HABITAT CONSERVATION PLAN

BIOLOGICAL MONITORING PROGRAM

Comal Springs/River Aquatic Ecosystem

ANNUAL REPORT

December 2020

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EXECUTIVE SUMMARY

The Edwards Aquifer Habitat Conservation Plan (HCP) Biological Monitoring Program continued to track biota and habitat conditions of the Comal Springs/River ecosystem in 2020 through a series of monitoring activities outlined in this report. Monitoring in the Comal system consisted of surveys specific to HCP Covered Species—Fountain Darter (*Etheostoma fonticola*), Comal Springs Salamander (*Eurycea* sp.), and multiple Comal Springs invertebrates. Additional community-level monitoring data were also collected on aquatic vegetation, fish, and benthic macroinvertebrates. City access points along the New Channel were closed to the public in the spring and summer due to the COVID-19 pandemic, which provided a unique opportunity to assess aquatic floral and faunal communities with limited recreational disturbance. The results from 2020 biological monitoring provide valuable data to further assess spatiotemporal trends of aquatic biota within the Comal Springs/River ecosystem.

In 2020, Comal River mean daily discharge showed minimal variation among months from historical medians and did not fall outside of 10th-percentile or 90th-percentile flow levels. Monthly median discharge ranged from 246 cubic feet per second (cfs) in August to 325 cfs in February. The highest observed mean daily discharge in 2020 was 394 cfs in May, and the lowest was 235 cfs in August. Spring discharge and percent total discharge were similar to historical averages at most stations. Median water temperature was similar between locations near the springs (Heidelberg, Landa Lake) and more variable in river locations (New Channel, Other Place). Maximum optimal temperature threshold for Fountain Darter larval production was exceeded for part of the year at the New Channel and the Other Place, and the optimal temperature threshold for Fountain Darter egg production was also exceeded at the Other Place.

Aquatic vegetation coverage in 2020 was similar to long-term seasonal averages at Landa Lake and Old Channel. At Upper Spring Run, coverage was higher than the long-term spring average, but lower than the fall average. Vegetation coverage was higher than long-term averages at the Upper New Channel and Lower New Channel reaches, which may be related to minimal recreational disturbance due to the COVID-19 pandemic. Among vegetation types, bryophytes were reduced in fall at Upper Spring Run and Landa Lake. Bryophytes at Landa Lake were less robust compared to previous years and seemed to be replaced by *Rhizoclonium*. Native rooted vegetation increased in the Old Channel and observations indicate this reach has potential to become a self-sustaining *Ludwigia*- and *Cabomba*-dominated community due to limited occurrence of competitive species and consistent growing conditions.

Fountain Darter density and occurrence in 2020 supported previous research that observed Fountain Darters more frequently within ornate vegetation. Long, austere-leaved taxa are considered less suitable habitat. Despite this, *Vallisneria* exhibited the second-highest median density in 2020, potentially due to the presence of bryophytes. Smaller darters at lengths of approximately 20 mm or less were more frequent in ornate vegetation as the complex leaf structure likely provides more cover for these smaller size classes. Age 0 darters were more frequently observed in spring compared to fall. This is consistent with previous data and supports a late-winter/early spring reproductive peak. Fountain Darter median density from drop-net sampling and percent occurrence from random-station dip-netting were above historical values in spring and below historical values in fall. Reductions in bryophyte coverage and quality within Landa Lake and Upper Spring Run in fall 2020 likely influenced density and occurrence of

darters in these areas. In contrast to other Fountain Darter monitoring techniques, median catch rates were similar to historical medians for all seasons based on timed dip-netting. Timed dip-netting is not stratified by vegetation type and does not involve random site selection. Therefore, surveyors tend to focus efforts on the best available habitat and results are less influenced by habitat availability. This demonstrates that despite changes to habitat availability noted above, Fountain Darters are continuing to do well in the quality habitat available within each reach. Annual Fountain Darter density, CPUE, and occurrence were variable in 2020, but generally did not demonstrate substantial differences from recent years, with two exceptions. In Landa Lake, darter occurrence has decreased in recent years, whereas catch rates appear to be increasing. In the Old Channel, annual values for density, catch rates, and occurrence have been high in recent years, likely the result of habitat restoration in this reach. In the future, assessing habitat use versus availability (i.e., relative habitat use) may prove useful for elucidating potential mechanisms of observed trends during annual sampling efforts.

Fish community sampling demonstrated that median species richness and diversity were higher at Upper Spring Run, Old Channel, and New Channel compared to Landa Lake. Median species richness and diversity were generally similar to previous data. Fountain Darters comprised a smaller percentage of the overall fish community compared to historical observations at all reaches, but this metric may be influenced by a variety of factors including the number of other fishes observed. Lastly, relative abundance of spring-associated fishes was highest in Landa Lake, in close proximity to springs.

Overall, catch rates of Comal Springs Salamander in 2020 exceeded the long-term average and was the second-highest number of observations among all sampling years. Salamander CPUE within the surface environments of the Comal Springs system has been steadily increasing since the return of sustained water levels after the 2014 drought. Overall, salamander populations within this spring system are persistent and have increased steadily in abundance in recent years.

Lure sampling for Comal Springs Riffle Beetles showed that densities were below long-term averages. Lower densities observed may be due to the inherent variability in collections using this method or possibly due to increased harvest from the multiple lure studies conducted in 2020. Rapid bioassessment metrics displayed that areas of more lentic-type habitat (e.g., Landa Lake, Upper Spring Run) scored lower, as these communities differ from swift-flowing least disturbed reference streams. Downstream areas with more lotic conditions generally scored higher because the habitat is more similar to reference streams.

Overall, 2020 biological monitoring documented the persistence of appropriate habitat conditions to support the Covered Species and a diverse community of other native organisms. Reductions in bryophyte coverage in the Upper Spring Run and Landa Lake likely resulted in declines in some Fountain Darter population metrics, but this is expected to be a short-term impact. Habitat restoration in the Old Channel Reach appears to be improving conditions for Fountain Darters. Comal Springs Salamander populations continue to persist with increased catch rates observed in recent years. Lastly, Comal Springs Riffle Beetle densities were low in 2020, but this may be influenced by increased sampling activity around their limited habitat. Continued monitoring is paramount in evaluating responses of this diverse and dynamic system to a suite of ever-changing hydrologic, climatic, and anthropogenic conditions.

INTRODUCTION

The Edwards Aquifer Habitat Conservation Plan (HCP) was established in 2012 and supports the issuance of an Incidental Take Permit that allows the "incidental take" of threatened and endangered species (i.e., Covered Species) (Table 1) 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 since the implementation of this monitoring program (BIO-WEST 2000–2020a) now serves as the cornerstone for several underlying sections in the HCP, which include the following: (1) long-term biological goals (LTBGs) and management objectives (Section 4.1); (2) determination of potential impacts potential impacts to Covered Species and "incidental take" assessment, and Environmental Impact Statement alternatives (Section 4.2); and (3) establishment of core adaptive-management activities for triggered monitoring and adaptive-management response actions (Section 6.4.3). As the HCP proceeds, biological monitoring program data, in conjunction with other available information, are essential to adaptive management. Current and future data collection will help assess the effectiveness and efficiency of certain EAHCP mitigation and restoration activities conducted in the Comal Springs/River and calculate the EAHCP habitat baseline and net disturbance determination and annual "incidental take" estimate (EAHCP 2012).

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

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	Petitioned
Stygobromus pecki	Peck's Cave Amphipod	Endangered
Amphibians		
Eurycea sp.	Comal Springs Salamander	Petitioned
Fish		
Etheostoma fonticola	Fountain Darter	Endangered

This report provides the methodology and results for biological monitoring activities conducted in 2020 within the Comal Spring/River ecosystem. The results include summaries of current physiochemical conditions, as well as current conditions of floral and faunal communities. For all aquatic organisms, historical observations (BIO-WEST 2000–2020a) are also used in various manners to provide context to current conditions.

METHODS

Study Location

The Comal Springs System is the largest spring complex in Texas. It encompasses an extensive headsprings system and the Comal River (New Braunfels, Comal County, Texas), and is fed by the Edwards Aquifer (Brune 2002). 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. The majority of water that exits Landa Lake flows through the "New Channel", an engineered diversion that was created to act as a cooling system for a power generation plant. Remaining flows are diverted to the original river channel, known as the "Old Channel," that rejoins the New Channel about 2.5 km downstream (Ottmers 1987).

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, such as Comal Springs Riffle Beetle (*Heterelmis comalensis*), Peck's Cave Amphipod (*Stygobromus pecki*), Comal Springs Salamander (*Eurycea* sp.), and Fountain Darter (*Etheostoma fonticola*) among others.

Sampling Strategy

Based on the LTBGs and management objectives outlined in the HCP, representative 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 (summer)
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). No low-flow sampling was conducted in 2020 and further details on species-specific triggers can be found in Appendix A.

The remaining methods sections provide brief descriptions of the procedures utilized for 2020 comprehensive 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

River hydrology in 2020 was assessed using US Geological Survey (USGS) stream gage data from January to October. 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 2020). For analysis, the distribution of 2020 mean daily discharge was summarized by month using boxplots. Monthly discharge levels were compared with historical (1928–2019) 10th, 50th (i.e., median), and 90th percentiles.

Discharge was also measured in spring and fall at the following five stations: Upper Spring Run, Spring Run 1, Spring Run 2, Spring Run 3, and Old Channel, using a HACH FH90 flowmeter and adjustable wading rod (Figure 3). Additionally, discharge was calculated in Landa Lake by EAA scientists with a SonTek RiverSurveyor M9 Acoustic Doppler Current Profiler (Figure 3). To quantify the contribution of each station to total system discharge, percent total discharge ([discharge(station *x*)/total river discharge]*100) was calculated. Total 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 and fall measurements using bar graphs. Historical (2003–2019) mean discharge and associated 95% confidence intervals were also presented at each station for comparison.

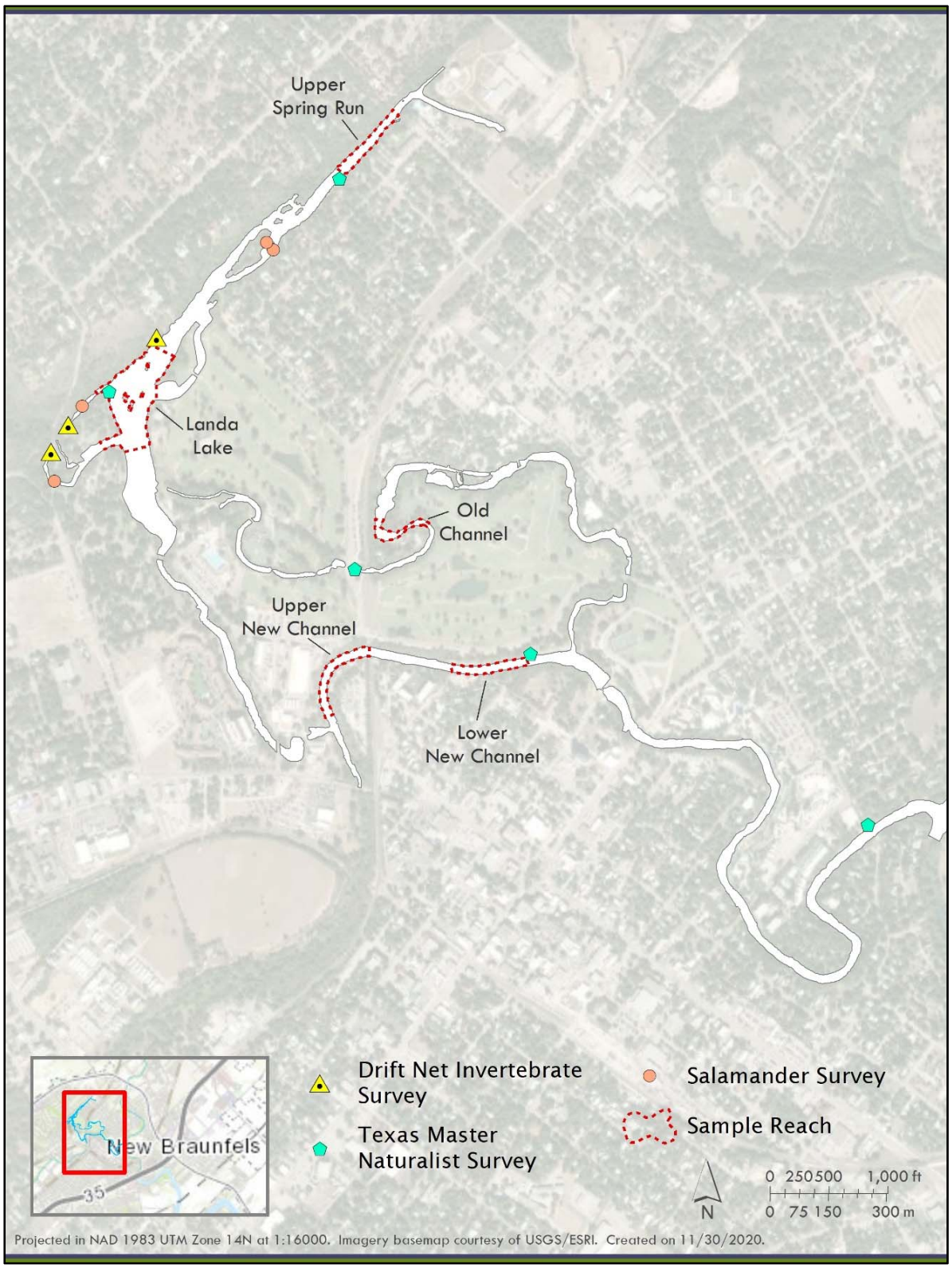

Figure 1. **Invertebrate, Comal Springs Salamander, Texas Master Naturalist, and biomonitoring (includes aquatic vegetation mapping, drop-net sampling, presence/absence dip-net sampling, and macroinvertebrate community sampling) sample areas within the Comal Spring/River study area.**

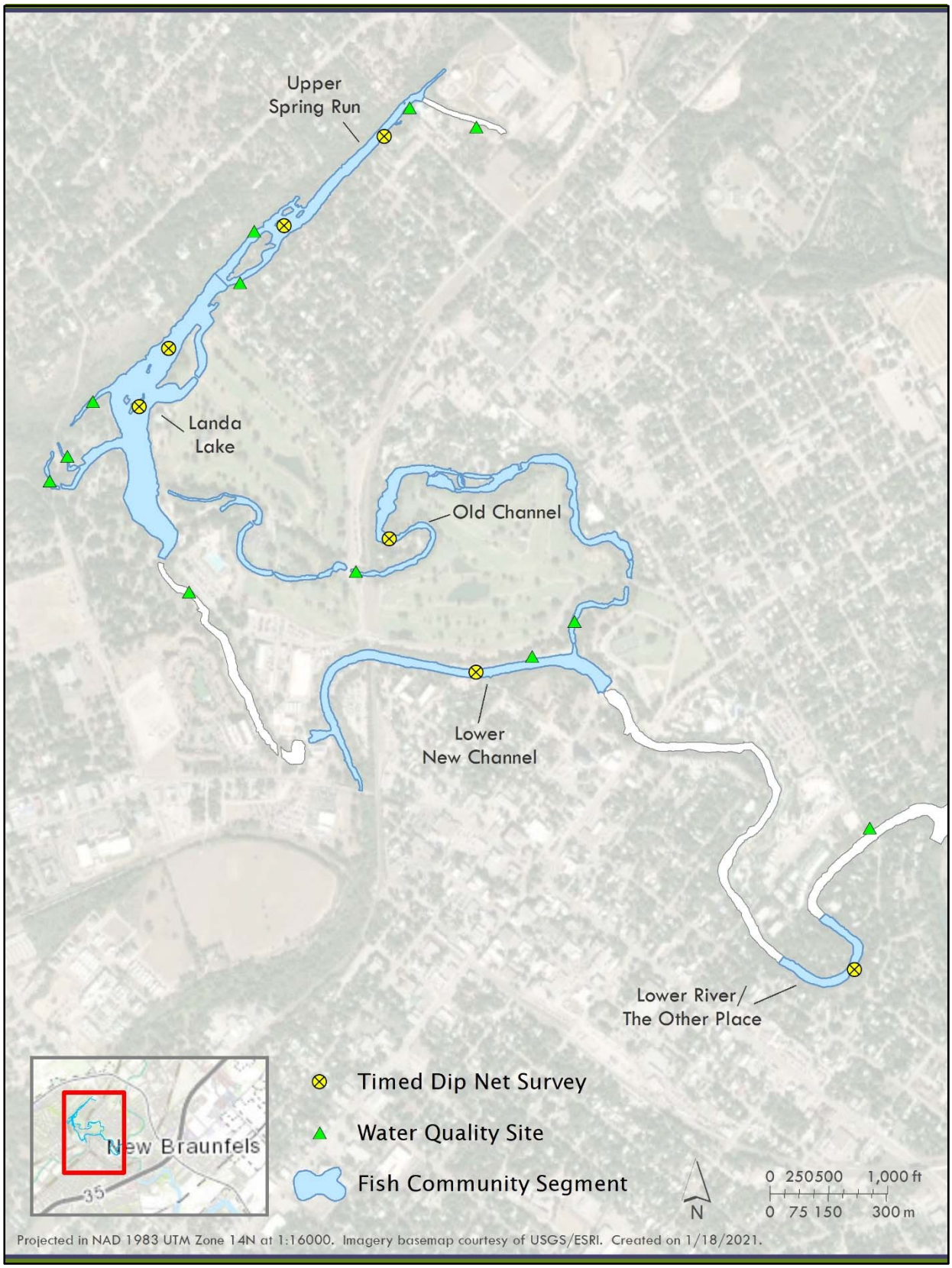

Figure 2. Fish community, water quality, and Fountain Darter timed dip-net surveys within the Comal Springs/River study area.

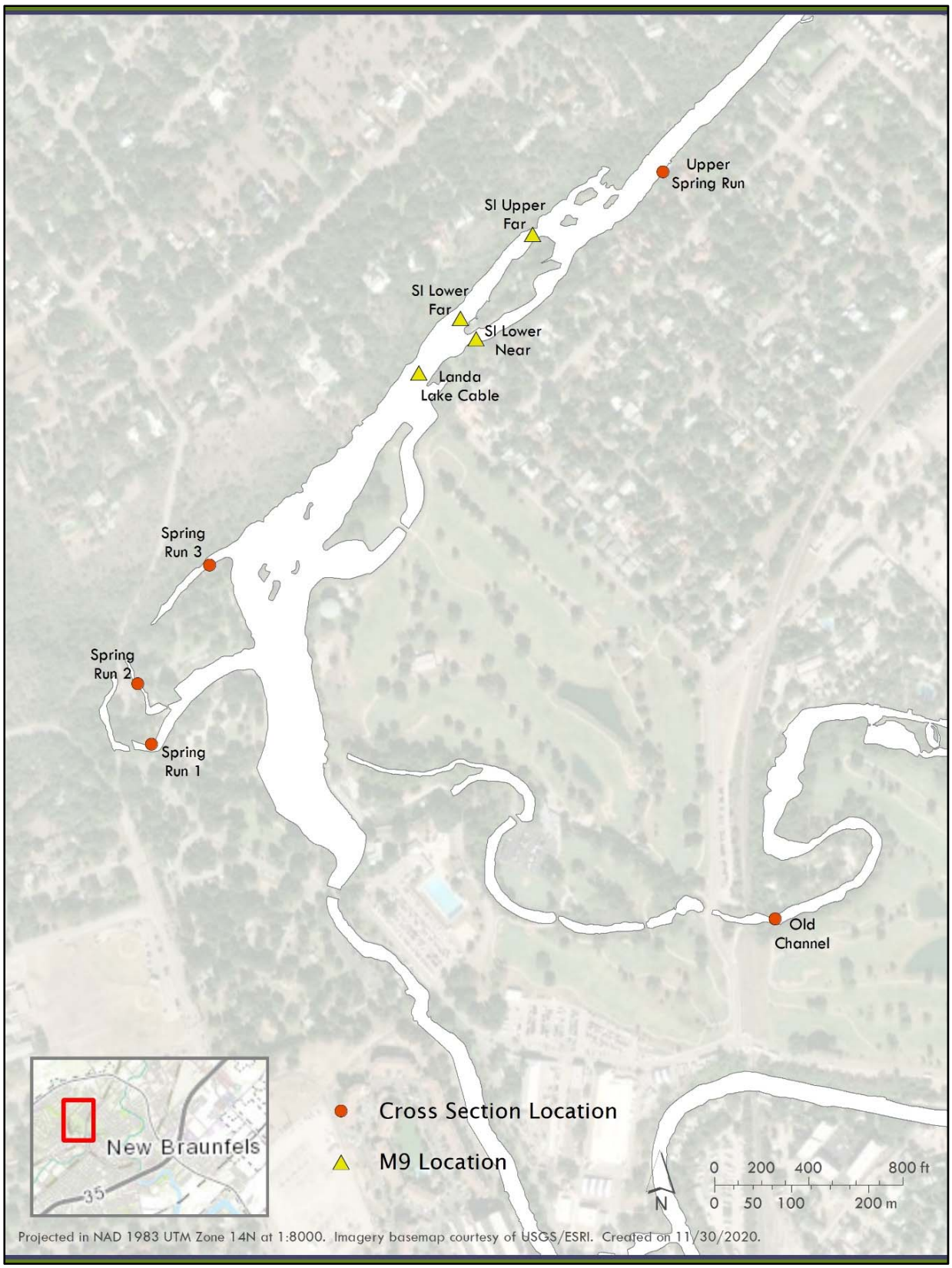

Figure 3. Cross-section and M9 discharge collection locations in the Comal Springs/River study area.

Water Temperature

Spatiotemporal trends in water temperature were assessed in 2020 using temperature data loggers (HOBO Tidbit v2 Temp Loggers) at the 13 permanent monitoring stations established in 2000. Data loggers recorded water temperature every 10 minutes and were downloaded at regular intervals. The following five sites were selected to characterize longitudinal variation in water temperature regimes: Heidelberg (January 1–October 15), Landa Lake Lower (January 1–October 15), New Channel Upstream (January 14–October 15), and Other Place (January 1–October 15). Results of the remaining sites can be found in Appendix B. Water temperature data are not presented for the Old Channel due to data logger malfunction in 2020. The distribution of 2020 water temperatures for the selected stations were assessed based on 4-hour intervals and summarized using boxplots. 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 the selected stations that surpassed either water temperature threshold in 2020, 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 2020 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. All results from this monitoring effort can be found in Appendix C.

Aquatic Vegetation Mapping

The team used a 10-foot sit-in kayak with a plexiglass window for visual observations to complete aquatic vegetation mapping (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 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.

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 Observations text and tables by genus. Total surface area of aquatic vegetation, measured in square meters (m^2), is presented for each season in 2020 using bar graphs and is compared with long-term (2001–2020) spring, fall, high-flow event, and low-flow event averages. High-flow and low-flow event averages were calculated from Critical Period 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 Sampling

Drop-Net Sampling

Drop-net sampling was utilized to quantify Fountain Darter densities and habitat utilization during the spring and fall monitoring events (Figure 1). Sample sites were selected using a random-stratified design. In each study reach, sample sites were randomly selected based on dominant aquatic vegetation (including open areas) mapped prior to sampling (see Aquatic Vegetation Mapping for details), totaling two sites per vegetation strata. At each sample site, 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 site was considered complete, and if fish were collected, an additional 5 sweeps were conducted. If any Fountain Darters were collected on sweep 15, additional sweeps were conducted until no 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 25 individuals of other fish taxa were measured (total length expressed 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) data were collected at the upstream end of drop-net samples using a HACH FH90 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. Mid-column velocity (60% water depth) was measured at water depths of <3 ft. Water velocities at 20% and 80% water depths were measured and averaged at depths of ≥3 ft. Water quality was measured within each drop-net using a HydroTech multiprobe, which included water temperature (measured in degrees Celsius [°C]), pH, dissolved oxygen (measured in milligrams per liter [mg/L], percent saturation), and specific conductance (measured in microsiemens per centimeter [µs/cm]). Mid-column water quality was measured at water depths of <3 ft, whereas bottom and surface values were measured and averaged at depths of ≥3 ft. Lastly, vegetation composition (%) was visually estimated and dominate substrate type was recorded within each drop-net sample.

To evaluate 2020 drop-net results in context with historical (2001–2019) observations, median Fountain Darter densities were calculated between seasons and vegetation types. Vegetation types are described in the text by genus. Among reaches, annual median densities from 2014 to 2020 and their respective long-term (2001–2020) medians were also calculated to assess temporal trends. This timeframe was chosen because sampling at the New Channel restarted in 2014. Medians and associated 95% confidence intervals (percentiles) were calculated using bootstrap resampling with replacement (replicates=10,000). Bootstrapping is a useful technique for improving the inference value of central tendencies when datasets are skewed or have a limited sample size (McDonald 2014). Historical observations used for this analysis included data from spring and fall monitoring events for symmetric comparison.

Length-frequency (%) histograms using 2-mm bins were constructed to assess seasonal differences in Fountain Darter lengths and are compared with historical (2001–2019) observations. Boxplots coupled with violin plots were also used to display the distribution of darter lengths by dominant vegetation types and examine habitat use among size classes. Boxplots show basic length-distribution statistics (i.e., median, quartile, range) and violin plots visually display the full distribution of lengths relative to each vegetation using kernel probability density estimation (Hintze and Nelson 1998).

Dip-Net Sampling

Dip-net sampling was used to provide additional metrics for assessing Fountain 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.

Timed Dip-Net Surveys

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 long-term study reaches and 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. Deeper habitats (>1.4 m) were not sampled. All Fountain Darters collected were enumerated, measured (mm), and returned to the river at point of collection.

To evaluate 2020 timed dip-net results in context with historical (2001-2019) observations, raw Fountain Darter abundances per study reach were first standardized as catch-per-unit-effort (CPUE; [fish/person-hour]) for each sampling event. Results for Upper Spring Run and Spring Island were combined for analysis. Median Fountain Darter CPUEs were calculated between seasons. Among reaches, annual median CPUE from 2014 to 2020 and their respective long-term medians (2001–2020) were also calculated to assess temporal trends. Medians and associated 95% confidence intervals (percentiles) were calculated using bootstrap resampling with replacement (replicates=10,000). Historical observations used for analysis included data from the spring, summer, and fall monitoring events for symmetric comparison. Length-frequency (%) histograms using 2-mm bins were also constructed to assess seasonal differences in Fountain Darter lengths and are compared with historical (2001–2019) observations. Boxplots coupled with violin plots were also used to display the distribution of darter lengths by study reach and examine longitudinal variation in size structure.

Random-Station Dip-Net Surveys

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 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.

To analyze 2020 Fountain Darter random-station results, presence/absence per station was based on whether or not a Fountain Darter was observed during any of the four dips. Occurrence (%; [sum(darter presence)/sum(random stations)]*100) was then calculated among seasons and vegetation types to compare 2020 and historical (2006–2019) observations. Vegetation types that lack replication (i.e., n=1) were not included in this analysis. Among reaches, annual occurrences from 2013-2020 and their respective long-term (2001–2020) occurrence were also calculated to assess temporal trends. Bootstrap resampling with replacement (replicates=10,000) was used to calculate 95% confidence intervals (percentile) due to its more reliable estimate of variation for binomial data compared to traditional methods (McDonald 2014). Historical observations used for analysis included data from the spring, summer, and fall monitoring events for symmetric comparison.

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). 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. To evaluate 2020 visual survey results among seasons in context with historical (2001–2019) observations, Fountain Darter densities (fish/m^2) were first calculated. Historical median densities and 95% confidence intervals (percentile) were then calculated for the spring and fall using bootstrap resampling with replacement (replicates=10,000).

Fish Community Sampling

Fish community sampling was conducted in the spring and fall to quantify fish assemblage composition/structure and to assess Fountain Darters 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 species. 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, aquatic vegetation 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 Marsh McBirney Model 2000 portable flowmeter and adjustable wading rod. At each micro-transect pipe, water-velocity measurements were taken 15 cm from the bottom, mid-column, and the surface. Standard water-quality parameters were also recorded once at each transect using a handheld water-quality sonde.

In shallow habitats, at least three random longitudinal transects were sampled within each monitoring segment (except for Landa Lake) via seining. At each of these, multiple seine hauls were pulled until the entire wadeable area had been covered. After each seine haul, fish were identified, measured (mm), and enumerated. To prevent recapture on subsequent seine hauls, captured fish were placed in a holding bucket containing river water. After completion of the transect, all fish were released from holding buckets. 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.

To evaluate 2020 fish community results in context with historical (2014–2019) observations, all analyses were conducted using fishes identified to species; fishes identified to genus or family were excluded. Species raw abundances from all sampling methods used in each river segment were first combined per monitoring event, and relative abundance (%; [sum(species *x*)/sum(all species)]*100) was then quantified for all species. Overall community composition per reach was assessed for species richness and diversity using Shannon's Diversity Index (Spellerberg and Fedor 2003). Relative abundance of spring-associated fishes (Table 2) was also quantified. Lastly, median species richness, diversity, Fountain Darter relative abundance, and spring fish relative abundance and their associated 95% confidence intervals were calculated among reaches using bootstrap resampling with replacement (replicates = 10,000). Historical observations used for this analysis included data from the spring and fall monitoring events for symmetric comparison.

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 mexicanus	Mexican 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 2020, 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). 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. During survey periods, locations of all Comal Springs Salamander observations were recorded using pin flags, along with water depth (ft), and presence/absence of vegetation. Water depth and vegetation conditions 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.

Within Spring Run 1, a 1-hour survey was conducted from the Landa Park Drive Bridge upstream to just below the head spring orifice. Spring Run 3 was surveyed for 1 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. In total, this effort represents 6 person-hours (ph) per sampling event.

Comal Springs Salamander number of observations and CPUE (salamanders/person hour) for spring and fall routine sampling in 2020 and the long-term average (2001–2020) are presented in a table. Salamander CPUEs are presented for each season using bar graphs and are compared with long-term (2001–2020) spring, fall, high-flow event, and low-flow event averages. High-flow and low-flow event averages were calculated from Critical Period 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.

Macroinvertebrate Sampling

Drift-net Sampling

Macroinvertebrate samples were collected via drift net at three sites in the Comal system. During each 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 (Figure 1). Drift nets were anchored into the substrate directly over each spring opening, with the net faced 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 Riffle 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 Hydrotech multiprobe (MS5) water-quality meter and Hach (FH950) handheld flow meter.

Comal Springs Riffle Beetle

Comal Springs Riffle Beetles were collected from three reaches in the Comal River system during two routine sampling events in spring and fall 2020. Sampling followed the methods of the Cotton Lure standard operating procedure developed for the HCP (Figure 1). 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 Beetle. 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. Lures were deployed and collected at all sites in April/May and October/November; the length of time lures were deployed ranged from 29 to 35 days. 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.

All Comal Springs Riffle Beetles collected with cotton lures were identified, counted, and returned to their spring of origin during the spring 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, and Peck's Cave Amphipod collected on lures. These and 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.

Benthic Macroinvertebrate Rapid Bioassessment

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 5 minutes while moving in a zig-zag fashion up-stream. Invertebrates were then randomly distributed in a tray and subsamples were taken by scooping out random 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 reaches, during spring (April 27) and fall (October 21) 2020 (Figure 1).

Picked samples were preserved in 70% isopropyl, returned to the laboratory, and identified to TCEQ taxonomic effort 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 as “Exceptional”, “High”, “Intermediate”, or “Limited”. In this way, point-scores were calculated and the aquatic-life-use for each sample reach was evaluated.

OBSERVATIONS

Comal River Discharge and Springflow Results

Median daily discharge in the Comal River showed minimal variation from the historical median for most of 2020 and did not fall outside of the 10th-percentile or 90th-percentile historical values. Monthly median discharge ranged from 246 cfs in August to 325 cfs in February. Spring sampling was conducted in April, where discharge ranged from 264 to 370 cfs (median=320), with the majority of values from 304 to 325 cfs. The highest observed mean daily discharge in 2020 was 394 cfs in May. During summer sampling in August, discharge ranged from 235 to 254 cfs (median=246), which encompassed the lowest mean daily discharge in 2020. Fall sampling was conducted in October, which exhibited less variation than previous sampling months, with discharges ranging from 259 to 284 cfs (median=273) (Figure 4).

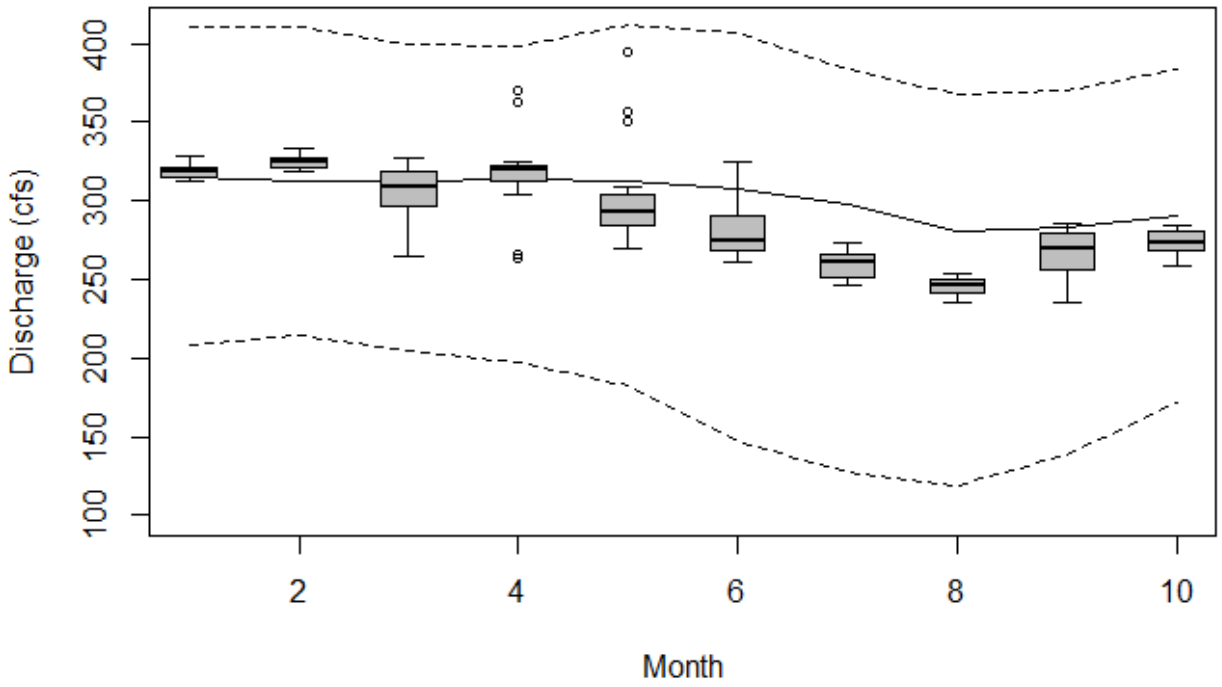

Figure 4. **Boxplots (median, quartiles, range) displaying the distribution of 2020 mean daily discharge among months (January–October) in comparison to historical (1928–2019) monthly discharges represented by the 10th percentile (lower dashed line), median (solid line), and 90th percentile (upper dashed line).**

Spring discharge and percent total discharge were similar to historical averages at most stations. At Landa Lake Cable, percent total discharge was below the historical average in fall and confidence intervals did not overlap with the 2020 value. Further, fall discharge and percent total discharge at Upper Spring Run was about 8 cfs, and 4% lower in 2020, respectively, and confidence intervals did not overlap for both values (Figure 5).

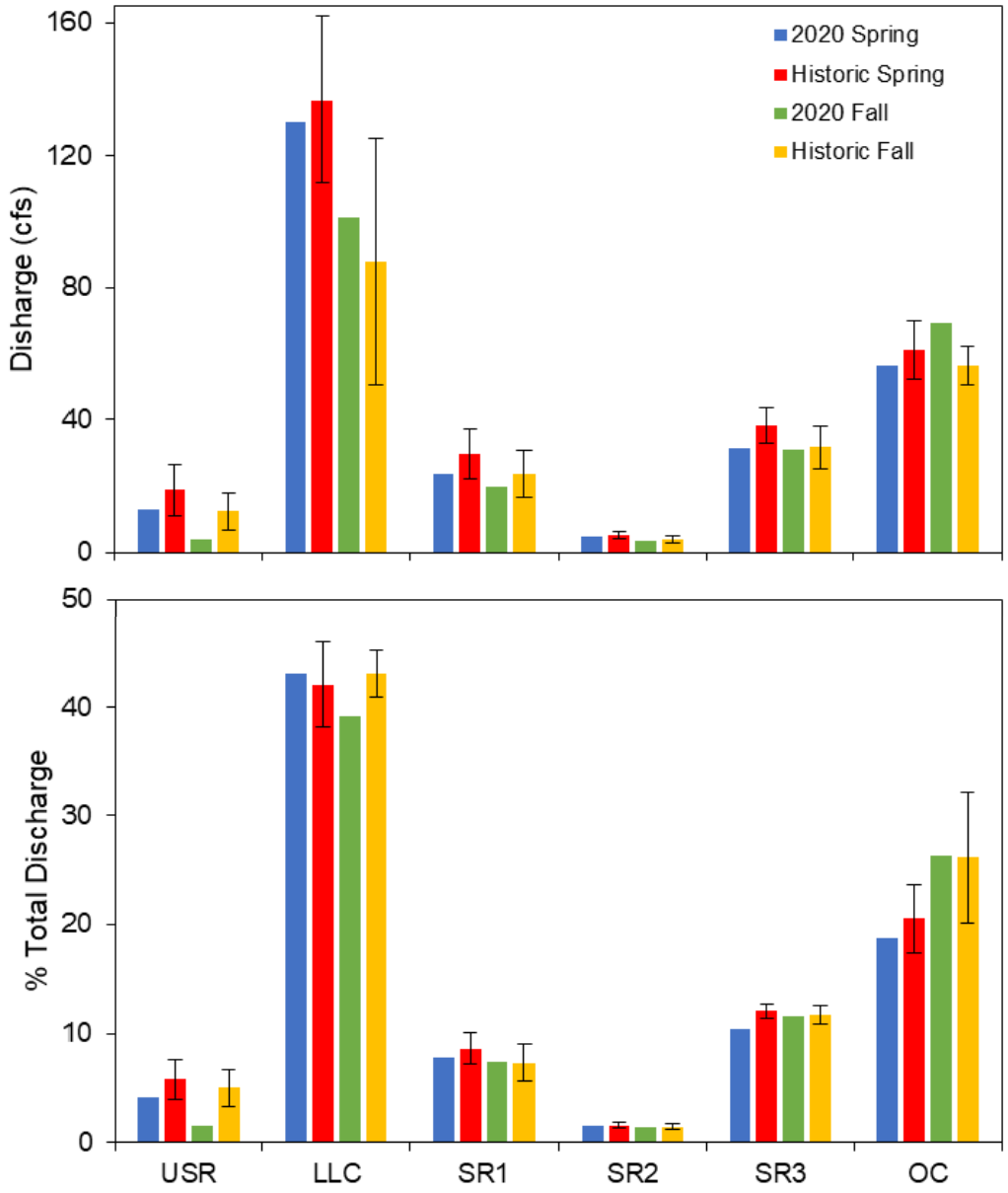

Figure 5. **Current and historical (mean ±95% CI) discharge and percent total discharge at Upper Spring Run (USR), Landa Lake Cable (LLC), Spring Run 1 (SR1), Spring Run 2 (SR2), Spring 3 (SR3), and Old Channel (OC). Discharge measurements were conducted in spring and fall.**

Water Temperature Results

Water temperature variation differed between spring and river stations in 2020. In the springs, median water temperature was similar at Heidelberg (23.81 °C) and Landa Lake (23.91 °C), and differences between maximum and minimum values were about 1 °C. In the river, median water temperature was also similar at the New Channel Upstream (23.64 °C), and Other Place (23.74 °C), but considerably more variable at the Other Place (20.63–26.43 °C) compared to the New Channel Upstream (21.60–25.28 °C) (Figure 6).

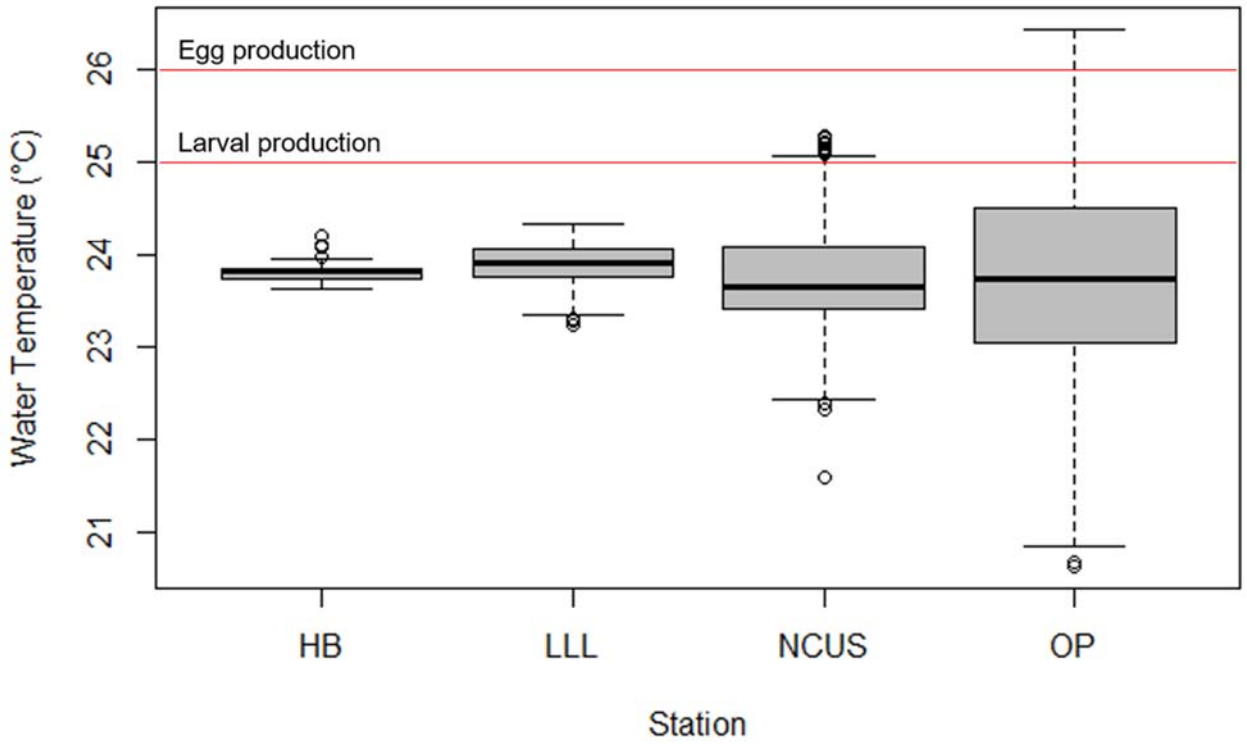

Figure 6. **Boxplots (median, quartiles, range) displaying 2020 water temperatures from January to October at Heidelberg (HB), Landa Lake Lower (LLL), New Channel Upstream (NCUS), and Other Place (OP). The red lines indicate maximum optimal temperatures for Fountain Darter larval (≥25 °C) and egg (≥26 °C) production (McDonald et al. 2007).**

Water temperature exceeded the 25 °C maximum optimal temperature for Fountain Darter larval production (McDonald et al. 2007) and designated HCP threshold (EAHCP 2012) within the New Channel in 2020. At the New Channel Upstream, water temperature exceeded 25 °C at one to three measurements per day for 45 days between May and August. Water temperature also exceeded 25 °C at the Other Place (the most downstream thermistor) on one to two measurements per day for 138 days between March and September. Additionally, the Other Place site exceeded the 26 °C maximum optimal temperature for Fountain Darter egg production (McDonald et al. 2007) at one measurement per day on 34 days between May and August. Water temperature also surpassed the egg production threshold from May to September at Blieders and New Channel Downstream. Exceedance occurred at one to six measurements for 113 and 60 days at Blieders and New Channel Downstream, respectively (Appendix B, Figure B1).

Aquatic Vegetation Mapping Results

Aquatic vegetation maps for all study reaches and for both sampling periods are presented in Appendix B. The maps are organized by individual reach with spring and fall mapping events ordered chronologically. It is important to note that maps highlight only the single dominant plant species within a mixed stand of aquatic vegetation. While less-dominant species may not be represented on the maps, their coverage is estimated and factored into the total vegetation calculations.

Upper Spring Run Reach

In 2020, vegetation cover was slightly higher than average for spring, yet lower than average in fall (Figure 7). The absence of bryophyte coverage resulted in a considerable reduction in total vegetation coverage in fall 2020 (Table 3). As apparent from long-term seasonal averages, there is typically a reduction from spring to fall, attributed mainly to recreational stress occurring over summer months. However, in 2020 there was an overall increase for rooted vegetation taxa *Ludwigia* (39–62 m^2) and *Sagittaria* (1,281–1,372 m^2) from spring to fall, which may be attributed to the lack of recreation in the reach during COVID-19 shutdown (Table 3). Although not included as part of vegetation coverage, the distribution of *Rhizoclonium* was mapped this year because this habitat type is becoming more persistent. It was common in the reach during both spring and fall mapping events and decreased from 1,152 m^2 to 722 m^2 between the two periods.

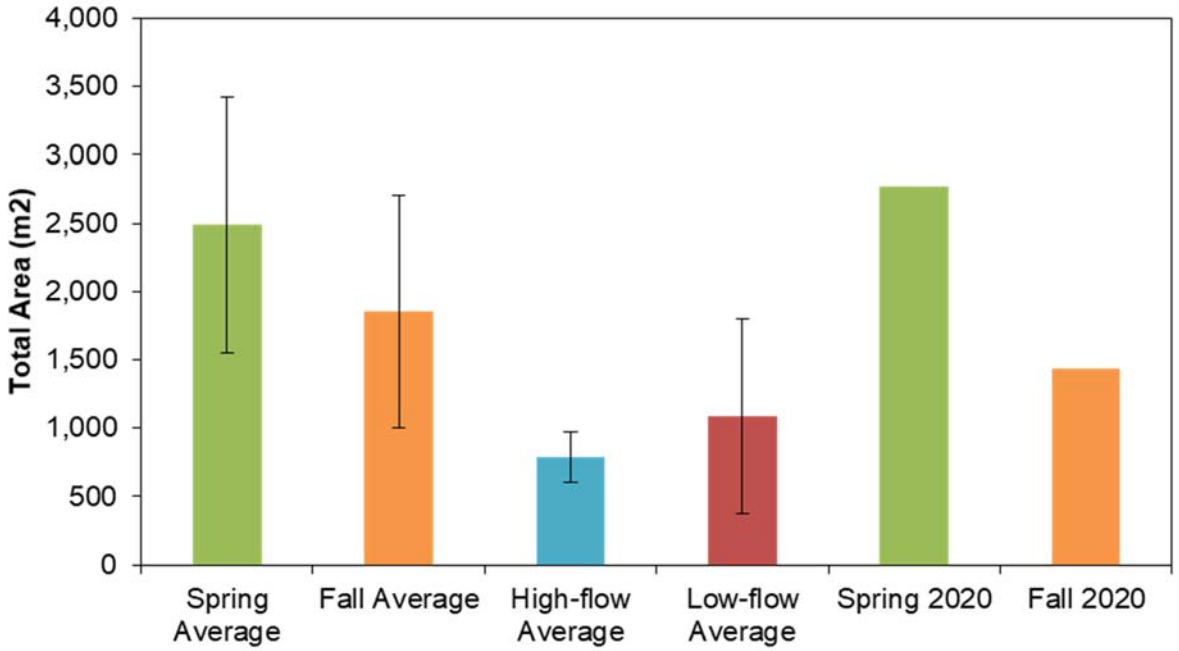

Figure 7. **Total surface area (m^2) of aquatic vegetation in the Upper Spring Run Study Reach. Long-term study averages are provided with error bars representing one standard deviation from the mean.**

Table 3. **Seasonal coverage of each aquatic vegetation species in the Upper Spring Run LTBG reach.**

SPECIES	SPRING 2020 COVER (m^2)	FALL 2020 COVER (m^2)
Bryophyte	298	0
Ludwigia	39	62
Sagittaria	1,281	1,372
Total	**1,618**	**1,434**

Landa Lake Reach

Aquatic vegetation cover in Landa Lake typically exhibits less annual variability and less impact from high and low flows compared to other study reaches. This year was no exception. Both spring and fall total seasonal cover mirrored their respective seasonal averages (Figure 8). Landa Lake was dominated by *Vallisneria* (12,033–12,125 m^2) and *Sagittaria* (3,807–4,809 m^2) (Table 4). *Vallisneria* usually accounts for greater than 50% of the total coverage, and both species tend to remain consistent in coverage season-to-season (BIO-WEST 2001–2020a). Vegetation mapping over the previous 3 to 4 years has shown *Sagittaria* expanding its coverage, particularly in the upper one-third of the study reach and along the Eastern shoreline (BIO-WEST 2016–2019). *Vallisneria* has also expanded in a few areas while retreating in others. As usual, bryophytes were common in Landa Lake during spring (1,107 m^2), but they were greatly reduced in fall (299 m^2) (Table 4). The bryophyte community was less-robust than usual and largely replaced by *Rhizoclonium*, which reached 785 m^2 during the fall sampling event. *Rhizoclonium* was not mapped in spring because it was uncommon.

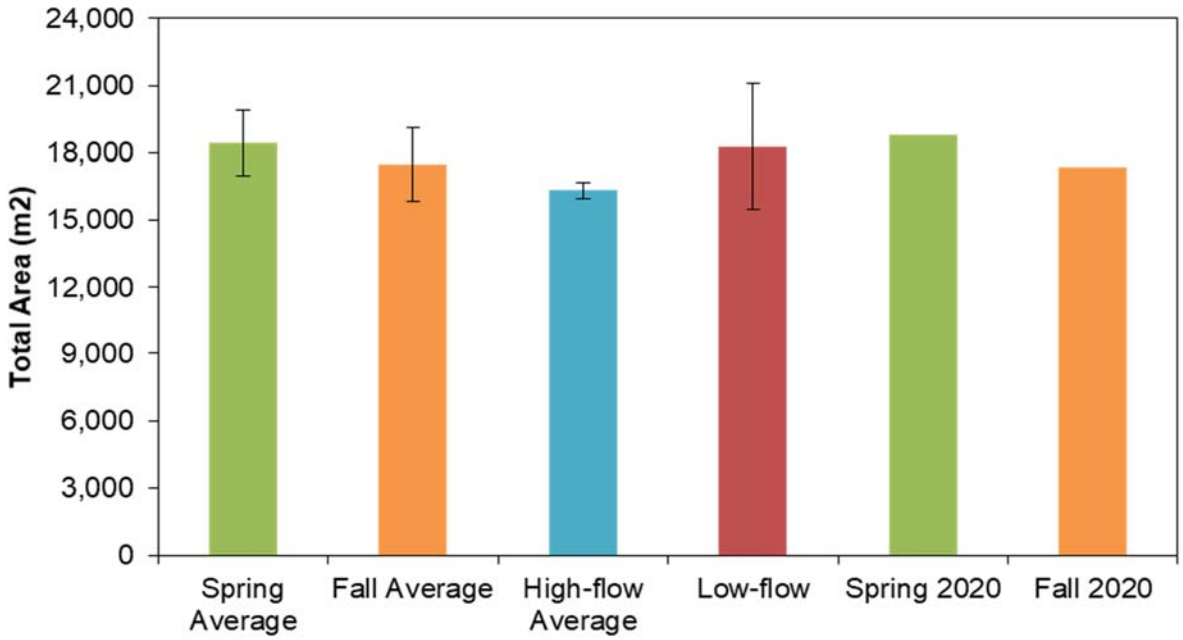

Figure 8. Total surface area (m^2) of aquatic vegetation in the Landa Lake Study Reach. Long-term study averages are provided with error bars representing one standard deviation from the mean.

Table 4. Seasonal coverage of each aquatic vegetation species in the Landa Lake study reach.

SPECIES	SPRING 2020 COVER (m^2)	FALL 2020 COVER (m^2)
Bryophyte	1,107	299
Bacopa	4	1
Cabomba	200	402
Ludwigia	542	802
Potamogeton	25	0
Sagittaria	4,809	3,807
Vallisneria	12,125	12,033
Total	**18,812**	**17,344**

Ludwigia and *Cabomba* coverages have benefited from restoration planting efforts in the past 5 years. *Ludwigia* had the greatest positive response from restoration plantings in 2020. *Cabomba* cover doubled due to restoration plantings, but, most importantly, it expanded into new areas of the lake, which were previously occupied by *Vallisneria*. The annual Comal River Restoration Report provides more information regarding the restoration of native vegetation (BIO-WEST 2020b).

Old Channel Reach

The Old Channel reach saw another consecutive year of overall vegetation cover increase (Figure 9). Bryophyte was the dominant vegetation during both mapping events (662–687 m^2) and was dense along the streambed and was intermixed with rooted vegetation. *Ludwigia* and *Cabomba* continue to expand in coverage and both species exhibited considerable coverage increases between spring and fall (290–324 m^2 and 48–190 m^2, respectively) (Table 5). This is due to 2020 restoration activities and increasing natural expansion of previous restoration plantings (BIO-WEST 2020b).

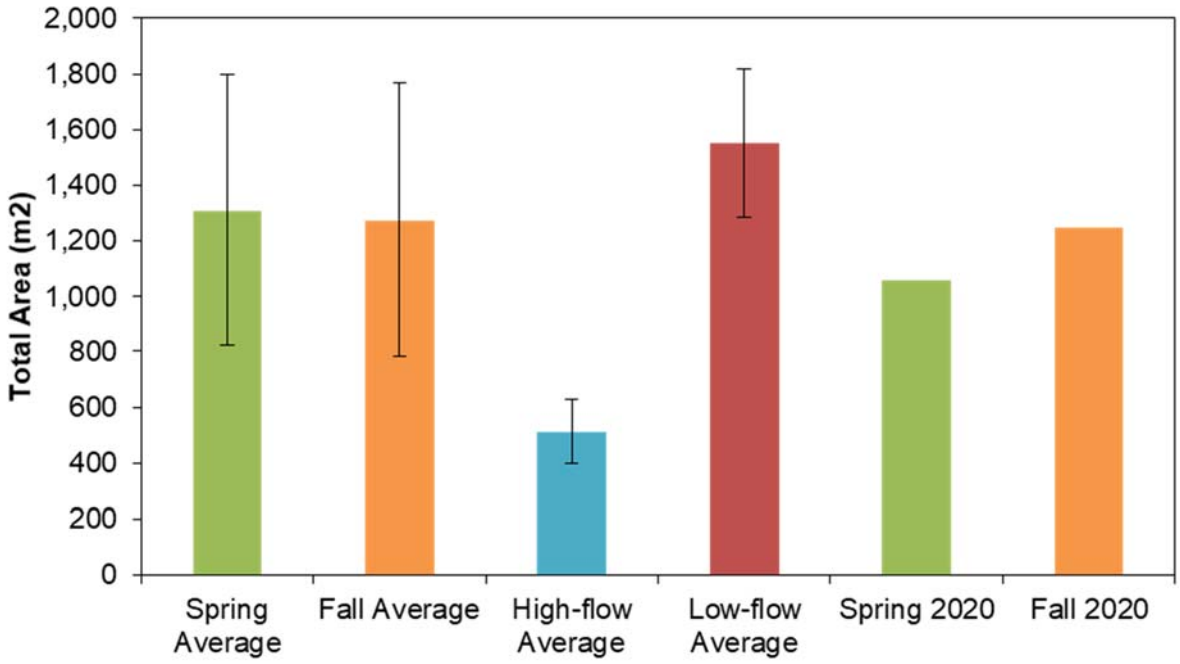

Figure 9. Total surface area (m^2) of aquatic vegetation in the Old Channel Study Reach. Long-term study averages are provided with error bars representing one standard deviation from the mean.

Table 5. Seasonal coverage (m^2) of each aquatic vegetation species in the Old Channel study reach.

SPECIES	SPRING 2020 COVER (m^2)	FALL 2020 COVER (m^2)
Bryophyte	662	687
Cabomba	48	190
Ludwigia	290	324
Nuphar	41	39
Sagittaria	19	7
Total	**1,060**	**1,247**

Seasonal mapping shows below-average vegetation cover for spring, but within one standard deviation of the mean. Fall coverage was in line with the seasonal average (Figure 9). The overall vegetation community in the Old Channel is much improved. Coverage of native rooted vegetation is increasing (Table 5). Observations indicate this reach has the highest potential to become a self-sustaining *Ludwigia*- and *Cabomba*-dominated community, due to the area's limited occurrence of competitive species and consistent growing conditions.

Upper New Channel Reach

In 2020, both spring and fall mapping showed higher-than-average vegetation coverage with spring coverage being considerably higher than the average (Figure 10). Aquatic vegetation has benefited from the prolonged absence of flood events along Dry Comal Creek in recent years. The lack of recreation during the COVID-19 lockdown of summer 2020 likely allowed vegetation coverage to stay high in this reach compared to the seasonal averages. However, some recreation activity was still ongoing and increased toward the end of summer. This may have influenced the reduction that occurred from spring to fall. This reach continues to be dominated by *Hygrophila* (991–1,116 m^2). *Ludwigia* (105–112 m^2) and continues to rank second in coverage. *Cabomba* (8–9 m^2) coverage was low and under current conditions appears ephemeral (Table 6).

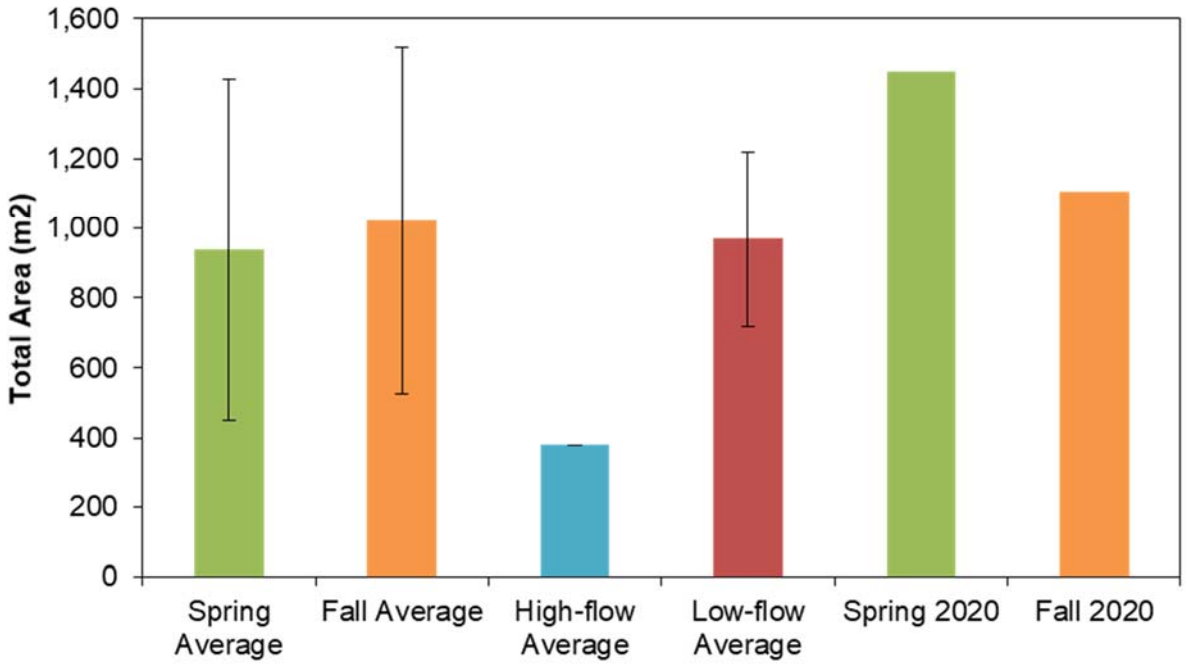

Figure 10. Total surface area (m^2) of aquatic vegetation in the Upper New Channel Study Reach. Long-term study averages are provided with error bars representing one standard deviation from the mean.

Table 6. Seasonal coverage of each aquatic vegetation species in the Upper New Channel.

SPECIES	SPRING 2020 COVER (m^2)	FALL 2020 COVER (m^2)
Bryophyte	214	0
Bacopa	0	1
Cabomba	8	9
Hygrophila	1,116	991
Ludwigia	112	105
Total	**1,450**	**1106**

Lower New Channel Reach

Both spring and fall coverages in 2020 were greater than their respective averages and followed typical seasonal trends observed in this reach (Figure 11). Although it experiences high levels of recreation, this reach is too deep for wading in most areas, which minimizes disturbance to benthic vegetation and results in fall long-term averages being higher than spring. Vegetation coverage in this reach is also influenced by scour from high-flow events, but no significant events occurred in 2020 (Figure 4). The two dominant species in this reach, *Cabomba* (1,816–2,236 m^2) and *Hygrophila* (499–773 m^2), lose biomass easily as a result of high flows but can recover quickly once river conditions stabilize (Table 7).

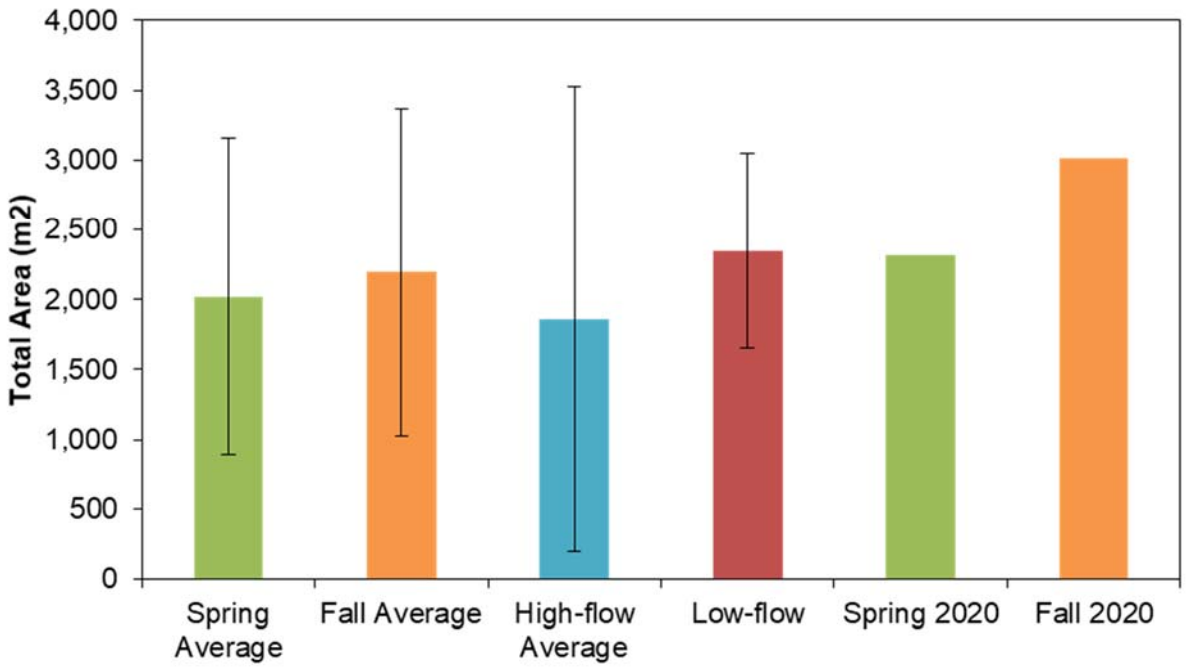

Figure 11. Total surface area (m^2) of aquatic vegetation in the Lower New Channel Study Reach. Long-term study averages are provided with error bars representing one standard deviation from the mean.

Table 7. Seasonal coverage of each aquatic vegetation species in the Lower New Channel study reach.

SPECIES	SPRING 2020 COVER (m^2)	FALL 2020 COVER (m^2)
Cabomba	1,816	2,236
Hygrophila	499	773
Total	**2,315**	**3,009**

Fountain Darter Sampling Results

Drop-Net Sampling

A total of 1,012 Fountain Darters were observed at 71 drop-net samples in 2020. Drop-net densities ranged from 0.00 to 62.00 fish/m^2. Community summaries and raw drop-net data are included in appendices D and E, respectively. A summary of dominant vegetation (and their median % coverage) and substrate types sampled, as well as ranges of depth, velocity, and water quality parameters observed among all drop-net locations are provided in Table 8.

Table 8. Habitat conditions observed during 2020 drop-net sampling. Physical habitat parameters include counts of dominant vegetation (median % composition) and dominant substrate type sampled. Depth-velocity and water quality parameters include observed ranges (min-max) of each variable among all drop-net samples.

HABITAT PARAMETERS	USR	LL	OC	NC
Vegetation				
Bryophyte[1]	4 (70%)	4 (100%)	4 (100%)	2 (100%)
Cabomba[1]	0	4 (100%)	4 (100%)	4 (100%)
Hygrophila[1]	0	0	0	4 (100%)
Ludwigia[1]	4 (98%)	4 (100%)	4 (88%)	2 (90%)
Open	4 (100%)	4 (100%)	4 (98%)	4 (100%)
Sagittaria[2]	3 (100%)	4 (100%)	0	0
Vallisneria[2]	0	4 (100%)	0	0
Substrate				
Cobble	0	1	1	0
Gravel	12	7	4	5
Sand	0	3	0	3
Silt	3	13	11	8
Depth-velocity				
Water depth (ft)	2.0–3.9	1.6–4.2	0.7–3.6	2.0–4.4
Mean column velocity (ft/s)	0.00–0.05	0.00–0.43	0.00–0.54	0.00–0.78
15-cm column velocity (ft/s)	0.00–0.03	0.0–0.32	0.00–0.29	0.00–0.07
Water quality				
Water temperature (°C)	22.6–25.0	21.8–24.7	21.9–23.7	22.2–24.1
DO (ppm)	5.7–7.8	5.5–8.8	6.9–9.5	8.5–9.4
DO saturation (%)	65.7–95.5	43.8–105.8	81.0–110.4	102.5–109.9
pH	7.3–7.3	7.2–7.4	7.5–7.7	7.6–7.7
Specific conductance (µs/cm)	551–572	547–578	289–550	551–571

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

Among seasons, median density was less in fall (0.96 fish/m^2) than spring (9.20 fish/m^2). Median density in spring 2020 was greater than the historical median (5.90 fish/m^2). In contrast, fall 2020 median density was less than the historical median (3.80 fish/m^2) and confidence intervals did not overlap. Among vegetation types, 2020 median densities were greatest in *Cabomba* (14.00 fish/m^2). Median densities were intermediate but variable in bryophyte (7.60 fish/m^2) and *Vallisneria* (6.80 fish/m^2). Median density was lowest in open (0.04 fish/m^2), *Sagittaria* (1.40 fish/m^2), and *Ludwigia* (1.90 fish/m^2) drop-net samples. Most vegetation types exhibited variable median densities compared to historical observations, except for *Hygrophila* (3.30 fish/m^2) and open, which were similar to historical observations (4.00 and 0.03 fish/m^2, respectively). Bryophyte and *Ludwigia* were about 12 and 5 fish/m^2 less than historical medians, respectively, although confidence intervals overlapped. Conversely, *Cabomba* was 7 fish/m^2 greater than the historical median. *Vallisneria* was also around 5 fish/m^2 higher than historical observations (Figure 12). Current patterns of vegetation utilization partially support previous research that observed Fountain Darter densities highest within ornate vegetation, such as *Cabomba* and bryophyte (Schenck and Whiteside 1976; Linam et al. 1993; Alexander and Phillips 2012). However, long, austere-leaved taxa are considered less-suitable habitat (Linam et al. 1993; Alexander and Phillips 2012) and *Vallisneria* exhibited the second-highest median density in 2020, which is likely due to the presence of bryophytes within the sites sampled (Figure 12).

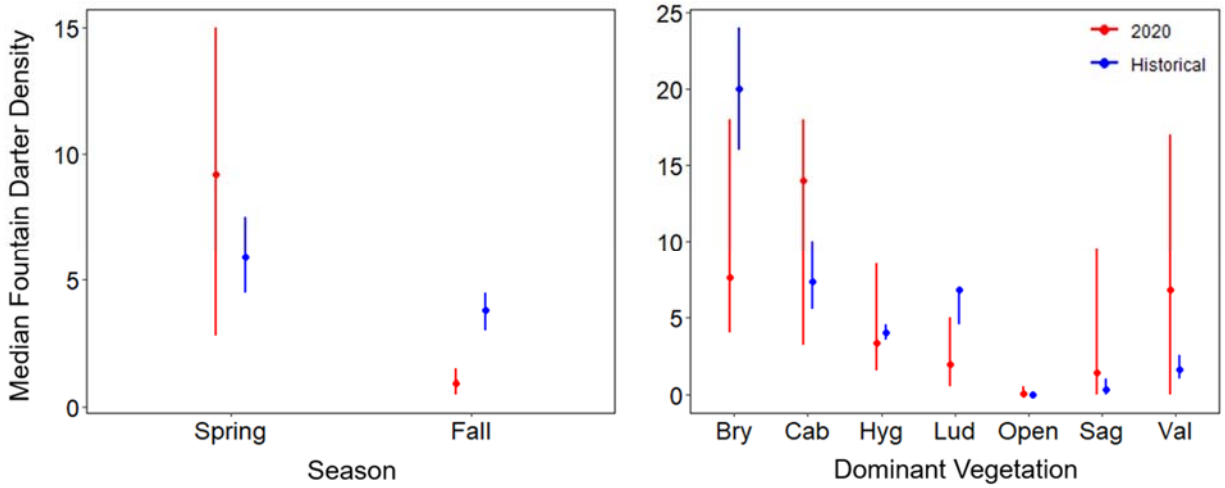

Figure 12. Current and historical (2001–2019) median Fountain Darter density (fish/m^2 ± 95% CI) among seasons and dominant vegetation types observed during drop-net sampling. Error bars denote 95% confidence intervals. Vegetation abbreviations include bryophyte (Bry), *Cabomba* (Cab), *Hygrophila* (Hyg), *Ludwigia* (Lud), *Sagittaria* (Sag), and *Vallisneria* (Val).

Annual trends among reaches demonstrated that median Fountain Darter densities in 2020 were 0.50–3.20 fish/m^2 less than the long-term median densities (2001-2020) at Upper Spring Run, Landa Lake, and New Channel, although current and long-term confidence intervals did overlap. Conversely, Old Channel was 2.60 fish/m^2 greater than the long-term median (3.50 fish/m^2) in 2020 and consistently above the long-term median since 2014 (6.10–11.00 fish/m^2). Upper Spring Run median densities were generally similar between all years. Median Fountain Darter density in 2020 at Landa Lake (6.80 fish/m^2) was less than the long-term median (10.00 fish/m^2), which also occurred in 2015 (9.00 fish/m^2), 2016 (5.60 fish/m^2), and 2019 (7.70 fish/m^2),

although confidence intervals overlapped. Median density at the New Channel was greater than the long-term median (1.90 fish/m^2) from 2014 to 2016 (3.00–4.70 fish/m^2) and 2018 to 2019 (2.90–3.20 fish/m^2) (Figure 13). It should be noted that a variety of potential factors influence annual median Fountain Darter density within each study reach, including changes to the type and number of vegetation strata sampled. For example, vegetation restoration began in the Old Channel in 2013 (BIO-WEST 2020b) and has led to a switch in the dominant vegetation types in this reach. This change has likely contributed to annual median densities surpassing the long-term trend in recent years.

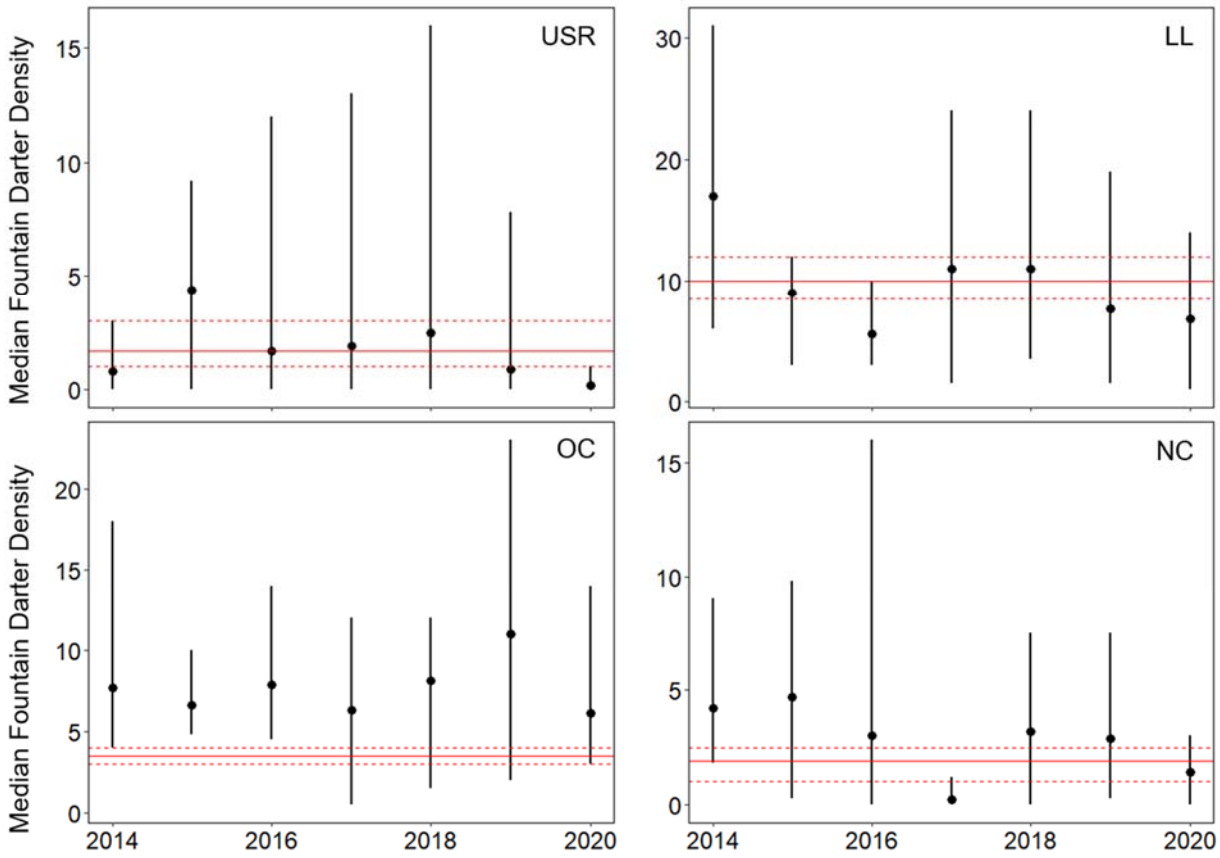

Figure 13. Median Fountain Darter density (fish/m^2 ± 95% CI) at Upper Spring Run (USR), Landa Lake (LL), and Old Channel (OC), and New Channel (NC) from 2014 to 2020 during drop-net sampling. Solid and dashed red lines denote long-term medians (2001–2020) and 95% confidence intervals, respectively.

Fountain Darter lengths in spring ranged from 9 to 35 mm (median=19). The spring length-frequency histogram exhibited a right-skewed distribution and showed that individuals at length bins of 16 to 22 mm contained the majority of observations (60.95%). In comparison to historical spring length-frequency distributions, 2020 collections included increased frequency of Fountain Darters less than 20 mm total length and a decreased frequency of individuals greater than 28 mm (Figure 14). In fall, Fountain Darter lengths ranged from 10 to 38 mm (median=27). Contrary to spring observations, the fall length-frequency histogram displayed a left-skewed distribution that showed most individuals in bins from 26 to 32 mm (55.81%). The current

distribution of fall total lengths was mostly similar to historical observations, although smaller individuals from 12 to 18 mm were more frequent in 2020 collections (Figure 14).

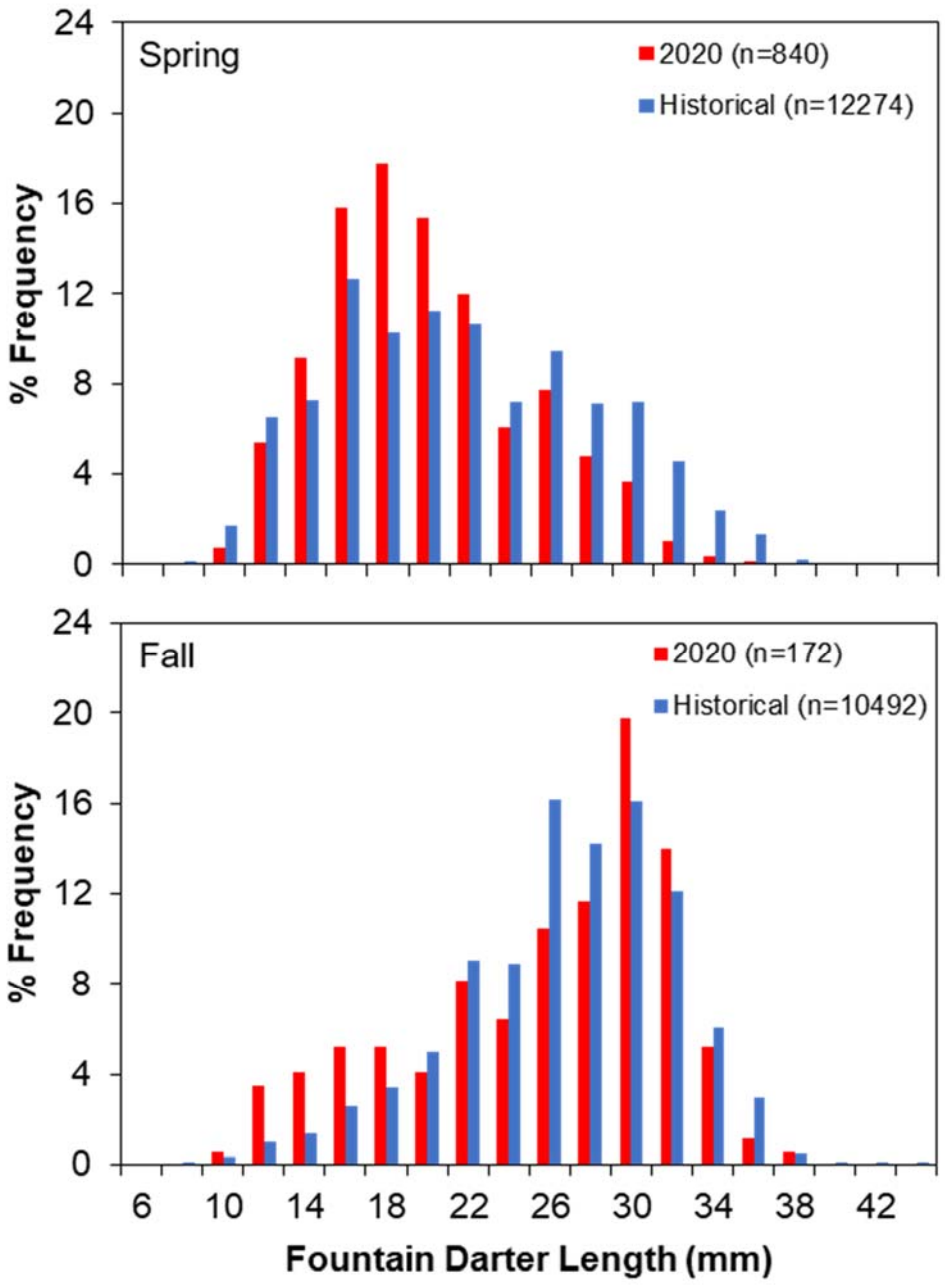

Figure 14. Length-frequency (%) histograms comparing 2020 and historical (2001–2019) Fountain Darter lengths among seasons based on drop-net sampling.

Among vegetation types, median darter length was lowest in bryophyte (18 mm) and *Ludwigia* (18 mm) and highest in open (24 mm). For all violin plots, wider sections denote higher probabilities of observations at a given length (Hintze and Nelson 1998). The majority of Fountain Darters occurred in bryophyte and *Cabomba*, and within these vegetation types, a greater probability of observations occurred at lengths of approximately 18 mm or less. The highest probability of observations also occurred at lengths about 20 mm or less for *Vallisneria*, *Sagittaria*, and *Ludwigia*. Conversely, probability of observations in open areas was less for smaller individuals but increased for individuals 25 mm or greater (Figure 15).

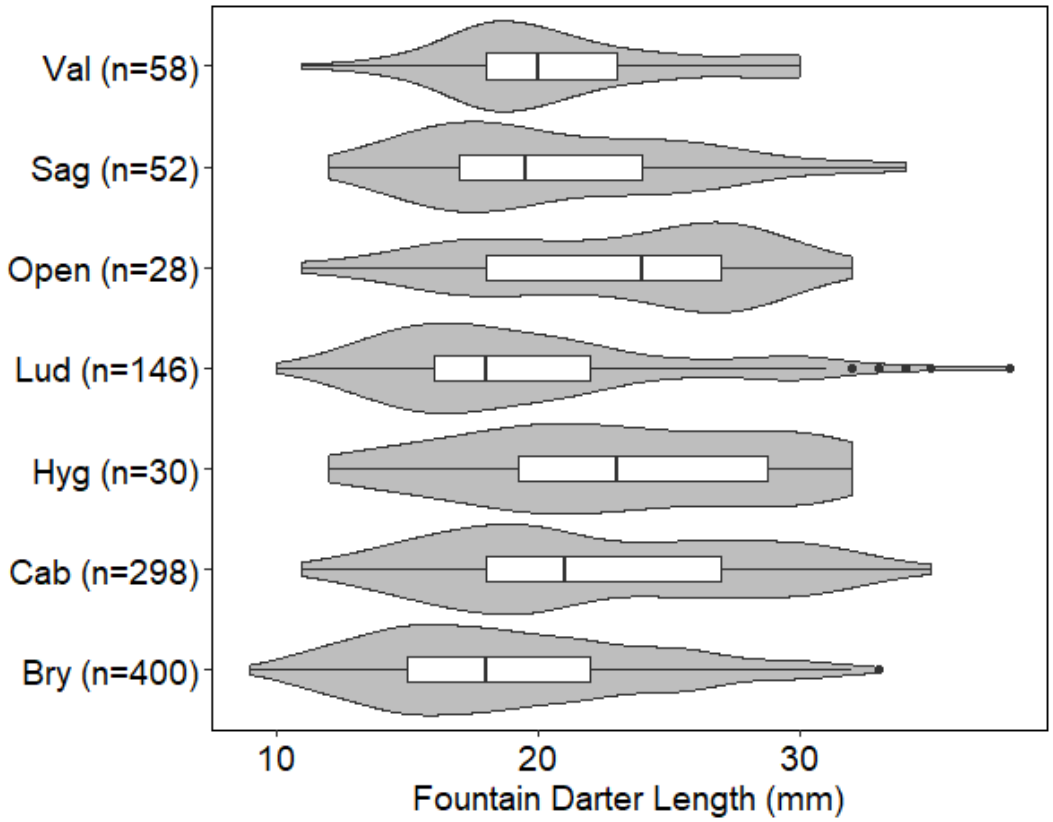

Figure 15. **Box (median, quartiles, range) and violin (probability density) plots displaying Fountain Darter lengths among dominant vegetation types during 2020 drop-net sampling. Vegetation abbreviations include bryophyte (Bry), *Cabomba* (Cab), *Hygrophila* (Hyg), *Ludwigia* (Lud), *Sagittaria* (Sag), and *Vallisneria* (Val).**

Timed Dip-Net Surveys

A total of 945 Fountain Darters were observed during 15 person-hours (ph) of timed dip-netting effort in 2020. Site CPUE ranged from 21 to 160 fish/ph. Median CPUE was slightly higher in the spring (69.60 fish/ph) compared to the summer (61.50 fish/ph) and fall (58.50 fish/ph), all of which were similar to historical observations (Figure 16).

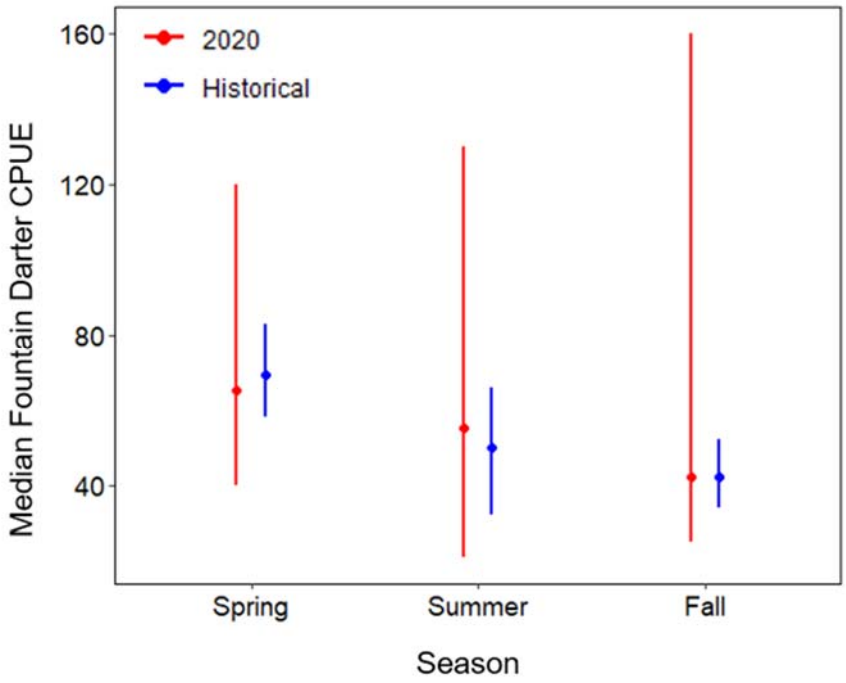

Figure 16. Current and historical (2001–2019) median Fountain Darter CPUE (fish/ph ± 95% CI) among seasons during timed surveys.

Annual trends showed that median CPUEs in 2020 were above the long-term median for all reaches except Upper Spring Run/Spring Island. At Upper Spring Run/Spring Island, median CPUE was at or above the long-term median (77.00 fish/ph) from 2014 to 2019 (76.00–110.00 fish/ph). Median density at Landa Lake was about 50 fish/ph higher than the long-term median (92.00 fish/ph) and was above the long-term median for all years except 2014 (80.00 fish.ph). Further, confidence intervals did not overlap at Landa Lake from 2018 to 2020, demonstrating an increase in catch rates in recent years within this reach. At the Old Channel and Lower River, median density was similar or above their long-term median (48.00 and 28.00 fish/ph, respectively) from 2014 to 2020 (45.00–83.00 and 19.00–43.00 fish/ph, respectively). Median density at the New Channel was above the long-term median (20.00 fish/ph) for all years except 2017 (9.00 fish/ph), where confidence intervals did not overlap (Figure 17).

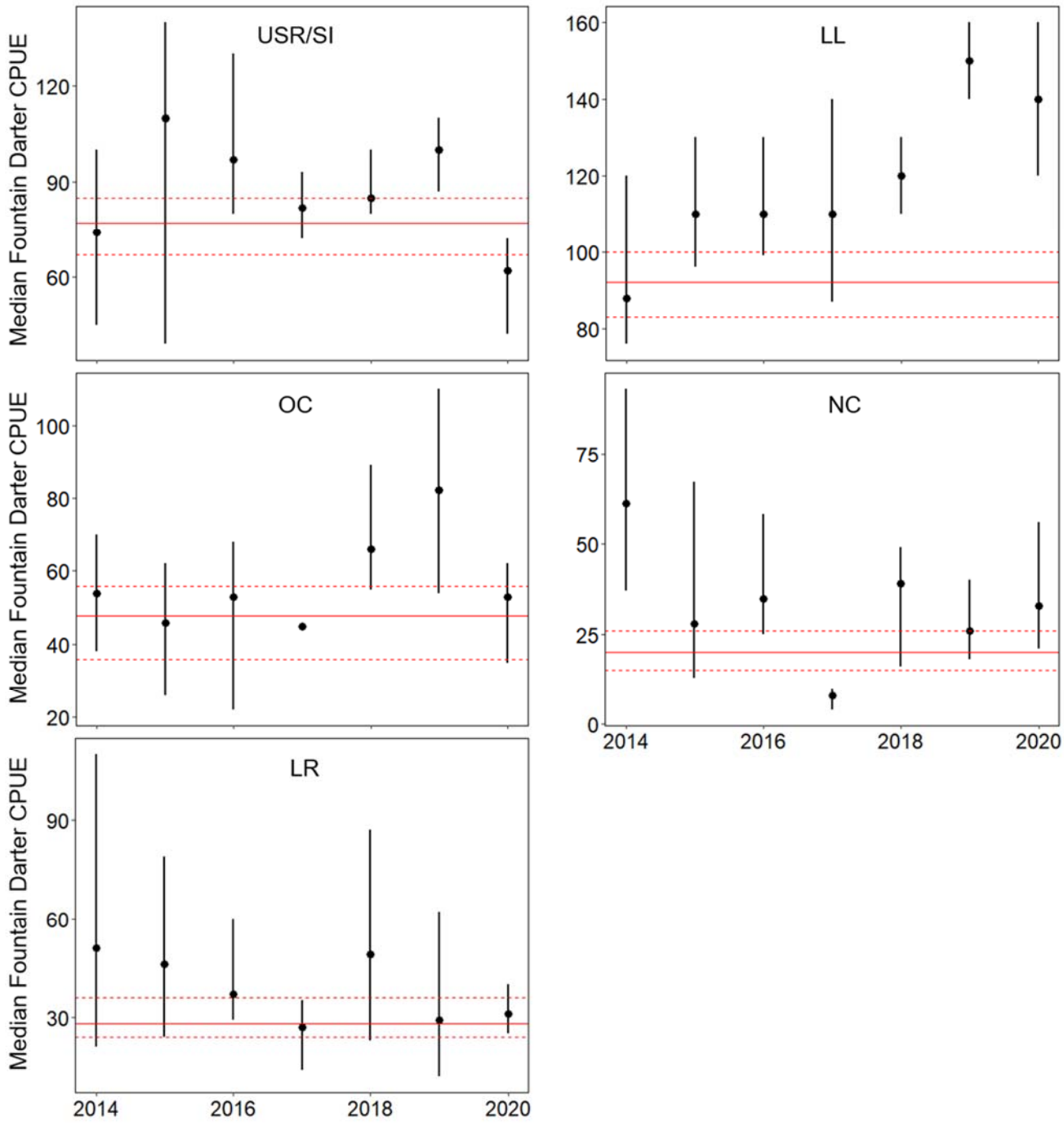

Figure 17. **Annual trends of median Fountain Darter CPUE (fish/ph ± 95% CI) at Upper Spring Run/Spring Island (USR/SI), Landa Lake (LL), Old Channel (OC), New Channel (NC), and Lower River (LR) from 2014 to 2020 during timed surveys. Solid and dashed red lines denote long-term medians (2001–2020) and 95% confidence intervals, respectively.**

Fountain Darter lengths in the spring ranged from 7 to 35 mm (median=20). The spring length-frequency histogram displayed a normal distribution and showed that individuals at length bins 14 to 24 mm contained the majority of observations (70.98%). In the summer, lengths ranged from 7 to 41 mm (median=26), and the length-frequency histogram exhibited a left-skewed distribution. Length frequencies were highest from bins 24 to 30 mm (52.12%). Fall lengths ranged from 6 to 35 mm (median=27) and also exhibited a left-skewed distribution with greater representation of darters in bins 24 to 30 mm (56.55%). Distributional shapes were generally similar to historical observations among all seasons (Figure 18).

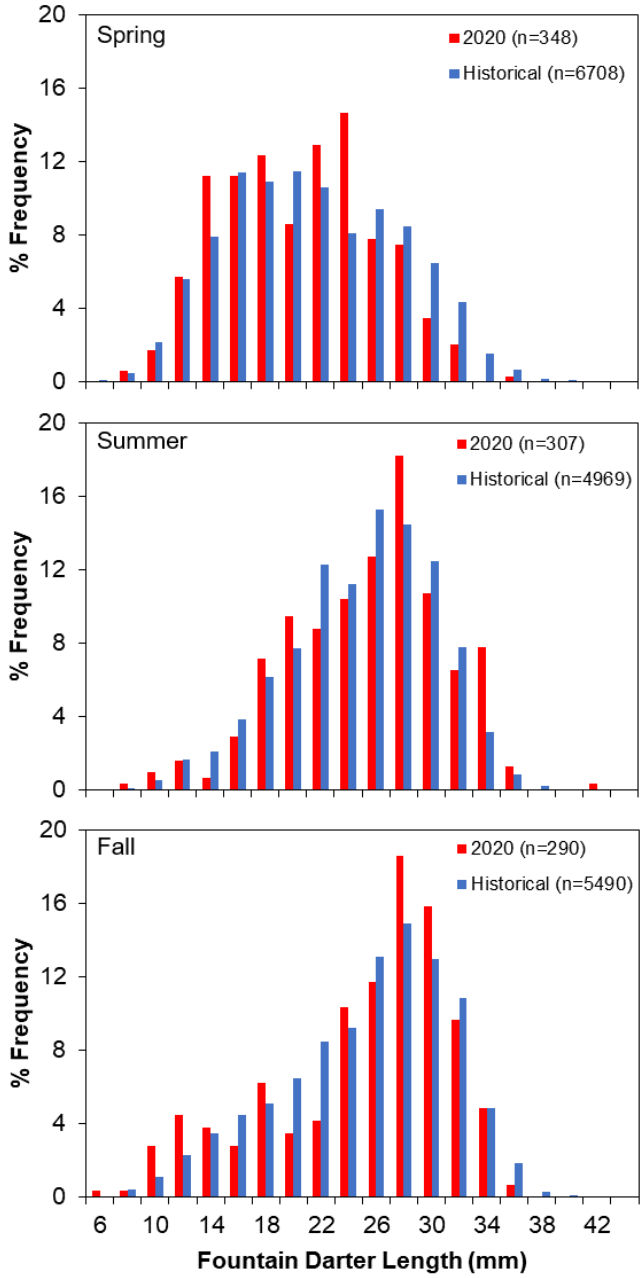

Figure 18. Length-frequency (%) histograms comparing 2020 and historical (2001–2019) Fountain Darter lengths among seasons based on timed dip surveys.

Among reaches, median darter length was lowest at the Lower River (18 mm) and highest at the Old Channel (26 mm). Probability densities were highest at or above median darter length in Upper Spring Run/Spring Island, Landa Lake, Old Channel, and New Channel. At the New Channel, probability density was also higher for individuals at lengths of about 22 mm. In contrast, probability density at the Lower River was highest around 15 mm. Individuals less than 10 mm were observed at Upper Spring Run/Spring Island, Landa Lake, and Lower River, but not at the New Channel (Figure 19).

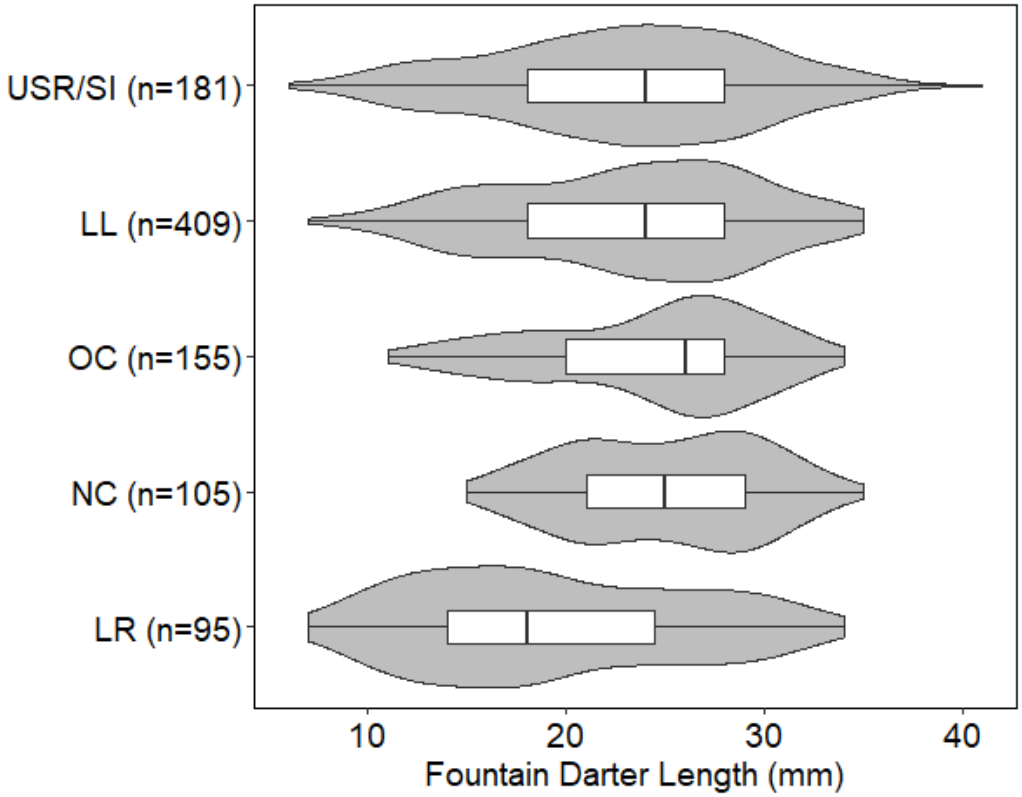

Figure 19. Box (median, quartiles, range) and violin (probability density) plots displaying Fountain Darter lengths among reaches during 2020 timed surveys. Reach abbreviations include Upper Spring Run/Spring Island (USR/SI), Landa Lake (LL), Old Channel (OC), New Channel (NC), and Lower River (LR).

Random-Station Dip-Net Surveys

A total of 108 Fountain Darter occurrences were observed at 150 random-stations for an overall occurrence of 72.00%. A summary of the vegetation types sampled can be found in Table 9.

Among seasons, 2020 data documented decreasing occurrence from spring (84.00%) to fall (60.00%). Further, 2020 occurrence in the spring was about 10% greater than historical observations. In contrast, occurrence in summer and fall were about 4 to 6% less than historical occurrence and confidence intervals overlapped (Figure 20).

Table 9. Summary of vegetation types sampled among reaches during 2020 random-station dip-net surveys.

VEGETATION TYPE	USR	LL	OC	NC
Bryophytes[1]	4	8	14	0
Cabomba[1]	0	2	7	15
Ludwigia[1]	3	8	39	0
Potamogeton[2]	0	1	0	0
Rhizoclonium[1]	1	0	0	0
Sagittaria[2]	7	20	0	0
Vallisneria[2]	0	21	0	0

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

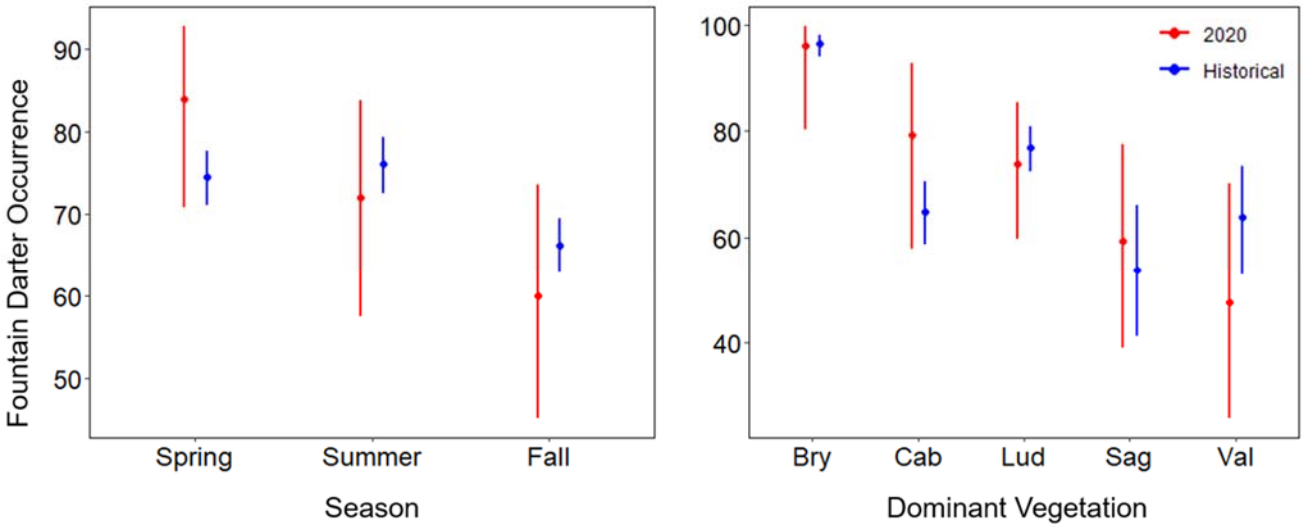

Figure 20. Current and historical (2001–2019) Fountain Darter occurrence (% ± 95% CI) among seasons and dominant vegetation types observed during random-station sampling. Error bars denote 95% confidence intervals. Vegetation abbreviations include bryophyte (Bry), *Cabomba* (Cab), *Ludwigia* (Lud), *Potamogeton* (Pot), *Rhizoclonium* (Rhi), *Sagittaria* (Sag), and *Vallisneria* (Val). Results for *Potamogeton* and *Rhizoclonium* are not presented due to the lack of replicates (n=1) for each taxon.

Among vegetation types, occurrence was highest in bryophyte (96.15%), *Cabomba* (79.17%), and *Ludwigia* (74.00%). Minimum occurrences were observed in *Vallisneria* (47.62%) and *Potamogeton* (0.00%). Occurrence was also lower in *Sagittaria* (59.26%). Vegetation-specific occurrences in 2020 were similar to historical observations for most vegetation types. Occurrence in *Cabomba* was about 15% greater than historical observations. Conversely, occurrence in *Vallisneria* was about 16% lower than historical trends. Despite these differences, confidence intervals overlapped for vegetation types with greater than one random-station sampled (Figure 20).

Annual trends showed that occurrences in 2020 were higher at Landa Lake (68.33%), Old Channel (84.00%), and New Channel (73.33%) compared to Upper Spring Run. At Upper Spring Run, occurrence was at or above long-term occurrence from 2014 to 2019 and was about 33% less in 2020. Landa Lake annual occurrences were above long-term occurrence in 2014 and 2015 and have been below long-term occurrence since. Further, 2020 occurrence at Landa Lake was about 18% less than the long-term occurrence and confidence intervals did not overlap. Annual occurrence at the Old Channel was above long-term occurrence for all years and was 20% greater in 2020 with no confidence interval overlap. Lastly, annual occurrence at the New Channel was above the long-term trend for all years, except 2015 and 2016, and was about 25% higher in 2020 (Figure 21).

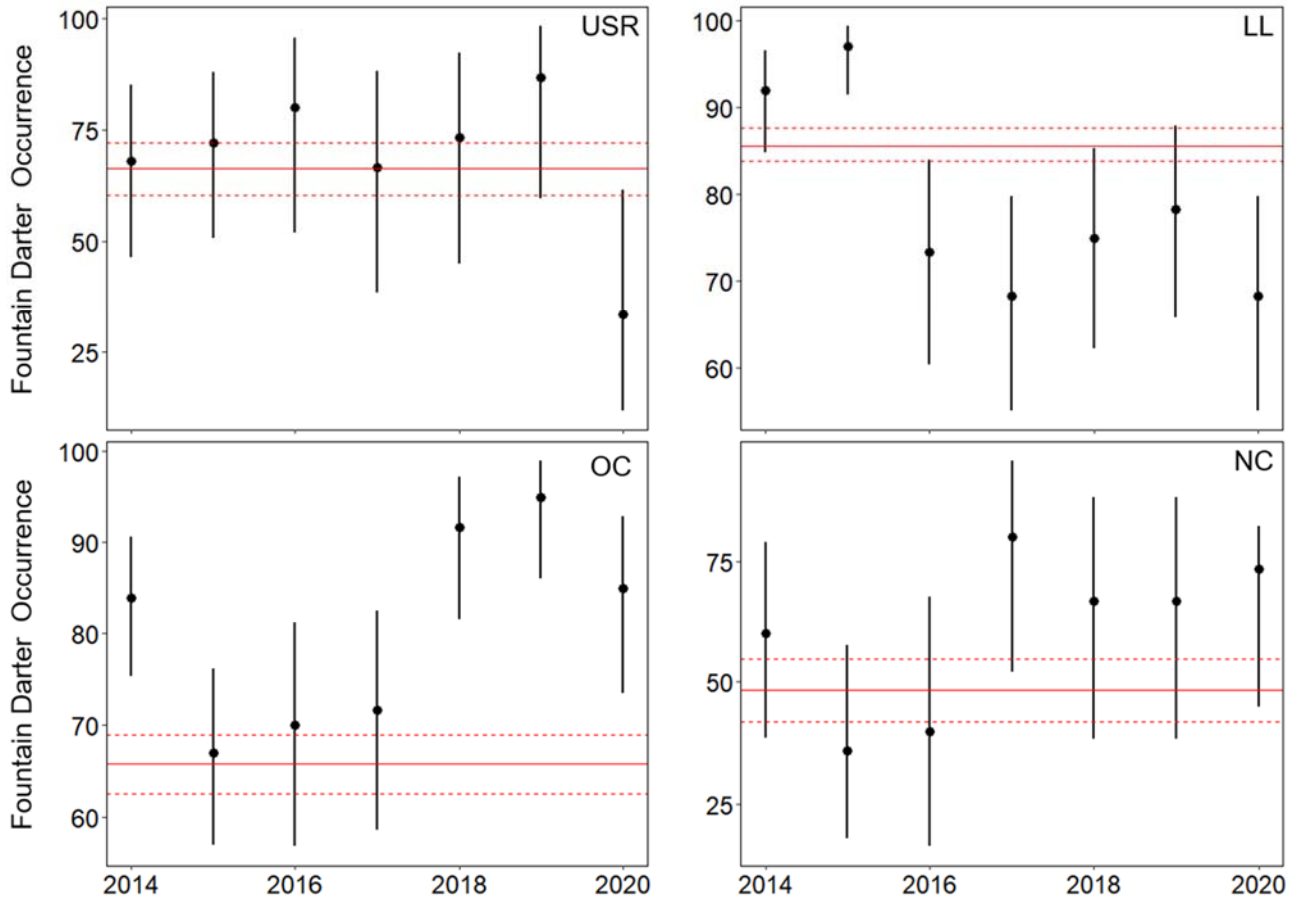

Figure 21. Annual trends of Fountain Darter occurrence (% ± 95% CI) at Upper Spring Run (USR), Landa Lake (LL), Old Channel (OC), and New Channel (NC) from 2013 to 2020 during random-station sampling. Solid and dashed red lines denote long-term (2001–2020) medians and 95% confidence intervals, respectively.

Fountain Darter Visual Surveys

A total of 80 Fountain Darters were observed at Landa Lake during 2020 visual survey efforts. Bryophyte composition in the survey grid was 85% in spring and 80% in fall, although a reduction in bryophyte quality was noted in fall. Fountain Darter density was higher in spring

(6.79 fish/m^2) compared to fall (3.46 fish/m^2). Spring density was higher than the historical median (5.90 fish/m^2). Fall density was lower than the historical median (5.80 fish/m^2) and did not overlap with historical confidence intervals (Figure 22).

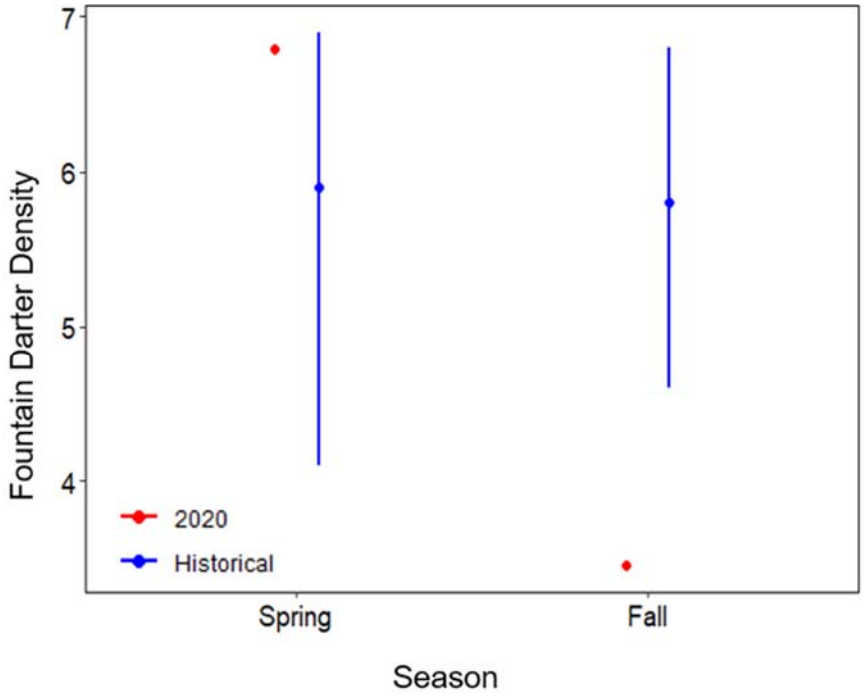

Figure 22. Current Fountain Darter density and historical (2001–2019) median density (fish/m^2 ± 95% CI) among seasons during visual surveys at Landa Lake.

Fish Community Sampling Results

A total of 5,473 fishes represented by 8 families and 23 species were observed in the Comal Springs System during 2020 sampling. Overall community summaries can be found in Appendix D. Among reaches, median species richness and diversity were higher at Upper Spring Run, Old Channel, and New Channel (12–15 species and 1.60–2.00, respectively) compared to Landa Lake (6 species and 1.10, respectively). Median species richness and diversity were generally similar compared to historical observations for all reaches (Figure 23).

Fountain Darter relative abundance was similar between reaches and ranged from 5.20 to 12.00%. Further, Fountain Darters represented a smaller portion of the overall fish community in 2020 (5.20–12.00%) compared to historical observations for all reaches (13.00–43.00%). Fountain Darter relative abundance was about 38% less in Landa Lake and about 4–16% lower in Upper Spring Run, Old Channel, and New Channel. Confidence intervals overlapped only at Upper Spring Run. It should be noted that percent relative abundance is not a measure of population performance, and is instead a metric that assesses relative community composition. Median spring fish relative abundance in 2020 was highest at Landa Lake (94.00%), lowest at the New Channel (49.00%), and similar at Upper Spring Run (71.00%) and Old Channel (69.00%). In comparison to historical observations, relative abundance of spring fish was higher than historical observations in Upper Spring Run (66.00%) and Landa Lake (83.00%), and lower compared to Old Channel (80.00%) and New Channel (61.00%) (Figure 23).

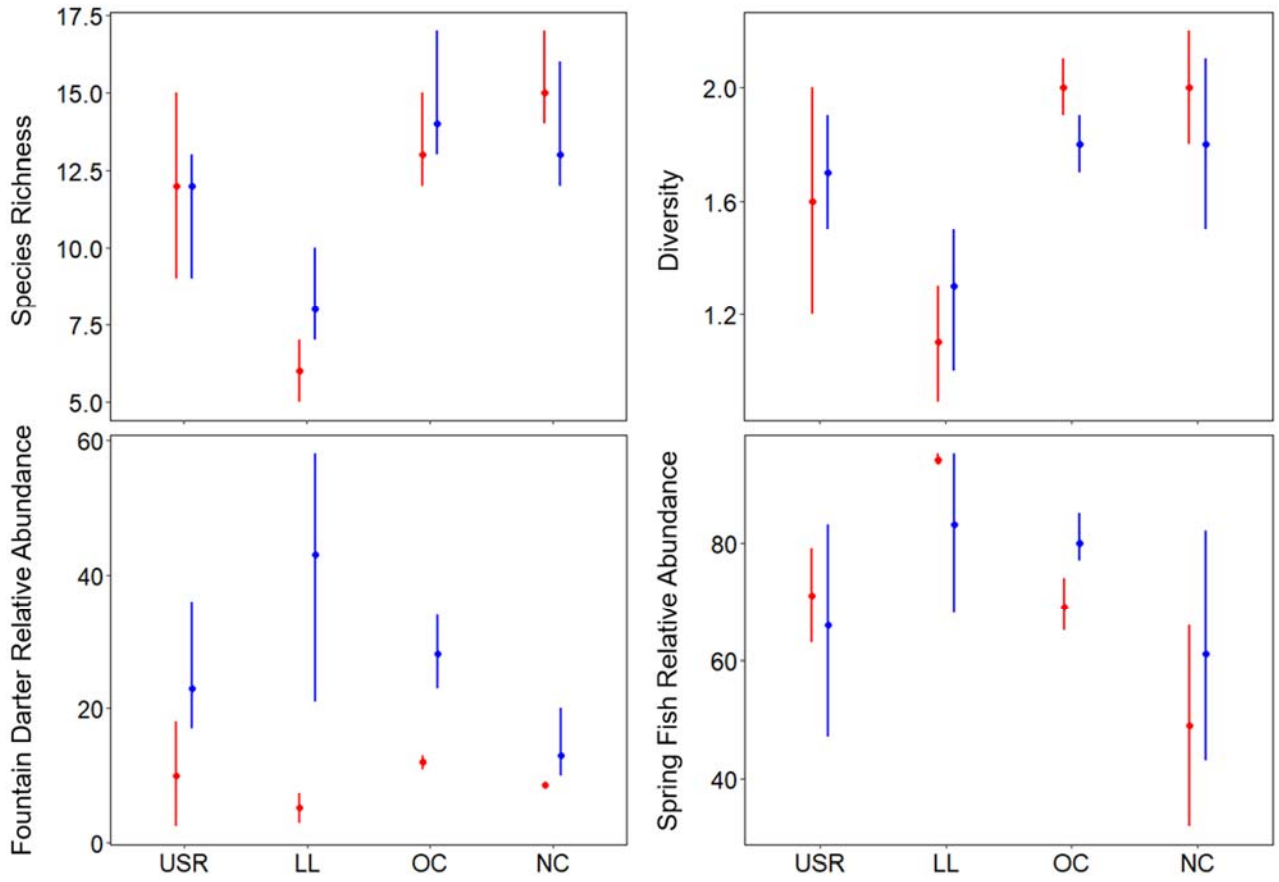

Figure 23. **Current and historical (2014–2019) median species richness, diversity, Fountain Darter relative abundance (%), and spring fish relative abundance (%) among reaches. Error bars denote 95% confidence intervals. Abbreviations include Upper Spring Run (USR), Landa Lake (LL), Old Channel (OC), and New Channel (NC).**

Comal Springs Salamander Survey Results

A total of 384 Comal Springs Salamanders were observed across all four sampling sites during 2020 sampling efforts, with a CPUE of 32.0 salamanders/ph (Table 10). This exceeded the 2000–2020 long-term average (n=62 salamanders; CPUE=10.4 salamanders/ph) (Figure 24) but fell below the previous maximum recorded observations within a single year (2019; n=502 salamanders; CPUE=41.8 salamanders/ph).

Spring Run 1 had the highest total number of observations (n=209 salamanders) and highest CPUE (52.3 salamanders/ph). Contrary to 2019 observations, CPUE was lower for Spring Island Outfall (CPUE=37.0 salamanders/ph) than for Spring Run 3 (CPUE=50.0 salamanders/ph). Consistent with previous years, counts were lower in Spring Island Run, with only one salamander documented in this area in 2020.

Table 10. **Comal Springs Salamander observations with number of observations and catch-per-unit-effort (CPUE; salamanders/person hour) for spring and fall routine sampling in 2020 and the long-term average (2001–2020).**

SEASON	SPRING RUN 1	SPRING RUN 2	SPRING ISLAND RUN	SPRING ISLAND EAST OUTFALL	TOTALS
Spring	113	40	1	37	191 (31.8)
Fall	96	60	0	37	193 (32.2)
Total	209	100	1	74	384 (32.0)
Long-Term Average	27.5	17.3	2.9	13.2	62.3 (10.4)

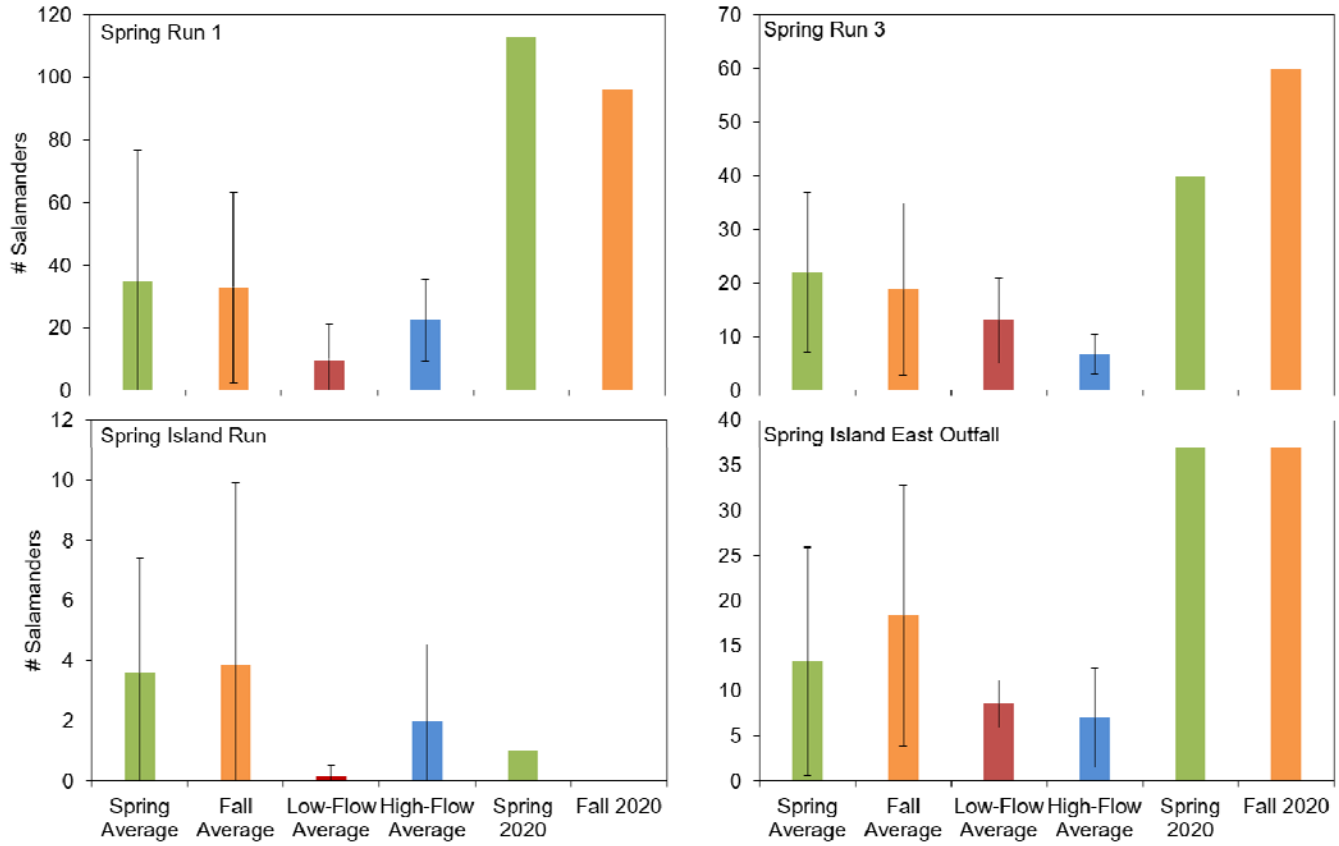

Figure 24. Comal Springs Salamander observations at Spring Run 1, Spring Run 3, Spring Island Run, and Spring Island East Outfall in 2020, with the long-term (2001–2020) average for each sampling event. Error bars for long-term study averages represent the standard deviation of the mean.

Monitoring in 2020 produced the second-highest number of salamander observations ever recorded throughout the duration of the biological monitoring program. With the exception of Spring Island Run, salamander CPUE within the surface environments of the Comal Springs system has been steadily increasing since the return of sustained water levels after the 2014 drought (Figure 25). Overall, salamander populations within this spring system have been persistent and steadily increasing in abundance in recent years.

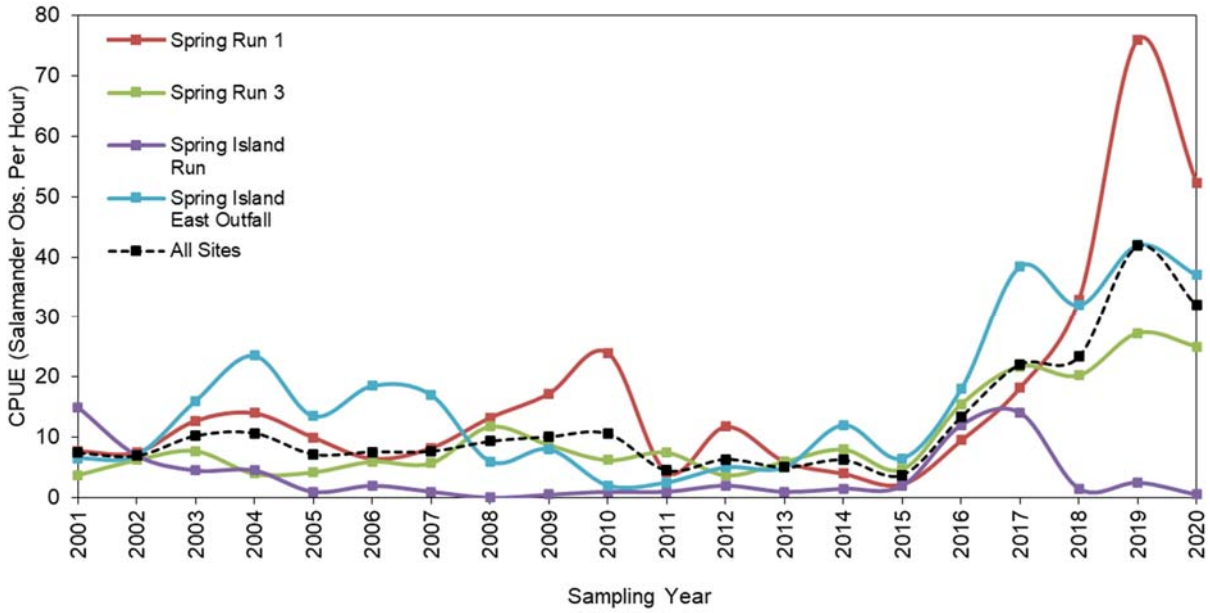

Figure 25. Comal Springs Salamander CPUE (2001–2020) by sampling area showing combined spring and fall sampling events and average across all four sampling sites.

Macroinvertebrate Sampling Results

Drift-Net Sampling

A total of 1,178 groundwater invertebrates were collected during drift-net sampling efforts among both seasons in 2020, with 215 at Spring Run 1, 542 at Spring Run 3, and 421 at the upwelling along the Western Shoreline of Landa Lake (Spring 7) (Table 11). Across all sites, *Stygobromus* species were the most commonly captured organisms. *Lirceolus* (isopods) had the second most observations in drift-net collections. One adult and two larval Comal Springs Riffle Beetles were collected from Spring Run 1 during 2020 drift-net activities.

No Edwards Aquifer Diving Beetles or Comal Springs Dryopid Beetles were collected in drift-net sampling in 2020. Similar to 2019, Comal Springs Riffle Beetle and Comal Springs Dryopid Beetle were not collected at the Western Shoreline upwelling. However, this site did have the greatest number of Peck's Cave Amphipod (34), and the highest number of immature *Stygobromus* species (337) (Table 11).

Table 11. Total numbers of stygobitic and endangered species collected at each site during May and November 2020. Federally endangered species are designated with (E). A=adult; L=larvae; P=probable pupae.

TOTAL DRIFT NET TIME (HOURS)	RUN 1 (48)	RUN 3 (48)	UPWELLING (48)
Crustaceans			
Amphipoda			
Crangonyctidae			
Stygobromus pecki (E)	17	32	34
Stygobromus russelli	4	0	0
Stygobromus sp.	122	195	337
Hadziidae			
Mexiweckelia hardeni	11	65	6
Sebidae			
Seborgia relicta	2	3	10
Bogidiellidae			
Artesia subterranea	0	2	0
Parabogidiella americana	0	0	0
Isopoda			
Asellidae			
Lirceolus sp.	41	87	14
Cirolanidae			
Cirolanides texensis	0	1	6
Turbellaria			
Kenkiidae			
Sphalloplana mohri	2	2	0
Mollusca			
Gastropda			
Cochliopidae			
Phreatodrobia spica	0	72	0
Phreatodrobia plana	1	33	13
Stygopyrus sp.	1	40	1
Annelids			
Lumbriculata			
Lumbriculidae			
Eremidrilus sp.	4	9	0
Arachnids			
Hydrachnoidea			
Hydryphantidae			
Almuerzothyas comalensis	6	0	0
Insects			
Coleoptera			
Dytiscidae			
Comaldessus stygius	1 L	1 A	0
Elmidae			
Heterelmis comalensis (E)	3 (2L,1A)	0	0

Comal Springs Riffle Beetle

The use of tags to place and relocate lures was implemented in 2020, and only one lure was not recovered from the Western Shoreline in spring. However, seven additional lures among all collecting sites and seasons appeared to have been disturbed or exposed and were not included in the analysis. Figure 26 summarizes the densities of adult Comal Springs Riffle Beetle from 2020 in the context of the long-term study. In 2020, the number of adult Comal Springs Riffle Beetles collected from lures at all localities in spring were low compared to previous years. In fall there appeared to be somewhat of a recovery, though numbers were lower compared to 2019 (BIO-WEST 2020). Numbers of adult beetles sampled per lure from Spring Run 3 ranged from 0 to 9 in spring and 0 to 20 in fall. Only four adult Comal Springs Riffle Beetles were collected on a single lure at the Western Shoreline in spring, but abundance ranged from 0 to 12 in fall. Lures retrieved from Spring Island collected 0–7 adult beetles in spring and 0–11 in fall.

In general, Comal Springs Riffle Beetle densities were below long-term averages. It is worth noting that there were many studies in 2020 that utilized lures to either directly catch Comal Springs Riffle Beetle, or to catch other species that could indirectly catch Comal Springs Riffle Beetles. This may be a partial explanation for the lower numbers observed this year. Due to the nature of the monitoring technique (cotton lures left in the system for long periods) and the extremely clumped distribution of Comal Springs Riffle Beetle, which are associated with small spring orifices, these data are inherently variable in nature. High-flow events, human disturbance, or other stochastic factors can result in loss of cotton lures. Similarly, variation in placement of lures by only a few feet may influence capture rates. To reduce the influence of such factors, efforts are being made to standardize exact lure placement and minimize lure loss. However, it was perceived that some springs had decreased in flow intensity while others increased. Continued monitoring is crucial to further evaluate the mechanisms influencing Comal Springs Riffle Beetle densities on cotton lures.

Benthic Macroinvertebrate Rapid Bioassessment

A total of 792 and 849 individual macroinvertebrates, representing 32 and 36 unique taxa were sampled in spring and fall, respectively (raw data presented in Appendix D). Altogether, 41 unique taxa were represented among all samples from 2020. Metric scores for calculating the B-IBI can be found in Table 12.

The overall results of this metric analysis contribute to the B-IBI scores and assessment of the aquatic-life-use (Figure 27). Upper Spring Run was assessed as an “Intermediate” habitat in spring but was found to be “High” in fall with regard to supporting a balanced, integrated, adaptive community of organisms. Landa Lake is described from these assessments as being “Limited” in the spring and “Intermediate” in the fall. New Channel ranked “High” for both seasons. Old Channel ranked “Intermediate” for both seasons. The Lower River reach ranked “High” in both seasons. It is important to note that, although it is easy to focus on the differences between reaches, the overall goal of this assessment is to track the “condition” of specific reaches through time as an indicator of trends.

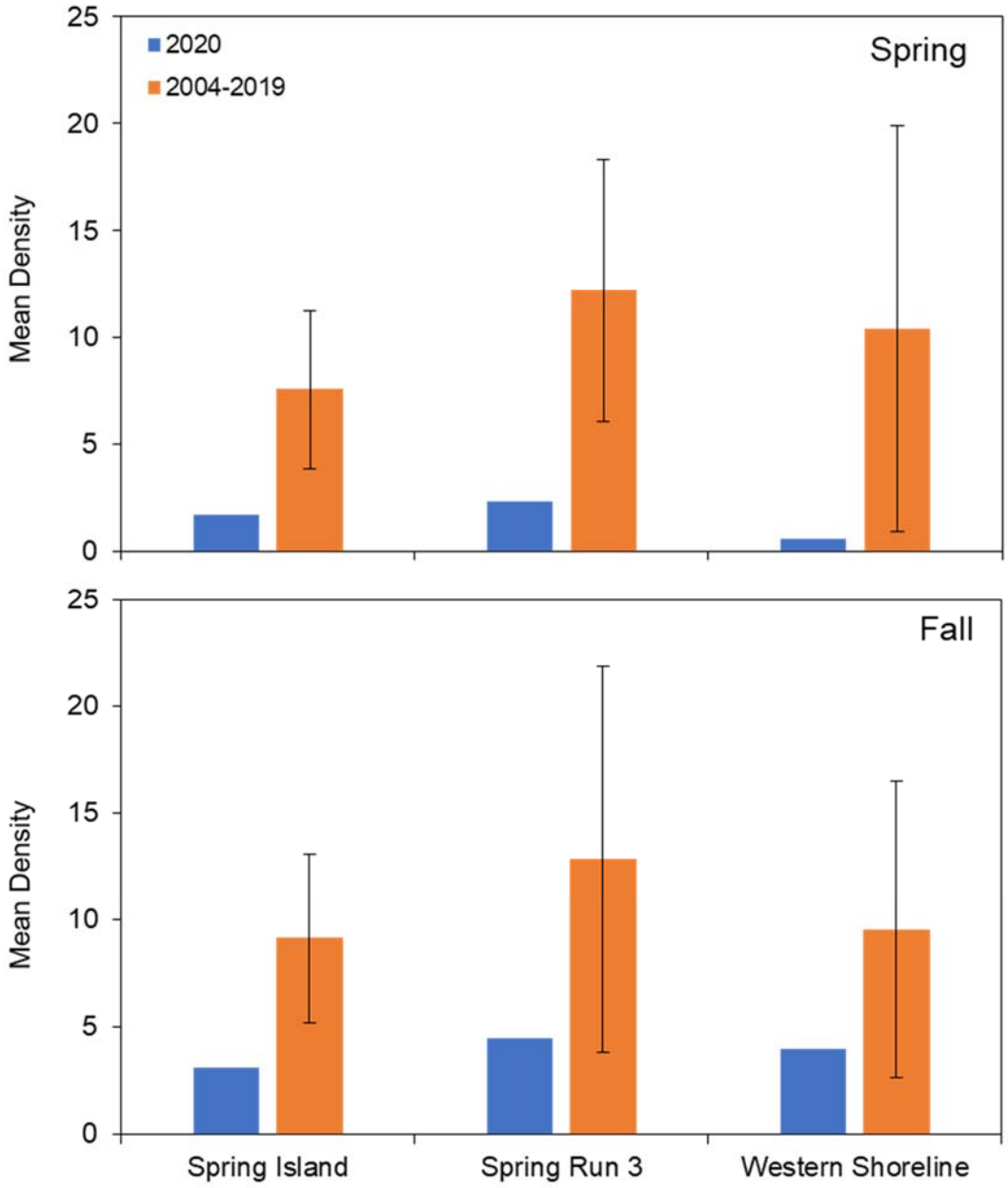

Figure 26. **Mean densities of adult Comal Springs Riffle Beetles sampled during the spring and fall of 2020 compared to long-term (2004–2019) mean densities. Error bars represent one standard deviation of the mean.**

Table 12. 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

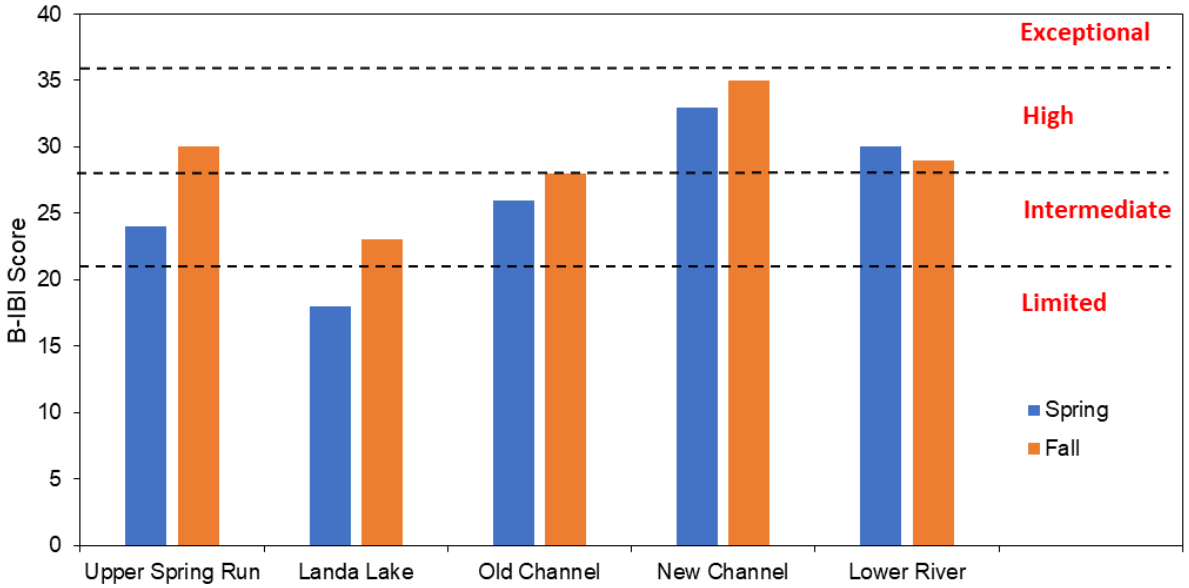

Figure 27. Benthic macroinvertebrate Index of Biotic Integrity (B-IBI) scores and aquatic-life-use point-score ranges for Comal Springs sample sites. "Exceptional" indicates highest quality habitats relative to reference streams used to develop the index.

In summary, areas of more lentic-type habitat (Landa Lake, Upper Spring Run) scored lower because these communities are different compared to the swift-flowing, least-disturbed reference streams used in development of the metrics. Downstream areas with more-lotic conditions generally scored higher, as habitat is more similar to reference streams. It should also be noted that most reference streams do not exhibit the stenothermal conditions present within the upper Comal River, and this may result in differing community composition. Additional monitoring may allow development of a reference dataset specific to this unique ecosystem, and potentially development of a specific IBI scoring system for unique large spring environments such as the San Marcos and Comal rivers.

CONCLUSION

Aquatic vegetation coverage in 2020 was similar to long-term seasonal averages at Landa Lake and Old Channel. At Upper Spring Run, coverage was higher than the long-term spring average, but lower than the long-term fall average. Vegetation coverage was higher than long-term averages at upper and lower New Channel reaches, which may be influenced by minimal recreational disturbance during the COVID-19 pandemic. Among vegetation types, bryophytes were reduced in fall at Upper Spring Run and Landa Lake. Bryophytes at Landa Lake were less robust compared to previous years and seemed to be replaced by *Rhizoclonium*. In contrast, *Ludwigia* and *Cabomba* have increased in coverage due to restoration efforts in Landa Lake. Native rooted vegetation increased in the Old Channel, and observations indicate this reach has the highest potential to become a self-sustaining *Ludwigia*- and *Cabomba*-dominated community due to limited occurrence of competitive species and consistent growing conditions.

Fountain Darter density and occurrence in 2020 partially supported previous research that observed Fountain Darter more frequently within ornate vegetation (e.g., bryophyte, *Cabomba*) (Schenck and Whiteside 1976; Linam et al. 1993; Alexander and Phillips 2012). Long, austere-leaved taxa are considered less-suitable habitat. Despite this, *Vallisneria* exhibited the second-highest median density in 2020, which is likely due to the presence of bryophytes within the sites sampled. Further, smaller darters at lengths of approximately 20 mm or less were more frequent in ornate vegetation. Among seasons, darters 20 mm or less were more frequent in spring, which is consistent with previous data and suggests a late winter/early spring reproductive peak. Fountain Darter median density and occurrence were above their historical trends in spring and below in fall. In contrast, median catch rates were similar to historical values for all seasons. Annual trends in Fountain Darter population metrics (density, occurrence, catch rates) were variable, and showed no consistent patterns across metrics. Median densities varied between reaches but no strong temporal patterns were evident. Patterns in median annual catch rates at Landa Lake were much higher than the long-term median in 2019 and 2020. Lastly, occurrence was lower than long-term trends in Upper Spring Run and Landa Lake, and higher at Old Channel and New Channel. The differences in seasonal and annual trends between these population metrics shows the importance of using multiple sampling methods to assess Fountain Darter populations. Density, occurrence, and catch rates do not always show similar responses, and having data on all three metrics allows increased resolution in tracking Fountain Darter population responses. In the future, assessing habitat use versus availability (i.e., relative habitat use) may prove useful for elucidating potential mechanisms of observed trends during annual sampling efforts.

Overall catch rates of Comal Springs Salamander in 2020 exceeded the long-term average and was the second-highest number of observations among all sampling years. Spring Run 1 had the highest total number of observations and catch rates. Contrary to 2019 observations, CPUE was lower for Spring Island Outfall than for Spring Run 3. Consistent with previous years, counts were lower in Spring Island Run, with only one salamander documented in this area in 2020. With the exception of Spring Island Run, salamander CPUE within the surface environments of the Comal Springs system has been steadily increasing since the return of sustained water levels after the 2014 drought. Overall, salamander populations within the study area are persistent and steadily increasing in abundance in recent years.

During macroinvertebrate drift-net sampling, one adult and two larval Comal Springs Riffle Beetles were collected from Spring Run 1. No Edwards Aquifer Diving Beetles or Comal Springs Dryopid Beetles were collected in any drift-net samples. Further, the Western Shoreline upwelling had the greatest number of Peck's Cave Amphipods. Lure sampling for Comal Springs Riffle Beetles showed that densities were below long-term averages. Lower densities observed may be due to the inherent variability in collections using this method or possibly due to many lure studies being conducted in 2020. Benthic Macroinvertebrate Rapid Bioassessment displayed that areas of more lentic-type habitat (Landa Lake, Upper Spring Run) scored lower because these communities are different compared to swift-flowing, least-disturbed reference streams. Downstream areas with more lotic conditions generally scored higher because the habitat is more similar to reference streams.

Overall, 2020 observations of habitat and species condition remain generally stable in Landa Lake, while variable conditions continue in the other spring areas and the Comal River. Continued monitoring is paramount in evaluating responses of this diverse and dynamic system to a suite of ever-changing hydrologic, climatic, and anthropogenic 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: FIGURES AND AQUATIC VEGETATION MAPS

FIGURES

Water Temperature Results

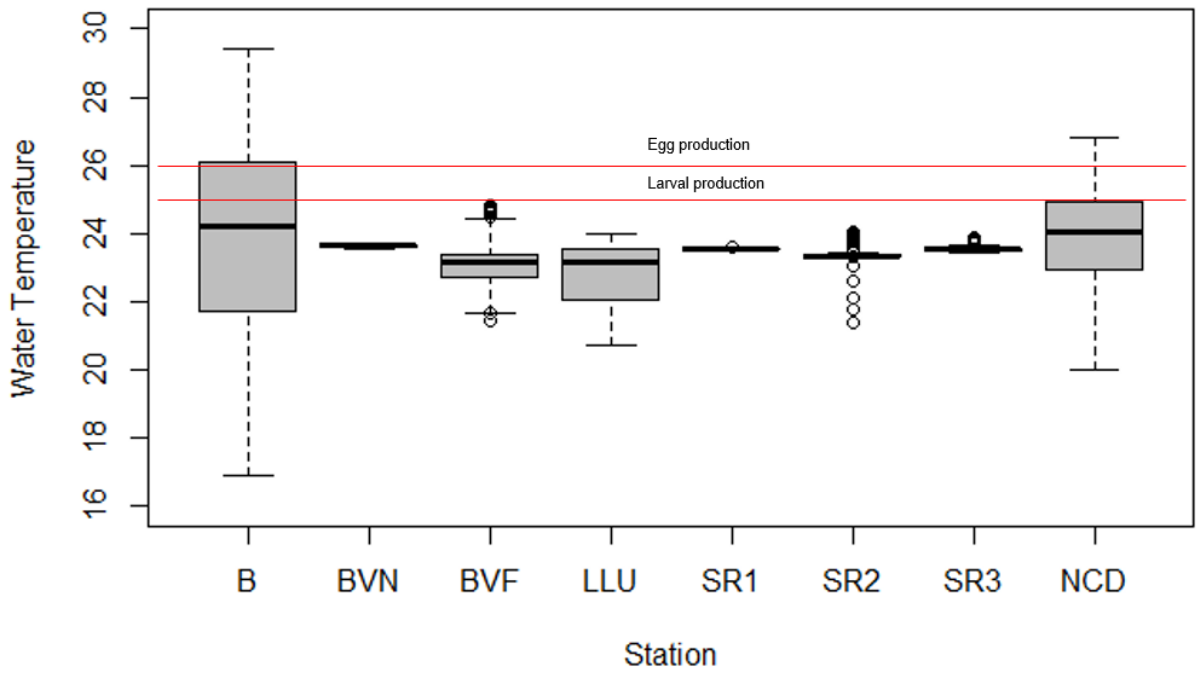

Figure B1. **Boxplots (median, quantile, range) displaying 2020 water temperatures at Blieders (B; 1/1-10/15), Boonville Near (BVN; 1/1-10/15), Booneville Far (BVF; 1/1-4/28), Landa Lake Upper (LLU; 1/1-10/29), Spring Run 1 (SR1; 1/1-10/15), Spring Run 2 (SR2; 1/1-10/15), Spring Run 3 (SR3; 1/1-10/15), and New Channel Downstream (NCDS; 1/1-10/15).**

AQUATIC VEGETATION MAPS

Figure B2. Map of aquatic vegetation coverage at Upper Spring Run Study Reach in spring 2020.

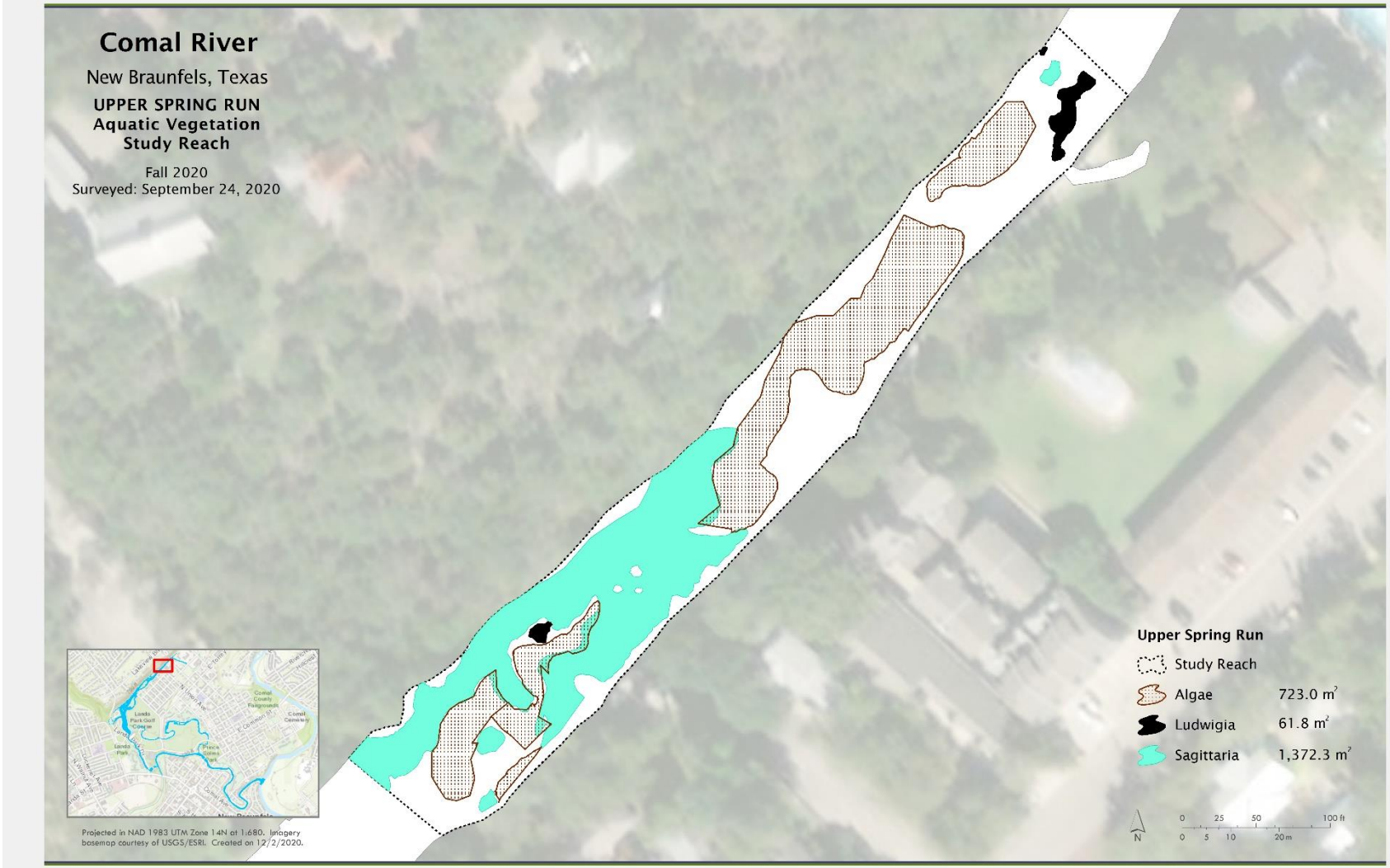

Figure B3. Map of aquatic vegetation coverage at Upper Spring Run Study Reach in fall 2020.

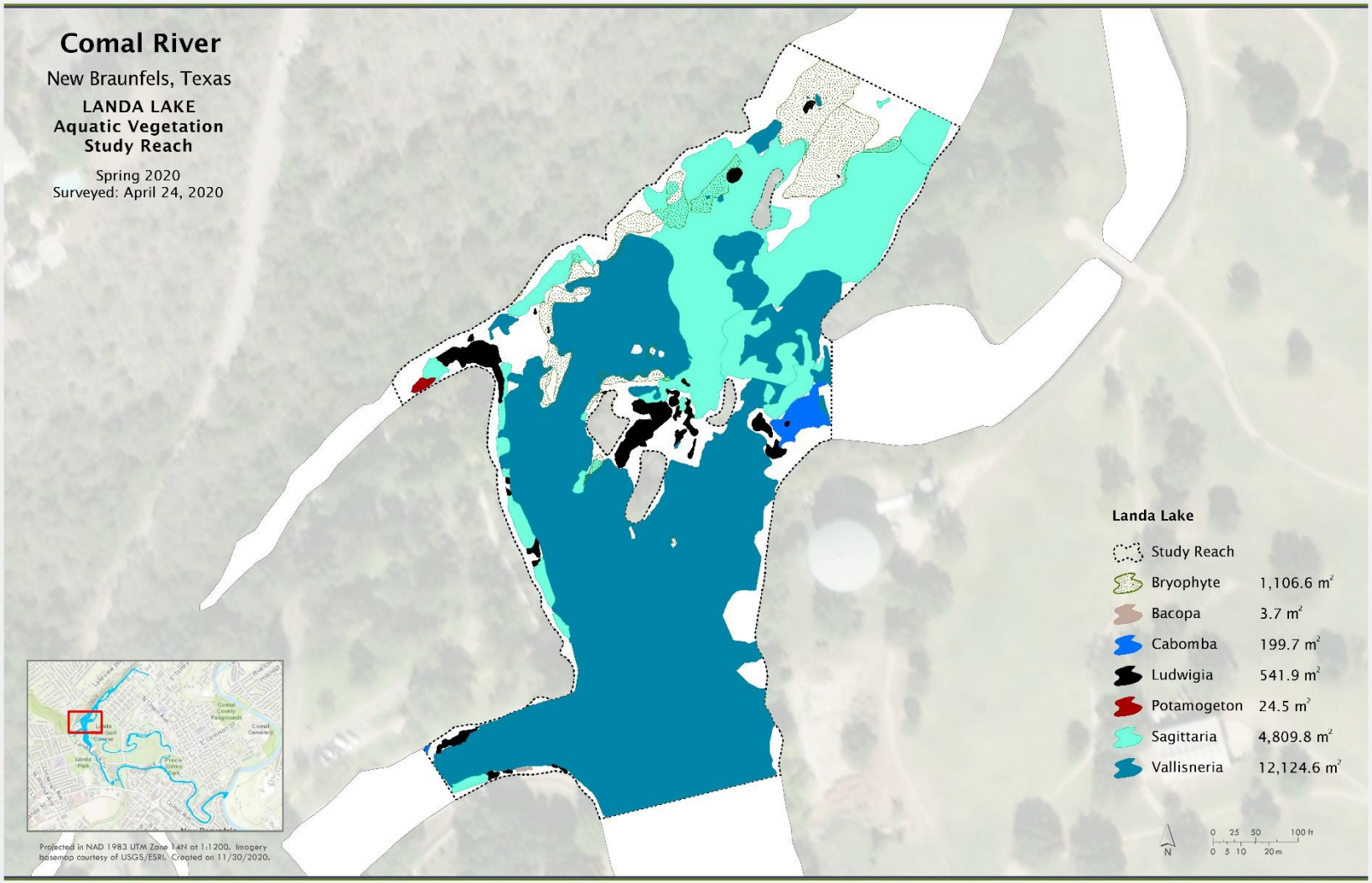

Figure B4. Map of aquatic vegetation coverage at Landa Lake Study Reach in spring 2020.

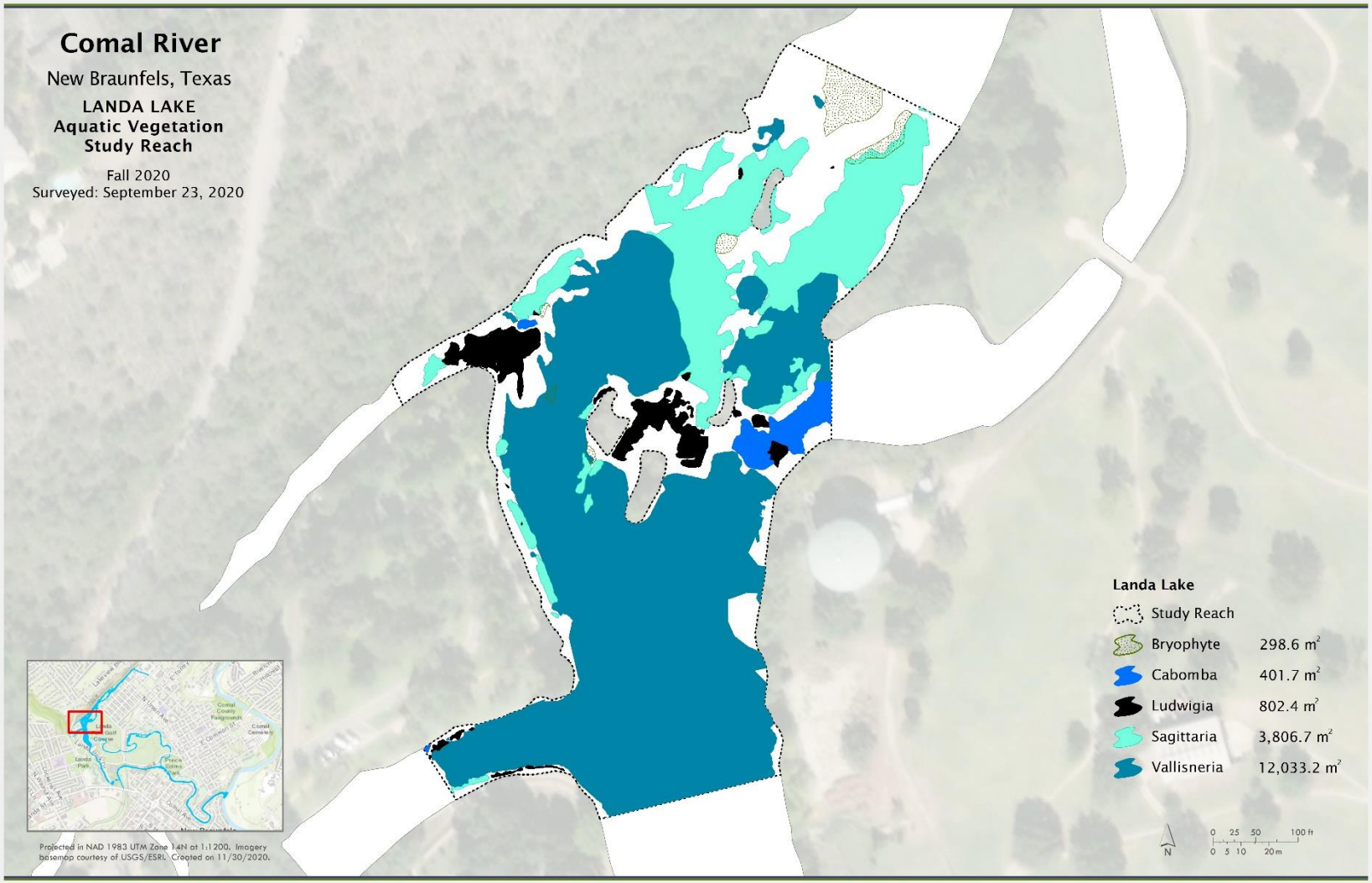

Figure B5. Map of aquatic vegetation coverage at Landa Lake Study Reach in fall 2020.

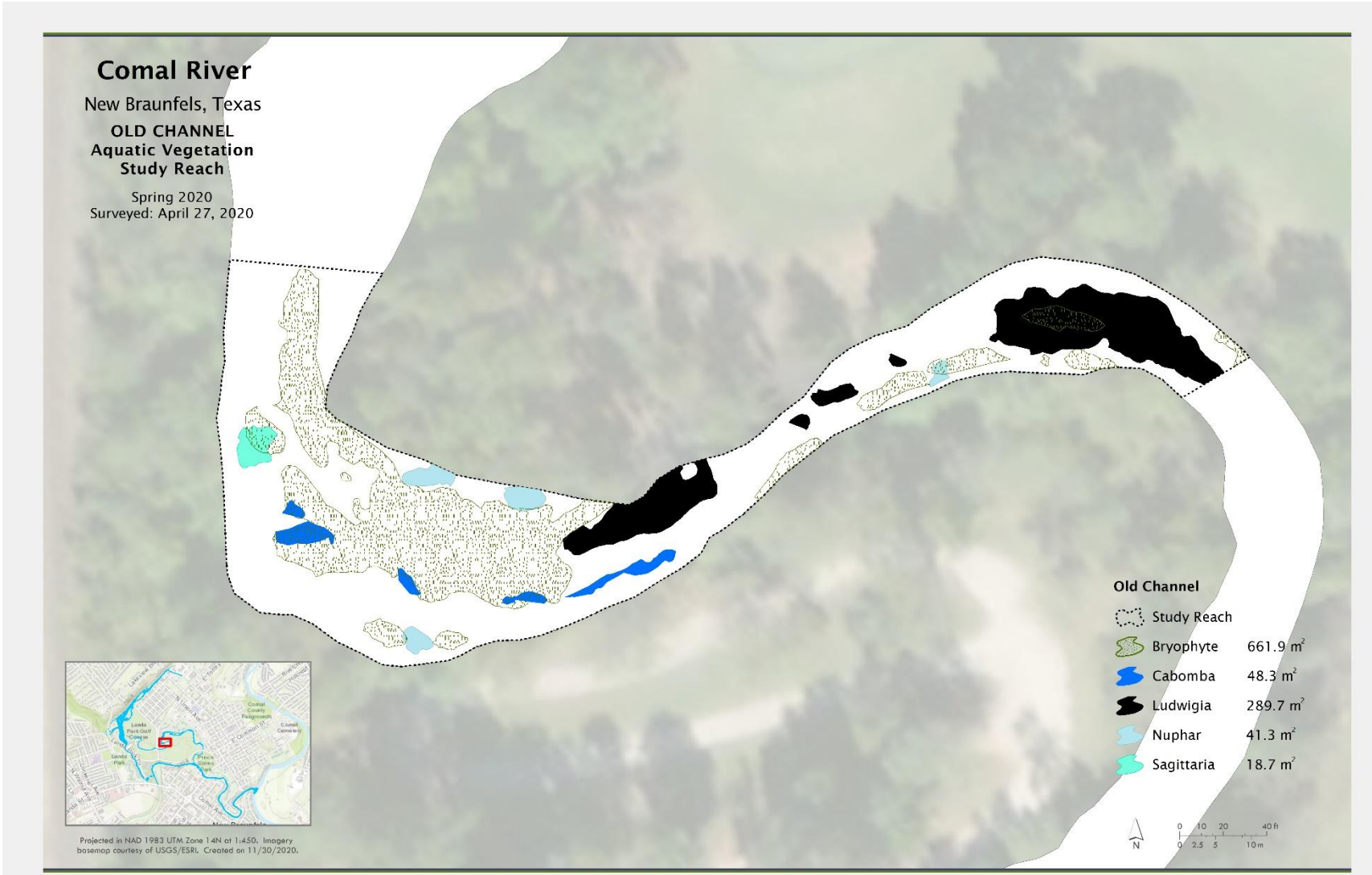

Figure B6. Map of aquatic vegetation coverage at Old Channel Study Reach in spring 2020.

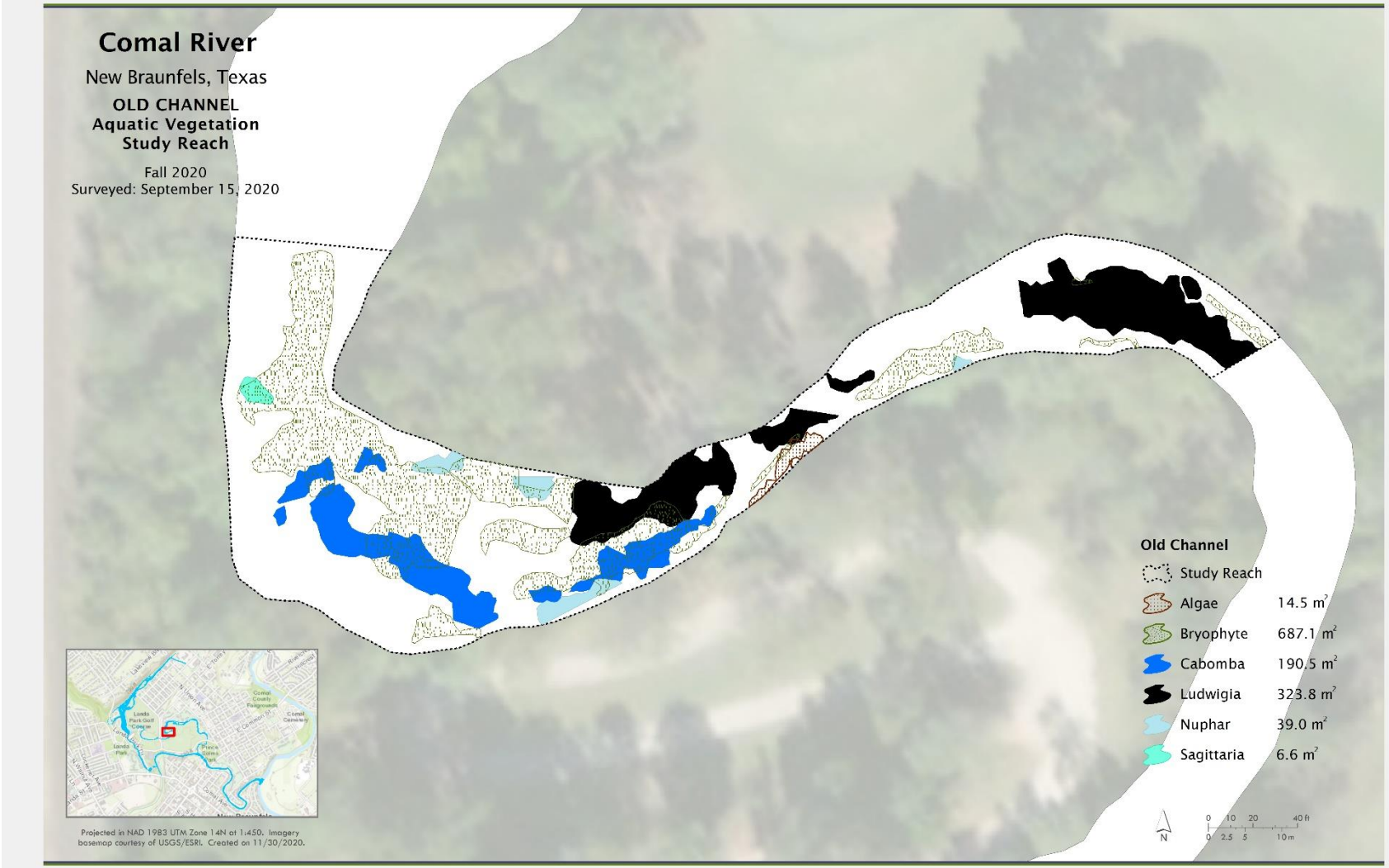

Figure B7. Map of aquatic vegetation coverage at Old Channel Study Reach in fall 2020.

Figure B8. Map of aquatic vegetation coverage at Upper New Channel Study Reach in spring 2020.

Figure B9. Map of aquatic vegetation coverage at Upper New Channel Study Reach in fall 2020.

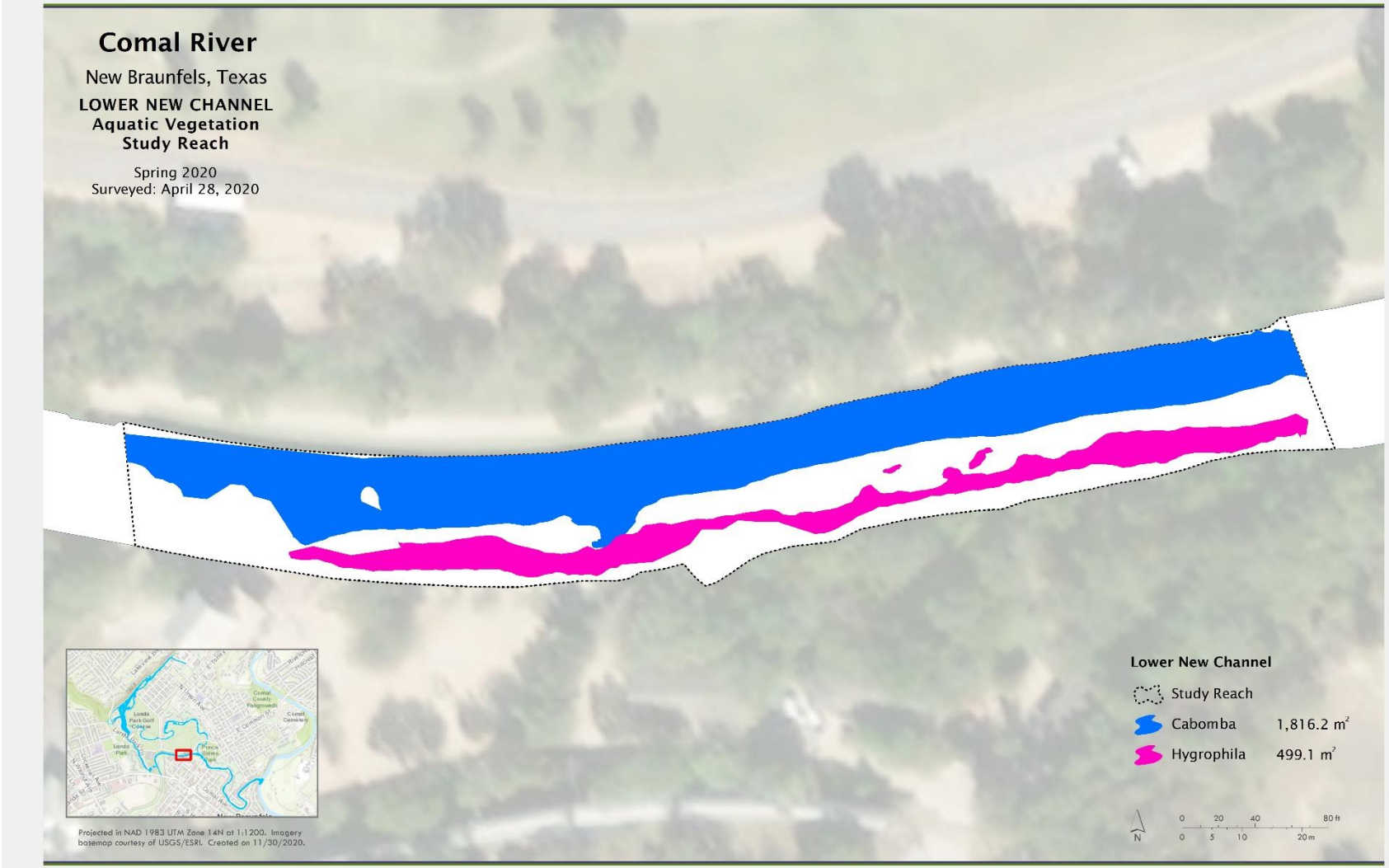

Figure B10. Map of aquatic vegetation coverage at Lower New Channel Study Reach in spring 2020.

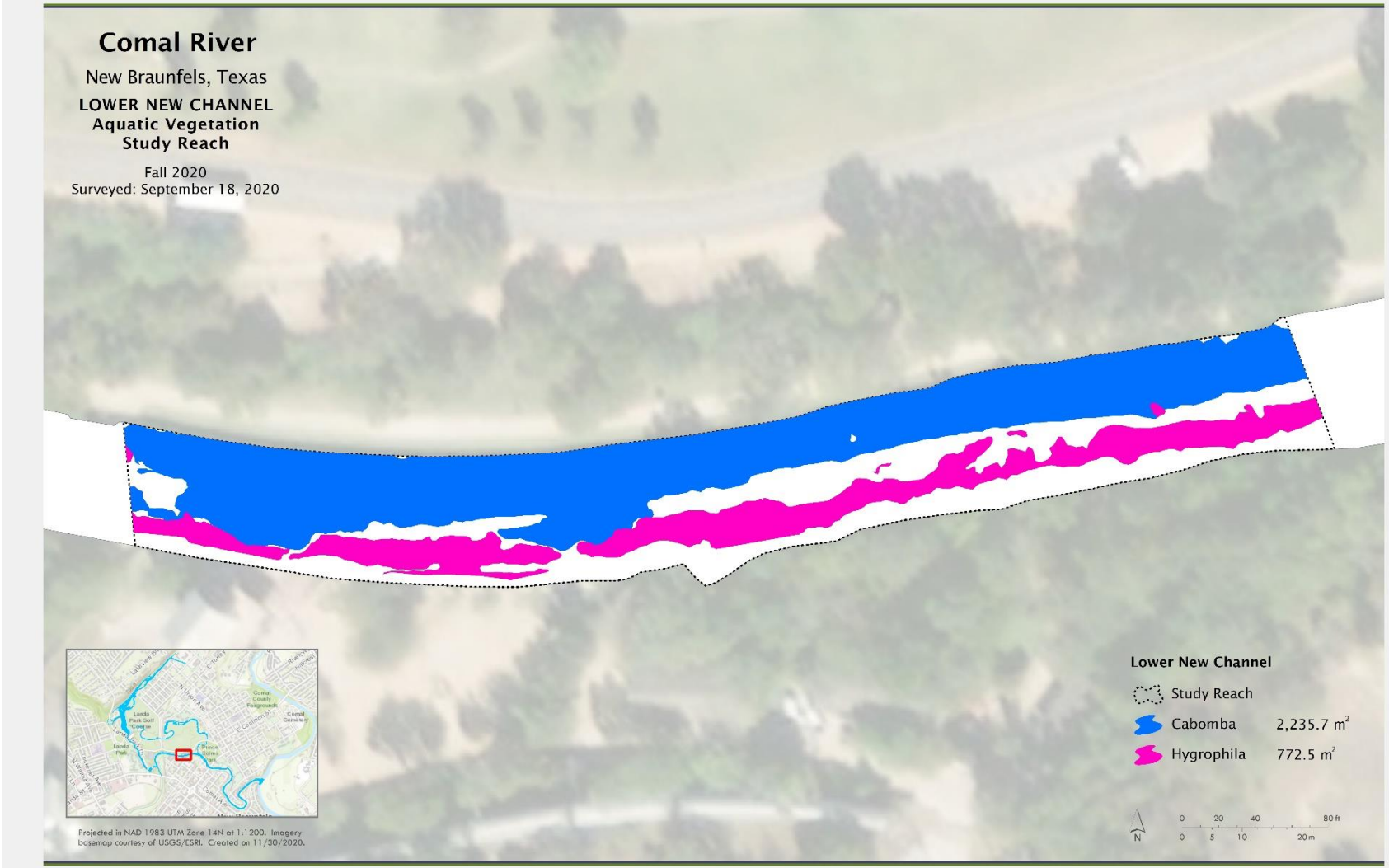

Figure B11. Map of aquatic vegetation coverage at Lower New Channel Reach in fall 2020.

APPENDIX C: TEXAS MASTER NATURALIST MONITORING RESULTS

Site locations are shown in Figure 2 of the report and listed from upstream (Houston Street) to downstream (Union Avenue). Water quality data collected by Master Naturalist volunteers in 2020 were similar to years past, observing CO_2 concentrations highest at sites near springs, such as the Houston Street (Upper Spring Run Reach) and Gazebo (Landa Lake/Spring Run 3) sample sites (Figure E1). Also continuing with past trends, pH measurements increased with increased distance from the springs (Figure E2). The inverse relationship between CO_2 and pH is directly related to greater concentrations of carbonic acid in spring waters, so as CO_2 concentrations decline going downstream, pH rises in the system. Within sites, year-to-year variation was relatively limited in both pH and CO_2 concentrations, with pH measurements being slightly higher than previous years, but similar to 2016 measurements.

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 E3–E7). In 2020 (as in all years), the New Channel received the most recreation pressure, which is similar to previous years. Recreation pressure was second highest at Union Avenue. As in previous years, recreational use at Elizabeth Street (Old Channel) was low (Figure E3) because this site is not located within a city park or advertised for recreational use.

The New Channel site has received the most recreation pressure throughout the Texas Master Naturalist monitoring (2006–2020). The peak of recreational use is usually during the summer months of June through September (Figure E6). During the 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, due to the COVID-19 pandemic in 2020, activity at the New Channel site was lower than previous years due to park closures. 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 E7) and like the New Channel, experienced lower traffic in 2020 due to the COVID-19 pandemic. However, unlike the New Channel site, this location does not offer long-term attraction such as picnic tables, resulting in fewer alternative or additional recreational activities.

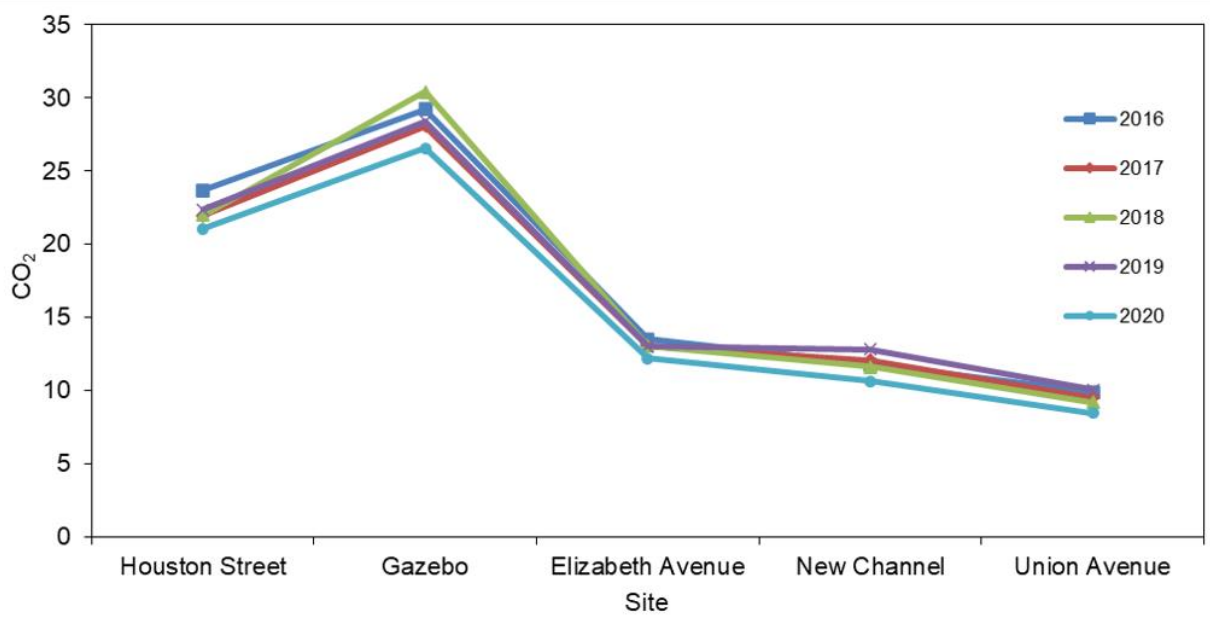

Figure E1. **Annual average dissolved carbon dioxide (CO_2) concentrations at five sites on the Comal River system (2016–2020).**

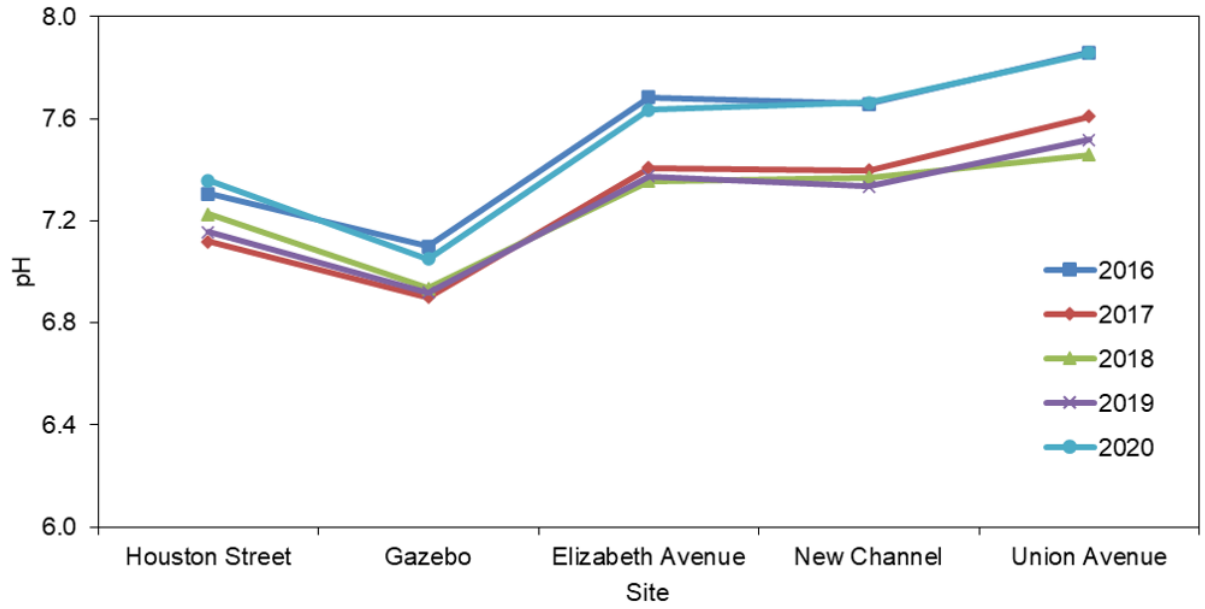

Figure E2. **Annual average pH values at five sites on the Comal River system (2016–2020).**

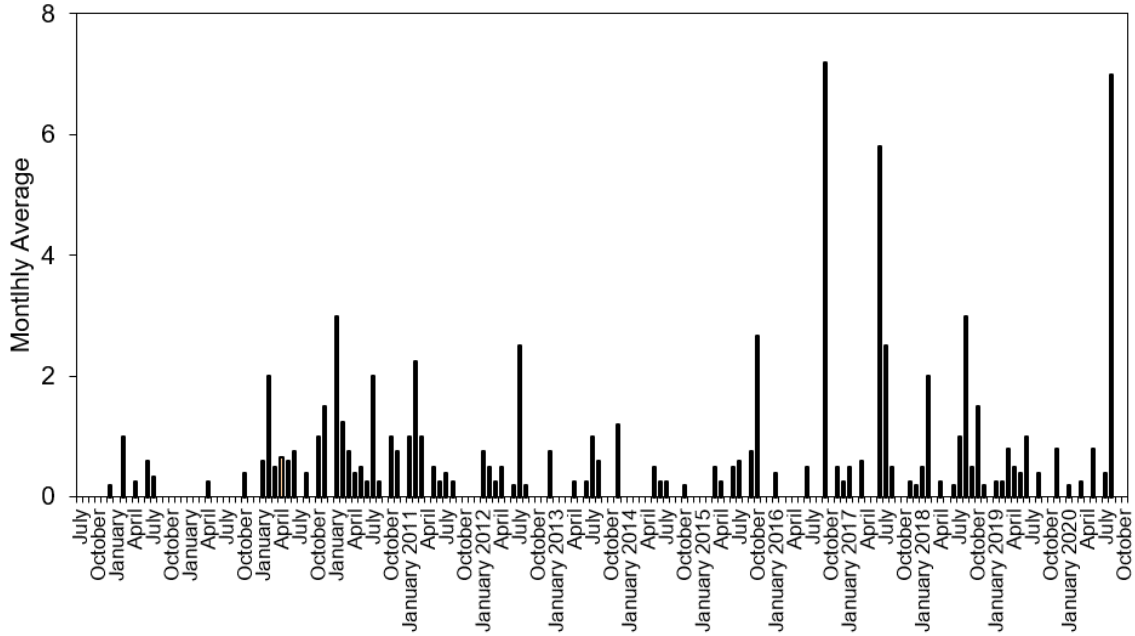

Figure E3. Average daily recreational user counts at the Elizabeth Avenue site (2006–2020).

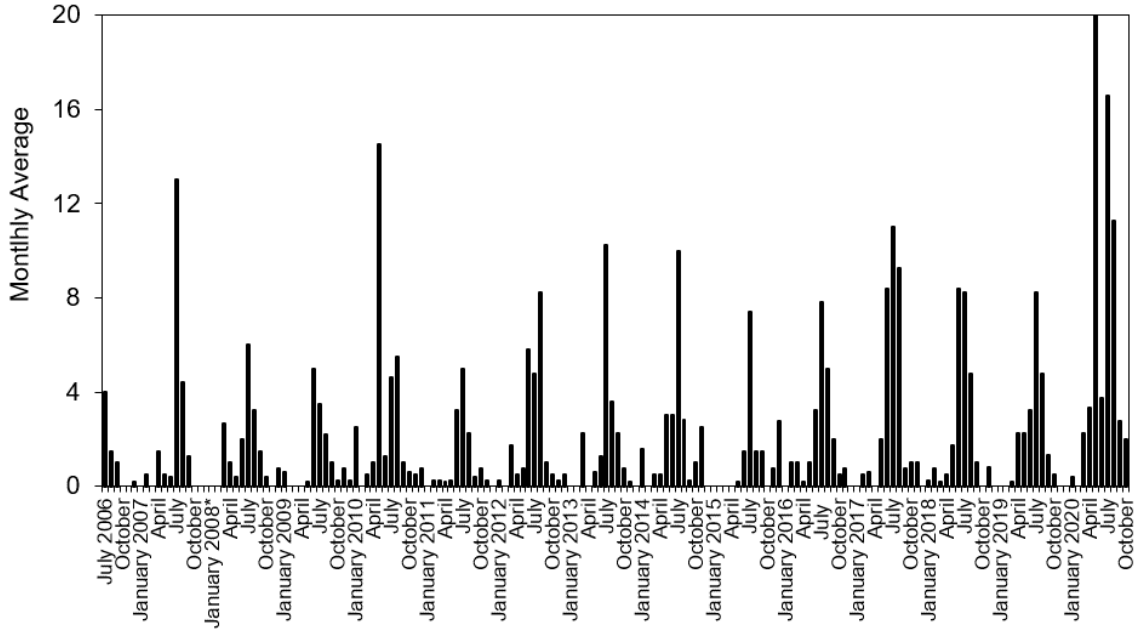

Figure E4. Average daily recreational user counts at the Upper Spring Run site (2006–2020).

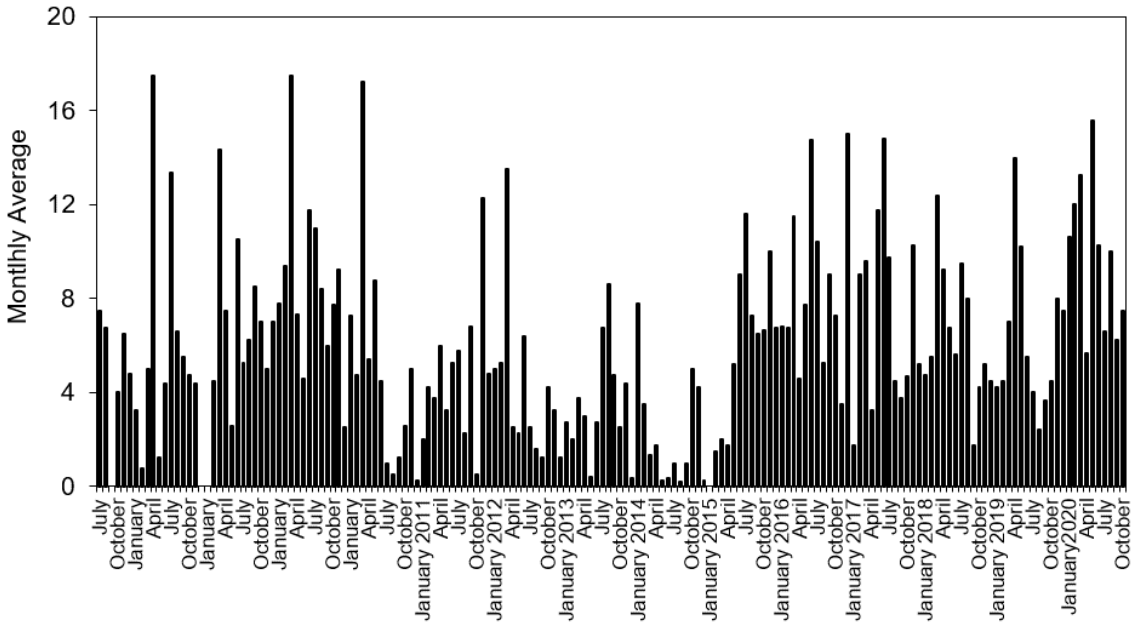

Figure E5. Average daily user counts at the Landa Lake Park Gazebo site (2006–2020).

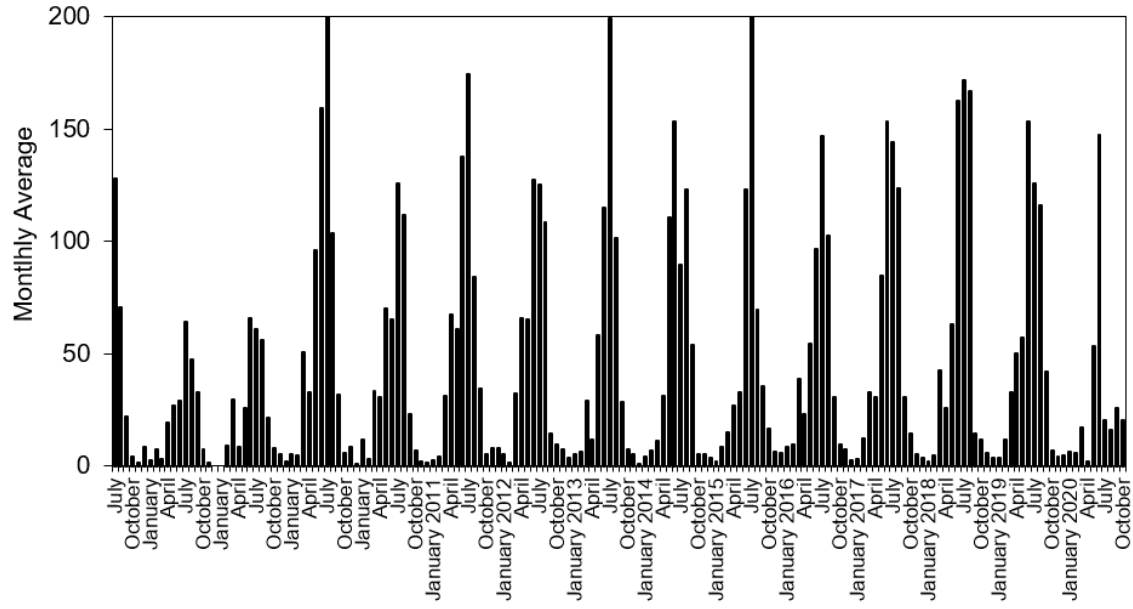

Figure E6. Average daily user counts at the New Channel site (2006-2020).

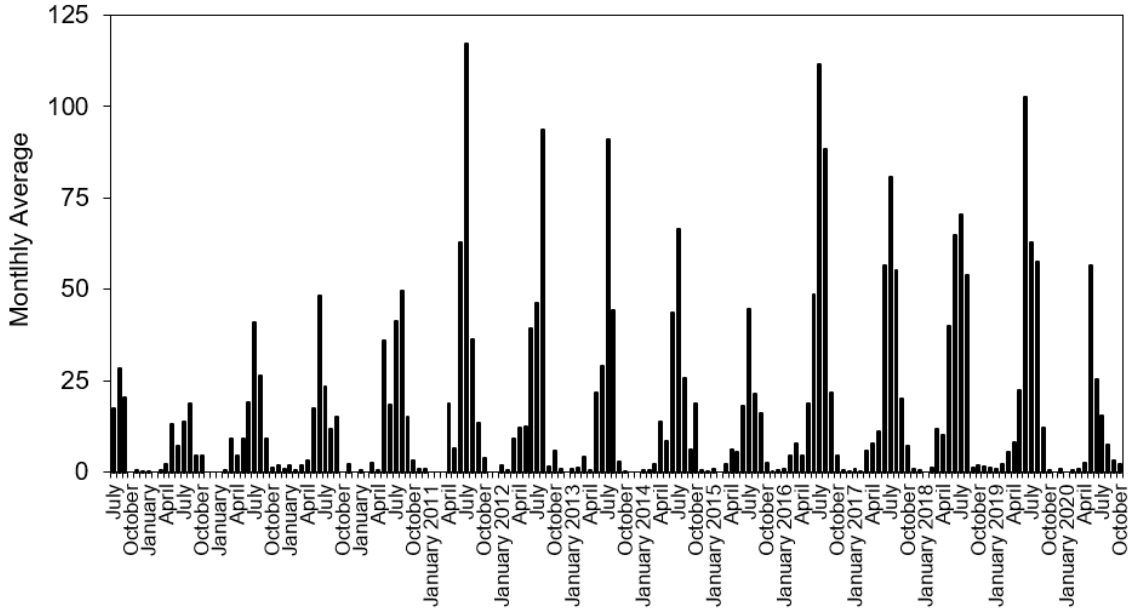

Figure E7. Average daily recreational user counts at the Union Avenue site (2006–2020).

APPENDIX D: TABLES AND DATA

TABLES

Fish Assemblage Results:
Drop-Net and Fish Community Sampling

Table C1. Overall number (#) and percent relative abundance (%) of fishes collected from the three long-term biological goals study reaches during drop-net sampling in 2020.

TAXA	UPPER SPRING RUN		LANDA LAKE		OLD CHANNEL		NEW CHANNEL	
	#	%	#	%	#	%	#	%
Ambloplites rupestris	0	0.0	0	0.00	0	0.0	2	1.1
Ameiurus natalis	0	0.0	2	0.29	0	0.0	1	0.5
Astyanax mexicanus	27	12.9	4	0.59	9	2.0	1	0.5
Dionda nigrotaeniata	21	10.0	18	2.64	6	1.3	3	1.6
Etheostoma fonticola	68	32.4	528	77.31	296	66.1	120	64.2
Etheostoma lepidum	0	0.0	0	0.00	0	0.0	2	1.1
Gambusia sp.	4	1.9	20	2.93	13	2.9	33	17.6
Herichthys cyanoguttatus	0	0.0	1	0.15	6	1.3	3	1.6
Lepomis auritus	0	0.0	0	0.00	2	0.4	0	0.0
Lepomis cyanellus	0	0.0	0	0.00	0	0.0	1	0.5
Lepomis gulosus	0	0.0	0	0.00	0	0.0	1	0.5
Lepomis miniatus	43	20.5	38	5.56	22	4.9	11	5.9
Lepomis sp.	23	11.0	68	9.96	7	1.6	5	2.7
Micropterus salmoides	24	11.4	4	0.59	1	0.2	4	2.1
Notropis amabilis	0	0.0	0	0.00	86	19.2	0	0.0
Total	**210**		**683**		**448**		**187**	

Asterisks (*) denotes introduced species

Table C2. Overall number (#) and percent relative abundance (%) of fishes collected during fish community sampling in 2020.

TAXA	UPPER SPRING RUN		LANDA LAKE		OLD CHANNEL		NEW CHANNEL	
	#	%	#	%	#	%	#	%
Cyprinella venusta	0	0.0	0	0.0	0	0.0	1	0.08
Dionda nigrotaeniata	823	37.2	811	57.3	68	11.8	24	1.89
Notropis amabilis	110	5.0	220	15.5	0	0.0	38	2.99
Notropis volucellus	0	0.0	0	0.0	17	3.0	208	16.39
*Astyanax mexicanus**	70	3.2	152	10.7	105	18.3	168	13.24
Ameiurus natalis	0	0.0	0	0.0	1	0.2	0	0.00
Ictalurus punctatus	0	0.0	0	0.0	0	0.0	1	0.08
Loricariidae sp.	0	0.0	0	0.0	1	0.2	6	0.47
Gambusia sp.	582	26.3	23	1.6	99	17.2	70	5.52
Gambusia affinis	6	0.3	0	0.0	23	4.0	3	0.24
Gambusia geiseri	1	0.0	0	0.0	44	7.7	157	12.37
*Poecilia latipinna**	0	0.0	0	0.0	4	0.7	1	0.08
Ambloplites rupestris	0	0.0	0	0.0	4	0.7	3	0.24
Lepomis sp.	22	1.0	7	0.5	55	9.6	237	18.68
Lepomis auritus	7	0.3	0	0.0	20	3.5	38	2.99
Lepomis cyanellus	4	0.2	0	0.0	0	0.0	1	0.08
Lepomis macrochirus	2	0.1	0	0.0	1	0.2	10	0.79
Lepomis megalotis	2	0.1	0	0.0	0	0.0	0	0.00
Lepomis microlophus	0	0.0	0	0.0	0	0.0	1	0.08
Lepomis miniatus	66	3.0	1	0.1	3	0.5	19	1.50
Micropterus salmoides	305	13.8	76	5.4	5	0.9	82	6.46
Etheostoma sp.	54	2.4	42	3.0	18	3.1	56	4.41
Etheostoma fonticola	103	4.7	65	4.6	48	8.4	79	6.23
Etheostoma lepidum	55	2.5	18	1.3	10	1.7	27	2.13
Percina apristis	1	0.0	0	0.0	0	0.0	0	0.00
*Herichthys cyanoguttatus**	1	0.0	0	0.0	43	7.5	37	2.92
*Oreochromis aureus**	1	0.0	0	0.0	5	0.9	2	0.16
Total	**2215**		**1415**		**574**		**1269**	

Asterisks (*) denotes introduced species

DATA

Macroinvertebrate Raw Data:
TCEQ RBP

Location	Site	Date	Class	Order	Family	FinalID	num	TolTX	FFGTX	FFGTX2
Comal	Landa Lake	27-Apr-20	Malacostraca	Decapoda	Cambaridae	Cambarinae	4			
Comal	Landa Lake	27-Apr-20	Malacostraca	Amphipoda	Talitridae	Hyalella	118	8	Gather/Collector	Shredder
Comal	Landa Lake	27-Apr-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	7	5	Gather/Collector	
Comal	Landa Lake	27-Apr-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	7		Scraper	
Comal	Landa Lake	27-Apr-20	Clitellata			Oligochaeta	7	8	Gather/Collector	
Comal	Landa Lake	27-Apr-20	Malacostraca	Decapoda	Palaemonidae	Palaemonetes	2	4	Gather/Collector	
Comal	Landa Lake	27-Apr-20	Insecta	Ephemeroptera	Ephemeridae	Hexagenia	1	6	Gather/Collector	
Comal	Landa Lake	27-Apr-20	Insecta	Coleoptera	Psephinidae	Psephenus	2	4	Scraper	
Comal	Landa Lake	27-Apr-20	Turbellaria	Tricladida		Planariidae	1			
Comal	Landa Lake	27-Apr-20	Insecta	Odonata	Coenagrionidae	Enallagma	1	6	Predator	
Comal	Landa Lake	27-Apr-20	Insecta	Ephemeroptera	Baetidae	Callibaetis	8	4	Gather/Collector	
Comal	Landa Lake	27-Apr-20	Insecta	Ephemeroptera	Baetidae	Fallceon	1	4	Gather/Collector	Scraper
Comal	New Channel	27-Apr-20	Insecta	Megaloptera	Corydalidae	Corydalus cornutus	1			
Comal	New Channel	27-Apr-20	Malacostraca	Amphipoda	Talitridae	Hyalella	19	8	Gather/Collector	Shredder
Comal	New Channel	27-Apr-20	Insecta	Coleoptera	Elmidae	Macrelmis	29	4	Scraper	
Comal	New Channel	27-Apr-20	Insecta	Coleoptera	Psephinidae	Psephenus	6	4	Scraper	
Comal	New Channel	27-Apr-20	Clitellata			Oligochaeta	2	8	Gather/Collector	
Comal	New Channel	27-Apr-20	Insecta	Odonata	Coenagrionidae	Argia	5	6	Predator	
Comal	New Channel	27-Apr-20	Insecta	Diptera	Chironomidae	Chironomidae	33	6	Gather/Collector	Filterer/Collector
Comal	New Channel	27-Apr-20	Insecta	Diptera	Empididae	Hemerodromia	1			
Comal	New Channel	27-Apr-20	Insecta	Ephemeroptera	Baetidae	Fallceon	52	4	Gather/Collector	Scraper
Comal	New Channel	27-Apr-20	Turbellaria	Tricladida		Planariidae	4			
Comal	New Channel	27-Apr-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	1	5	Gather/Collector	
Comal	New Channel	27-Apr-20	Insecta	Trichoptera	Glossosomatidae	Protoptila	1	1	Scraper	
Comal	New Channel	27-Apr-20	Insecta	Coleoptera	Dytiscidae	Liodessus	2	5	Predator	
Comal	New Channel	27-Apr-20	Insecta	Trichoptera	Philopotamidae	Chimarra	1	2	Filterer/Collector	
Comal	New Channel	27-Apr-20	Gastropoda	Neotaenioglossa	Pleuroceridae	Elimia	5	2.5	Scraper	
Comal	New Channel	27-Apr-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	5		Scraper	
Comal	New Channel	27-Apr-20	Insecta	Trichoptera	Heliocopyschidae	Helicopsyche	15	2	Scraper	
Comal	New Channel	27-Apr-20	Insecta	Trichoptera	Hydrobiosidae	Atopsyche	4	0	Predator	
Comal	New Channel	27-Apr-20	Insecta	Trichoptera	Hydroptilidae	Leucotrichia	2	3	Gather/Collector	Scraper
Comal	The Other Place	27-Apr-20	Malacostraca	Amphipoda	Talitridae	Hyalella	29	8	Gather/Collector	Shredder
Comal	The Other Place	27-Apr-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	35	5	Gather/Collector	
Comal	The Other Place	27-Apr-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	15		Scraper	
Comal	The Other Place	27-Apr-20	Gastropoda	Neotaenioglossa	Pleuroceridae	Elimia	4	2.5	Scraper	
Comal	The Other Place	27-Apr-20	Insecta	Ephemeroptera	Leptophlebiidae	Thraulodes	6	2	Gather/Collector	
Comal	The Other Place	27-Apr-20	Insecta	Trichoptera	Heliocopyschidae	Helicopsyche	6	2	Scraper	
Comal	The Other Place	27-Apr-20	Insecta	Diptera	Chironomidae	Chironomidae	2	6	Gather/Collector	Filterer/Collector
Comal	The Other Place	27-Apr-20	Clitellata			Hirudinea	1	8	Predator	
Comal	The Other Place	27-Apr-20	Clitellata			Oligochaeta	2	8	Gather/Collector	
Comal	The Other Place	27-Apr-20	Insecta	Trichoptera	Glossosomatidae	Protoptila	1	1	Scraper	
Comal	The Other Place	27-Apr-20	Insecta	Ephemeroptera	Baetidae	Fallceon	7	4	Gather/Collector	Scraper
Comal	The Other Place	27-Apr-20	Insecta	Trichoptera	Leptoceridae	Nectopsyche	4	3	Shredder	Gather/Collector
Comal	The Other Place	27-Apr-20	Insecta	Coleoptera	Psephinidae	Psephenus	2	4	Scraper	
Comal	The Other Place	27-Apr-20	Gastropoda	Neotaenioglossa	Hydrobiidae	Hydrobiidae	2	7	Scraper	
Comal	The Other Place	27-Apr-20	Insecta	Coleoptera	Elmidae	Microcylloepus pusillus	1			
Comal	The Other Place	27-Apr-20	Insecta	Odonata	Coenagrionidae	Enallagma	6	6	Predator	
Comal	The Other Place	27-Apr-20	Insecta	Odonata	Coenagrionidae	Argia	2	6	Predator	
Comal	The Other Place	27-Apr-20	Turbellaria	Tricladida		Planariidae	7			
Comal	Old Channel	27-Apr-20	Malacostraca	Amphipoda	Talitridae	Hyalella	44	8	Gather/Collector	Shredder
Comal	Old Channel	27-Apr-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	52	5	Gather/Collector	
Comal	Old Channel	27-Apr-20	Clitellata			Oligochaeta	6	8	Gather/Collector	
Comal	Old Channel	27-Apr-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	4		Scraper	
Comal	Old Channel	27-Apr-20	Insecta	Diptera	Chironomidae	Chironomidae	2	6	Gather/Collector	Filterer/Collector
Comal	Old Channel	27-Apr-20	Insecta	Ephemeroptera	Leptophlebiidae	Thraulodes	1	2	Gather/Collector	
Comal	Old Channel	27-Apr-20	Insecta	Odonata	Coenagrionidae	Argia	4	6	Predator	
Comal	Old Channel	27-Apr-20	Insecta	Lepidoptera	Crambidae	Crambidae	1			

Comal	Old Channel	27-Apr-20	Insecta	Coleoptera	Elmidae	Stenelmis	1	7	Gather/Collector	Scraper
Comal	Old Channel	27-Apr-20	Insecta	Ephemeroptera	Baetidae	Fallceon	8	4	Gather/Collector	Scraper
Comal	Old Channel	27-Apr-20	Gastropoda	Neotaenioglossa	Hydrobiidae	Hydrobiidae	2	7	Scraper	
Comal	Old Channel	27-Apr-20	Insecta	Odonata	Coenagrionidae	Enallagma	4	6	Predator	
Comal	Old Channel	27-Apr-20	Insecta	Coleoptera	Psephinidae	Psephenus	4	4	Scraper	
Comal	Old Channel	27-Apr-20	Insecta	Trichoptera	Heliocopyschidae	Helicopsyche	1	2	Scraper	
Comal	Upper Spring Run	27-Apr-20	Malacostraca	Amphipoda	Talitridae	Hyalella	59	8	Gather/Collector	Shredder
Comal	Upper Spring Run	27-Apr-20	Turbellaria	Tricladida		Planariidae	2			
Comal	Upper Spring Run	27-Apr-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	2		Scraper	
Comal	Upper Spring Run	27-Apr-20	Clitellata			Oligochaeta	12	8	Gather/Collector	
Comal	Upper Spring Run	27-Apr-20	Insecta	Diptera	Chironomidae	Chironomidae	5	6	Gather/Collector	Filterer/Collector
Comal	Upper Spring Run	27-Apr-20	Clitellata			Hirudinea	2	8	Predator	
Comal	Upper Spring Run	27-Apr-20	Malacostraca	Decapoda	Cambaridae	Cambarinae	2			
Comal	Upper Spring Run	27-Apr-20	Gastropoda	Neotaenioglossa	Pleuroceridae	Elimia	2	2.5	Scraper	
Comal	Upper Spring Run	27-Apr-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	23	5	Gather/Collector	
Comal	Upper Spring Run	27-Apr-20	Gastropoda	Neotaenioglossa	Hydrobiidae	Hydrobiidae	1	7	Scraper	
Comal	Upper Spring Run	27-Apr-20	Insecta	Ephemeroptera	Baetidae	Callibaetis	31	4	Gather/Collector	
Comal	Upper Spring Run	27-Apr-20	Insecta	Odonata	Coenagrionidae	Argia	1	6	Predator	
Comal	Upper Spring Run	27-Apr-20	Insecta	Odonata	Coenagrionidae	Coenagrionidae	1			
Comal	Upper Spring Run	27-Apr-20	Insecta	Coleoptera	Psephinidae	Psephenus	28	4	Scraper	
Comal	Upper Spring Run	27-Apr-20	Insecta	Coleoptera	Dytiscidae	Liodessus	8	5	Predator	
Comal	Upper Spring Run	21-Oct-20	Malacostraca	Amphipoda	Crangonyctidae	Stygobromus	2			
Comal	Upper Spring Run	21-Oct-20	Malacostraca	Amphipoda	Talitridae	Hyalella	80	8	Gather/Collector	Shredder
Comal	Upper Spring Run	21-Oct-20	Insecta	Ephemeroptera	Baetidae	Callibaetis	19	4	Gather/Collector	
Comal	Upper Spring Run	21-Oct-20	Insecta	Diptera	Chironomidae	Chironomidae	12	6	Gather/Collector	Filterer/Collector
Comal	Upper Spring Run	21-Oct-20	Clitellata			Oligochaeta	8	8	Gather/Collector	
Comal	Upper Spring Run	21-Oct-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	2		Scraper	
Comal	Upper Spring Run	21-Oct-20	Gastropoda	Neotaenioglossa	Hydrobiidae	Hydrobiidae	3	7	Scraper	
Comal	Upper Spring Run	21-Oct-20	Gastropoda	Basommatophora	Planorbidae	Planorbidae	1			
Comal	Upper Spring Run	21-Oct-20	Insecta	Coleoptera	Dytiscidae	Liodessus	8	5	Predator	
Comal	Upper Spring Run	21-Oct-20	Turbellaria	Tricladida		Planariidae	2			
Comal	Upper Spring Run	21-Oct-20	Insecta	Coleoptera	Psephinidae	Psephenus	26	4	Scraper	
Comal	Upper Spring Run	21-Oct-20	Gastropoda	Neotaenioglossa	Pleuroceridae	Elimia	4	2.5	Scraper	
Comal	Upper Spring Run	21-Oct-20	Insecta	Coleoptera	Elmidae	Microcylloepus pusillus	3			
Comal	Upper Spring Run	21-Oct-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	8	5	Gather/Collector	
Comal	Upper Spring Run	21-Oct-20	Clitellata			Hirudinea	3	8	Predator	
Comal	Upper Spring Run	21-Oct-20	Clitellata			Hirudinea	1	8	Predator	
Comal	Upper Spring Run	21-Oct-20	Insecta	Odonata	Coenagrionidae	Argia	1	6	Predator	
Comal	Upper Spring Run	21-Oct-20	Insecta	Odonata	Coenagrionidae	Enallagma	2	6	Predator	
Comal	Upper Spring Run	21-Oct-20	Insecta	Trichoptera	Hydroptilidae	Oxyethira	2	2	Gather/Collector	
Comal	Old Channel	21-Oct-20	Malacostraca	Decapoda	Cambaridae	Cambarinae	2			
Comal	Old Channel	21-Oct-20	Malacostraca	Amphipoda	Talitridae	Hyalella	34	8	Gather/Collector	Shredder
Comal	Old Channel	21-Oct-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	46	5	Gather/Collector	
Comal	Old Channel	21-Oct-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	5		Scraper	
Comal	Old Channel	21-Oct-20	Clitellata			Oligochaeta	4	8	Gather/Collector	
Comal	Old Channel	21-Oct-20	Clitellata			Hirudinea	1	8	Predator	
Comal	Old Channel	21-Oct-20	Insecta	Odonata	Coenagrionidae	Argia	7	6	Predator	
Comal	Old Channel	21-Oct-20	Insecta	Odonata	Coenagrionidae	Enallagma	1	6	Predator	
Comal	Old Channel	21-Oct-20	Insecta	Coleoptera	Elmidae	Macrelmis	1	4	Scraper	
Comal	Old Channel	21-Oct-20	Insecta	Diptera	Chironomidae	Chironomidae	4	6	Gather/Collector	Filterer/Collector
Comal	Old Channel	21-Oct-20	Insecta	Ephemeroptera	Heptageniidae	Stenacron	3	4	Gather/Collector	Scraper
Comal	Old Channel	21-Oct-20	Insecta	Ephemeroptera	Baetidae	Fallceon	26	4	Gather/Collector	Scraper
Comal	Old Channel	21-Oct-20	Gastropoda	Neotaenioglossa	Pleuroceridae	Elimia	1	2.5	Scraper	
Comal	Old Channel	21-Oct-20	Insecta	Coleoptera	Psephinidae	Psephenus	1	4	Scraper	
Comal	Old Channel	21-Oct-20	Insecta	Trichoptera	Philopotamidae	Chimarra	5	2	Filterer/Collector	
Comal	Old Channel	21-Oct-20	Insecta	Diptera	Simuliidae	Simuliidae	1			
Comal	Old Channel	21-Oct-20	Gastropoda	Neotaenioglossa	Hydrobiidae	Hydrobiidae	2	7	Scraper	
Comal	Old Channel	21-Oct-20	Insecta	Trichoptera	Leptoceridae	Nectopsyche	1	3	Shredder	Gather/Collector

Comal	New Channel	21-Oct-20	Malacostraca	Amphipoda	Talitridae	Hyalella	40	8	Gather/Collector	Shredder
Comal	New Channel	21-Oct-20	Insecta	Coleoptera	Elmidae	Macrelmis	26	4	Scraper	
Comal	New Channel	21-Oct-20	Insecta	Diptera	Chironomidae	Chironomidae	48	6	Gather/Collector	Filterer/Collector
Comal	New Channel	21-Oct-20	Insecta	Ephemeroptera	Baetidae	Fallceon	12	4	Gather/Collector	Scraper
Comal	New Channel	21-Oct-20	Insecta	Trichoptera	Glossosomatidae	Protoptila	2	1	Scraper	
Comal	New Channel	21-Oct-20	Insecta	Trichoptera	Hydroptilidae	Hydroptila	2	2	Scraper	
Comal	New Channel	21-Oct-20	Clitellata			Hirudinea	1	8	Predator	
Comal	New Channel	21-Oct-20	Insecta	Odonata	Coenagrionidae	Argia	14	6	Predator	
Comal	New Channel	21-Oct-20	Insecta	Trichoptera	Hydroptilidae	Leucotrichia	6	3	Gather/Collector	Scraper
Comal	New Channel	21-Oct-20	Insecta	Trichoptera	Heliocopyschidae	Helicopsyche	8	2	Scraper	
Comal	New Channel	21-Oct-20	Gastropoda	Neotaenioglossa	Hydrobiidae	Hydrobiidae	1	7	Scraper	
Comal	New Channel	21-Oct-20	Insecta	Odonata	Coenagrionidae	Enallagma	1	6	Predator	
Comal	New Channel	21-Oct-20	Insecta	Trichoptera	Hydrobiosidae	Atopsyche	1	0	Predator	
Comal	New Channel	21-Oct-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	2	5	Gather/Collector	
Comal	New Channel	21-Oct-20	Insecta	Coleoptera	Elmidae	Microcylloepus pusillus	10			
Comal	New Channel	21-Oct-20	Insecta	Coleoptera	Elmidae	Hexacylloepus ferrugineus	1	2	Scraper	
Comal	New Channel	21-Oct-20	Clitellata			Hirudinea	1	8	Predator	
Comal	New Channel	21-Oct-20	Turbellaria	Tricladida		Planariidae	9			
Comal	New Channel	21-Oct-20	Insecta	Trichoptera	Hydropsychidae	Smicridea	2	4	Filterer/Collector	
Comal	New Channel	21-Oct-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	2		Scraper	
Comal	New Channel	21-Oct-20	Insecta	Coleoptera	Psephinidae	Psephenus	5	4	Scraper	
Comal	New Channel	21-Oct-20	Gastropoda	Neotaenioglossa	Pleuroceridae	Elimia	6	2.5	Scraper	
Comal	New Channel	21-Oct-20	Clitellata			Oligochaeta	1	8	Gather/Collector	
Comal	New Channel	21-Oct-20	Insecta	Coleoptera	Dytiscidae	Liodessus	1	5	Predator	
Comal	The Other Place	21-Oct-20	Malacostraca	Amphipoda	Talitridae	Hyalella	18	8	Gather/Collector	Shredder
Comal	The Other Place	21-Oct-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	13	5	Gather/Collector	
Comal	The Other Place	21-Oct-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	54		Scraper	
Comal	The Other Place	21-Oct-20	Clitellata			Oligochaeta	11	8	Gather/Collector	
Comal	The Other Place	21-Oct-20	Insecta	Diptera	Chironomidae	Chironomidae	7	6	Gather/Collector	Filterer/Collector
Comal	The Other Place	21-Oct-20	Insecta	Odonata	Coenagrionidae	Enallagma	1	6	Predator	
Comal	The Other Place	21-Oct-20	Insecta	Odonata	Coenagrionidae	Argia	2	6	Predator	
Comal	The Other Place	21-Oct-20	Insecta	Trichoptera	Glossosomatidae	Protoptila	3	1	Scraper	
Comal	The Other Place	21-Oct-20	Insecta	Lepidoptera	Crambidae	Crambidae	1			
Comal	The Other Place	21-Oct-20	Insecta	Ephemeroptera	Leptohyphidae	Allenhyphes	25			
Comal	The Other Place	21-Oct-20	Insecta	Coleoptera	Elmidae	Microcylloepus pusillus	1			
Comal	The Other Place	21-Oct-20	Insecta	Ephemeroptera	Baetidae	Fallceon	2	4	Gather/Collector	Scraper
Comal	The Other Place	21-Oct-20	Turbellaria	Tricladida		Planariidae	2			
Comal	The Other Place	21-Oct-20	Insecta	Coleoptera	Psephinidae	Psephenus	3	4	Scraper	
Comal	The Other Place	21-Oct-20	Insecta	Trichoptera	Heliocopyschidae	Helicopsyche	10	2	Scraper	
Comal	The Other Place	21-Oct-20	Insecta	Ephemeroptera	Leptophlebiidae	Thraulodes	2	2	Gather/Collector	
Comal	The Other Place	21-Oct-20	Malacostraca	Decapoda	Palaemonidae	Palaemonetes	1	4	Gather/Collector	
Comal	The Other Place	21-Oct-20	Insecta	Trichoptera	Leptoceridae	Nectopsyche	3	3	Shredder	Gather/Collector
Comal	The Other Place	21-Oct-20	Gastropoda	Neotaenioglossa	Pleuroceridae	Elimia	1	2.5	Scraper	
Comal	Landa Lake	21-Oct-20	Malacostraca	Decapoda	Cambaridae	Cambarinae	4			
Comal	Landa Lake	21-Oct-20	Malacostraca	Amphipoda	Talitridae	Hyalella	77	8	Gather/Collector	Shredder
Comal	Landa Lake	21-Oct-20	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	9	5	Gather/Collector	
Comal	Landa Lake	21-Oct-20	Gastropoda	Neotaenioglossa	Thiaridae	Tarebia	49		Scraper	
Comal	Landa Lake	21-Oct-20	Clitellata			Oligochaeta	5	8	Gather/Collector	
Comal	Landa Lake	21-Oct-20	Malacostraca	Decapoda	Palaemonidae	Palaemonetes	1	4	Gather/Collector	
Comal	Landa Lake	21-Oct-20	Insecta	Diptera	Chironomidae	Chironomidae	2	6	Gather/Collector	Filterer/Collector
Comal	Landa Lake	21-Oct-20	Insecta	Ephemeroptera	Baetidae	Callibaetis	2	4	Gather/Collector	
Comal	Landa Lake	21-Oct-20	Gastropoda	Neotaenioglossa	Pleuroceridae	Elimia	3	2.5	Scraper	
Comal	Landa Lake	21-Oct-20	Insecta	Odonata	Coenagrionidae	Enallagma	2	6	Predator	
Comal	Landa Lake	21-Oct-20	Turbellaria	Tricladida		Planariidae	1			

APPENDIX E: DROP-NET RAW DATA

SiteCode	Reach	Site_No	Date	Dip_Net	Species	Length	Count
2514	Upper Spring Run	Sagi-1	30-Apr-20	1	Micropterus salmoides	38	1
2514	Upper Spring Run	Sagi-1	30-Apr-20	1	Palaemonetes sp.		1
2514	Upper Spring Run	Sagi-1	30-Apr-20	1	Lepomis sp.	17	1
2514	Upper Spring Run	Sagi-1	30-Apr-20	1	Lepomis miniatus	72	1
2514	Upper Spring Run	Sagi-1	30-Apr-20	2	Lepomis miniatus	55	1
2514	Upper Spring Run	Sagi-1	30-Apr-20	2	Lepomis sp.	24	1
2514	Upper Spring Run	Sagi-1	30-Apr-20	2	Procambarus sp.		2
2514	Upper Spring Run	Sagi-1	30-Apr-20	3	Procambarus sp.		2
2514	Upper Spring Run	Sagi-1	30-Apr-20	3	No fish collected		
2514	Upper Spring Run	Sagi-1	30-Apr-20	4	Procambarus sp.		1
2514	Upper Spring Run	Sagi-1	30-Apr-20	4	No fish collected		
2514	Upper Spring Run	Sagi-1	30-Apr-20	5	Procambarus sp.		1
2514	Upper Spring Run	Sagi-1	30-Apr-20	5	Palaemonetes sp.		2
2514	Upper Spring Run	Sagi-1	30-Apr-20	5	No fish collected		
2514	Upper Spring Run	Sagi-1	30-Apr-20	6	Dionda nigrotaeniata	65	1
2514	Upper Spring Run	Sagi-1	30-Apr-20	7	Procambarus sp.		1
2514	Upper Spring Run	Sagi-1	30-Apr-20	7	No fish collected		
2514	Upper Spring Run	Sagi-1	30-Apr-20	8	Procambarus sp.		1
2514	Upper Spring Run	Sagi-1	30-Apr-20	8	No fish collected		
2514	Upper Spring Run	Sagi-1	30-Apr-20	9	Procambarus sp.		1
2514	Upper Spring Run	Sagi-1	30-Apr-20	9	No fish collected		
2514	Upper Spring Run	Sagi-1	30-Apr-20	10	Lepomis miniatus	90	1
2514	Upper Spring Run	Sagi-1	30-Apr-20	10	Procambarus sp.		2
2514	Upper Spring Run	Sagi-1	30-Apr-20	11	Lepomis miniatus	90	1
2514	Upper Spring Run	Sagi-1	30-Apr-20	11	Procambarus sp.		2
2514	Upper Spring Run	Sagi-1	30-Apr-20	12	No fish collected		
2514	Upper Spring Run	Sagi-1	30-Apr-20	13	Procambarus sp.		1
2514	Upper Spring Run	Sagi-1	30-Apr-20	13	No fish collected		
2514	Upper Spring Run	Sagi-1	30-Apr-20	14	Lepomis miniatus	26	1
2514	Upper Spring Run	Sagi-1	30-Apr-20	15	No fish collected		
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	28	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	11	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	26	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	24	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	19	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	27	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	22	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	30	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	26	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	18	1

2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Etheostoma fonticola	17	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Procambarus sp.		10
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Dionda nigrotaeniata	15	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	1	Dionda nigrotaeniata	15	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	2	Gambusia sp.	10	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	2	Procambarus sp.		1
2515	Upper Spring Run	Bryo-1	30-Apr-20	3	Etheostoma fonticola	25	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	3	Etheostoma fonticola	17	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	3	Procambarus sp.		4
2515	Upper Spring Run	Bryo-1	30-Apr-20	4	Etheostoma fonticola	23	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	4	Etheostoma fonticola	19	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	4	Procambarus sp.		1
2515	Upper Spring Run	Bryo-1	30-Apr-20	5	Lepomis sp.	12	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	5	Lepomis sp.	12	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	5	Palaemonetes sp.		2
2515	Upper Spring Run	Bryo-1	30-Apr-20	5	Procambarus sp.		1
2515	Upper Spring Run	Bryo-1	30-Apr-20	5	Etheostoma fonticola	17	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	5	Etheostoma fonticola	21	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	6	Etheostoma fonticola	18	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	6	Etheostoma fonticola	25	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	6	Etheostoma fonticola	26	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	6	Etheostoma fonticola	22	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	6	Etheostoma fonticola	12	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	6	Lepomis sp.	12	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	6	Lepomis sp.	13	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	6	Procambarus sp.		3
2515	Upper Spring Run	Bryo-1	30-Apr-20	7	Lepomis sp.	18	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	8	Etheostoma fonticola	18	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	8	Procambarus sp.		1
2515	Upper Spring Run	Bryo-1	30-Apr-20	9	Procambarus sp.		1
2515	Upper Spring Run	Bryo-1	30-Apr-20	9	No fish collected		
2515	Upper Spring Run	Bryo-1	30-Apr-20	10	Procambarus sp.		1
2515	Upper Spring Run	Bryo-1	30-Apr-20	10	Lepomis sp.	12	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	11	No fish collected		
2515	Upper Spring Run	Bryo-1	30-Apr-20	12	Lepomis sp.	12	1
2515	Upper Spring Run	Bryo-1	30-Apr-20	12	Procambarus sp.		1
2515	Upper Spring Run	Bryo-1	30-Apr-20	13	Procambarus sp.		1
2515	Upper Spring Run	Bryo-1	30-Apr-20	13	No fish collected		
2515	Upper Spring Run	Bryo-1	30-Apr-20	14	No fish collected		
2515	Upper Spring Run	Bryo-1	30-Apr-20	15	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	1	Micropterus salmoides	47	1

2516	Upper Spring Run	Sagi-2	30-Apr-20	1	Micropterus salmoides	36	1
2516	Upper Spring Run	Sagi-2	30-Apr-20	2	Lepomis miniatus	63	1
2516	Upper Spring Run	Sagi-2	30-Apr-20	2	Procambarus sp.		5
2516	Upper Spring Run	Sagi-2	30-Apr-20	3	Lepomis miniatus	68	1
2516	Upper Spring Run	Sagi-2	30-Apr-20	4	Procambarus sp.		1
2516	Upper Spring Run	Sagi-2	30-Apr-20	4	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	5	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	6	Lepomis miniatus	32	1
2516	Upper Spring Run	Sagi-2	30-Apr-20	7	Procambarus sp.		2
2516	Upper Spring Run	Sagi-2	30-Apr-20	7	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	8	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	9	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	10	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	11	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	12	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	13	Procambarus sp.		1
2516	Upper Spring Run	Sagi-2	30-Apr-20	13	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	14	No fish collected		
2516	Upper Spring Run	Sagi-2	30-Apr-20	15	No fish collected		
2517	Upper Spring Run	Ludw-1	30-Apr-20	1	Micropterus salmoides	40	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	1	Micropterus salmoides	42	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	1	Lepomis miniatus	45	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	1	Dionda nigrotaeniata	42	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	1	Astyanax mexicanus	25	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	1	Astyanax mexicanus	18	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	2	Micropterus salmoides	35	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	2	Micropterus salmoides	43	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	2	Astyanax mexicanus	32	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	2	Lepomis miniatus	28	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	2	Lepomis miniatus	24	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	2	Lepomis miniatus	33	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	2	Lepomis miniatus	30	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	3	Astyanax mexicanus	32	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	3	Micropterus salmoides	48	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Micropterus salmoides	40	1

2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Micropterus salmoides	38	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Micropterus salmoides	40	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Micropterus salmoides	59	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Micropterus salmoides	48	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Micropterus salmoides	49	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Astyanax mexicanus	30	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Astyanax mexicanus	34	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Astyanax mexicanus	35	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Astyanax mexicanus	34	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Gambusia sp.	38	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Lepomis miniatus	39	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Lepomis miniatus	25	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	4	Palaemonetes sp.		6
2517	Upper Spring Run	Ludw-1	30-Apr-20	5	Astyanax mexicanus	28	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	5	Lepomis miniatus	28	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	5	Lepomis sp.	10	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	6	Astyanax mexicanus	35	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	6	Lepomis miniatus	30	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	6	Palaemonetes sp.		1
2517	Upper Spring Run	Ludw-1	30-Apr-20	6	Lepomis sp.	10	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	7	Dionda nigrotaeniata	30	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	7	Lepomis miniatus	32	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	8	Lepomis sp.	10	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	8	Palaemonetes sp.		1
2517	Upper Spring Run	Ludw-1	30-Apr-20	8	Lepomis miniatus	32	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	9	Palaemonetes sp.		1
2517	Upper Spring Run	Ludw-1	30-Apr-20	9	No fish collected		
2517	Upper Spring Run	Ludw-1	30-Apr-20	10	Lepomis miniatus	28	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	10	Lepomis miniatus	20	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	10	Astyanax mexicanus	40	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	11	Palaemonetes sp.		1
2517	Upper Spring Run	Ludw-1	30-Apr-20	11	Lepomis miniatus	28	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	12	Palaemonetes sp.		2
2517	Upper Spring Run	Ludw-1	30-Apr-20	12	Astyanax mexicanus	22	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	12	Lepomis miniatus	36	1
2517	Upper Spring Run	Ludw-1	30-Apr-20	12	Procambarus sp.		1
2517	Upper Spring Run	Ludw-1	30-Apr-20	13	Micropterus salmoides	40	1

2517	Upper Spring Run	Ludw-1	30-Apr-20	14	No fish collected		
2517	Upper Spring Run	Ludw-1	30-Apr-20	15	Lepomis miniatus	35	1
2538	Landa Lake	Vall-1	30-Apr-20	1	Lepomis miniatus	116	1
2538	Landa Lake	Vall-1	30-Apr-20	1	Palaemonetes sp.		2
2538	Landa Lake	Vall-1	30-Apr-20	1	Procambarus sp.		1
2538	Landa Lake	Vall-1	30-Apr-20	2	Procambarus sp.		2
2538	Landa Lake	Vall-1	30-Apr-20	2	Etheostoma fonticola	21	1
2538	Landa Lake	Vall-1	30-Apr-20	2	Etheostoma fonticola	23	1
2538	Landa Lake	Vall-1	30-Apr-20	2	Etheostoma fonticola	19	1
2538	Landa Lake	Vall-1	30-Apr-20	2	Etheostoma fonticola	29	1
2538	Landa Lake	Vall-1	30-Apr-20	3	Etheostoma fonticola	20	1
2538	Landa Lake	Vall-1	30-Apr-20	3	Etheostoma fonticola	19	1
2538	Landa Lake	Vall-1	30-Apr-20	3	Etheostoma fonticola	16	1
2538	Landa Lake	Vall-1	30-Apr-20	3	Etheostoma fonticola	18	1
2538	Landa Lake	Vall-1	30-Apr-20	3	Palaemonetes sp.		2
2538	Landa Lake	Vall-1	30-Apr-20	4	Etheostoma fonticola	30	1
2538	Landa Lake	Vall-1	30-Apr-20	4	Etheostoma fonticola	24	1
2538	Landa Lake	Vall-1	30-Apr-20	4	Etheostoma fonticola	17	1
2538	Landa Lake	Vall-1	30-Apr-20	4	Etheostoma fonticola	30	1
2538	Landa Lake	Vall-1	30-Apr-20	4	Procambarus sp.		3
2538	Landa Lake	Vall-1	30-Apr-20	4	Palaemonetes sp.		1
2538	Landa Lake	Vall-1	30-Apr-20	5	Etheostoma fonticola	19	1
2538	Landa Lake	Vall-1	30-Apr-20	6	Procambarus sp.		2
2538	Landa Lake	Vall-1	30-Apr-20	6	Palaemonetes sp.		1
2538	Landa Lake	Vall-1	30-Apr-20	6	No fish collected		
2538	Landa Lake	Vall-1	30-Apr-20	7	No fish collected		
2538	Landa Lake	Vall-1	30-Apr-20	8	No fish collected		
2538	Landa Lake	Vall-1	30-Apr-20	9	Etheostoma fonticola	18	1
2538	Landa Lake	Vall-1	30-Apr-20	10	Procambarus sp.		1
2538	Landa Lake	Vall-1	30-Apr-20	10	Etheostoma fonticola	21	1
2538	Landa Lake	Vall-1	30-Apr-20	11	No fish collected		
2538	Landa Lake	Vall-1	30-Apr-20	12	Lepomis miniatus	70	1
2538	Landa Lake	Vall-1	30-Apr-20	12	Etheostoma fonticola	11	1
2538	Landa Lake	Vall-1	30-Apr-20	13	Procambarus sp.		2
2538	Landa Lake	Vall-1	30-Apr-20	13	Palaemonetes sp.		1
2538	Landa Lake	Vall-1	30-Apr-20	13	Etheostoma fonticola	21	1
2538	Landa Lake	Vall-1	30-Apr-20	13	Etheostoma fonticola	18	1
2538	Landa Lake	Vall-1	30-Apr-20	13	Etheostoma fonticola	19	1
2538	Landa Lake	Vall-1	30-Apr-20	13	Etheostoma fonticola	17	1
2538	Landa Lake	Vall-1	30-Apr-20	14	Etheostoma fonticola	24	1
2538	Landa Lake	Vall-1	30-Apr-20	14	Etheostoma fonticola	15	1

2538	Landa Lake	Vall-1	30-Apr-20	15	Etheostoma fonticola	26	1
2538	Landa Lake	Vall-1	30-Apr-20	15	Etheostoma fonticola	21	1
2538	Landa Lake	Vall-1	30-Apr-20	16	No fish collected		
2539	Landa Lake	Vall-2	30-Apr-20	1	Lepomis miniatus	60	1
2539	Landa Lake	Vall-2	30-Apr-20	1	Lepomis miniatus	73	1
2539	Landa Lake	Vall-2	30-Apr-20	1	Etheostoma fonticola	18	1
2539	Landa Lake	Vall-2	30-Apr-20	1	Etheostoma fonticola	14	1
2539	Landa Lake	Vall-2	30-Apr-20	1	Etheostoma fonticola	21	1
2539	Landa Lake	Vall-2	30-Apr-20	1	Etheostoma fonticola	20	1
2539	Landa Lake	Vall-2	30-Apr-20	1	Palaemonetes sp.		2
2539	Landa Lake	Vall-2	30-Apr-20	2	Etheostoma fonticola	30	1
2539	Landa Lake	Vall-2	30-Apr-20	2	Etheostoma fonticola	18	1
2539	Landa Lake	Vall-2	30-Apr-20	2	Etheostoma fonticola	30	1
2539	Landa Lake	Vall-2	30-Apr-20	2	Etheostoma fonticola	17	1
2539	Landa Lake	Vall-2	30-Apr-20	2	Etheostoma fonticola	19	1
2539	Landa Lake	Vall-2	30-Apr-20	2	Etheostoma fonticola	27	1
2539	Landa Lake	Vall-2	30-Apr-20	2	Etheostoma fonticola	25	1
2539	Landa Lake	Vall-2	30-Apr-20	2	Etheostoma fonticola	18	1
2539	Landa Lake	Vall-2	30-Apr-20	2	Etheostoma fonticola	20	1
2539	Landa Lake	Vall-2	30-Apr-20	2	Lepomis miniatus	55	1
2539	Landa Lake	Vall-2	30-Apr-20	3	Lepomis miniatus	58	1
2539	Landa Lake	Vall-2	30-Apr-20	3	Procambarus sp.		2
2539	Landa Lake	Vall-2	30-Apr-20	3	Palaemonetes sp.		2
2539	Landa Lake	Vall-2	30-Apr-20	4	Etheostoma fonticola	22	1
2539	Landa Lake	Vall-2	30-Apr-20	5	Procambarus sp.		1
2539	Landa Lake	Vall-2	30-Apr-20	5	Palaemonetes sp.		1
2539	Landa Lake	Vall-2	30-Apr-20	5	Etheostoma fonticola	21	1
2539	Landa Lake	Vall-2	30-Apr-20	6	Etheostoma fonticola	24	1
2539	Landa Lake	Vall-2	30-Apr-20	6	Etheostoma fonticola	18	1
2539	Landa Lake	Vall-2	30-Apr-20	6	Etheostoma fonticola	22	1
2539	Landa Lake	Vall-2	30-Apr-20	6	Etheostoma fonticola	20	1
2539	Landa Lake	Vall-2	30-Apr-20	6	Etheostoma fonticola	16	1
2539	Landa Lake	Vall-2	30-Apr-20	6	Etheostoma fonticola	14	1
2539	Landa Lake	Vall-2	30-Apr-20	6	Etheostoma fonticola	18	1
2539	Landa Lake	Vall-2	30-Apr-20	6	Etheostoma fonticola	18	1
2539	Landa Lake	Vall-2	30-Apr-20	6	Procambarus sp.		1
2539	Landa Lake	Vall-2	30-Apr-20	7	Etheostoma fonticola	21	1
2539	Landa Lake	Vall-2	30-Apr-20	8	Etheostoma fonticola	28	1
2539	Landa Lake	Vall-2	30-Apr-20	8	Etheostoma fonticola	18	1
2539	Landa Lake	Vall-2	30-Apr-20	8	Etheostoma fonticola	16	1
2539	Landa Lake	Vall-2	30-Apr-20	8	Procambarus sp.		2

2539	Landa Lake	Vall-2	30-Apr-20	9	Etheostoma fonticola	18	1
2539	Landa Lake	Vall-2	30-Apr-20	9	Etheostoma fonticola	20	1
2539	Landa Lake	Vall-2	30-Apr-20	9	Etheostoma fonticola	25	1
2539	Landa Lake	Vall-2	30-Apr-20	9	Procambarus sp.		2
2539	Landa Lake	Vall-2	30-Apr-20	9	Lepomis miniatus	104	1
2539	Landa Lake	Vall-2	30-Apr-20	10	No fish collected		
2539	Landa Lake	Vall-2	30-Apr-20	11	Etheostoma fonticola	28	1
2539	Landa Lake	Vall-2	30-Apr-20	11	Procambarus sp.		1
2539	Landa Lake	Vall-2	30-Apr-20	12	Procambarus sp.		1
2539	Landa Lake	Vall-2	30-Apr-20	12	Etheostoma fonticola	23	1
2539	Landa Lake	Vall-2	30-Apr-20	13	No fish collected		
2539	Landa Lake	Vall-2	30-Apr-20	14	Etheostoma fonticola	18	1
2539	Landa Lake	Vall-2	30-Apr-20	15	Etheostoma fonticola	19	1
2539	Landa Lake	Vall-2	30-Apr-20	16	No fish collected		
2540	Landa Lake	Open-1	30-Apr-20	1	Palaemonetes sp.		1
2540	Landa Lake	Open-1	30-Apr-20	1	No fish collected		
2540	Landa Lake	Open-1	30-Apr-20	2	Etheostoma fonticola	27	1
2540	Landa Lake	Open-1	30-Apr-20	2	Etheostoma fonticola	26	1
2540	Landa Lake	Open-1	30-Apr-20	2	Etheostoma fonticola	27	1
2540	Landa Lake	Open-1	30-Apr-20	2	Etheostoma fonticola	20	1
2540	Landa Lake	Open-1	30-Apr-20	2	Etheostoma fonticola	26	1
2540	Landa Lake	Open-1	30-Apr-20	3	Procambarus sp.		3
2540	Landa Lake	Open-1	30-Apr-20	3	No fish collected		
2540	Landa Lake	Open-1	30-Apr-20	4	Procambarus sp.		3
2540	Landa Lake	Open-1	30-Apr-20	4	No fish collected		
2540	Landa Lake	Open-1	30-Apr-20	5	Etheostoma fonticola	25	1
2540	Landa Lake	Open-1	30-Apr-20	5	Etheostoma fonticola	28	1
2540	Landa Lake	Open-1	30-Apr-20	5	Etheostoma fonticola	27	1
2540	Landa Lake	Open-1	30-Apr-20	6	No fish collected		
2540	Landa Lake	Open-1	30-Apr-20	7	No fish collected		
2540	Landa Lake	Open-1	30-Apr-20	8	Etheostoma fonticola	17	1
2540	Landa Lake	Open-1	30-Apr-20	8	Etheostoma fonticola	18	1
2540	Landa Lake	Open-1	30-Apr-20	8	Etheostoma fonticola	18	1
2540	Landa Lake	Open-1	30-Apr-20	9	Procambarus sp.		1
2540	Landa Lake	Open-1	30-Apr-20	9	Etheostoma fonticola	27	1
2540	Landa Lake	Open-1	30-Apr-20	10	Etheostoma fonticola	16	1
2540	Landa Lake	Open-1	30-Apr-20	11	Etheostoma fonticola	32	1
2540	Landa Lake	Open-1	30-Apr-20	12	Dionda nigrotaeniata	17	1
2540	Landa Lake	Open-1	30-Apr-20	13	No fish collected		
2540	Landa Lake	Open-1	30-Apr-20	14	Etheostoma fonticola	28	1
2540	Landa Lake	Open-1	30-Apr-20	15	Etheostoma fonticola	19	1

2540	Landa Lake	Open-1	30-Apr-20	15	Etheostoma fonticola	27	1
2540	Landa Lake	Open-1	30-Apr-20	16	Procambarus sp.		1
2540	Landa Lake	Open-1	30-Apr-20	16	Etheostoma fonticola	22	1
2540	Landa Lake	Open-1	30-Apr-20	16	Etheostoma fonticola	23	1
2540	Landa Lake	Open-1	30-Apr-20	17	No fish collected		
2541	Landa Lake	Cabo-1	30-Apr-20	1	Etheostoma fonticola	28	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Procambarus sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Dionda nigrotaeniata	23	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Dionda nigrotaeniata	25	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Palaemonetes sp.		6
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	1	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	2	Etheostoma fonticola	25	1
2541	Landa Lake	Cabo-1	30-Apr-20	2	Etheostoma fonticola	13	1
2541	Landa Lake	Cabo-1	30-Apr-20	2	Palaemonetes sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Etheostoma fonticola	25	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Etheostoma fonticola	27	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Etheostoma fonticola	22	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Etheostoma fonticola	29	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Palaemonetes sp.		3
2541	Landa Lake	Cabo-1	30-Apr-20	3	Procambarus sp.		3
2541	Landa Lake	Cabo-1	30-Apr-20	3	Dionda nigrotaeniata	21	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Dionda nigrotaeniata	28	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Dionda nigrotaeniata	26	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Dionda nigrotaeniata	24	1

2541	Landa Lake	Cabo-1	30-Apr-20	3	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	3	Lepomis sp.	7	1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Procambarus sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Palaemonetes sp.		2
2541	Landa Lake	Cabo-1	30-Apr-20	4	Dionda nigrotaeniata	26	1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Etheostoma fonticola	18	1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Etheostoma fonticola	15	1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	4	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	5	Etheostoma fonticola	24	1
2541	Landa Lake	Cabo-1	30-Apr-20	5	Palaemonetes sp.		2
2541	Landa Lake	Cabo-1	30-Apr-20	5	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Procambarus sp.		2
2541	Landa Lake	Cabo-1	30-Apr-20	6	Palaemonetes sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Etheostoma fonticola	20	1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Etheostoma fonticola	25	1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	6	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	7	Procambarus sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	7	Etheostoma fonticola	21	1

2541	Landa Lake	Cabo-1	30-Apr-20	7	Etheostoma fonticola	24	1
2541	Landa Lake	Cabo-1	30-Apr-20	7	Astyanax mexicanus	13	1
2541	Landa Lake	Cabo-1	30-Apr-20	7	Palaemonetes sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	7	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	7	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	8	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	8	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	8	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	8	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	8	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	8	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	9	Etheostoma fonticola	20	1
2541	Landa Lake	Cabo-1	30-Apr-20	2	Etheostoma fonticola	31	1
2541	Landa Lake	Cabo-1	30-Apr-20	9	Etheostoma fonticola	18	1
2541	Landa Lake	Cabo-1	30-Apr-20	9	Etheostoma fonticola	19	1
2541	Landa Lake	Cabo-1	30-Apr-20	9	Etheostoma fonticola	26	1
2541	Landa Lake	Cabo-1	30-Apr-20	9	Etheostoma fonticola	12	1
2541	Landa Lake	Cabo-1	30-Apr-20	9	Etheostoma fonticola	19	1
2541	Landa Lake	Cabo-1	30-Apr-20	9	Procambarus sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	10	Procambarus sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	10	Etheostoma fonticola	21	1
2541	Landa Lake	Cabo-1	30-Apr-20	10	Etheostoma fonticola	19	1
2541	Landa Lake	Cabo-1	30-Apr-20	11	Etheostoma fonticola	35	1
2541	Landa Lake	Cabo-1	30-Apr-20	11	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	11	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	11	Lepomis sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	12	Etheostoma fonticola	14	1
2541	Landa Lake	Cabo-1	30-Apr-20	12	Procambarus sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	13	Etheostoma fonticola	28	1
2541	Landa Lake	Cabo-1	30-Apr-20	13	Etheostoma fonticola	30	1
2541	Landa Lake	Cabo-1	30-Apr-20	14	Procambarus sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	14	No fish collected		
2541	Landa Lake	Cabo-1	30-Apr-20	15	Etheostoma fonticola	27	1
2541	Landa Lake	Cabo-1	30-Apr-20	16	Procambarus sp.		2
2541	Landa Lake	Cabo-1	30-Apr-20	16	Palaemonetes sp.		1
2541	Landa Lake	Cabo-1	30-Apr-20	16	Etheostoma fonticola	25	1
2541	Landa Lake	Cabo-1	30-Apr-20	17	Etheostoma fonticola	26	1
2541	Landa Lake	Cabo-1	30-Apr-20	17	Etheostoma fonticola	26	1
2541	Landa Lake	Cabo-1	30-Apr-20	18	No fish collected		
2542	Landa Lake	Cabo-2	30-Apr-20	1	Palaemonetes sp.		5
2542	Landa Lake	Cabo-2	30-Apr-20	1	Astyanax mexicanus	25	1

2542	Landa Lake	Cabo-2	30-Apr-20	1	Etheostoma fonticola	18	1
2542	Landa Lake	Cabo-2	30-Apr-20	1	Etheostoma fonticola	30	1
2542	Landa Lake	Cabo-2	30-Apr-20	1	Dionda nigrotaeniata	27	1
2542	Landa Lake	Cabo-2	30-Apr-20	2	Etheostoma fonticola	25	1
2542	Landa Lake	Cabo-2	30-Apr-20	2	Etheostoma fonticola	27	1
2542	Landa Lake	Cabo-2	30-Apr-20	2	Etheostoma fonticola	16	1
2542	Landa Lake	Cabo-2	30-Apr-20	2	Lepomis miniatus	42	1
2542	Landa Lake	Cabo-2	30-Apr-20	2	Procambarus sp.		1
2542	Landa Lake	Cabo-2	30-Apr-20	2	Palaemonetes sp.		9
2542	Landa Lake	Cabo-2	30-Apr-20	3	Procambarus sp.		3
2542	Landa Lake	Cabo-2	30-Apr-20	3	Palaemonetes sp.		3
2542	Landa Lake	Cabo-2	30-Apr-20	3	No fish collected		
2542	Landa Lake	Cabo-2	30-Apr-20	4	Etheostoma fonticola	18	1
2542	Landa Lake	Cabo-2	30-Apr-20	4	Etheostoma fonticola	27	1
2542	Landa Lake	Cabo-2	30-Apr-20	4	Etheostoma fonticola	20	1
2542	Landa Lake	Cabo-2	30-Apr-20	4	Etheostoma fonticola	18	1
2542	Landa Lake	Cabo-2	30-Apr-20	4	Dionda nigrotaeniata	33	1
2542	Landa Lake	Cabo-2	30-Apr-20	4	Palaemonetes sp.		5
2542	Landa Lake	Cabo-2	30-Apr-20	5	Procambarus sp.		2
2542	Landa Lake	Cabo-2	30-Apr-20	5	Palaemonetes sp.		5
2542	Landa Lake	Cabo-2	30-Apr-20	5	Dionda nigrotaeniata	30	1
2542	Landa Lake	Cabo-2	30-Apr-20	5	Dionda nigrotaeniata	28	1
2542	Landa Lake	Cabo-2	30-Apr-20	5	Dionda nigrotaeniata	21	1
2542	Landa Lake	Cabo-2	30-Apr-20	5	Etheostoma fonticola	18	1
2542	Landa Lake	Cabo-2	30-Apr-20	5	Etheostoma fonticola	22	1
2542	Landa Lake	Cabo-2	30-Apr-20	6	Etheostoma fonticola	18	1
2542	Landa Lake	Cabo-2	30-Apr-20	6	Etheostoma fonticola	23	1
2542	Landa Lake	Cabo-2	30-Apr-20	6	Etheostoma fonticola	16	1
2542	Landa Lake	Cabo-2	30-Apr-20	7	Etheostoma fonticola	21	1
2542	Landa Lake	Cabo-2	30-Apr-20	7	Etheostoma fonticola	26	1
2542	Landa Lake	Cabo-2	30-Apr-20	7	Palaemonetes sp.		1
2542	Landa Lake	Cabo-2	30-Apr-20	7	Procambarus sp.		4
2542	Landa Lake	Cabo-2	30-Apr-20	8	Procambarus sp.		2
2542	Landa Lake	Cabo-2	30-Apr-20	8	Etheostoma fonticola	22	1
2542	Landa Lake	Cabo-2	30-Apr-20	8	Etheostoma fonticola	25	1
2542	Landa Lake	Cabo-2	30-Apr-20	8	Dionda nigrotaeniata	29	1
2542	Landa Lake	Cabo-2	30-Apr-20	9	Etheostoma fonticola	24	1
2542	Landa Lake	Cabo-2	30-Apr-20	9	Etheostoma fonticola	18	1
2542	Landa Lake	Cabo-2	30-Apr-20	10	Etheostoma fonticola	22	1
2542	Landa Lake	Cabo-2	30-Apr-20	10	Palaemonetes sp.		1
2542	Landa Lake	Cabo-2	30-Apr-20	11	Etheostoma fonticola	25	1

2542	Landa Lake	Cabo-2	30-Apr-20	11	Etheostoma fonticola	27	1
2542	Landa Lake	Cabo-2	30-Apr-20	11	Etheostoma fonticola	25	1
2542	Landa Lake	Cabo-2	30-Apr-20	11	Palaemonetes sp.		1
2542	Landa Lake	Cabo-2	30-Apr-20	12	Palaemonetes sp.		1
2542	Landa Lake	Cabo-2	30-Apr-20	12	No fish collected		
2542	Landa Lake	Cabo-2	30-Apr-20	13	No fish collected		
2542	Landa Lake	Cabo-2	30-Apr-20	14	No fish collected		
2542	Landa Lake	Cabo-2	30-Apr-20	15	Etheostoma fonticola	23	1
2542	Landa Lake	Cabo-2	30-Apr-20	15	Etheostoma fonticola	19	1
2542	Landa Lake	Cabo-2	30-Apr-20	15	Etheostoma fonticola	18	1
2542	Landa Lake	Cabo-2	30-Apr-20	15	Procambarus sp.		2
2542	Landa Lake	Cabo-2	30-Apr-20	16	Procambarus sp.		2
2542	Landa Lake	Cabo-2	30-Apr-20	16	Palaemonetes sp.		2
2542	Landa Lake	Cabo-2	30-Apr-20	16	Etheostoma fonticola	29	1
2542	Landa Lake	Cabo-2	30-Apr-20	16	Etheostoma fonticola	28	1
2542	Landa Lake	Cabo-2	30-Apr-20	16	Etheostoma fonticola	20	1
2542	Landa Lake	Cabo-2	30-Apr-20	17	Etheostoma fonticola	26	1
2542	Landa Lake	Cabo-2	30-Apr-20	17	Dionda nigrotaeniata	24	1
2542	Landa Lake	Cabo-2	30-Apr-20	17	Palaemonetes sp.		1
2542	Landa Lake	Cabo-2	30-Apr-20	18	No fish collected		
2543	Landa Lake	Sagi-1	30-Apr-20	8	Etheostoma fonticola	23	1
2543	Landa Lake	Sagi-1	30-Apr-20	8	Etheostoma fonticola	12	1
2543	Landa Lake	Sagi-1	30-Apr-20	9	Procambarus sp.		1
2543	Landa Lake	Sagi-1	30-Apr-20	9	Etheostoma fonticola	17	1
2543	Landa Lake	Sagi-1	30-Apr-20	10	Procambarus sp.		1
2543	Landa Lake	Sagi-1	30-Apr-20	10	Palaemonetes sp.		1
2543	Landa Lake	Sagi-1	30-Apr-20	10	No fish collected		
2543	Landa Lake	Sagi-1	30-Apr-20	11	Procambarus sp.		1
2543	Landa Lake	Sagi-1	30-Apr-20	11	Lepomis miniatus	29	1
2543	Landa Lake	Sagi-1	30-Apr-20	12	Etheostoma fonticola	17	1
2543	Landa Lake	Sagi-1	30-Apr-20	12	Etheostoma fonticola	20	1
2543	Landa Lake	Sagi-1	30-Apr-20	13	No fish collected		
2543	Landa Lake	Sagi-1	30-Apr-20	14	Procambarus sp.		2
2543	Landa Lake	Sagi-1	30-Apr-20	14	No fish collected		
2543	Landa Lake	Sagi-1	30-Apr-20	15	Procambarus sp.		1
2543	Landa Lake	Sagi-1	30-Apr-20	15	No fish collected		
2543	Landa Lake	Sagi-1	30-Apr-20	1	Etheostoma fonticola	25	1
2543	Landa Lake	Sagi-1	30-Apr-20	1	Etheostoma fonticola	12	1
2543	Landa Lake	Sagi-1	30-Apr-20	1	Etheostoma fonticola	14	1
2543	Landa Lake	Sagi-1	30-Apr-20	1	Lepomis sp.	18	1
2543	Landa Lake	Sagi-1	30-Apr-20	1	Astyanax mexicanus	18	1

2543	Landa Lake	Sagi-1	30-Apr-20	1	Palaemonetes sp.		1
2543	Landa Lake	Sagi-1	30-Apr-20	2	Etheostoma fonticola	18	1
2543	Landa Lake	Sagi-1	30-Apr-20	2	Etheostoma fonticola	27	1
2543	Landa Lake	Sagi-1	30-Apr-20	2	Etheostoma fonticola	15	1
2543	Landa Lake	Sagi-1	30-Apr-20	2	Etheostoma fonticola	16	1
2543	Landa Lake	Sagi-1	30-Apr-20	2	Etheostoma fonticola	15	1
2543	Landa Lake	Sagi-1	30-Apr-20	2	Palaemonetes sp.		3
2543	Landa Lake	Sagi-1	30-Apr-20	3	Etheostoma fonticola	16	1
2543	Landa Lake	Sagi-1	30-Apr-20	3	Dionda nigrotaeniata	17	1
2543	Landa Lake	Sagi-1	30-Apr-20	4	Etheostoma fonticola	15	1
2543	Landa Lake	Sagi-1	30-Apr-20	5	Procambarus sp.		1
2543	Landa Lake	Sagi-1	30-Apr-20	5	Etheostoma fonticola	15	1
2543	Landa Lake	Sagi-1	30-Apr-20	5	Lepomis sp.	12	1
2543	Landa Lake	Sagi-1	30-Apr-20	5	Palaemonetes sp.		2
2543	Landa Lake	Sagi-1	30-Apr-20	6	Etheostoma fonticola	16	1
2543	Landa Lake	Sagi-1	30-Apr-20	6	Procambarus sp.		3
2543	Landa Lake	Sagi-1	30-Apr-20	6	Lepomis sp.	17	1
2543	Landa Lake	Sagi-1	30-Apr-20	6	Procambarus sp.		2
2543	Landa Lake	Sagi-1	30-Apr-20	7	Procambarus sp.		1
2543	Landa Lake	Sagi-1	30-Apr-20	7	Etheostoma fonticola	18	1
2543	Landa Lake	Sagi-1	30-Apr-20	7	Etheostoma fonticola	18	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Etheostoma fonticola	27	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Etheostoma fonticola	18	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Etheostoma fonticola	18	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Etheostoma fonticola	19	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Etheostoma fonticola	31	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Etheostoma fonticola	25	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Dionda nigrotaeniata	26	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Lepomis miniatus	24	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Gambusia sp.	16	1
2544	Landa Lake	Sagi-2	30-Apr-20	1	Palaemonetes sp.		17
2544	Landa Lake	Sagi-2	30-Apr-20	2	Procambarus sp.		9
2544	Landa Lake	Sagi-2	30-Apr-20	2	Etheostoma fonticola	28	1
2544	Landa Lake	Sagi-2	30-Apr-20	2	Etheostoma fonticola	25	1
2544	Landa Lake	Sagi-2	30-Apr-20	2	Etheostoma fonticola	15	1
2544	Landa Lake	Sagi-2	30-Apr-20	2	Etheostoma fonticola	18	1
2544	Landa Lake	Sagi-2	30-Apr-20	2	Lepomis miniatus	59	1
2544	Landa Lake	Sagi-2	30-Apr-20	2	Palaemonetes sp.		4
2544	Landa Lake	Sagi-2	30-Apr-20	3	Procambarus sp.		11
2544	Landa Lake	Sagi-2	30-Apr-20	3	Etheostoma fonticola	18	1
2544	Landa Lake	Sagi-2	30-Apr-20	3	Etheostoma fonticola	17	1

2544	Landa Lake	Sagi-2	30-Apr-20	3	Etheostoma fonticola	20	1
2544	Landa Lake	Sagi-2	30-Apr-20	3	Palaemonetes sp.		6
2544	Landa Lake	Sagi-2	30-Apr-20	4	Lepomis miniatus	62	1
2544	Landa Lake	Sagi-2	30-Apr-20	4	Lepomis miniatus	41	1
2544	Landa Lake	Sagi-2	30-Apr-20	4	Etheostoma fonticola	27	1
2544	Landa Lake	Sagi-2	30-Apr-20	4	Etheostoma fonticola	22	1
2544	Landa Lake	Sagi-2	30-Apr-20	4	Etheostoma fonticola	24	1
2544	Landa Lake	Sagi-2	30-Apr-20	4	Etheostoma fonticola	20	1
2544	Landa Lake	Sagi-2	30-Apr-20	4	Etheostoma fonticola	18	1
2544	Landa Lake	Sagi-2	30-Apr-20	4	Procambarus sp.		8
2544	Landa Lake	Sagi-2	30-Apr-20	4	Palaemonetes sp.		1
2544	Landa Lake	Sagi-2	30-Apr-20	5	Procambarus sp.		12
2544	Landa Lake	Sagi-2	30-Apr-20	5	Lepomis miniatus	48	1
2544	Landa Lake	Sagi-2	30-Apr-20	5	Etheostoma fonticola	24	1
2544	Landa Lake	Sagi-2	30-Apr-20	5	Etheostoma fonticola	17	1
2544	Landa Lake	Sagi-2	30-Apr-20	6	Procambarus sp.		15
2544	Landa Lake	Sagi-2	30-Apr-20	6	Etheostoma fonticola	22	1
2544	Landa Lake	Sagi-2	30-Apr-20	6	Etheostoma fonticola	19	1
2544	Landa Lake	Sagi-2	30-Apr-20	6	Etheostoma fonticola	27	1
2544	Landa Lake	Sagi-2	30-Apr-20	6	Etheostoma fonticola	20	1
2544	Landa Lake	Sagi-2	30-Apr-20	6	Palaemonetes sp.		2
2544	Landa Lake	Sagi-2	30-Apr-20	7	Lepomis miniatus	60	1
2544	Landa Lake	Sagi-2	30-Apr-20	7	Etheostoma fonticola	27	1
2544	Landa Lake	Sagi-2	30-Apr-20	7	Etheostoma fonticola	20	1
2544	Landa Lake	Sagi-2	30-Apr-20	7	Procambarus sp.		1
2544	Landa Lake	Sagi-2	30-Apr-20	7	Palaemonetes sp.		1
2544	Landa Lake	Sagi-2	30-Apr-20	8	Etheostoma fonticola	22	1
2544	Landa Lake	Sagi-2	30-Apr-20	8	Procambarus sp.		4
2544	Landa Lake	Sagi-2	30-Apr-20	9	Procambarus sp.		6
2544	Landa Lake	Sagi-2	30-Apr-20	9	No fish collected		
2544	Landa Lake	Sagi-2	30-Apr-20	10	Procambarus sp.		5
2544	Landa Lake	Sagi-2	30-Apr-20	10	No fish collected		
2544	Landa Lake	Sagi-2	30-Apr-20	11	Etheostoma fonticola	34	1
2544	Landa Lake	Sagi-2	30-Apr-20	11	Etheostoma fonticola	23	1
2544	Landa Lake	Sagi-2	30-Apr-20	11	Procambarus sp.		2
2544	Landa Lake	Sagi-2	30-Apr-20	12	Etheostoma fonticola	24	1
2544	Landa Lake	Sagi-2	30-Apr-20	12	Procambarus sp.		4
2544	Landa Lake	Sagi-2	30-Apr-20	13	Procambarus sp.		4
2544	Landa Lake	Sagi-2	30-Apr-20	14	Lepomis miniatus	80	1
2544	Landa Lake	Sagi-2	30-Apr-20	14	Procambarus sp.		1
2544	Landa Lake	Sagi-2	30-Apr-20	15	Procambarus sp.		

2544	Landa Lake	Sagi-2	30-Apr-20	15	No fish collected		
2524	Old Channel Reach	Cabo-2	01-May-20	1	Gambusia sp.	30	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Gambusia sp.	22	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	18	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	23	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	26	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	18	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	16	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	17	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	16	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	19	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	30	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	27	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	20	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	30	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	24	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	21	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	16	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	19	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	20	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	20	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	17	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	17	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	22	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Etheostoma fonticola	19	1
2524	Old Channel Reach	Cabo-2	01-May-20	1	Palaemonetes sp.		18
2524	Old Channel Reach	Cabo-2	01-May-20	1	Procambarus sp.		10
2524	Old Channel Reach	Cabo-2	01-May-20	2	Etheostoma fonticola	21	1
2524	Old Channel Reach	Cabo-2	01-May-20	2	Etheostoma fonticola	16	1
2524	Old Channel Reach	Cabo-2	01-May-20	2	Etheostoma fonticola	27	1
2524	Old Channel Reach	Cabo-2	01-May-20	2	Etheostoma fonticola	17	1
2524	Old Channel Reach	Cabo-2	01-May-20	3	Etheostoma fonticola	14	1
2524	Old Channel Reach	Cabo-2	01-May-20	3	Etheostoma fonticola	15	1
2524	Old Channel Reach	Cabo-2	01-May-20	3	Gambusia sp.	20	1
2524	Old Channel Reach	Cabo-2	01-May-20	3	Procambarus sp.		3
2524	Old Channel Reach	Cabo-2	01-May-20	4	Procambarus sp.		5
2524	Old Channel Reach	Cabo-2	01-May-20	4	Palaemonetes sp.		1
2524	Old Channel Reach	Cabo-2	01-May-20	4	Etheostoma fonticola	20	1
2524	Old Channel Reach	Cabo-2	01-May-20	5	Etheostoma fonticola	13	1
2524	Old Channel Reach	Cabo-2	01-May-20	5	Etheostoma fonticola	16	1
2524	Old Channel Reach	Cabo-2	01-May-20	6	Etheostoma fonticola	19	1

2524	Old Channel Reach	Cabo-2	01-May-20	6	Etheostoma fonticola	26	1
2524	Old Channel Reach	Cabo-2	01-May-20	6	Etheostoma fonticola	16	1
2524	Old Channel Reach	Cabo-2	01-May-20	6	Etheostoma fonticola	16	1
2524	Old Channel Reach	Cabo-2	01-May-20	6	Etheostoma fonticola	18	1
2524	Old Channel Reach	Cabo-2	01-May-20	6	Etheostoma fonticola	14	1
2524	Old Channel Reach	Cabo-2	01-May-20	6	Procambarus sp.		2
2524	Old Channel Reach	Cabo-2	01-May-20	7	Etheostoma fonticola	13	1
2524	Old Channel Reach	Cabo-2	01-May-20	7	Etheostoma fonticola	17	1
2524	Old Channel Reach	Cabo-2	01-May-20	8	Etheostoma fonticola	18	1
2524	Old Channel Reach	Cabo-2	01-May-20	8	Etheostoma fonticola	18	1
2524	Old Channel Reach	Cabo-2	01-May-20	8	Etheostoma fonticola	16	1
2524	Old Channel Reach	Cabo-2	01-May-20	8	Procambarus sp.		2
2524	Old Channel Reach	Cabo-2	01-May-20	9	Etheostoma fonticola	19	1
2524	Old Channel Reach	Cabo-2	01-May-20	10	Procambarus sp.		1
2524	Old Channel Reach	Cabo-2	01-May-20	10	Etheostoma fonticola	19	1
2524	Old Channel Reach	Cabo-2	01-May-20	10	Etheostoma fonticola	19	1
2524	Old Channel Reach	Cabo-2	01-May-20	11	Etheostoma fonticola	17	1
2524	Old Channel Reach	Cabo-2	01-May-20	12	Procambarus sp.		2
2524	Old Channel Reach	Cabo-2	01-May-20	12	No fish collected		
2524	Old Channel Reach	Cabo-2	01-May-20	13	Etheostoma fonticola	21	1
2524	Old Channel Reach	Cabo-2	01-May-20	14	No fish collected		
2524	Old Channel Reach	Cabo-2	01-May-20	15	No fish collected		
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	16	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	18	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	21	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	13	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	24	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	16	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	19	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	20	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	14	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	20	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Etheostoma fonticola	16	1
2525	Old Channel Reach	Ludw-1	01-May-20	1	Palaemonetes sp.		8
2525	Old Channel Reach	Ludw-1	01-May-20	2	Procambarus sp.		1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	18	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	19	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	16	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	20	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	12	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	14	1

2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	16	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	22	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	17	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	14	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	15	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	12	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	14	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	18	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Etheostoma fonticola	23	1
2525	Old Channel Reach	Ludw-1	01-May-20	2	Palaemonetes sp.		9
2525	Old Channel Reach	Ludw-1	01-May-20	3	Etheostoma fonticola	15	1
2525	Old Channel Reach	Ludw-1	01-May-20	3	Etheostoma fonticola	17	1
2525	Old Channel Reach	Ludw-1	01-May-20	3	Palaemonetes sp.		1
2525	Old Channel Reach	Ludw-1	01-May-20	3	Procambarus sp.		1
2525	Old Channel Reach	Ludw-1	01-May-20	4	Etheostoma fonticola	25	1
2525	Old Channel Reach	Ludw-1	01-May-20	4	Etheostoma fonticola	21	1
2525	Old Channel Reach	Ludw-1	01-May-20	4	Etheostoma fonticola	22	1
2525	Old Channel Reach	Ludw-1	01-May-20	4	Etheostoma fonticola	10	1
2525	Old Channel Reach	Ludw-1	01-May-20	4	Etheostoma fonticola	13	1
2525	Old Channel Reach	Ludw-1	01-May-20	4	Palaemonetes sp.		3
2525	Old Channel Reach	Ludw-1	01-May-20	4	Procambarus sp.		2
2525	Old Channel Reach	Ludw-1	01-May-20	5	Etheostoma fonticola	18	1
2525	Old Channel Reach	Ludw-1	01-May-20	5	Etheostoma fonticola	20	1
2525	Old Channel Reach	Ludw-1	01-May-20	6	Procambarus sp.		4
2525	Old Channel Reach	Ludw-1	01-May-20	6	Etheostoma fonticola	16	1
2525	Old Channel Reach	Ludw-1	01-May-20	7	Etheostoma fonticola	17	1
2525	Old Channel Reach	Ludw-1	01-May-20	7	Etheostoma fonticola	18	1
2525	Old Channel Reach	Ludw-1	01-May-20	7	Etheostoma fonticola	18	1
2525	Old Channel Reach	Ludw-1	01-May-20	7	Etheostoma fonticola	30	1
2525	Old Channel Reach	Ludw-1	01-May-20	7	Etheostoma fonticola	16	1
2525	Old Channel Reach	Ludw-1	01-May-20	8	Etheostoma fonticola	18	1
2525	Old Channel Reach	Ludw-1	01-May-20	8	Etheostoma fonticola	22	1
2525	Old Channel Reach	Ludw-1	01-May-20	9	Procambarus sp.		1
2525	Old Channel Reach	Ludw-1	01-May-20	9	Palaemonetes sp.		2
2525	Old Channel Reach	Ludw-1	01-May-20	9	Etheostoma fonticola	18	1
2525	Old Channel Reach	Ludw-1	01-May-20	10	Etheostoma fonticola	22	1
2525	Old Channel Reach	Ludw-1	01-May-20	10	Etheostoma fonticola	16	1
2525	Old Channel Reach	Ludw-1	01-May-20	11	Etheostoma fonticola	23	1
2525	Old Channel Reach	Ludw-1	01-May-20	11	Etheostoma fonticola	18	1
2525	Old Channel Reach	Ludw-1	01-May-20	11	Palaemonetes sp.		1
2525	Old Channel Reach	Ludw-1	01-May-20	12	Etheostoma fonticola	13	1

2525	Old Channel Reach	Ludw-1	01-May-20	12	Etheostoma fonticola	14	1
2525	Old Channel Reach	Ludw-1	01-May-20	12	Etheostoma fonticola	19	1
2525	Old Channel Reach	Ludw-1	01-May-20	13	Procambarus sp.		1
2525	Old Channel Reach	Ludw-1	01-May-20	13	No fish collected		
2525	Old Channel Reach	Ludw-1	01-May-20	14	No fish collected		
2525	Old Channel Reach	Ludw-1	01-May-20	15	Etheostoma fonticola	20	1
2525	Old Channel Reach	Ludw-1	01-May-20	15	Etheostoma fonticola	10	1
2525	Old Channel Reach	Ludw-1	01-May-20	15	Procambarus sp.		1
2525	Old Channel Reach	Ludw-1	01-May-20	16	Procambarus sp.		1
2525	Old Channel Reach	Ludw-1	01-May-20	16	Etheostoma fonticola	15	1
2525	Old Channel Reach	Ludw-1	01-May-20	17	Etheostoma fonticola	17	1
2525	Old Channel Reach	Ludw-1	01-May-20	17	Etheostoma fonticola	20	1
2525	Old Channel Reach	Ludw-1	01-May-20	17	Etheostoma fonticola	20	1
2525	Old Channel Reach	Ludw-1	01-May-20	17	Etheostoma fonticola	13	1
2525	Old Channel Reach	Ludw-1	01-May-20	18	No fish collected		
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	19	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	16	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	15	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	13	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	15	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	19	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	15	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	18	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	14	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	12	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	14	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	14	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	11	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	16	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	10	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	12	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	12	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	13	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	12	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	12	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	14	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	14	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	10	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	11	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	9	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	11	1

2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	11	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	16	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	15	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Etheostoma fonticola	13	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Gambusia sp.	35	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Gambusia sp.	36	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Gambusia sp.	31	1
2526	Old Channel Reach	Bryo-1	01-May-20	1	Procambarus sp.		4
2526	Old Channel Reach	Bryo-1	01-May-20	1	Palaemonetes sp.		3
2526	Old Channel Reach	Bryo-1	01-May-20	2	Etheostoma fonticola	15	1
2526	Old Channel Reach	Bryo-1	01-May-20	2	Etheostoma fonticola	30	1
2526	Old Channel Reach	Bryo-1	01-May-20	2	Etheostoma fonticola	26	1
2526	Old Channel Reach	Bryo-1	01-May-20	2	Procambarus sp.		4
2526	Old Channel Reach	Bryo-1	01-May-20	2	Lepomis miniatus	88	1
2526	Old Channel Reach	Bryo-1	01-May-20	2	Gambusia sp.	25	1
2526	Old Channel Reach	Bryo-1	01-May-20	2	Gambusia sp.	25	1
2526	Old Channel Reach	Bryo-1	01-May-20	2	Gambusia sp.	47	1
2526	Old Channel Reach	Bryo-1	01-May-20	3	Procambarus sp.		4
2526	Old Channel Reach	Bryo-1	01-May-20	3	No fish collected		
2526	Old Channel Reach	Bryo-1	01-May-20	4	Procambarus sp.		2
2526	Old Channel Reach	Bryo-1	01-May-20	4	Palaemonetes sp.		1
2526	Old Channel Reach	Bryo-1	01-May-20	4	No fish collected		
2526	Old Channel Reach	Bryo-1	01-May-20	5	Procambarus sp.		1
2526	Old Channel Reach	Bryo-1	01-May-20	5	Palaemonetes sp.		1
2526	Old Channel Reach	Bryo-1	01-May-20	5	No fish collected		
2526	Old Channel Reach	Bryo-1	01-May-20	6	Etheostoma fonticola	14	1
2526	Old Channel Reach	Bryo-1	01-May-20	7	Procambarus sp.		1
2526	Old Channel Reach	Bryo-1	01-May-20	7	Etheostoma fonticola	19	1
2526	Old Channel Reach	Bryo-1	01-May-20	8	Etheostoma fonticola	11	1
2526	Old Channel Reach	Bryo-1	01-May-20	8	Procambarus sp.		1
2526	Old Channel Reach	Bryo-1	01-May-20	9	Etheostoma fonticola	27	1
2526	Old Channel Reach	Bryo-1	01-May-20	10	No fish collected		
2526	Old Channel Reach	Bryo-1	01-May-20	11	Procambarus sp.	1	
2526	Old Channel Reach	Bryo-1	01-May-20	11	No fish collected		
2526	Old Channel Reach	Bryo-1	01-May-20	12	Procambarus sp.		1
2526	Old Channel Reach	Bryo-1	01-May-20	12	Etheostoma fonticola	17	1
2526	Old Channel Reach	Bryo-1	01-May-20	13	Procambarus sp.		1
2526	Old Channel Reach	Bryo-1	01-May-20	13	No fish collected		
2526	Old Channel Reach	Bryo-1	01-May-20	14	Procambarus sp.		1
2526	Old Channel Reach	Bryo-1	01-May-20	14	No fish collected		
2526	Old Channel Reach	Bryo-1	01-May-20	15	No fish collected		

2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	17	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1

2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	3	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	4	No fish collected		
2527	Old Channel Reach	Open-2	01-May-20	5	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	5	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	5	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	6	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	7	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	8	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	8	Notropis amabilis		1
2527	Old Channel Reach	Open-2	01-May-20	9	No fish collected		
2527	Old Channel Reach	Open-2	01-May-20	10	No fish collected		
2527	Old Channel Reach	Open-2	01-May-20	11	No fish collected		
2527	Old Channel Reach	Open-2	01-May-20	12	No fish collected		

2527	Old Channel Reach	Open-2	01-May-20	13	No fish collected		
2527	Old Channel Reach	Open-2	01-May-20	14	No fish collected		
2527	Old Channel Reach	Open-2	01-May-20	15	No fish collected		
2527	Old Channel Reach	Open-2	01-May-20	1	Notropis amabilis	14	1
2527	Old Channel Reach	Open-2	01-May-20	1	Notropis amabilis	19	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	12	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	14	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	13	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	13	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	13	1
2527	Old Channel Reach	Open-2	01-May-20	2	Notropis amabilis	15	1
2528	Old Channel Reach	Bryo-2	01-May-20	1	Astyanax mexicanus	24	1
2528	Old Channel Reach	Bryo-2	01-May-20	1	Astyanax mexicanus	15	1
2528	Old Channel Reach	Bryo-2	01-May-20	1	Dionda nigrotaeniata	22	1
2528	Old Channel Reach	Bryo-2	01-May-20	1	Palaemonetes sp.		3
2528	Old Channel Reach	Bryo-2	01-May-20	1	Gambusia sp.	9	1
2528	Old Channel Reach	Bryo-2	01-May-20	1	Etheostoma fonticola	25	1
2528	Old Channel Reach	Bryo-2	01-May-20	1	Etheostoma fonticola	22	1
2528	Old Channel Reach	Bryo-2	01-May-20	1	Etheostoma fonticola	18	1
2528	Old Channel Reach	Bryo-2	01-May-20	1	Procambarus sp.		3
2528	Old Channel Reach	Bryo-2	01-May-20	2	Dionda nigrotaeniata	19	1
2528	Old Channel Reach	Bryo-2	01-May-20	2	Dionda nigrotaeniata	26	1
2528	Old Channel Reach	Bryo-2	01-May-20	2	Procambarus sp.		8
2528	Old Channel Reach	Bryo-2	01-May-20	2	Palaemonetes sp.		4
2528	Old Channel Reach	Bryo-2	01-May-20	2	Astyanax mexicanus	15	1
2528	Old Channel Reach	Bryo-2	01-May-20	2	Gambusia sp.	10	1
2528	Old Channel Reach	Bryo-2	01-May-20	3	Lepomis sp.	10	1
2528	Old Channel Reach	Bryo-2	01-May-20	3	Lepomis sp.	14	1
2528	Old Channel Reach	Bryo-2	01-May-20	3	Gambusia sp.	12	1
2528	Old Channel Reach	Bryo-2	01-May-20	3	Dionda nigrotaeniata	21	1
2528	Old Channel Reach	Bryo-2	01-May-20	4	Astyanax mexicanus	32	1
2528	Old Channel Reach	Bryo-2	01-May-20	4	Etheostoma fonticola	13	1
2528	Old Channel Reach	Bryo-2	01-May-20	4	Palaemonetes sp.		3
2528	Old Channel Reach	Bryo-2	01-May-20	4	Procambarus sp.		1
2528	Old Channel Reach	Bryo-2	01-May-20	5	Herichthys cyanoguttatus	19	1
2528	Old Channel Reach	Bryo-2	01-May-20	5	Procambarus sp.		4
2528	Old Channel Reach	Bryo-2	01-May-20	5	Lepomis miniatus	23	1
2528	Old Channel Reach	Bryo-2	01-May-20	5	Palaemonetes sp.		1
2528	Old Channel Reach	Bryo-2	01-May-20	6	Dionda nigrotaeniata	15	1
2528	Old Channel Reach	Bryo-2	01-May-20	6	Lepomis miniatus	60	1
2528	Old Channel Reach	Bryo-2	01-May-20	6	Palaemonetes sp.		1

2528	Old Channel Reach	Bryo-2	01-May-20	7	Gambusia sp.	32	1
2528	Old Channel Reach	Bryo-2	01-May-20	7	Astyanax mexicanus	14	1
2528	Old Channel Reach	Bryo-2	01-May-20	8	No fish collected		
2528	Old Channel Reach	Bryo-2	01-May-20	9	Etheostoma fonticola	15	1
2528	Old Channel Reach	Bryo-2	01-May-20	9	Palaemonetes sp.		1
2528	Old Channel Reach	Bryo-2	01-May-20	9	Procambarus sp.		1
2528	Old Channel Reach	Bryo-2	01-May-20	10	Procambarus sp.		1
2528	Old Channel Reach	Bryo-2	01-May-20	10	Palaemonetes sp.		1
2528	Old Channel Reach	Bryo-2	01-May-20	10	No fish collected		
2528	Old Channel Reach	Bryo-2	01-May-20	11	Lepomis sp.	17	1
2528	Old Channel Reach	Bryo-2	01-May-20	12	Palaemonetes sp.		1
2528	Old Channel Reach	Bryo-2	01-May-20	12	No fish collected		
2528	Old Channel Reach	Bryo-2	01-May-20	13	Etheostoma fonticola	26	1
2528	Old Channel Reach	Bryo-2	01-May-20	13	Etheostoma fonticola	15	1
2528	Old Channel Reach	Bryo-2	01-May-20	13	Etheostoma fonticola	19	1
2528	Old Channel Reach	Bryo-2	01-May-20	14	Astyanax mexicanus	14	1
2528	Old Channel Reach	Bryo-2	01-May-20	15	No fish collected		
2529	Old Channel Reach	Ludw-2	01-May-20	1	Palaemonetes sp.		8
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	23	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	17	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	21	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	21	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	19	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	18	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	15	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	14	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	20	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	17	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	26	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	13	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	15	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	18	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	14	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	18	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	15	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	16	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	17	1
2529	Old Channel Reach	Ludw-2	01-May-20	1	Etheostoma fonticola	17	1
2529	Old Channel Reach	Ludw-2	01-May-20	2	Lepomis miniatus	30	1
2529	Old Channel Reach	Ludw-2	01-May-20	2	Lepomis miniatus	65	1
2529	Old Channel Reach	Ludw-2	01-May-20	2	Procambarus sp.		3

2529	Old Channel Reach	Ludw-2	01-May-20	2	Palaemonetes sp.		2
2529	Old Channel Reach	Ludw-2	01-May-20	2	Etheostoma fonticola	17	1
2529	Old Channel Reach	Ludw-2	01-May-20	2	Etheostoma fonticola	14	1
2529	Old Channel Reach	Ludw-2	01-May-20	3	Dionda nigrotaeniata	18	1
2529	Old Channel Reach	Ludw-2	01-May-20	3	Procambarus sp.		8
2529	Old Channel Reach	Ludw-2	01-May-20	3	Palaemonetes sp.		2
2529	Old Channel Reach	Ludw-2	01-May-20	3	Etheostoma fonticola	19	1
2529	Old Channel Reach	Ludw-2	01-May-20	4	Etheostoma fonticola	21	1
2529	Old Channel Reach	Ludw-2	01-May-20	4	Etheostoma fonticola	15	1
2529	Old Channel Reach	Ludw-2	01-May-20	5	Procambarus sp.		2
2529	Old Channel Reach	Ludw-2	01-May-20	5	Etheostoma fonticola	14	1
2529	Old Channel Reach	Ludw-2	01-May-20	6	Procambarus sp.		2
2529	Old Channel Reach	Ludw-2	01-May-20	6	Etheostoma fonticola	16	1
2529	Old Channel Reach	Ludw-2	01-May-20	7	Palaemonetes sp.		1
2529	Old Channel Reach	Ludw-2	01-May-20	7	Lepomis sp.	10	1
2529	Old Channel Reach	Ludw-2	01-May-20	7	Etheostoma fonticola	12	1
2529	Old Channel Reach	Ludw-2	01-May-20	8	No fish collected		
2529	Old Channel Reach	Ludw-2	01-May-20	9	Etheostoma fonticola	15	1
2529	Old Channel Reach	Ludw-2	01-May-20	10	No fish collected		
2529	Old Channel Reach	Ludw-2	01-May-20	11	No fish collected		
2529	Old Channel Reach	Ludw-2	01-May-20	12	No fish collected		
2529	Old Channel Reach	Ludw-2	01-May-20	13	No fish collected		
2529	Old Channel Reach	Ludw-2	01-May-20	14	No fish collected		
2529	Old Channel Reach	Ludw-2	01-May-20	15	Procambarus sp.		1
2529	Old Channel Reach	Ludw-2	01-May-20	15	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20	1	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20	2	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20	3	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20	6	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20	7	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20	8	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20	9	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20	10	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20				

2530	Upper New Channel Reach	Open-1	05-May-20	4	No fish collected		
2530	Upper New Channel Reach	Open-1	05-May-20	5	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	1	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	2	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	3	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	4	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	5	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	6	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	7	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	8	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	9	No fish collected		
2518	Upper Spring Run	Open-1	30-Apr-20	10	No fish collected		
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	19	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	18	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	14	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	11	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	13	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	13	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	11	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	21	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	13	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	17	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	15	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	19	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	1	Etheostoma fonticola	14	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	2	Procambarus sp.		3
2519	Upper Spring Run	Bryo-2	30-Apr-20	2	Lepomis sp.	12	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	3	Etheostoma fonticola	22	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	3	Etheostoma fonticola	18	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	3	Etheostoma fonticola	19	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	3	Etheostoma fonticola	21	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	3	Etheostoma fonticola	20	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	3	Etheostoma fonticola	14	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	3	Etheostoma fonticola	18	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	3	Palaemonetes sp.		1
2519	Upper Spring Run	Bryo-2	30-Apr-20	4	No fish collected		
2519	Upper Spring Run	Bryo-2	30-Apr-20	5	Etheostoma fonticola	17	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	5	Etheostoma fonticola	23	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	5	Etheostoma fonticola	22	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	5	Lepomis sp.	14	1

2519	Upper Spring Run	Bryo-2	30-Apr-20	6	No fish collected		
2519	Upper Spring Run	Bryo-2	30-Apr-20	7	Etheostoma fonticola	19	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	7	Lepomis sp.	10	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	8	Palaemonetes sp.		2
2519	Upper Spring Run	Bryo-2	30-Apr-20	8	Etheostoma fonticola	24	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	8	Etheostoma fonticola	30	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	8	Etheostoma fonticola	19	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	8	Etheostoma fonticola	18	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	8	Etheostoma fonticola	20	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	8	Etheostoma fonticola	20	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	9	Etheostoma fonticola	30	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	9	Etheostoma fonticola	12	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	9	Procambarus sp.		1
2519	Upper Spring Run	Bryo-2	30-Apr-20	9	Palaemonetes sp.		1
2519	Upper Spring Run	Bryo-2	30-Apr-20	10	Etheostoma fonticola	19	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	10	Etheostoma fonticola	20	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	11	Etheostoma fonticola	28	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	11	Etheostoma fonticola	11	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	12	No fish collected		
2519	Upper Spring Run	Bryo-2	30-Apr-20	13	No fish collected		
2519	Upper Spring Run	Bryo-2	30-Apr-20	14	Lepomis miniatus	28	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	14	Astyanax mexicanus	23	1
2519	Upper Spring Run	Bryo-2	30-Apr-20	15	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	1	Etheostoma fonticola	18	1
2520	Upper Spring Run	Open-2	30-Apr-20	2	Etheostoma fonticola	22	1
2520	Upper Spring Run	Open-2	30-Apr-20	3	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	3	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	4	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	5	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	6	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	7	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	8	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	9	Etheostoma fonticola	16	1
2520	Upper Spring Run	Open-2	30-Apr-20	9	Etheostoma fonticola	15	1
2520	Upper Spring Run	Open-2	30-Apr-20	10	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	11	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	12	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	13	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	14	No fish collected		
2520	Upper Spring Run	Open-2	30-Apr-20	15	No fish collected		
2521	Upper Spring Run	Ludw-2	30-Apr-20	1	Dionda nigrotaeniata	24	1

2521	Upper Spring Run	Ludw-2	30-Apr-20	1	Lepomis sp.	15	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	1	Lepomis sp.	10	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	1	Lepomis sp.	15	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	1	Astyanax mexicanus	40	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	1	Micropterus salmoides	45	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	2	Micropterus salmoides	40	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	2	Astyanax mexicanus	39	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	2	Dionda nigrotaeniata	32	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	2	Lepomis sp.	10	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	2	Palaemonetes sp.		1
2521	Upper Spring Run	Ludw-2	30-Apr-20	3	Micropterus salmoides	32	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	3	Micropterus salmoides	40	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	3	Astyanax mexicanus	23	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	4	Astyanax mexicanus	45	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	4	Astyanax mexicanus	46	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	4	Lepomis sp.	15	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	5	Astyanax mexicanus	40	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	5	Astyanax mexicanus	40	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	5	Astyanax mexicanus	45	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	5	Astyanax mexicanus	24	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	6	Astyanax mexicanus	29	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	7	Astyanax mexicanus	30	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	7	Lepomis sp.	10	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	8	Astyanax mexicanus	35	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	8	Astyanax mexicanus	28	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	9	No fish collected		
2521	Upper Spring Run	Ludw-2	30-Apr-20	10	Dionda nigrotaeniata	29	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	11	Lepomis miniatus	35	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	12	No fish collected		
2521	Upper Spring Run	Ludw-2	30-Apr-20	13	Lepomis miniatus	25	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	14	Astyanax mexicanus	36	1
2521	Upper Spring Run	Ludw-2	30-Apr-20	15	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20	1	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20	2	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20	3	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20	4	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20	5	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20	6	No fish collected		

2522	Old Channel Reach	Open-1	01-May-20	7	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20	8	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20	9	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20	10	No fish collected		
2522	Old Channel Reach	Open-1	01-May-20				
2522	Old Channel Reach	Open-1	01-May-20				
2523	Old Channel Reach	Cabo-1	01-May-20	7	Procambarus sp.		1
2523	Old Channel Reach	Cabo-1	01-May-20	8	Etheostoma fonticola	14	1
2523	Old Channel Reach	Cabo-1	01-May-20	9	Etheostoma fonticola	20	1
2523	Old Channel Reach	Cabo-1	01-May-20	9	Etheostoma fonticola	22	1
2523	Old Channel Reach	Cabo-1	01-May-20	9	Etheostoma fonticola	14	1
2523	Old Channel Reach	Cabo-1	01-May-20	9	Procambarus sp.		4
2523	Old Channel Reach	Cabo-1	01-May-20	9	Palaemonetes sp.		3
2523	Old Channel Reach	Cabo-1	01-May-20	10	Etheostoma fonticola	19	1
2523	Old Channel Reach	Cabo-1	01-May-20	10	Etheostoma fonticola	22	1
2523	Old Channel Reach	Cabo-1	01-May-20	11	Procambarus sp.		1
2523	Old Channel Reach	Cabo-1	01-May-20	11	No fish collected		
2523	Old Channel Reach	Cabo-1	01-May-20	12	Etheostoma fonticola	24	1
2523	Old Channel Reach	Cabo-1	01-May-20	12	Etheostoma fonticola	15	1
2523	Old Channel Reach	Cabo-1	01-May-20	13	Procambarus sp.		2
2523	Old Channel Reach	Cabo-1	01-May-20	13	Palaemonetes sp.		1
2523	Old Channel Reach	Cabo-1	01-May-20	13	No fish collected		
2523	Old Channel Reach	Cabo-1	01-May-20	14	Etheostoma fonticola	13	1
2523	Old Channel Reach	Cabo-1	01-May-20	14	Etheostoma fonticola	19	1
2523	Old Channel Reach	Cabo-1	01-May-20	14	Etheostoma fonticola	23	1
2523	Old Channel Reach	Cabo-1	01-May-20	15	No fish collected		
2523	Old Channel Reach	Cabo-1	01-May-20	1	Procambarus sp.		16
2523	Old Channel Reach	Cabo-1	01-May-20	1	Palaemonetes sp.		21
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	17	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	21	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	17	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	15	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	11	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	19	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	17	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	15	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	12	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	16	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	18	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	20	1
2523	Old Channel Reach	Cabo-1	01-May-20	1	Etheostoma fonticola	16	1

2523	Old Channel Reach	Cabo-1	01-May-20	2	Palaemonetes sp.		9
2523	Old Channel Reach	Cabo-1	01-May-20	2	Procambarus sp.		5
2523	Old Channel Reach	Cabo-1	01-May-20	2	Etheostoma fonticola	12	1
2523	Old Channel Reach	Cabo-1	01-May-20	2	Etheostoma fonticola	14	1
2523	Old Channel Reach	Cabo-1	01-May-20	2	Etheostoma fonticola	16	1
2523	Old Channel Reach	Cabo-1	01-May-20	2	Etheostoma fonticola	24	1
2523	Old Channel Reach	Cabo-1	01-May-20	2	Etheostoma fonticola	16	1
2523	Old Channel Reach	Cabo-1	01-May-20	2	Etheostoma fonticola	13	1
2523	Old Channel Reach	Cabo-1	01-May-20	3	Procambarus sp.		6
2523	Old Channel Reach	Cabo-1	01-May-20	3	Palaemonetes sp.		3
2523	Old Channel Reach	Cabo-1	01-May-20	3	No fish collected		
2523	Old Channel Reach	Cabo-1	01-May-20	4	Procambarus sp.		4
2523	Old Channel Reach	Cabo-1	01-May-20	4	Palaemonetes sp.		2
2523	Old Channel Reach	Cabo-1	01-May-20	4	Etheostoma fonticola	21	1
2523	Old Channel Reach	Cabo-1	01-May-20	4	Etheostoma fonticola	30	1
2523	Old Channel Reach	Cabo-1	01-May-20	4	Etheostoma fonticola	20	1
2523	Old Channel Reach	Cabo-1	01-May-20	4	Etheostoma fonticola	14	1
2523	Old Channel Reach	Cabo-1	01-May-20	4	Lepomis sp.	10	1
2523	Old Channel Reach	Cabo-1	01-May-20	5	Etheostoma fonticola	15	1
2523	Old Channel Reach	Cabo-1	01-May-20	5	Etheostoma fonticola	18	1
2523	Old Channel Reach	Cabo-1	01-May-20	5	Etheostoma fonticola	18	1
2523	Old Channel Reach	Cabo-1	01-May-20	5	Etheostoma fonticola	16	1
2523	Old Channel Reach	Cabo-1	01-May-20	5	Palaemonetes sp.		2
2523	Old Channel Reach	Cabo-1	01-May-20	5	Procambarus sp.		2
2523	Old Channel Reach	Cabo-1	01-May-20	6	Etheostoma fonticola	20	1
2523	Old Channel Reach	Cabo-1	01-May-20	6	Etheostoma fonticola	17	1
2523	Old Channel Reach	Cabo-1	01-May-20	6	Etheostoma fonticola	21	1
2523	Old Channel Reach	Cabo-1	01-May-20	6	Etheostoma fonticola	16	1
2523	Old Channel Reach	Cabo-1	01-May-20	6	Etheostoma fonticola	16	1
2523	Old Channel Reach	Cabo-1	01-May-20	6	Procambarus sp.		2
2523	Old Channel Reach	Cabo-1	01-May-20	6	Palaemonetes sp.		3
2523	Old Channel Reach	Cabo-1	01-May-20	7	Lepomis sp.	16	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Etheostoma fonticola	21	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Etheostoma fonticola	20	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Etheostoma fonticola	19	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Etheostoma fonticola	16	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Etheostoma fonticola	16	1

2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Etheostoma fonticola	21	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Etheostoma fonticola	21	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Etheostoma fonticola	20	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Palaemonetes sp.		12
2531	Upper New Channel Reach	Hygr-1	05-May-20	1	Procambarus sp.		3
2531	Upper New Channel Reach	Hygr-1	05-May-20	2	Lepomis sp.	18	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	2	Lepomis sp.	15	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	2	Dionda nigrotaeniata	23	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	2	Lepomis miniatus	34	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	2	Palaemonetes sp.		15
2531	Upper New Channel Reach	Hygr-1	05-May-20	3	Procambarus sp.		4
2531	Upper New Channel Reach	Hygr-1	05-May-20	3	Palaemonetes sp.		5
2531	Upper New Channel Reach	Hygr-1	05-May-20	3	Gambusia sp.	11	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	3	Etheostoma fonticola	31	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	4	Etheostoma fonticola	28	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	4	Palaemonetes sp.		7
2531	Upper New Channel Reach	Hygr-1	05-May-20	5	Ambloplites rupestris	28	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	5	Palaemonetes sp.		2
2531	Upper New Channel Reach	Hygr-1	05-May-20	6	Etheostoma fonticola	18	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	6	Etheostoma fonticola	18	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	6	Herichthys cyanoguttatus	55	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	6	Palaemonetes sp.		4
2531	Upper New Channel Reach	Hygr-1	05-May-20	7	Etheostoma fonticola	30	1

2531	Upper New Channel Reach	Hygr-1	05-May-20	7	Etheostoma fonticola	14	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	7	Lepomis sp.	16	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	7	Palaemonetes sp.		5
2531	Upper New Channel Reach	Hygr-1	05-May-20	8	Lepomis miniatus	30	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	8	Procambarus sp.		2
2531	Upper New Channel Reach	Hygr-1	05-May-20	8	Etheostoma fonticola	29	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	8	Etheostoma fonticola	25	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	8	Palaemonetes sp.		1
2531	Upper New Channel Reach	Hygr-1	05-May-20	9	Procambarus sp.		2
2531	Upper New Channel Reach	Hygr-1	05-May-20	9	Palaemonetes sp.		3
2531	Upper New Channel Reach	Hygr-1	05-May-20	9	Etheostoma fonticola	12	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	10	No fish collected		
2531	Upper New Channel Reach	Hygr-1	05-May-20	11	No fish collected		
2531	Upper New Channel Reach	Hygr-1	05-May-20	12	No fish collected		
2531	Upper New Channel Reach	Hygr-1	05-May-20	13	Micropterus salmoides	50	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	13	Procambarus sp.		1
2531	Upper New Channel Reach	Hygr-1	05-May-20	13	Gambusia sp.	12	1
2531	Upper New Channel Reach	Hygr-1	05-May-20	14	No fish collected		
2531	Upper New Channel Reach	Hygr-1	05-May-20	15	Palaemonetes sp.		1
2531	Upper New Channel Reach	Hygr-1	05-May-20	15	No fish collected		
2532	Upper New Channel Reach	Hygr-2	05-May-20	1	Palaemonetes sp.		3
2532	Upper New Channel Reach	Hygr-2	05-May-20	1	Gambusia sp.	20	1
2532	Upper New Channel Reach	Hygr-2	05-May-20	1	Gambusia sp.	9	1

2532	Upper New Channel Reach	Hygr-2	05-May-20	2	Lepomis gulosus	215	1
2532	Upper New Channel Reach	Hygr-2	05-May-20	2	Etheostoma fonticola	26	1
2532	Upper New Channel Reach	Hygr-2	05-May-20	2	Etheostoma fonticola	30	1
2532	Upper New Channel Reach	Hygr-2	05-May-20	2	Procambarus sp.		1
2532	Upper New Channel Reach	Hygr-2	05-May-20	2	Palaemonetes sp.		8
2532	Upper New Channel Reach	Hygr-2	05-May-20	3	Etheostoma fonticola	22	1
2532	Upper New Channel Reach	Hygr-2	05-May-20	3	Palaemonetes sp.		6
2532	Upper New Channel Reach	Hygr-2	05-May-20	4	Etheostoma fonticola	24	1
2532	Upper New Channel Reach	Hygr-2	05-May-20	4	Etheostoma fonticola	32	1
2532	Upper New Channel Reach	Hygr-2	05-May-20	4	Palaemonetes sp.		3
2532	Upper New Channel Reach	Hygr-2	05-May-20	5	No fish collected		
2532	Upper New Channel Reach	Hygr-2	05-May-20	6	No fish collected		
2532	Upper New Channel Reach	Hygr-2	05-May-20	7	Palaemonetes sp.		3
2532	Upper New Channel Reach	Hygr-2	05-May-20	7	Procambarus sp.		2
2532	Upper New Channel Reach	Hygr-2	05-May-20	7	No fish collected		
2532	Upper New Channel Reach	Hygr-2	05-May-20	8	Etheostoma fonticola	24	1
2532	Upper New Channel Reach	Hygr-2	05-May-20	9	Palaemonetes sp.		1
2532	Upper New Channel Reach	Hygr-2	05-May-20	9	No fish collected		
2532	Upper New Channel Reach	Hygr-2	05-May-20	10	Procambarus sp.		2
2532	Upper New Channel Reach	Hygr-2	05-May-20	10	No fish collected		
2532	Upper New Channel Reach	Hygr-2	05-May-20	11	No fish collected		
2532	Upper New Channel Reach	Hygr-2	05-May-20	12	Palaemonetes sp.		1
2532	Upper New Channel Reach	Hygr-2	05-May-20	12	No fish collected		

2532	Upper New Channel Reach	Hygr-2	05-May-20	13	No fish collected		
2532	Upper New Channel Reach	Hygr-2	05-May-20	14	Procambarus sp.		4
2532	Upper New Channel Reach	Hygr-2	05-May-20	14	No fish collected		
2532	Upper New Channel Reach	Hygr-2	05-May-20	15	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	1	Procambarus sp.		10
2533	Upper New Channel Reach	Bryo-1	05-May-20	1	Gambusia sp.	12	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	1	Gambusia sp.	13	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	1	Etheostoma fonticola	27	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	1	Lepomis sp.	10	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	1	Lepomis sp.	17	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	2	Procambarus sp.		5
2533	Upper New Channel Reach	Bryo-1	05-May-20	2	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	3	Palaemonetes sp.		3
2533	Upper New Channel Reach	Bryo-1	05-May-20	3	Etheostoma fonticola	30	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	3	Gambusia sp.	12	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	3	Gambusia sp.	10	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	3	Gambusia sp.	10	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	3	Gambusia sp.	15	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	3	Procambarus sp.		2
2533	Upper New Channel Reach	Bryo-1	05-May-20	4	Procambarus sp.		1
2533	Upper New Channel Reach	Bryo-1	05-May-20	4	Gambusia sp.	12	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	5	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	6	Palaemonetes sp.		1

2533	Upper New Channel Reach	Bryo-1	05-May-20	6	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	7	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	8	Procambarus sp.		1
2533	Upper New Channel Reach	Bryo-1	05-May-20	8	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	9	Procambarus sp.		1
2533	Upper New Channel Reach	Bryo-1	05-May-20	9	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	10	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	11	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	12	Gambusia sp.	12	1
2533	Upper New Channel Reach	Bryo-1	05-May-20	12	Palaemonetes sp.		1
2533	Upper New Channel Reach	Bryo-1	05-May-20	13	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	14	No fish collected		
2533	Upper New Channel Reach	Bryo-1	05-May-20	15	No fish collected		
2534	Upper New Channel Reach	Cabo-1	05-May-20	10	No fish collected		
2534	Upper New Channel Reach	Cabo-1	05-May-20	11	Etheostoma fonticola	12	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	12	Etheostoma fonticola	28	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	12	Etheostoma fonticola	24	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	12	Etheostoma fonticola	16	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	12	Etheostoma fonticola	19	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	12	Gambusia sp.	12	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	12	Palaemonetes sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	13	Procambarus sp.		2
2534	Upper New Channel Reach	Cabo-1	05-May-20	13	Palaemonetes sp.		1

2534	Upper New Channel Reach	Cabo-1	05-May-20	13	No fish collected		
2534	Upper New Channel Reach	Cabo-1	05-May-20	14	Etheostoma fonticola	22	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	15	Procambarus sp.		3
2534	Upper New Channel Reach	Cabo-1	05-May-20	15	Etheostoma fonticola	33	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	15	Etheostoma fonticola	15	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	15	Palaemonetes sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	16	Etheostoma fonticola	29	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	16	Procambarus sp.		2
2534	Upper New Channel Reach	Cabo-1	05-May-20	17	Etheostoma fonticola	19	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	17	Etheostoma fonticola	29	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	17	Etheostoma fonticola	22	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	18	Procambarus sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	18	Etheostoma fonticola	12	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	19	Palaemonetes sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	19	No fish collected		
2534	Upper New Channel Reach	Cabo-1	05-May-20	1	Gambusia sp.	23	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	1	Gambusia sp.	25	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	1	Gambusia sp.	10	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	1	Gambusia sp.	10	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	1	Palaemonetes sp.		7
2534	Upper New Channel Reach	Cabo-1	05-May-20	1	Etheostoma fonticola	16	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Etheostoma fonticola	19	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Etheostoma fonticola	18	1

2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Etheostoma fonticola	18	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Etheostoma fonticola	21	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Etheostoma fonticola	19	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Etheostoma fonticola	20	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Etheostoma fonticola	19	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Procambarus sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Palaemonetes sp.		10
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Astyanax mexicanus	13	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	2	Micropterus salmoides	30	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	3	Etheostoma fonticola	22	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	3	Etheostoma fonticola	20	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	3	Etheostoma fonticola	26	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	3	Etheostoma fonticola	27	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	3	Dionda nigrotaeniata	25	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	3	Palaemonetes sp.		5
2534	Upper New Channel Reach	Cabo-1	05-May-20	4	Etheostoma fonticola	14	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	4	Etheostoma fonticola	30	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	4	Palaemonetes sp.		2
2534	Upper New Channel Reach	Cabo-1	05-May-20	5	Palaemonetes sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	5	No fish collected		
2534	Upper New Channel Reach	Cabo-1	05-May-20	6	Palaemonetes sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	6	No fish collected		
2534	Upper New Channel Reach	Cabo-1	05-May-20	7	Etheostoma fonticola	20	1

2534	Upper New Channel Reach	Cabo-1	05-May-20	7	Etheostoma fonticola	22	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	7	Etheostoma fonticola	20	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	7	Etheostoma fonticola	20	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	7	Gambusia sp.	10	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	7	Procambarus sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	8	Etheostoma fonticola	21	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	8	Etheostoma fonticola	30	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	8	Etheostoma fonticola	11	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	8	Etheostoma fonticola	13	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	8	Palaemonetes sp.		2
2534	Upper New Channel Reach	Cabo-1	05-May-20	9	Palaemonetes sp.		2
2534	Upper New Channel Reach	Cabo-1	05-May-20	9	Procambarus sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	9	Etheostoma fonticola	20	1
2534	Upper New Channel Reach	Cabo-1	05-May-20	10	Palaemonetes sp.		1
2534	Upper New Channel Reach	Cabo-1	05-May-20	10	Procambarus sp.		1
2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Etheostoma fonticola	34	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Etheostoma fonticola	30	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Etheostoma fonticola	17	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Etheostoma fonticola	25	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Etheostoma fonticola	29	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Palaemonetes sp.		20
2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Gambusia sp.	12	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Gambusia sp.	10	1

2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Gambusia sp.	15	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	1	Procambarus sp.		1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	25	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	18	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	28	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	21	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	26	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	19	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	20	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	19	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	20	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	19	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Etheostoma fonticola	18	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Gambusia sp.	10	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	2	Palaemonetes sp.		4
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Lepomis cyanellus	65	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Etheostoma fonticola	22	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Etheostoma fonticola	25	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Etheostoma fonticola	24	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Etheostoma fonticola	20	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Etheostoma fonticola	19	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Etheostoma fonticola	24	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Etheostoma fonticola	18	1

2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Gambusia sp.	10	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Gambusia sp.	10	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Gambusia sp.	12	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Procambarus sp.		5
2535	Upper New Channel Reach	Cabo-2	05-May-20	3	Palaemonetes sp.		5
2535	Upper New Channel Reach	Cabo-2	05-May-20	4	Etheostoma fonticola	30	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	4	Etheostoma fonticola	20	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	4	Dionda nigrotaeniata	18	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	4	Gambusia sp.	10	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	4	Palaemonetes sp.		6
2535	Upper New Channel Reach	Cabo-2	05-May-20	5	Etheostoma fonticola	31	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	5	Etheostoma fonticola	26	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	5	Procambarus sp.		6
2535	Upper New Channel Reach	Cabo-2	05-May-20	5	Palaemonetes sp.		2
2535	Upper New Channel Reach	Cabo-2	05-May-20	6	Procambarus sp.		1
2535	Upper New Channel Reach	Cabo-2	05-May-20	6	Etheostoma fonticola	32	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	6	Etheostoma fonticola	18	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	7	Gambusia sp.	10	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	7	Procambarus sp.		3
2535	Upper New Channel Reach	Cabo-2	05-May-20	8	Procambarus sp.		1
2535	Upper New Channel Reach	Cabo-2	05-May-20	8	Etheostoma fonticola	22	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	9	Etheostoma fonticola	24	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	9	Palaemonetes sp.		3

2535	Upper New Channel Reach	Cabo-2	05-May-20	9	Procambarus sp.		1
2535	Upper New Channel Reach	Cabo-2	05-May-20	10	Procambarus sp.		3
2535	Upper New Channel Reach	Cabo-2	05-May-20	10	Etheostoma fonticola	22	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	11	Etheostoma fonticola	25	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	11	Etheostoma fonticola	32	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	11	Etheostoma fonticola	28	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	11	Etheostoma fonticola	24	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	12	Palaemonetes sp.		1
2535	Upper New Channel Reach	Cabo-2	05-May-20	12	No fish collected		
2535	Upper New Channel Reach	Cabo-2	05-May-20	13	Gambusia sp.	12	1
2535	Upper New Channel Reach	Cabo-2	05-May-20	13	Palaemonetes sp.		1
2535	Upper New Channel Reach	Cabo-2	05-May-20	14	Palaemonetes sp.		2
2535	Upper New Channel Reach	Cabo-2	05-May-20	14	Procambarus sp.		1
2535	Upper New Channel Reach	Cabo-2	05-May-20	14	No fish collected		
2535	Upper New Channel Reach	Cabo-2	05-May-20	15	Procambarus sp.		2
2535	Upper New Channel Reach	Cabo-2	05-May-20	15	Palaemonetes sp.		1
2535	Upper New Channel Reach	Cabo-2	05-May-20	15	No fish collected		
2536	Upper New Channel Reach	Byro-2	05-May-20	1	Gambusia sp.	10	1
2536	Upper New Channel Reach	Byro-2	05-May-20	1	Gambusia sp.	10	1
2536	Upper New Channel Reach	Byro-2	05-May-20	1	Gambusia sp.	12	1
2536	Upper New Channel Reach	Byro-2	05-May-20	1	Etheostoma fonticola	24	1
2536	Upper New Channel Reach	Byro-2	05-May-20	1	Etheostoma fonticola	24	1
2536	Upper New Channel Reach	Byro-2	05-May-20	1	Etheostoma fonticola	20	1

2536	Upper New Channel Reach	Byro-2	05-May-20	1	Etheostoma fonticola	18	1
2536	Upper New Channel Reach	Byro-2	05-May-20	1	Procambarus sp.		1
2536	Upper New Channel Reach	Byro-2	05-May-20	2	No fish collected		
2536	Upper New Channel Reach	Byro-2	05-May-20	3	Etheostoma fonticola	13	1
2536	Upper New Channel Reach	Byro-2	05-May-20	3	Etheostoma fonticola	16	1
2536	Upper New Channel Reach	Byro-2	05-May-20	3	Gambusia sp.	20	1
2536	Upper New Channel Reach	Byro-2	05-May-20	4	Gambusia sp.	17	1
2536	Upper New Channel Reach	Byro-2	05-May-20	5	Etheostoma fonticola	15	1
2536	Upper New Channel Reach	Byro-2	05-May-20	6	No fish collected		
2536	Upper New Channel Reach	Byro-2	05-May-20	7	Palaemonetes sp.		2
2536	Upper New Channel Reach	Byro-2	05-May-20	7	No fish collected		
2536	Upper New Channel Reach	Byro-2	05-May-20	8	No fish collected		
2536	Upper New Channel Reach	Byro-2	05-May-20	9	No fish collected		
2536	Upper New Channel Reach	Byro-2	05-May-20	10	No fish collected		
2536	Upper New Channel Reach	Byro-2	05-May-20	11	Etheostoma fonticola	22	1
2536	Upper New Channel Reach	Byro-2	05-May-20	12	Procambarus sp.		1
2536	Upper New Channel Reach	Byro-2	05-May-20	12	Etheostoma fonticola	30	1
2536	Upper New Channel Reach	Byro-2	05-May-20	13	Lepomis miniatus	220	1
2536	Upper New Channel Reach	Byro-2	05-May-20	13	Procambarus sp.		1
2536	Upper New Channel Reach	Byro-2	05-May-20	14	No fish collected		
2536	Upper New Channel Reach	Byro-2	05-May-20	15	No fish collected		
2537	Upper New Channel Reach	Open-2	05-May-20	1	No fish collected		
2537	Upper New Channel Reach	Open-2	05-May-20	2	No fish collected		

2537	Upper New Channel Reach	Open-2	05-May-20	3	No fish collected		
2537	Upper New Channel Reach	Open-2	05-May-20	4	No fish collected		
2537	Upper New Channel Reach	Open-2	05-May-20	5	No fish collected		
2537	Upper New Channel Reach	Open-2	05-May-20	6	No fish collected		
2537	Upper New Channel Reach	Open-2	05-May-20	7	No fish collected		
2537	Upper New Channel Reach	Open-2	05-May-20	8	No fish collected		
2537	Upper New Channel Reach	Open-2	05-May-20	9	No fish collected		
2537	Upper New Channel Reach	Open-2	05-May-20	10	No fish collected		
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	11	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	25	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	12	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	26	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	14	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	26	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	11	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	14	1
2545	Landa Lake	Bryo-1	30-Apr-20	2	Palaemonetes sp.		10
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	26	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	24	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	19	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	19	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	19	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	24	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	25	1

2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	25	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	19	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	14	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	13	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	14	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	25	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Procambarus sp.		1
2545	Landa Lake	Bryo-1	30-Apr-20	3	Palaemonetes sp.		1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	24	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	28	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	13	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	14	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	13	1

2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Etheostoma fonticola	13	1
2545	Landa Lake	Bryo-1	30-Apr-20	4	Palaemonetes sp.		4
2545	Landa Lake	Bryo-1	30-Apr-20	4	Gambusia sp.	10	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	19	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	24	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	19	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	28	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Etheostoma fonticola	14	1
2545	Landa Lake	Bryo-1	30-Apr-20	6	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	6	Etheostoma fonticola	27	1
2545	Landa Lake	Bryo-1	30-Apr-20	6	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	6	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	6	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	6	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	6	Procambarus sp.		3
2545	Landa Lake	Bryo-1	30-Apr-20	7	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	7	Procambarus sp.		1
2545	Landa Lake	Bryo-1	30-Apr-20	7	Palaemonetes sp.		1
2545	Landa Lake	Bryo-1	30-Apr-20	8	No fish collected		
2545	Landa Lake	Bryo-1	30-Apr-20	9	Procambarus sp.		2
2545	Landa Lake	Bryo-1	30-Apr-20	9	No fish collected		
2545	Landa Lake	Bryo-1	30-Apr-20	10	Procambarus sp.		2
2545	Landa Lake	Bryo-1	30-Apr-20	10	No fish collected		
2545	Landa Lake	Bryo-1	30-Apr-20	11	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	12	Procambarus sp.		3

2545	Landa Lake	Bryo-1	30-Apr-20	12	No fish collected		
2545	Landa Lake	Bryo-1	30-Apr-20	13	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	13	Etheostoma fonticola	12	1
2545	Landa Lake	Bryo-1	30-Apr-20	14	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	15	Etheostoma fonticola	19	1
2545	Landa Lake	Bryo-1	30-Apr-20	15	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	16	No fish collected		
2545	Landa Lake	Bryo-1	30-Apr-20	1	Procambarus sp.		8
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	26	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	19	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	20	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	32	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	14	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	14	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	26	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	18	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	21	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	15	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	13	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	17	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Etheostoma fonticola	22	1
2545	Landa Lake	Bryo-1	30-Apr-20	1	Palaemonetes sp.		6
2545	Landa Lake	Bryo-1	30-Apr-20	2	Etheostoma fonticola	16	1
2545	Landa Lake	Bryo-1	30-Apr-20	5	Procambarus sp.		2
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	16	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	19	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	12	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	11	1

2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	18	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	14	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	16	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	16	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	22	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	18	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	18	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	26	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Procambarus sp.		16
2546	Landa Lake	Bryo-2	30-Apr-20	1	Palaemonetes sp.		2
2546	Landa Lake	Bryo-2	30-Apr-20	1	Dionda nigrotaeniata	20	1
2546	Landa Lake	Bryo-2	30-Apr-20	2	Etheostoma fonticola	25	1
2546	Landa Lake	Bryo-2	30-Apr-20	2	Etheostoma fonticola	22	1
2546	Landa Lake	Bryo-2	30-Apr-20	2	Etheostoma fonticola	26	1
2546	Landa Lake	Bryo-2	30-Apr-20	2	Etheostoma fonticola	19	1
2546	Landa Lake	Bryo-2	30-Apr-20	2	Etheostoma fonticola	21	1
2546	Landa Lake	Bryo-2	30-Apr-20	2	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	2	Etheostoma fonticola	18	1
2546	Landa Lake	Bryo-2	30-Apr-20	2	Etheostoma fonticola	22	1
2546	Landa Lake	Bryo-2	30-Apr-20	2	Palaemonetes sp.		2
2546	Landa Lake	Bryo-2	30-Apr-20	2	Procambarus sp.		3
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	22	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	23	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	26	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	12	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	13	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	14	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	18	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	16	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	14	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	19	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	11	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Etheostoma fonticola	16	1
2546	Landa Lake	Bryo-2	30-Apr-20	3	Procambarus sp.		16
2546	Landa Lake	Bryo-2	30-Apr-20	3	Palaemonetes sp.		3
2546	Landa Lake	Bryo-2	30-Apr-20	3	Gambusia sp.	12	1

2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	25	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	20	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	22	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	21	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	19	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	23	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	30	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	22	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	16	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	18	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	24	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	24	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	14	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	12	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	22	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	13	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	22	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	4	Procambarus sp.		6
2546	Landa Lake	Bryo-2	30-Apr-20	4	Palaemonetes sp.		2
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	12	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	10	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	21	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	23	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	30	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	25	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	25	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	21	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	25	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	13	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	20	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	20	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Etheostoma fonticola	18	1
2546	Landa Lake	Bryo-2	30-Apr-20	5	Procambarus sp.		1

2546	Landa Lake	Bryo-2	30-Apr-20	6	Palaemonetes sp.		1
2546	Landa Lake	Bryo-2	30-Apr-20	6	Procambarus sp.		3
2546	Landa Lake	Bryo-2	30-Apr-20	6	Etheostoma fonticola	22	1
2546	Landa Lake	Bryo-2	30-Apr-20	7	Etheostoma fonticola	16	1
2546	Landa Lake	Bryo-2	30-Apr-20	7	Procambarus sp.		1
2546	Landa Lake	Bryo-2	30-Apr-20	8	Etheostoma fonticola	18	1
2546	Landa Lake	Bryo-2	30-Apr-20	8	Etheostoma fonticola	12	1
2546	Landa Lake	Bryo-2	30-Apr-20	8	Etheostoma fonticola	26	1
2546	Landa Lake	Bryo-2	30-Apr-20	8	Etheostoma fonticola	14	1
2546	Landa Lake	Bryo-2	30-Apr-20	8	Etheostoma fonticola	24	1
2546	Landa Lake	Bryo-2	30-Apr-20	8	Procambarus sp.		2
2546	Landa Lake	Bryo-2	30-Apr-20	9	Procambarus sp.		1
2546	Landa Lake	Bryo-2	30-Apr-20	9	No fish collected		
2546	Landa Lake	Bryo-2	30-Apr-20	10	Etheostoma fonticola	13	1
2546	Landa Lake	Bryo-2	30-Apr-20	11	Etheostoma fonticola	18	1
2546	Landa Lake	Bryo-2	30-Apr-20	12	No fish collected		
2546	Landa Lake	Bryo-2	30-Apr-20	13	No fish collected		
2546	Landa Lake	Bryo-2	30-Apr-20	14	Etheostoma fonticola	21	1
2546	Landa Lake	Bryo-2	30-Apr-20	14	Etheostoma fonticola	21	1
2546	Landa Lake	Bryo-2	30-Apr-20	14	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	14	Etheostoma fonticola	12	1
2546	Landa Lake	Bryo-2	30-Apr-20	14	Procambarus sp.		1
2546	Landa Lake	Bryo-2	30-Apr-20	15	No fish collected		
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	25	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	17	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	15	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	14	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	14	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	20	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	27	1
2546	Landa Lake	Bryo-2	30-Apr-20	1	Etheostoma fonticola	16	1
2547	Landa Lake	Ludw-1	30-Apr-20	1	Etheostoma fonticola	18	1
2547	Landa Lake	Ludw-1	30-Apr-20	1	Etheostoma fonticola	25	1
2547	Landa Lake	Ludw-1	30-Apr-20	1	Lepomis sp.	16	1
2547	Landa Lake	Ludw-1	30-Apr-20	1	Palaemonetes sp.		18
2547	Landa Lake	Ludw-1	30-Apr-20	2	Lepomis miniatus	27	1
2547	Landa Lake	Ludw-1	30-Apr-20	2	Etheostoma fonticola	23	1
2547	Landa Lake	Ludw-1	30-Apr-20	2	Etheostoma fonticola	23	1

2547	Landa Lake	Ludw-1	30-Apr-20	2	Etheostoma fonticola	15	1
2547	Landa Lake	Ludw-1	30-Apr-20	2	Etheostoma fonticola	18	1
2547	Landa Lake	Ludw-1	30-Apr-20	2	Palaemonetes sp.		14
2547	Landa Lake	Ludw-1	30-Apr-20	3	Palaemonetes sp.		2
2547	Landa Lake	Ludw-1	30-Apr-20	3	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	4	Palaemonetes sp.		4
2547	Landa Lake	Ludw-1	30-Apr-20	4	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	5	Gambusia sp.	34	1
2547	Landa Lake	Ludw-1	30-Apr-20	5	Gambusia sp.	28	1
2547	Landa Lake	Ludw-1	30-Apr-20	5	Gambusia sp.	23	1
2547	Landa Lake	Ludw-1	30-Apr-20	5	Procambarus sp.		1
2547	Landa Lake	Ludw-1	30-Apr-20	5	Palaemonetes sp.		2
2547	Landa Lake	Ludw-1	30-Apr-20	6	Palaemonetes sp.		3
2547	Landa Lake	Ludw-1	30-Apr-20	6	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	7	Palaemonetes sp.		2
2547	Landa Lake	Ludw-1	30-Apr-20	7	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	8	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	9	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	10	Palaemonetes sp.		2
2547	Landa Lake	Ludw-1	30-Apr-20	10	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	11	Etheostoma fonticola	17	1
2547	Landa Lake	Ludw-1	30-Apr-20	12	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	13	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	14	Procambarus sp.		1
2547	Landa Lake	Ludw-1	30-Apr-20	14	No fish collected		
2547	Landa Lake	Ludw-1	30-Apr-20	15	Procambarus sp.		2
2547	Landa Lake	Ludw-1	30-Apr-20	15	No fish collected		
2548	Landa Lake	Ludw-2	30-Apr-20	1	Gambusia sp.	15	1
2548	Landa Lake	Ludw-2	30-Apr-20	1	Gambusia sp.	17	1
2548	Landa Lake	Ludw-2	30-Apr-20	1	Gambusia sp.	10	1
2548	Landa Lake	Ludw-2	30-Apr-20	1	Gambusia sp.	12	1
2548	Landa Lake	Ludw-2	30-Apr-20	1	Palaemonetes sp.		18
2548	Landa Lake	Ludw-2	30-Apr-20	2	Etheostoma fonticola	12	1
2548	Landa Lake	Ludw-2	30-Apr-20	2	Etheostoma fonticola	14	1
2548	Landa Lake	Ludw-2	30-Apr-20	2	Etheostoma fonticola	12	1
2548	Landa Lake	Ludw-2	30-Apr-20	2	Lepomis sp.	12	1
2548	Landa Lake	Ludw-2	30-Apr-20	2	Procambarus sp.		1
2548	Landa Lake	Ludw-2	30-Apr-20	2	Palaemonetes sp.		3
2548	Landa Lake	Ludw-2	30-Apr-20	2	Gambusia sp.	23	1
2548	Landa Lake	Ludw-2	30-Apr-20	3	Lepomis miniatus	34	1
2548	Landa Lake	Ludw-2	30-Apr-20	3	Etheostoma fonticola	15	1

2548	Landa Lake	Ludw-2	30-Apr-20	3	Etheostoma fonticola	16	1
2548	Landa Lake	Ludw-2	30-Apr-20	3	Etheostoma fonticola	16	1
2548	Landa Lake	Ludw-2	30-Apr-20	3	Etheostoma fonticola	14	1
2548	Landa Lake	Ludw-2	30-Apr-20	3	Etheostoma fonticola	17	1
2548	Landa Lake	Ludw-2	30-Apr-20	3	Palaemonetes sp.		3
2548	Landa Lake	Ludw-2	30-Apr-20	3	Gambusia sp.	11	1
2548	Landa Lake	Ludw-2	30-Apr-20	4	Procambarus sp.		1
2548	Landa Lake	Ludw-2	30-Apr-20	4	Etheostoma fonticola	21	1
2548	Landa Lake	Ludw-2	30-Apr-20	4	Etheostoma fonticola	22	1
2548	Landa Lake	Ludw-2	30-Apr-20	4	Lepomis miniatus	100	1
2548	Landa Lake	Ludw-2	30-Apr-20	5	Etheostoma fonticola	25	1
2548	Landa Lake	Ludw-2	30-Apr-20	5	Etheostoma fonticola	20	1
2548	Landa Lake	Ludw-2	30-Apr-20	5	Etheostoma fonticola	16	1
2548	Landa Lake	Ludw-2	30-Apr-20	6	Procambarus sp.		1
2548	Landa Lake	Ludw-2	30-Apr-20	6	Palaemonetes sp.		5
2548	Landa Lake	Ludw-2	30-Apr-20	6	Etheostoma fonticola	19	1
2548	Landa Lake	Ludw-2	30-Apr-20	7	Etheostoma fonticola	20	1
2548	Landa Lake	Ludw-2	30-Apr-20	8	Procambarus sp.		1
2548	Landa Lake	Ludw-2	30-Apr-20	8	Etheostoma fonticola	26	1
2548	Landa Lake	Ludw-2	30-Apr-20	9	Etheostoma fonticola	16	1
2548	Landa Lake	Ludw-2	30-Apr-20	9	Etheostoma fonticola	19	1
2548	Landa Lake	Ludw-2	30-Apr-20	9	Etheostoma fonticola	22	1
2548	Landa Lake	Ludw-2	30-Apr-20	9	Etheostoma fonticola	16	1
2548	Landa Lake	Ludw-2	30-Apr-20	9	Etheostoma fonticola	16	1
2548	Landa Lake	Ludw-2	30-Apr-20	9	Procambarus sp.		3
2548	Landa Lake	Ludw-2	30-Apr-20	9	Palaemonetes sp.		2
2548	Landa Lake	Ludw-2	30-Apr-20	10	Etheostoma fonticola	22	1
2548	Landa Lake	Ludw-2	30-Apr-20	10	Etheostoma fonticola	14	1
2548	Landa Lake	Ludw-2	30-Apr-20	10	Etheostoma fonticola	12	1
2548	Landa Lake	Ludw-2	30-Apr-20	10	Palaemonetes sp.		1
2548	Landa Lake	Ludw-2	30-Apr-20	11	Procambarus sp.		
2548	Landa Lake	Ludw-2	30-Apr-20	11	No fish collected		
2548	Landa Lake	Ludw-2	30-Apr-20	12	Procambarus sp.		3
2548	Landa Lake	Ludw-2	30-Apr-20	12	Etheostoma fonticola	23	1
2548	Landa Lake	Ludw-2	30-Apr-20	12	Etheostoma fonticola	20	1
2548	Landa Lake	Ludw-2	30-Apr-20	12	Etheostoma fonticola	14	1
2548	Landa Lake	Ludw-2	30-Apr-20	13	Palaemonetes sp.		1
2548	Landa Lake	Ludw-2	30-Apr-20	13	Procambarus sp.		1
2548	Landa Lake	Ludw-2	30-Apr-20	13	No fish collected		
2548	Landa Lake	Ludw-2	30-Apr-20	14	Lepomis sp.	13	1
2548	Landa Lake	Ludw-2	30-Apr-20	15	Procambarus sp.		2

2548	Landa Lake	Ludw-2	30-Apr-20	15	Lepomis sp.	12	1
2549	Landa Lake	Open-2	30-Apr-20	1	No fish collected		
2549	Landa Lake	Open-2	30-Apr-20	2	No fish collected		
2549	Landa Lake	Open-2	30-Apr-20	3	No fish collected		
2549	Landa Lake	Open-2	30-Apr-20	4	No fish collected		
2549	Landa Lake	Open-2	30-Apr-20	5	No fish collected		
2549	Landa Lake	Open-2	30-Apr-20	6	No fish collected		
2549	Landa Lake	Open-2	30-Apr-20	7	No fish collected		
2549	Landa Lake	Open-2	30-Apr-20	8	No fish collected		
2549	Landa Lake	Open-2	30-Apr-20	9	No fish collected		
2549	Landa Lake	Open-2	30-Apr-20	10	No fish collected		
2581	Upper Spring Run	Ludw-1	28-Oct-20	1	Etheostoma fonticola	29	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	1	Etheostoma fonticola	30	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	1	Micropterus salmoides	50	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	1	Dionda nigrotaeniata	42	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Micropterus salmoides	85	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Dionda nigrotaeniata	40	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Dionda nigrotaeniata	40	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Dionda nigrotaeniata	38	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Dionda nigrotaeniata	32	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Dionda nigrotaeniata	34	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Dionda nigrotaeniata	48	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Dionda nigrotaeniata	45	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Dionda nigrotaeniata	45	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	2	Dionda nigrotaeniata	51	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	3	Dionda nigrotaeniata	47	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	3	Gambusia sp.	40	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	3	Palaemonetes sp.		1
2581	Upper Spring Run	Ludw-1	28-Oct-20	4	Procambarus sp.		2
2581	Upper Spring Run	Ludw-1	28-Oct-20	4	No fish collected		
2581	Upper Spring Run	Ludw-1	28-Oct-20	5	Micropterus salmoides	60	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	5	Micropterus salmoides	59	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	5	Micropterus salmoides	60	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	6	Lepomis miniatus	27	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	7	Dionda nigrotaeniata	43	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	8	Lepomis miniatus	24	1
2581	Upper Spring Run	Ludw-1	28-Oct-20	8	Dionda nigrotaeniata	50	1

2581	Upper Spring Run	Ludw-1	28-Oct-20	9	No fish collected		
2581	Upper Spring Run	Ludw-1	28-Oct-20	10	No fish collected		
2581	Upper Spring Run	Ludw-1	28-Oct-20	11	No fish collected		
2581	Upper Spring Run	Ludw-1	28-Oct-20	12	No fish collected		
2581	Upper Spring Run	Ludw-1	28-Oct-20	13	No fish collected		
2581	Upper Spring Run	Ludw-1	28-Oct-20	14	No fish collected		
2581	Upper Spring Run	Ludw-1	28-Oct-20	15	No fish collected		
2582	Upper Spring Run	Sagi-2	28-Oct-20	1	Lepomis miniatus	64	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	1	Lepomis miniatus	55	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	1	Lepomis miniatus	62	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	2	Lepomis miniatus	85	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	2	Lepomis miniatus	40	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	3	Lepomis miniatus	70	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	3	Lepomis miniatus	72	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	3	Lepomis miniatus	85	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	3	Lepomis miniatus	65	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	4	Lepomis miniatus	63	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	4	Procambarus sp.		1
2582	Upper Spring Run	Sagi-2	28-Oct-20	5	No fish collected		
2582	Upper Spring Run	Sagi-2	28-Oct-20	6	No fish collected		
2582	Upper Spring Run	Sagi-2	28-Oct-20	7	No fish collected		
2582	Upper Spring Run	Sagi-2	28-Oct-20	8	No fish collected		
2582	Upper Spring Run	Sagi-2	28-Oct-20	9	Lepomis miniatus	92	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	10	Lepomis miniatus	65	1
2582	Upper Spring Run	Sagi-2	28-Oct-20	11	No fish collected		
2582	Upper Spring Run	Sagi-2	28-Oct-20	12	No fish collected		
2582	Upper Spring Run	Sagi-2	28-Oct-20	13	No fish collected		
2582	Upper Spring Run	Sagi-2	28-Oct-20	14	No fish collected		
2582	Upper Spring Run	Sagi-2	28-Oct-20	15	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	1	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	2	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	3	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	4	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	5	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	6	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	7	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	8	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	9	No fish collected		
2583	Upper Spring Run	Open-1	28-Oct-20	10	No fish collected		
2584	Upper Spring Run	Open-2	28-Oct-20	1	No fish collected		
2584	Upper Spring Run	Open-2	28-Oct-20	2	No fish collected		

2584	Upper Spring Run	Open-2	28-Oct-20	3	No fish collected		
2584	Upper Spring Run	Open-2	28-Oct-20	4	No fish collected		
2584	Upper Spring Run	Open-2	28-Oct-20	5	No fish collected		
2584	Upper Spring Run	Open-2	28-Oct-20	6	No fish collected		
2584	Upper Spring Run	Open-2	28-Oct-20	7	No fish collected		
2584	Upper Spring Run	Open-2	28-Oct-20	8	No fish collected		
2584	Upper Spring Run	Open-2	28-Oct-20	9	No fish collected		
2584	Upper Spring Run	Open-2	28-Oct-20	10	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	1	Procambarus sp.		1
2585	Upper Spring Run	Bryo-1	28-Oct-20	1	Gambusia sp.	10	1
2585	Upper Spring Run	Bryo-1	28-Oct-20	2	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	3	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	4	Procambarus sp.		1
2585	Upper Spring Run	Bryo-1	28-Oct-20	4	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	5	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	6	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	7	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	8	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	9	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	10	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	11	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	12	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	13	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	14	No fish collected		
2585	Upper Spring Run	Bryo-1	28-Oct-20	15	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	1	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	2	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	3	Etheostoma fonticola	30	1
2586	Upper Spring Run	Bryo-2	28-Oct-20	4	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	5	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	6	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	7	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	8	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	9	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	10	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	11	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	12	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	12	Procambarus sp.		1
2586	Upper Spring Run	Bryo-2	28-Oct-20	13	No fish collected		
2586	Upper Spring Run	Bryo-2	28-Oct-20	14	Etheostoma fonticola	32	1
2586	Upper Spring Run	Bryo-2	28-Oct-20	15	Lepomis sp.	10	1

2587	Upper Spring Run	Ludw-2	28-Oct-20	1	Procambarus sp.		1
2587	Upper Spring Run	Ludw-2	28-Oct-20	1	Palaemonetes sp.		5
2587	Upper Spring Run	Ludw-2	28-Oct-20	1	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	2	Lepomis miniatus	60	1
2587	Upper Spring Run	Ludw-2	28-Oct-20	3	Procambarus sp.		1
2587	Upper Spring Run	Ludw-2	28-Oct-20	3	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	4	Palaemonetes sp.		1
2587	Upper Spring Run	Ludw-2	28-Oct-20	4	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	5	Procambarus sp.		1
2587	Upper Spring Run	Ludw-2	28-Oct-20	5	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	6	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	7	Palaemonetes sp.		2
2587	Upper Spring Run	Ludw-2	28-Oct-20	7	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	8	Palaemonetes sp.		1
2587	Upper Spring Run	Ludw-2	28-Oct-20	8	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	9	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	10	Lepomis miniatus	41	1
2587	Upper Spring Run	Ludw-2	28-Oct-20	11	Procambarus sp.		1
2587	Upper Spring Run	Ludw-2	28-Oct-20	11	Lepomis sp.	15	1
2587	Upper Spring Run	Ludw-2	28-Oct-20	12	Etheostoma fonticola	31	1
2587	Upper Spring Run	Ludw-2	28-Oct-20	12	Palaemonetes sp.		2
2587	Upper Spring Run	Ludw-2	28-Oct-20	13	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	14	No fish collected		
2587	Upper Spring Run	Ludw-2	28-Oct-20	15	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	1	Procambarus sp.		1
2588	Upper New Channel Reach	Open-1	30-Oct-20	1	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	2	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	3	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	4	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	5	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	6	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	7	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	8	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	9	No fish collected		

2588	Upper New Channel Reach	Open-1	30-Oct-20	10	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	11	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	12	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	13	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	14	No fish collected		
2588	Upper New Channel Reach	Open-1	30-Oct-20	15	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	1	Etheostoma fonticola	25	1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	1	Procambarus sp.		5
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	1	Palaemonetes sp.		15
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	2	Procambarus sp.		4
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	2	Palaemonetes sp.		10
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	3	Etheostoma fonticola	29	1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	3	Etheostoma fonticola	30	1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	3	Ambloplites rupestris	78	1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	3	Procambarus sp.		4
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	3	Palaemonetes sp.		8
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	4	Etheostoma fonticola	20	1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	4	Lepomis miniatus	75	1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	4	Procambarus sp.		3
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	4	Palaemonetes sp.		6
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	5	Palaemonetes sp.		2
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	5	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	2	No fish collected		

2589	Upper New Channel Reach	Hygr-1	30-Oct-20	6	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	7	Procambarus sp.		2
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	7	Palaemonetes sp.		2
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	7	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	8	Palaemonetes sp.		2
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	8	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	9	Lepomis miniatus	45	1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	10	Palaemonetes sp.		1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	10	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	11	Palaemonetes sp.		3
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	11	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	12	Palaemonetes sp.		1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	12	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	13	Palaemonetes sp.		2
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	13	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	14	No fish collected		
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	15	Procambarus sp.		1
2589	Upper New Channel Reach	Hygr-1	30-Oct-20	15	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	1	Etheostoma fonticola	31	1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	1	Etheostoma fonticola	14	1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	1	Etheostoma lepidum	42	1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	1	Palaemonetes sp.		10
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	1	Procambarus sp.		1

2590	Upper New Channel Reach	Hygr-2	30-Oct-20	2	Herichthys cyanoguttatus	58	1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	2	Lepomis miniatus	60	1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	2	Procambarus sp.		2
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	2	Palaemonetes sp.		9
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	3	Palaemonetes sp.		3
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	3	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	4	Palaemonetes sp.		4
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	4	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	5	Procambarus sp.		1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	5	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	6	Etheostoma fonticola	24	1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	6	Palaemonetes sp.		3
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	7	Palaemonetes sp.		2
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	7	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	8	Palaemonetes sp.		10
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	8	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	9	Palaemonetes sp.		4
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	9	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	10	Palaemonetes sp.		4
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	10	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	11	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	12	Palaemonetes sp.		3
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	12	Procambarus sp.		2

2590	Upper New Channel Reach	Hygr-2	30-Oct-20	13	Lepomis miniatus	55	1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	14	Palaemonetes sp.		1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	14	No fish collected		
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	15	Palaemonetes sp.		1
2590	Upper New Channel Reach	Hygr-2	30-Oct-20	15	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	1	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	2	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	3	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	4	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	5	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	6	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	7	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	8	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	9	No fish collected		
2591	Upper New Channel Reach	Open-2	30-Oct-20	10	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	1	Procambarus sp.		1
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	1	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	2	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	3	Procambarus sp.		1
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	3	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	4	Lepomis miniatus	75	1
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	4	Lepomis miniatus	115	1
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	4	Etheostoma fonticola	16	1

2592	Upper New Channel Reach	Cabo-1	30-Oct-20	4	Procambarus sp.		1
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	5	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	6	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	6	Procambarus sp.		1
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	7	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	8	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	9	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	10	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	11	Procambarus sp.		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	11	Lepomis miniatus	58	1
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	12	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	13	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	14	Procambarus sp.		2
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	14	No fish collected		
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	15	Etheostoma fonticola	28	1
2592	Upper New Channel Reach	Cabo-1	30-Oct-20	16	No fish collected		
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	1	Procambarus sp.		1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	1	Micropterus salmoides	53	1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	2	Etheostoma fonticola	17	1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	2	Palaemonetes sp.		1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	3	Etheostoma fonticola	21	1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	4	Procambarus sp.		1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	4	Lepomis miniatus	102	1

2593	Upper New Channel Reach	Cabo-2	30-Oct-20	4	Palaemonetes sp.		1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	5	No fish collected		
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	6	No fish collected		
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	7	No fish collected		
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	8	Etheostoma fonticola	32	1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	9	Micropterus salmoides	48	1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	10	No fish collected		
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	11	No fish collected		
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	12	Etheostoma fonticola	14	1
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	13	No fish collected		
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	14	No fish collected		
2593	Upper New Channel Reach	Cabo-2	30-Oct-20	15	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	1	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	2	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	3	Procambarus sp.		1
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	3	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	4	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	5	Etheostoma lepidum	45	1
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	5	Etheostoma fonticola	29	1
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	6	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	7	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	8	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	9	No fish collected		

2594	Upper New Channel Reach	Ludw-1	30-Oct-20	10	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	11	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	12	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	13	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	14	No fish collected		
2594	Upper New Channel Reach	Ludw-1	30-Oct-20	15	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	7	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	8	Palaemonetes sp.		1
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	8	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	9	Palaemonetes sp.		1
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	9	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	10	Palaemonetes sp.		1
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	10	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	11	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	12	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	13	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	14	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	15	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	1	Palaemonetes sp.		4
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	1	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	2	Palaemonetes sp.		5
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	2	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	3	No fish collected		

2595	Upper New Channel Reach	Ludw-2	30-Oct-20	4	Herichthys cyanoguttatus	53	1
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	5	Ameiurus natalis	22	1
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	5	Procambarus sp.		1
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	6	Palaemonetes sp.		2
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	6	No fish collected		
2595	Upper New Channel Reach	Ludw-2	30-Oct-20	7	Palaemonetes sp.		1
2596	Old Channel Reach	Bryo-1	29-Oct-20	1	Etheostoma fonticola	23	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	1	Etheostoma fonticola	24	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	1	Procambarus sp.		3
2596	Old Channel Reach	Bryo-1	29-Oct-20	2	Etheostoma fonticola	26	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	2	Etheostoma fonticola	22	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	2	Etheostoma fonticola	29	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	2	Etheostoma fonticola	25	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	3	Procambarus sp.		2
2596	Old Channel Reach	Bryo-1	29-Oct-20	3	Etheostoma fonticola	25	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	3	Lepomis miniatus	50	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	4	Palaemonetes sp.		6
2596	Old Channel Reach	Bryo-1	29-Oct-20	4	Procambarus sp.		1
2596	Old Channel Reach	Bryo-1	29-Oct-20	4	No fish collected		
2596	Old Channel Reach	Bryo-1	29-Oct-20	5	Palaemonetes sp.		2
2596	Old Channel Reach	Bryo-1	29-Oct-20	5	No fish collected		
2596	Old Channel Reach	Bryo-1	29-Oct-20	6	Palaemonetes sp.		1
2596	Old Channel Reach	Bryo-1	29-Oct-20	6	Procambarus sp.		2
2596	Old Channel Reach	Bryo-1	29-Oct-20	6	Etheostoma fonticola	22	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	6	Etheostoma fonticola	12	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	7	Procambarus sp.		1
2596	Old Channel Reach	Bryo-1	29-Oct-20	7	Palaemonetes sp.		1
2596	Old Channel Reach	Bryo-1	29-Oct-20	8	Palaemonetes sp.		1
2596	Old Channel Reach	Bryo-1	29-Oct-20	8	No fish collected		
2596	Old Channel Reach	Bryo-1	29-Oct-20	9	No fish collected		
2596	Old Channel Reach	Bryo-1	29-Oct-20	10	Herichthys cyanoguttatus	22	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	10	Palaemonetes sp.		1
2596	Old Channel Reach	Bryo-1	29-Oct-20	11	No fish collected		
2596	Old Channel Reach	Bryo-1	29-Oct-20	12	Lepomis miniatus	53	1
2596	Old Channel Reach	Bryo-1	29-Oct-20	12	Procambarus sp.		4
2596	Old Channel Reach	Bryo-1	29-Oct-20	12	Etheostoma fonticola	26	1

2596	Old Channel Reach	Bryo-1	29-Oct-20	13	Palaemonetes sp.		1
2596	Old Channel Reach	Bryo-1	29-Oct-20	13	No fish collected		
2596	Old Channel Reach	Bryo-1	29-Oct-20	14	Procambarus sp.		1
2596	Old Channel Reach	Bryo-1	29-Oct-20	14	No fish collected		
2596	Old Channel Reach	Bryo-1	29-Oct-20	15	No fish collected		
2597	Old Channel Reach	Cabo-1	29-Oct-20	1	Palaemonetes sp.		4
2597	Old Channel Reach	Cabo-1	29-Oct-20	1	Etheostoma fonticola	30	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	1	Etheostoma fonticola	30	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	1	Etheostoma fonticola	14	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	1	Lepomis miniatus	50	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	2	Lepomis miniatus	50	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	2	Lepomis miniatus	60	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	2	Palaemonetes sp.		1
2597	Old Channel Reach	Cabo-1	29-Oct-20	3	No fish collected		
2597	Old Channel Reach	Cabo-1	29-Oct-20	4	Etheostoma fonticola	21	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	4	Procambarus sp.		2
2597	Old Channel Reach	Cabo-1	29-Oct-20	4	Palaemonetes sp.		1
2597	Old Channel Reach	Cabo-1	29-Oct-20	5	Etheostoma fonticola	32	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	6	Lepomis miniatus	50	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	6	Palaemonetes sp.		1
2597	Old Channel Reach	Cabo-1	29-Oct-20	7	Lepomis miniatus	51	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	7	Lepomis miniatus	61	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	7	Lepomis miniatus	54	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	7	Etheostoma fonticola	28	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	8	Palaemonetes sp.		1
2597	Old Channel Reach	Cabo-1	29-Oct-20	8	No fish collected		
2597	Old Channel Reach	Cabo-1	29-Oct-20	9	Lepomis miniatus	55	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	10	Herichthys cyanoguttatus	46	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	10	Procambarus sp.		2
2597	Old Channel Reach	Cabo-1	29-Oct-20	10	Palaemonetes sp.		2
2597	Old Channel Reach	Cabo-1	29-Oct-20	11	Lepomis miniatus	33	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	12	Lepomis miniatus	72	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	12	Palaemonetes sp.		1
2597	Old Channel Reach	Cabo-1	29-Oct-20	13	Etheostoma fonticola	20	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	14	Procambarus sp.		1
2597	Old Channel Reach	Cabo-1	29-Oct-20	14	No fish collected		
2597	Old Channel Reach	Cabo-1	29-Oct-20	15	Lepomis miniatus	34	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	15	Etheostoma fonticola	31	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	16	Procambarus sp.		2
2597	Old Channel Reach	Cabo-1	29-Oct-20	16	Etheostoma fonticola	28	1
2597	Old Channel Reach	Cabo-1	29-Oct-20	17	No fish collected		

2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Etheostoma fonticola	28	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Etheostoma fonticola	26	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Etheostoma fonticola	31	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Etheostoma fonticola	20	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Etheostoma fonticola	16	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Etheostoma fonticola	29	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Etheostoma fonticola	28	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Etheostoma fonticola	14	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Procambarus sp.		3
2598	Old Channel Reach	Cabo-2	29-Oct-20	1	Palaemonetes sp.		9
2598	Old Channel Reach	Cabo-2	29-Oct-20	2	Astyanax mexicanus	15	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	2	Procambarus sp.		2
2598	Old Channel Reach	Cabo-2	29-Oct-20	2	Palaemonetes sp.		3
2598	Old Channel Reach	Cabo-2	29-Oct-20	3	Etheostoma fonticola	31	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	3	Etheostoma fonticola	22	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	3	Etheostoma fonticola	33	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	3	Etheostoma fonticola	15	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	3	Astyanax mexicanus	21	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	3	Herichthys cyanoguttatus	36	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	3	Herichthys cyanoguttatus	31	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	4	Procambarus sp.		3
2598	Old Channel Reach	Cabo-2	29-Oct-20	4	Palaemonetes sp.		1
2598	Old Channel Reach	Cabo-2	29-Oct-20	4	Lepomis auritus	43	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	4	Etheostoma fonticola	15	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	5	Etheostoma fonticola	30	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	5	Etheostoma fonticola	17	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	5	Etheostoma fonticola	32	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	5	Etheostoma fonticola	15	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	5	Procambarus sp.		2
2598	Old Channel Reach	Cabo-2	29-Oct-20	5	Palaemonetes sp.		1
2598	Old Channel Reach	Cabo-2	29-Oct-20	6	Procambarus sp.		3
2598	Old Channel Reach	Cabo-2	29-Oct-20	6	No fish collected		
2598	Old Channel Reach	Cabo-2	29-Oct-20	7	Palaemonetes sp.		2
2598	Old Channel Reach	Cabo-2	29-Oct-20	7	Etheostoma fonticola	32	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	8	Lepomis miniatus	49	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	8	Palaemonetes sp.		1
2598	Old Channel Reach	Cabo-2	29-Oct-20	8	Procambarus sp.		1
2598	Old Channel Reach	Cabo-2	29-Oct-20	9	Procambarus sp.		1
2598	Old Channel Reach	Cabo-2	29-Oct-20	9	No fish collected		
2598	Old Channel Reach	Cabo-2	29-Oct-20	10	Procambarus sp.		3

2598	Old Channel Reach	Cabo-2	29-Oct-20	10	No fish collected		
2598	Old Channel Reach	Cabo-2	29-Oct-20	11	Procambarus sp.		2
2598	Old Channel Reach	Cabo-2	29-Oct-20	11	Etheostoma fonticola	35	1
2598	Old Channel Reach	Cabo-2	29-Oct-20	12	Procambarus sp.		3
2598	Old Channel Reach	Cabo-2	29-Oct-20	12	No fish collected		
2598	Old Channel Reach	Cabo-2	29-Oct-20	13	No fish collected		
2598	Old Channel Reach	Cabo-2	29-Oct-20	14	No fish collected		
2598	Old Channel Reach	Cabo-2	29-Oct-20	15	Procambarus sp.		1
2598	Old Channel Reach	Cabo-2	29-Oct-20	15	Palaemonetes sp.		2
2598	Old Channel Reach	Cabo-2	29-Oct-20	15	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	1	Notropis amabilis	19	1
2599	Old Channel Reach	Open-1	29-Oct-20	2	Etheostoma fonticola	28	1
2599	Old Channel Reach	Open-1	29-Oct-20	2	Etheostoma fonticola	23	1
2599	Old Channel Reach	Open-1	29-Oct-20	3	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	4	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	5	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	6	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	7	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	8	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	9	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	10	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	11	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	12	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	13	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	14	No fish collected		
2599	Old Channel Reach	Open-1	29-Oct-20	15	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	1	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	2	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	3	Etheostoma fonticola	29	1
2600	Old Channel Reach	Open-2	29-Oct-20	4	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	5	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	6	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	7	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	7	Procambarus sp.		1
2600	Old Channel Reach	Open-2	29-Oct-20	8	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	9	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	10	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	11	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	12	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	13	No fish collected		
2600	Old Channel Reach	Open-2	29-Oct-20	14	Etheostoma fonticola	27	1

2600	Old Channel Reach	Open-2	29-Oct-20	15	No fish collected		
2601	Old Channel Reach	Bryo-2	29-Oct-20	1	Procambarus sp.		15
2601	Old Channel Reach	Bryo-2	29-Oct-20	1	Palaemonetes sp.		20
2601	Old Channel Reach	Bryo-2	29-Oct-20	1	Etheostoma fonticola	30	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	1	Etheostoma fonticola	27	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	1	Etheostoma fonticola	33	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	2	Palaemonetes sp.		9
2601	Old Channel Reach	Bryo-2	29-Oct-20	2	Procambarus sp.		2
2601	Old Channel Reach	Bryo-2	29-Oct-20	2	Etheostoma fonticola	25	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	3	Procambarus sp.		2
2601	Old Channel Reach	Bryo-2	29-Oct-20	3	Palaemonetes sp.		6
2601	Old Channel Reach	Bryo-2	29-Oct-20	3	No fish collected		
2601	Old Channel Reach	Bryo-2	29-Oct-20	4	Etheostoma fonticola	26	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	4	Etheostoma fonticola	32	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	4	Palaemonetes sp.		3
2601	Old Channel Reach	Bryo-2	29-Oct-20	5	Palaemonetes sp.		1
2601	Old Channel Reach	Bryo-2	29-Oct-20	5	Etheostoma fonticola	30	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	6	Procambarus sp.		3
2601	Old Channel Reach	Bryo-2	29-Oct-20	6	No fish collected		
2601	Old Channel Reach	Bryo-2	29-Oct-20	7	Procambarus sp.		5
2601	Old Channel Reach	Bryo-2	29-Oct-20	7	Etheostoma fonticola	29	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	7	Lepomis miniatus	49	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	8	Etheostoma fonticola	24	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	8	Etheostoma fonticola	30	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	8	Palaemonetes sp.		2
2601	Old Channel Reach	Bryo-2	29-Oct-20	8	Procambarus sp.		4
2601	Old Channel Reach	Bryo-2	29-Oct-20	9	No fish collected		
2601	Old Channel Reach	Bryo-2	29-Oct-20	10	Etheostoma fonticola	25	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	11	Procambarus sp.		1
2601	Old Channel Reach	Bryo-2	29-Oct-20	11	Palaemonetes sp.		2
2601	Old Channel Reach	Bryo-2	29-Oct-20	11	No fish collected		
2601	Old Channel Reach	Bryo-2	29-Oct-20	12	Palaemonetes sp.		1
2601	Old Channel Reach	Bryo-2	29-Oct-20	13	No fish collected		
2601	Old Channel Reach	Bryo-2	29-Oct-20	14	Etheostoma fonticola	33	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	15	Etheostoma fonticola	31	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	15	Palaemonetes sp.		1
2601	Old Channel Reach	Bryo-2	29-Oct-20	16	Lepomis miniatus	28	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	16	Etheostoma fonticola	28	1
2601	Old Channel Reach	Bryo-2	29-Oct-20	17	No fish collected		
2601	Old Channel Reach	Bryo-2	29-Oct-20	1	Etheostoma fonticola		
2602	Old Channel Reach	Ludw-1	29-Oct-20	1	Micropterus salmoides	61	1

2602	Old Channel Reach	Ludw-1	29-Oct-20	1	Procambarus sp.		5
2602	Old Channel Reach	Ludw-1	29-Oct-20	1	Etheostoma fonticola	17	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	1	Etheostoma fonticola	30	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	1	Etheostoma fonticola	31	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	1	Etheostoma fonticola	20	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	1	Palaemonetes sp.		4
2602	Old Channel Reach	Ludw-1	29-Oct-20	1	Astyanax mexicanus	10	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	2	Lepomis miniatus	50	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	2	Procambarus sp.		2
2602	Old Channel Reach	Ludw-1	29-Oct-20	2	Palaemonetes sp.		1
2602	Old Channel Reach	Ludw-1	29-Oct-20	3	Procambarus sp.		1
2602	Old Channel Reach	Ludw-1	29-Oct-20	3	Palaemonetes sp.		2
2602	Old Channel Reach	Ludw-1	29-Oct-20	3	No fish collected		
2602	Old Channel Reach	Ludw-1	29-Oct-20	4	Procambarus sp.		1
2602	Old Channel Reach	Ludw-1	29-Oct-20	4	No fish collected		
2602	Old Channel Reach	Ludw-1	29-Oct-20	5	Etheostoma fonticola	21	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	5	Etheostoma fonticola	34	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	5	Procambarus sp.		1
2602	Old Channel Reach	Ludw-1	29-Oct-20	5	Palaemonetes sp.		1
2602	Old Channel Reach	Ludw-1	29-Oct-20	6	No fish collected		
2602	Old Channel Reach	Ludw-1	29-Oct-20	7	Etheostoma fonticola	28	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	8	No fish collected		
2602	Old Channel Reach	Ludw-1	29-Oct-20	9	No fish collected		
2602	Old Channel Reach	Ludw-1	29-Oct-20	10	No fish collected		
2602	Old Channel Reach	Ludw-1	29-Oct-20	11	Etheostoma fonticola	32	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	12	No fish collected		
2602	Old Channel Reach	Ludw-1	29-Oct-20	13	Lepomis sp.	17	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	13	Procambarus sp.		1
2602	Old Channel Reach	Ludw-1	29-Oct-20	14	No fish collected		
2602	Old Channel Reach	Ludw-1	29-Oct-20	15	Etheostoma fonticola	28	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	15	Etheostoma fonticola	38	1
2602	Old Channel Reach	Ludw-1	29-Oct-20	16	No fish collected		
2603	Old Channel Reach	Ludw-2	29-Oct-20	1	Palaemonetes sp.		13
2603	Old Channel Reach	Ludw-2	29-Oct-20	1	No fish collected		
2603	Old Channel Reach	Ludw-2	29-Oct-20	2	Etheostoma fonticola	27	1
2603	Old Channel Reach	Ludw-2	29-Oct-20	2	Procambarus sp.		1
2603	Old Channel Reach	Ludw-2	29-Oct-20	2	Palaemonetes sp.		6
2603	Old Channel Reach	Ludw-2	29-Oct-20	3	Etheostoma fonticola	35	1
2603	Old Channel Reach	Ludw-2	29-Oct-20	3	Etheostoma fonticola	33	1
2603	Old Channel Reach	Ludw-2	29-Oct-20	3	Procambarus sp.		7
2603	Old Channel Reach	Ludw-2	29-Oct-20	3	Palaemonetes sp.		4

2603	Old Channel Reach	Ludw-2	29-Oct-20	4	Procambarus sp.		2
2603	Old Channel Reach	Ludw-2	29-Oct-20	4	Palaemonetes sp.		3
2603	Old Channel Reach	Ludw-2	29-Oct-20	4	Lepomis auritus	84	1
2603	Old Channel Reach	Ludw-2	29-Oct-20	5	Herichthys cyanoguttatus	29	1
2603	Old Channel Reach	Ludw-2	29-Oct-20	5	Procambarus sp.		2
2603	Old Channel Reach	Ludw-2	29-Oct-20	5	Palaemonetes sp.		2
2603	Old Channel Reach	Ludw-2	29-Oct-20	6	No fish collected		
2603	Old Channel Reach	Ludw-2	29-Oct-20	7	Palaemonetes sp.		1
2603	Old Channel Reach	Ludw-2	29-Oct-20	7	Procambarus sp.		1
2603	Old Channel Reach	Ludw-2	29-Oct-20	7	No fish collected		
2603	Old Channel Reach	Ludw-2	29-Oct-20	8	Etheostoma fonticola	27	1
2603	Old Channel Reach	Ludw-2	29-Oct-20	8	Etheostoma fonticola	30	1
2603	Old Channel Reach	Ludw-2	29-Oct-20	8	Procambarus sp.		1
2603	Old Channel Reach	Ludw-2	29-Oct-20	9	No fish collected		
2603	Old Channel Reach	Ludw-2	29-Oct-20	10	No fish collected		
2603	Old Channel Reach	Ludw-2	29-Oct-20	11	Palaemonetes sp.		3
2603	Old Channel Reach	Ludw-2	29-Oct-20	11	Etheostoma fonticola	30	1
2603	Old Channel Reach	Ludw-2	29-Oct-20	12	Procambarus sp.		1
2603	Old Channel Reach	Ludw-2	29-Oct-20	13	Etheostoma fonticola	30	1
2603	Old Channel Reach	Ludw-2	29-Oct-20	14	No fish collected		
2603	Old Channel Reach	Ludw-2	29-Oct-20	15	Palaemonetes sp.		2
2603	Old Channel Reach	Ludw-2	29-Oct-20	15	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	1	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	2	Etheostoma fonticola	11	1
2604	Landa Lake	Open-1	28-Oct-20	3	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	4	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	5	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	6	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	7	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	8	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	9	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	10	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	11	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	12	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	13	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	14	No fish collected		
2604	Landa Lake	Open-1	28-Oct-20	15	No fish collected		
2605	Landa Lake	Bryo-1	28-Oct-20	1	Etheostoma fonticola	21	1
2605	Landa Lake	Bryo-1	28-Oct-20	1	Procambarus sp.		2
2605	Landa Lake	Bryo-1	28-Oct-20	1	Palaemonetes sp.		10
2605	Landa Lake	Bryo-1	28-Oct-20	1	Gambusia sp.	16	1

2605	Landa Lake	Bryo-1	28-Oct-20	2	Etheostoma fonticola	19	1
2605	Landa Lake	Bryo-1	28-Oct-20	2	Etheostoma fonticola	18	1
2605	Landa Lake	Bryo-1	28-Oct-20	2	Etheostoma fonticola	27	1
2605	Landa Lake	Bryo-1	28-Oct-20	2	Procambarus sp.		1
2605	Landa Lake	Bryo-1	28-Oct-20	2	Palaemonetes sp.		3
2605	Landa Lake	Bryo-1	28-Oct-20	3	Etheostoma fonticola	19	1
2605	Landa Lake	Bryo-1	28-Oct-20	3	Etheostoma fonticola	30	1
2605	Landa Lake	Bryo-1	28-Oct-20	3	Etheostoma fonticola	23	1
2605	Landa Lake	Bryo-1	28-Oct-20	3	Procambarus sp.		3
2605	Landa Lake	Bryo-1	28-Oct-20	3	Palaemonetes sp.		6
2605	Landa Lake	Bryo-1	28-Oct-20	4	Palaemonetes sp.		1
2605	Landa Lake	Bryo-1	28-Oct-20	4	No fish collected		
2605	Landa Lake	Bryo-1	28-Oct-20	5	No fish collected		
2605	Landa Lake	Bryo-1	28-Oct-20	6	Etheostoma fonticola	25	1
2605	Landa Lake	Bryo-1	28-Oct-20	6	Palaemonetes sp.		3
2605	Landa Lake	Bryo-1	28-Oct-20	7	Etheostoma fonticola	15	1
2605	Landa Lake	Bryo-1	28-Oct-20	7	Procambarus sp.		1
2605	Landa Lake	Bryo-1	28-Oct-20	8	Etheostoma fonticola	17	1
2605	Landa Lake	Bryo-1	28-Oct-20	8	Etheostoma fonticola	17	1
2605	Landa Lake	Bryo-1	28-Oct-20	9	No fish collected		
2605	Landa Lake	Bryo-1	28-Oct-20	10	Palaemonetes sp.		1
2605	Landa Lake	Bryo-1	28-Oct-20	10	No fish collected		
2605	Landa Lake	Bryo-1	28-Oct-20	11	No fish collected		
2605	Landa Lake	Bryo-1	28-Oct-20	12	Etheostoma fonticola	25	1
2605	Landa Lake	Bryo-1	28-Oct-20	12	Etheostoma fonticola	12	1
2605	Landa Lake	Bryo-1	28-Oct-20	13	No fish collected		
2605	Landa Lake	Bryo-1	28-Oct-20	14	No fish collected		
2605	Landa Lake	Bryo-1	28-Oct-20	15	No fish collected		
2606	Landa Lake	Bryo-2	28-Oct-20	1	Etheostoma fonticola	24	1
2606	Landa Lake	Bryo-2	28-Oct-20	1	Etheostoma fonticola	29	1
2606	Landa Lake	Bryo-2	28-Oct-20	1	Etheostoma fonticola	26	1
2606	Landa Lake	Bryo-2	28-Oct-20	1	Etheostoma fonticola	18	1
2606	Landa Lake	Bryo-2	28-Oct-20	1	Etheostoma fonticola	15	1
2606	Landa Lake	Bryo-2	28-Oct-20	1	Etheostoma fonticola	21	1
2606	Landa Lake	Bryo-2	28-Oct-20	1	Etheostoma fonticola	29	1
2606	Landa Lake	Bryo-2	28-Oct-20	1	Etheostoma fonticola	17	1
2606	Landa Lake	Bryo-2	28-Oct-20	2	Etheostoma fonticola	32	1
2606	Landa Lake	Bryo-2	28-Oct-20	2	Procambarus sp.		1
2606	Landa Lake	Bryo-2	28-Oct-20	3	Etheostoma fonticola	22	1
2606	Landa Lake	Bryo-2	28-Oct-20	3	Etheostoma fonticola	21	1
2606	Landa Lake	Bryo-2	28-Oct-20	4	Etheostoma fonticola	14	1

2606	Landa Lake	Bryo-2	28-Oct-20	4	Procambarus sp.		1
2606	Landa Lake	Bryo-2	28-Oct-20	5	No fish collected		
2606	Landa Lake	Bryo-2	28-Oct-20	6	No fish collected		
2606	Landa Lake	Bryo-2	28-Oct-20	7	Etheostoma fonticola	13	1
2606	Landa Lake	Bryo-2	28-Oct-20	7	Etheostoma fonticola	13	1
2606	Landa Lake	Bryo-2	28-Oct-20	8	Etheostoma fonticola	11	1
2606	Landa Lake	Bryo-2	28-Oct-20	9	Etheostoma fonticola	12	1
2606	Landa Lake	Bryo-2	28-Oct-20	10	Etheostoma fonticola	19	1
2606	Landa Lake	Bryo-2	28-Oct-20	11	Etheostoma fonticola	10	1
2606	Landa Lake	Bryo-2	28-Oct-20	12	Etheostoma fonticola	22	1
2606	Landa Lake	Bryo-2	28-Oct-20	13	No fish collected		
2606	Landa Lake	Bryo-2	28-Oct-20	14	No fish collected		
2606	Landa Lake	Bryo-2	28-Oct-20	15	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	3	Palaemonetes sp.		2
2607	Landa Lake	Vall-1	28-Oct-20	3	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	4	Procambarus sp.		1
2607	Landa Lake	Vall-1	28-Oct-20	4	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	5	Procambarus sp.		1
2607	Landa Lake	Vall-1	28-Oct-20	5	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	6	Procambarus sp.		2
2607	Landa Lake	Vall-1	28-Oct-20	6	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	7	Lepomis miniatus	92	1
2607	Landa Lake	Vall-1	28-Oct-20	8	Procambarus sp.		1
2607	Landa Lake	Vall-1	28-Oct-20	8	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	9	Palaemonetes sp.		1
2607	Landa Lake	Vall-1	28-Oct-20	9	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	10	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	11	Procambarus sp.		1
2607	Landa Lake	Vall-1	28-Oct-20	11	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	12	Procambarus sp.		1
2607	Landa Lake	Vall-1	28-Oct-20	12	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	13	Micropterus salmoides	270	1
2607	Landa Lake	Vall-1	28-Oct-20	13	Palaemonetes sp.		1
2607	Landa Lake	Vall-1	28-Oct-20	13	Procambarus sp.		1
2607	Landa Lake	Vall-1	28-Oct-20	14	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	15	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	1	Lepomis miniatus	92	1
2607	Landa Lake	Vall-1	28-Oct-20	1	Lepomis miniatus	32	1
2607	Landa Lake	Vall-1	28-Oct-20	1	Micropterus salmoides	95	1
2607	Landa Lake	Vall-1	28-Oct-20	1	Astyanax mexicanus	15	1

2607	Landa Lake	Vall-1	28-Oct-20	1	Palaemonetes sp.		3
2607	Landa Lake	Vall-1	28-Oct-20	2	No fish collected		
2607	Landa Lake	Vall-1	28-Oct-20	3	Procambarus sp.		1
2608	Landa Lake	Vall-2	28-Oct-20	1	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	2	Lepomis miniatus	80	1
2608	Landa Lake	Vall-2	28-Oct-20	2	Palaemonetes sp.		1
2608	Landa Lake	Vall-2	28-Oct-20	2	Procambarus sp.		2
2608	Landa Lake	Vall-2	28-Oct-20	3	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	4	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	5	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	6	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	7	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	8	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	9	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	10	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	11	Procambarus sp.		1
2608	Landa Lake	Vall-2	28-Oct-20	11	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	12	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	13	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	14	No fish collected		
2608	Landa Lake	Vall-2	28-Oct-20	15	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	1	Micropterus salmoides	65	1
2609	Landa Lake	Open-2	28-Oct-20	2	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	2	Procambarus sp.		1
2609	Landa Lake	Open-2	28-Oct-20	3	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	4	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	5	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	6	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	7	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	8	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	9	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	10	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	11	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	12	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	13	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	14	No fish collected		
2609	Landa Lake	Open-2	28-Oct-20	15	No fish collected		
2610	Landa Lake	Ludw-1	28-Oct-20	1	Etheostoma fonticola	28	1
2610	Landa Lake	Ludw-1	28-Oct-20	1	Gambusia sp.	17	1
2610	Landa Lake	Ludw-1	28-Oct-20	1	Palaemonetes sp.		4
2610	Landa Lake	Ludw-1	28-Oct-20	2	Gambusia sp.	19	1

2610	Landa Lake	Ludw-1	28-Oct-20	2	Palaemonetes sp.		10
2610	Landa Lake	Ludw-1	28-Oct-20	3	Palaemonetes sp.		3
2610	Landa Lake	Ludw-1	28-Oct-20	3	No fish collected		
2610	Landa Lake	Ludw-1	28-Oct-20	4	Palaemonetes sp.		4
2610	Landa Lake	Ludw-1	28-Oct-20	4	No fish collected		
2610	Landa Lake	Ludw-1	28-Oct-20	5	Palaemonetes sp.		1
2610	Landa Lake	Ludw-1	28-Oct-20	5	No fish collected		
2610	Landa Lake	Ludw-1	28-Oct-20	6	Gambusia sp.	35	1
2610	Landa Lake	Ludw-1	28-Oct-20	6	Gambusia sp.	23	1
2610	Landa Lake	Ludw-1	28-Oct-20	6	Palaemonetes sp.		3
2610	Landa Lake	Ludw-1	28-Oct-20	7	Palaemonetes sp.		1
2610	Landa Lake	Ludw-1	28-Oct-20	7	No fish collected		
2610	Landa Lake	Ludw-1	28-Oct-20	8	Gambusia sp.	11	1
2610	Landa Lake	Ludw-1	28-Oct-20	9	No fish collected		
2610	Landa Lake	Ludw-1	28-Oct-20	10	Etheostoma fonticola	25	1
2610	Landa Lake	Ludw-1	28-Oct-20	11	Palaemonetes sp.		1
2610	Landa Lake	Ludw-1	28-Oct-20	11	No fish collected		
2610	Landa Lake	Ludw-1	28-Oct-20	12	Palaemonetes sp.		4
2610	Landa Lake	Ludw-1	28-Oct-20	12	No fish collected		
2610	Landa Lake	Ludw-1	28-Oct-20	13	Gambusia sp.	26	1
2610	Landa Lake	Ludw-1	28-Oct-20	13	Etheostoma fonticola	30	1
2610	Landa Lake	Ludw-1	28-Oct-20	14	Palaemonetes sp.		2
2610	Landa Lake	Ludw-1	28-Oct-20	14	No fish collected		
2610	Landa Lake	Ludw-1	28-Oct-20	15	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	1	Procambarus sp.		1
2611	Landa Lake	Ludw-2	28-Oct-20	1	Palaemonetes sp.		2
2611	Landa Lake	Ludw-2	28-Oct-20	1	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	2	Ameiurus natalis	52	1
2611	Landa Lake	Ludw-2	28-Oct-20	2	Gambusia sp.	12	1
2611	Landa Lake	Ludw-2	28-Oct-20	2	Procambarus sp.		3
2611	Landa Lake	Ludw-2	28-Oct-20	3	Procambarus sp.		1
2611	Landa Lake	Ludw-2	28-Oct-20	3	Palaemonetes sp.		3
2611	Landa Lake	Ludw-2	28-Oct-20	3	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	4	Procambarus sp.		1
2611	Landa Lake	Ludw-2	28-Oct-20	4	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	5	Procambarus sp.		1
2611	Landa Lake	Ludw-2	28-Oct-20	5	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	6	Procambarus sp.		3
2611	Landa Lake	Ludw-2	28-Oct-20	6	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	7	Procambarus sp.		2
2611	Landa Lake	Ludw-2	28-Oct-20	7	No fish collected		

2611	Landa Lake	Ludw-2	28-Oct-20	8	Procambarus sp.		1
2611	Landa Lake	Ludw-2	28-Oct-20	8	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	9	Procambarus sp.		4
2611	Landa Lake	Ludw-2	28-Oct-20	9	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	10	Procambarus sp.		1
2611	Landa Lake	Ludw-2	28-Oct-20	10	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	11	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	12	Procambarus sp.		1
2611	Landa Lake	Ludw-2	28-Oct-20	12	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	13	No fish collected		
2611	Landa Lake	Ludw-2	28-Oct-20	14	Etheostoma fonticola	21	1
2611	Landa Lake	Ludw-2	28-Oct-20	15	Procambarus sp.		1
2611	Landa Lake	Ludw-2	28-Oct-20	15	No fish collected		
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	30	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	31	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	26	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	28	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	29	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	26	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	34	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	32	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	22	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	24	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	15	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	11	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Lepomis sp.	10	1
2612	Landa Lake	Cabo-1	29-Oct-20	1	Palaemonetes sp.		29
2612	Landa Lake	Cabo-1	29-Oct-20	1	Procambarus sp.		7
2612	Landa Lake	Cabo-1	29-Oct-20	2	Etheostoma fonticola	26	1
2612	Landa Lake	Cabo-1	29-Oct-20	2	Etheostoma fonticola	30	1
2612	Landa Lake	Cabo-1	29-Oct-20	2	Etheostoma fonticola	30	1
2612	Landa Lake	Cabo-1	29-Oct-20	2	Etheostoma fonticola	29	1
2612	Landa Lake	Cabo-1	29-Oct-20	2	Etheostoma fonticola	28	1
2612	Landa Lake	Cabo-1	29-Oct-20	2	Etheostoma fonticola	30	1
2612	Landa Lake	Cabo-1	29-Oct-20	2	Etheostoma fonticola	29	1
2612	Landa Lake	Cabo-1	29-Oct-20	2	Procambarus sp.		3
2612	Landa Lake	Cabo-1	29-Oct-20	2	Palaemonetes sp.		14
2612	Landa Lake	Cabo-1	29-Oct-20	3	Etheostoma fonticola	27	1
2612	Landa Lake	Cabo-1	29-Oct-20	3	Etheostoma fonticola	17	1
2612	Landa Lake	Cabo-1	29-Oct-20	3	Etheostoma fonticola	32	1
2612	Landa Lake	Cabo-1	29-Oct-20	3	Lepomis sp.	10	1

2612	Landa Lake	Cabo-1	29-Oct-20	3	Procambarus sp.		5
2612	Landa Lake	Cabo-1	29-Oct-20	3	Palaemonetes sp.		12
2612	Landa Lake	Cabo-1	29-Oct-20	4	Etheostoma fonticola	26	1
2612	Landa Lake	Cabo-1	29-Oct-20	4	Etheostoma fonticola	26	1
2612	Landa Lake	Cabo-1	29-Oct-20	4	Etheostoma fonticola	31	1
2612	Landa Lake	Cabo-1	29-Oct-20	4	Etheostoma fonticola	29	1
2612	Landa Lake	Cabo-1	29-Oct-20	4	Etheostoma fonticola	32	1
2612	Landa Lake	Cabo-1	29-Oct-20	4	Procambarus sp.		7
2612	Landa Lake	Cabo-1	29-Oct-20	4	Palaemonetes sp.		4
2612	Landa Lake	Cabo-1	29-Oct-20	5	Etheostoma fonticola	31	1
2612	Landa Lake	Cabo-1	29-Oct-20	5	Etheostoma fonticola	34	1
2612	Landa Lake	Cabo-1	29-Oct-20	5	Procambarus sp.		10
2612	Landa Lake	Cabo-1	29-Oct-20	5	Palaemonetes sp.		2
2612	Landa Lake	Cabo-1	29-Oct-20	6	Procambarus sp.		1
2612	Landa Lake	Cabo-1	29-Oct-20	6	Palaemonetes sp.		1
2612	Landa Lake	Cabo-1	29-Oct-20	6	No fish collected		
2612	Landa Lake	Cabo-1	29-Oct-20	7	Palaemonetes sp.		1
2612	Landa Lake	Cabo-1	29-Oct-20	7	No fish collected		
2612	Landa Lake	Cabo-1	29-Oct-20	8	Etheostoma fonticola	33	1
2612	Landa Lake	Cabo-1	29-Oct-20	8	Etheostoma fonticola	24	1
2612	Landa Lake	Cabo-1	29-Oct-20	8	Etheostoma fonticola	30	1
2612	Landa Lake	Cabo-1	29-Oct-20	8	Etheostoma fonticola	31	1
2612	Landa Lake	Cabo-1	29-Oct-20	8	Palaemonetes sp.		2
2612	Landa Lake	Cabo-1	29-Oct-20	8	Procambarus sp.		6
2612	Landa Lake	Cabo-1	29-Oct-20	9	Palaemonetes sp.		1
2612	Landa Lake	Cabo-1	29-Oct-20	9	No fish collected		
2612	Landa Lake	Cabo-1	29-Oct-20	10	Palaemonetes sp.		1
2612	Landa Lake	Cabo-1	29-Oct-20	10	No fish collected		
2612	Landa Lake	Cabo-1	29-Oct-20	11	Etheostoma fonticola	33	1
2612	Landa Lake	Cabo-1	29-Oct-20	11	Etheostoma fonticola	24	1
2612	Landa Lake	Cabo-1	29-Oct-20	12	No fish collected		
2612	Landa Lake	Cabo-1	29-Oct-20	13	Etheostoma fonticola	31	1
2612	Landa Lake	Cabo-1	29-Oct-20	13	Procambarus sp.		1
2612	Landa Lake	Cabo-1	29-Oct-20	13	Palaemonetes sp.		2
2612	Landa Lake	Cabo-1	29-Oct-20	14	Etheostoma fonticola	30	1
2612	Landa Lake	Cabo-1	29-Oct-20	15	Palaemonetes sp.		1
2612	Landa Lake	Cabo-1	29-Oct-20	15	No fish collected		
2612	Landa Lake	Cabo-1	29-Oct-20	1	Etheostoma fonticola	28	1
2613	Landa Lake	Cabo-2	29-Oct-20	1	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	2	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	3	No fish collected		

2613	Landa Lake	Cabo-2	29-Oct-20	4	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	5	Etheostoma fonticola	22	1
2613	Landa Lake	Cabo-2	29-Oct-20	5	Palaemonetes sp.		1
2613	Landa Lake	Cabo-2	29-Oct-20	5	Procambarus sp.		1
2613	Landa Lake	Cabo-2	29-Oct-20	6	Etheostoma fonticola	27	1
2613	Landa Lake	Cabo-2	29-Oct-20	7	Procambarus sp.		1
2613	Landa Lake	Cabo-2	29-Oct-20	7	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	8	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	9	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	10	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	11	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	12	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	13	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	14	No fish collected		
2613	Landa Lake	Cabo-2	29-Oct-20	15	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	1	Etheostoma fonticola	24	1
2614	Landa Lake	Sagi-1	29-Oct-20	1	Lepomis miniatus	43	1
2614	Landa Lake	Sagi-1	29-Oct-20	1	Micropterus salmoides	80	1
2614	Landa Lake	Sagi-1	29-Oct-20	2	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	3	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	4	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	5	Lepomis miniatus	30	1
2614	Landa Lake	Sagi-1	29-Oct-20	5	Lepomis miniatus	75	1
2614	Landa Lake	Sagi-1	29-Oct-20	6	Procambarus sp.		1
2614	Landa Lake	Sagi-1	29-Oct-20	6	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	7	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	8	Lepomis miniatus	55	1
2614	Landa Lake	Sagi-1	29-Oct-20	8	Procambarus sp.		1
2614	Landa Lake	Sagi-1	29-Oct-20	9	Palaemonetes sp.		1
2614	Landa Lake	Sagi-1	29-Oct-20	9	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	10	Herichthys cyanoguttatus	87	1
2614	Landa Lake	Sagi-1	29-Oct-20	10	Etheostoma fonticola	32	1
2614	Landa Lake	Sagi-1	29-Oct-20	10	Etheostoma fonticola	15	1
2614	Landa Lake	Sagi-1	29-Oct-20	11	Procambarus sp.		2
2614	Landa Lake	Sagi-1	29-Oct-20	11	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	12	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	13	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	14	No fish collected		
2614	Landa Lake	Sagi-1	29-Oct-20	15	No fish collected		
2615	Landa Lake	Sagi-2	29-Oct-20	1	Procambarus sp.		4

2615	Landa Lake	Sagi-2	29-Oct-20	1	Lepomis miniatus	25	1
2615	Landa Lake	Sagi-2	29-Oct-20	1	Palaemonetes sp.		2
2615	Landa Lake	Sagi-2	29-Oct-20	2	Procambarus sp.		3
2615	Landa Lake	Sagi-2	29-Oct-20	2	No fish collected		
2615	Landa Lake	Sagi-2	29-Oct-20	3	Procambarus sp.		7
2615	Landa Lake	Sagi-2	29-Oct-20	3	Lepomis miniatus	62	1
2615	Landa Lake	Sagi-2	29-Oct-20	3	Lepomis miniatus	56	1
2615	Landa Lake	Sagi-2	29-Oct-20	4	Procambarus sp.		3
2615	Landa Lake	Sagi-2	29-Oct-20	4	Lepomis miniatus	58	1
2615	Landa Lake	Sagi-2	29-Oct-20	4	Ameiurus natalis	17	1
2615	Landa Lake	Sagi-2	29-Oct-20	5	Lepomis sp.	10	1
2615	Landa Lake	Sagi-2	29-Oct-20	6	Lepomis miniatus	99	1
2615	Landa Lake	Sagi-2	29-Oct-20	6	Lepomis miniatus	48	1
2615	Landa Lake	Sagi-2	29-Oct-20	6	Lepomis miniatus	35	1
2615	Landa Lake	Sagi-2	29-Oct-20	6	Lepomis sp.	28	1
2615	Landa Lake	Sagi-2	29-Oct-20	6	Procambarus sp.		1
2615	Landa Lake	Sagi-2	29-Oct-20	7	Lepomis miniatus	45	1
2615	Landa Lake	Sagi-2	29-Oct-20	8	Lepomis miniatus	54	1
2615	Landa Lake	Sagi-2	29-Oct-20	8	Procambarus sp.		1
2615	Landa Lake	Sagi-2	29-Oct-20	9	No fish collected		
2615	Landa Lake	Sagi-2	29-Oct-20	10	Procambarus sp.		1
2615	Landa Lake	Sagi-2	29-Oct-20	10	No fish collected		
2615	Landa Lake	Sagi-2	29-Oct-20	11	Procambarus sp.		1
2615	Landa Lake	Sagi-2	29-Oct-20	11	No fish collected		
2615	Landa Lake	Sagi-2	29-Oct-20	12	Procambarus sp.		1
2615	Landa Lake	Sagi-2	29-Oct-20	12	No fish collected		
2615	Landa Lake	Sagi-2	29-Oct-20	13	Lepomis miniatus	30	1
2615	Landa Lake	Sagi-2	29-Oct-20	13	Lepomis miniatus	100	1
2615	Landa Lake	Sagi-2	29-Oct-20	13	Procambarus sp.		1
2615	Landa Lake	Sagi-2	29-Oct-20	14	Procambarus sp.		2
2615	Landa Lake	Sagi-2	29-Oct-20	14	No fish collected		
2615	Landa Lake	Sagi-2	29-Oct-20	15	Procambarus sp.		1
2615	Landa Lake	Sagi-2	29-Oct-20	15	No fish collected		