Honolulu Bar Floodplain Enhancement Project

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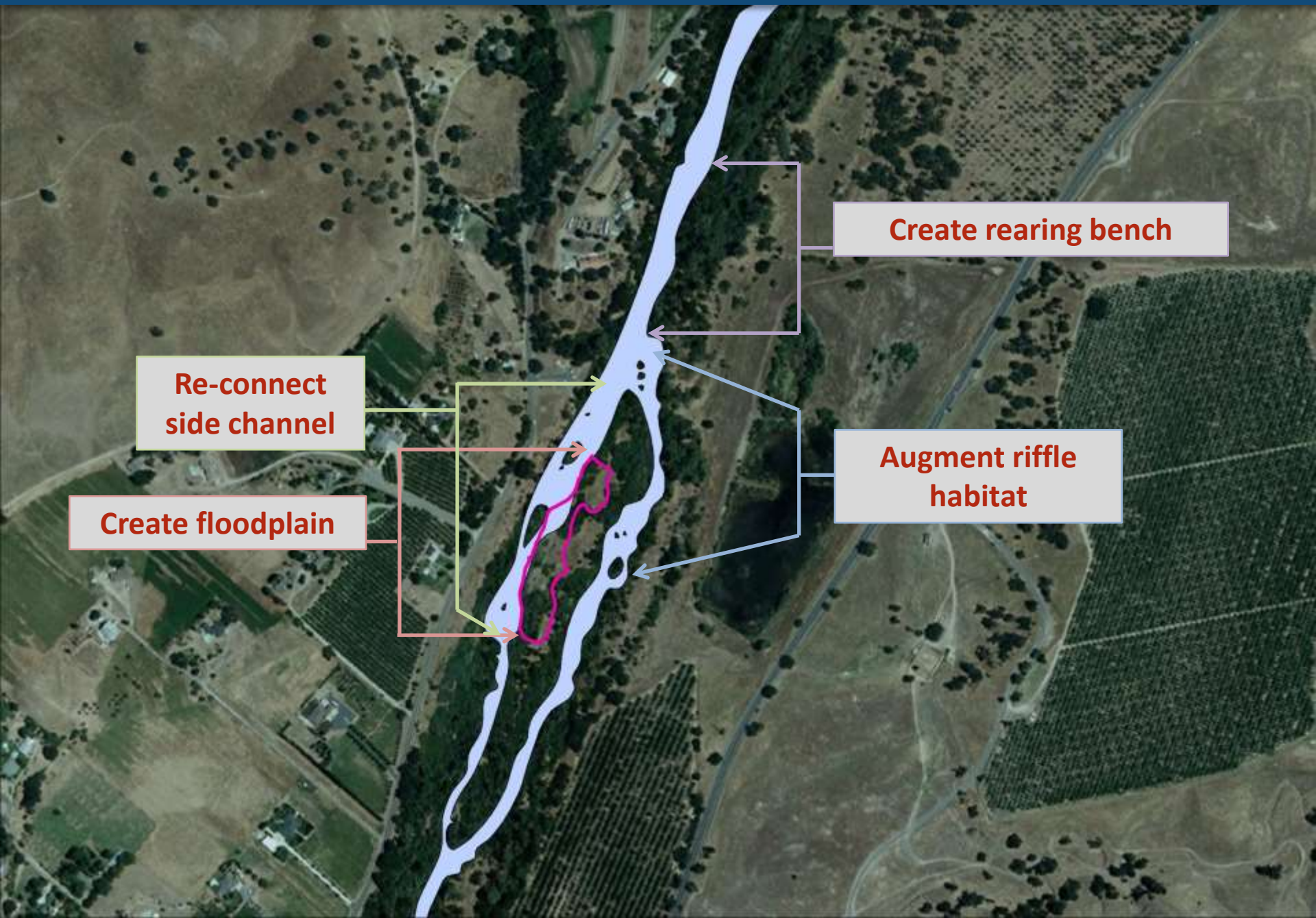
Honolulu Bar Floodplain Enhancement Project: Background

- Stanislaus River spawning and rearing habitat reduced by mining and dams
- Population constraints identified through two decades of monitoring
- Honolulu Bar Restoration Project designed to increase juvenile salmonid rearing habitat, among other benefits
- Jointly funded by Oakdale Irrigation District and the Anadromous Fish Restoration Program

Honolulu Bar Floodplain Enhancement Project: Location

Project Design: Key elements



Implementation: Re-connected side channel

- Problems
  - Limited shallow water, low velocity rearing habitat
  - Stranding

- Project accomplishments
  - Nearly one-half mile of re-connected side channel habitat.
  - Side channel remains connected at all flows

Implementation: Created small floodplain

- 1.51 acres of excavated floodplain
- Floodplain begins to inundate at ~400 cfs; fully inundated at ~1,000 cfs

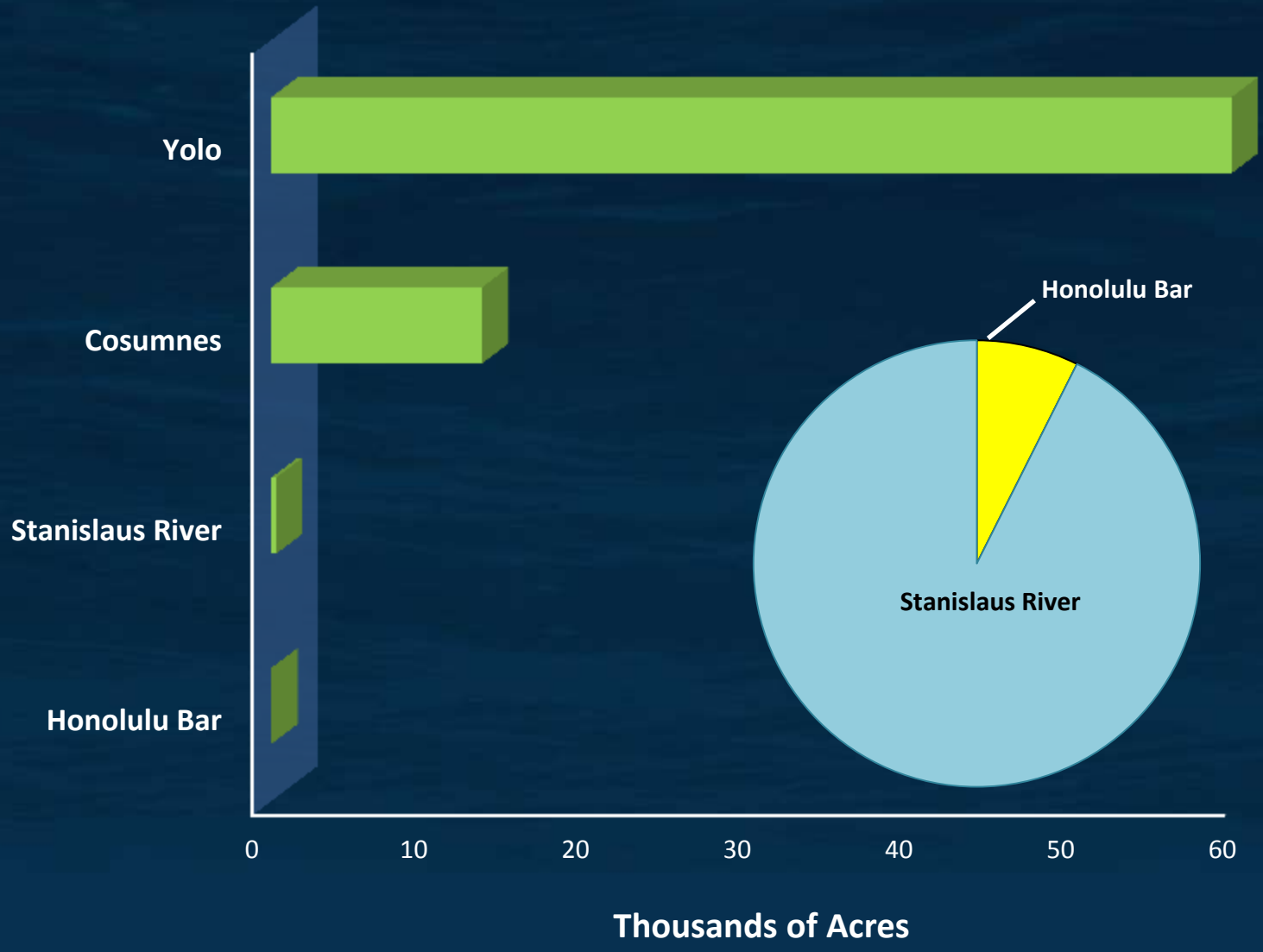
Implementation: Created rearing benches

- Approximately one-quarter mile (0.28 acres)

Implementation: Augmented riffle habitat

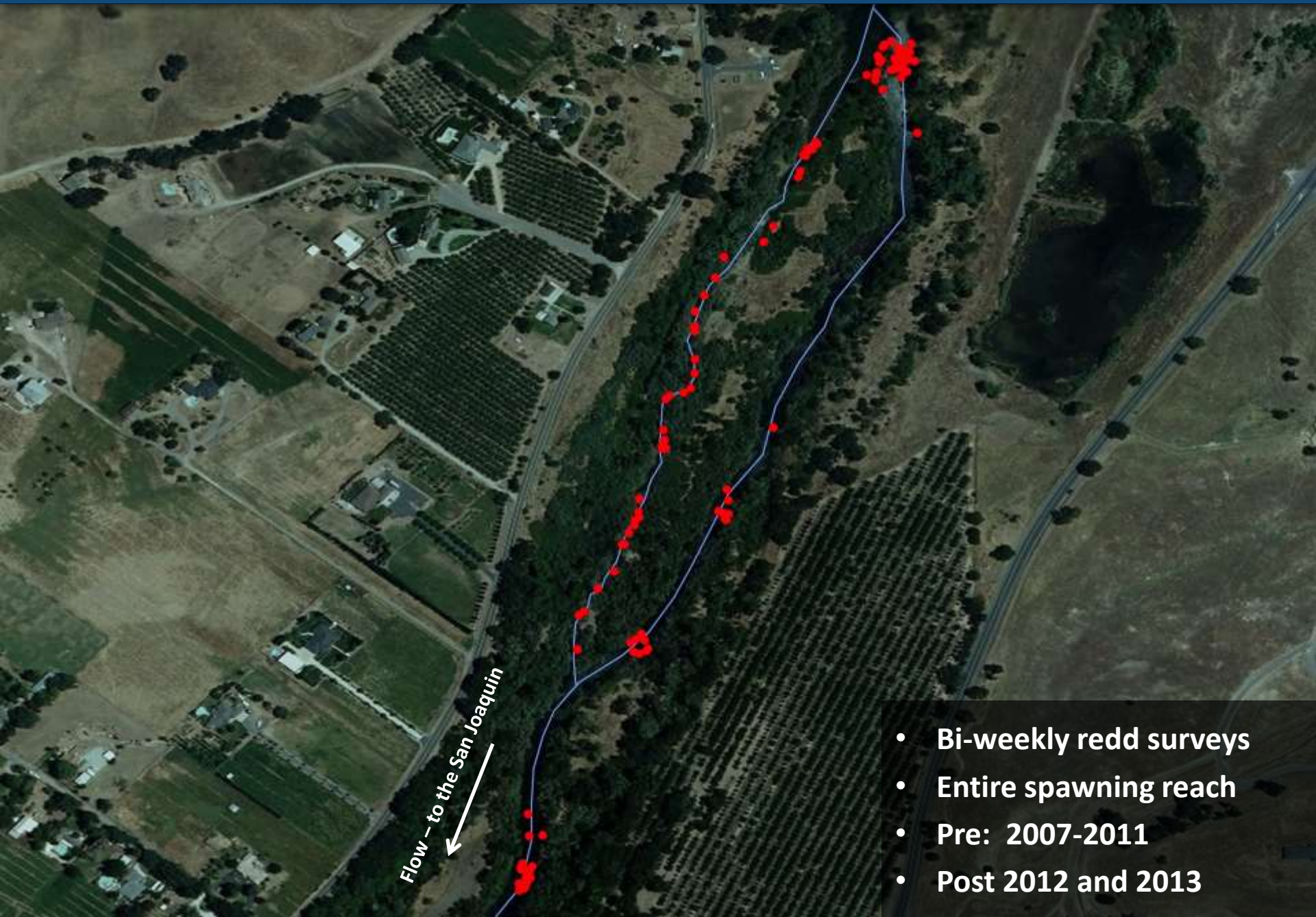
- 3,325 yds^3 of gravel added to the main channel
- Increased spawning habitat
- Increased rearing habitat

Implementation: Project scale



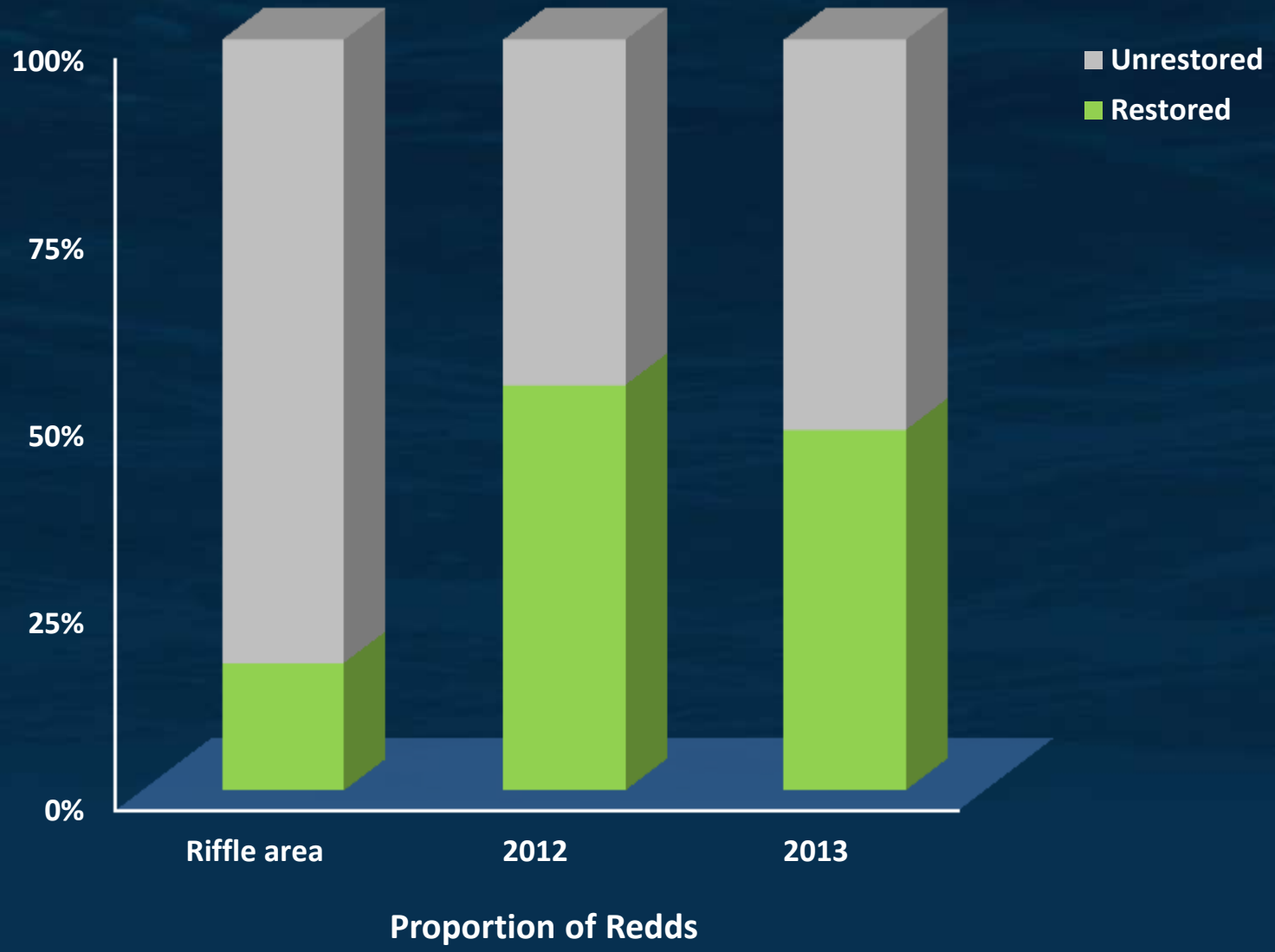
Post-restoration monitoring: Salmonid response

Post-restoration monitoring: Adult salmon

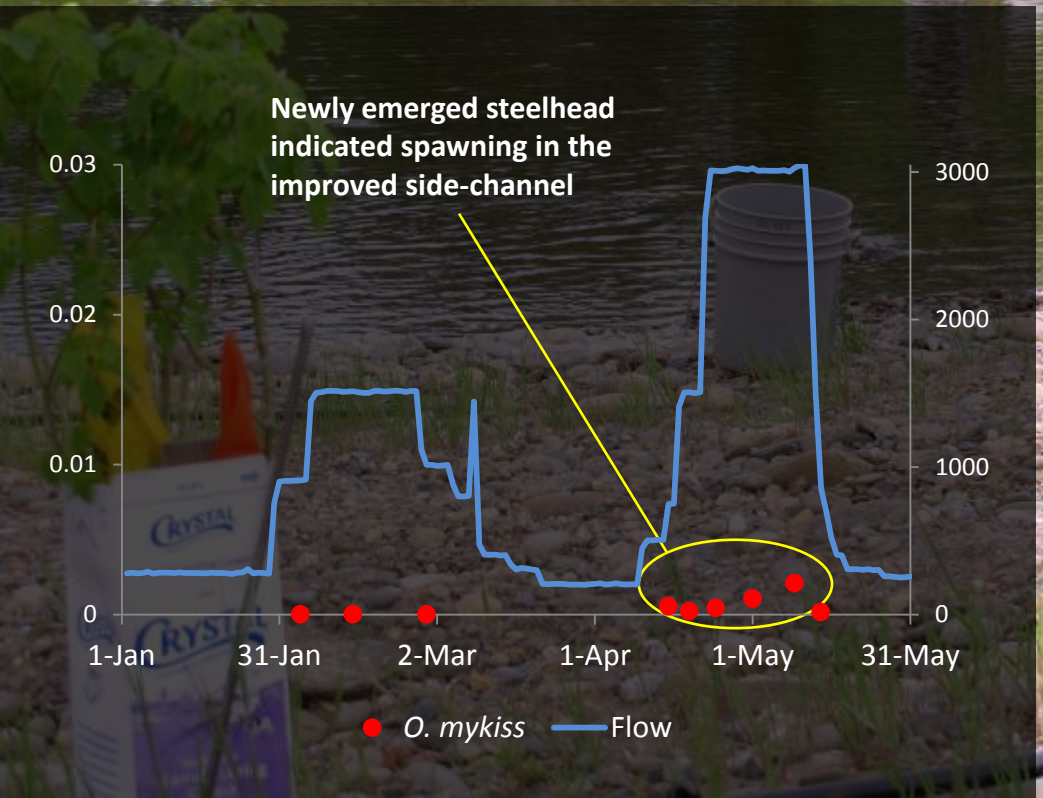


- Bi-weekly redd surveys
- Entire spawning reach
- Pre: 2007-2011
- Post 2012 and 2013

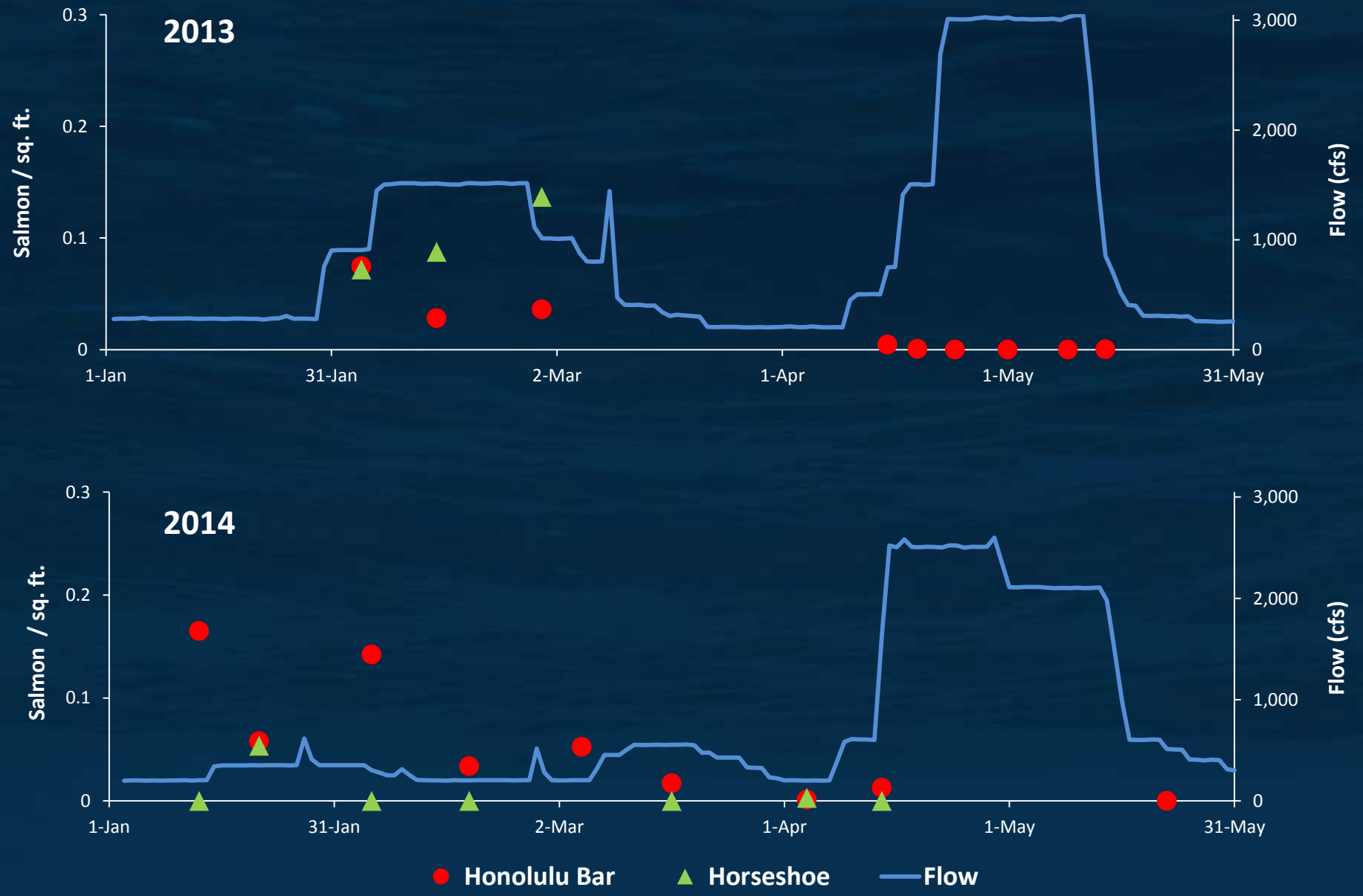
Post-restoration monitoring: Adult salmon



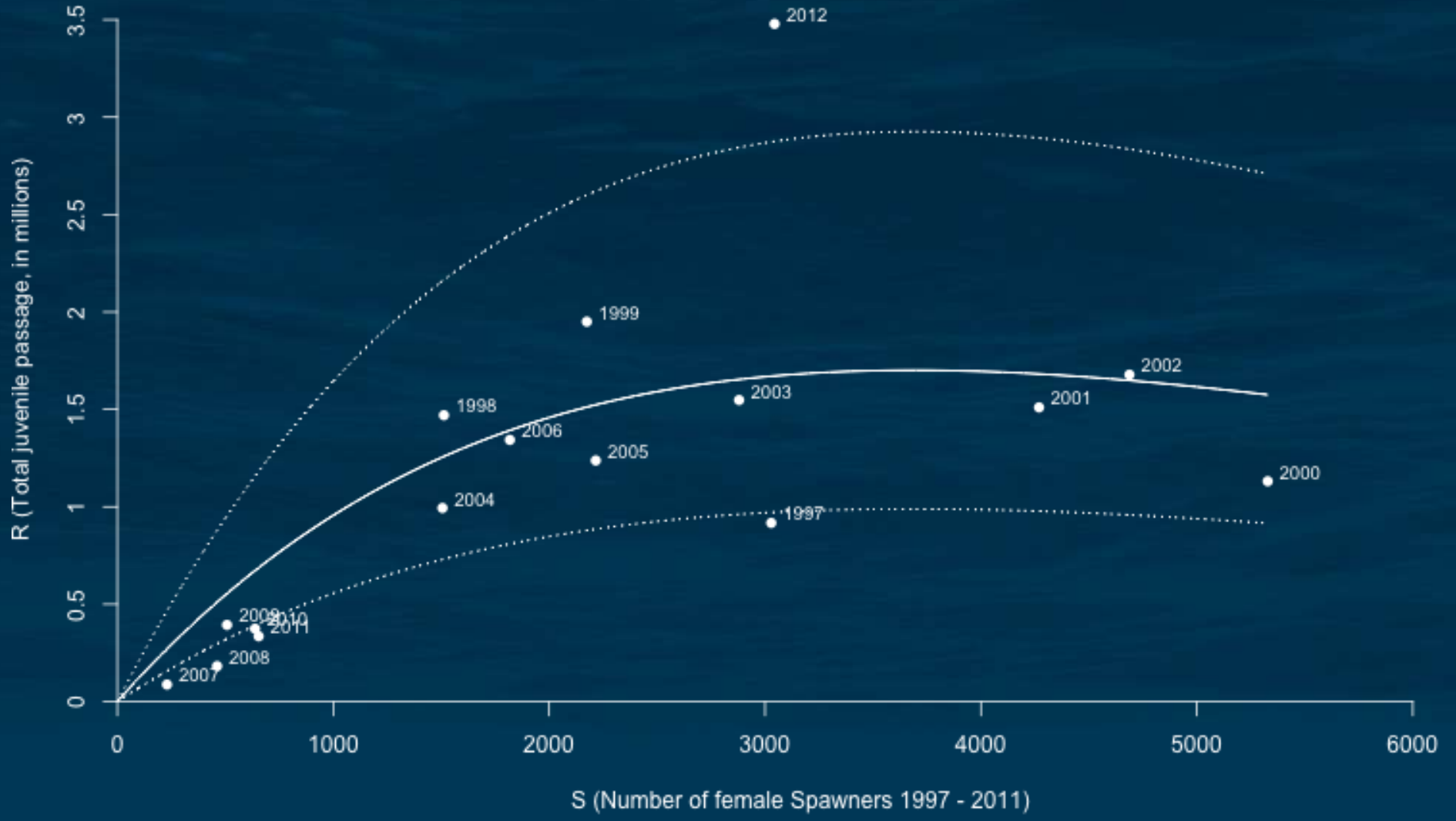
Post-restoration monitoring: Juvenile *O. mykiss* rearing



Post-restoration monitoring: Juvenile salmon rearing



Post-restoration monitoring: Juvenile salmon production



Post-restoration: Lessons Learned

- Juvenile salmon and steelhead used newly created habitats that were not previously available
- Restored areas were used almost immediately
- Use of restored area by juvenile salmon was not significantly different than unrestored area
- Use of restored areas by adult salmon is higher than unrestored areas
- Ongoing monitoring provides baseline and measures population level response to habitat restoration and other actions intended to increase salmon production
- Response to cumulative efforts to improve salmon abundance not yet clear.

Questions?

cbec

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