



Meeting 6 - 12.11.2019

CSRB Work Group





EAHCP CSR B WG Charge

Charge Topic	Topic Question
Cotton lure sampling methodology	Is the current cotton lure sampling methodology an appropriate means to monitor abundance at a locale?
	If not, what sampling methodologies exist that would provide a better proxy of abundance at a locale?
	If the previous two questions cannot be adequately answered without additional study, what would be an appropriate study to answer the questions?
Biological monitoring, Refugia collections, and Applied Research collections	What changes are recommended for the Biological monitoring sampling program? What are the stated goals behind those changes?
	What changes are recommended for Refugia removal efforts? What are the stated goals behind those changes?
	Are the current and proposed levels of physical activity in the CSR B habitat protective of the species? If not, what level of activity is appropriate?
Long-term biological goals	Are the current population and habitat LTBGs for the CSR B appropriate? What are the criteria for more appropriate goals?
	What is an appropriate means to monitor the habitat quality goal?
	How can Biological monitoring, Refugia efforts, and Applied Research studies be used to establish new LTBGs?



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Cotton lure sampling methodology

2019 Work Group Recommendations

- Continue using cotton lure for CSRB biological monitoring and refugia removals.
- Conduct cotton lure mesocosm experiment using methodology developed during work group meetings.
- EAHCP goal is to conduct and finalize experiment in 2020.



CSRB microcosm lure study

Ely's presentation



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Biological monitoring, Refugia and Applied Research collections

2019 Work Group Recommendations

- Continue historical Biological monitoring program at 3 locations, twice a year, 10 lures per survey, repeated sampling of individual orifices.
- Conduct two Comal system-wide occupancy and population studies prior to 2028.
 - Potential survey years are 2022 and 2025.

EAHCP Biological Monitoring

2004-2020

location	surveys	lures_set	adults_caught	larva_caught
:-----:	-----:	-----:	-----:	-----:
Spring Island	45	445	2875	1558
Spring Run 3	44	471	4568	591
Western Shoreline	44	484	4440	1283

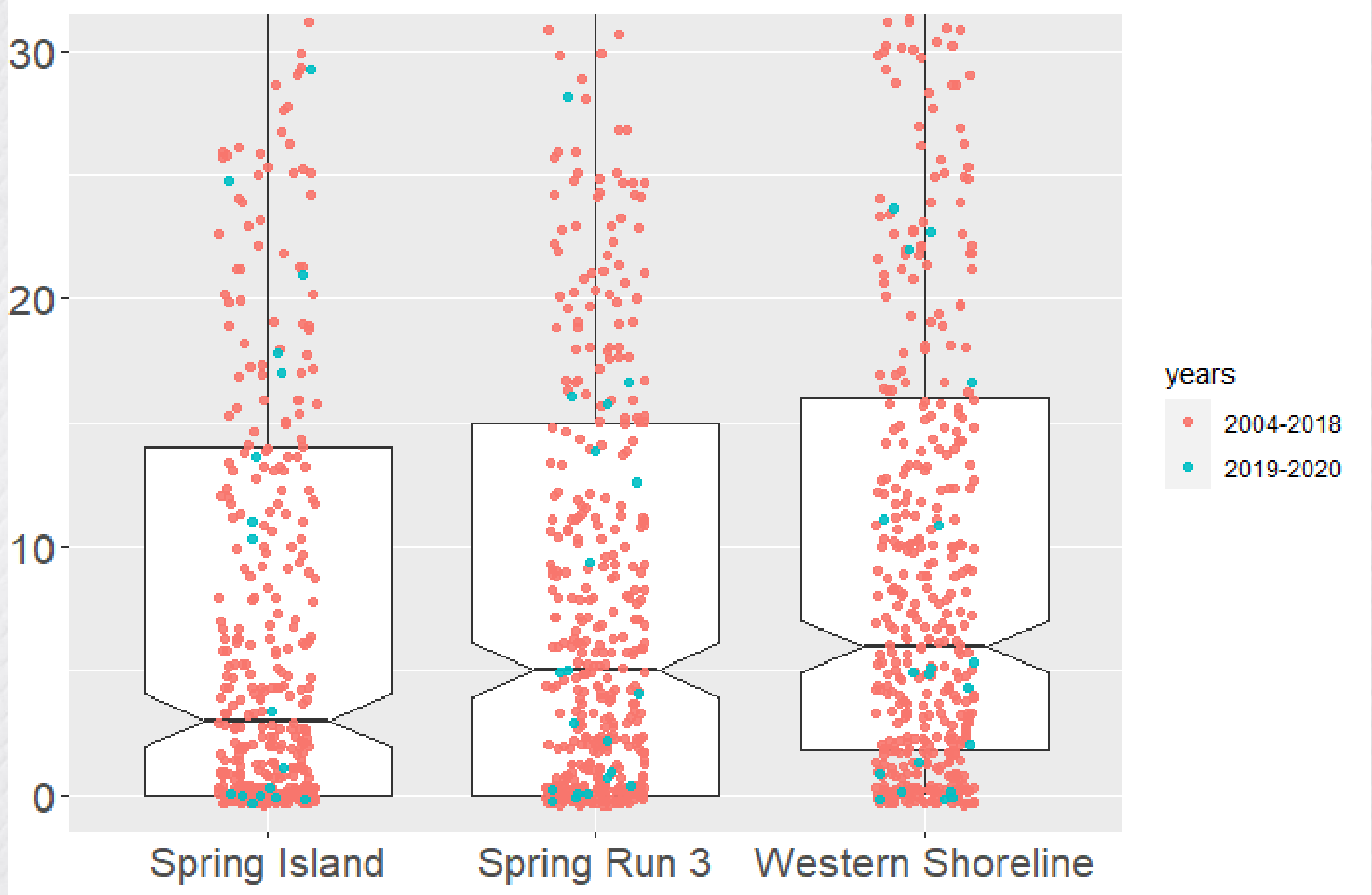
2019

location	lures_set	adults_caught	larva_caught
:-----:	-----:	-----:	-----:
Spring Island	20	171	151
Spring Run 3	20	116	18
Western Shoreline	20	119	55

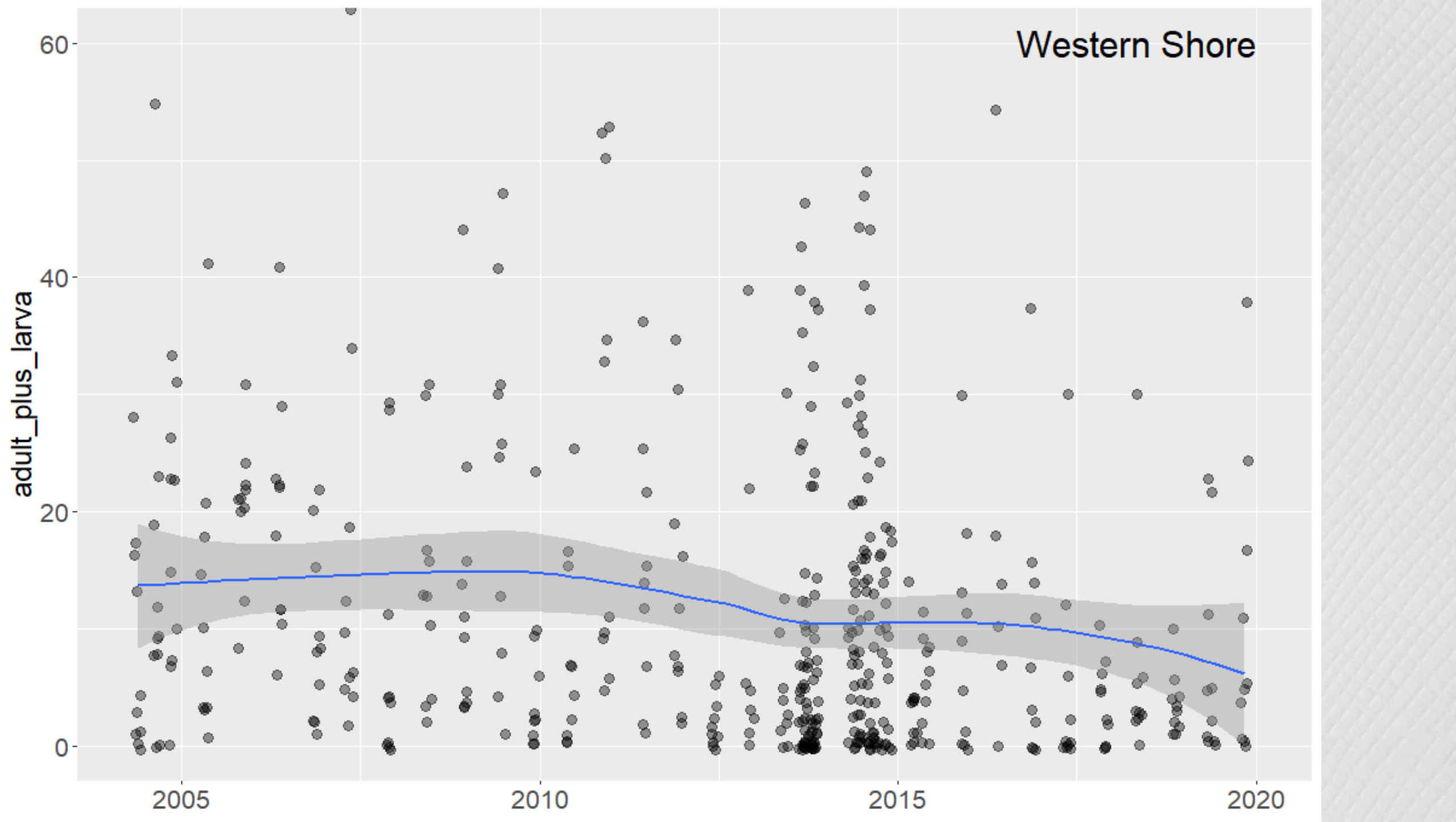
2020

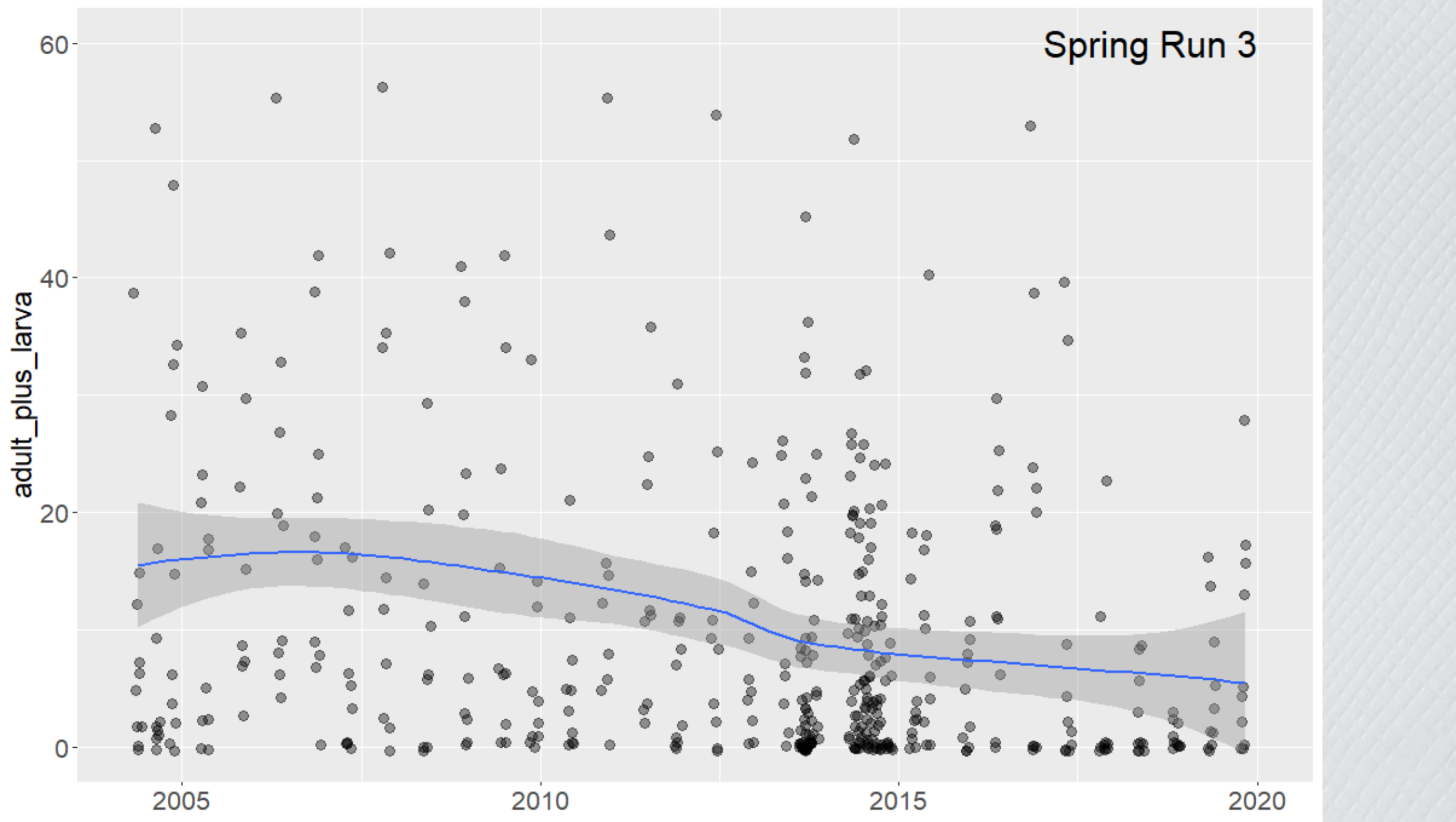
Summary of EAHCP long-term biological monitoring for CSRB for 2004-2020, 2019, and 2020.

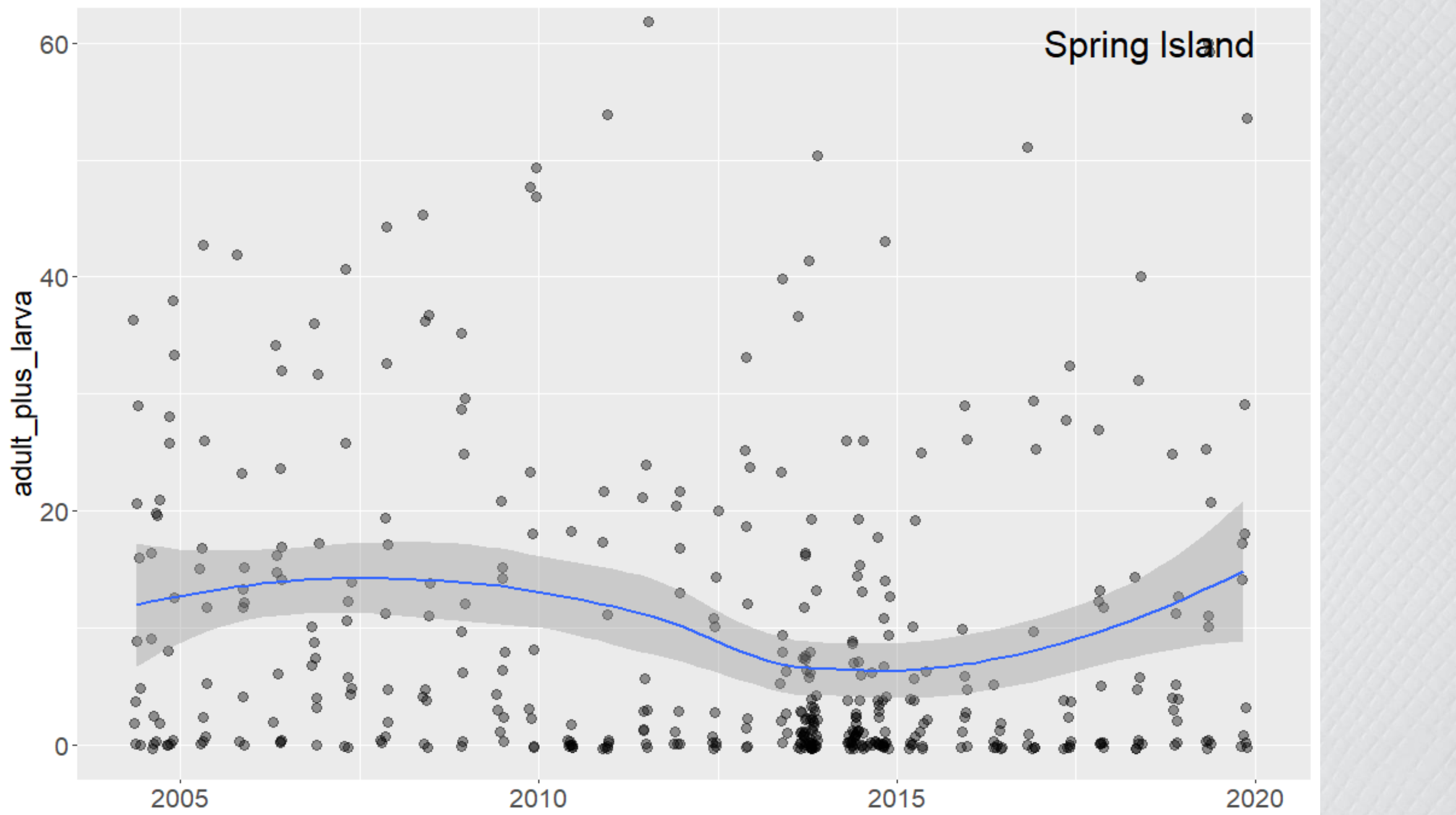




CSRB adult plus larva collections at long-term biological monitoring locations 2004-2020. Note, not all data are shown.





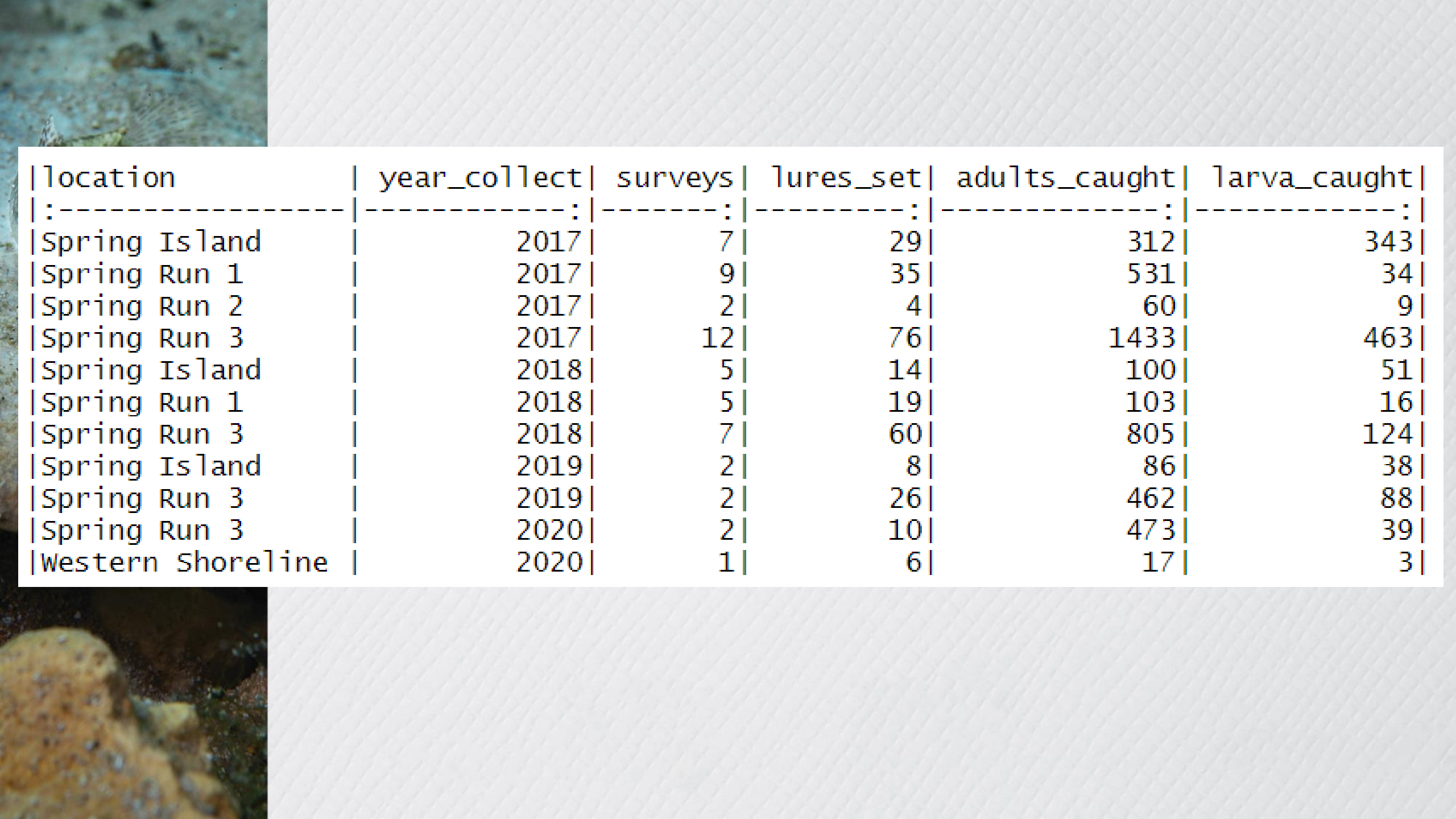




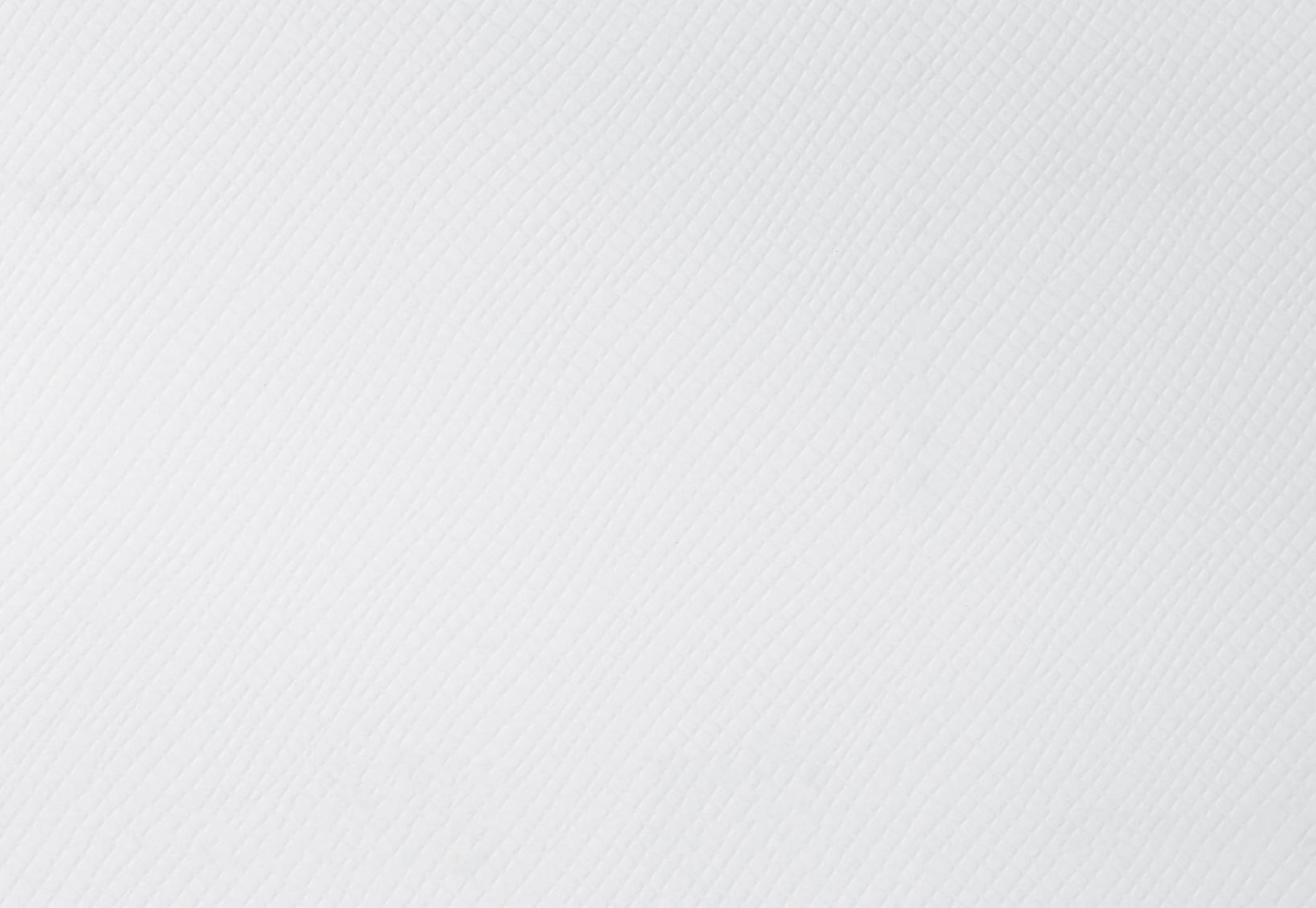
Biological monitoring, Refugia and Applied Research collections

2019 Work Group Recommendations

- Allow Refugia collections to retain 100% of beetles captured on a lure
- Alternate spring orifices between Refugia collection events such that the same spring orifice is not sampled on consecutive collection events.
- Do not overlap Refugia collection locations with Biomonitoring locations.
- Reduce Refugia standing stock numbers to 150 adults (75 at each station).



location	year_collect	surveys	lures_set	adults_caught	larva_caught
Spring Island	2017	7	29	312	343
Spring Run 1	2017	9	35	531	34
Spring Run 2	2017	2	4	60	9
Spring Run 3	2017	12	76	1433	463
Spring Island	2018	5	14	100	51
Spring Run 1	2018	5	19	103	16
Spring Run 3	2018	7	60	805	124
Spring Island	2019	2	8	86	38
Spring Run 3	2019	2	26	462	88
Spring Run 3	2020	2	10	473	39
Western Shoreline	2020	1	6	17	3





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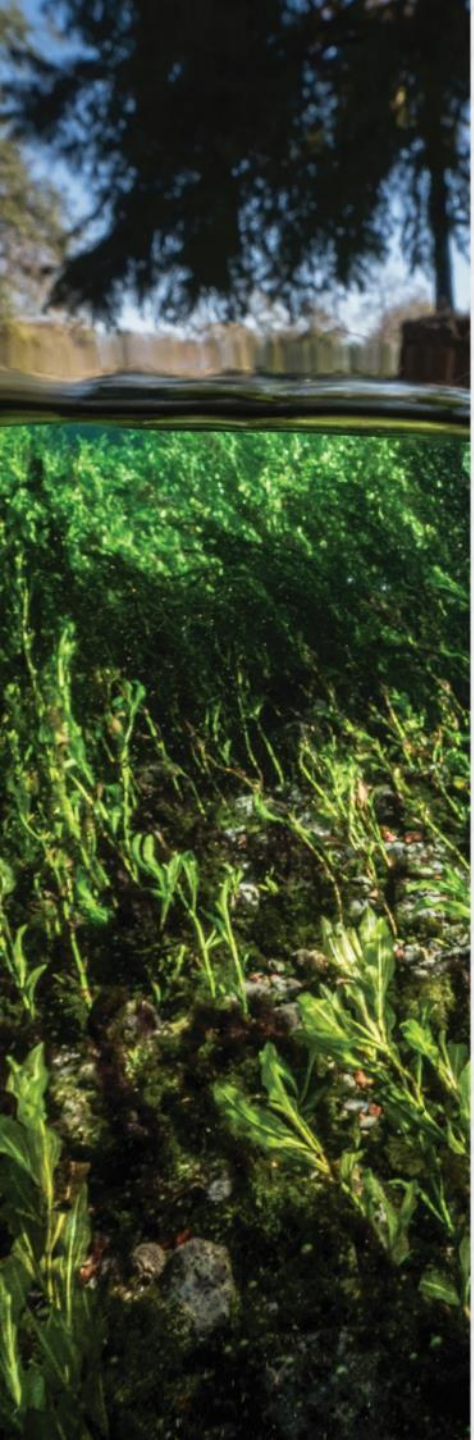
CSRB Long-Term Biological Goals

- Maintain present Long-Term Biological Goals.
- Revisit Long-Term Biological Goals after population studies and in-situ cotton lure studies have been completed.



CSRB future meetings

- Conduct an annual meeting to review progress and discuss current CSRB topics
- December 9th 2020 – location TBD
- Potential topics:
 - 2019 and 2020 Biomonitoring surveys
 - Refugia collections, captive life spans, and standing stock numbers
 - TSU population survey



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