Post-stocking survival and natural recruitment of razorback sucker in isolated backwaters

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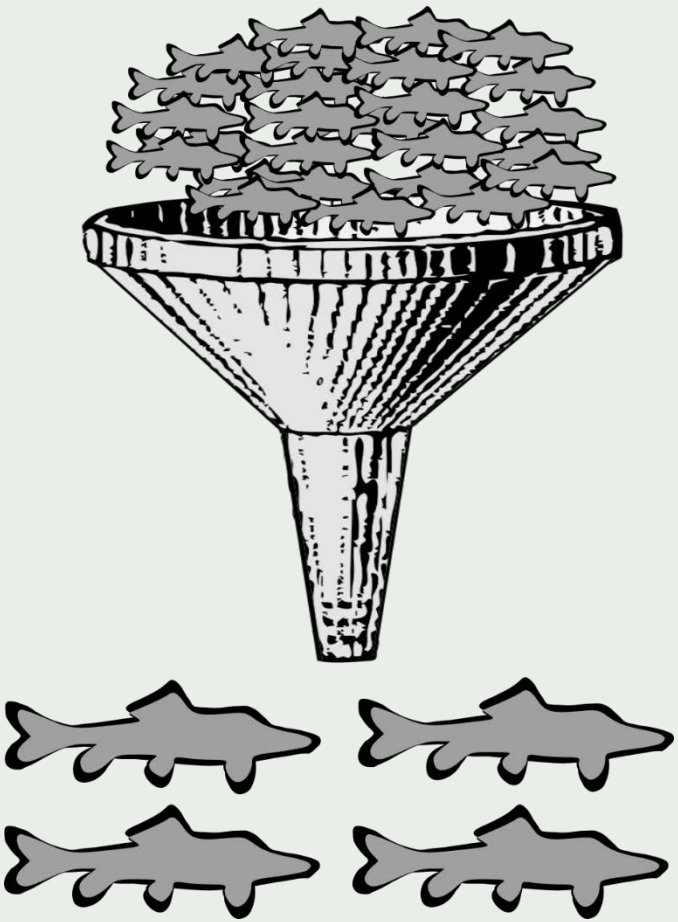
Razorback Sucker Stocking Program



- For every 100 razorback sucker stocked optimistically we get 4 adult survivors
  - More if size at release is increased…
- Costs approximately $30 to raise fish to stocking size - $3000 per 100 fish
- Each of the 4 adult fish cost an estimated $750
- Populations in the lower basin are worth millions $$

A Plan of Action

Articles

A Conservation Plan for Native Fishes of the Lower Colorado River

2003. Bioscience Vol 53: 3

W. L. MINCKLEY, PAUL C. MARSH, JAMES E. DEACON, THOMAS E. DOWLING,
PHILIP W. HEDRICK, WILLIAM J. MATTHEWS, AND GORDON MUELLER

The native fish fauna of the lower Colorado River, in the western United States, includes four "big-river" fishes that are federally listed as endangered. Existing recovery implementation plans are inadequate for these critically imperiled species. We describe a realistic, proactive management program founded on demographic and genetic principles and crafted to avoid potential conflicts with nonnative sport fisheries. In this program, native species would breed and their progeny grow in isolated, protected, off-channel habitats in the absence of nonnative fishes. Panmictic adult populations would reside in the main channel and connected waters, exchanging reproductive adults and repatriated subadults with populations occupying isolated habitats. Implementation of the plan would greatly enhance recovery potential of the four listed fishes.

Keywords: conservation, management, genetics, endangered fishes

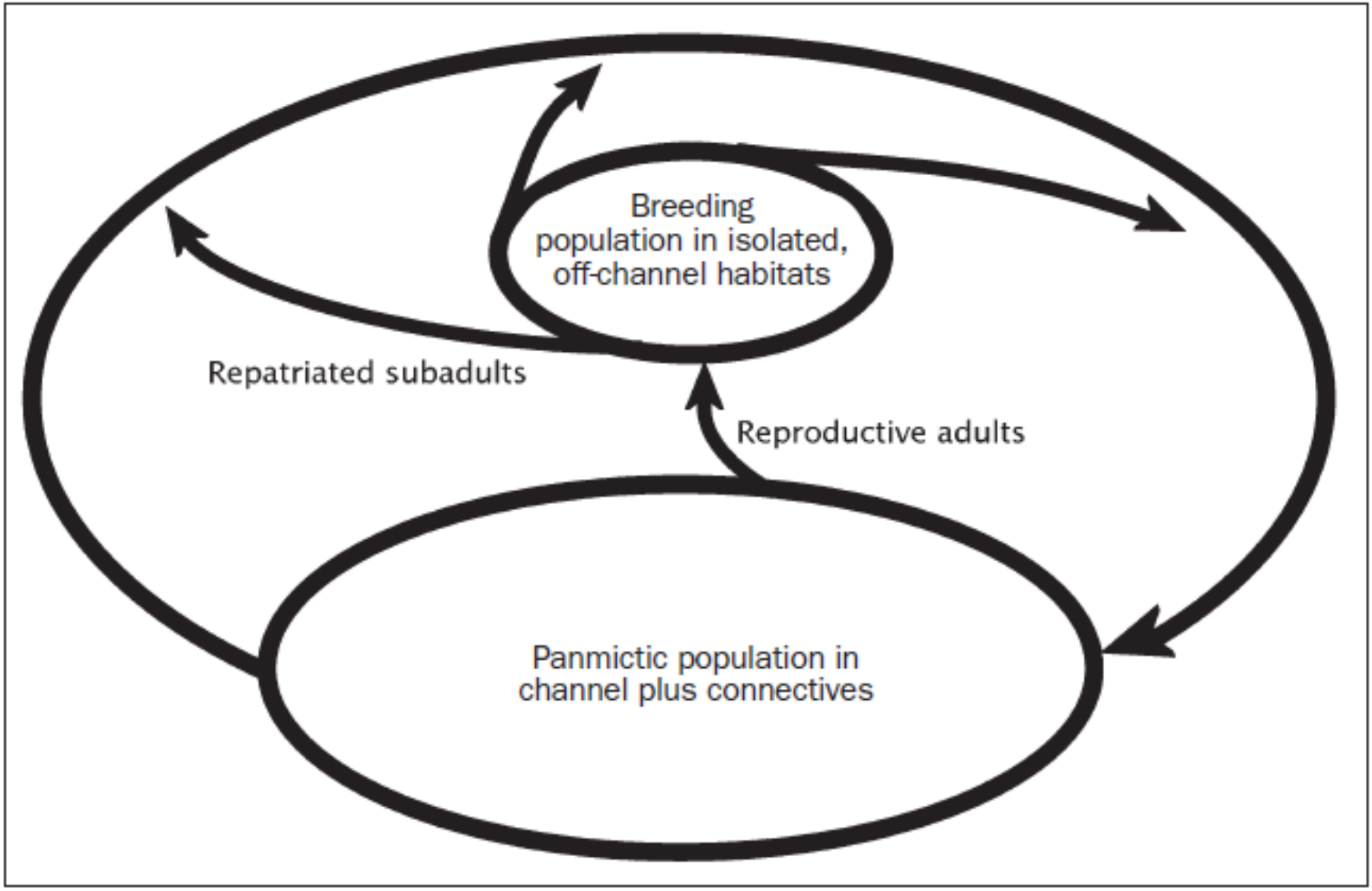
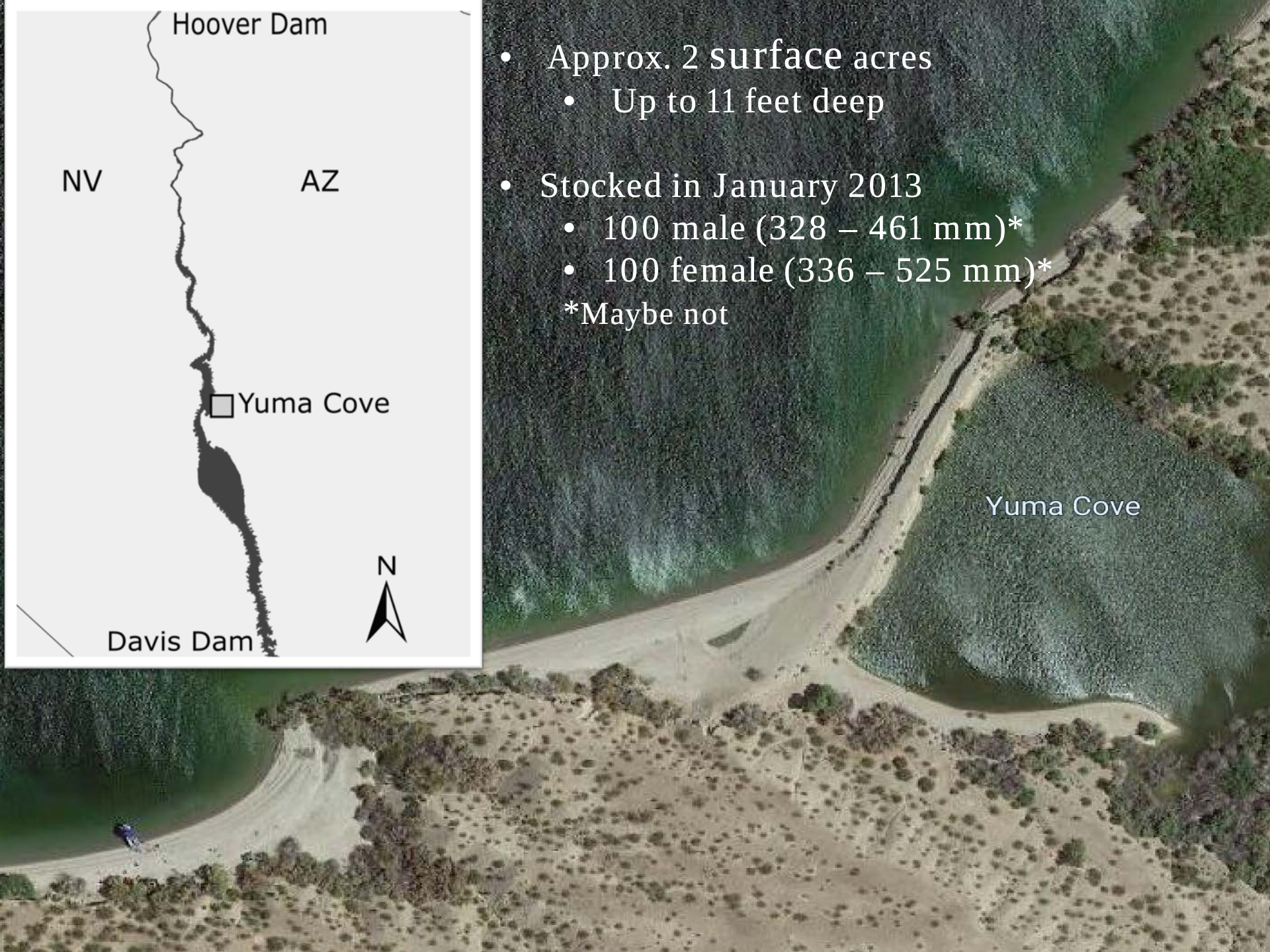


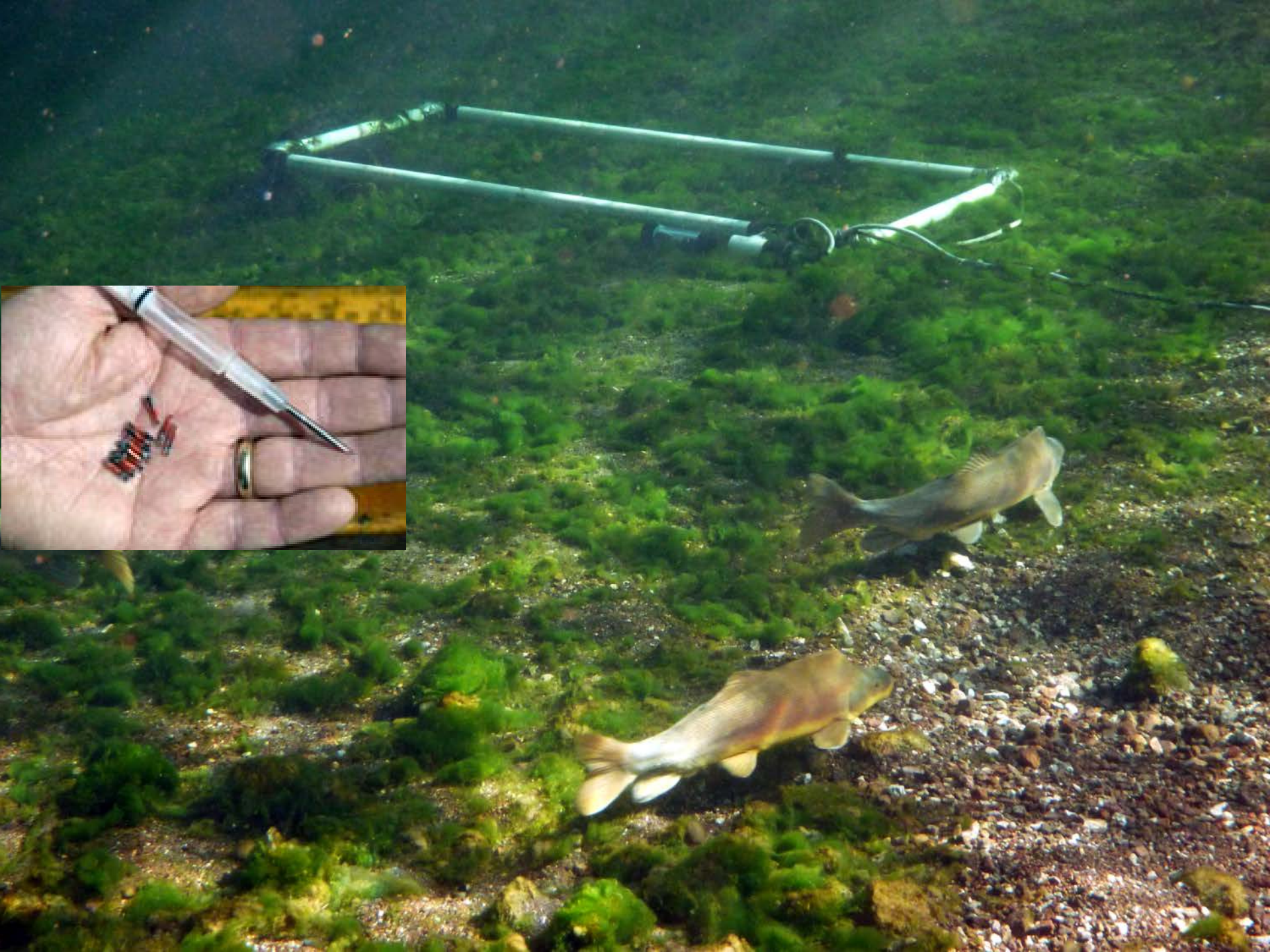
Figure 6. Schematic interrelations between lower Colorado River off-channel habitats and channel plus connectives.

- Approx. 2 surface acres
  - Up to 11 feet deep

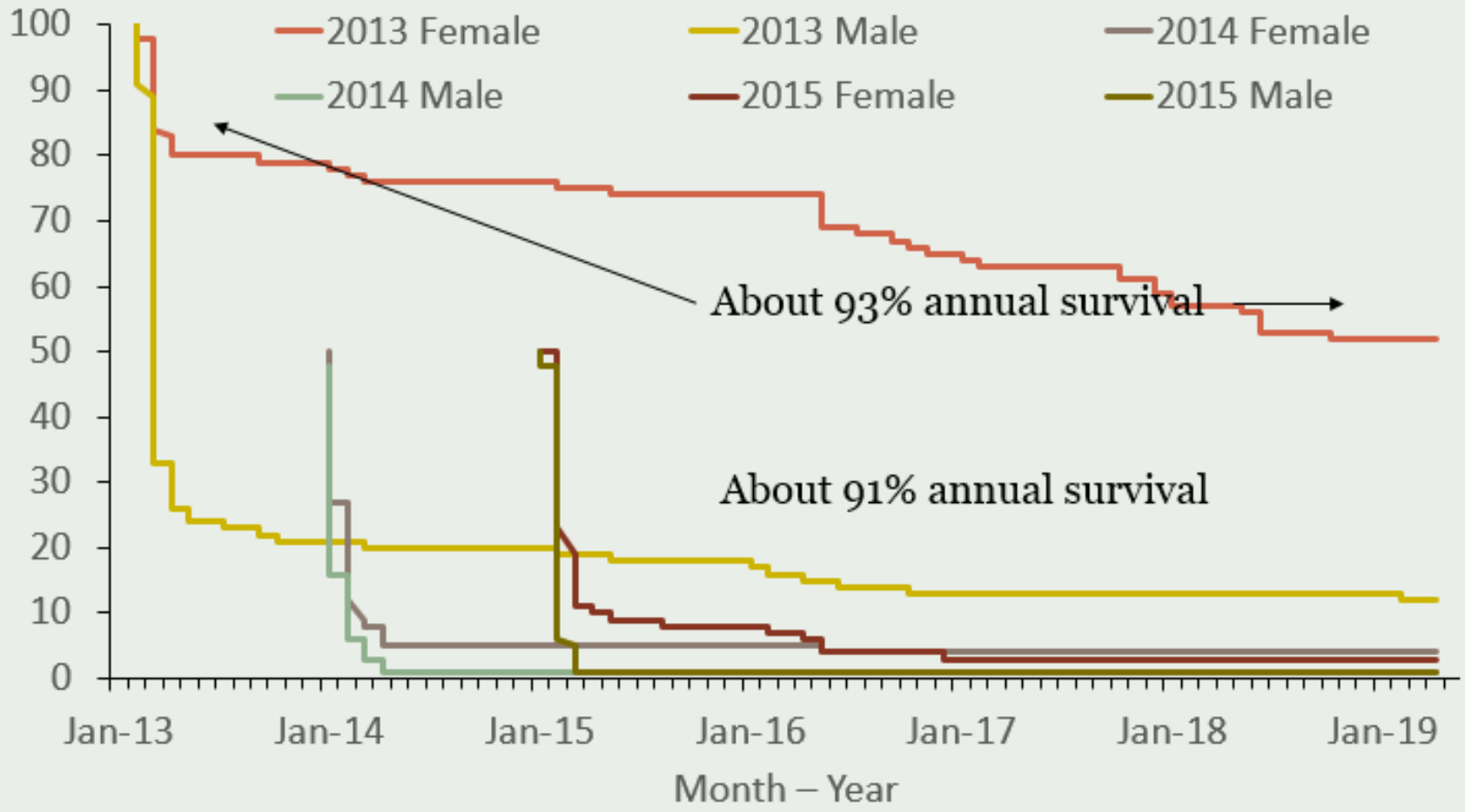
- Stocked in January 2013
  - 100 male (328 – 461 mm)*
  - 100 female (336 – 525 mm)*

*Maybe not

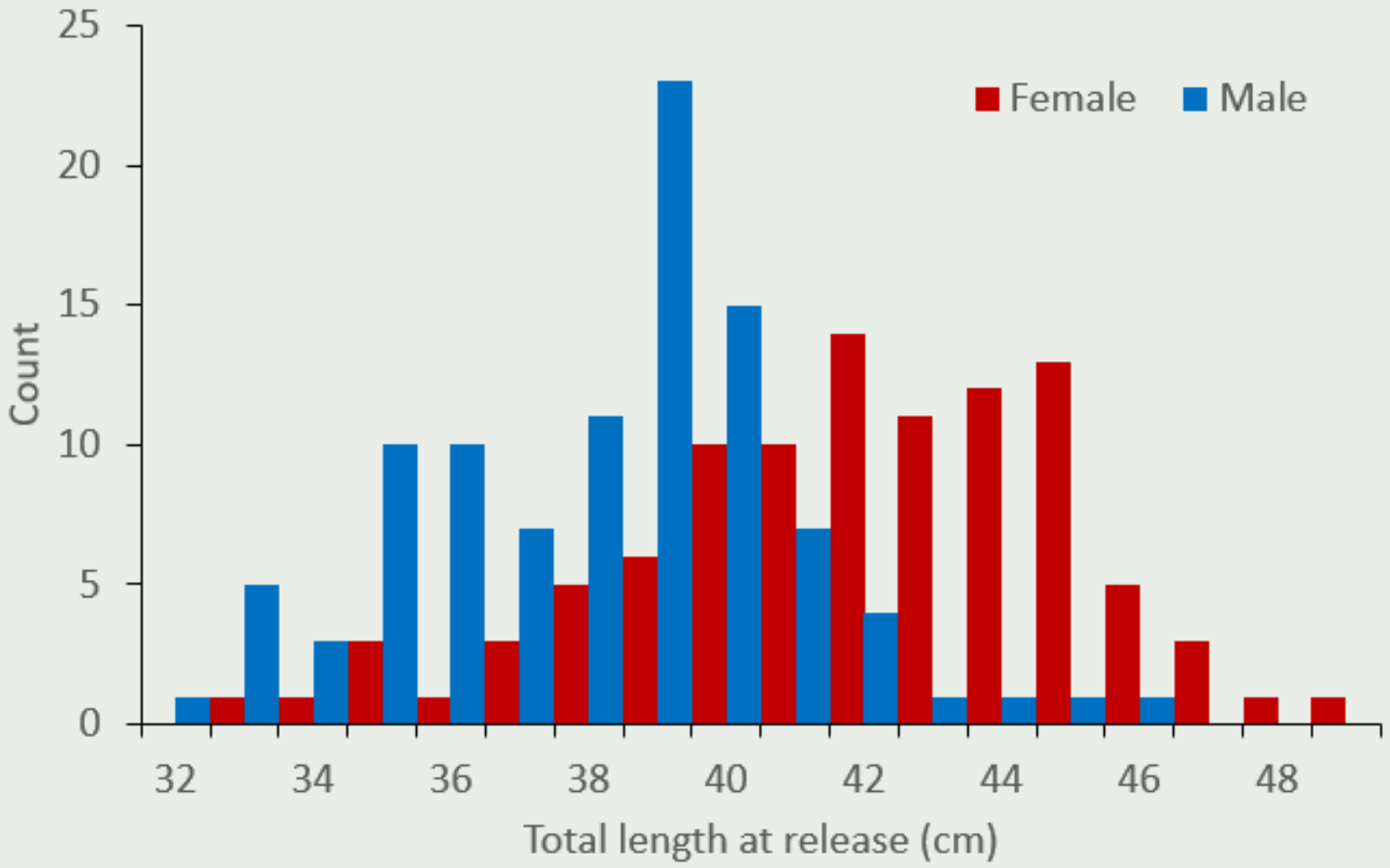




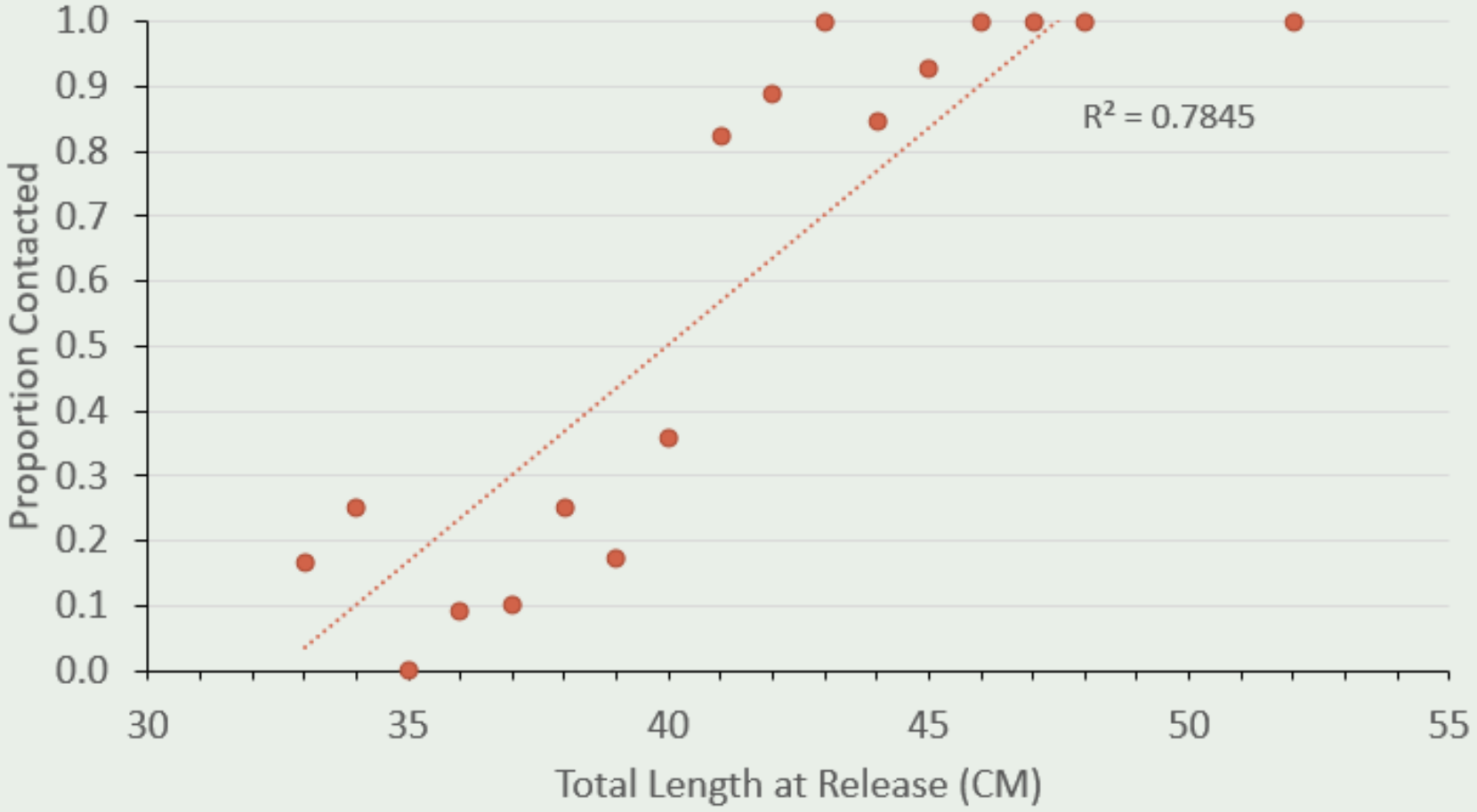
Yuma Cove Stocked Adults



Yuma Cove Razorback Sucker (2013)



Yuma Cove Razorback Sucker



Yuma Cove Razorback Sucker

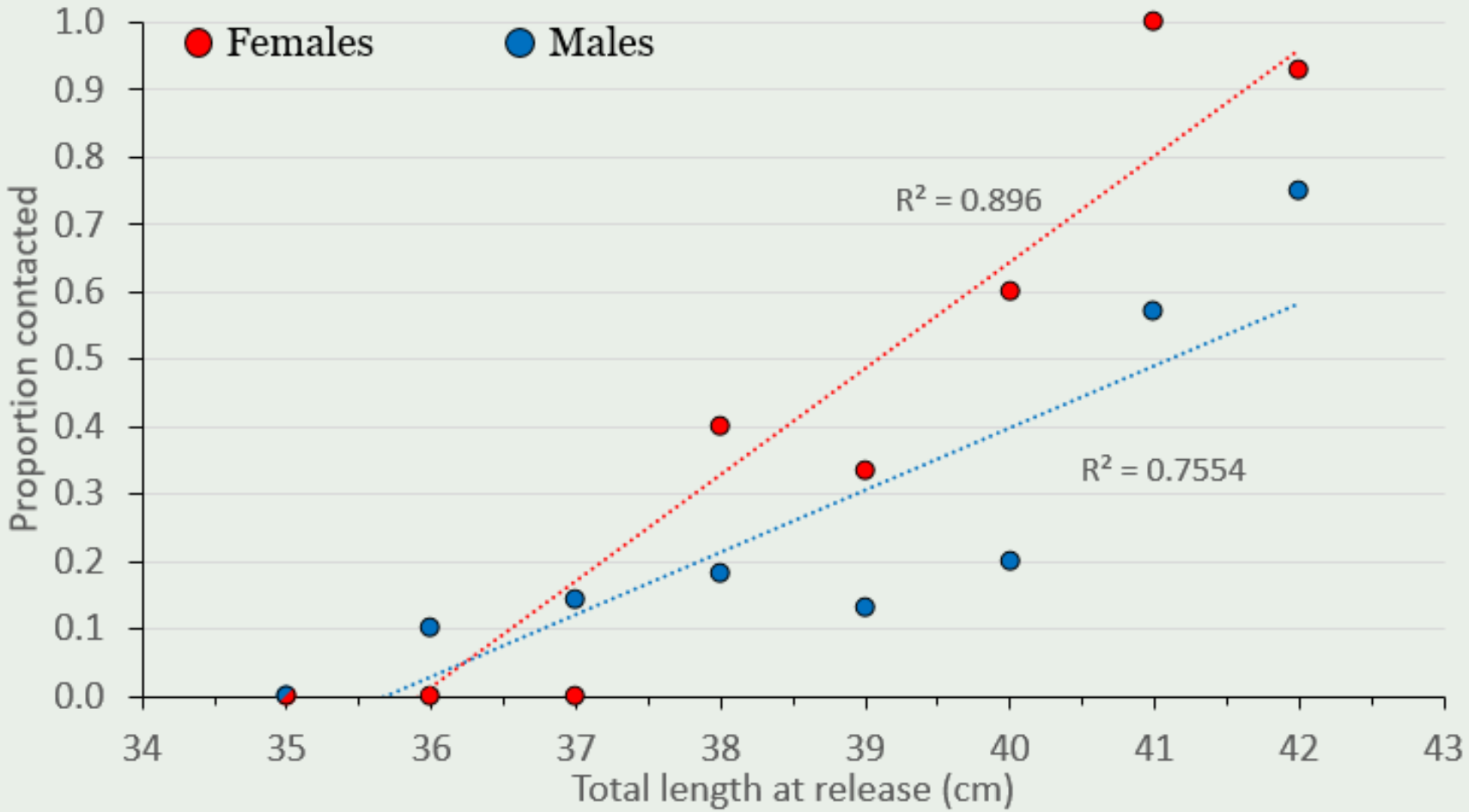
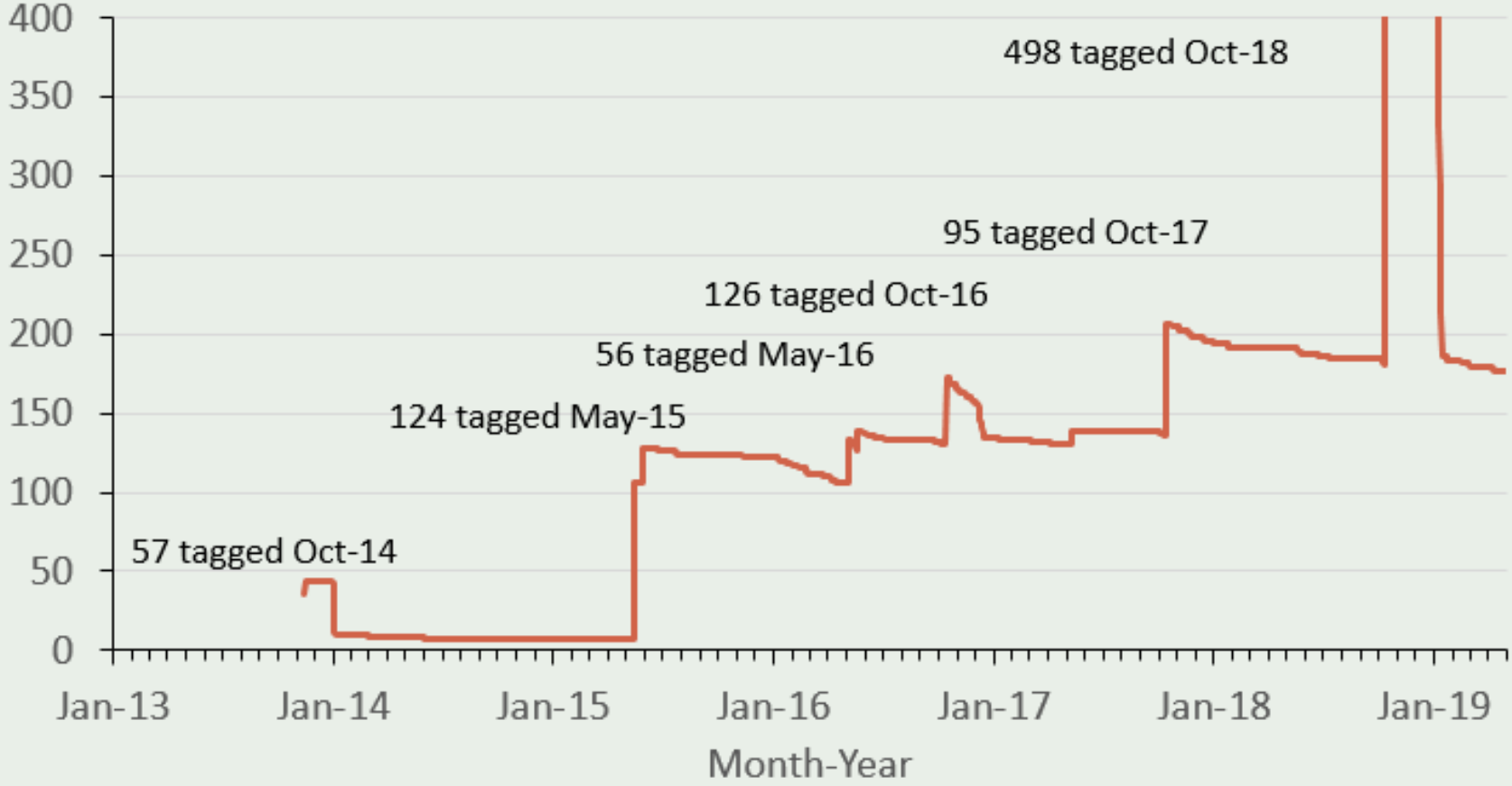
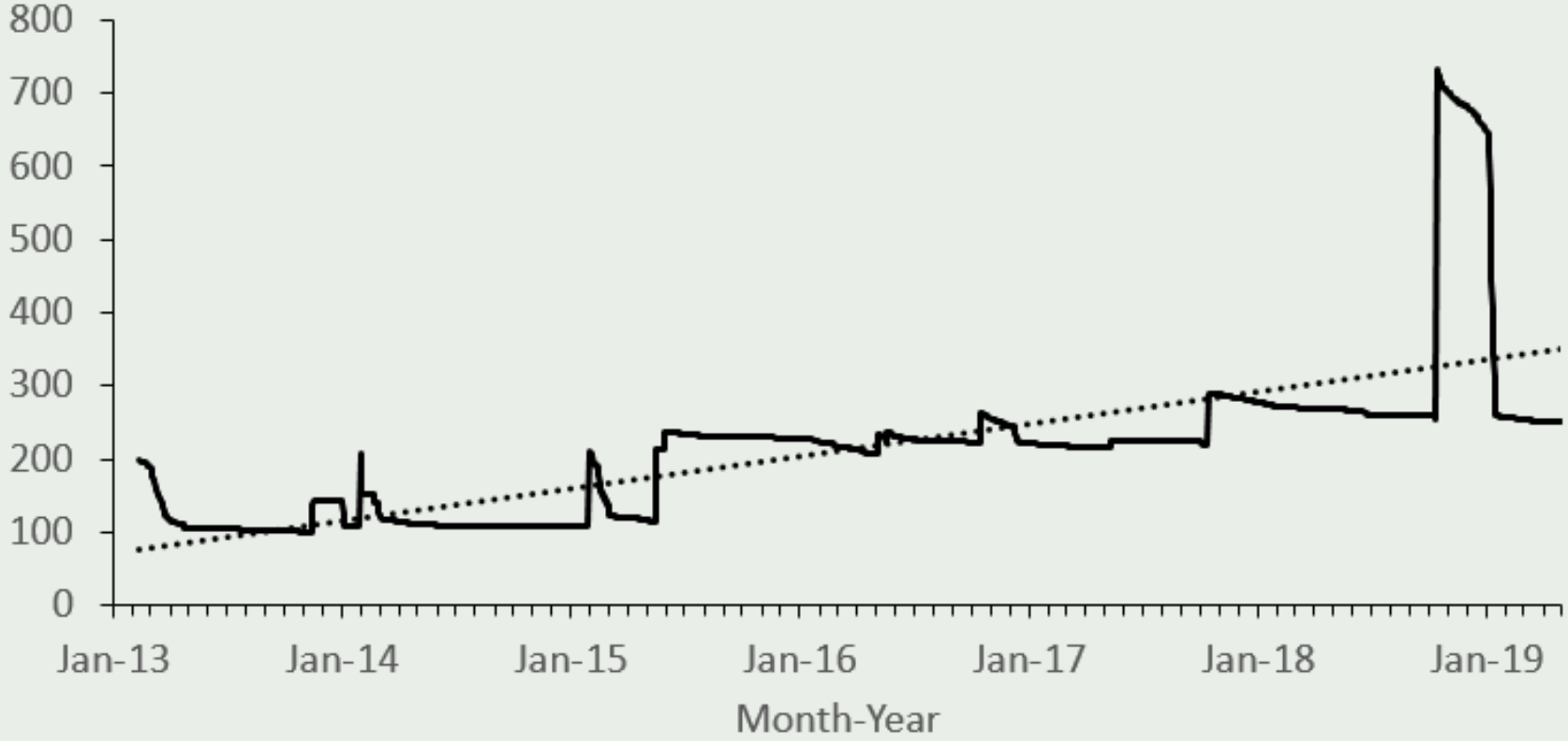


Photo courtesy of Reclamation

Yuma Cove Captured and Tagged – "Recruits"



Yuma Cove PIT Tagged Razorback Sucker Population



Fall 2019 Survey

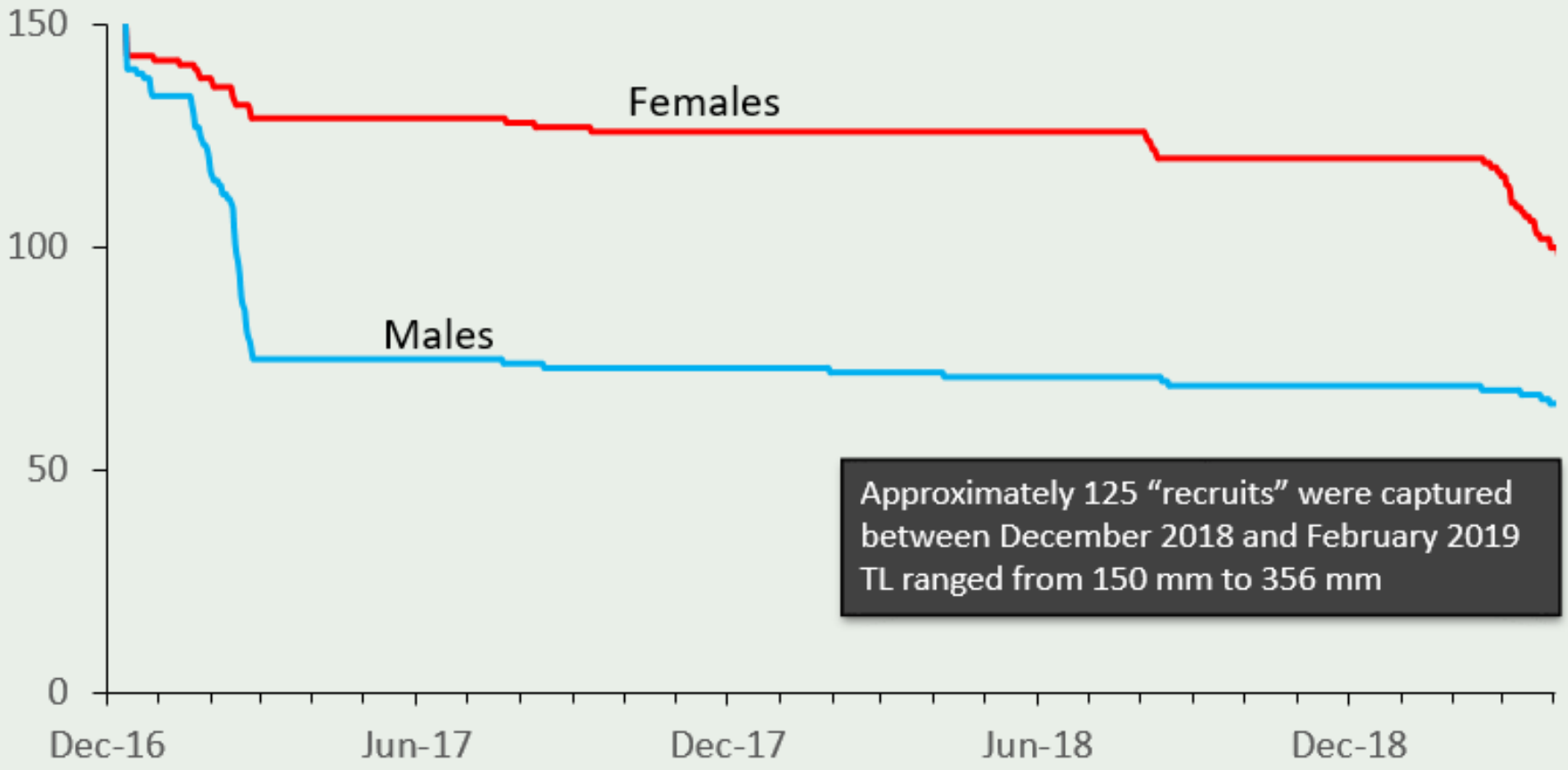
	Number	Mean TL mm (range)	Recaps	New Tags
Recruits (2019 Year Class)	2,782	152 (100 – 220)	0	-
Recruits (unknown Year Class)	80	457 (330 -585)	28	52
Stocked Adults	9	561 (535-592)	9	0

Imperial Ponds, Imperial National Wildlife Area

- Pond 1 – 8.9 surface acres
- Pond 3 – 14.3 surface acres
- Pond 4 – 10.2 surface acres
- Stocked with 300 razorback sucker December 2016
  - 150 males (314 to 483 mm TL)*
  - 150 females (340 to 591 mm TL)*

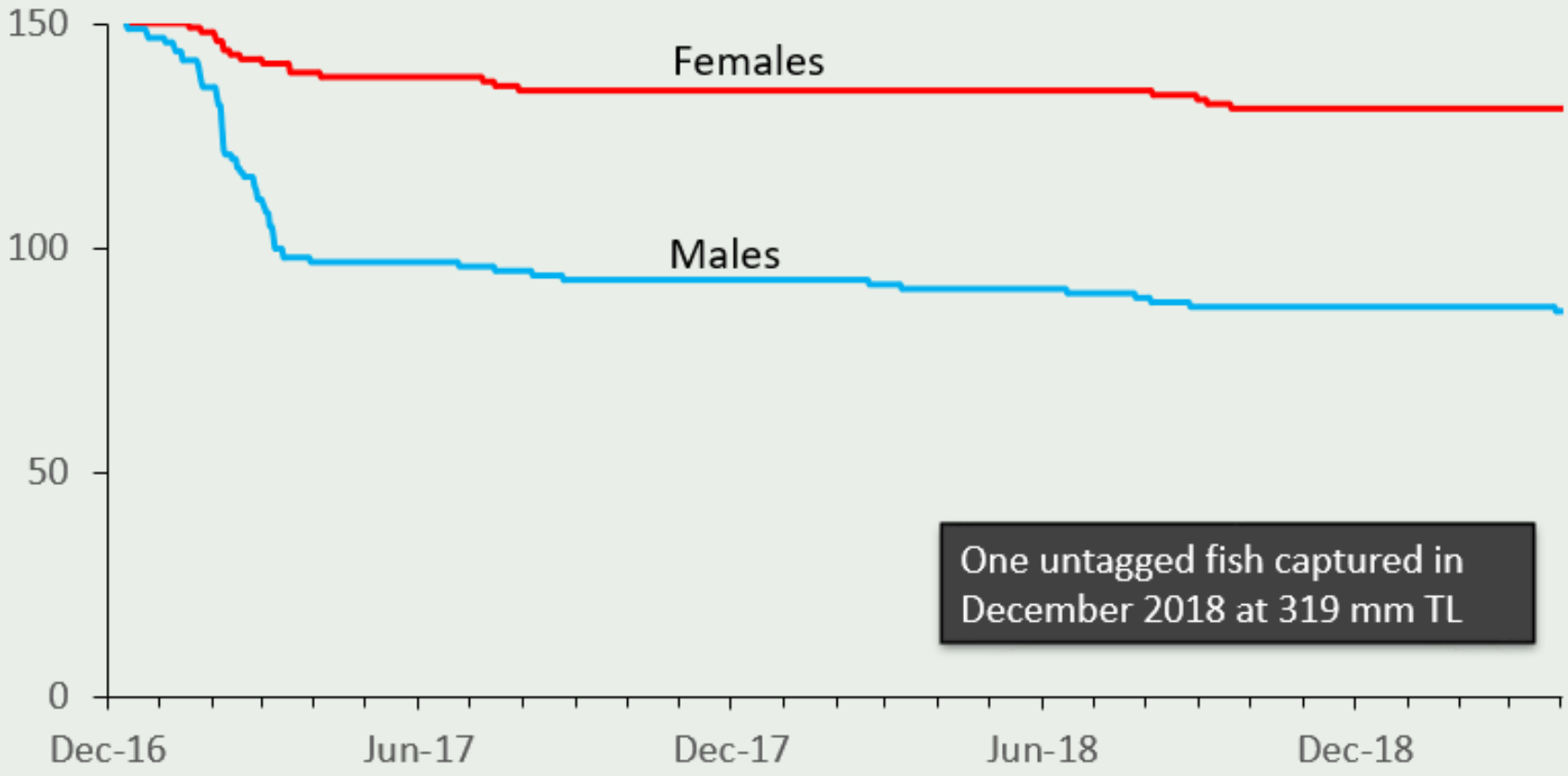
Photo courtesy of Reclamation
Johnson
MOLARK

Razorback Sucker Imperial Ponds - Pond 1

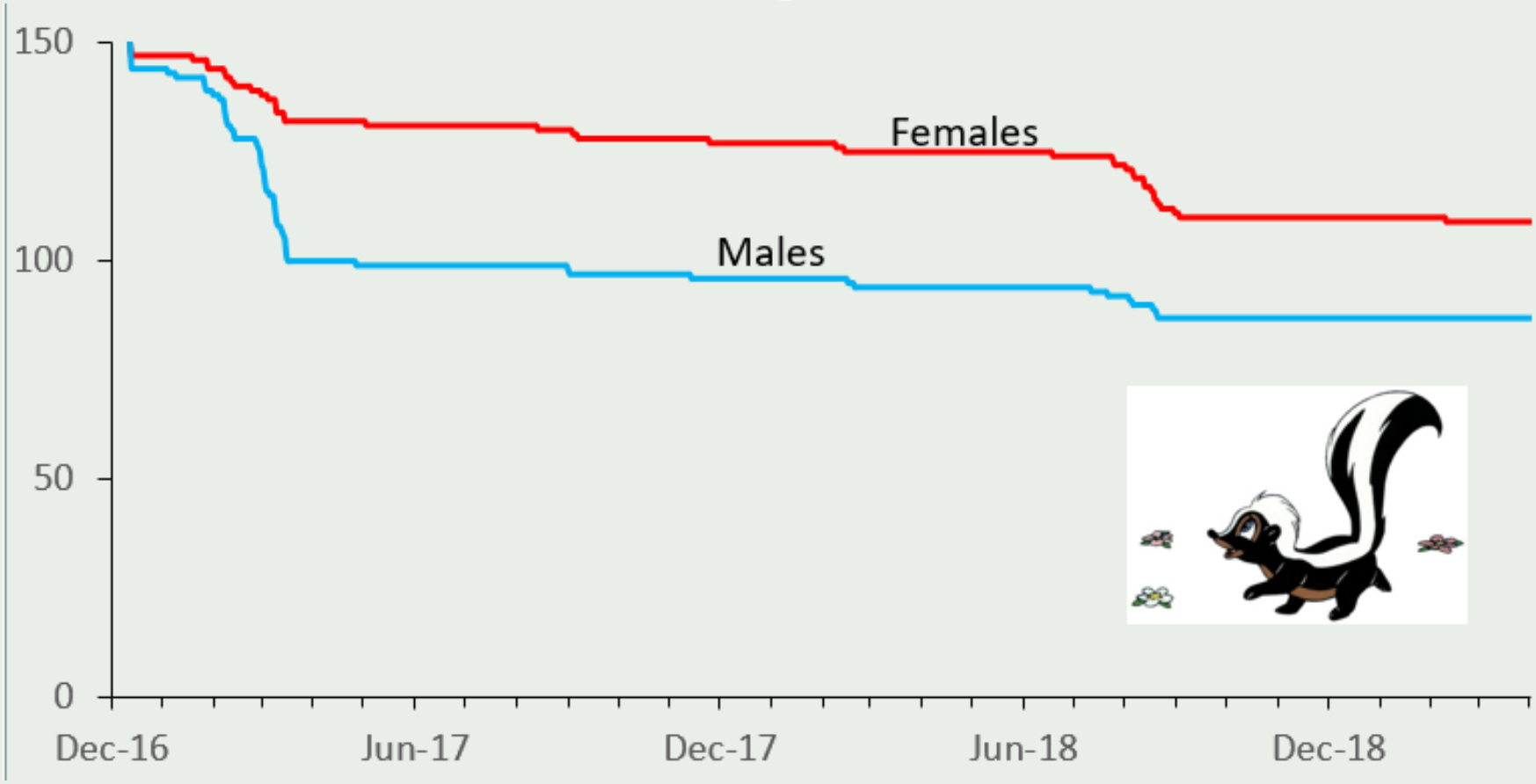


Approximately 125 “recruits” were captured between December 2018 and February 2019
TL ranged from 150 mm to 356 mm

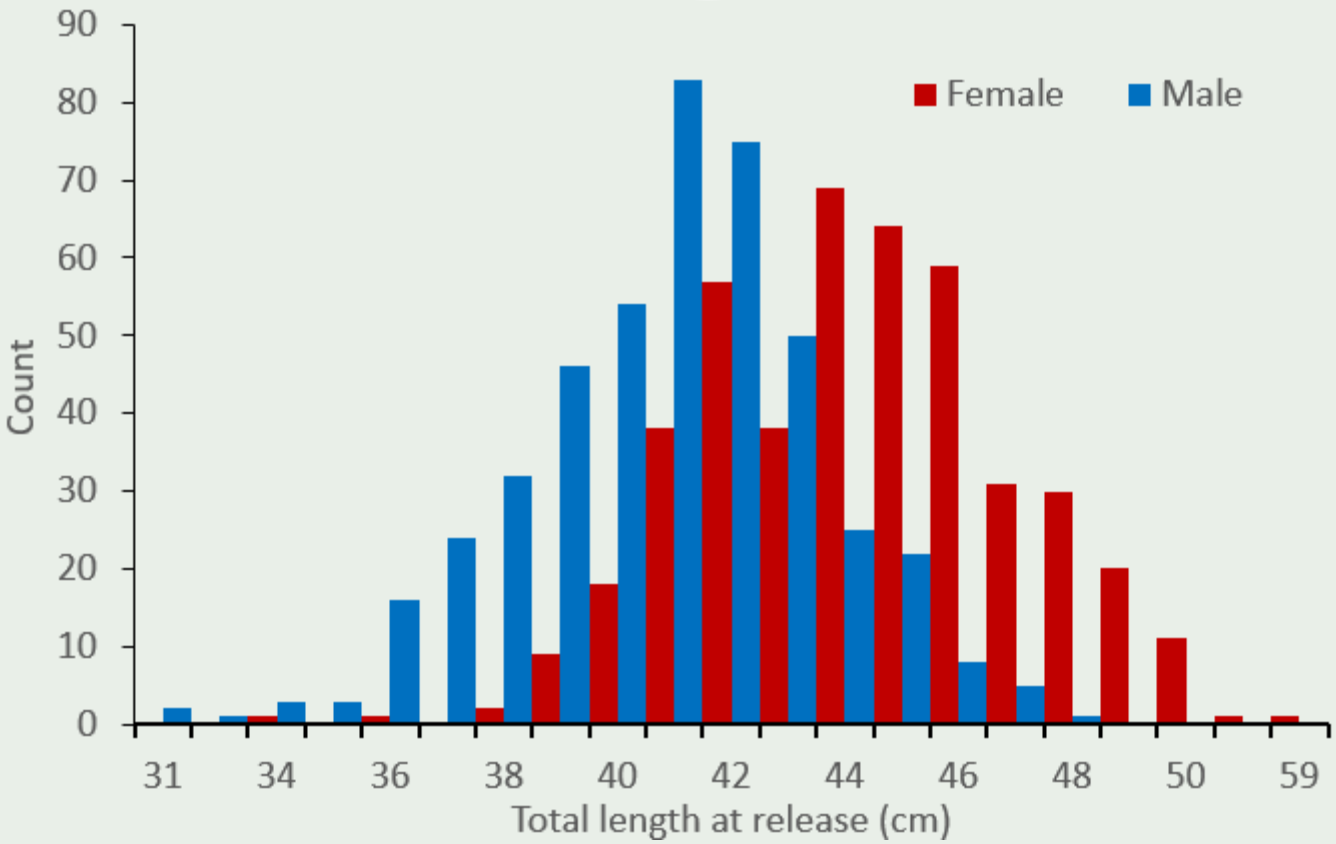
Razorback Sucker Imperial Ponds - Pond 3



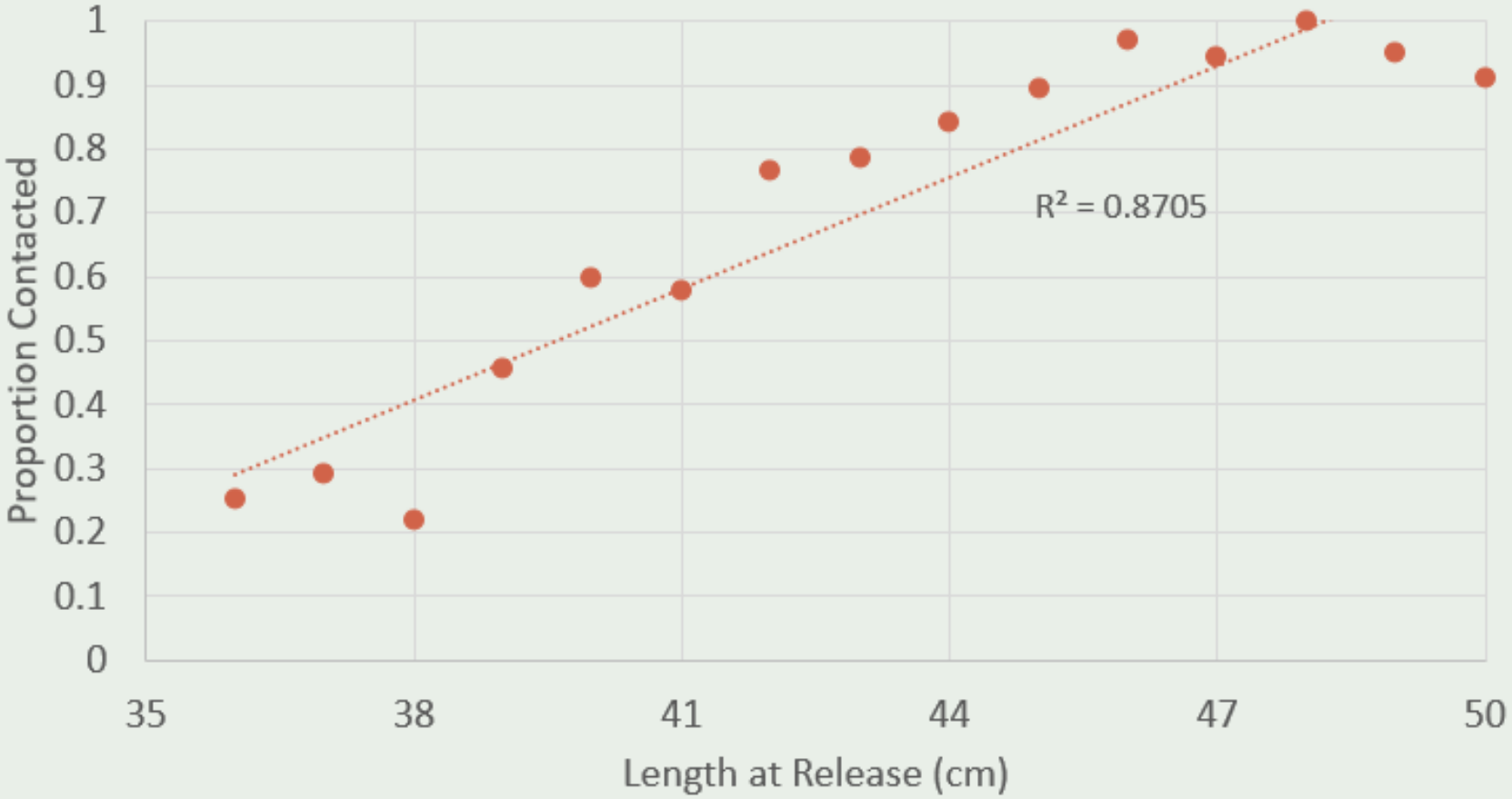
Razorback Sucker Imperial Ponds - Pond 4



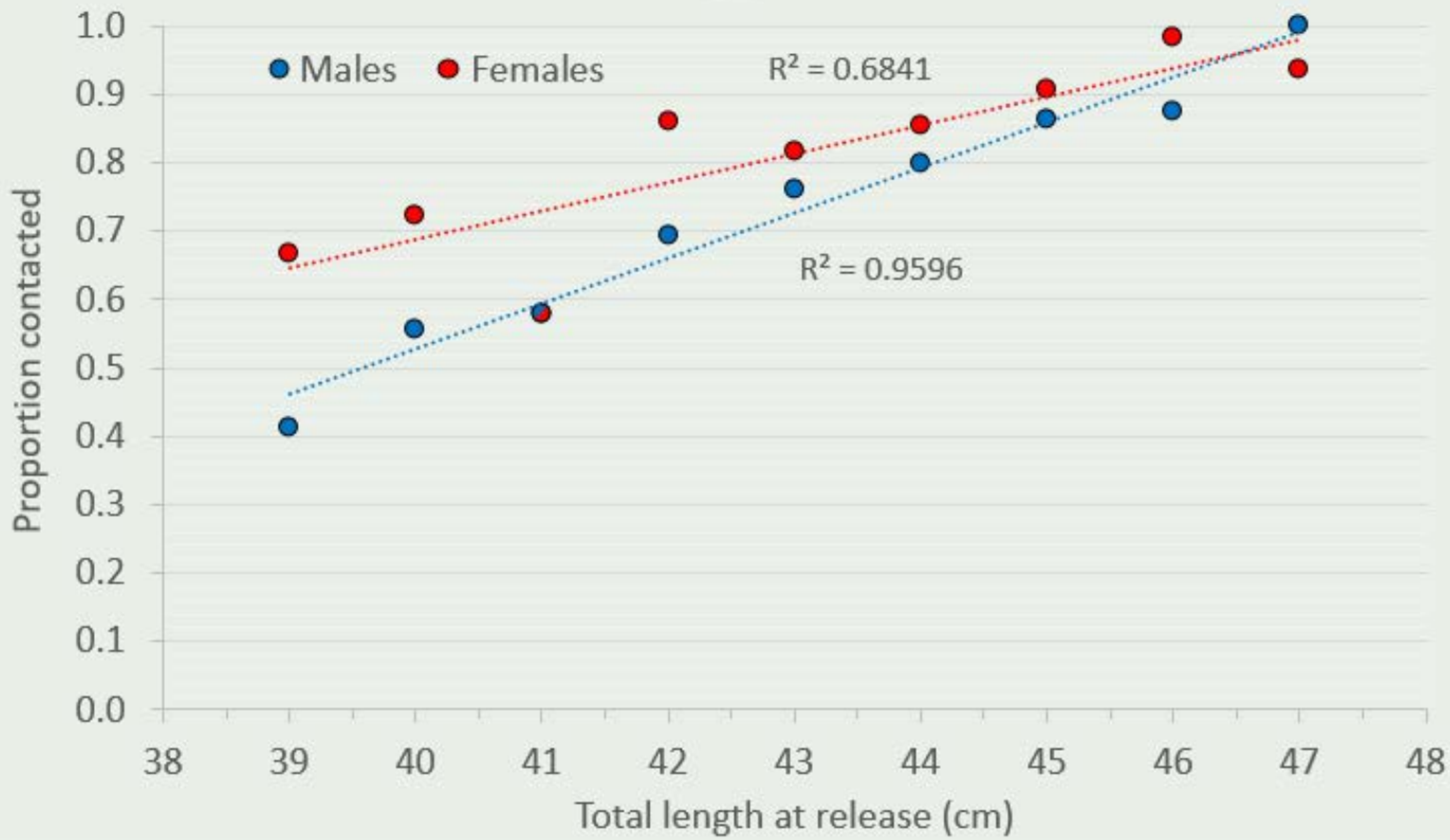
Imperial Ponds Razorback Sucker



Imperial Ponds Razorback Sucker



Imperial Ponds Razorback Sucker



The Backwater Concept

- Self-sustaining populations of razorback sucker can be established in small isolated ponds free on nonnative fishes

- The backwater approach works, but there remain obstacles, mostly political or logistical
  - Where can we build more backwaters?
  - How big can they be?
  - Who will pay for it?

Thanks to our partners for their support

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Lake Mead Fish Hatchery

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