Spatiotemporal population dynamics of *Hypostomus* in an aridland spring, South Texas

Matthew Troia, Cora Mickey
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Robert Mollenhauer
Coast Ecology and Life Cycle Monitoring Unit, Washington Department of Fish and Wildlife

Monica McGarrity
Texas Parks and Wildlife Department

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Funding
TPWD AIS Program
TPWD SWG
TPWD Section 6

Acknowledgements

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Field assistance

Garrett Faulk, Trinity DeCandia, Nick Loveland, Garrett Tucker, Trinity Wardle, Isabela Silva, Carlos Rocha, Harold Rosario Navarro, Kat Coglianese, Joey Perez, Jennifer Smith, Jacob Pace, Riley Taylor, Karmann Kessler, Roni Maddox

Logistical support

Carlos Ayala, City of Del Rio, San Felipe Springs Golf Course,
US Fish and Wildlife Service

TEXAS PARKS & WILDLIFE

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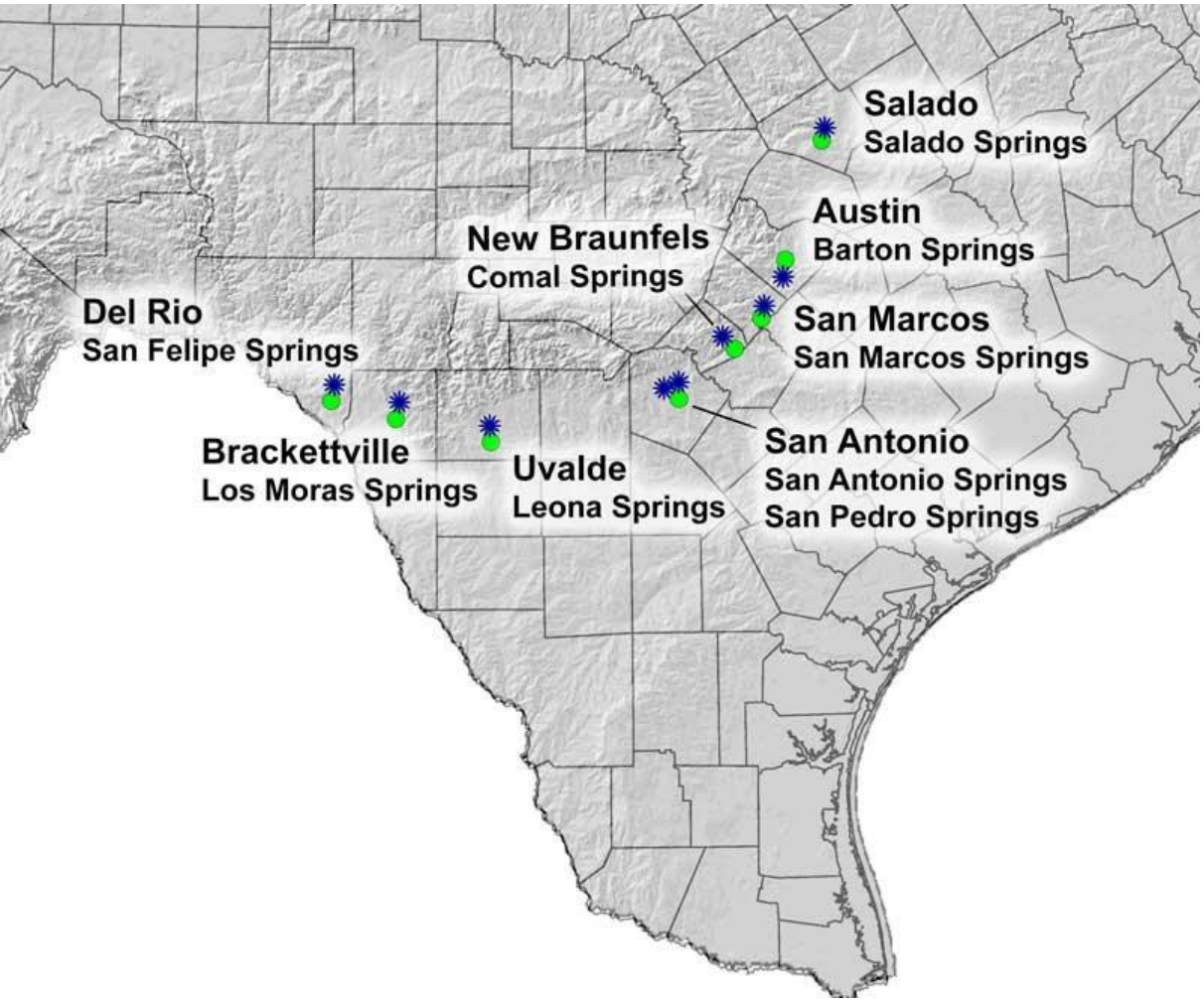
Geographic and conservation context

Edwards Aquifer Balcones Escarpment



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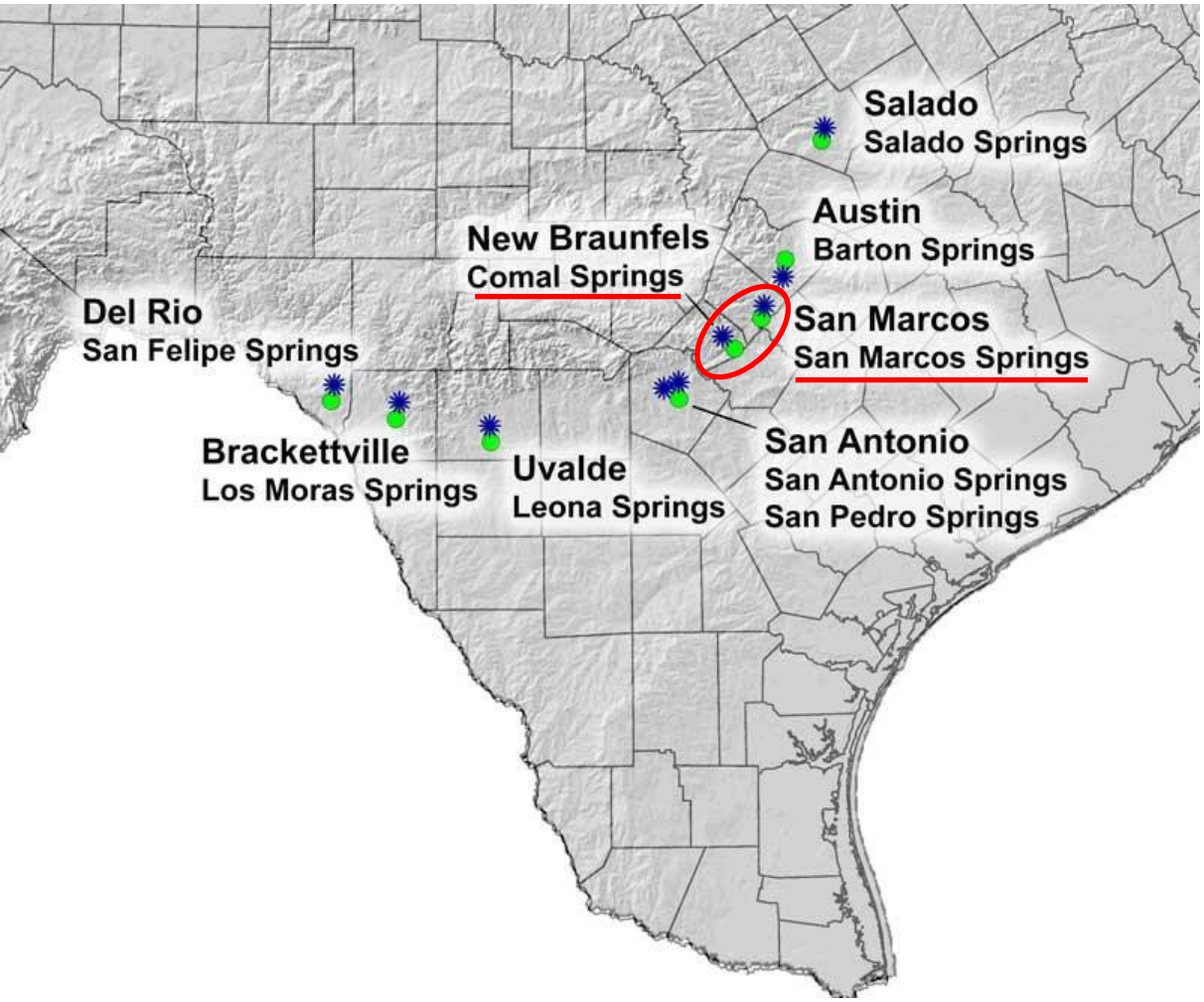

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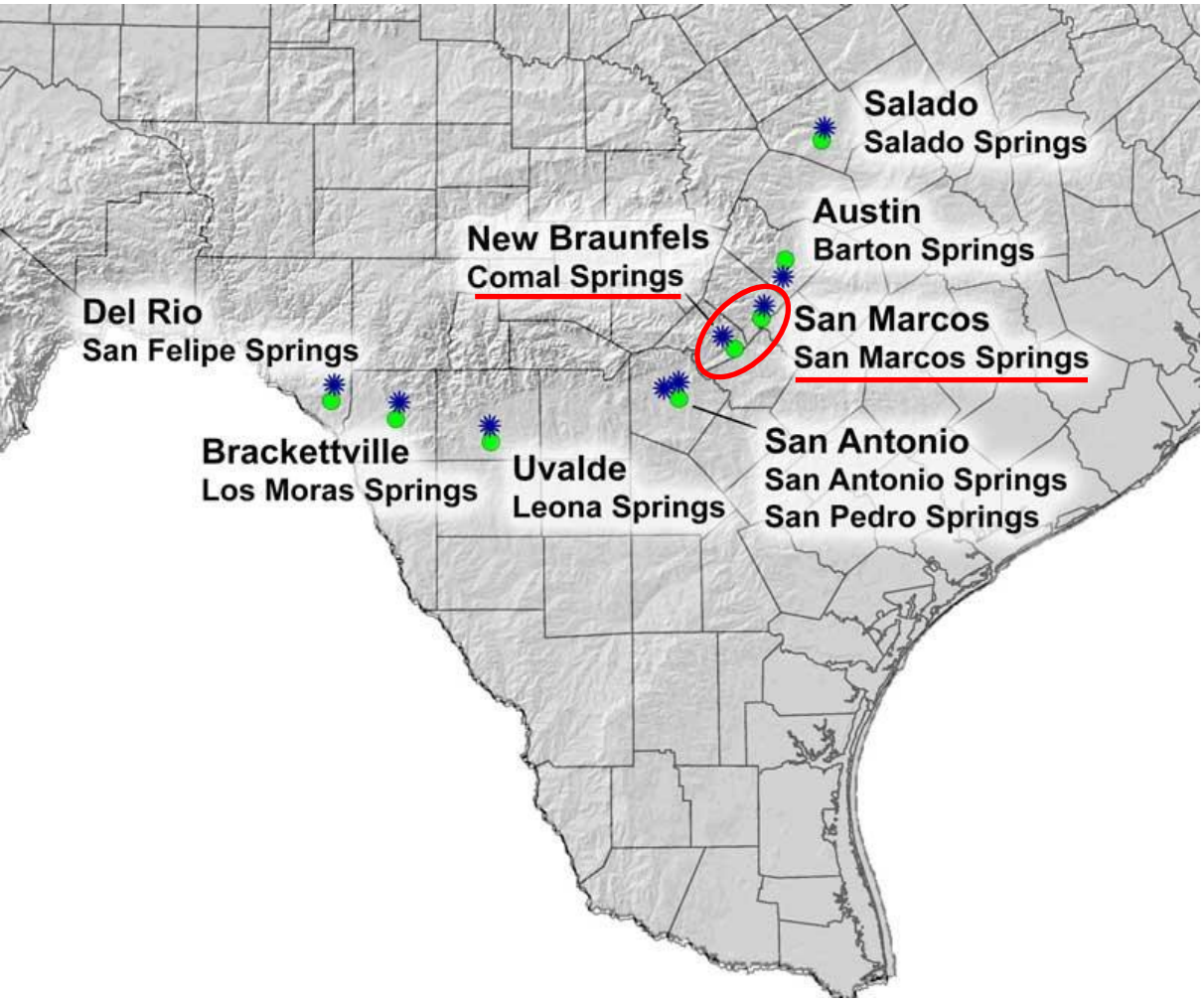

Sources: USFWS, TPWD, Edwards Aquifer Authority

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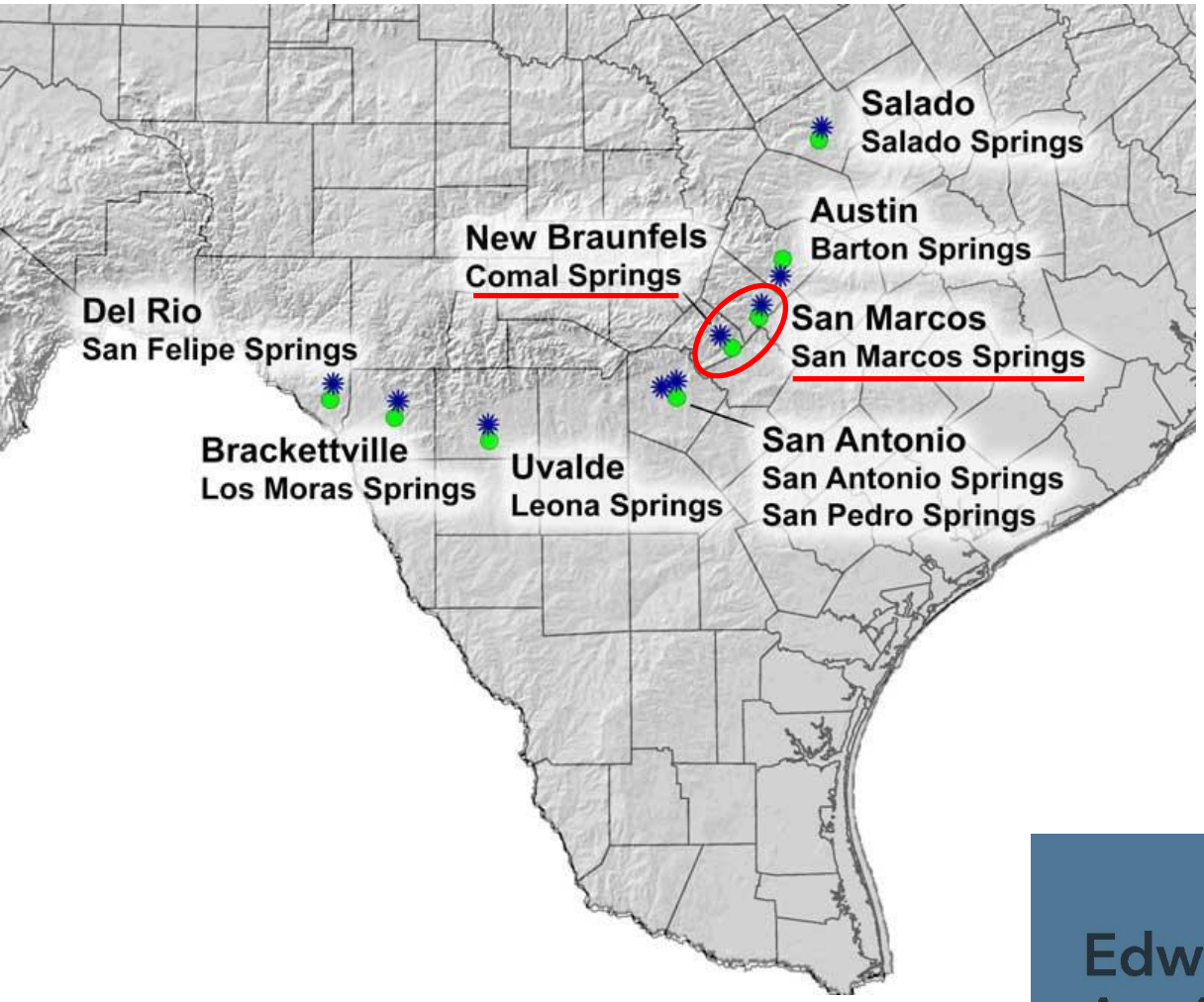

Edwards Aquifer Habitat Conservation Plan

Permit Options Report

Prepared for:
Edwards Aquifer Authority
900 E. Quincy
San Antonio, Texas 78215

Prepared by:
ICF
2700 Via Fortuna, Suite 200
Austin, Texas 78746

Sources: USFWS, TPWD, Edwards Aquifer Authority

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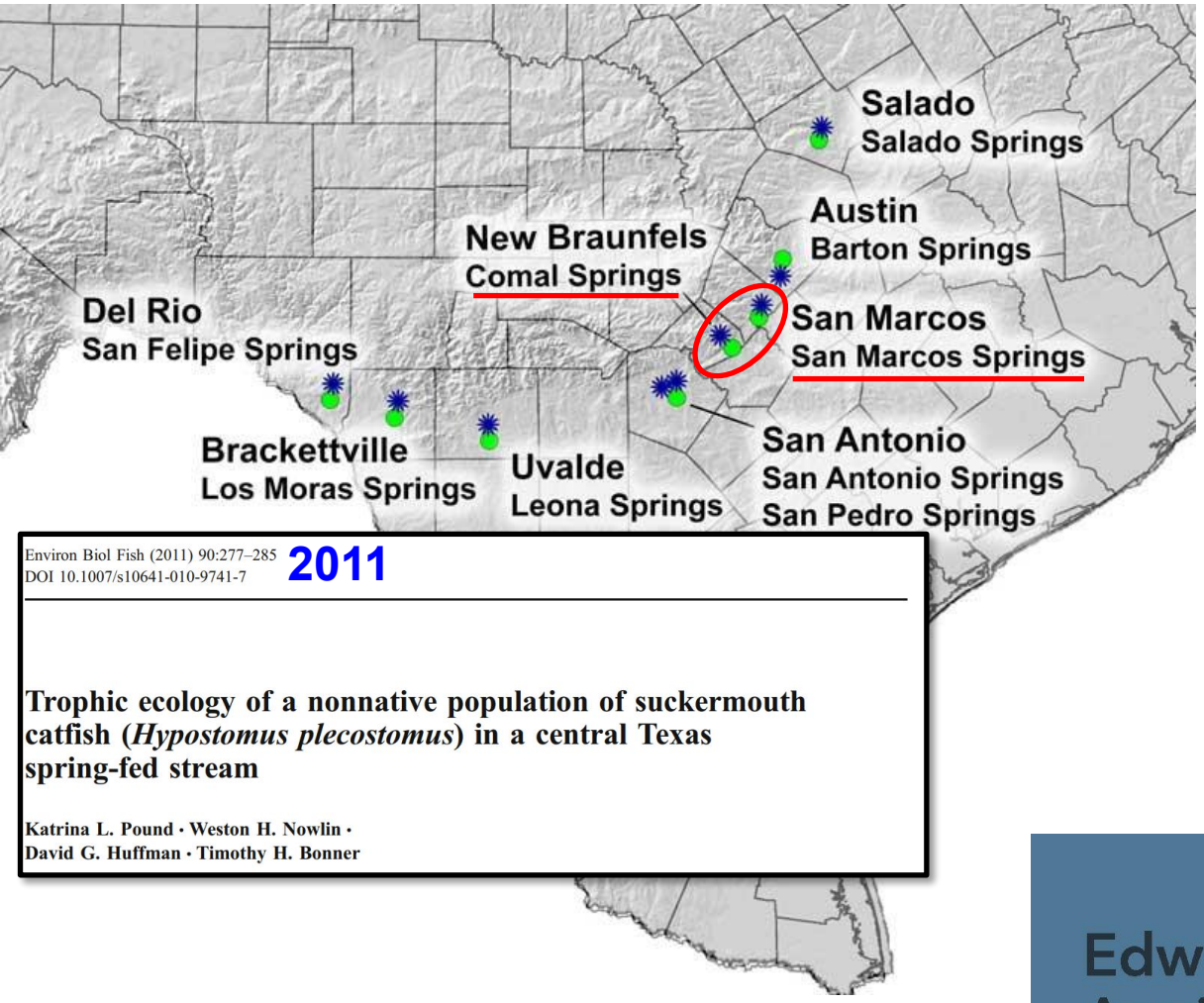

Environ Biol Fish (2011) 90:277–285
DOI 10.1007/s10641-010-9741-7 **2011**

Trophic ecology of a nonnative population of suckermouth catfish (*Hypostomus plecostomus*) in a central Texas spring-fed stream

Katrina L. Pound · Weston H. Nowlin ·
David G. Huffman · Timothy H. Bonner

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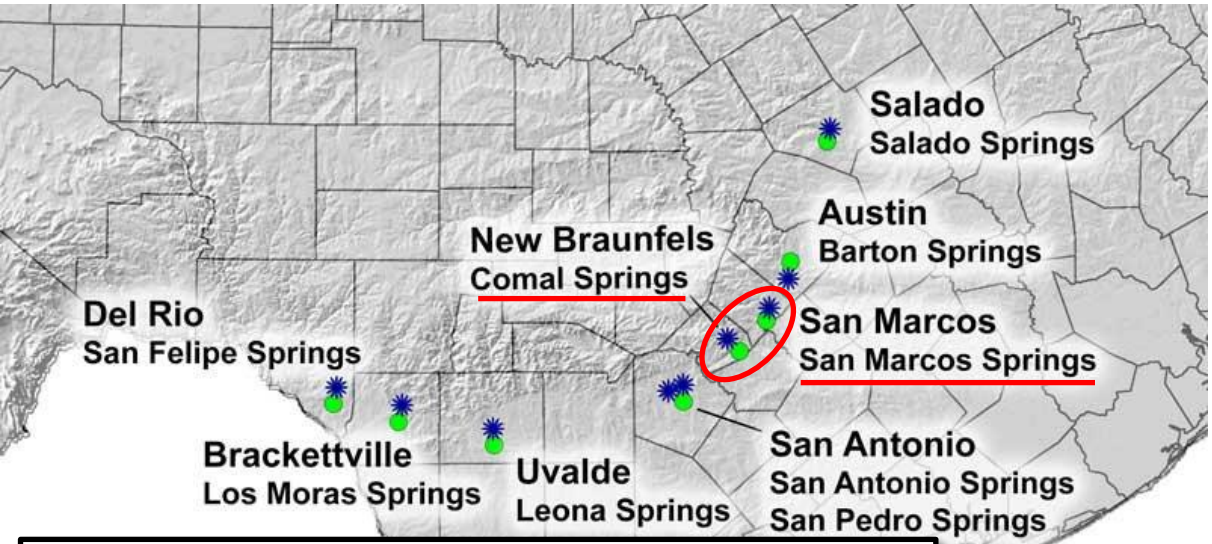

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Katrina
David G.

Biol Invasions (2022) 24:3119–3131
https://doi.org/10.1007/s10530-022-02834-2 **2022**

ORIGINAL PAPER

Check for updates

Movement and mortality of invasive suckermouth armored catfish during a spearfishing control experiment

Allison Hay · Christopher L. Riggins · Thomas Heard · Collin Garoutte · Yeyetzi Rodriguez · Francesca Fillipone · Kristy K. Smith · Nick Menchaca · Janaye Williamson · Joshuah S. Perkin

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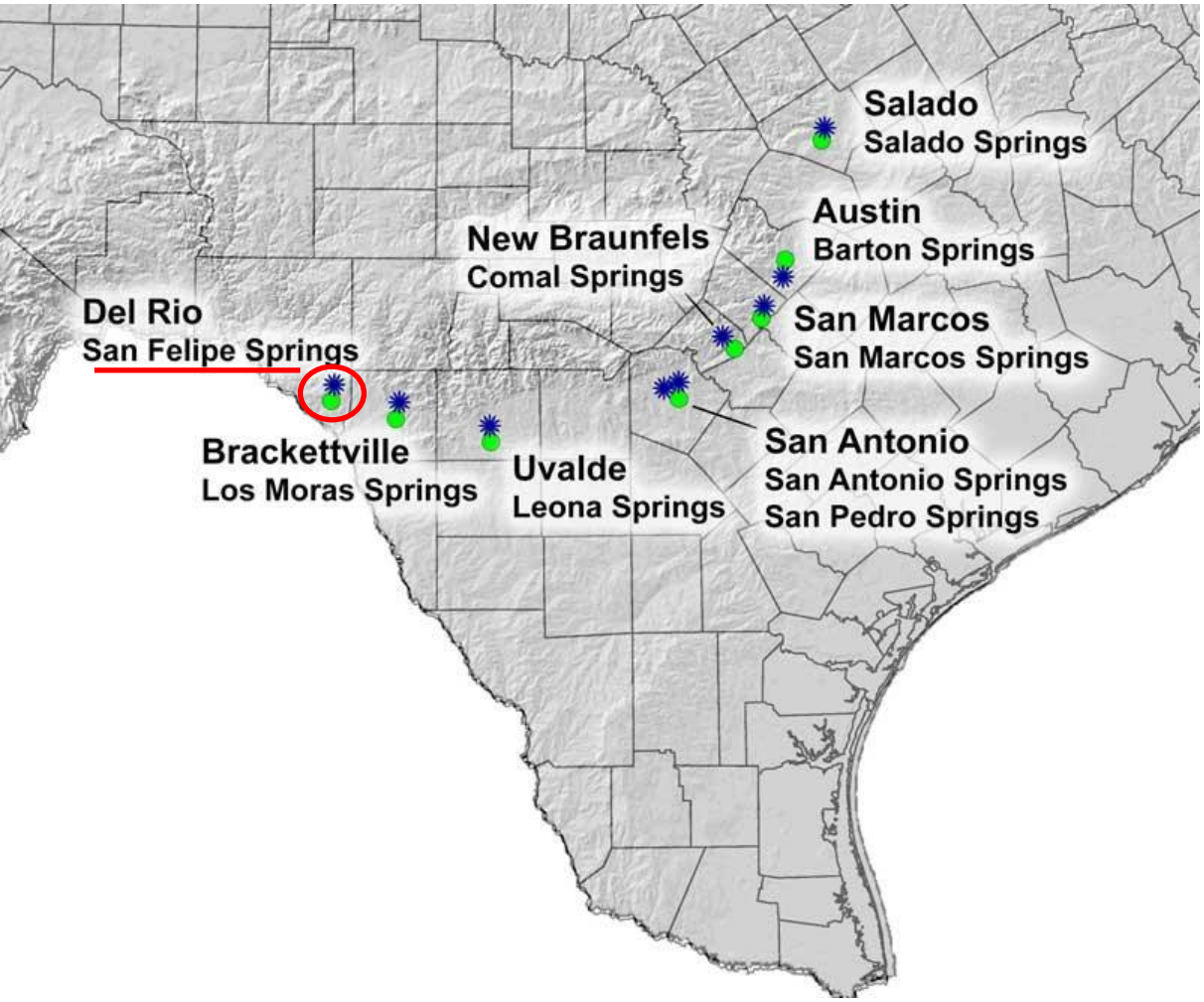

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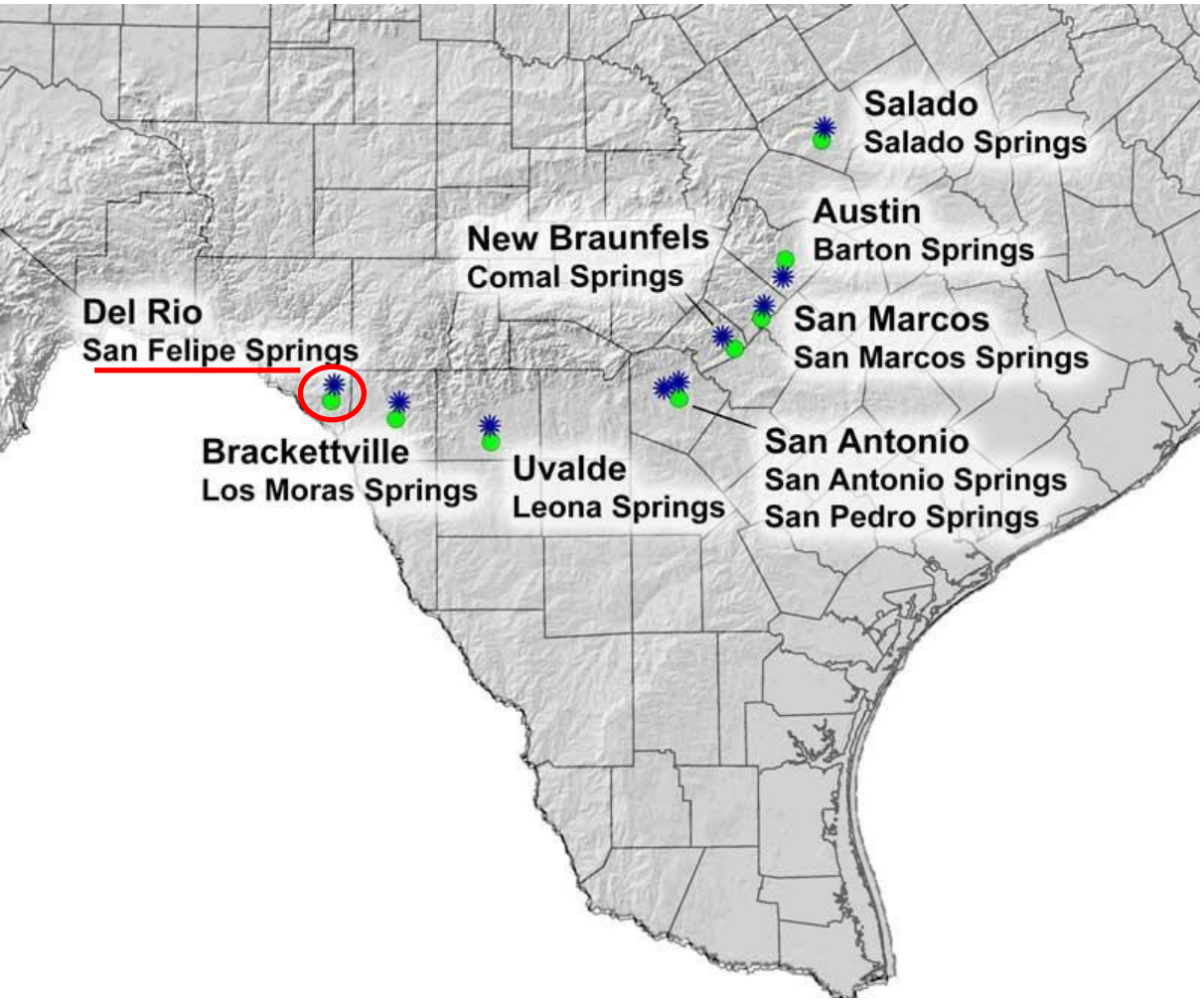

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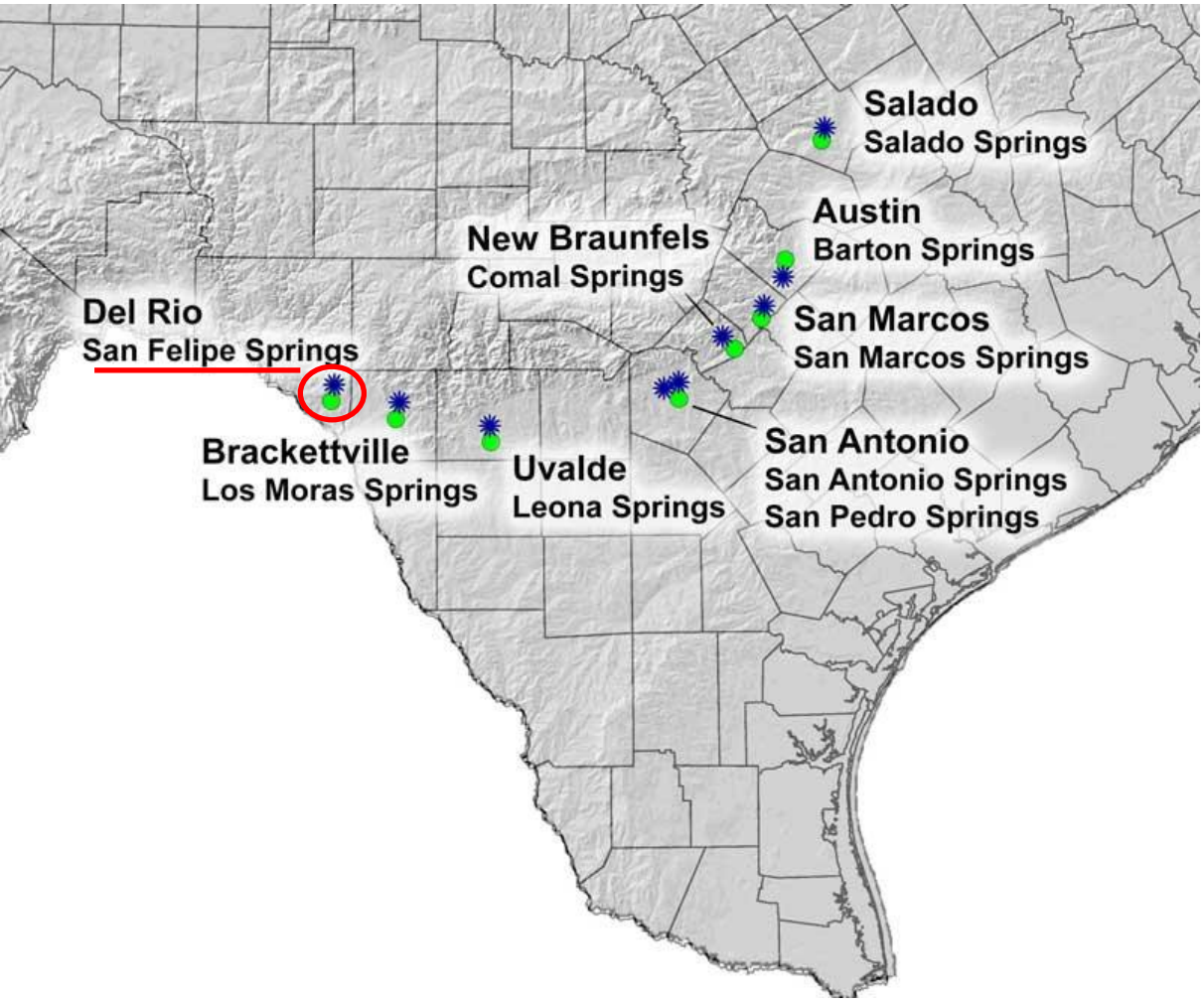

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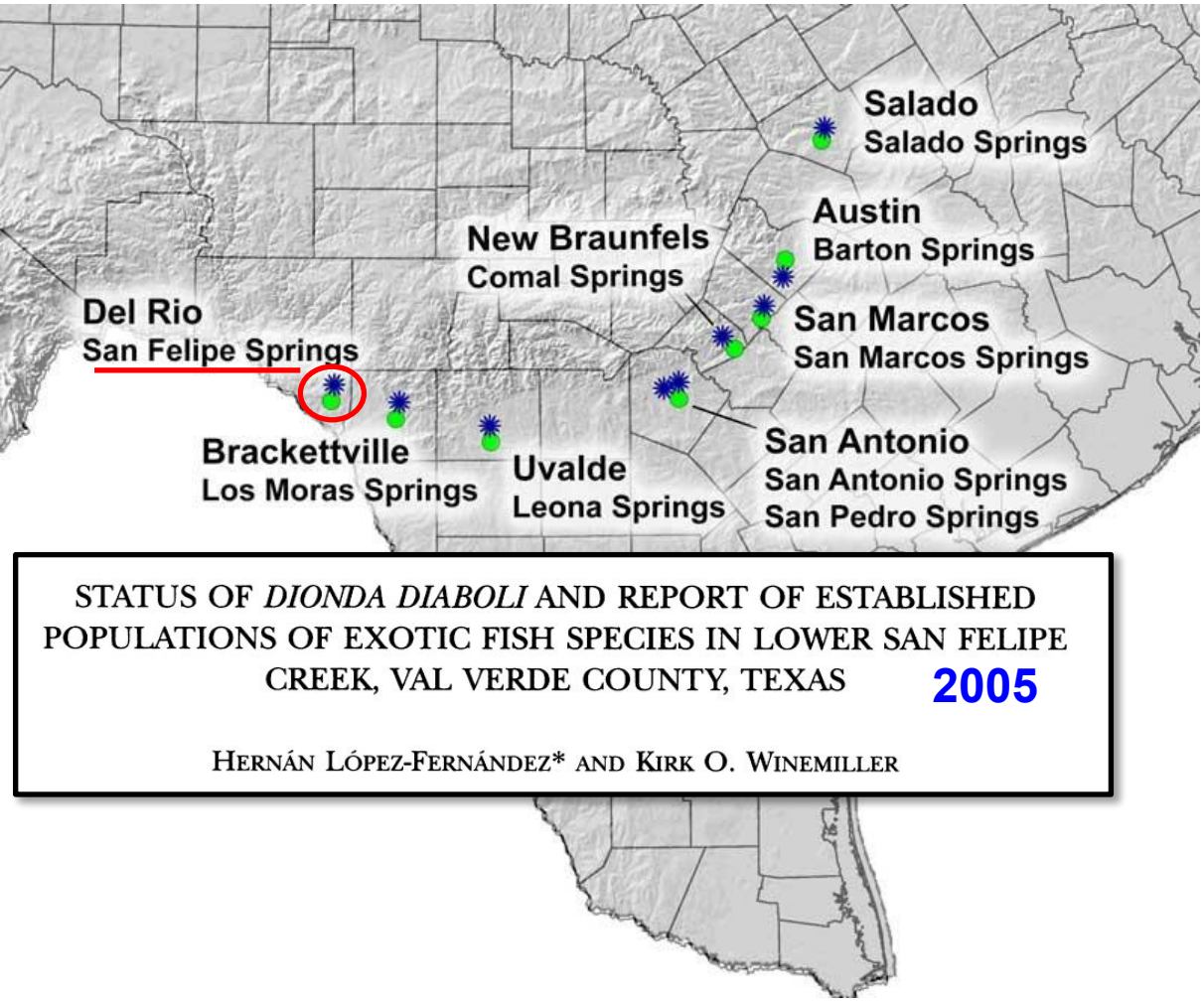

STATUS OF *DIONDA DIABOLI* AND REPORT OF ESTABLISHED POPULATIONS OF EXOTIC FISH SPECIES IN LOWER SAN FELIPE CREEK, VAL VERDE COUNTY, TEXAS **2005**

HERNÁN LÓPEZ-FERNÁNDEZ* AND KIRK O. WINEMILLER

Sources: USFWS, TPWD, City of Del Rio

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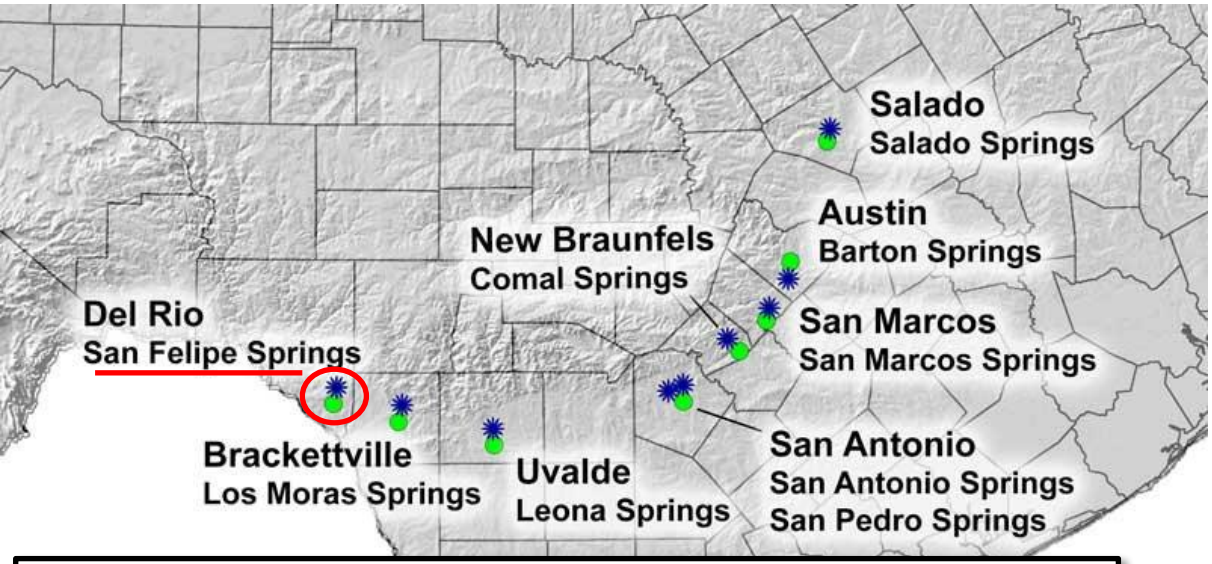

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FINAL TECHNICAL REPORT TO TEXAS PARKS AND WILDLIFE DEPARTMENT
CONTRACT CA-006080
OCTOBER 2025 **2025**

Project Title:
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Principal Investigators:
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Dr. Jennifer A. Smith - Caesar Kleberg Wildlife Research Institute, Texas A&M University–Kingsville, Kingsville, TX 78363, USA (jennifer.smith@tamuk.edu)

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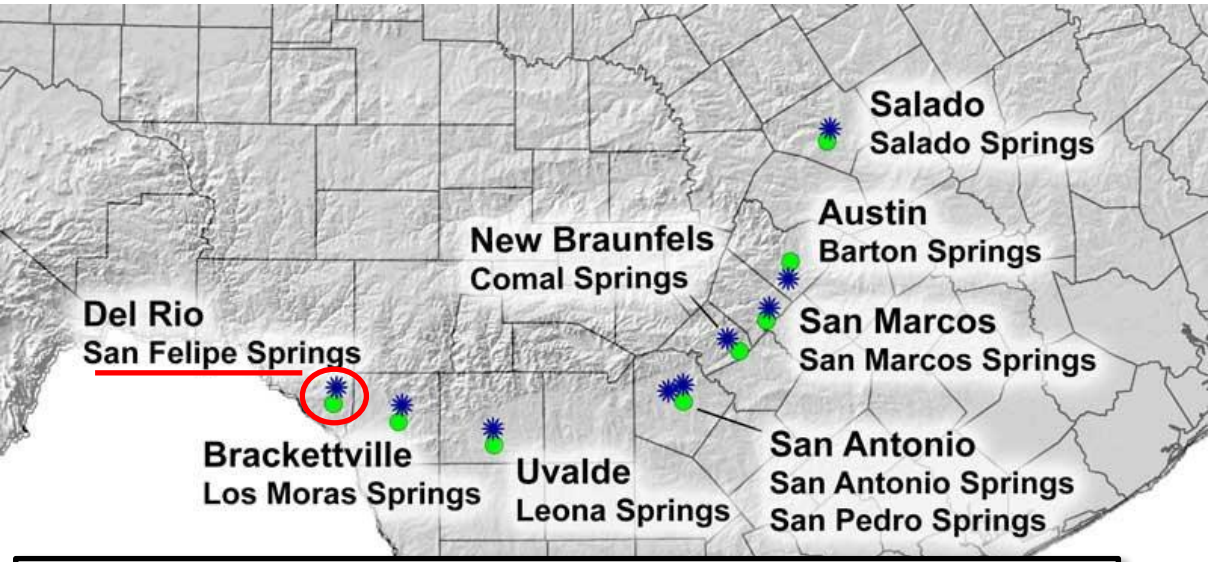

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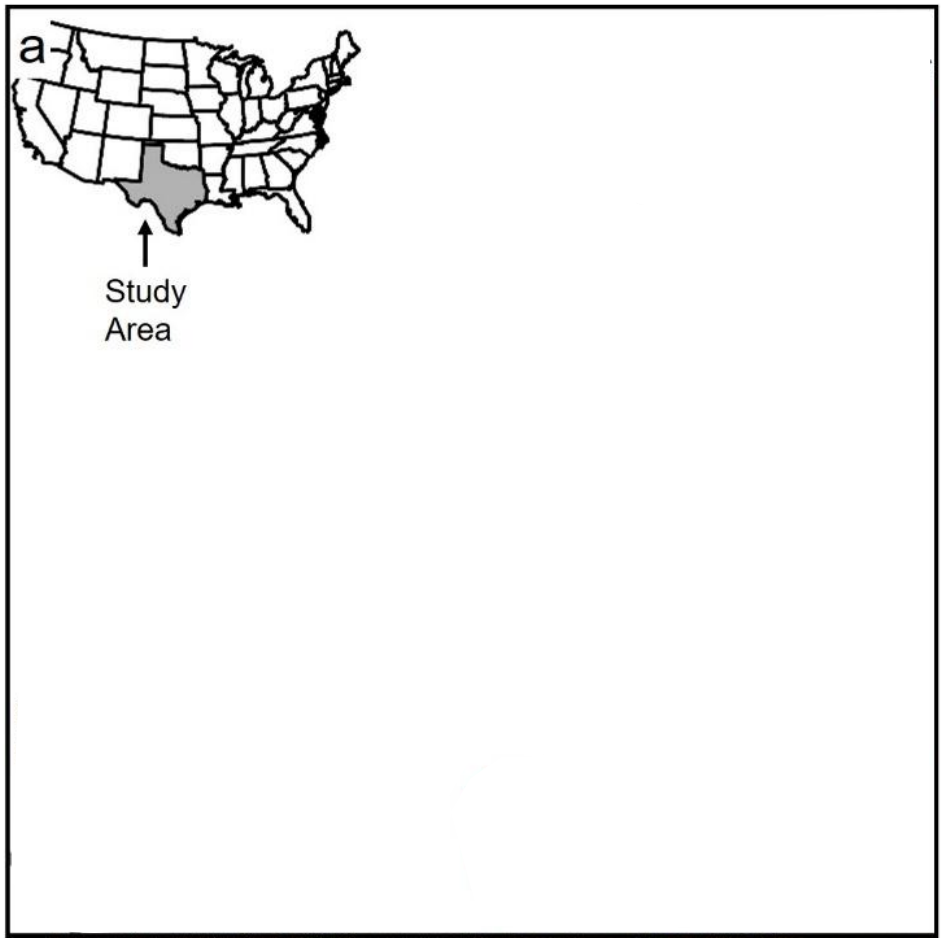

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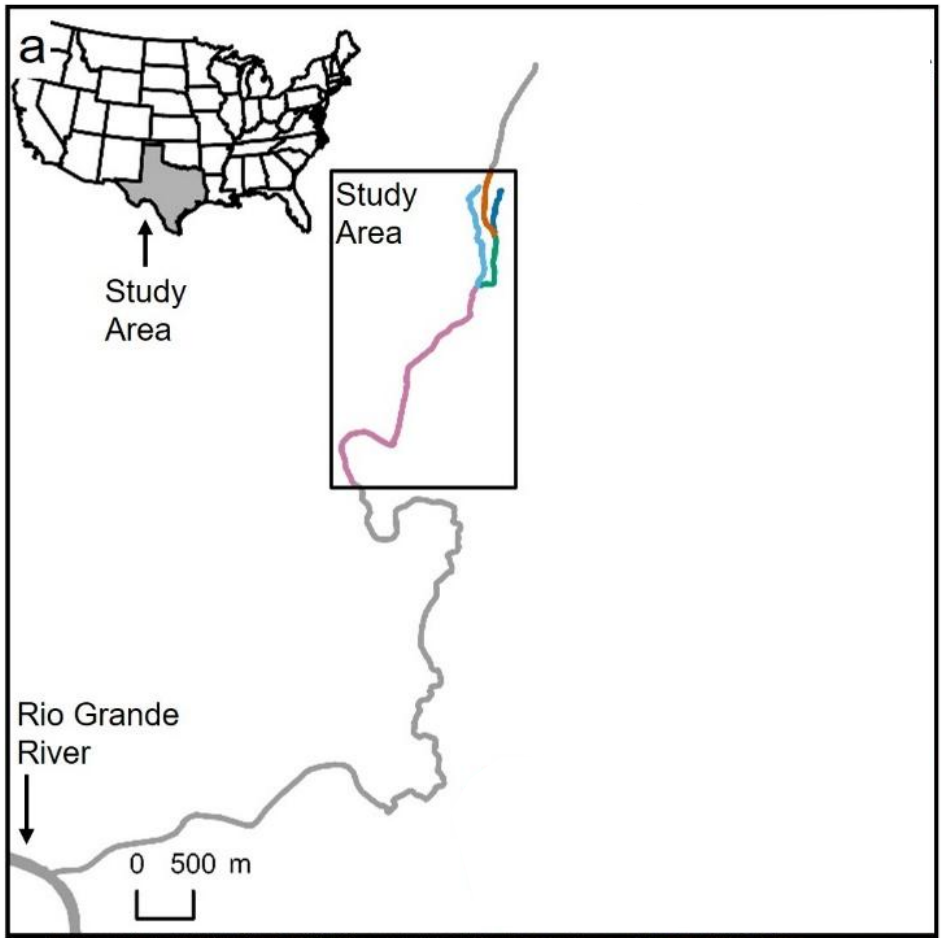

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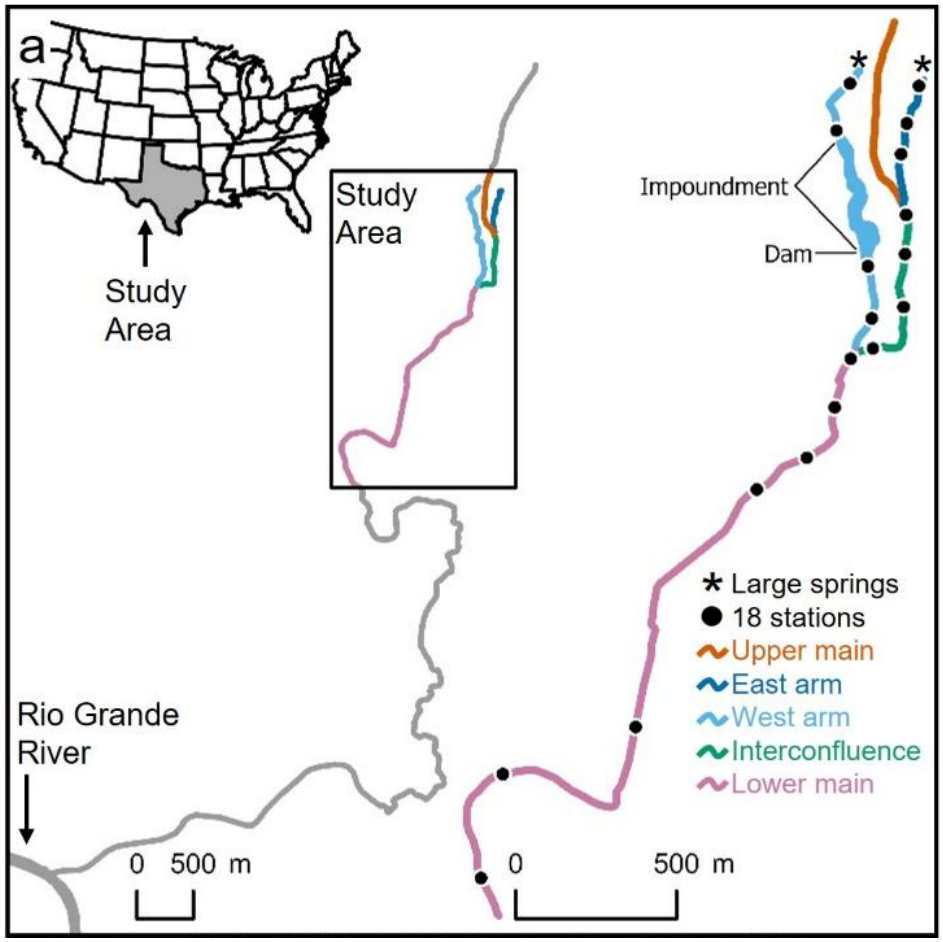

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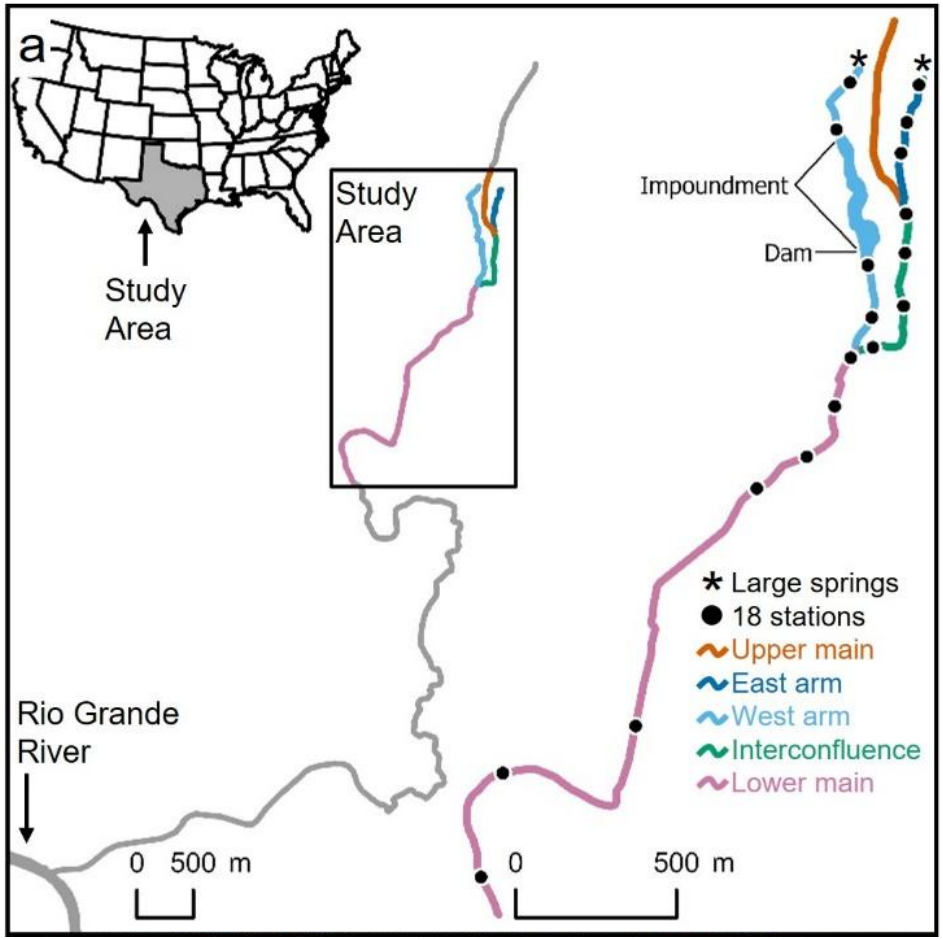

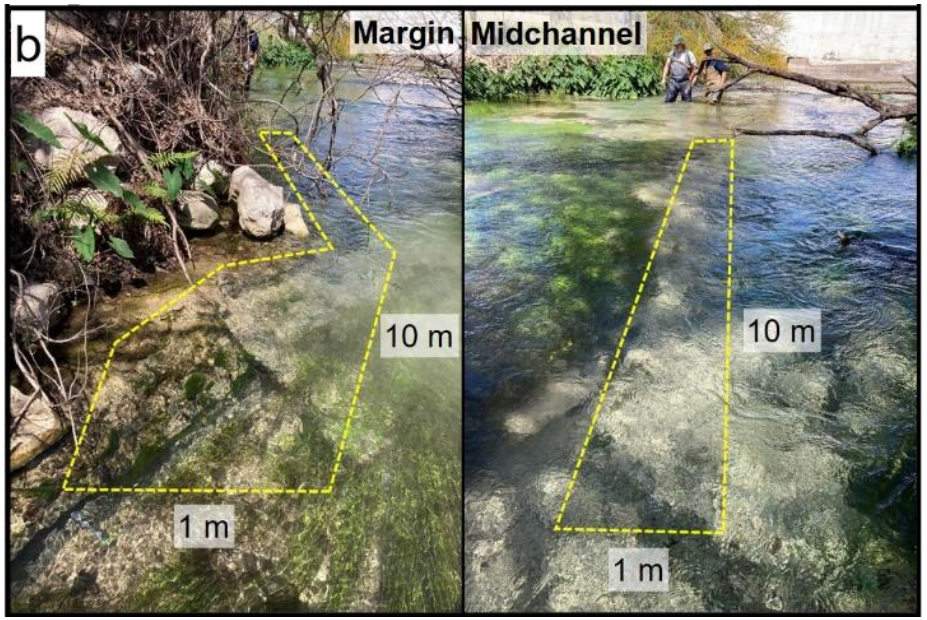

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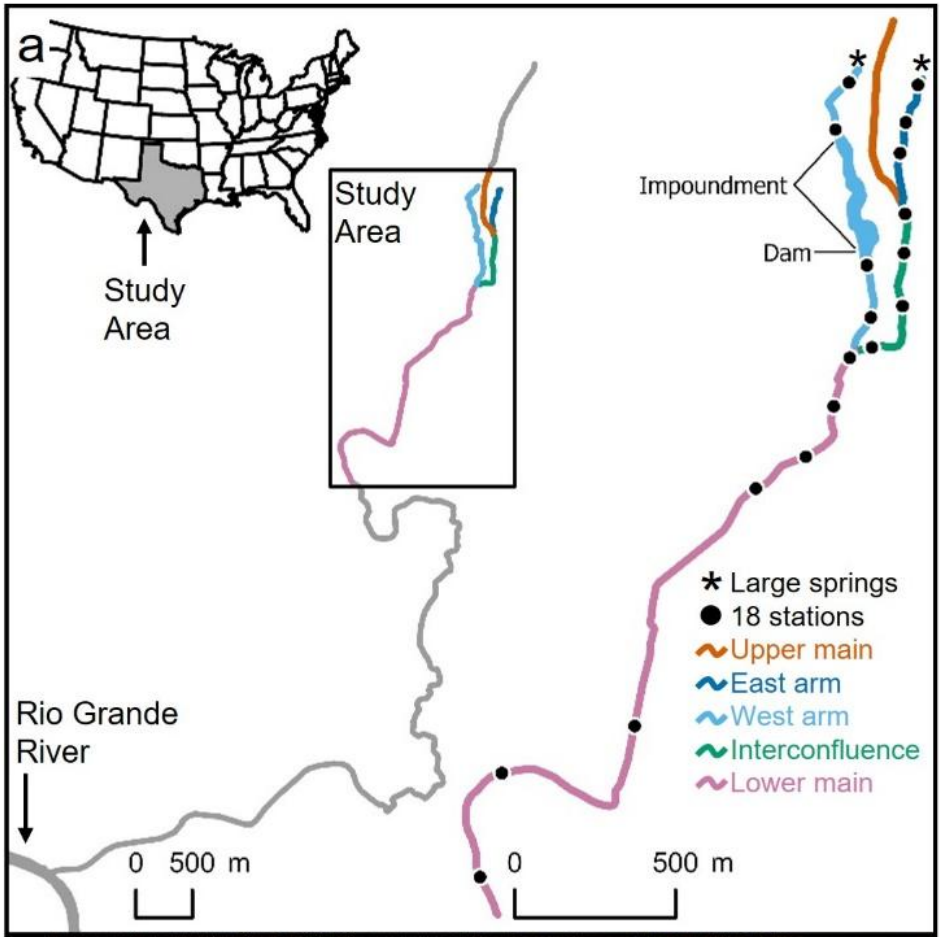

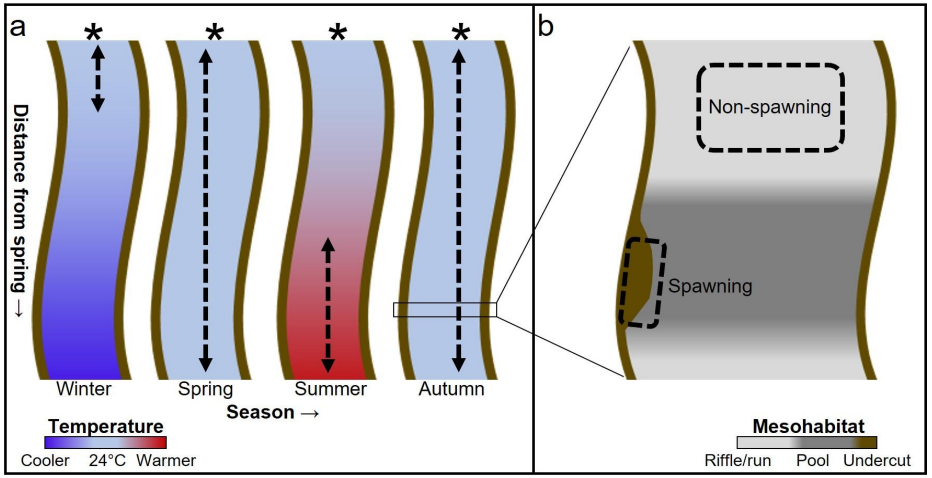

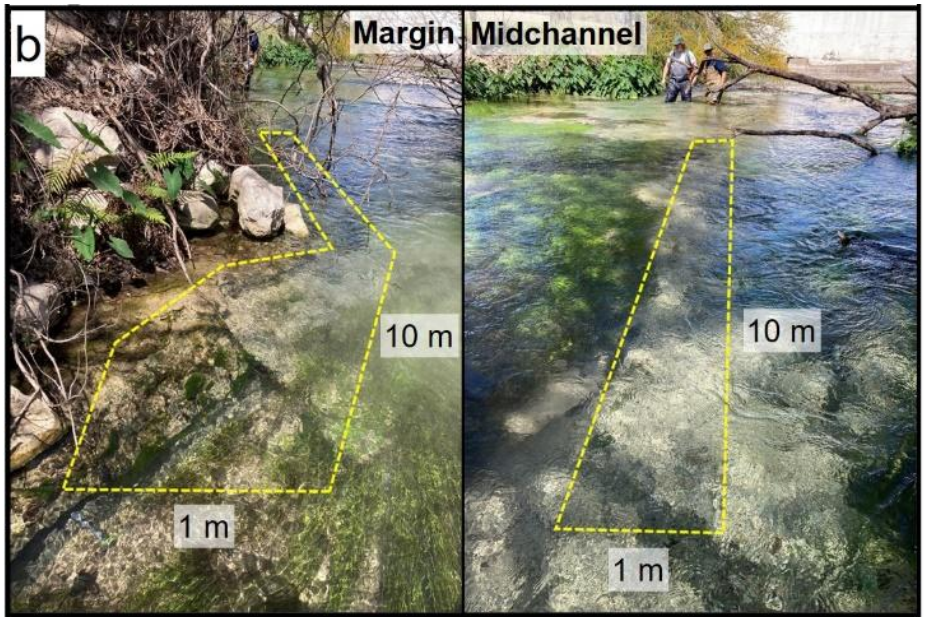

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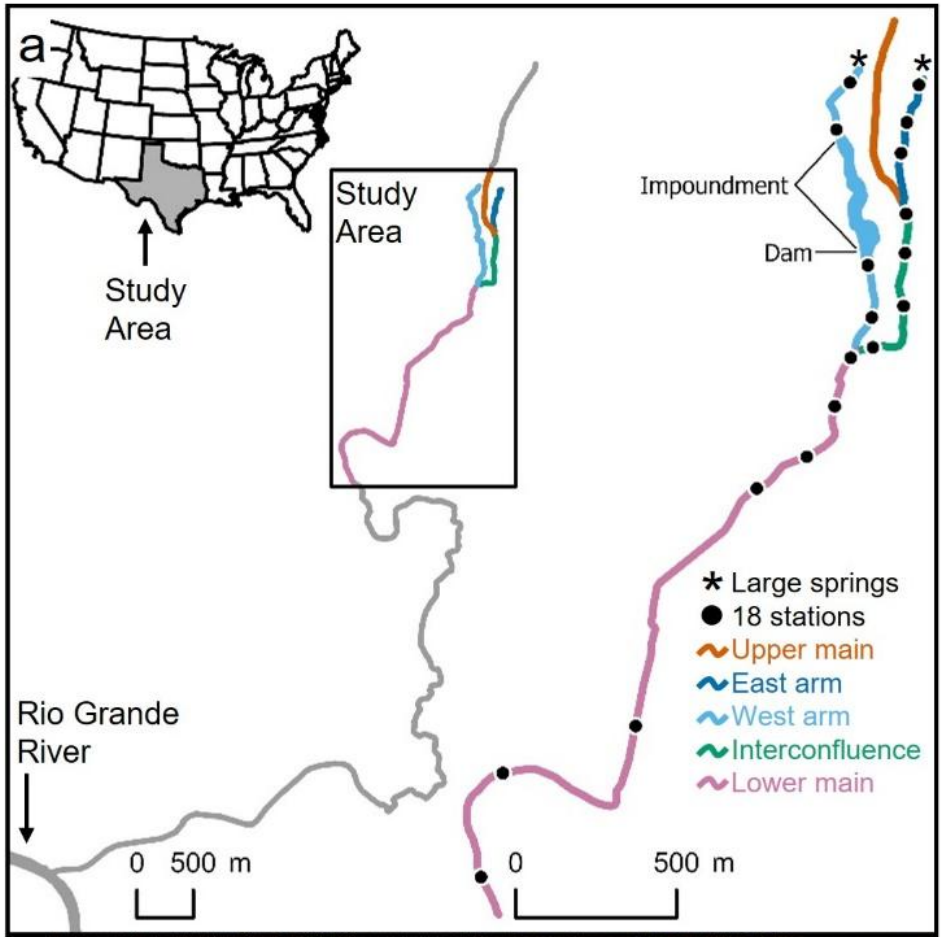
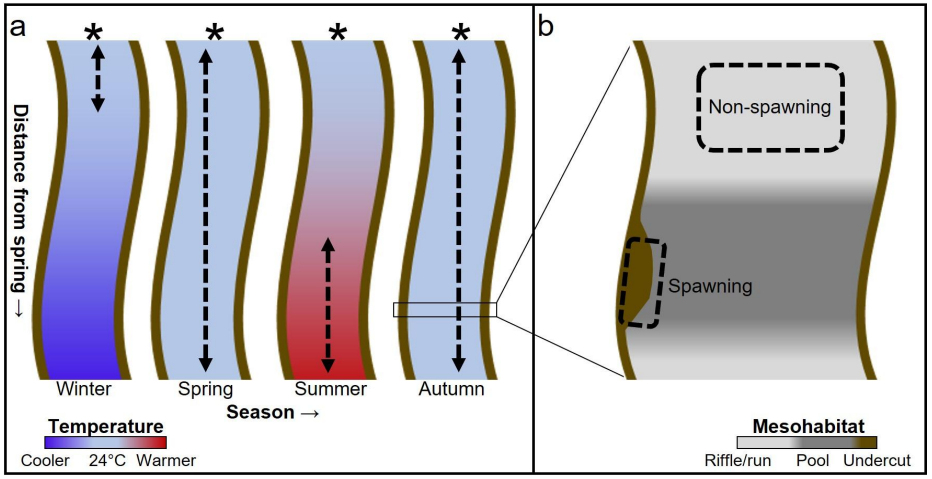
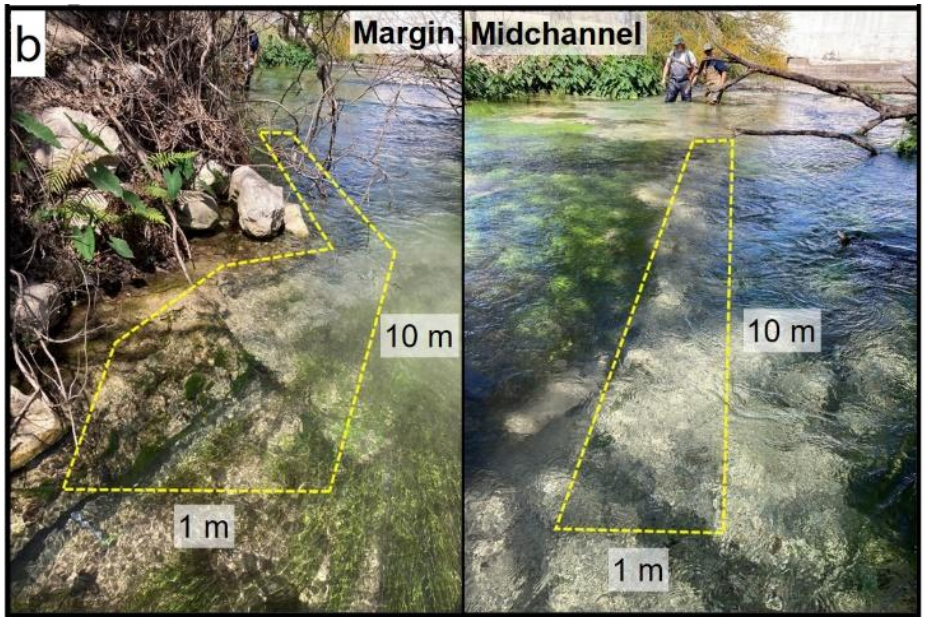
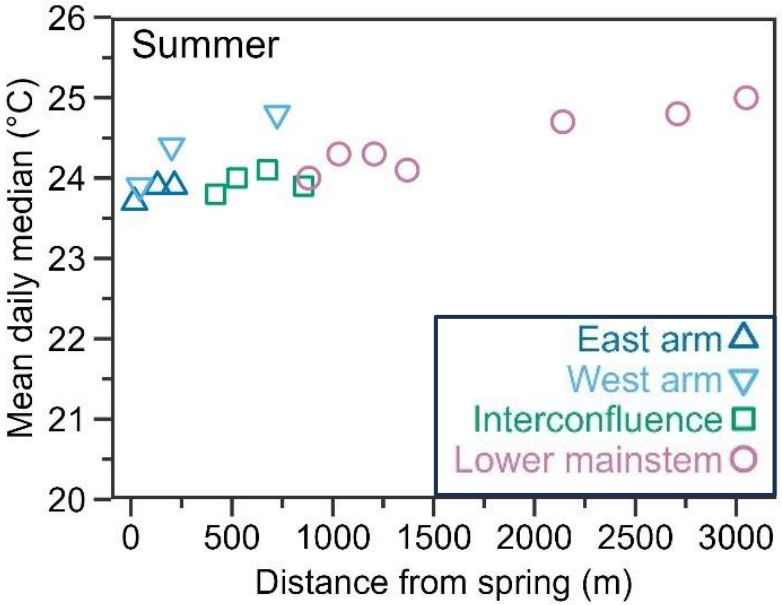






San Felipe Creek – Thermal regimes



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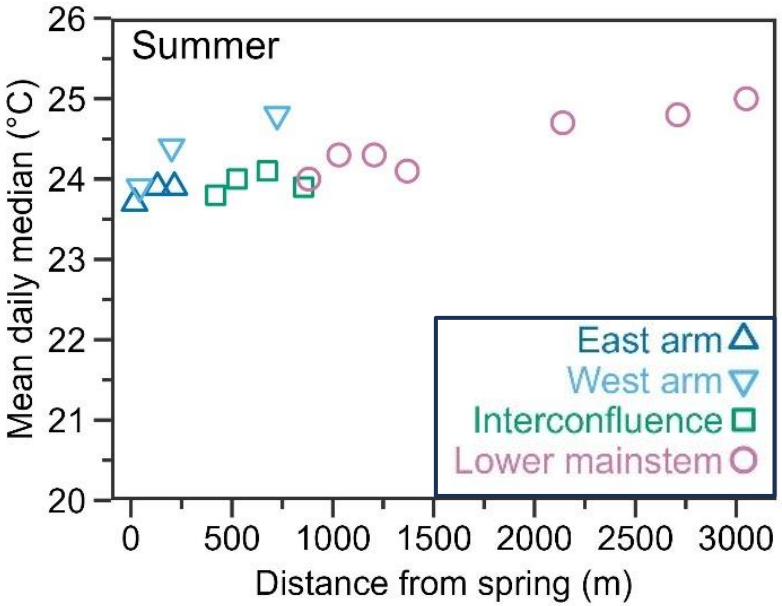

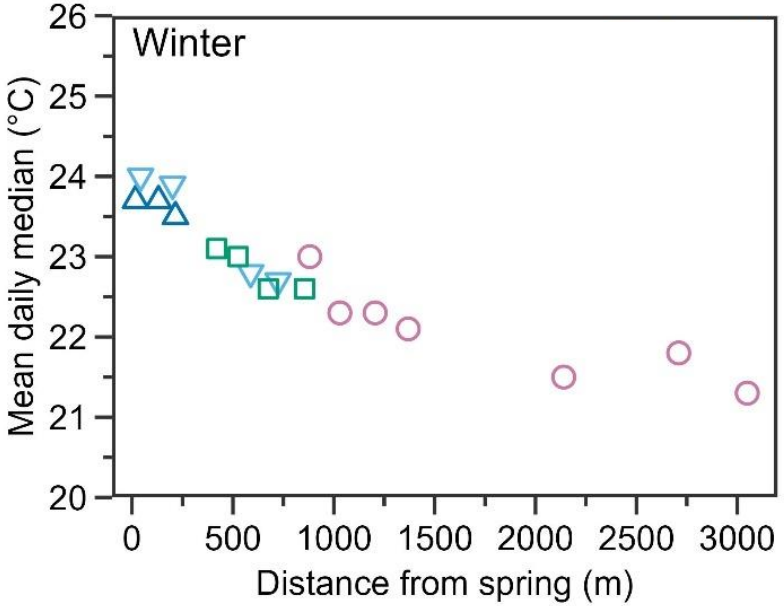

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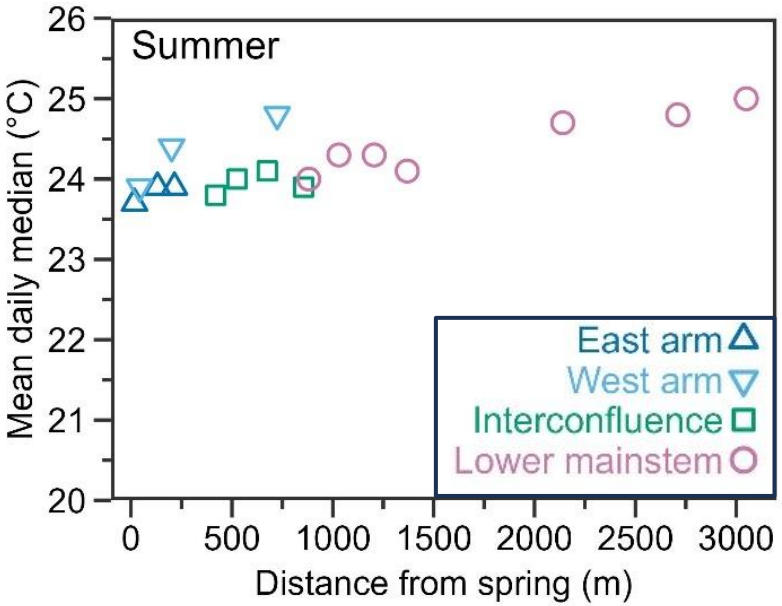

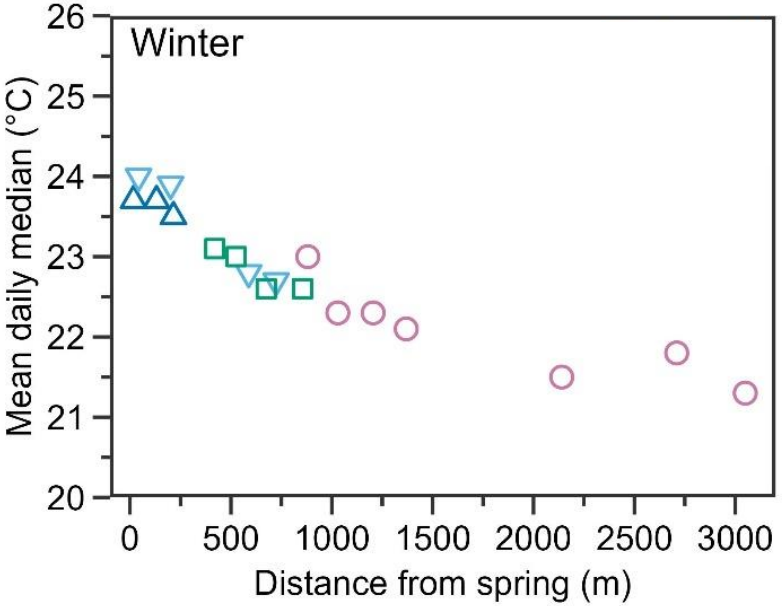

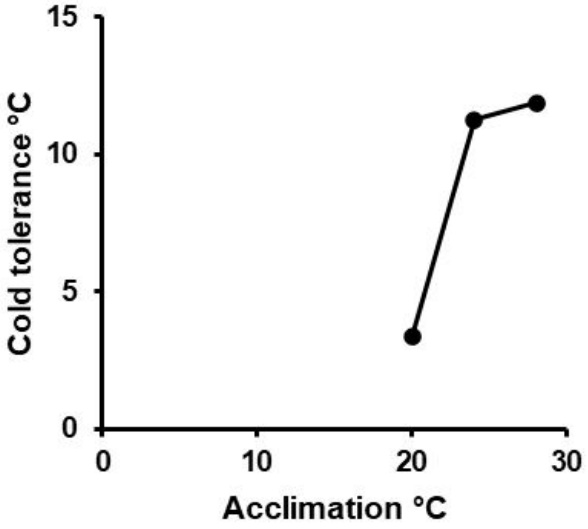

Yanar et al. (2019) *Aquaculture*

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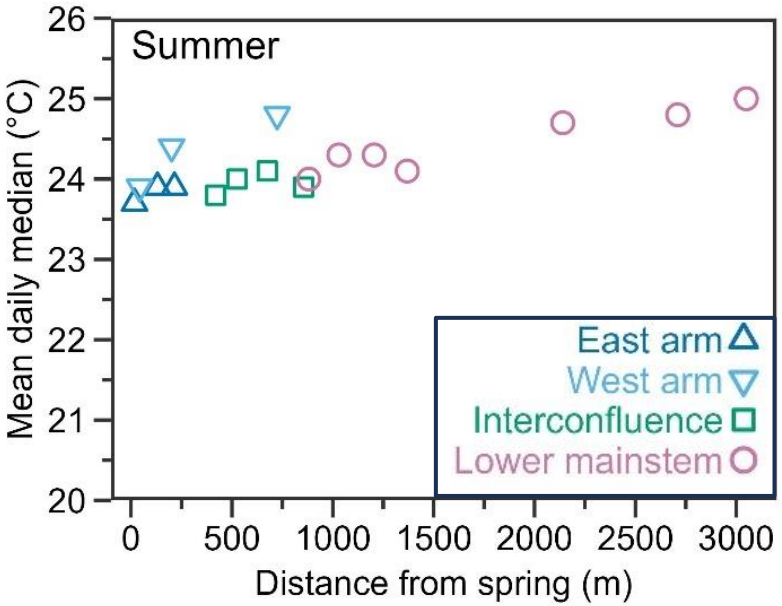

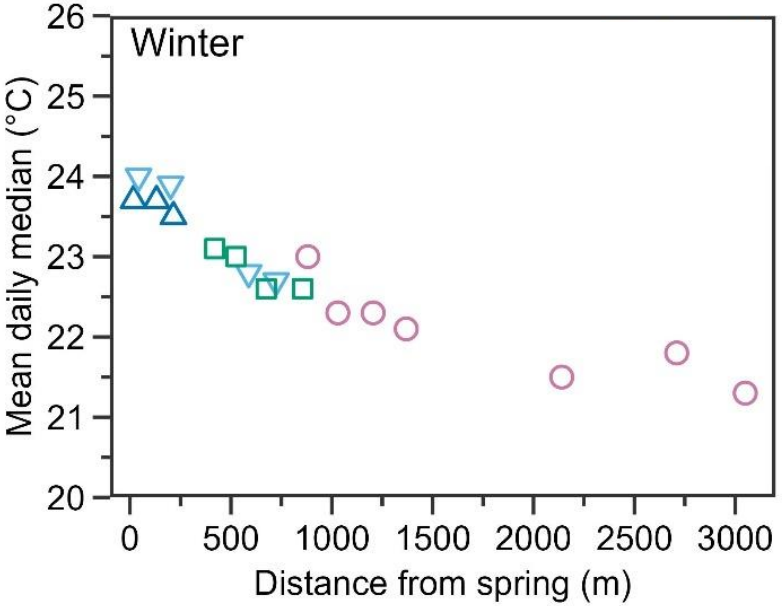

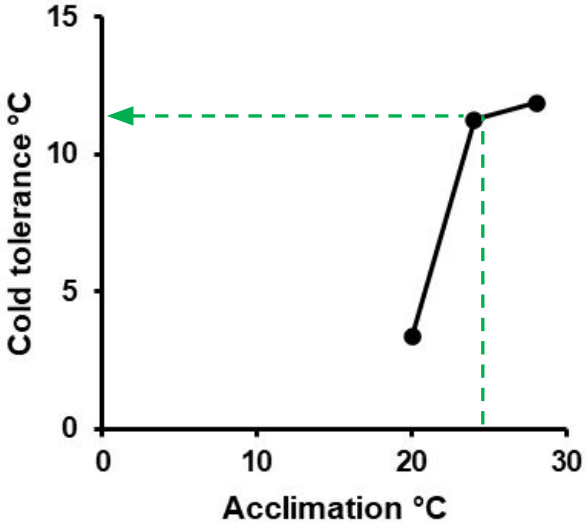

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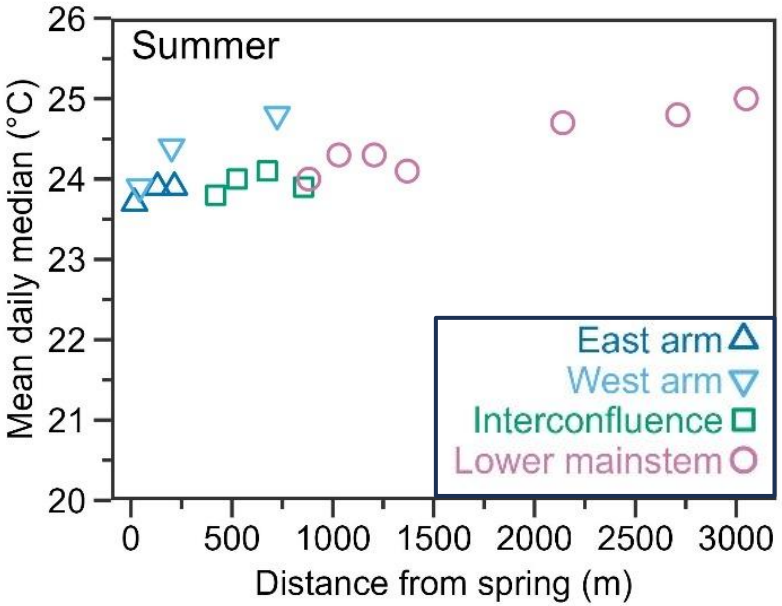

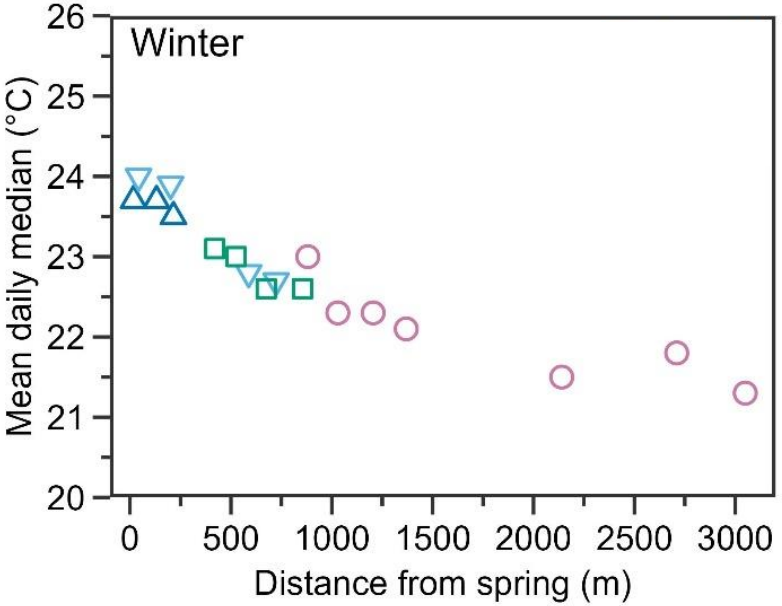

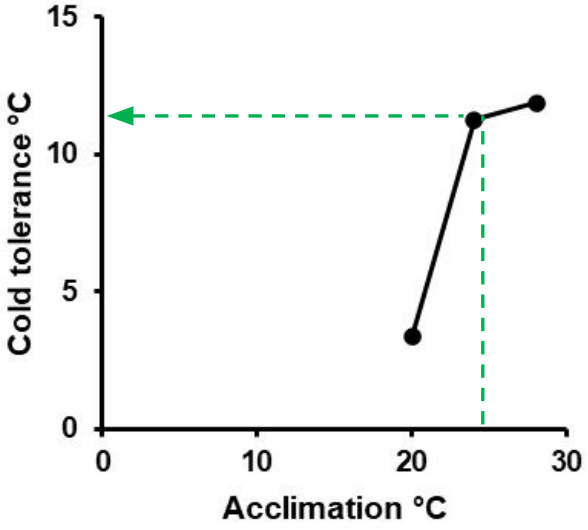

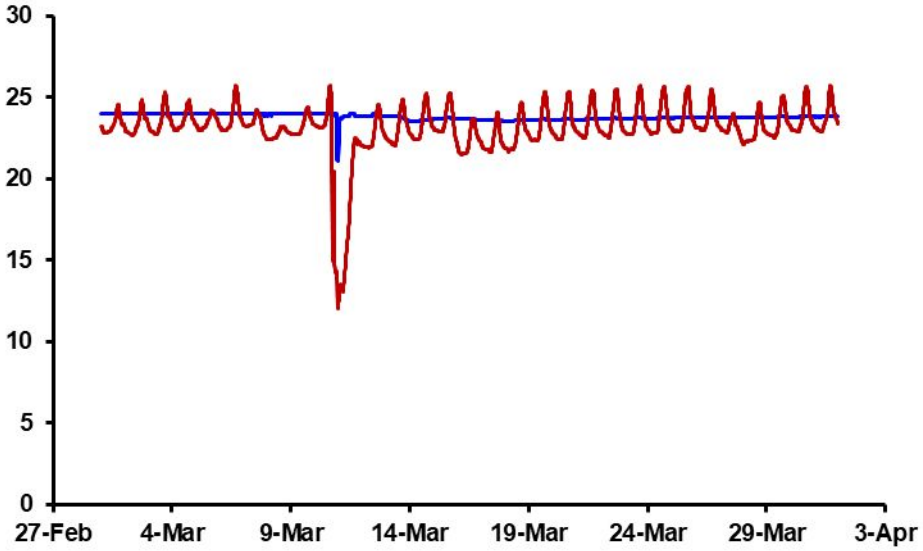

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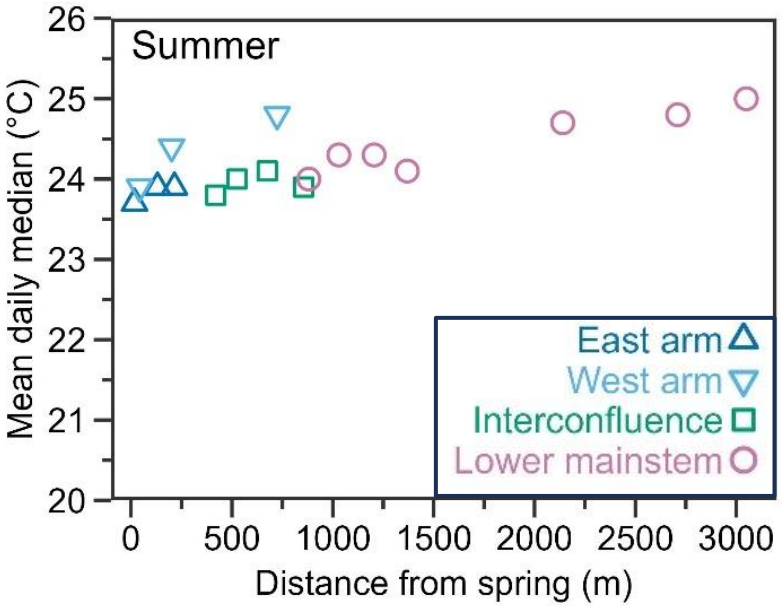

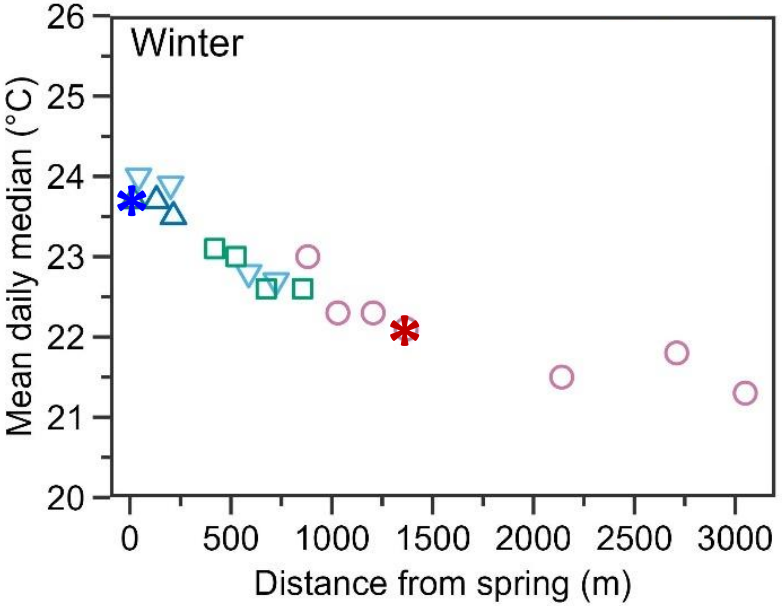

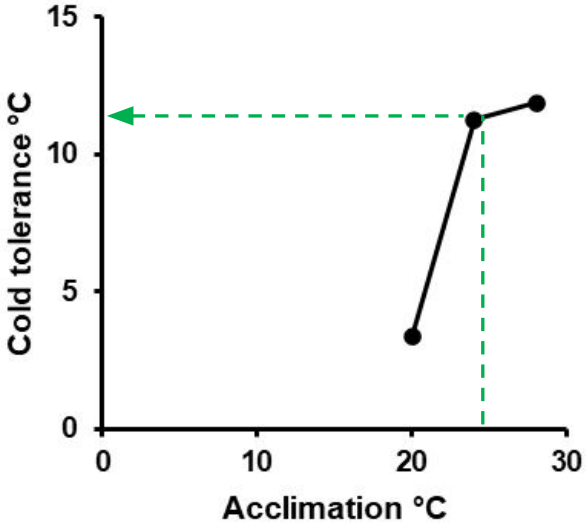

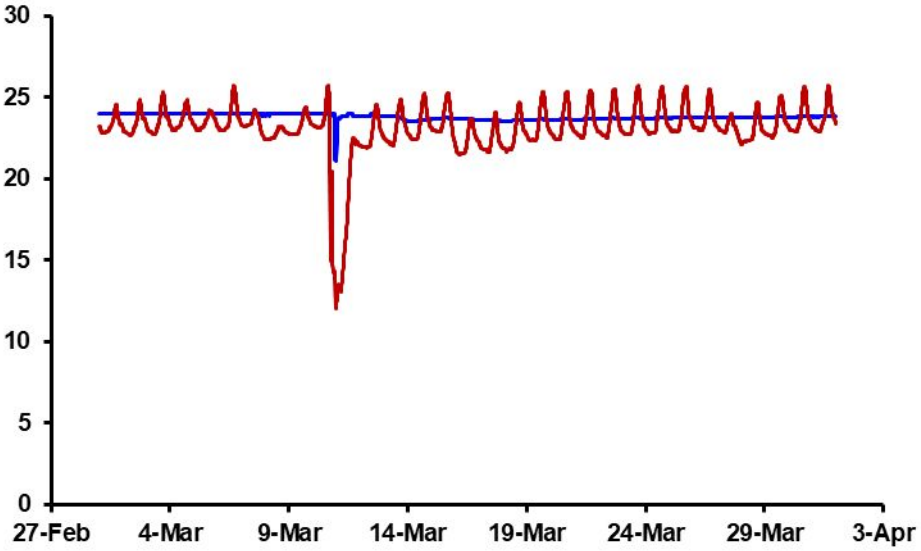

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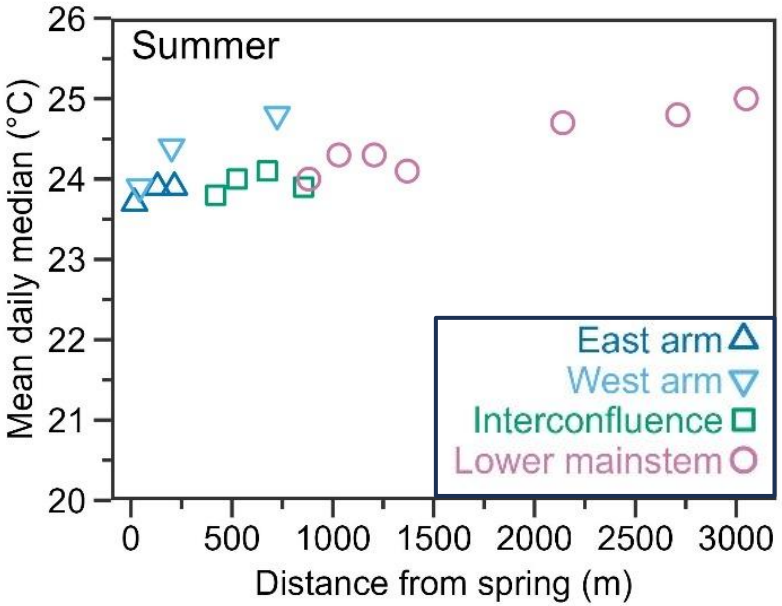

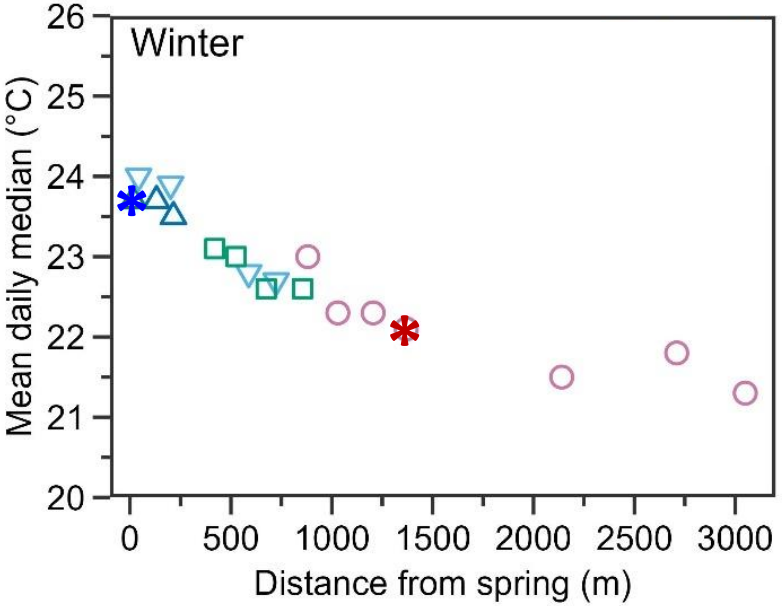

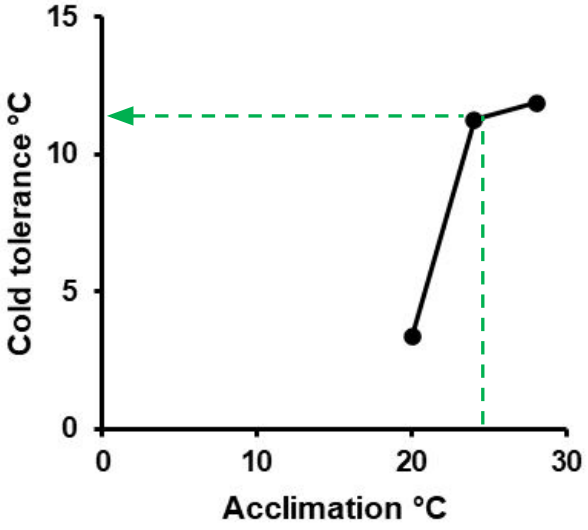

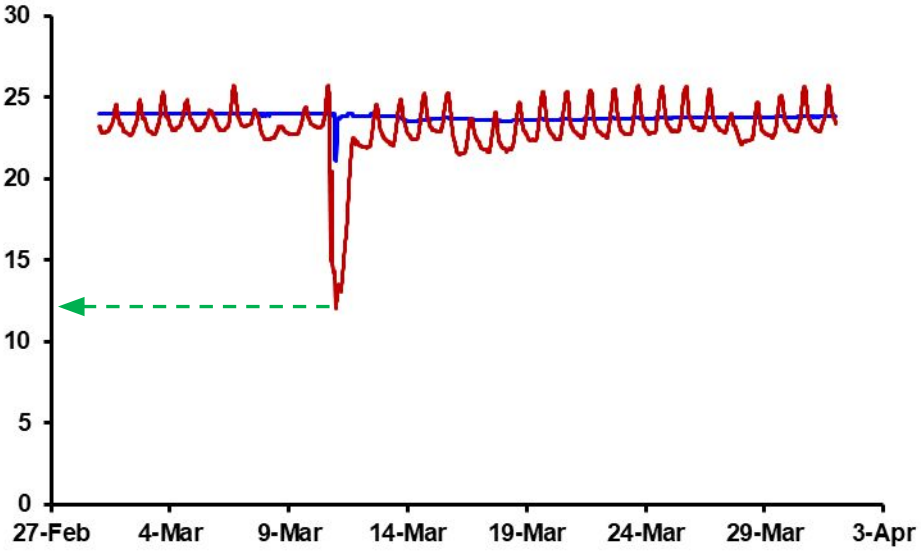

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36 transects
8 passes
4 seasons in 2024
1,152 snorkel surveys

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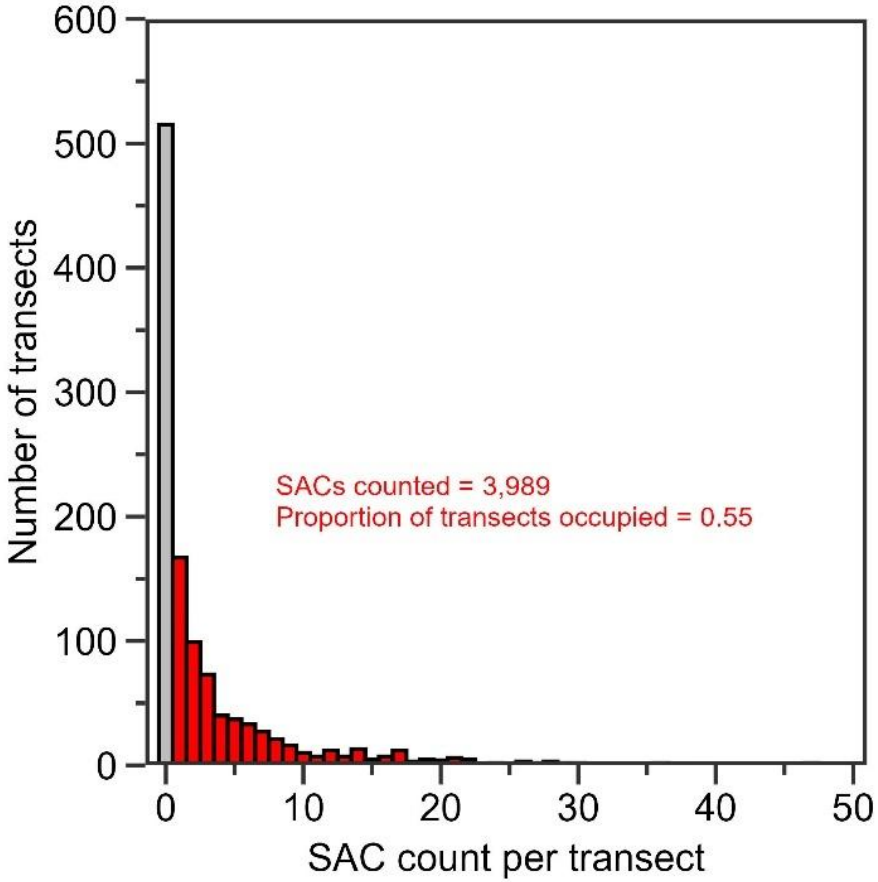

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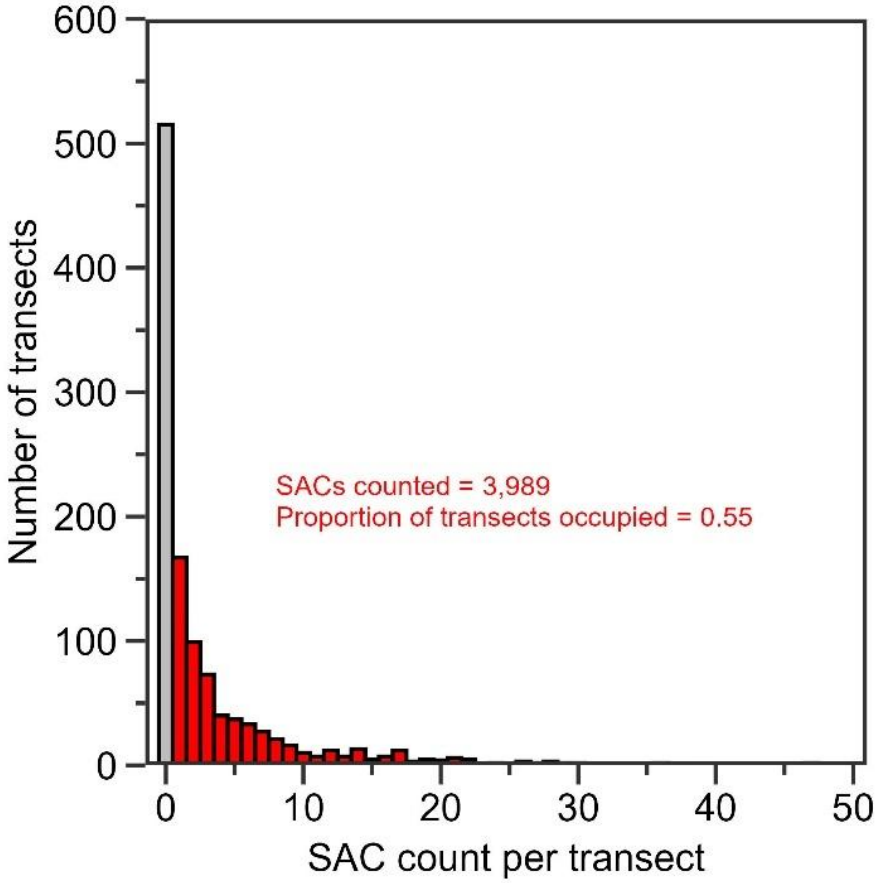

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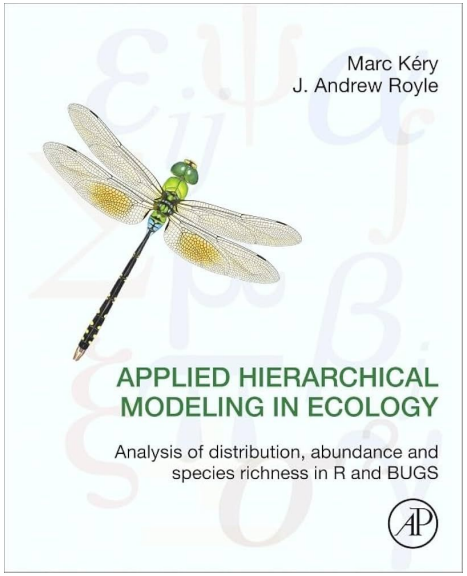
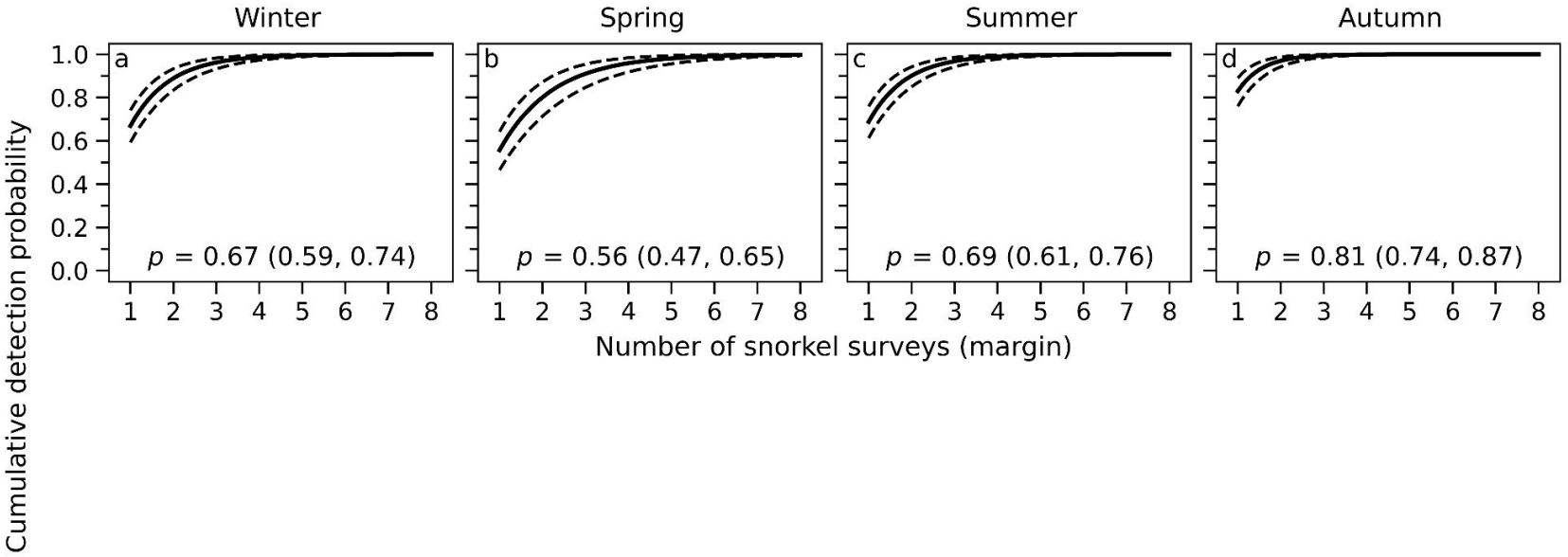
Hierarchical modeling
- Detection
- Occupancy
- Abundance



San Felipe Creek – *Hypostomus* population



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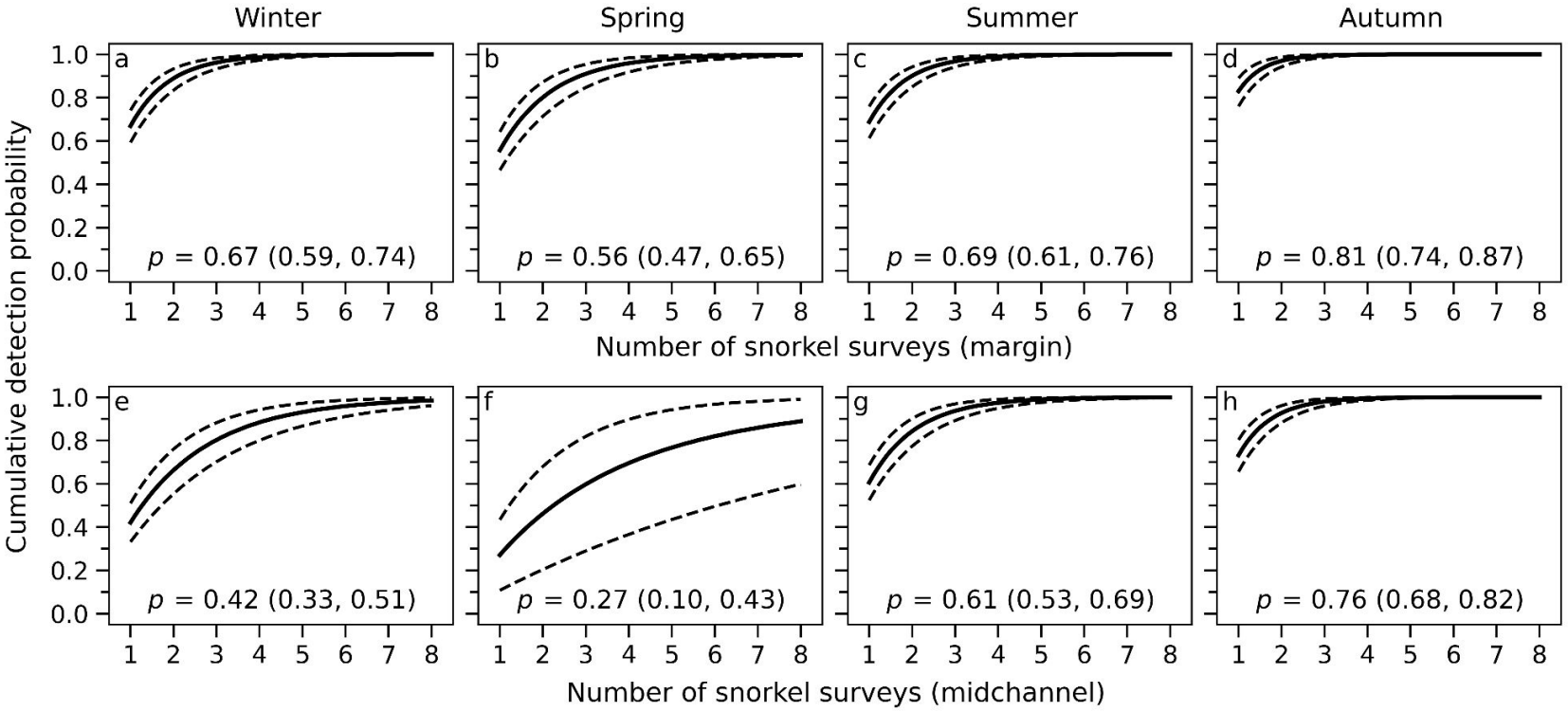

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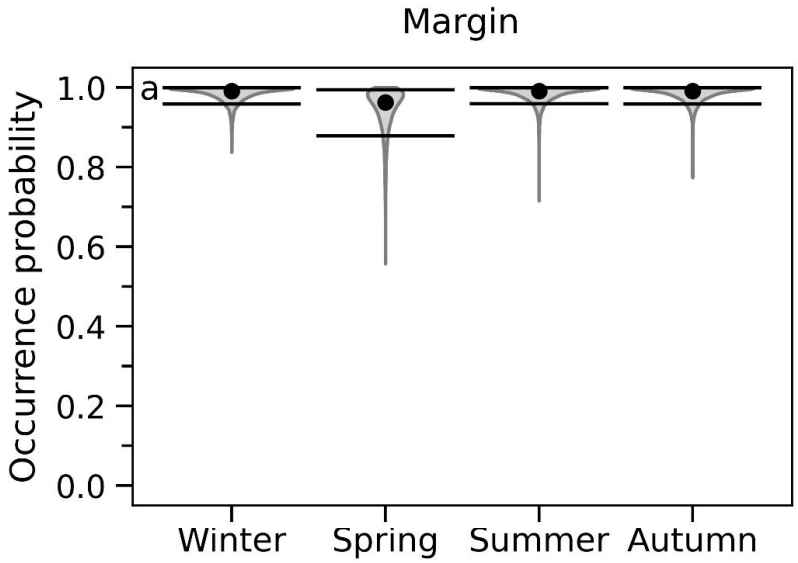
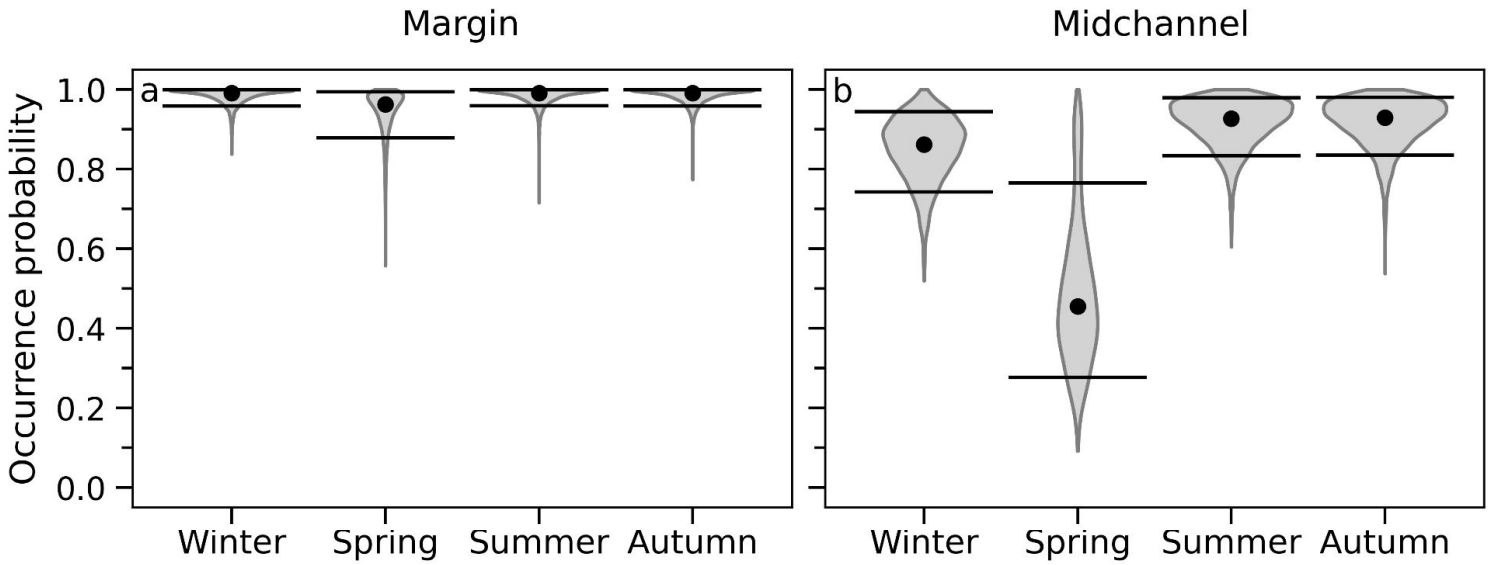


San Felipe Creek – *Hypostomus* population



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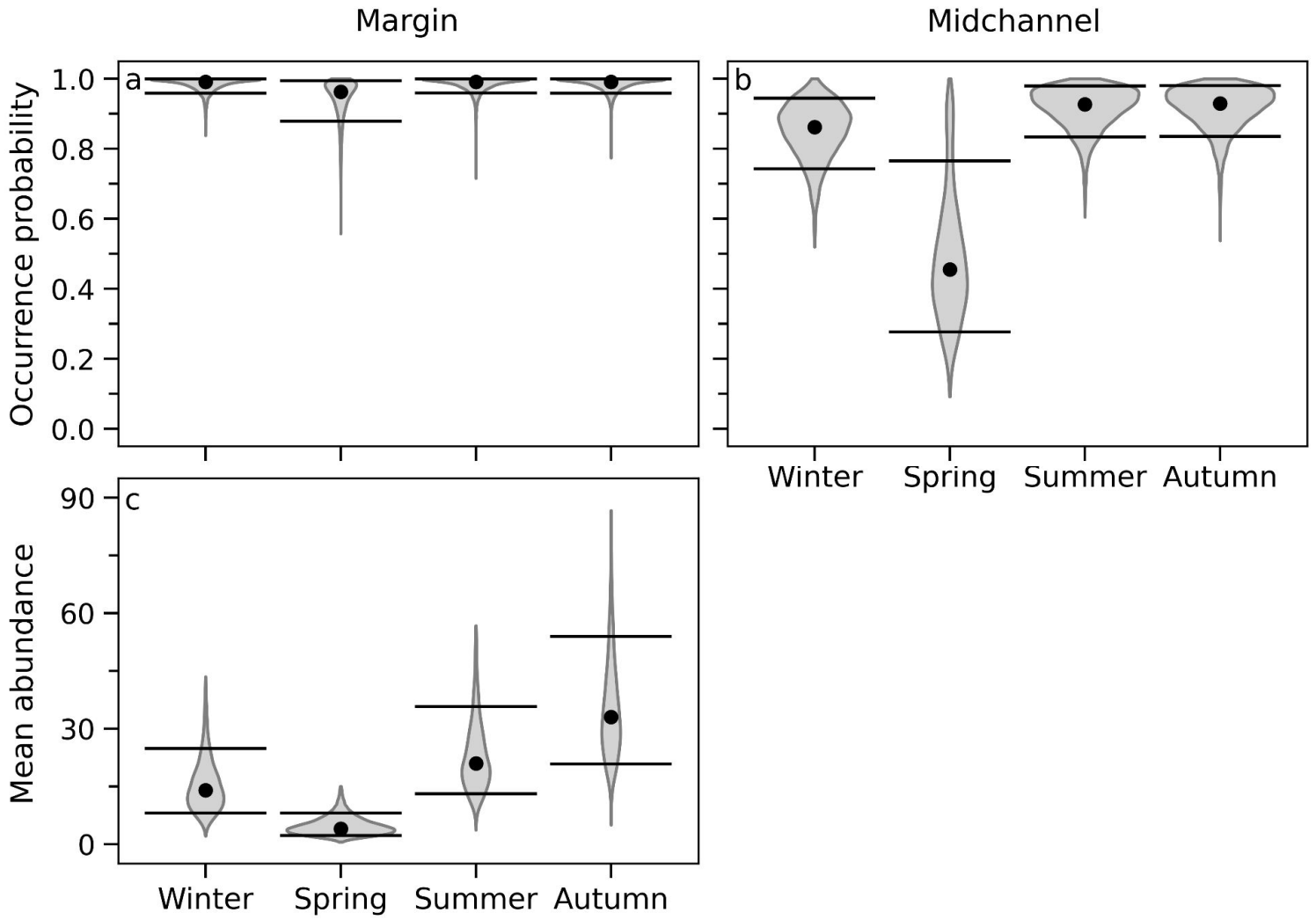

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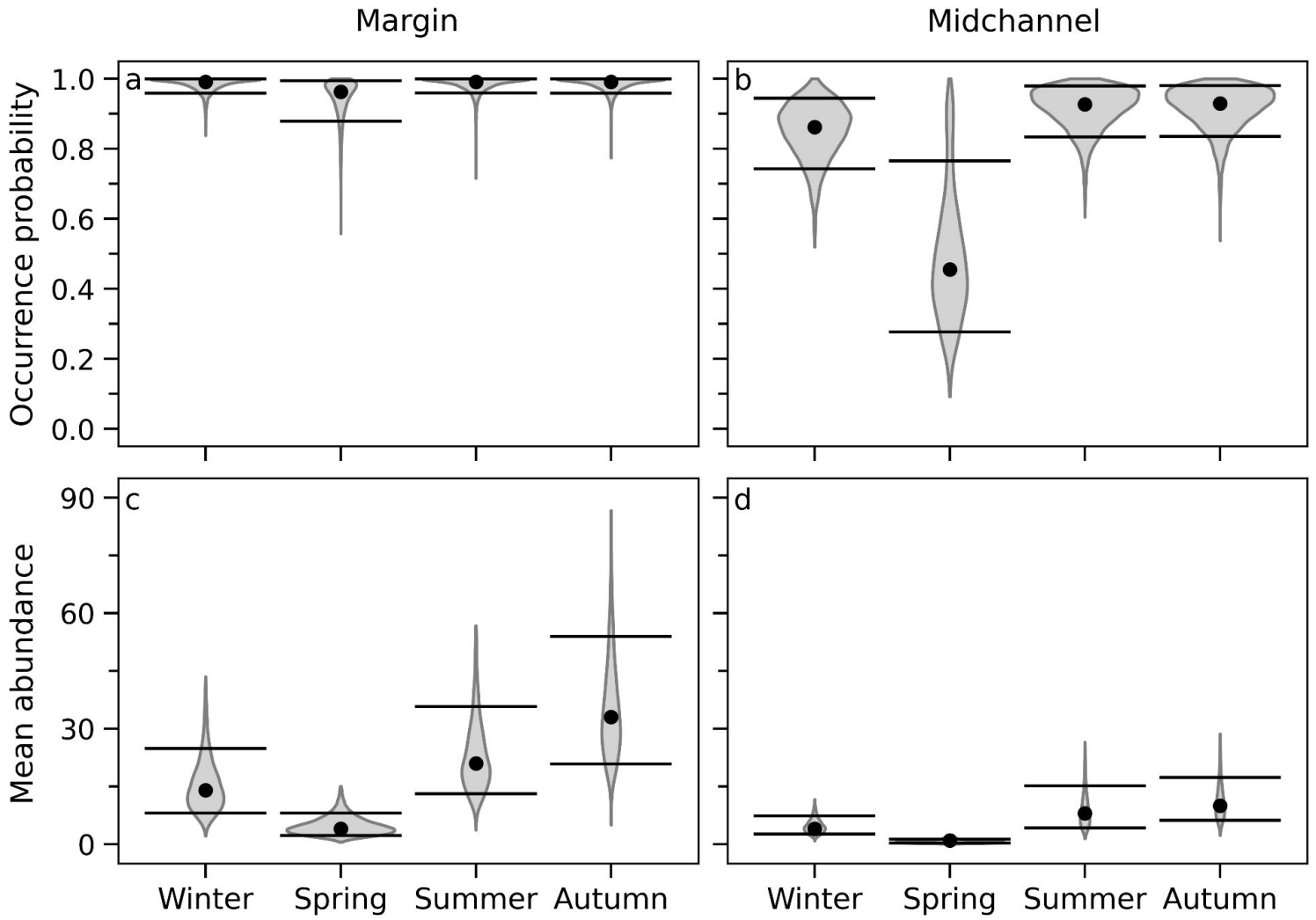
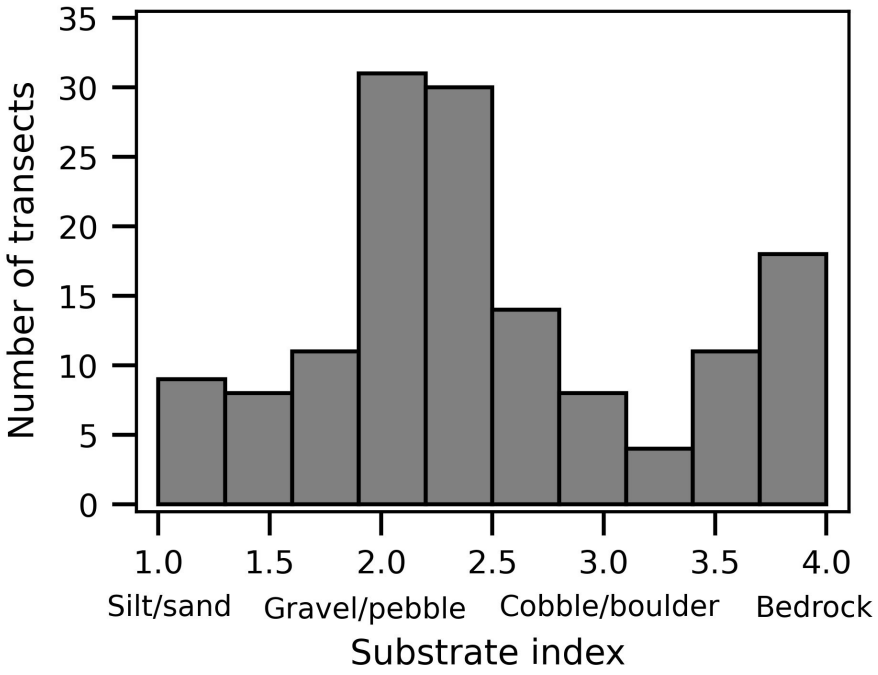


San Felipe Creek – *Hypostomus* habitat



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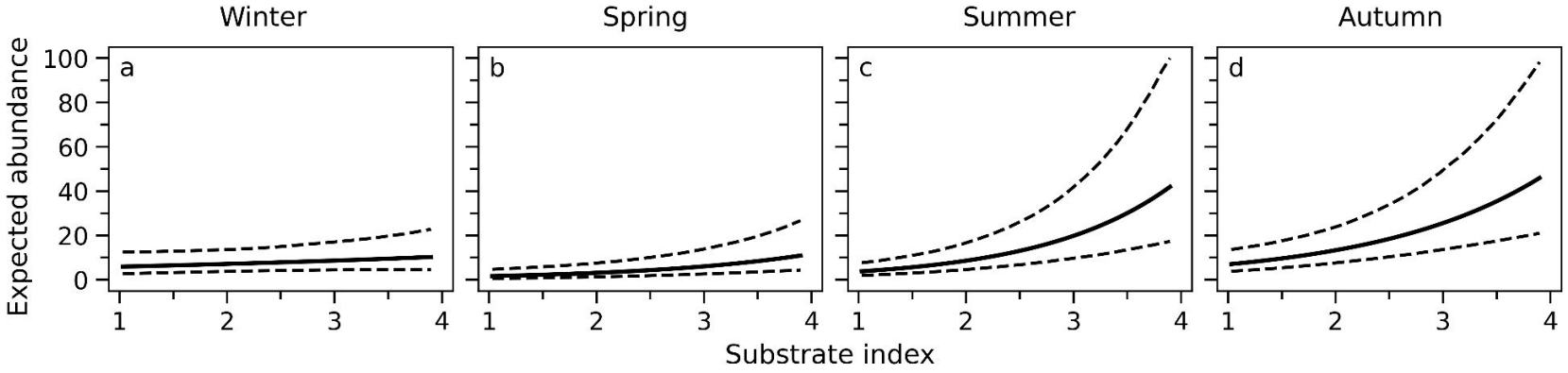

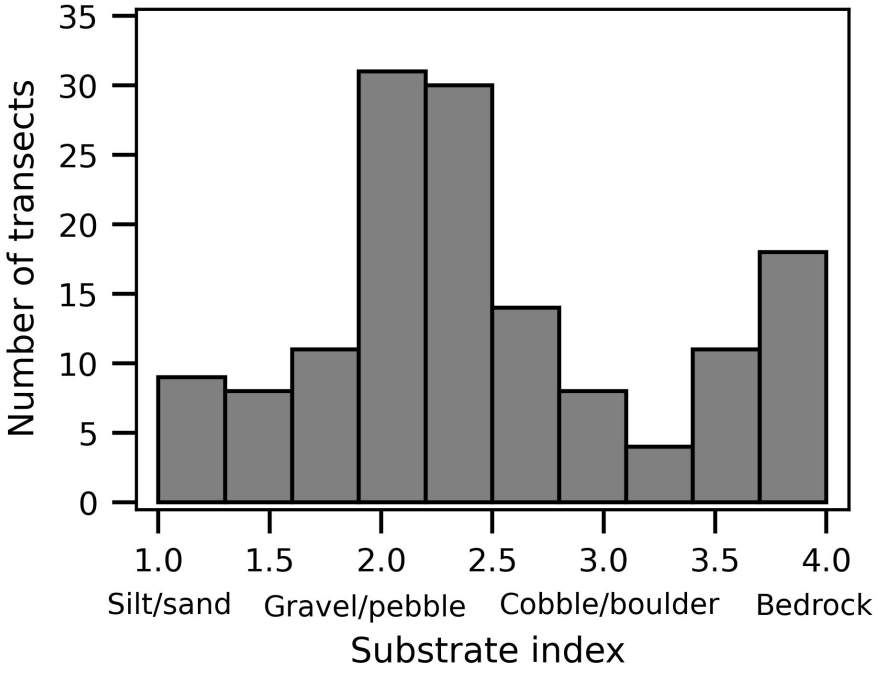

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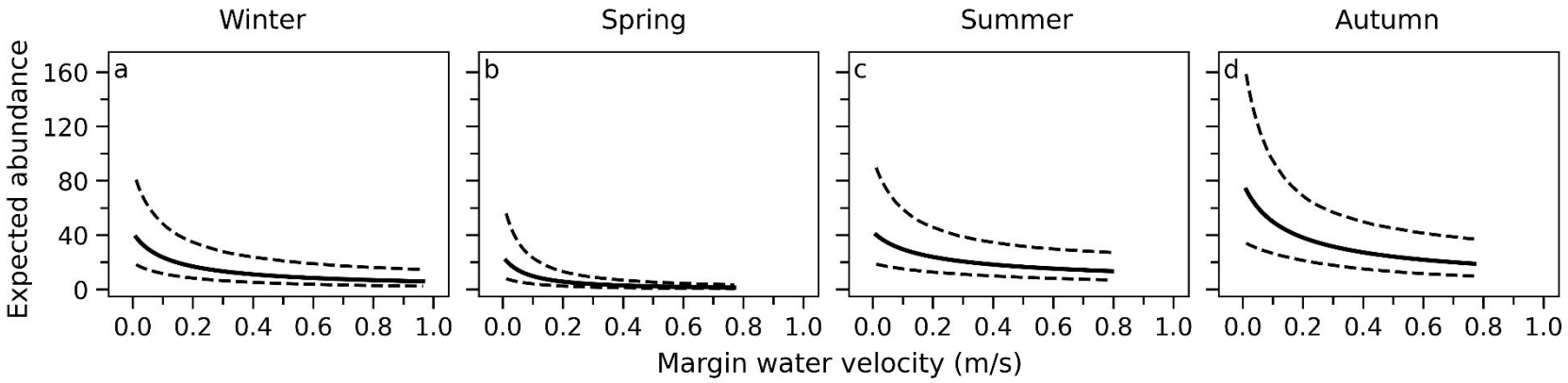

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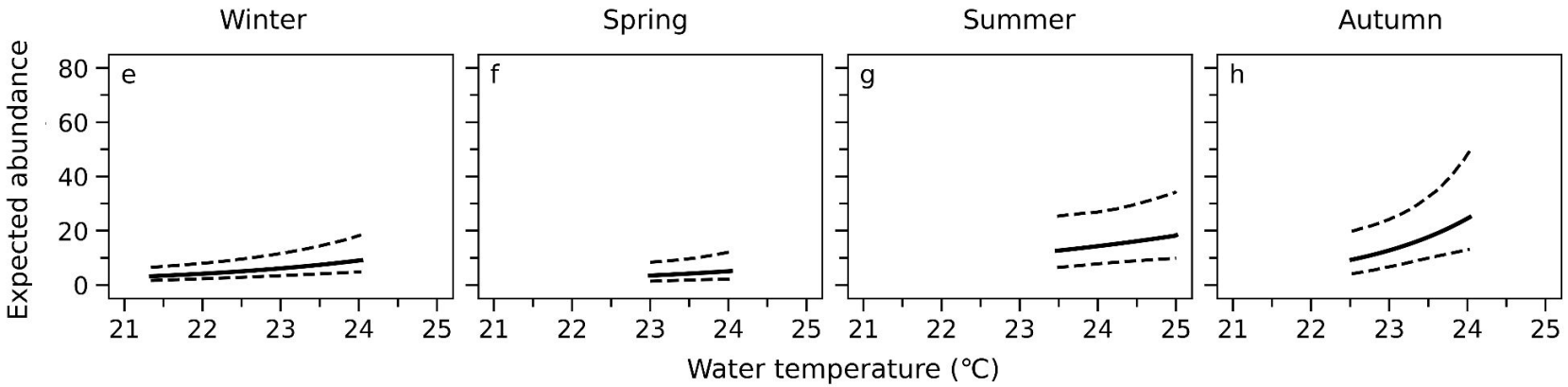
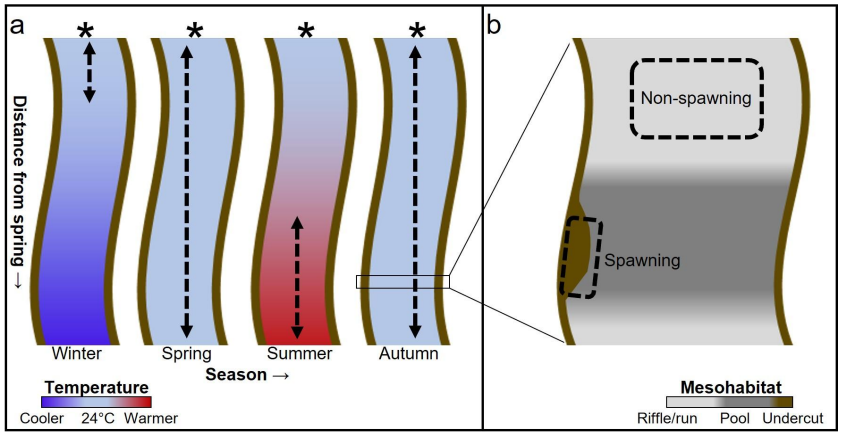


Management implications

1. **Weak evidence of thermal refuge use**
2. **Stronger microhabitat associations**
3. **Low abundance in spring season**



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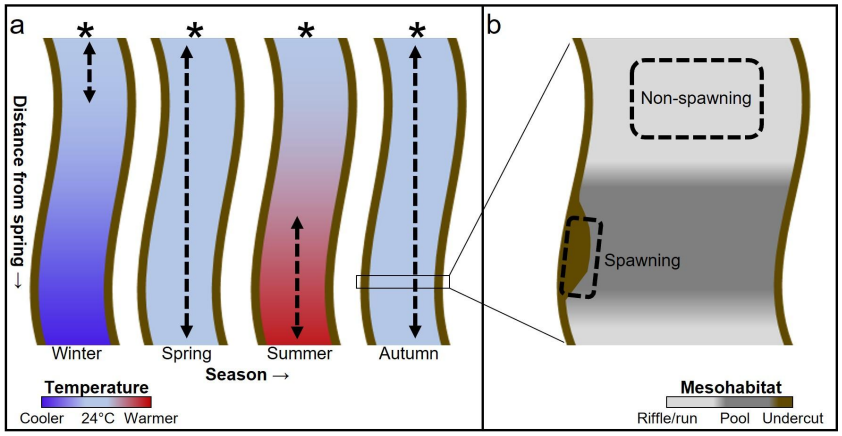

Ongoing, future work

1. Continued snorkel counts
2. Co-occurrence with natives
3. Quantify removal impacts
   - SAC abundance
   - Native abundance

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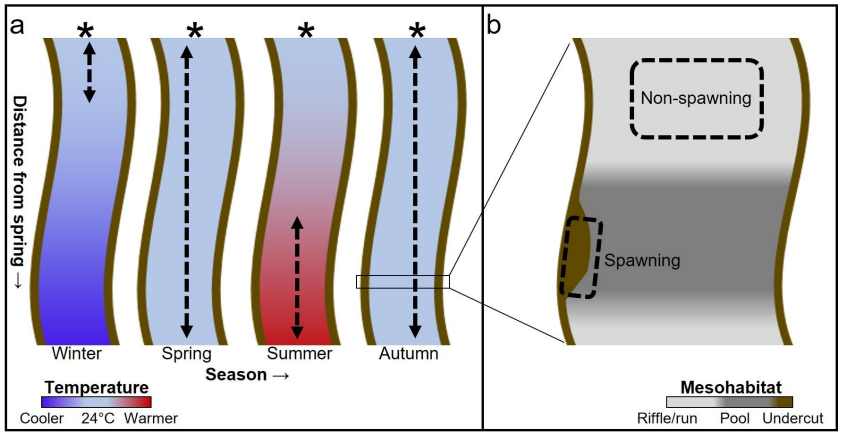

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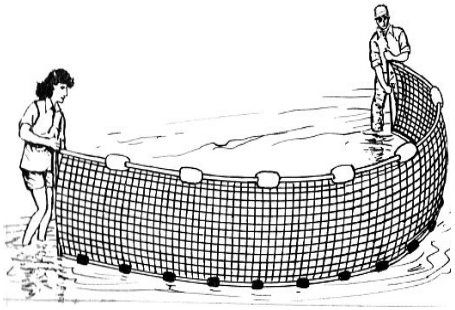

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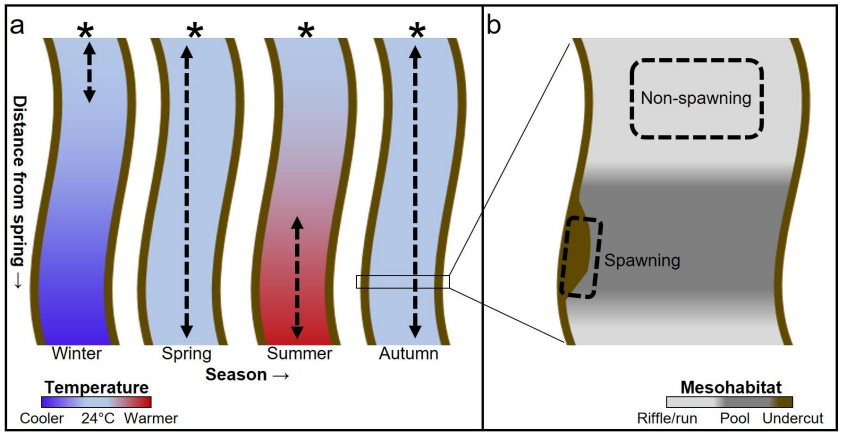

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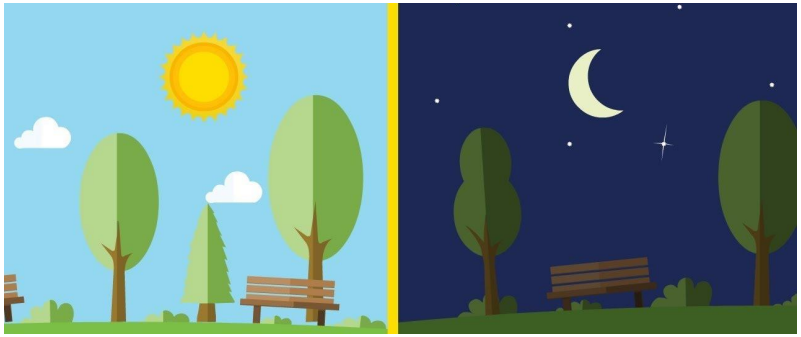

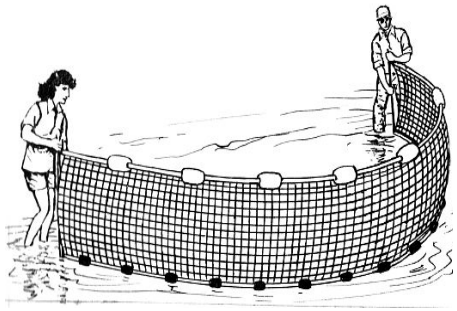

Thanks!

Questions?

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Mural by
Roger Peet - Del Rio, Texas