Old Channel Reach	Bryo-2	2025-04-29	4	Procambarus sp.		1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	13	1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	22	1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	15	1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	16	1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	29	1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	29	1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	13	1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	13	1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	17	1

3334	Old Channel Reach	Bryo-2	2025-04-29	5	Etheostoma fonticola	19	1
3334	Old Channel Reach	Bryo-2	2025-04-29	5	Procambarus sp.		1
3334	Old Channel Reach	Bryo-2	2025-04-29	6	Ameiurus natalis	13	1
3334	Old Channel Reach	Bryo-2	2025-04-29	6	Procambarus sp.		3
3334	Old Channel Reach	Bryo-2	2025-04-29	6	Etheostoma fonticola	30	1
3334	Old Channel Reach	Bryo-2	2025-04-29	6	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	6	Etheostoma fonticola	13	1
3334	Old Channel Reach	Bryo-2	2025-04-29	6	Etheostoma fonticola	10	1
3334	Old Channel Reach	Bryo-2	2025-04-29	7	Etheostoma fonticola	15	1
3334	Old Channel Reach	Bryo-2	2025-04-29	7	Etheostoma fonticola	18	1
3334	Old Channel Reach	Bryo-2	2025-04-29	7	Etheostoma fonticola	10	1
3334	Old Channel Reach	Bryo-2	2025-04-29	7	Etheostoma fonticola	19	1
3334	Old Channel Reach	Bryo-2	2025-04-29	7	Etheostoma fonticola	11	1
3334	Old Channel Reach	Bryo-2	2025-04-29	7	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	7	Etheostoma fonticola	10	1
3334	Old Channel Reach	Bryo-2	2025-04-29	7	Etheostoma fonticola	11	1
3334	Old Channel Reach	Bryo-2	2025-04-29	8	Lepomis miniatus	58	1
3334	Old Channel Reach	Bryo-2	2025-04-29	8	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	9	Etheostoma fonticola	23	1
3334	Old Channel Reach	Bryo-2	2025-04-29	9	Etheostoma fonticola	10	1
3334	Old Channel Reach	Bryo-2	2025-04-29	9	Etheostoma fonticola	11	1
3334	Old Channel Reach	Bryo-2	2025-04-29	9	Etheostoma fonticola	9	1
3334	Old Channel Reach	Bryo-2	2025-04-29	9	Etheostoma fonticola	16	1
3334	Old Channel Reach	Bryo-2	2025-04-29	10	Etheostoma fonticola	13	1
3334	Old Channel Reach	Bryo-2	2025-04-29	10	Etheostoma fonticola	13	1
3334	Old Channel Reach	Bryo-2	2025-04-29	10	Etheostoma fonticola	16	1
3334	Old Channel Reach	Bryo-2	2025-04-29	10	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	10	Etheostoma fonticola	10	1
3334	Old Channel Reach	Bryo-2	2025-04-29	10	Etheostoma fonticola	10	1
3334	Old Channel Reach	Bryo-2	2025-04-29	11	Etheostoma fonticola	15	1

3334	Old Channel Reach	Bryo-2	2025-04-29	11	Etheostoma fonticola	18	1
3334	Old Channel Reach	Bryo-2	2025-04-29	12	Etheostoma fonticola	11	1
3334	Old Channel Reach	Bryo-2	2025-04-29	13	No fish collected		
3334	Old Channel Reach	Bryo-2	2025-04-29	14	No fish collected		
3334	Old Channel Reach	Bryo-2	2025-04-29	15	Procambarus sp.		1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	13	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Etheostoma fonticola	10	1
3334	Old Channel Reach	Bryo-2	2025-04-29	1	Procambarus sp.		1
3334	Old Channel Reach	Bryo-2	2025-04-29	2	Etheostoma fonticola	29	1
3334	Old Channel Reach	Bryo-2	2025-04-29	2	Etheostoma fonticola	31	1
3334	Old Channel Reach	Bryo-2	2025-04-29	2	Etheostoma fonticola	18	1
3334	Old Channel Reach	Bryo-2	2025-04-29	2	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	2	Etheostoma fonticola	13	1
3334	Old Channel Reach	Bryo-2	2025-04-29	2	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	3	Etheostoma fonticola	19	1
3334	Old Channel Reach	Bryo-2	2025-04-29	3	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	3	Etheostoma fonticola	18	1
3334	Old Channel Reach	Bryo-2	2025-04-29	3	Etheostoma fonticola	17	1
3334	Old Channel Reach	Bryo-2	2025-04-29	3	Etheostoma fonticola	23	1
3334	Old Channel Reach	Bryo-2	2025-04-29	3	Etheostoma fonticola	12	1
3334	Old Channel Reach	Bryo-2	2025-04-29	3	Etheostoma fonticola	16	1
3334	Old Channel Reach	Bryo-2	2025-04-29	4	Etheostoma fonticola	14	1
3334	Old Channel Reach	Bryo-2	2025-04-29	4	Etheostoma fonticola	26	1
3334	Old Channel Reach	Bryo-2	2025-04-29	4	Etheostoma fonticola	13	1
3335	Old Channel Reach	Lud-1	2025-04-29	1	Lepomis miniatus	23	1
3335	Old Channel Reach	Lud-1	2025-04-29	1	Etheostoma fonticola	20	1
3335	Old Channel Reach	Lud-1	2025-04-29	1	Etheostoma fonticola	28	1
3335	Old Channel Reach	Lud-1	2025-04-29	1	Etheostoma fonticola	18	1
3335	Old Channel Reach	Lud-1	2025-04-29	1	Etheostoma fonticola	19	1
3335	Old Channel Reach	Lud-1	2025-04-29	1	Palaemonetes sp.		3

3335	Old Channel Reach	Lud-1	2025-04-29	1	Lepomis sp.	15	1
3335	Old Channel Reach	Lud-1	2025-04-29	1	Gambusia sp.	14	1
3335	Old Channel Reach	Lud-1	2025-04-29	1	Gambusia sp.	11	1
3335	Old Channel Reach	Lud-1	2025-04-29	2	Etheostoma fonticola	18	1
3335	Old Channel Reach	Lud-1	2025-04-29	2	Etheostoma fonticola	27	1
3335	Old Channel Reach	Lud-1	2025-04-29	2	Procambarus sp.		1
3335	Old Channel Reach	Lud-1	2025-04-29	3	Palaemonetes sp.		1
3335	Old Channel Reach	Lud-1	2025-04-29	4	Etheostoma fonticola	18	1
3335	Old Channel Reach	Lud-1	2025-04-29	5	Palaemonetes sp.		2
3335	Old Channel Reach	Lud-1	2025-04-29	5	Etheostoma fonticola	15	1
3335	Old Channel Reach	Lud-1	2025-04-29	6	Etheostoma fonticola	15	1
3335	Old Channel Reach	Lud-1	2025-04-29	7	Procambarus sp.		1
3335	Old Channel Reach	Lud-1	2025-04-29	7	Etheostoma fonticola	15	1
3335	Old Channel Reach	Lud-1	2025-04-29	8	Palaemonetes sp.		1
3335	Old Channel Reach	Lud-1	2025-04-29	9	Procambarus sp.		1
3335	Old Channel Reach	Lud-1	2025-04-29	9	Etheostoma fonticola	31	1
3335	Old Channel Reach	Lud-1	2025-04-29	10	No fish collected		
3335	Old Channel Reach	Lud-1	2025-04-29	11	No fish collected		
3335	Old Channel Reach	Lud-1	2025-04-29	12	No fish collected		
3335	Old Channel Reach	Lud-1	2025-04-29	13	Palaemonetes sp.		1
3335	Old Channel Reach	Lud-1	2025-04-29	13	Etheostoma fonticola	19	1
3335	Old Channel Reach	Lud-1	2025-04-29	14	Etheostoma fonticola	19	1
3335	Old Channel Reach	Lud-1	2025-04-29	15	No fish collected		
3336	Old Channel Reach	Cab-1	2025-04-29	1	Etheostoma fonticola	30	1
3336	Old Channel Reach	Cab-1	2025-04-29	1	Etheostoma fonticola	28	1
3336	Old Channel Reach	Cab-1	2025-04-29	1	Etheostoma fonticola	11	1
3336	Old Channel Reach	Cab-1	2025-04-29	1	Etheostoma fonticola	19	1
3336	Old Channel Reach	Cab-1	2025-04-29	1	Etheostoma fonticola	26	1
3336	Old Channel Reach	Cab-1	2025-04-29	1	Etheostoma fonticola	30	1
3336	Old Channel Reach	Cab-1	2025-04-29	2	Palaemonetes sp.		3

3336	Old Channel Reach	Cab-1	2025-04-29	2	Procambarus sp.		2
3336	Old Channel Reach	Cab-1	2025-04-29	2	Etheostoma fonticola	27	1
3336	Old Channel Reach	Cab-1	2025-04-29	2	Etheostoma fonticola	32	1
3336	Old Channel Reach	Cab-1	2025-04-29	2	Etheostoma fonticola	29	1
3336	Old Channel Reach	Cab-1	2025-04-29	2	Etheostoma fonticola	25	1
3336	Old Channel Reach	Cab-1	2025-04-29	2	Etheostoma fonticola	17	1
3336	Old Channel Reach	Cab-1	2025-04-29	3	Procambarus sp.		1
3336	Old Channel Reach	Cab-1	2025-04-29	3	Palaemonetes sp.		2
3336	Old Channel Reach	Cab-1	2025-04-29	3	Etheostoma fonticola	18	1
3336	Old Channel Reach	Cab-1	2025-04-29	3	Etheostoma fonticola	17	1
3336	Old Channel Reach	Cab-1	2025-04-29	4	Procambarus sp.		5
3336	Old Channel Reach	Cab-1	2025-04-29	4	Palaemonetes sp.		2
3336	Old Channel Reach	Cab-1	2025-04-29	4	Etheostoma fonticola	25	1
3336	Old Channel Reach	Cab-1	2025-04-29	4	Etheostoma fonticola	36	1
3336	Old Channel Reach	Cab-1	2025-04-29	4	Etheostoma fonticola	23	1
3336	Old Channel Reach	Cab-1	2025-04-29	4	Etheostoma fonticola	25	1
3336	Old Channel Reach	Cab-1	2025-04-29	4	Etheostoma fonticola	26	1
3336	Old Channel Reach	Cab-1	2025-04-29	4	Etheostoma fonticola	24	1
3336	Old Channel Reach	Cab-1	2025-04-29	4	Etheostoma fonticola	15	1
3336	Old Channel Reach	Cab-1	2025-04-29	4	Etheostoma fonticola	12	1
3336	Old Channel Reach	Cab-1	2025-04-29	5	Micropterus salmoides	40	1
3336	Old Channel Reach	Cab-1	2025-04-29	5	Micropterus salmoides	25	1
3336	Old Channel Reach	Cab-1	2025-04-29	5	Etheostoma fonticola	18	1
3336	Old Channel Reach	Cab-1	2025-04-29	5	Etheostoma fonticola	23	1
3336	Old Channel Reach	Cab-1	2025-04-29	5	Etheostoma fonticola	9	1
3336	Old Channel Reach	Cab-1	2025-04-29	5	Herichthys cyanoguttatus	19	1
3336	Old Channel Reach	Cab-1	2025-04-29	5	Herichthys cyanoguttatus	19	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Palaemonetes sp.		2
3336	Old Channel Reach	Cab-1	2025-04-29	6	Procambarus sp.		3
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	31	1

3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	30	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	24	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	28	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	27	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	28	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	21	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	32	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	22	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	15	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	25	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Etheostoma fonticola	18	1
3336	Old Channel Reach	Cab-1	2025-04-29	6	Herichthys cyanoguttatus	19	1
3336	Old Channel Reach	Cab-1	2025-04-29	7	Etheostoma fonticola	33	1
3336	Old Channel Reach	Cab-1	2025-04-29	7	Etheostoma fonticola	16	1
3336	Old Channel Reach	Cab-1	2025-04-29	7	Palaemonetes sp.		1
3336	Old Channel Reach	Cab-1	2025-04-29	8	Procambarus sp.		1
3336	Old Channel Reach	Cab-1	2025-04-29	8	Etheostoma fonticola	30	1
3336	Old Channel Reach	Cab-1	2025-04-29	8	Etheostoma fonticola	29	1
3336	Old Channel Reach	Cab-1	2025-04-29	8	Etheostoma fonticola	24	1
3336	Old Channel Reach	Cab-1	2025-04-29	8	Etheostoma fonticola	28	1
3336	Old Channel Reach	Cab-1	2025-04-29	8	Etheostoma fonticola	26	1
3336	Old Channel Reach	Cab-1	2025-04-29	8	Palaemonetes sp.		1
3336	Old Channel Reach	Cab-1	2025-04-29	8	Procambarus sp.		1
3336	Old Channel Reach	Cab-1	2025-04-29	9	Palaemonetes sp.		2
3336	Old Channel Reach	Cab-1	2025-04-29	9	Etheostoma fonticola	24	1
3336	Old Channel Reach	Cab-1	2025-04-29	9	Etheostoma fonticola	22	1
3336	Old Channel Reach	Cab-1	2025-04-29	9	Etheostoma fonticola	16	1
3336	Old Channel Reach	Cab-1	2025-04-29	9	Etheostoma fonticola	25	1
3336	Old Channel Reach	Cab-1	2025-04-29	9	Etheostoma fonticola	9	1
3336	Old Channel Reach	Cab-1	2025-04-29	9	Etheostoma fonticola	12	1

3336	Old Channel Reach	Cab-1	2025-04-29	10	Etheostoma fonticola	24	1
3336	Old Channel Reach	Cab-1	2025-04-29	10	Etheostoma fonticola	32	1
3336	Old Channel Reach	Cab-1	2025-04-29	10	Etheostoma fonticola	23	1
3336	Old Channel Reach	Cab-1	2025-04-29	10	Etheostoma fonticola	15	1
3336	Old Channel Reach	Cab-1	2025-04-29	10	Etheostoma fonticola	24	1
3336	Old Channel Reach	Cab-1	2025-04-29	10	Etheostoma fonticola	12	1
3336	Old Channel Reach	Cab-1	2025-04-29	11	Herichthys cyanoguttatus	38	1
3336	Old Channel Reach	Cab-1	2025-04-29	11	Etheostoma fonticola	30	1
3336	Old Channel Reach	Cab-1	2025-04-29	11	Etheostoma fonticola	24	1
3336	Old Channel Reach	Cab-1	2025-04-29	11	Etheostoma fonticola	28	1
3336	Old Channel Reach	Cab-1	2025-04-29	11	Etheostoma fonticola	30	1
3336	Old Channel Reach	Cab-1	2025-04-29	11	Procambarus sp.		3
3336	Old Channel Reach	Cab-1	2025-04-29	11	Astyanax argentatus	20	1
3336	Old Channel Reach	Cab-1	2025-04-29	12	Etheostoma fonticola	15	1
3336	Old Channel Reach	Cab-1	2025-04-29	12	Etheostoma fonticola	35	1
3336	Old Channel Reach	Cab-1	2025-04-29	12	Etheostoma fonticola	26	1
3336	Old Channel Reach	Cab-1	2025-04-29	12	Procambarus sp.		2
3336	Old Channel Reach	Cab-1	2025-04-29	13	Procambarus sp.		4
3336	Old Channel Reach	Cab-1	2025-04-29	13	Etheostoma fonticola	22	1
3336	Old Channel Reach	Cab-1	2025-04-29	14	Procambarus sp.		1
3336	Old Channel Reach	Cab-1	2025-04-29	14	Lepomis miniatus	35	1
3336	Old Channel Reach	Cab-1	2025-04-29	14	Etheostoma fonticola	16	1
3336	Old Channel Reach	Cab-1	2025-04-29	15	Etheostoma fonticola	12	1
3336	Old Channel Reach	Cab-1	2025-04-29	15	Etheostoma fonticola	26	1
3336	Old Channel Reach	Cab-1	2025-04-29	16	No fish collected		
3337	Old Channel Reach	Cab-2	2025-04-29	1	Palaemonetes sp.		13
3337	Old Channel Reach	Cab-2	2025-04-29	1	Lepomis miniatus	65	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Lepomis miniatus	80	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Herichthys cyanoguttatus	50	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Herichthys cyanoguttatus	18	1

3337	Old Channel Reach	Cab-2	2025-04-29	1	Herichthys cyanoguttatus	18	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Lepomis sp.	13	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Lepomis sp.	16	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Lepomis sp.	17	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Etheostoma fonticola	20	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Etheostoma fonticola	15	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Etheostoma fonticola	28	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Etheostoma fonticola	19	1
3337	Old Channel Reach	Cab-2	2025-04-29	1	Etheostoma fonticola	23	1
3337	Old Channel Reach	Cab-2	2025-04-29	2	Procambarus sp.		3
3337	Old Channel Reach	Cab-2	2025-04-29	2	Etheostoma fonticola	16	1
3337	Old Channel Reach	Cab-2	2025-04-29	2	Etheostoma fonticola	30	1
3337	Old Channel Reach	Cab-2	2025-04-29	2	Herichthys cyanoguttatus	18	1
3337	Old Channel Reach	Cab-2	2025-04-29	2	Herichthys cyanoguttatus	20	1
3337	Old Channel Reach	Cab-2	2025-04-29	2	Herichthys cyanoguttatus	20	1
3337	Old Channel Reach	Cab-2	2025-04-29	2	Palaemonetes sp.		2
3337	Old Channel Reach	Cab-2	2025-04-29	3	Lepomis miniatus	70	1
3337	Old Channel Reach	Cab-2	2025-04-29	3	Herichthys cyanoguttatus	18	1
3337	Old Channel Reach	Cab-2	2025-04-29	3	Etheostoma fonticola	20	1
3337	Old Channel Reach	Cab-2	2025-04-29	3	Etheostoma fonticola	18	1
3337	Old Channel Reach	Cab-2	2025-04-29	3	Palaemonetes sp.		2
3337	Old Channel Reach	Cab-2	2025-04-29	4	No fish collected		
3337	Old Channel Reach	Cab-2	2025-04-29	5	Procambarus sp.		1
3337	Old Channel Reach	Cab-2	2025-04-29	5	Lepomis auritus	96	1
3337	Old Channel Reach	Cab-2	2025-04-29	5	Etheostoma fonticola	18	1
3337	Old Channel Reach	Cab-2	2025-04-29	6	Procambarus sp.		2
3337	Old Channel Reach	Cab-2	2025-04-29	7	No fish collected		
3337	Old Channel Reach	Cab-2	2025-04-29	8	No fish collected		
3337	Old Channel Reach	Cab-2	2025-04-29	9	Etheostoma fonticola	20	1
3337	Old Channel Reach	Cab-2	2025-04-29	9	Etheostoma fonticola	21	1

3337	Old Channel Reach	Cab-2	2025-04-29	10	No fish collected		
3337	Old Channel Reach	Cab-2	2025-04-29	11	No fish collected		
3337	Old Channel Reach	Cab-2	2025-04-29	12	No fish collected		
3337	Old Channel Reach	Cab-2	2025-04-29	13	No fish collected		
3337	Old Channel Reach	Cab-2	2025-04-29	14	No fish collected		
3337	Old Channel Reach	Cab-2	2025-04-29	15	No fish collected		
3338	Old Channel Reach	Lud-2	2025-04-29	1	Lepomis miniatus	83	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1

3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	1	Herichthys cyanoguttatus		1

3338	Old Channel Reach	Lud-2	2025-04-29	1	Palaemonetes sp.		2
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Procambarus sp.		1
3338	Old Channel Reach	Lud-2	2025-04-29	2	Palaemonetes sp.		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Herichthys cyanoguttatus		1

3338	Old Channel Reach	Lud-2	2025-04-29	3	Lepomis miniatus	60	1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Palaemonetes sp.		1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Etheostoma fonticola	22	1
3338	Old Channel Reach	Lud-2	2025-04-29	3	Etheostoma fonticola	15	1
3338	Old Channel Reach	Lud-2	2025-04-29	4	Etheostoma fonticola	26	1
3338	Old Channel Reach	Lud-2	2025-04-29	4	Lepomis miniatus	49	1
3338	Old Channel Reach	Lud-2	2025-04-29	4	Etheostoma fonticola	25	1
3338	Old Channel Reach	Lud-2	2025-04-29	4	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	4	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	4	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1

3338	Old Channel Reach	Lud-2	2025-04-29	5	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Procambarus sp.		1
3338	Old Channel Reach	Lud-2	2025-04-29	5	Palaemonetes sp.		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Etheostoma fonticola	18	1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Etheostoma fonticola	30	1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	6	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	7	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	7	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	7	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	8	Herichthys cyanoguttatus		1

3338	Old Channel Reach	Lud-2	2025-04-29	8	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	9	Procambarus sp.		1
3338	Old Channel Reach	Lud-2	2025-04-29	9	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	9	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	9	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	9	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	9	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	9	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	9	Lepomis miniatus	61	1
3338	Old Channel Reach	Lud-2	2025-04-29	9	Etheostoma fonticola	21	1
3338	Old Channel Reach	Lud-2	2025-04-29	10	Procambarus sp.		3
3338	Old Channel Reach	Lud-2	2025-04-29	10	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	10	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	11	No fish collected		
3338	Old Channel Reach	Lud-2	2025-04-29	12	Etheostoma fonticola	30	1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	12	Palaemonetes sp.		1

3338	Old Channel Reach	Lud-2	2025-04-29	13	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	13	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	13	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	14	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	14	Herichthys cyanoguttatus		1
3338	Old Channel Reach	Lud-2	2025-04-29	15	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	1	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	2	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	3	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	4	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	5	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	6	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	7	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	8	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	9	No fish collected		
3339	Old Channel Reach	Open-1	2025-04-29	10	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	1	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	2	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	3	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	4	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	5	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	6	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	7	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	8	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	9	No fish collected		
3340	Old Channel Reach	Open-2	2025-04-29	10	No fish collected		
3341	Upper New Channel Reach	Hyg-1	2025-05-01	11	Lepomis miniatus	92	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	12	No fish collected		
3341	Upper New Channel Reach	Hyg-1	2025-05-01	13	No fish collected		
3341	Upper New Channel Reach	Hyg-1	2025-05-01	14	No fish collected		

3341	Upper New Channel Reach	Hyg-1	2025-05-01	15	No fish collected		
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	34	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	32	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	20	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	17	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	23	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	24	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	19	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	21	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	20	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	28	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	18	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	16	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	15	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Etheostoma fonticola	10	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Lepomis gulosus	124	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Lepomis sp.	20	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	1	Procambarus sp.		3
3341	Upper New Channel Reach	Hyg-1	2025-05-01	2	Procambarus sp.		1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	2	Etheostoma fonticola	11	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	2	Etheostoma fonticola	25	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	2	Etheostoma fonticola	23	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	2	Etheostoma fonticola	19	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	2	Etheostoma fonticola	25	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	2	Etheostoma fonticola	20	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	2	Etheostoma fonticola	18	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Etheostoma fonticola	26	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Etheostoma fonticola	20	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Etheostoma fonticola	21	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Etheostoma fonticola	16	1

3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Etheostoma fonticola	27	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Etheostoma fonticola	31	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Etheostoma fonticola	17	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Etheostoma fonticola	24	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Etheostoma fonticola	20	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	3	Procambarus sp.		1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	4	Etheostoma fonticola	30	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	5	Lepomis gulosus	112	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	5	Lepomis sp.	15	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	5	Etheostoma fonticola	22	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	5	Etheostoma fonticola	13	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	5	Etheostoma fonticola	18	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	5	Etheostoma fonticola	26	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	5	Etheostoma fonticola	20	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	6	Etheostoma fonticola	19	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	6	Etheostoma fonticola	19	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	6	Etheostoma fonticola	16	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	7	Procambarus sp.		2
3341	Upper New Channel Reach	Hyg-1	2025-05-01	7	Etheostoma fonticola	32	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	7	Etheostoma fonticola	16	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	8	No fish collected		
3341	Upper New Channel Reach	Hyg-1	2025-05-01	9	Procambarus sp.		1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	9	Etheostoma fonticola	11	1
3341	Upper New Channel Reach	Hyg-1	2025-05-01	10	No fish collected		
3341	Upper New Channel Reach	Hyg-1	2025-05-01	11	Procambarus sp.		2
3342	Upper New Channel Reach	Open-1	2025-05-01	1	No fish collected		
3342	Upper New Channel Reach	Open-1	2025-05-01	2	No fish collected		
3342	Upper New Channel Reach	Open-1	2025-05-01	3	No fish collected		
3342	Upper New Channel Reach	Open-1	2025-05-01	4	No fish collected		
3342	Upper New Channel Reach	Open-1	2025-05-01	5	No fish collected		

3342	Upper New Channel Reach	Open-1	2025-05-01	6	No fish collected		
3342	Upper New Channel Reach	Open-1	2025-05-01	7	No fish collected		
3342	Upper New Channel Reach	Open-1	2025-05-01	8	No fish collected		
3342	Upper New Channel Reach	Open-1	2025-05-01	9	No fish collected		
3342	Upper New Channel Reach	Open-1	2025-05-01	10	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	1	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	2	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	3	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	4	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	5	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	6	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	7	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	8	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	9	No fish collected		
3343	Upper New Channel Reach	Open-2	2025-05-01	10	No fish collected		
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	22	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	19	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	21	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	20	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	17	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	18	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	31	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	16	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	16	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	19	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	19	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	25	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	24	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	17	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	22	1

3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	15	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	17	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	14	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	13	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	8	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	12	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Lepomis miniatus	95	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Lepomis miniatus	72	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Procambarus sp.		1
3344	Upper New Channel Reach	Cab-1	2025-05-01	2	Procambarus sp.		1
3344	Upper New Channel Reach	Cab-1	2025-05-01	2	Etheostoma fonticola	32	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	2	Etheostoma fonticola	21	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	2	Etheostoma fonticola	15	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	2	Etheostoma fonticola	28	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	2	Etheostoma fonticola	12	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	2	Etheostoma fonticola	32	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	2	Etheostoma fonticola	14	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	23	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	25	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	24	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	29	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	17	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	29	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	24	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	18	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	24	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	16	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	22	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	28	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	14	1

3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	20	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	16	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Etheostoma fonticola	10	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	3	Procambarus sp.		1
3344	Upper New Channel Reach	Cab-1	2025-05-01	4	Etheostoma fonticola	27	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	4	Etheostoma fonticola	26	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	4	Etheostoma fonticola	22	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	4	Etheostoma fonticola	24	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	5	Lepomis miniatus	105	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	5	Etheostoma fonticola	18	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	5	Etheostoma fonticola	22	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	6	Etheostoma fonticola	26	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	6	Etheostoma fonticola	16	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	6	Etheostoma fonticola	23	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	6	Etheostoma fonticola	10	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	6	Lepomis sp.	12	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	7	Etheostoma fonticola	27	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	7	Etheostoma fonticola	14	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	7	Etheostoma fonticola	23	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	7	Etheostoma fonticola	22	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	7	Etheostoma fonticola	11	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	8	Etheostoma fonticola	25	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	8	Etheostoma fonticola	24	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	8	Etheostoma fonticola	15	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	9	Etheostoma fonticola	15	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	9	Etheostoma fonticola	25	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	10	No fish collected		
3344	Upper New Channel Reach	Cab-1	2025-05-01	11	No fish collected		
3344	Upper New Channel Reach	Cab-1	2025-05-01	12	No fish collected		
3344	Upper New Channel Reach	Cab-1	2025-05-01	13	Etheostoma fonticola	20	1

3344	Upper New Channel Reach	Cab-1	2025-05-01	13	Etheostoma fonticola	23	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	13	Etheostoma fonticola	26	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	13	Etheostoma fonticola	23	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	13	Etheostoma fonticola	26	1
3344	Upper New Channel Reach	Cab-1	2025-05-01	14	No fish collected		
3344	Upper New Channel Reach	Cab-1	2025-05-01	15	No fish collected		
3344	Upper New Channel Reach	Cab-1	2025-05-01	1	Etheostoma fonticola	15	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	1	Etheostoma fonticola	31	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	1	Etheostoma fonticola	22	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	1	Etheostoma fonticola	22	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	1	Etheostoma fonticola	18	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	1	Etheostoma fonticola	17	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	1	Etheostoma fonticola	12	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	1	Etheostoma fonticola	9	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	2	Etheostoma fonticola	24	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	2	Etheostoma fonticola	19	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	2	Etheostoma fonticola	29	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	2	Etheostoma fonticola	25	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	2	Etheostoma fonticola	12	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	2	Palaemonetes sp.		2
3345	Upper New Channel Reach	Cab-2	2025-05-01	3	Etheostoma fonticola	28	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	4	Herichthys cyanoguttatus	74	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	4	Herichthys cyanoguttatus	91	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	5	Etheostoma fonticola	28	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	5	Etheostoma fonticola	22	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	5	Etheostoma fonticola	10	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	5	Herichthys cyanoguttatus	20	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	5	Palaemonetes sp.		1
3345	Upper New Channel Reach	Cab-2	2025-05-01	5	Astyanax argentatus	8	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	6	Lepomis miniatus	68	1

3345	Upper New Channel Reach	Cab-2	2025-05-01	7	Etheostoma fonticola	13	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	8	No fish collected		
3345	Upper New Channel Reach	Cab-2	2025-05-01	9	No fish collected		
3345	Upper New Channel Reach	Cab-2	2025-05-01	10	No fish collected		
3345	Upper New Channel Reach	Cab-2	2025-05-01	11	No fish collected		
3345	Upper New Channel Reach	Cab-2	2025-05-01	12	No fish collected		
3345	Upper New Channel Reach	Cab-2	2025-05-01	13	No fish collected		
3345	Upper New Channel Reach	Cab-2	2025-05-01	14	Lepomis miniatus	60	1
3345	Upper New Channel Reach	Cab-2	2025-05-01	15	No fish collected		
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Procambarus sp.		4
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Astyanax argentatus	24	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Astyanax argentatus	22	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Etheostoma fonticola	19	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Etheostoma fonticola	22	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Etheostoma fonticola	18	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Gambusia sp.	38	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Gambusia sp.	30	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Gambusia sp.	41	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Gambusia sp.	34	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Gambusia sp.	46	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Micropterus salmoides	38	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Micropterus salmoides	40	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	1	Lepomis sp.	18	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	2	Micropterus salmoides	44	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	2	Gambusia sp.	26	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	2	Gambusia sp.	46	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	2	Gambusia sp.	31	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	2	Astyanax argentatus	33	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	2	Astyanax argentatus	18	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	2	Astyanax argentatus	44	1

3346	Upper New Channel Reach	Hyg-2	2025-05-01	2	Palaemonetes sp.		1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	2	Procambarus sp.		1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	3	Procambarus sp.		1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	3	Etheostoma fonticola	31	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	3	Astyanax argentatus	25	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	4	Etheostoma fonticola	17	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	4	Palaemonetes sp.		1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	4	Procambarus sp.		2
3346	Upper New Channel Reach	Hyg-2	2025-05-01	5	Etheostoma fonticola	22	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	5	Etheostoma fonticola	16	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	5	Etheostoma fonticola	9	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	6	Astyanax argentatus	25	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	6	Etheostoma fonticola	32	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	6	Lepomis sp.	12	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	7	Etheostoma fonticola	27	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	7	Lepomis miniatus	64	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	8	Etheostoma fonticola	28	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	9	Lepomis sp.	24	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	9	Lepomis sp.	24	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	10	Procambarus sp.		1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	10	Etheostoma fonticola	21	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	10	Etheostoma fonticola	34	1
3346	Upper New Channel Reach	Hyg-2	2025-05-01	11	No fish collected		
3346	Upper New Channel Reach	Hyg-2	2025-05-01	12	No fish collected		
3346	Upper New Channel Reach	Hyg-2	2025-05-01	13	No fish collected		
3346	Upper New Channel Reach	Hyg-2	2025-05-01	14	No fish collected		
3346	Upper New Channel Reach	Hyg-2	2025-05-01	15	No fish collected		
3313	Upper Spring Run	Chara-1	2025-04-29	1	Astyanax argentatus	9	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Astyanax argentatus	16	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Astyanax argentatus	15	1

3313	Upper Spring Run	Chara-1	2025-04-29	1	Etheostoma fonticola	25	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Etheostoma fonticola	22	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Etheostoma fonticola	26	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Etheostoma fonticola	21	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Etheostoma fonticola	15	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Etheostoma fonticola	19	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Etheostoma fonticola	25	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Etheostoma fonticola	18	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Etheostoma fonticola	26	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Dionda nigrotaeniata	34	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Dionda nigrotaeniata	30	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Dionda nigrotaeniata	25	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Lepomis sp.	19	1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Procambarus sp.		1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Etheostoma fonticola	25	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Etheostoma fonticola	29	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Etheostoma fonticola	25	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Etheostoma fonticola	22	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Etheostoma fonticola	27	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Etheostoma fonticola	22	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Etheostoma fonticola	27	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Lepomis miniatus	78	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Astyanax argentatus	20	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Astyanax argentatus	20	1
3313	Upper Spring Run	Chara-1	2025-04-29	2	Lepomis sp.	13	1
3313	Upper Spring Run	Chara-1	2025-04-29	3	Lepomis miniatus	95	1
3313	Upper Spring Run	Chara-1	2025-04-29	3	Dionda nigrotaeniata	36	1
3313	Upper Spring Run	Chara-1	2025-04-29	3	Astyanax argentatus	25	1
3313	Upper Spring Run	Chara-1	2025-04-29	3	Etheostoma fonticola	25	1
3313	Upper Spring Run	Chara-1	2025-04-29	3	Etheostoma fonticola	20	1

3313	Upper Spring Run	Chara-1	2025-04-29	3	Etheostoma fonticola	24	1
3313	Upper Spring Run	Chara-1	2025-04-29	4	Etheostoma fonticola	26	1
3313	Upper Spring Run	Chara-1	2025-04-29	4	Etheostoma fonticola	17	1
3313	Upper Spring Run	Chara-1	2025-04-29	4	Astyanax argentatus	24	1
3313	Upper Spring Run	Chara-1	2025-04-29	4	Astyanax argentatus	18	1
3313	Upper Spring Run	Chara-1	2025-04-29	5	Lepomis miniatus	50	1
3313	Upper Spring Run	Chara-1	2025-04-29	5	Etheostoma fonticola	18	1
3313	Upper Spring Run	Chara-1	2025-04-29	5	Etheostoma fonticola	25	1
3313	Upper Spring Run	Chara-1	2025-04-29	5	Etheostoma fonticola	29	1
3313	Upper Spring Run	Chara-1	2025-04-29	5	Etheostoma fonticola	28	1
3313	Upper Spring Run	Chara-1	2025-04-29	5	Etheostoma fonticola	28	1
3313	Upper Spring Run	Chara-1	2025-04-29	5	Etheostoma fonticola	22	1
3313	Upper Spring Run	Chara-1	2025-04-29	5	Etheostoma fonticola	18	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Etheostoma fonticola	15	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Etheostoma fonticola	30	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Etheostoma fonticola	22	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Etheostoma fonticola	24	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Etheostoma fonticola	24	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Etheostoma fonticola	27	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Procambarus sp.		1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Lepomis sp.	15	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Gambusia sp.	15	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Gambusia sp.	12	1
3313	Upper Spring Run	Chara-1	2025-04-29	6	Astyanax argentatus	14	1
3313	Upper Spring Run	Chara-1	2025-04-29	7	Etheostoma fonticola	30	1
3313	Upper Spring Run	Chara-1	2025-04-29	7	Etheostoma fonticola	21	1
3313	Upper Spring Run	Chara-1	2025-04-29	7	Etheostoma fonticola	20	1
3313	Upper Spring Run	Chara-1	2025-04-29	7	Etheostoma fonticola	20	1
3313	Upper Spring Run	Chara-1	2025-04-29	8	Etheostoma fonticola	28	1
3313	Upper Spring Run	Chara-1	2025-04-29	8	Etheostoma fonticola	24	1

3313	Upper Spring Run	Chara-1	2025-04-29	8	Etheostoma fonticola	26	1
3313	Upper Spring Run	Chara-1	2025-04-29	8	Astyanax argentatus	12	1
3313	Upper Spring Run	Chara-1	2025-04-29	9	Dionda nigrotaeniata	26	1
3313	Upper Spring Run	Chara-1	2025-04-29	9	Etheostoma fonticola	23	1
3313	Upper Spring Run	Chara-1	2025-04-29	9	Etheostoma fonticola	27	1
3313	Upper Spring Run	Chara-1	2025-04-29	9	Etheostoma fonticola	28	1
3313	Upper Spring Run	Chara-1	2025-04-29	9	Etheostoma fonticola	15	1
3313	Upper Spring Run	Chara-1	2025-04-29	9	Etheostoma fonticola	14	1
3313	Upper Spring Run	Chara-1	2025-04-29	10	Procambarus sp.		1
3313	Upper Spring Run	Chara-1	2025-04-29	10	Etheostoma fonticola	27	1
3313	Upper Spring Run	Chara-1	2025-04-29	10	Etheostoma fonticola	24	1
3313	Upper Spring Run	Chara-1	2025-04-29	10	Etheostoma fonticola	18	1
3313	Upper Spring Run	Chara-1	2025-04-29	10	Etheostoma fonticola	29	1
3313	Upper Spring Run	Chara-1	2025-04-29	11	Lepomis miniatus	72	1
3313	Upper Spring Run	Chara-1	2025-04-29	11	Etheostoma fonticola	26	1
3313	Upper Spring Run	Chara-1	2025-04-29	12	Procambarus sp.		1
3313	Upper Spring Run	Chara-1	2025-04-29	13	No fish collected		
3313	Upper Spring Run	Chara-1	2025-04-29	14	No fish collected		
3313	Upper Spring Run	Chara-1	2025-04-29	15	Procambarus sp.		1
3313	Upper Spring Run	Chara-1	2025-04-29	1	Astyanax argentatus	24	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Dionda nigrotaeniata	69	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Dionda nigrotaeniata	36	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Dionda nigrotaeniata	22	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Dionda nigrotaeniata	18	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Dionda nigrotaeniata	38	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Dionda nigrotaeniata	25	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Dionda nigrotaeniata	33	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Astyanax argentatus	66	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Astyanax argentatus	34	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Astyanax argentatus	35	1

3371	Upper Spring Run	Chara-1	2025-10-29	1	Astyanax argentatus	38	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Lepomis miniatus	95	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Lepomis miniatus	40	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Lepomis miniatus	25	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Lepomis sp.	17	1
3371	Upper Spring Run	Chara-1	2025-10-29	1	Palaemonetes sp.		1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Dionda nigrotaeniata	65	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Dionda nigrotaeniata	32	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Dionda nigrotaeniata	28	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Dionda nigrotaeniata	23	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Lepomis macrochirus	65	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Herichthys cyanoguttatus	30	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Astyanax argentatus	37	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Astyanax argentatus	47	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Astyanax argentatus	40	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Astyanax argentatus	32	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Astyanax argentatus	32	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Lepomis miniatus	38	1
3371	Upper Spring Run	Chara-1	2025-10-29	2	Palaemonetes sp.		1
3371	Upper Spring Run	Chara-1	2025-10-29	3	Herichthys cyanoguttatus	42	1
3371	Upper Spring Run	Chara-1	2025-10-29	3	Lepomis miniatus	52	1
3371	Upper Spring Run	Chara-1	2025-10-29	3	Lepomis sp.	13	1
3371	Upper Spring Run	Chara-1	2025-10-29	3	Lepomis sp.	18	1
3371	Upper Spring Run	Chara-1	2025-10-29	4	Etheostoma fonticola	32	1
3371	Upper Spring Run	Chara-1	2025-10-29	4	Astyanax argentatus	12	1
3371	Upper Spring Run	Chara-1	2025-10-29	5	Herichthys cyanoguttatus	55	1
3371	Upper Spring Run	Chara-1	2025-10-29	5	Lepomis miniatus	81	1
3371	Upper Spring Run	Chara-1	2025-10-29	5	Astyanax argentatus	19	1
3371	Upper Spring Run	Chara-1	2025-10-29	5	Astyanax argentatus	15	1
3371	Upper Spring Run	Chara-1	2025-10-29	5	Astyanax argentatus	12	1

3371	Upper Spring Run	Chara-1	2025-10-29	6	Dionda nigrotaeniata	67	1
3371	Upper Spring Run	Chara-1	2025-10-29	6	Lepomis miniatus	87	1
3371	Upper Spring Run	Chara-1	2025-10-29	6	Lepomis miniatus	62	1
3371	Upper Spring Run	Chara-1	2025-10-29	6	Lepomis miniatus	32	1
3371	Upper Spring Run	Chara-1	2025-10-29	6	Astyanax argentatus	29	1
3371	Upper Spring Run	Chara-1	2025-10-29	6	Astyanax argentatus	24	1
3371	Upper Spring Run	Chara-1	2025-10-29	6	Herichthys cyanoguttatus	58	1
3371	Upper Spring Run	Chara-1	2025-10-29	6	Lepomis sp.	8	1
3371	Upper Spring Run	Chara-1	2025-10-29	7	Astyanax argentatus	25	1
3371	Upper Spring Run	Chara-1	2025-10-29	8	Lepomis miniatus	80	1
3371	Upper Spring Run	Chara-1	2025-10-29	8	Astyanax argentatus	28	1
3371	Upper Spring Run	Chara-1	2025-10-29	9	Dionda nigrotaeniata	64	1
3371	Upper Spring Run	Chara-1	2025-10-29	9	Lepomis miniatus	54	1
3371	Upper Spring Run	Chara-1	2025-10-29	10	Lepomis miniatus	109	1
3371	Upper Spring Run	Chara-1	2025-10-29	10	Lepomis sp.	14	1
3371	Upper Spring Run	Chara-1	2025-10-29	11	Lepomis miniatus	22	1
3371	Upper Spring Run	Chara-1	2025-10-29	11	Lepomis miniatus	35	1
3371	Upper Spring Run	Chara-1	2025-10-29	11	Herichthys cyanoguttatus	36	1
3371	Upper Spring Run	Chara-1	2025-10-29	11	Herichthys cyanoguttatus	28	1
3371	Upper Spring Run	Chara-1	2025-10-29	12	Etheostoma fonticola	23	1
3371	Upper Spring Run	Chara-1	2025-10-29	13	No fish collected		
3371	Upper Spring Run	Chara-1	2025-10-29	14	No fish collected		
3371	Upper Spring Run	Chara-1	2025-10-29	15	Dionda nigrotaeniata	18	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Lepomis macrochirus	56	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Dionda nigrotaeniata	39	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Dionda nigrotaeniata	32	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Dionda nigrotaeniata	41	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Lepomis miniatus	22	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Lepomis miniatus	23	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	33	1

3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	30	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	30	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	13	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	12	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	42	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	35	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	16	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	15	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Astyanax argentatus	22	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Lepomis sp.	18	1
3372	Upper Spring Run	Chara-2	2025-10-29	1	Palaemonetes sp.		2
3372	Upper Spring Run	Chara-2	2025-10-29	2	Lepomis miniatus	68	1
3372	Upper Spring Run	Chara-2	2025-10-29	2	Lepomis miniatus	30	1
3372	Upper Spring Run	Chara-2	2025-10-29	2	Micropterus salmoides	95	1
3372	Upper Spring Run	Chara-2	2025-10-29	2	Astyanax argentatus	61	1
3372	Upper Spring Run	Chara-2	2025-10-29	2	Astyanax argentatus	31	1
3372	Upper Spring Run	Chara-2	2025-10-29	2	Astyanax argentatus	33	1
3372	Upper Spring Run	Chara-2	2025-10-29	3	Lepomis macrochirus	82	1
3372	Upper Spring Run	Chara-2	2025-10-29	3	Astyanax argentatus	47	1
3372	Upper Spring Run	Chara-2	2025-10-29	3	Astyanax argentatus	15	1
3372	Upper Spring Run	Chara-2	2025-10-29	3	Herichthys cyanoguttatus	88	
3372	Upper Spring Run	Chara-2	2025-10-29	3	Etheostoma fonticola	24	1
3372	Upper Spring Run	Chara-2	2025-10-29	3	Lepomis miniatus	27	1
3372	Upper Spring Run	Chara-2	2025-10-29	3	Lepomis miniatus	28	1
3372	Upper Spring Run	Chara-2	2025-10-29	3	Palaemonetes sp.		1
3372	Upper Spring Run	Chara-2	2025-10-29	4	Palaemonetes sp.		2
3372	Upper Spring Run	Chara-2	2025-10-29	4	Astyanax argentatus	35	1
3372	Upper Spring Run	Chara-2	2025-10-29	4	Astyanax argentatus	10	1
3372	Upper Spring Run	Chara-2	2025-10-29	4	Herichthys cyanoguttatus	40	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Micropterus salmoides	93	1

3372	Upper Spring Run	Chara-2	2025-10-29	5	Lepomis miniatus	60	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Lepomis miniatus	24	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Lepomis miniatus	27	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Lepomis miniatus	30	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Lepomis miniatus	22	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Astyanax argentatus	38	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Lepomis macrochirus	67	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Lepomis macrochirus	40	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Lepomis sp.	10	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Lepomis sp.	10	1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Palaemonetes sp.		1
3372	Upper Spring Run	Chara-2	2025-10-29	5	Procambarus sp.		1
3372	Upper Spring Run	Chara-2	2025-10-29	6	Lepomis miniatus	28	1
3372	Upper Spring Run	Chara-2	2025-10-29	7	Astyanax argentatus	69	1
3372	Upper Spring Run	Chara-2	2025-10-29	7	Lepomis miniatus	96	1
3372	Upper Spring Run	Chara-2	2025-10-29	7	Herichthys cyanoguttatus	35	1
3372	Upper Spring Run	Chara-2	2025-10-29	7	Etheostoma fonticola	30	1
3372	Upper Spring Run	Chara-2	2025-10-29	7	Lepomis sp.	15	1
3372	Upper Spring Run	Chara-2	2025-10-29	8	Lepomis sp.	10	1
3372	Upper Spring Run	Chara-2	2025-10-29	8	Lepomis miniatus	33	1
3372	Upper Spring Run	Chara-2	2025-10-29	9	Dionda nigrotaeniata	40	1
3372	Upper Spring Run	Chara-2	2025-10-29	9	Dionda nigrotaeniata	40	1
3372	Upper Spring Run	Chara-2	2025-10-29	9	Dionda nigrotaeniata	20	1
3372	Upper Spring Run	Chara-2	2025-10-29	9	Dionda nigrotaeniata	36	1
3372	Upper Spring Run	Chara-2	2025-10-29	9	Lepomis miniatus	21	1
3372	Upper Spring Run	Chara-2	2025-10-29	9	Lepomis miniatus	28	1
3372	Upper Spring Run	Chara-2	2025-10-29	9	Lepomis miniatus	26	1
3372	Upper Spring Run	Chara-2	2025-10-29	9	Palaemonetes sp.		1
3372	Upper Spring Run	Chara-2	2025-10-29	10	Lepomis miniatus	37	1
3372	Upper Spring Run	Chara-2	2025-10-29	11	No fish collected		

3372	Upper Spring Run	Chara-2	2025-10-29	12	No fish collected		
3372	Upper Spring Run	Chara-2	2025-10-29	13	No fish collected		
3372	Upper Spring Run	Chara-2	2025-10-29	14	Lepomis miniatus	65	1
3372	Upper Spring Run	Chara-2	2025-10-29	14	Lepomis miniatus	30	1
3372	Upper Spring Run	Chara-2	2025-10-29	15	Lepomis miniatus	42	1
3373	Upper Spring Run	Sag-1	2025-10-29	1	No fish collected		
3373	Upper Spring Run	Sag-1	2025-10-29	2	No fish collected		
3373	Upper Spring Run	Sag-1	2025-10-29	3	Etheostoma lepidum	41	1
3373	Upper Spring Run	Sag-1	2025-10-29	4	Lepomis miniatus	39	1
3373	Upper Spring Run	Sag-1	2025-10-29	5	Lepomis macrochirus	65	1
3373	Upper Spring Run	Sag-1	2025-10-29	5	Lepomis miniatus	51	1
3373	Upper Spring Run	Sag-1	2025-10-29	6	No fish collected		
3373	Upper Spring Run	Sag-1	2025-10-29	7	Procambarus sp.		1
3373	Upper Spring Run	Sag-1	2025-10-29	8	No fish collected		
3373	Upper Spring Run	Sag-1	2025-10-29	9	No fish collected		
3373	Upper Spring Run	Sag-1	2025-10-29	10	Herichthys cyanoguttatus	75	1
3373	Upper Spring Run	Sag-1	2025-10-29	10	Procambarus sp.		1
3373	Upper Spring Run	Sag-1	2025-10-29	11	No fish collected		
3373	Upper Spring Run	Sag-1	2025-10-29	12	No fish collected		
3373	Upper Spring Run	Sag-1	2025-10-29	13	Procambarus sp.		2
3373	Upper Spring Run	Sag-1	2025-10-29	14	No fish collected		
3373	Upper Spring Run	Sag-1	2025-10-29	15	Procambarus sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	8	Procambarus sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	8	Palaemonetes sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	8	Lepomis sp.	15	1
3374	Upper Spring Run	Sag-2	2025-10-29	9	Procambarus sp.		2
3374	Upper Spring Run	Sag-2	2025-10-29	9	Etheostoma lepidum	58	1
3374	Upper Spring Run	Sag-2	2025-10-29	9	Palaemonetes sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	10	Procambarus sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	11	Herichthys cyanoguttatus	39	1

3374	Upper Spring Run	Sag-2	2025-10-29	11	Procambarus sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	12	No fish collected		
3374	Upper Spring Run	Sag-2	2025-10-29	13	Procambarus sp.		3
3374	Upper Spring Run	Sag-2	2025-10-29	14	Procambarus sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	15	Lepomis miniatus	87	1
3374	Upper Spring Run	Sag-2	2025-10-29	1	Lepomis miniatus	39	1
3374	Upper Spring Run	Sag-2	2025-10-29	1	Lepomis miniatus	90	1
3374	Upper Spring Run	Sag-2	2025-10-29	1	Lepomis miniatus	66	1
3374	Upper Spring Run	Sag-2	2025-10-29	1	Lepomis miniatus	26	1
3374	Upper Spring Run	Sag-2	2025-10-29	1	Procambarus sp.		4
3374	Upper Spring Run	Sag-2	2025-10-29	1	Gambusia sp.	21	1
3374	Upper Spring Run	Sag-2	2025-10-29	1	Gambusia sp.	11	1
3374	Upper Spring Run	Sag-2	2025-10-29	1	Lepomis sp.	20	1
3374	Upper Spring Run	Sag-2	2025-10-29	1	Palaemonetes sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	2	Lepomis miniatus	96	1
3374	Upper Spring Run	Sag-2	2025-10-29	2	Gambusia sp.	38	1
3374	Upper Spring Run	Sag-2	2025-10-29	2	Procambarus sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	3	Lepomis miniatus	80	1
3374	Upper Spring Run	Sag-2	2025-10-29	3	Procambarus sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	3	Herichthys cyanoguttatus	35	1
3374	Upper Spring Run	Sag-2	2025-10-29	4	Procambarus sp.		2
3374	Upper Spring Run	Sag-2	2025-10-29	4	Lepomis miniatus	81	1
3374	Upper Spring Run	Sag-2	2025-10-29	5	Procambarus sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	5	Lepomis miniatus	39	1
3374	Upper Spring Run	Sag-2	2025-10-29	5	Herichthys cyanoguttatus	42	1
3374	Upper Spring Run	Sag-2	2025-10-29	5	Lepomis sp.	20	1
3374	Upper Spring Run	Sag-2	2025-10-29	6	Lepomis miniatus	89	1
3374	Upper Spring Run	Sag-2	2025-10-29	6	Procambarus sp.		1
3374	Upper Spring Run	Sag-2	2025-10-29	7	Lepomis miniatus	85	1
3374	Upper Spring Run	Sag-2	2025-10-29	7	Ameiurus natalis	91	1

3374	Upper Spring Run	Sag-2	2025-10-29	7	Gambusia sp.	31	1
3375	Upper Spring Run	Open-1	2025-10-29	1	No fish collected		
3375	Upper Spring Run	Open-1	2025-10-29	2	No fish collected		
3375	Upper Spring Run	Open-1	2025-10-29	3	No fish collected		
3375	Upper Spring Run	Open-1	2025-10-29	4	No fish collected		
3375	Upper Spring Run	Open-1	2025-10-29	5	No fish collected		
3375	Upper Spring Run	Open-1	2025-10-29	6	No fish collected		
3375	Upper Spring Run	Open-1	2025-10-29	7	No fish collected		
3375	Upper Spring Run	Open-1	2025-10-29	8	No fish collected		
3375	Upper Spring Run	Open-1	2025-10-29	9	No fish collected		
3375	Upper Spring Run	Open-1	2025-10-29	10	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	1	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	2	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	3	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	4	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	5	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	6	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	7	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	8	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	9	No fish collected		
3376	Upper Spring Run	Open-2	2025-10-29	10	No fish collected		
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis miniatus	60	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis miniatus	36	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis miniatus	27	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis miniatus	102	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis miniatus	34	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis miniatus	22	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis miniatus	30	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis macrochirus	38	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis macrochirus	37	1

3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	25	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	22	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	25	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	23	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	24	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	23	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	16	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	34	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	20	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Gambusia sp.	12	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Palaemonetes sp.		1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis sp.	20	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Lepomis sp.	20	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Astyanax argentatus	14	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Astyanax argentatus	9	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Astyanax argentatus	13	1
3377	Upper Spring Run	Cab-1	2025-10-29	1	Astyanax argentatus	12	1
3377	Upper Spring Run	Cab-1	2025-10-29	2	Lepomis macrochirus	75	1
3377	Upper Spring Run	Cab-1	2025-10-29	2	Lepomis macrochirus	42	1
3377	Upper Spring Run	Cab-1	2025-10-29	2	Lepomis macrochirus	57	1
3377	Upper Spring Run	Cab-1	2025-10-29	2	Lepomis miniatus	36	1
3377	Upper Spring Run	Cab-1	2025-10-29	2	Lepomis miniatus	33	1
3377	Upper Spring Run	Cab-1	2025-10-29	2	Astyanax argentatus	12	1
3377	Upper Spring Run	Cab-1	2025-10-29	2	Palaemonetes sp.		1
3377	Upper Spring Run	Cab-1	2025-10-29	2	Lepomis sp.	15	1
3377	Upper Spring Run	Cab-1	2025-10-29	2	Lepomis sp.	20	1
3377	Upper Spring Run	Cab-1	2025-10-29	3	Lepomis miniatus	105	1
3377	Upper Spring Run	Cab-1	2025-10-29	3	Lepomis miniatus	127	1
3377	Upper Spring Run	Cab-1	2025-10-29	3	Lepomis miniatus	38	1
3377	Upper Spring Run	Cab-1	2025-10-29	3	Lepomis miniatus	20	1

3377	Upper Spring Run	Cab-1	2025-10-29	3	Palaemonetes sp.		1
3377	Upper Spring Run	Cab-1	2025-10-29	3	Astyanax argentatus	16	1
3377	Upper Spring Run	Cab-1	2025-10-29	4	No fish collected		
3377	Upper Spring Run	Cab-1	2025-10-29	5	Palaemonetes sp.		1
3377	Upper Spring Run	Cab-1	2025-10-29	6	Lepomis miniatus	31	1
3377	Upper Spring Run	Cab-1	2025-10-29	6	Palaemonetes sp.		1
3377	Upper Spring Run	Cab-1	2025-10-29	7	Lepomis miniatus	112	1
3377	Upper Spring Run	Cab-1	2025-10-29	7	Lepomis miniatus	55	1
3377	Upper Spring Run	Cab-1	2025-10-29	8	Lepomis miniatus	78	1
3377	Upper Spring Run	Cab-1	2025-10-29	9	No fish collected		
3377	Upper Spring Run	Cab-1	2025-10-29	10	Lepomis miniatus	125	1
3377	Upper Spring Run	Cab-1	2025-10-29	11	Lepomis miniatus	110	1
3377	Upper Spring Run	Cab-1	2025-10-29	11	Lepomis macrochirus	92	1
3377	Upper Spring Run	Cab-1	2025-10-29	12	Lepomis macrochirus	30	1
3377	Upper Spring Run	Cab-1	2025-10-29	12	Lepomis sp.	19	1
3377	Upper Spring Run	Cab-1	2025-10-29	13	No fish collected		
3377	Upper Spring Run	Cab-1	2025-10-29	14	No fish collected		
3377	Upper Spring Run	Cab-1	2025-10-29	15	Lepomis miniatus	125	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Lepomis sp.	14	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Lepomis sp.	10	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Lepomis sp.	12	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Lepomis sp.	10	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Gambusia sp.	35	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Gambusia sp.	22	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Gambusia sp.	10	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Lepomis miniatus	32	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Astyanax argentatus	15	1
3378	Upper Spring Run	Cab-2	2025-10-29	1	Astyanax argentatus	10	1
3378	Upper Spring Run	Cab-2	2025-10-29	2	Gambusia sp.	16	1
3378	Upper Spring Run	Cab-2	2025-10-29	2	Astyanax argentatus	11	1

3378	Upper Spring Run	Cab-2	2025-10-29	3	Gambusia sp.	20	1
3378	Upper Spring Run	Cab-2	2025-10-29	3	Gambusia sp.	22	1
3378	Upper Spring Run	Cab-2	2025-10-29	3	Gambusia sp.	23	1
3378	Upper Spring Run	Cab-2	2025-10-29	3	Lepomis sp.	14	1
3378	Upper Spring Run	Cab-2	2025-10-29	3	Astyanax argentatus	11	1
3378	Upper Spring Run	Cab-2	2025-10-29	3	Astyanax argentatus	9	1
3378	Upper Spring Run	Cab-2	2025-10-29	4	Lepomis sp.	17	1
3378	Upper Spring Run	Cab-2	2025-10-29	5	Astyanax argentatus	10	1
3378	Upper Spring Run	Cab-2	2025-10-29	6	No fish collected		
3378	Upper Spring Run	Cab-2	2025-10-29	7	Gambusia sp.	11	1
3378	Upper Spring Run	Cab-2	2025-10-29	8	No fish collected		
3378	Upper Spring Run	Cab-2	2025-10-29	9	Lepomis sp.	10	1
3378	Upper Spring Run	Cab-2	2025-10-29	10	No fish collected		
3378	Upper Spring Run	Cab-2	2025-10-29	11	Astyanax argentatus	13	1
3378	Upper Spring Run	Cab-2	2025-10-29	12	No fish collected		
3378	Upper Spring Run	Cab-2	2025-10-29	13	Astyanax argentatus	12	1
3378	Upper Spring Run	Cab-2	2025-10-29	14	Lepomis auritus	121	1
3378	Upper Spring Run	Cab-2	2025-10-29	15	No fish collected		
3379	Landa Lake	Val-1	2025-10-28	1	Procambarus sp.		15
3379	Landa Lake	Val-1	2025-10-28	1	Ameiurus natalis	55	1
3379	Landa Lake	Val-1	2025-10-28	1	Palaemonetes sp.		2
3379	Landa Lake	Val-1	2025-10-28	1	Gambusia sp.	28	1
3379	Landa Lake	Val-1	2025-10-28	1	Gambusia sp.	15	1
3379	Landa Lake	Val-1	2025-10-28	1	Gambusia sp.	32	1
3379	Landa Lake	Val-1	2025-10-28	1	Gambusia sp.	15	1
3379	Landa Lake	Val-1	2025-10-28	1	Gambusia sp.	16	1
3379	Landa Lake	Val-1	2025-10-28	1	Gambusia sp.	14	1
3379	Landa Lake	Val-1	2025-10-28	1	Gambusia sp.	18	1
3379	Landa Lake	Val-1	2025-10-28	1	Gambusia sp.	10	1
3379	Landa Lake	Val-1	2025-10-28	1	Gambusia sp.	16	1

3379	Landa Lake	Val-1	2025-10-28	2	Poecilia latipinna	39	1
3379	Landa Lake	Val-1	2025-10-28	2	Poecilia latipinna	35	1
3379	Landa Lake	Val-1	2025-10-28	2	Poecilia latipinna	22	1
3379	Landa Lake	Val-1	2025-10-28	2	Poecilia latipinna	22	1
3379	Landa Lake	Val-1	2025-10-28	2	Poecilia latipinna	18	1
3379	Landa Lake	Val-1	2025-10-28	2	Procambarus sp.		1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	25	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	20	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	16	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	11	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	22	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	14	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	19	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	15	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	15	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	10	1
3379	Landa Lake	Val-1	2025-10-28	2	Gambusia sp.	15	1
3379	Landa Lake	Val-1	2025-10-28	2	Palaemonetes sp.		1
3379	Landa Lake	Val-1	2025-10-28	3	Poecilia latipinna	27	1
3379	Landa Lake	Val-1	2025-10-28	3	Palaemonetes sp.		4
3379	Landa Lake	Val-1	2025-10-28	3	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	3	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	3	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	3	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	4	Procambarus sp.		1
3379	Landa Lake	Val-1	2025-10-28	5	Ameiurus natalis	65	1
3379	Landa Lake	Val-1	2025-10-28	5	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	5	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	5	Palaemonetes sp.		6
3379	Landa Lake	Val-1	2025-10-28	6	Procambarus sp.		1

3379	Landa Lake	Val-1	2025-10-28	6	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	6	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	7	Procambarus sp.		1
3379	Landa Lake	Val-1	2025-10-28	7	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	7	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	7	Palaemonetes sp.		2
3379	Landa Lake	Val-1	2025-10-28	8	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	9	Palaemonetes sp.		1
3379	Landa Lake	Val-1	2025-10-28	9	Etheostoma fonticola	30	1
3379	Landa Lake	Val-1	2025-10-28	10	Procambarus sp.		1
3379	Landa Lake	Val-1	2025-10-28	10	Ameiurus natalis	45	1
3379	Landa Lake	Val-1	2025-10-28	10	Etheostoma fonticola	32	1
3379	Landa Lake	Val-1	2025-10-28	11	Ameiurus natalis	62	1
3379	Landa Lake	Val-1	2025-10-28	11	Palaemonetes sp.		1
3379	Landa Lake	Val-1	2025-10-28	12	No fish collected		
3379	Landa Lake	Val-1	2025-10-28	13	Procambarus sp.		1
3379	Landa Lake	Val-1	2025-10-28	14	Palaemonetes sp.		1
3379	Landa Lake	Val-1	2025-10-28	14	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	14	Gambusia sp.		1
3379	Landa Lake	Val-1	2025-10-28	15	Lepomis miniatus	72	1
3380	Landa Lake	Sag-1	2025-10-28	1	Gambusia sp.	24	1
3380	Landa Lake	Sag-1	2025-10-28	1	Gambusia sp.	24	1
3380	Landa Lake	Sag-1	2025-10-28	1	Gambusia sp.	25	1
3380	Landa Lake	Sag-1	2025-10-28	1	Gambusia sp.	31	1
3380	Landa Lake	Sag-1	2025-10-28	1	Gambusia sp.	22	1
3380	Landa Lake	Sag-1	2025-10-28	1	Gambusia sp.	28	1
3380	Landa Lake	Sag-1	2025-10-28	1	Gambusia sp.	20	1
3380	Landa Lake	Sag-1	2025-10-28	1	Gambusia sp.	13	1
3380	Landa Lake	Sag-1	2025-10-28	1	Lepomis miniatus	26	1
3380	Landa Lake	Sag-1	2025-10-28	1	Herichthys cyanoguttatus	39	1

3380	Landa Lake	Sag-1	2025-10-28	1	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	1	Palaemonetes sp.		4
3380	Landa Lake	Sag-1	2025-10-28	2	Etheostoma fonticola	29	1
3380	Landa Lake	Sag-1	2025-10-28	2	Herichthys cyanoguttatus	45	1
3380	Landa Lake	Sag-1	2025-10-28	2	Micropterus salmoides	44	1
3380	Landa Lake	Sag-1	2025-10-28	2	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	2	Gambusia sp.	24	1
3380	Landa Lake	Sag-1	2025-10-28	2	Gambusia sp.	22	1
3380	Landa Lake	Sag-1	2025-10-28	2	Gambusia sp.	30	1
3380	Landa Lake	Sag-1	2025-10-28	3	Procambarus sp.		2
3380	Landa Lake	Sag-1	2025-10-28	3	Gambusia sp.	15	1
3380	Landa Lake	Sag-1	2025-10-28	3	Gambusia sp.	28	1
3380	Landa Lake	Sag-1	2025-10-28	4	Lepomis miniatus	52	1
3380	Landa Lake	Sag-1	2025-10-28	4	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	4	Gambusia sp.	15	1
3380	Landa Lake	Sag-1	2025-10-28	5	Herichthys cyanoguttatus	36	1
3380	Landa Lake	Sag-1	2025-10-28	5	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	6	Palaemonetes sp.		1
3380	Landa Lake	Sag-1	2025-10-28	7	Procambarus sp.		4
3380	Landa Lake	Sag-1	2025-10-28	8	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	9	Procambarus sp.		2
3380	Landa Lake	Sag-1	2025-10-28	9	Lepomis miniatus	36	1
3380	Landa Lake	Sag-1	2025-10-28	10	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	11	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	12	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	12	Gambusia sp.	10	1
3380	Landa Lake	Sag-1	2025-10-28	13	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	14	Procambarus sp.		1
3380	Landa Lake	Sag-1	2025-10-28	15	No fish collected		
3381	Landa Lake	Sag-2	2025-10-28	1	Astyanax argentatus	67	1

3381	Landa Lake	Sag-2	2025-10-28	1	Poecilia latipinna	52	1
3381	Landa Lake	Sag-2	2025-10-28	1	Herichthys cyanoguttatus	40	1
3381	Landa Lake	Sag-2	2025-10-28	1	Lepomis miniatus	40	1
3381	Landa Lake	Sag-2	2025-10-28	1	Lepomis miniatus	25	1
3381	Landa Lake	Sag-2	2025-10-28	1	Lepomis miniatus	29	1
3381	Landa Lake	Sag-2	2025-10-28	1	Lepomis miniatus	30	1
3381	Landa Lake	Sag-2	2025-10-28	1	Lepomis miniatus	25	1
3381	Landa Lake	Sag-2	2025-10-28	1	Gambusia sp.	34	1
3381	Landa Lake	Sag-2	2025-10-28	1	Gambusia sp.	22	1
3381	Landa Lake	Sag-2	2025-10-28	1	Gambusia sp.	24	1
3381	Landa Lake	Sag-2	2025-10-28	1	Gambusia sp.	23	1
3381	Landa Lake	Sag-2	2025-10-28	1	Gambusia sp.	22	1
3381	Landa Lake	Sag-2	2025-10-28	1	Gambusia sp.	22	1
3381	Landa Lake	Sag-2	2025-10-28	1	Gambusia sp.	23	1
3381	Landa Lake	Sag-2	2025-10-28	1	Gambusia sp.	23	1
3381	Landa Lake	Sag-2	2025-10-28	1	Gambusia sp.	22	1
3381	Landa Lake	Sag-2	2025-10-28	1	Procambarus sp.		3
3381	Landa Lake	Sag-2	2025-10-28	1	Etheostoma fonticola	32	1
3381	Landa Lake	Sag-2	2025-10-28	1	Palaemonetes sp.		11
3381	Landa Lake	Sag-2	2025-10-28	2	Poecilia latipinna	35	1
3381	Landa Lake	Sag-2	2025-10-28	2	Gambusia sp.	28	1
3381	Landa Lake	Sag-2	2025-10-28	2	Gambusia sp.	19	1
3381	Landa Lake	Sag-2	2025-10-28	2	Gambusia sp.	20	1
3381	Landa Lake	Sag-2	2025-10-28	2	Gambusia sp.	21	1
3381	Landa Lake	Sag-2	2025-10-28	2	Gambusia sp.	17	1
3381	Landa Lake	Sag-2	2025-10-28	2	Etheostoma fonticola	16	1
3381	Landa Lake	Sag-2	2025-10-28	3	Procambarus sp.		1
3381	Landa Lake	Sag-2	2025-10-28	3	Gambusia sp.	22	1
3381	Landa Lake	Sag-2	2025-10-28	3	Palaemonetes sp.		1
3381	Landa Lake	Sag-2	2025-10-28	3	Lepomis miniatus	38	1

3381	Landa Lake	Sag-2	2025-10-28	4	Procambarus sp.		3
3381	Landa Lake	Sag-2	2025-10-28	4	Gambusia sp.	25	1
3381	Landa Lake	Sag-2	2025-10-28	4	Gambusia sp.	20	1
3381	Landa Lake	Sag-2	2025-10-28	4	Herichthys cyanoguttatus	51	1
3381	Landa Lake	Sag-2	2025-10-28	5	Procambarus sp.		2
3381	Landa Lake	Sag-2	2025-10-28	5	Gambusia sp.	12	1
3381	Landa Lake	Sag-2	2025-10-28	6	No fish collected		
3381	Landa Lake	Sag-2	2025-10-28	7	Procambarus sp.		1
3381	Landa Lake	Sag-2	2025-10-28	8	Procambarus sp.		1
3381	Landa Lake	Sag-2	2025-10-28	8	Gambusia sp.	22	1
3381	Landa Lake	Sag-2	2025-10-28	8	Gambusia sp.	10	1
3381	Landa Lake	Sag-2	2025-10-28	9	Procambarus sp.		1
3381	Landa Lake	Sag-2	2025-10-28	9	Gambusia sp.	22	1
3381	Landa Lake	Sag-2	2025-10-28	9	Etheostoma fonticola	30	1
3381	Landa Lake	Sag-2	2025-10-28	9	Etheostoma fonticola	34	1
3381	Landa Lake	Sag-2	2025-10-28	9	Lepomis miniatus	42	1
3381	Landa Lake	Sag-2	2025-10-28	10	Procambarus sp.		1
3381	Landa Lake	Sag-2	2025-10-28	11	Gambusia sp.	25	1
3381	Landa Lake	Sag-2	2025-10-28	12	No fish collected		
3381	Landa Lake	Sag-2	2025-10-28	13	No fish collected		
3381	Landa Lake	Sag-2	2025-10-28	14	Gambusia sp.	26	1
3381	Landa Lake	Sag-2	2025-10-28	15	Gambusia sp.	23	1
3382	Landa Lake	Lud-1	2025-10-28	13	Procambarus sp.		1
3382	Landa Lake	Lud-1	2025-10-28	13	Etheostoma fonticola	30	1
3382	Landa Lake	Lud-1	2025-10-28	13	Etheostoma fonticola	27	1
3382	Landa Lake	Lud-1	2025-10-28	13	Lepomis miniatus	25	1
3382	Landa Lake	Lud-1	2025-10-28	14	No fish collected		
3382	Landa Lake	Lud-1	2025-10-28	15	Etheostoma fonticola	24	1
3382	Landa Lake	Lud-1	2025-10-28	15	Etheostoma fonticola	25	1
3382	Landa Lake	Lud-1	2025-10-28	16	Poecilia latipinna	48	1

3382	Landa Lake	Lud-1	2025-10-28	16	Procambarus sp.		1
3382	Landa Lake	Lud-1	2025-10-28	1	Etheostoma fonticola	32	1
3382	Landa Lake	Lud-1	2025-10-28	1	Etheostoma fonticola	20	1
3382	Landa Lake	Lud-1	2025-10-28	1	Etheostoma fonticola	35	1
3382	Landa Lake	Lud-1	2025-10-28	1	Etheostoma fonticola	32	1
3382	Landa Lake	Lud-1	2025-10-28	1	Etheostoma fonticola	18	1
3382	Landa Lake	Lud-1	2025-10-28	1	Etheostoma fonticola	16	1
3382	Landa Lake	Lud-1	2025-10-28	1	Lepomis miniatus	31	1
3382	Landa Lake	Lud-1	2025-10-28	1	Lepomis miniatus	38	1
3382	Landa Lake	Lud-1	2025-10-28	1	Gambusia sp.	32	1
3382	Landa Lake	Lud-1	2025-10-28	1	Gambusia sp.	20	1
3382	Landa Lake	Lud-1	2025-10-28	1	Gambusia sp.	15	1
3382	Landa Lake	Lud-1	2025-10-28	1	Gambusia sp.	12	1
3382	Landa Lake	Lud-1	2025-10-28	1	Gambusia sp.	24	1
3382	Landa Lake	Lud-1	2025-10-28	1	Gambusia sp.	25	1
3382	Landa Lake	Lud-1	2025-10-28	1	Gambusia sp.	20	1
3382	Landa Lake	Lud-1	2025-10-28	1	Gambusia sp.	15	1
3382	Landa Lake	Lud-1	2025-10-28	1	Herichthys cyanoguttatus	67	1
3382	Landa Lake	Lud-1	2025-10-28	1	Procambarus sp.		1
3382	Landa Lake	Lud-1	2025-10-28	1	Poecilia latipinna	35	1
3382	Landa Lake	Lud-1	2025-10-28	1	Poecilia latipinna	37	1
3382	Landa Lake	Lud-1	2025-10-28	1	Poecilia latipinna	15	1
3382	Landa Lake	Lud-1	2025-10-28	1	Poecilia latipinna	40	1
3382	Landa Lake	Lud-1	2025-10-28	1	Poecilia latipinna	25	1
3382	Landa Lake	Lud-1	2025-10-28	1	Palaemonetes sp.		20
3382	Landa Lake	Lud-1	2025-10-28	1	Lepomis sp.	19	1
3382	Landa Lake	Lud-1	2025-10-28	2	Procambarus sp.		3
3382	Landa Lake	Lud-1	2025-10-28	2	Etheostoma fonticola	32	1
3382	Landa Lake	Lud-1	2025-10-28	2	Etheostoma fonticola	23	1
3382	Landa Lake	Lud-1	2025-10-28	2	Etheostoma fonticola	28	1

3382	Landa Lake	Lud-1	2025-10-28	2	Etheostoma fonticola	32	1
3382	Landa Lake	Lud-1	2025-10-28	2	Poecilia latipinna	35	1
3382	Landa Lake	Lud-1	2025-10-28	2	Poecilia latipinna	30	1
3382	Landa Lake	Lud-1	2025-10-28	2	Poecilia latipinna	21	1
3382	Landa Lake	Lud-1	2025-10-28	2	Palaemonetes sp.		6
3382	Landa Lake	Lud-1	2025-10-28	2	Gambusia sp.	14	1
3382	Landa Lake	Lud-1	2025-10-28	3	Procambarus sp.		2
3382	Landa Lake	Lud-1	2025-10-28	3	Palaemonetes sp.		7
3382	Landa Lake	Lud-1	2025-10-28	3	Etheostoma fonticola	25	1
3382	Landa Lake	Lud-1	2025-10-28	3	Etheostoma fonticola	31	1
3382	Landa Lake	Lud-1	2025-10-28	3	Gambusia sp.	10	1
3382	Landa Lake	Lud-1	2025-10-28	3	Poecilia latipinna	12	1
3382	Landa Lake	Lud-1	2025-10-28	4	Poecilia latipinna	22	1
3382	Landa Lake	Lud-1	2025-10-28	4	Poecilia latipinna	18	1
3382	Landa Lake	Lud-1	2025-10-28	4	Palaemonetes sp.		4
3382	Landa Lake	Lud-1	2025-10-28	5	Poecilia latipinna	32	1
3382	Landa Lake	Lud-1	2025-10-28	5	Poecilia latipinna	42	1
3382	Landa Lake	Lud-1	2025-10-28	5	Procambarus sp.		1
3382	Landa Lake	Lud-1	2025-10-28	5	Etheostoma fonticola	36	1
3382	Landa Lake	Lud-1	2025-10-28	5	Etheostoma fonticola	21	1
3382	Landa Lake	Lud-1	2025-10-28	5	Palaemonetes sp.		1
3382	Landa Lake	Lud-1	2025-10-28	6	Procambarus sp.		4
3382	Landa Lake	Lud-1	2025-10-28	6	Etheostoma fonticola	22	1
3382	Landa Lake	Lud-1	2025-10-28	7	Procambarus sp.		2
3382	Landa Lake	Lud-1	2025-10-28	7	Etheostoma fonticola	26	1
3382	Landa Lake	Lud-1	2025-10-28	7	Etheostoma fonticola	35	1
3382	Landa Lake	Lud-1	2025-10-28	7	Etheostoma fonticola	26	1
3382	Landa Lake	Lud-1	2025-10-28	7	Etheostoma fonticola	33	1
3382	Landa Lake	Lud-1	2025-10-28	7	Lepomis miniatus	30	1
3382	Landa Lake	Lud-1	2025-10-28	7	Palaemonetes sp.		2

3382	Landa Lake	Lud-1	2025-10-28	8	Procambarus sp.		2
3382	Landa Lake	Lud-1	2025-10-28	8	Lepomis miniatus	44	1
3382	Landa Lake	Lud-1	2025-10-28	9	Etheostoma fonticola	35	1
3382	Landa Lake	Lud-1	2025-10-28	9	Etheostoma fonticola	18	1
3382	Landa Lake	Lud-1	2025-10-28	9	Etheostoma fonticola	19	1
3382	Landa Lake	Lud-1	2025-10-28	10	Palaemonetes sp.		1
3382	Landa Lake	Lud-1	2025-10-28	10	Etheostoma fonticola	30	1
3382	Landa Lake	Lud-1	2025-10-28	10	Procambarus sp.		2
3382	Landa Lake	Lud-1	2025-10-28	11	Etheostoma fonticola	28	1
3382	Landa Lake	Lud-1	2025-10-28	11	Gambusia sp.	32	1
3382	Landa Lake	Lud-1	2025-10-28	11	Gambusia sp.	33	1
3382	Landa Lake	Lud-1	2025-10-28	11	Palaemonetes sp.		1
3382	Landa Lake	Lud-1	2025-10-28	12	Procambarus sp.		1
3382	Landa Lake	Lud-1	2025-10-28	12	Palaemonetes sp.		1
3383	Landa Lake	Lud-2	2025-10-28	1	Etheostoma fonticola	31	1
3383	Landa Lake	Lud-2	2025-10-28	1	Etheostoma fonticola	29	1
3383	Landa Lake	Lud-2	2025-10-28	1	Gambusia sp.	20	1
3383	Landa Lake	Lud-2	2025-10-28	1	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	1	Gambusia sp.	24	1
3383	Landa Lake	Lud-2	2025-10-28	1	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	1	Gambusia sp.	14	1
3383	Landa Lake	Lud-2	2025-10-28	1	Gambusia sp.	15	1
3383	Landa Lake	Lud-2	2025-10-28	1	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	1	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	1	Poecilia latipinna	18	1
3383	Landa Lake	Lud-2	2025-10-28	1	Palaemonetes sp.		3
3383	Landa Lake	Lud-2	2025-10-28	2	Gambusia sp.	22	1
3383	Landa Lake	Lud-2	2025-10-28	2	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	2	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	2	Gambusia sp.	10	1

3383	Landa Lake	Lud-2	2025-10-28	2	Gambusia sp.	17	1
3383	Landa Lake	Lud-2	2025-10-28	2	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	2	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	2	Lepomis sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	2	Etheostoma fonticola	15	1
3383	Landa Lake	Lud-2	2025-10-28	2	Palaemonetes sp.		2
3383	Landa Lake	Lud-2	2025-10-28	3	Lepomis miniatus	32	1
3383	Landa Lake	Lud-2	2025-10-28	3	Poecilia latipinna	25	1
3383	Landa Lake	Lud-2	2025-10-28	3	Poecilia latipinna	22	1
3383	Landa Lake	Lud-2	2025-10-28	3	Gambusia sp.	15	1
3383	Landa Lake	Lud-2	2025-10-28	3	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	3	Gambusia sp.	15	1
3383	Landa Lake	Lud-2	2025-10-28	3	Gambusia sp.	10	1
3383	Landa Lake	Lud-2	2025-10-28	3	Gambusia sp.	14	1
3383	Landa Lake	Lud-2	2025-10-28	3	Gambusia sp.	14	1
3383	Landa Lake	Lud-2	2025-10-28	3	Palaemonetes sp.		1
3383	Landa Lake	Lud-2	2025-10-28	4	Gambusia sp.	43	1
3383	Landa Lake	Lud-2	2025-10-28	4	Etheostoma fonticola	31	1
3383	Landa Lake	Lud-2	2025-10-28	4	Lepomis miniatus	16	1
3383	Landa Lake	Lud-2	2025-10-28	4	Gambusia sp.		1
3383	Landa Lake	Lud-2	2025-10-28	4	Gambusia sp.		1
3383	Landa Lake	Lud-2	2025-10-28	5	Lepomis miniatus	34	1
3383	Landa Lake	Lud-2	2025-10-28	5	Palaemonetes sp.		3
3383	Landa Lake	Lud-2	2025-10-28	5	Poecilia latipinna	19	1
3383	Landa Lake	Lud-2	2025-10-28	5	Poecilia latipinna	18	1
3383	Landa Lake	Lud-2	2025-10-28	6	Palaemonetes sp.		1
3383	Landa Lake	Lud-2	2025-10-28	7	Etheostoma fonticola	22	1
3383	Landa Lake	Lud-2	2025-10-28	7	Palaemonetes sp.		1
3383	Landa Lake	Lud-2	2025-10-28	8	Gambusia sp.		1
3383	Landa Lake	Lud-2	2025-10-28	9	Procambarus sp.		1

3383	Landa Lake	Lud-2	2025-10-28	9	Etheostoma fonticola	35	1
3383	Landa Lake	Lud-2	2025-10-28	9	Etheostoma fonticola	31	1
3383	Landa Lake	Lud-2	2025-10-28	9	Palaemonetes sp.		3
3383	Landa Lake	Lud-2	2025-10-28	10	Gambusia sp.		1
3383	Landa Lake	Lud-2	2025-10-28	11	Etheostoma fonticola	32	1
3383	Landa Lake	Lud-2	2025-10-28	11	Etheostoma fonticola	16	1
3383	Landa Lake	Lud-2	2025-10-28	12	No fish collected		
3383	Landa Lake	Lud-2	2025-10-28	13	Procambarus sp.		1
3383	Landa Lake	Lud-2	2025-10-28	14	No fish collected		
3383	Landa Lake	Lud-2	2025-10-28	15	Palaemonetes sp.		3
3383	Landa Lake	Lud-2	2025-10-28	4	Palaemonetes sp.		2
3384	Landa Lake	Val-2	2025-10-28	1	Lepomis miniatus	84	1
3384	Landa Lake	Val-2	2025-10-28	1	Lepomis miniatus	50	1
3384	Landa Lake	Val-2	2025-10-28	1	Lepomis miniatus	42	1
3384	Landa Lake	Val-2	2025-10-28	1	Lepomis miniatus	32	1
3384	Landa Lake	Val-2	2025-10-28	1	Lepomis miniatus	22	1
3384	Landa Lake	Val-2	2025-10-28	1	Lepomis miniatus	29	1
3384	Landa Lake	Val-2	2025-10-28	1	Herichthys cyanoguttatus	70	1
3384	Landa Lake	Val-2	2025-10-28	1	Procambarus sp.		1
3384	Landa Lake	Val-2	2025-10-28	1	Astyanax argentatus	21	1
3384	Landa Lake	Val-2	2025-10-28	1	Palaemonetes sp.		2
3384	Landa Lake	Val-2	2025-10-28	1	Lepomis sp.	12	1
3384	Landa Lake	Val-2	2025-10-28	2	Lepomis miniatus	27	1
3384	Landa Lake	Val-2	2025-10-28	2	Etheostoma fonticola	36	1
3384	Landa Lake	Val-2	2025-10-28	3	Procambarus sp.		2
3384	Landa Lake	Val-2	2025-10-28	4	Procambarus sp.		1
3384	Landa Lake	Val-2	2025-10-28	4	Etheostoma fonticola	21	1
3384	Landa Lake	Val-2	2025-10-28	5	Lepomis miniatus	66	1
3384	Landa Lake	Val-2	2025-10-28	5	Lepomis miniatus	25	1
3384	Landa Lake	Val-2	2025-10-28	5	Procambarus sp.		1

3384	Landa Lake	Val-2	2025-10-28	5	Etheostoma fonticola	33	1
3384	Landa Lake	Val-2	2025-10-28	6	Lepomis miniatus	34	1
3384	Landa Lake	Val-2	2025-10-28	6	Lepomis miniatus	55	1
3384	Landa Lake	Val-2	2025-10-28	6	Lepomis miniatus	28	1
3384	Landa Lake	Val-2	2025-10-28	6	Etheostoma fonticola	30	1
3384	Landa Lake	Val-2	2025-10-28	7	No fish collected		
3384	Landa Lake	Val-2	2025-10-28	8	No fish collected		
3384	Landa Lake	Val-2	2025-10-28	9	No fish collected		
3384	Landa Lake	Val-2	2025-10-28	10	Procambarus sp.		1
3384	Landa Lake	Val-2	2025-10-28	11	No fish collected		
3384	Landa Lake	Val-2	2025-10-28	12	Procambarus sp.		1
3384	Landa Lake	Val-2	2025-10-28	13	No fish collected		
3384	Landa Lake	Val-2	2025-10-28	14	No fish collected		
3384	Landa Lake	Val-2	2025-10-28	15	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	1	Etheostoma fonticola	20	1
3385	Landa Lake	Open-1	2025-10-28	2	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	3	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	4	Gambusia sp.	23	1
3385	Landa Lake	Open-1	2025-10-28	5	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	6	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	7	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	8	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	9	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	10	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	11	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	12	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	13	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	14	No fish collected		
3385	Landa Lake	Open-1	2025-10-28	15	No fish collected		
3386	Landa Lake	Cab-1	2025-10-28	1	Lepomis miniatus	42	1

3386	Landa Lake	Cab-1	2025-10-28	1	Palaemonetes sp.		8
3386	Landa Lake	Cab-1	2025-10-28	1	Procambarus sp.		3
3386	Landa Lake	Cab-1	2025-10-28	1	Etheostoma fonticola	23	1
3386	Landa Lake	Cab-1	2025-10-28	1	Etheostoma fonticola	18	1
3386	Landa Lake	Cab-1	2025-10-28	1	Etheostoma fonticola	22	1
3386	Landa Lake	Cab-1	2025-10-28	1	Astyanax argentatus	35	1
3386	Landa Lake	Cab-1	2025-10-28	1	Lepomis sp.	18	1
3386	Landa Lake	Cab-1	2025-10-28	2	Lepomis miniatus	86	1
3386	Landa Lake	Cab-1	2025-10-28	2	Gambusia sp.	10	1
3386	Landa Lake	Cab-1	2025-10-28	2	Gambusia sp.	15	1
3386	Landa Lake	Cab-1	2025-10-28	2	Etheostoma fonticola	34	1
3386	Landa Lake	Cab-1	2025-10-28	2	Palaemonetes sp.		2
3386	Landa Lake	Cab-1	2025-10-28	3	Lepomis miniatus	27	1
3386	Landa Lake	Cab-1	2025-10-28	3	Lepomis miniatus	31	1
3386	Landa Lake	Cab-1	2025-10-28	3	Etheostoma fonticola	22	1
3386	Landa Lake	Cab-1	2025-10-28	3	Etheostoma fonticola	16	1
3386	Landa Lake	Cab-1	2025-10-28	3	Etheostoma fonticola	19	1
3386	Landa Lake	Cab-1	2025-10-28	3	Palaemonetes sp.		3
3386	Landa Lake	Cab-1	2025-10-28	4	Palaemonetes sp.		2
3386	Landa Lake	Cab-1	2025-10-28	4	Etheostoma fonticola	22	1
3386	Landa Lake	Cab-1	2025-10-28	4	Etheostoma fonticola	17	1
3386	Landa Lake	Cab-1	2025-10-28	5	Etheostoma fonticola	17	1
3386	Landa Lake	Cab-1	2025-10-28	5	Etheostoma fonticola	23	1
3386	Landa Lake	Cab-1	2025-10-28	5	Etheostoma fonticola	35	1
3386	Landa Lake	Cab-1	2025-10-28	5	Etheostoma fonticola	25	1
3386	Landa Lake	Cab-1	2025-10-28	6	Lepomis miniatus	44	1
3386	Landa Lake	Cab-1	2025-10-28	6	Etheostoma fonticola	23	1
3386	Landa Lake	Cab-1	2025-10-28	6	Procambarus sp.		1
3386	Landa Lake	Cab-1	2025-10-28	6	Palaemonetes sp.		1
3386	Landa Lake	Cab-1	2025-10-28	6	Lepomis sp.	12	1

3386	Landa Lake	Cab-1	2025-10-28	7	Procambarus sp.		1
3386	Landa Lake	Cab-1	2025-10-28	7	Etheostoma fonticola	33	1
3386	Landa Lake	Cab-1	2025-10-28	7	Etheostoma fonticola	26	1
3386	Landa Lake	Cab-1	2025-10-28	8	Palaemonetes sp.		2
3386	Landa Lake	Cab-1	2025-10-28	8	Etheostoma fonticola	20	1
3386	Landa Lake	Cab-1	2025-10-28	8	Etheostoma fonticola	32	1
3386	Landa Lake	Cab-1	2025-10-28	8	Etheostoma fonticola	22	1
3386	Landa Lake	Cab-1	2025-10-28	9	Lepomis miniatus	42	1
3386	Landa Lake	Cab-1	2025-10-28	9	Palaemonetes sp.		2
3386	Landa Lake	Cab-1	2025-10-28	9	Etheostoma fonticola	21	1
3386	Landa Lake	Cab-1	2025-10-28	9	Etheostoma fonticola	34	1
3386	Landa Lake	Cab-1	2025-10-28	9	Etheostoma fonticola	32	1
3386	Landa Lake	Cab-1	2025-10-28	9	Etheostoma fonticola	15	1
3386	Landa Lake	Cab-1	2025-10-28	9	Etheostoma fonticola	21	1
3386	Landa Lake	Cab-1	2025-10-28	10	Etheostoma fonticola	29	1
3386	Landa Lake	Cab-1	2025-10-28	10	Palaemonetes sp.		2
3386	Landa Lake	Cab-1	2025-10-28	11	Procambarus sp.		1
3386	Landa Lake	Cab-1	2025-10-28	12	Procambarus sp.		1
3386	Landa Lake	Cab-1	2025-10-28	12	Etheostoma fonticola	30	1
3386	Landa Lake	Cab-1	2025-10-28	12	Palaemonetes sp.		2
3386	Landa Lake	Cab-1	2025-10-28	13	Etheostoma fonticola	32	1
3386	Landa Lake	Cab-1	2025-10-28	13	Etheostoma fonticola	22	1
3386	Landa Lake	Cab-1	2025-10-28	14	Etheostoma fonticola	33	1
3386	Landa Lake	Cab-1	2025-10-28	14	Palaemonetes sp.		1
3386	Landa Lake	Cab-1	2025-10-28	15	Etheostoma fonticola	30	1
3386	Landa Lake	Cab-1	2025-10-28	15	Palaemonetes sp.		3
3386	Landa Lake	Cab-1	2025-10-28	16	No fish collected		
3387	Landa Lake	Cab-2	2025-10-28	1	Lepomis miniatus	35	1
3387	Landa Lake	Cab-2	2025-10-28	1	Herichthys cyanoguttatus	46	1
3387	Landa Lake	Cab-2	2025-10-28	1	Etheostoma fonticola	22	1

3387	Landa Lake	Cab-2	2025-10-28	1	Etheostoma fonticola	16	1
3387	Landa Lake	Cab-2	2025-10-28	1	Etheostoma fonticola	17	1
3387	Landa Lake	Cab-2	2025-10-28	1	Etheostoma fonticola	20	1
3387	Landa Lake	Cab-2	2025-10-28	1	Etheostoma fonticola	25	1
3387	Landa Lake	Cab-2	2025-10-28	1	Palaemonetes sp.		6
3387	Landa Lake	Cab-2	2025-10-28	2	Etheostoma fonticola	31	1
3387	Landa Lake	Cab-2	2025-10-28	2	Etheostoma fonticola	30	1
3387	Landa Lake	Cab-2	2025-10-28	2	Etheostoma fonticola	31	1
3387	Landa Lake	Cab-2	2025-10-28	2	Etheostoma fonticola	29	1
3387	Landa Lake	Cab-2	2025-10-28	2	Etheostoma fonticola	18	1
3387	Landa Lake	Cab-2	2025-10-28	2	Palaemonetes sp.		5
3387	Landa Lake	Cab-2	2025-10-28	3	Palaemonetes sp.		1
3387	Landa Lake	Cab-2	2025-10-28	4	Palaemonetes sp.		2
3387	Landa Lake	Cab-2	2025-10-28	5	Etheostoma fonticola	22	1
3387	Landa Lake	Cab-2	2025-10-28	5	Etheostoma fonticola	35	1
3387	Landa Lake	Cab-2	2025-10-28	5	Etheostoma fonticola	22	1
3387	Landa Lake	Cab-2	2025-10-28	5	Palaemonetes sp.		2
3387	Landa Lake	Cab-2	2025-10-28	6	Etheostoma fonticola	33	1
3387	Landa Lake	Cab-2	2025-10-28	6	Palaemonetes sp.		2
3387	Landa Lake	Cab-2	2025-10-28	7	Procambarus sp.		1
3387	Landa Lake	Cab-2	2025-10-28	7	Palaemonetes sp.		2
3387	Landa Lake	Cab-2	2025-10-28	8	Etheostoma fonticola	12	1
3387	Landa Lake	Cab-2	2025-10-28	8	Etheostoma fonticola	34	1
3387	Landa Lake	Cab-2	2025-10-28	8	Etheostoma fonticola	19	1
3387	Landa Lake	Cab-2	2025-10-28	8	Palaemonetes sp.		1
3387	Landa Lake	Cab-2	2025-10-28	9	Etheostoma fonticola	24	1
3387	Landa Lake	Cab-2	2025-10-28	9	Etheostoma fonticola	22	1
3387	Landa Lake	Cab-2	2025-10-28	10	Etheostoma fonticola	23	1
3387	Landa Lake	Cab-2	2025-10-28	10	Etheostoma fonticola	19	1
3387	Landa Lake	Cab-2	2025-10-28	11	Etheostoma fonticola	22	1

3387	Landa Lake	Cab-2	2025-10-28	12	No fish collected		
3387	Landa Lake	Cab-2	2025-10-28	13	No fish collected		
3387	Landa Lake	Cab-2	2025-10-28	14	Etheostoma fonticola	32	1
3387	Landa Lake	Cab-2	2025-10-28	15	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	1	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	2	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	3	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	4	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	5	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	6	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	7	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	8	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	9	No fish collected		
3388	Landa Lake	Open-2	2025-10-28	10	No fish collected		
3389	Landa Lake	Bryo-1	2025-10-28	1	Palaemonetes sp.		1
3389	Landa Lake	Bryo-1	2025-10-28	2	Etheostoma fonticola	27	1
3389	Landa Lake	Bryo-1	2025-10-28	2	Etheostoma fonticola	18	1
3389	Landa Lake	Bryo-1	2025-10-28	2	Etheostoma fonticola	23	1
3389	Landa Lake	Bryo-1	2025-10-28	2	Etheostoma fonticola	17	1
3389	Landa Lake	Bryo-1	2025-10-28	3	Etheostoma fonticola	24	1
3389	Landa Lake	Bryo-1	2025-10-28	3	Etheostoma fonticola	14	1
3389	Landa Lake	Bryo-1	2025-10-28	3	Etheostoma fonticola	19	1
3389	Landa Lake	Bryo-1	2025-10-28	3	Etheostoma fonticola	23	1
3389	Landa Lake	Bryo-1	2025-10-28	3	Etheostoma fonticola	19	1
3389	Landa Lake	Bryo-1	2025-10-28	3	Etheostoma fonticola	21	1
3389	Landa Lake	Bryo-1	2025-10-28	3	Etheostoma fonticola	25	1
3389	Landa Lake	Bryo-1	2025-10-28	3	Gambusia sp.	10	1
3389	Landa Lake	Bryo-1	2025-10-28	3	Palaemonetes sp.		1
3389	Landa Lake	Bryo-1	2025-10-28	4	Etheostoma fonticola	31	1
3389	Landa Lake	Bryo-1	2025-10-28	4	Etheostoma fonticola	18	1

3389	Landa Lake	Bryo-1	2025-10-28	4	Etheostoma fonticola	20	1
3389	Landa Lake	Bryo-1	2025-10-28	4	Etheostoma fonticola	34	1
3389	Landa Lake	Bryo-1	2025-10-28	4	Palaemonetes sp.		1
3389	Landa Lake	Bryo-1	2025-10-28	5	Etheostoma fonticola	29	1
3389	Landa Lake	Bryo-1	2025-10-28	5	Etheostoma fonticola	25	1
3389	Landa Lake	Bryo-1	2025-10-28	5	Procambarus sp.		1
3389	Landa Lake	Bryo-1	2025-10-28	6	No fish collected		
3389	Landa Lake	Bryo-1	2025-10-28	7	Etheostoma fonticola	23	1
3389	Landa Lake	Bryo-1	2025-10-28	7	Etheostoma fonticola	24	1
3389	Landa Lake	Bryo-1	2025-10-28	7	Etheostoma fonticola	34	1
3389	Landa Lake	Bryo-1	2025-10-28	8	No fish collected		
3389	Landa Lake	Bryo-1	2025-10-28	9	Etheostoma fonticola	21	1
3389	Landa Lake	Bryo-1	2025-10-28	10	No fish collected		
3389	Landa Lake	Bryo-1	2025-10-28	11	Etheostoma fonticola	35	1
3389	Landa Lake	Bryo-1	2025-10-28	12	Etheostoma fonticola	18	1
3389	Landa Lake	Bryo-1	2025-10-28	13	Etheostoma fonticola	19	1
3389	Landa Lake	Bryo-1	2025-10-28	14	No fish collected		
3389	Landa Lake	Bryo-1	2025-10-28	15	No fish collected		
3389	Landa Lake	Bryo-1	2025-10-28	7	Procambarus sp.		1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	20	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	31	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	22	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	22	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	19	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	23	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	29	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	22	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	18	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	31	1
3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	22	1

3389	Landa Lake	Bryo-1	2025-10-28	1	Etheostoma fonticola	22	1
3390	Landa Lake	Bryo-2	2025-10-28	1	Etheostoma fonticola	22	1
3390	Landa Lake	Bryo-2	2025-10-28	1	Etheostoma fonticola	34	1
3390	Landa Lake	Bryo-2	2025-10-28	1	Etheostoma fonticola	18	1
3390	Landa Lake	Bryo-2	2025-10-28	1	Etheostoma fonticola	21	1
3390	Landa Lake	Bryo-2	2025-10-28	2	Etheostoma fonticola	20	1
3390	Landa Lake	Bryo-2	2025-10-28	2	Etheostoma fonticola	19	1
3390	Landa Lake	Bryo-2	2025-10-28	3	No fish collected		
3390	Landa Lake	Bryo-2	2025-10-28	4	No fish collected		
3390	Landa Lake	Bryo-2	2025-10-28	5	No fish collected		
3390	Landa Lake	Bryo-2	2025-10-28	6	Etheostoma fonticola	20	1
3390	Landa Lake	Bryo-2	2025-10-28	7	Etheostoma fonticola	20	1
3390	Landa Lake	Bryo-2	2025-10-28	8	Ameiurus natalis	21	1
3390	Landa Lake	Bryo-2	2025-10-28	8	Etheostoma fonticola	18	1
3390	Landa Lake	Bryo-2	2025-10-28	9	No fish collected		
3390	Landa Lake	Bryo-2	2025-10-28	10	No fish collected		
3390	Landa Lake	Bryo-2	2025-10-28	11	Etheostoma fonticola	23	1
3390	Landa Lake	Bryo-2	2025-10-28	12	Etheostoma fonticola	19	1
3390	Landa Lake	Bryo-2	2025-10-28	12	Etheostoma fonticola	24	1
3390	Landa Lake	Bryo-2	2025-10-28	13	No fish collected		
3390	Landa Lake	Bryo-2	2025-10-28	14	No fish collected		
3390	Landa Lake	Bryo-2	2025-10-28	15	Procambarus sp.		1
3390	Landa Lake	Bryo-2	2025-10-28	15	Etheostoma fonticola	20	1
3390	Landa Lake	Bryo-2	2025-10-28	16	No fish collected		
3391	Old Channel Reach	Open-1	2025-10-29	1	No fish collected		
3391	Old Channel Reach	Open-1	2025-10-29	2	No fish collected		
3391	Old Channel Reach	Open-1	2025-10-29	3	No fish collected		
3391	Old Channel Reach	Open-1	2025-10-29	4	No fish collected		
3391	Old Channel Reach	Open-1	2025-10-29	5	No fish collected		
3391	Old Channel Reach	Open-1	2025-10-29	6	No fish collected		

3391	Old Channel Reach	Open-1	2025-10-29	7	No fish collected		
3391	Old Channel Reach	Open-1	2025-10-29	8	No fish collected		
3391	Old Channel Reach	Open-1	2025-10-29	9	No fish collected		
3391	Old Channel Reach	Open-1	2025-10-29	10	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	1	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	2	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	3	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	4	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	5	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	6	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	7	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	8	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	9	No fish collected		
3392	Old Channel Reach	Open-2	2025-10-29	10	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	1	Lepomis miniatus	32	1
3393	Old Channel Reach	Lud-1	2025-10-29	1	Gambusia sp.	12	1
3393	Old Channel Reach	Lud-1	2025-10-29	2	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	3	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	4	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	5	Palaemonetes sp.		1
3393	Old Channel Reach	Lud-1	2025-10-29	6	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	7	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	8	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	9	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	10	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	11	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	12	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	13	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	14	No fish collected		
3393	Old Channel Reach	Lud-1	2025-10-29	15	No fish collected		

3394	Old Channel Reach	Lud-2	2025-10-29	1	Astyanax argentatus	68	1
3394	Old Channel Reach	Lud-2	2025-10-29	1	Astyanax argentatus	101	1
3394	Old Channel Reach	Lud-2	2025-10-29	2	Astyanax argentatus	72	1
3394	Old Channel Reach	Lud-2	2025-10-29	2	Etheostoma fonticola	32	1
3394	Old Channel Reach	Lud-2	2025-10-29	3	No fish collected		
3394	Old Channel Reach	Lud-2	2025-10-29	4	Astyanax argentatus	69	1
3394	Old Channel Reach	Lud-2	2025-10-29	5	Etheostoma fonticola	30	1
3394	Old Channel Reach	Lud-2	2025-10-29	6	No fish collected		
3394	Old Channel Reach	Lud-2	2025-10-29	7	Astyanax argentatus	56	1
3394	Old Channel Reach	Lud-2	2025-10-29	7	Etheostoma fonticola	29	1
3394	Old Channel Reach	Lud-2	2025-10-29	8	No fish collected		
3394	Old Channel Reach	Lud-2	2025-10-29	9	No fish collected		
3394	Old Channel Reach	Lud-2	2025-10-29	10	No fish collected		
3394	Old Channel Reach	Lud-2	2025-10-29	11	Etheostoma fonticola	28	1
3394	Old Channel Reach	Lud-2	2025-10-29	12	No fish collected		
3394	Old Channel Reach	Lud-2	2025-10-29	13	No fish collected		
3394	Old Channel Reach	Lud-2	2025-10-29	14	No fish collected		
3394	Old Channel Reach	Lud-2	2025-10-29	15	No fish collected		
3395	Old Channel Reach	Cab-1	2025-10-29	1	Lepomis miniatus	78	1
3395	Old Channel Reach	Cab-1	2025-10-29	1	Etheostoma fonticola	30	1
3395	Old Channel Reach	Cab-1	2025-10-29	1	Etheostoma fonticola	28	1
3395	Old Channel Reach	Cab-1	2025-10-29	1	Etheostoma fonticola	28	1
3395	Old Channel Reach	Cab-1	2025-10-29	1	Etheostoma fonticola	14	1
3395	Old Channel Reach	Cab-1	2025-10-29	1	Etheostoma fonticola	27	1
3395	Old Channel Reach	Cab-1	2025-10-29	1	Etheostoma fonticola	25	1
3395	Old Channel Reach	Cab-1	2025-10-29	1	Palaemonetes sp.		4
3395	Old Channel Reach	Cab-1	2025-10-29	1	Procambarus sp.		2
3395	Old Channel Reach	Cab-1	2025-10-29	2	Procambarus sp.		2
3395	Old Channel Reach	Cab-1	2025-10-29	2	Etheostoma fonticola	28	1
3395	Old Channel Reach	Cab-1	2025-10-29	2	Etheostoma fonticola	26	1

3395	Old Channel Reach	Cab-1	2025-10-29	2	Etheostoma fonticola	20	1
3395	Old Channel Reach	Cab-1	2025-10-29	2	Etheostoma fonticola	24	1
3395	Old Channel Reach	Cab-1	2025-10-29	2	Palaemonetes sp.		1
3395	Old Channel Reach	Cab-1	2025-10-29	2	Herichthys cyanoguttatus	19	1
3395	Old Channel Reach	Cab-1	2025-10-29	3	Procambarus sp.		3
3395	Old Channel Reach	Cab-1	2025-10-29	3	Herichthys cyanoguttatus	50	1
3395	Old Channel Reach	Cab-1	2025-10-29	4	Etheostoma fonticola	23	1
3395	Old Channel Reach	Cab-1	2025-10-29	4	Etheostoma fonticola	20	1
3395	Old Channel Reach	Cab-1	2025-10-29	5	Etheostoma fonticola	32	1
3395	Old Channel Reach	Cab-1	2025-10-29	5	Etheostoma fonticola	26	1
3395	Old Channel Reach	Cab-1	2025-10-29	5	Procambarus sp.		1
3395	Old Channel Reach	Cab-1	2025-10-29	6	Procambarus sp.		1
3395	Old Channel Reach	Cab-1	2025-10-29	7	Procambarus sp.		5
3395	Old Channel Reach	Cab-1	2025-10-29	7	Lepomis miniatus	30	1
3395	Old Channel Reach	Cab-1	2025-10-29	8	Procambarus sp.		1
3395	Old Channel Reach	Cab-1	2025-10-29	9	No fish collected		
3395	Old Channel Reach	Cab-1	2025-10-29	10	Etheostoma fonticola	31	1
3395	Old Channel Reach	Cab-1	2025-10-29	11	No fish collected		
3395	Old Channel Reach	Cab-1	2025-10-29	12	Procambarus sp.		2
3395	Old Channel Reach	Cab-1	2025-10-29	12	Etheostoma fonticola	29	1
3395	Old Channel Reach	Cab-1	2025-10-29	12	Etheostoma fonticola	27	1
3395	Old Channel Reach	Cab-1	2025-10-29	12	Etheostoma fonticola	29	1
3395	Old Channel Reach	Cab-1	2025-10-29	12	Palaemonetes sp.		2
3395	Old Channel Reach	Cab-1	2025-10-29	13	No fish collected		
3395	Old Channel Reach	Cab-1	2025-10-29	14	No fish collected		
3395	Old Channel Reach	Cab-1	2025-10-29	15	Procambarus sp.		1
3396	Old Channel Reach	Cab-2	2025-10-29	1	Herichthys cyanoguttatus	41	1
3396	Old Channel Reach	Cab-2	2025-10-29	1	Etheostoma fonticola	19	1
3396	Old Channel Reach	Cab-2	2025-10-29	1	Etheostoma fonticola	30	1
3396	Old Channel Reach	Cab-2	2025-10-29	1	Etheostoma fonticola	28	1

3396	Old Channel Reach	Cab-2	2025-10-29	1	Palaemonetes sp.		9
3396	Old Channel Reach	Cab-2	2025-10-29	1	Procambarus sp.		3
3396	Old Channel Reach	Cab-2	2025-10-29	2	Etheostoma fonticola	31	1
3396	Old Channel Reach	Cab-2	2025-10-29	2	Etheostoma fonticola	30	1
3396	Old Channel Reach	Cab-2	2025-10-29	2	Palaemonetes sp.		2
3396	Old Channel Reach	Cab-2	2025-10-29	2	Herichthys cyanoguttatus	32	1
3396	Old Channel Reach	Cab-2	2025-10-29	2	Procambarus sp.		2
3396	Old Channel Reach	Cab-2	2025-10-29	3	Etheostoma fonticola	35	1
3396	Old Channel Reach	Cab-2	2025-10-29	3	Etheostoma fonticola	26	1
3396	Old Channel Reach	Cab-2	2025-10-29	3	Etheostoma fonticola	32	1
3396	Old Channel Reach	Cab-2	2025-10-29	4	Procambarus sp.		3
3396	Old Channel Reach	Cab-2	2025-10-29	4	Etheostoma fonticola	32	1
3396	Old Channel Reach	Cab-2	2025-10-29	4	Etheostoma fonticola	28	1
3396	Old Channel Reach	Cab-2	2025-10-29	4	Palaemonetes sp.		1
3396	Old Channel Reach	Cab-2	2025-10-29	5	Etheostoma fonticola	27	1
3396	Old Channel Reach	Cab-2	2025-10-29	5	Etheostoma fonticola	25	1
3396	Old Channel Reach	Cab-2	2025-10-29	5	Etheostoma fonticola	30	1
3396	Old Channel Reach	Cab-2	2025-10-29	6	No fish collected		
3396	Old Channel Reach	Cab-2	2025-10-29	7	Lepomis miniatus	32	1
3396	Old Channel Reach	Cab-2	2025-10-29	7	Procambarus sp.		1
3396	Old Channel Reach	Cab-2	2025-10-29	8	Etheostoma fonticola	32	1
3396	Old Channel Reach	Cab-2	2025-10-29	8	Procambarus sp.		2
3396	Old Channel Reach	Cab-2	2025-10-29	9	Procambarus sp.		1
3396	Old Channel Reach	Cab-2	2025-10-29	9	Palaemonetes sp.		1
3396	Old Channel Reach	Cab-2	2025-10-29	9	Etheostoma fonticola	26	1
3396	Old Channel Reach	Cab-2	2025-10-29	10	Procambarus sp.		2
3396	Old Channel Reach	Cab-2	2025-10-29	11	Procambarus sp.		2
3396	Old Channel Reach	Cab-2	2025-10-29	11	Etheostoma fonticola	32	1
3396	Old Channel Reach	Cab-2	2025-10-29	11	Etheostoma fonticola	28	1
3396	Old Channel Reach	Cab-2	2025-10-29	11	Etheostoma fonticola	27	1

3396	Old Channel Reach	Cab-2	2025-10-29	11	Palaemonetes sp.		1
3396	Old Channel Reach	Cab-2	2025-10-29	12	Procambarus sp.		3
3396	Old Channel Reach	Cab-2	2025-10-29	12	Etheostoma fonticola	28	1
3396	Old Channel Reach	Cab-2	2025-10-29	12	Palaemonetes sp.		1
3396	Old Channel Reach	Cab-2	2025-10-29	13	Etheostoma fonticola	33	1
3396	Old Channel Reach	Cab-2	2025-10-29	13	Procambarus sp.		1
3396	Old Channel Reach	Cab-2	2025-10-29	14	Procambarus sp.		2
3396	Old Channel Reach	Cab-2	2025-10-29	15	Etheostoma fonticola	19	1
3396	Old Channel Reach	Cab-2	2025-10-29	16	No fish collected		
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Herichthys cyanoguttatus	25	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Herichthys cyanoguttatus	45	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Herichthys cyanoguttatus	28	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Herichthys cyanoguttatus	31	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Herichthys cyanoguttatus	40	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Lepomis miniatus	65	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Lepomis miniatus	29	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Lepomis miniatus	32	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Astyanax argentatus	41	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Astyanax argentatus	38	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Astyanax argentatus	35	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Dionda nigrotaeniata	27	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Dionda nigrotaeniata	25	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Dionda nigrotaeniata	28	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Lepomis sp.	13	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Lepomis sp.	14	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Lepomis sp.	17	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Lepomis sp.	18	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Lepomis sp.	18	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Lepomis sp.	18	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Palaemonetes sp.		2

3397	Upper New Channel Reach	Hyg-1	2025-10-31	1	Gambusia sp.	15	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Procambarus sp.		4
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Herichthys cyanoguttatus	40	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Herichthys cyanoguttatus	44	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Herichthys cyanoguttatus	40	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Herichthys cyanoguttatus	45	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Herichthys cyanoguttatus	22	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Herichthys cyanoguttatus	26	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Lepomis miniatus	45	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Lepomis miniatus	33	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Etheostoma fonticola	23	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Etheostoma fonticola	33	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	2	Palaemonetes sp.		1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Lepomis miniatus	35	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Astyanax argentatus	30	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Astyanax argentatus	18	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Astyanax argentatus	36	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Etheostoma fonticola	14	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Etheostoma fonticola	35	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Etheostoma fonticola	28	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Dionda nigrotaeniata	33	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Palaemonetes sp.		2
3397	Upper New Channel Reach	Hyg-1	2025-10-31	3	Procambarus sp.		1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	4	Palaemonetes sp.		1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	4	Lepomis sp.	20	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	4	Lepomis miniatus	30	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Dionda nigrotaeniata	35	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Dionda nigrotaeniata	40	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Lepomis miniatus	29	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Lepomis miniatus	27	1

3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Lepomis miniatus	25	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Palaemonetes sp.		1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Etheostoma fonticola	24	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Etheostoma fonticola	18	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Astyanax argentatus	12	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Astyanax argentatus	16	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	5	Procambarus sp.		1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	6	Herichthys cyanoguttatus	38	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	6	Lepomis sp.	18	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	6	Lepomis sp.	18	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	6	Etheostoma fonticola	20	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	7	Astyanax argentatus	27	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	7	Lepomis miniatus	32	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	7	Etheostoma fonticola	25	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	7	Gambusia sp.	12	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	7	Palaemonetes sp.		1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	8	Lepomis miniatus	31	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	8	Palaemonetes sp.		2
3397	Upper New Channel Reach	Hyg-1	2025-10-31	9	Lepomis sp.	16	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	9	Etheostoma fonticola	28	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	10	Lepomis sp.	13	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	10	Procambarus sp.		1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	10	Etheostoma fonticola	13	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	11	Lepomis miniatus	58	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	11	Lepomis miniatus	25	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	11	Lepomis miniatus	35	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	11	Lepomis miniatus	25	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	11	Lepomis miniatus	24	1
3397	Upper New Channel Reach	Hyg-1	2025-10-31	12	No fish collected		
3397	Upper New Channel Reach	Hyg-1	2025-10-31	13	No fish collected		

3397	Upper New Channel Reach	Hyg-1	2025-10-31	14	No fish collected		
3397	Upper New Channel Reach	Hyg-1	2025-10-31	15	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	1	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	2	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	3	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	4	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	5	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	6	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	7	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	8	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	9	No fish collected		
3398	Upper New Channel Reach	Open-1	2025-10-31	10	No fish collected		
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	31	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	25	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	28	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	30	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	18	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	20	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	17	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	30	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	26	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	21	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Gambusia sp.	25	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	26	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	25	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	19	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	13	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	20	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	16	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	18	1

3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	22	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	21	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	21	1
3399	Upper New Channel Reach	Open-2	2025-10-31	1	Poecilia latipinna	26	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	15	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	17	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	38	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	33	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	23	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	18	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	25	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	25	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	23	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.	20	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Poecilia latipinna	20	1

3399	Upper New Channel Reach	Open-2	2025-10-31	2	Poecilia latipinna	27	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Poecilia latipinna	14	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Poecilia latipinna	22	1
3399	Upper New Channel Reach	Open-2	2025-10-31	2	Poecilia latipinna	21	1
3399	Upper New Channel Reach	Open-2	2025-10-31	3	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	3	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	3	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	3	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	3	Poecilia latipinna	19	1
3399	Upper New Channel Reach	Open-2	2025-10-31	4	Poecilia latipinna	12	1
3399	Upper New Channel Reach	Open-2	2025-10-31	5	Poecilia latipinna	22	1
3399	Upper New Channel Reach	Open-2	2025-10-31	5	Poecilia latipinna	17	1
3399	Upper New Channel Reach	Open-2	2025-10-31	5	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	5	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	6	Poecilia latipinna		1
3399	Upper New Channel Reach	Open-2	2025-10-31	6	Poecilia latipinna		1
3399	Upper New Channel Reach	Open-2	2025-10-31	7	No fish collected		
3399	Upper New Channel Reach	Open-2	2025-10-31	8	No fish collected		
3399	Upper New Channel Reach	Open-2	2025-10-31	9	No fish collected		
3399	Upper New Channel Reach	Open-2	2025-10-31	10	No fish collected		
3399	Upper New Channel Reach	Open-2	2025-10-31	11	No fish collected		
3399	Upper New Channel Reach	Open-2	2025-10-31	12	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	12	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	13	No fish collected		
3399	Upper New Channel Reach	Open-2	2025-10-31	14	No fish collected		
3399	Upper New Channel Reach	Open-2	2025-10-31	15	Etheostoma fonticola	27	1
3399	Upper New Channel Reach	Open-2	2025-10-31	15	Gambusia sp.		1
3399	Upper New Channel Reach	Open-2	2025-10-31	15	Poecilia latipinna		1
3399	Upper New Channel Reach	Open-2	2025-10-31	15	Poecilia latipinna		1
3399	Upper New Channel Reach	Open-2	2025-10-31	15	Poecilia latipinna		1

3399	Upper New Channel Reach	Open-2	2025-10-31	16	Poecilia latipinna		1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Oreochromis aureus	72	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Oreochromis aureus	26	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Dionda nigrotaeniata	29	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Dionda nigrotaeniata	25	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Dionda nigrotaeniata	30	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Dionda nigrotaeniata	17	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Dionda nigrotaeniata	24	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	32	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	30	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	28	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	22	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	25	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	27	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	28	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	27	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	15	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Astyanax argentatus	14	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Lepomis sp.	10	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Lepomis sp.	15	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Lepomis sp.	9	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Lepomis sp.	14	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Gambusia sp.	18	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Gambusia sp.	8	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Gambusia sp.	10	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Gambusia sp.	18	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Gambusia sp.	10	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Palaemonetes sp.		1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Lepomis miniatus	40	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Lepomis miniatus	28	1

3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Lepomis miniatus	25	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Lepomis miniatus	23	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	1	Lepomis miniatus	26	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Dionda nigrotaeniata	28	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Dionda nigrotaeniata	36	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Dionda nigrotaeniata	25	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Dionda nigrotaeniata	25	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Dionda nigrotaeniata	20	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Gambusia sp.	20	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Gambusia sp.	30	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Procambarus sp.		1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Lepomis cyanellus	70	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Herichthys cyanoguttatus	50	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Herichthys cyanoguttatus	53	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Astyanax argentatus	30	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Astyanax argentatus	10	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Astyanax argentatus	20	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	2	Lepomis sp.	12	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	3	Herichthys cyanoguttatus	32	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	3	Gambusia sp.	10	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	3	Gambusia sp.	28	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	3	Lepomis miniatus	28	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	3	Astyanax argentatus	22	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	3	Palaemonetes sp.		1
3400	Upper New Channel Reach	Cab-1	2025-10-31	4	Dionda nigrotaeniata	30	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	4	Herichthys cyanoguttatus	32	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	4	Herichthys cyanoguttatus	32	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	5	Lepomis miniatus	50	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	5	Gambusia sp.	14	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	5	Palaemonetes sp.		1

3400	Upper New Channel Reach	Cab-1	2025-10-31	6	Lepomis miniatus	38	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	6	Etheostoma fonticola	26	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	7	Lepomis miniatus	42	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	7	Lepomis miniatus	40	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	8	Palaemonetes sp.		2
3400	Upper New Channel Reach	Cab-1	2025-10-31	8	Lepomis miniatus	35	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	8	Procambarus sp.		1
3400	Upper New Channel Reach	Cab-1	2025-10-31	9	Lepomis miniatus	57	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	9	Lepomis miniatus	25	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	9	Lepomis miniatus	32	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	10	No fish collected		
3400	Upper New Channel Reach	Cab-1	2025-10-31	11	No fish collected		
3400	Upper New Channel Reach	Cab-1	2025-10-31	12	Lepomis cyanellus	60	1
3400	Upper New Channel Reach	Cab-1	2025-10-31	12	Palaemonetes sp.		1
3400	Upper New Channel Reach	Cab-1	2025-10-31	13	Procambarus sp.		1
3400	Upper New Channel Reach	Cab-1	2025-10-31	14	No fish collected		
3400	Upper New Channel Reach	Cab-1	2025-10-31	15	No fish collected		
3400	Upper New Channel Reach	Cab-1	2025-10-31	9	Palaemonetes sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	52	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	30	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	25	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	21	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	20	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	18	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	10	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	10	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	10	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	21	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	9	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	10	1

3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	10	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	15	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	17	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	10	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	10	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	14	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	10	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.	12	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis miniatus	28	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis miniatus	24	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis miniatus	25	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis miniatus	27	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis miniatus	22	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Dionda nigrotaeniata	21	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Dionda nigrotaeniata	20	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Dionda nigrotaeniata	22	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Dionda nigrotaeniata	20	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	22	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	22	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	22	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	16	1

3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	22	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	15	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	18	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	11	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	10	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Astyanax argentatus	12	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Etheostoma fonticola	30	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Etheostoma fonticola	16	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Etheostoma fonticola	21	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis sp.	18	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis sp.	15	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis sp.	15	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis sp.	14	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis sp.	15	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Lepomis sp.	12	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Poecilia latipinna	26	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Poecilia latipinna	23	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Poecilia latipinna	25	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Palaemonetes sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	1	Procambarus sp.		2
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Lepomis miniatus	27	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Lepomis miniatus	24	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Procambarus sp.		3
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Poecilia latipinna	35	1

3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Poecilia latipinna	20	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Poecilia latipinna	32	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Poecilia latipinna	27	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Astyanax argentatus	32	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Palaemonetes sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Etheostoma fonticola	17	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	2	Lepomis sp.	18	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Procambarus sp.		2
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Dionda nigrotaeniata	17	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Poecilia latipinna	25	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Poecilia latipinna	22	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Poecilia latipinna	22	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Poecilia latipinna	18	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Poecilia latipinna	34	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Poecilia latipinna	15	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Lepomis miniatus	35	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	3	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	4	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	4	Procambarus sp.		4
3401	Upper New Channel Reach	Cab-2	2025-10-31	4	Poecilia latipinna	32	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	4	Poecilia latipinna	24	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	4	Etheostoma fonticola	30	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	5	Dionda nigrotaeniata	22	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	5	Lepomis sp.	15	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	5	Procambarus sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	5	Etheostoma fonticola	26	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	5	Etheostoma fonticola	17	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	6	No fish collected		

3401	Upper New Channel Reach	Cab-2	2025-10-31	7	Etheostoma fonticola	27	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	7	Etheostoma fonticola	19	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	7	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	8	No fish collected		
3401	Upper New Channel Reach	Cab-2	2025-10-31	9	Etheostoma fonticola	30	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	9	Gambusia sp.		1
3401	Upper New Channel Reach	Cab-2	2025-10-31	10	No fish collected		
3401	Upper New Channel Reach	Cab-2	2025-10-31	11	Lepomis gulosus	120	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	11	Lepomis sp.	20	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	11	Lepomis miniatus	42	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	12	Procambarus sp.		2
3401	Upper New Channel Reach	Cab-2	2025-10-31	13	Etheostoma fonticola	28	1
3401	Upper New Channel Reach	Cab-2	2025-10-31	14	No fish collected		
3401	Upper New Channel Reach	Cab-2	2025-10-31	15	No fish collected		
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Herichthys cyanoguttatus	21	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Herichthys cyanoguttatus	32	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Herichthys cyanoguttatus	35	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Herichthys cyanoguttatus	40	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Herichthys cyanoguttatus	33	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Lepomis sp.	14	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Gambusia sp.	25	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Gambusia sp.	19	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Gambusia sp.	15	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Gambusia sp.	20	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Gambusia sp.	10	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Gambusia sp.	10	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Gambusia sp.	12	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Lepomis miniatus	28	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Lepomis miniatus	25	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Lepomis miniatus	35	1

3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Lepomis miniatus	28	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Lepomis miniatus	28	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Lepomis miniatus	34	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Lepomis miniatus	30	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Lepomis miniatus	28	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Etheostoma fonticola	35	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Palaemonetes sp.		7
3402	Upper New Channel Reach	Hyg-2	2025-10-31	1	Oreochromis aureus	24	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Procambarus sp.		1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Lepomis miniatus	25	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Lepomis miniatus	30	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Lepomis miniatus	30	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Palaemonetes sp.		4
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Herichthys cyanoguttatus	38	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Herichthys cyanoguttatus	35	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Herichthys cyanoguttatus	40	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Procambarus sp.		1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Lepomis sp.	10	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Lepomis sp.	20	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Astyanax argentatus	12	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Astyanax argentatus	28	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	2	Gambusia sp.	10	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	3	Palaemonetes sp.		4
3402	Upper New Channel Reach	Hyg-2	2025-10-31	3	Procambarus sp.		3
3402	Upper New Channel Reach	Hyg-2	2025-10-31	3	Herichthys cyanoguttatus	38	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	3	Astyanax argentatus	28	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	3	Lepomis sp.	20	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	3	Lepomis sp.	18	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	3	Lepomis miniatus	31	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Herichthys cyanoguttatus	22	1

3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Gambusia sp.	28	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Dionda nigrotaeniata	23	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Lepomis cyanellus	54	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Procambarus sp.		1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Astyanax argentatus	12	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Etheostoma fonticola	29	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Etheostoma fonticola	28	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Etheostoma fonticola	28	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Lepomis miniatus	36	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Lepomis miniatus	32	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	4	Palaemonetes sp.		1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	5	Procambarus sp.		2
3402	Upper New Channel Reach	Hyg-2	2025-10-31	5	Lepomis miniatus	19	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	5	Dionda nigrotaeniata	27	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	5	Astyanax argentatus	18	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	6	Palaemonetes sp.		2
3402	Upper New Channel Reach	Hyg-2	2025-10-31	6	Lepomis miniatus	24	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	6	Lepomis miniatus	23	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	7	Lepomis miniatus	31	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	7	Herichthys cyanoguttatus	25	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	8	Etheostoma fonticola	24	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	8	Lepomis miniatus	27	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	9	Dionda nigrotaeniata	26	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	10	Lepomis miniatus	37	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	10	Astyanax argentatus	17	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	10	Etheostoma fonticola	23	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	11	Lepomis miniatus	40	1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	11	Palaemonetes sp.		1
3402	Upper New Channel Reach	Hyg-2	2025-10-31	12	No fish collected		
3402	Upper New Channel Reach	Hyg-2	2025-10-31	13	Lepomis gulosus	116	1

3402	Upper New Channel Reach	Hyg-2	2025-10-31	14	No fish collected		
3402	Upper New Channel Reach	Hyg-2	2025-10-31	15	Lepomis aquilensis	60	1

APPENDIX H: FOUNTAIN DARTER HABITAT SUITABILITY ANALYTICAL FRAMEWORK

OBJECTIVES

The goal of this analysis was to develop an index to quantify Fountain Darter habitat suitability within biological monitoring study reaches based on aquatic vegetation composition. Specific objectives included: (1) build Habitat Suitability Criteria (HSC) for each vegetation taxa; (2) use HSC to calculate an Overall Habitat Suitability Index (OHSI) based on vegetation community composition mapped at a given study reach during each monitoring event; (3) evaluate the efficacy of OHSI as a measure of Fountain Darter habitat suitability by testing whether Fountain Darter occurrence can be predicted based on OHSI.

METHODS

Habitat Suitability Criteria

HSC are a form of resource selection function (RSF) defined as any function that is proportional to the probability of use by an organism (Manly et al. 1993). HSC were built separately for the Comal and San Marcos river/springs systems using logistic regression based on random-station dip-net data and drop-net data converted to presence/absence. Logistic regression is a form of classification model that uses presence/absence data to predict probabilities based on a set of covariates (Hastie et al. 2009). The response variable for this analysis, probability of darter occurrence, was used to quantify criteria for each vegetation type, ranging from 0 (i.e., not suitable) to 1 (i.e., most suitable) (Figure H1).

OHSI Calculation

To calculate the OHSI for each monitoring event, HSC values for each vegetation strata were first multiplied by the areal coverage of that vegetation strata, and these values were summed across all vegetation strata within each study reach, to generate a Weighted Usable Area (WUA) of vegetation only as follows:

Eq. 1 $$WUA = \sum_{i=1}^{N}(A_i \ x \ HSC_i)$$

where N is the total number of vegetation types, A_i is the areal coverage of a single vegetation type, and HSC_i is the habitat suitability criteria of that single vegetation type (Yao & Bamal 2014).

This WUA was then divided by the total wetted area within the reach to generate OHSI, as follows:

Eq. 2 $$OHSI = \frac{WUA}{\sum_{i=1}^{N}(A_i)}$$

In this way, OHSI can also be thought of as the proportion of weighted usable area (Yao & Bamal 2014), ranging from 0 (unsuitable overall habitat) to 1 (most suitable overall habitat). Standardizing by reach size allows for a comparison of habitat quality between reaches of different sizes.

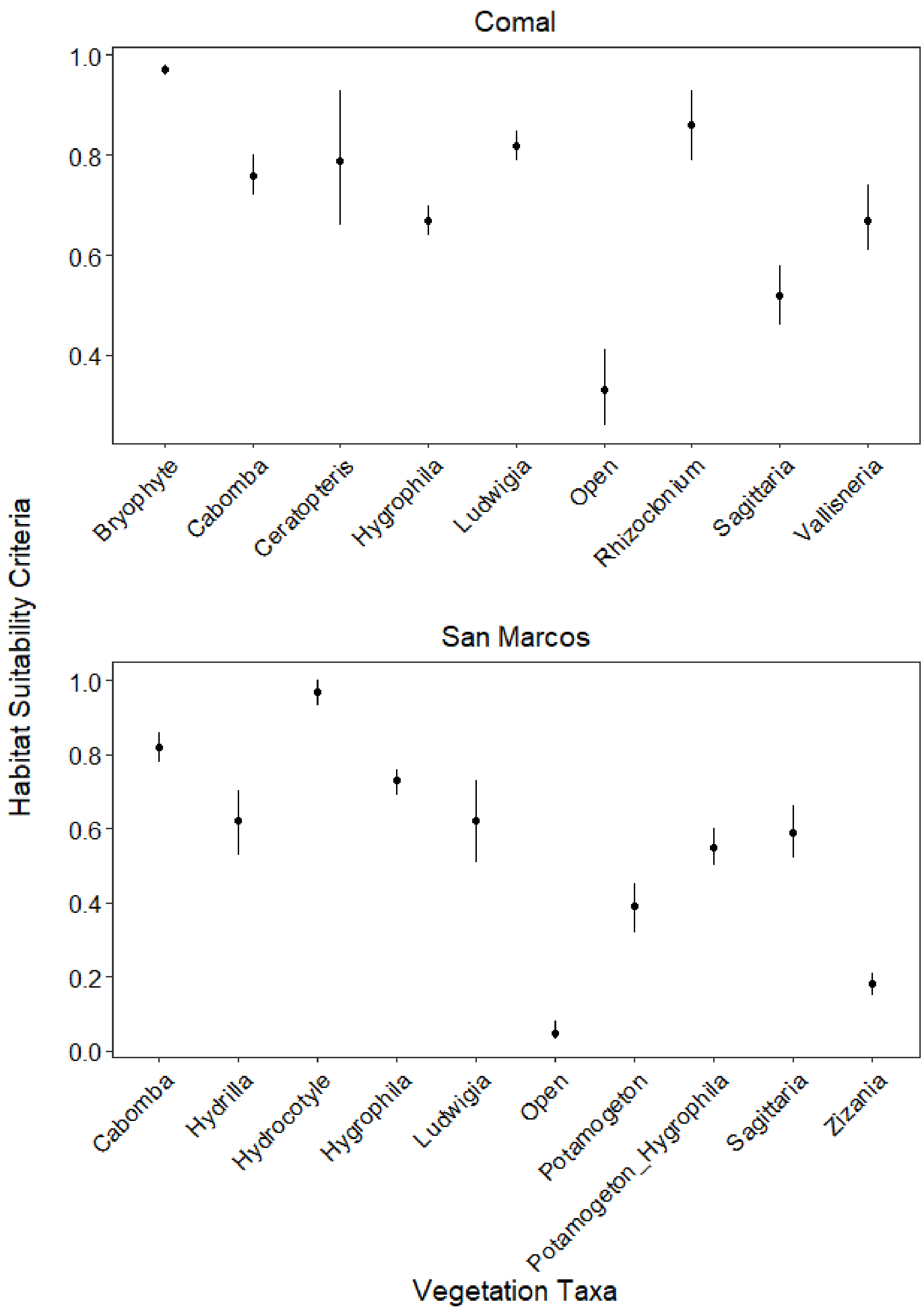

Figure H1. **Aquatic vegetation habitat suitability criteria (±95% CI) built with drop-net and random dip-net datasets using logistic regression.**

OHSI Evaluation

OHSI Evaluation Methods

To examine the relationship between OHSI and Fountain Darter population metrics, random-station dip-net data from 2017-2020 was organized in a way that treats each monitoring event per study reach as independent. This results in the response variable quantified as the proportional occurrence of Fountain Darters per reach at a given monitoring event based on the independent variable OHSI.

To predict Fountain Darter occurrence, two modeling approaches that are able to analyze proportions were used, which included: (1) GLM with a binomial distribution and (2) Random Forest Regression (RF). RF is an ensemble learning technique that builds many decision trees to predict a response variable (Breiman et al. 1984). Each decision tree of the "forest" is built by selecting a random subset of the dataset with replacement and a random set of covariates (Liaw & Wiener 2002). RF are considered more advantageous compared to traditional decision tree models and GLM because they correct for overfitting (Breiman 2001) and can provide more accurate predictions with many covariates (Cutler et al. 2007). For this analysis, we built RF models with 500 trees.

GLMs and RFs were built separately for the Comal and San Marcos systems. First, 50% of each dataset was randomly selected to train each model. Second, 5-fold cross validation (CV) was used to independently test the predictive performance of each model with the remaining 50% of the dataset (i.e., test data). Predictive performance was compared among models based on the correlation (R) and deviance (D) between observed and predicted values. Mean CV R ± standard error (SE) and CV D ± SE were calculated based on predictions from the 5 CV folds. Models with the highest CV R were considered as the best models for making predictions and elaborated on further in the results.

Lastly, figures were built to display fitted predictions across observed OHSI values to examine if there was a positive relationship between Fountain Darter occurrence and OHSI. Fitted predictions were also presented with a LOWESS smoothed function to visualize if trends of OHSI are linear or nonlinear (Milborrow 2020). In sum, if the models displayed strong predictive power and Fountain Darter occurrence showed a positive relationship with OHSI, then OHSI was considered a useful measurement of habitat suitability for Fountain Darters.

OHSI Evaluation Results

Predictive performance for the Comal models showed that RF (0.81 ± 0.18) predictions were more accurate than GLM (0.62 ± 0.20). San Marcos models were similar, showing better predictive accuracy for RF (0.97 ± 0.02) compared to GLM (0.93 ± 0.06) (Table H1). Comparisons between observed vs. predicted occurrence for the RF 5-fold CV demonstrated lowest predictive accuracy at observed proportions about 0.20 or less for the Comal and San Marcos (Figure H2).

Fitted predictions of occurrence as a function of OHSI showed that occurrence increased with increasing OHSI for the Comal and San Marcos. In the Comal, LOWESS smoothed predictions exhibited a non-linear asymptotic trend. Occurrence increased about 0.60 to 0.80 when OHSI increased from about 0.65 to 0.75 and remained around 0.80 at OHSI values >0.75. In the San Marcos, LOWESS smoothed predictions exhibited a more linear trend compared to the Comal and occurrence increased from about 0.25 to 0.55 as OHSI increased from 0.25 to 0.60 (Figure H3).

Table H1. Summary model performance statistics for predicting Fountain Darter occurrence based on OHSI. Summary statistics includes deviance (D) and correlation (R) for training data and 5-fold cross-validation (SE).

	Comal		San Marcos	
	GLM	RF	GLM	RF
Training Data				
Deviance	1.10	1.03	1.23	1.20
Correlation	0.48	0.77	0.70	0.89
Cross-Validation				
Deviance	1.12 (0.05)	1.05 (0.06)	1.24 (0.07)	1.21 (0.05)
Correlation	0.62 (0.20)	0.81 (0.18)	0.93 (0.06)	0.97 (0.02)

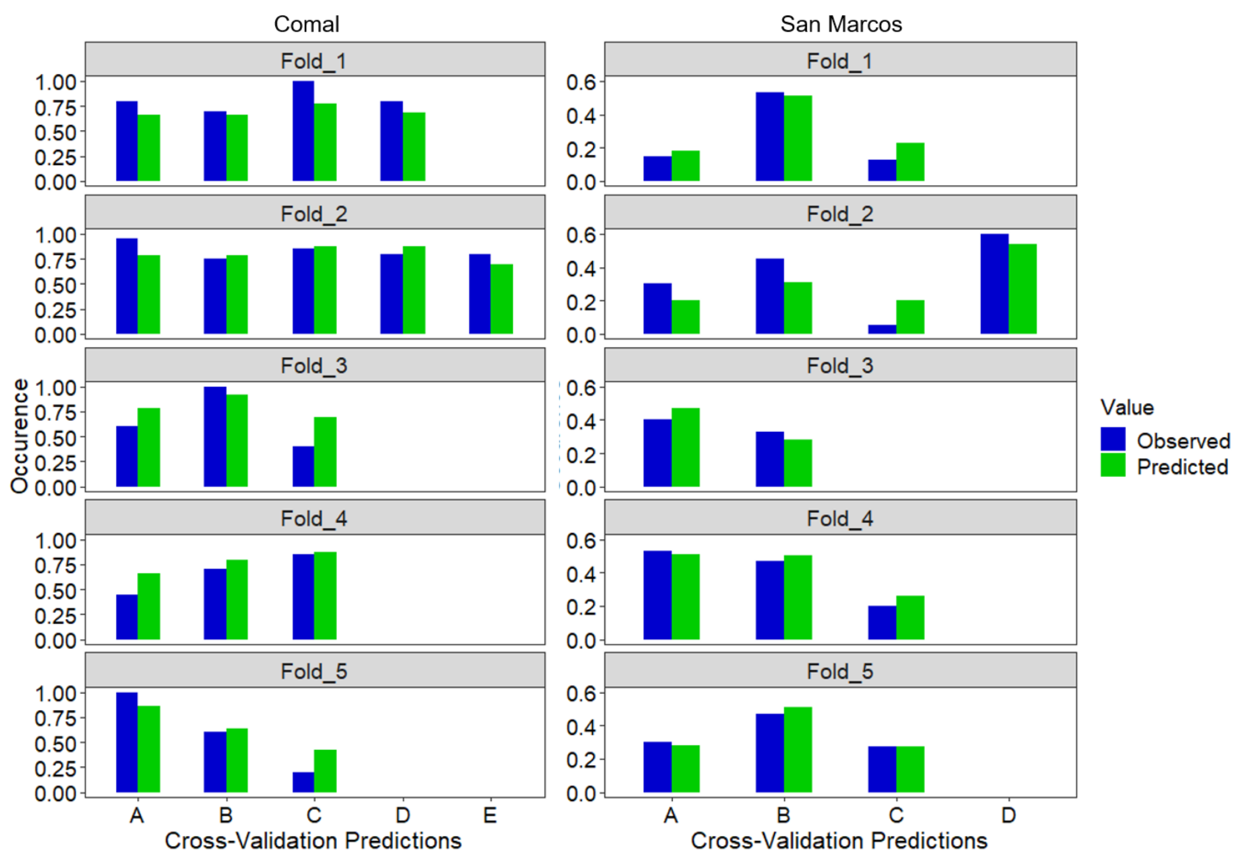

Figure H2. Observed vs. predicted Fountain Darter occurrence in relationship to OHSI from Random Forest 5-fold cross-validation.

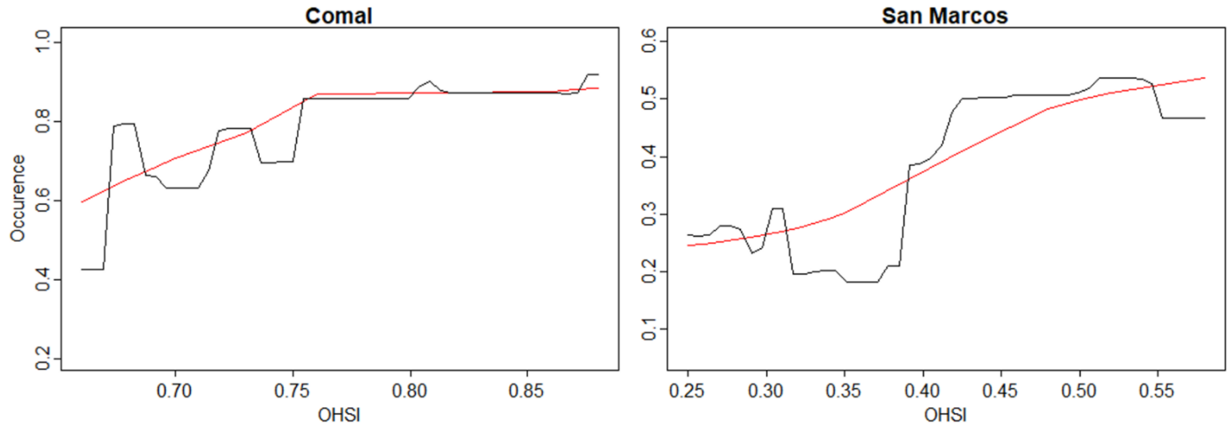

Figure H3. **Fitted occurrence predictions for OHSI in the Comal Springs/River and San Marcos River. The red lines are LOWESS smoothed fitted predictions used to visualize nonlinear trends.**

OHSI EVALUATION DISCUSSION

Model CV R >0.80 for all RFs demonstrate good model performance and that Fountain Darter occurrence can be accurately predicted based on OHSI. Further, similar performance statistics for training data and test data via cross-validation indicated that the training models were not overfit and can reliably predict independent observations in the future. That being said, predictions were least accurate at observed occurrence values about 0.20 or less, which is likely due to smaller sample sizes in this range. As random station dip-net sampling continues during future biomonitoring activities, predictions at these lower occurrence values will likely improve. Fountain Darter occurrence also increased with increasing OHSI. The positive relationship between occurrence and OHSI and good model performance supports that OHSI is an ecologically relevant index for evaluating Fountain Darter habitat suitability based on vegetation community composition.

In sum, this analysis demonstrated that OHSI based on vegetation-specific HSC and reach-level vegetation composition data can accurately predict Fountain Darter occurrence and is a useful measurement for quantifying habitat suitability. However, additional data collection can assist in addressing multiple limitations of this analysis. Firstly, random station dip-net data with simple random sampling is only available from about 2017-2020, which limits the ability to predict occurrence from historical observations. Further, model performance would likely improve at lower occurrence values as additional data are collected and a more robust dataset is generated. Secondly, this analysis assumed that vegetation alone determines Fountain Darter occurrence. For example, decreased predictive accuracy at lower darter occurrence values may be due to other habitat factors (e.g., depth-flow conditions, river discharge) or biotic factors (e.g., competition, predation) rather than due to smaller sample sizes of lower occurrence values; however, a multi-factor ecological model is beyond the scope of this work. In addition, OHSI can only be assessed for vegetation taxa that have been sampled previously and building HSC for rare vegetation taxa not represented may improve predictions. That being said, RF models demonstrated that occurrence can be predicted accurately without including additional habitat variables or vegetation types, supporting that this assumption does not hinder this analysis and does not appear to restrict the inference value of OHSI.

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