

Camera Station Monitoring for Sensitive Resources



Pond turtle restoration in San Diego

I. Background

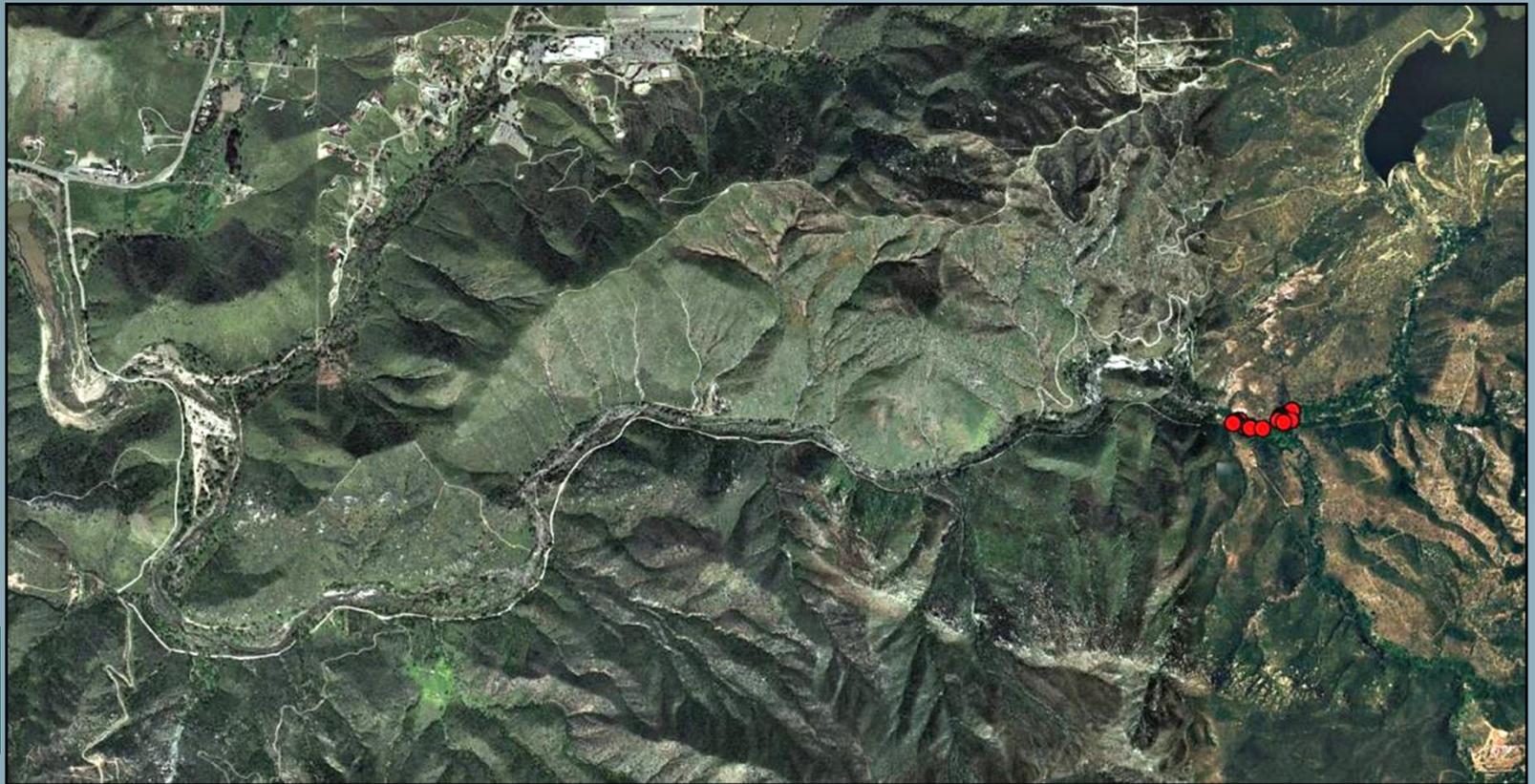
II. Monitoring success

III. Monitoring for reinvasion



--Sycuan Peak Ecological Reserve--

- Headstarting pond turtles and nonnatives removal
- CDFW Reserve—Restricted access and multi-agency collaboration
- Discrete ponds—Easier for trapping and exotics control
- Ideal for testing nonnatives species management as a strategy



Nonnative species removal

- Species removed include:
 - American bullfrog, African clawed frog, green sunfish, largemouth bass, red swamp crayfish



- Wild recruitment detected in 6 of 8 years since restoration began-Youngest pond turtles detected in MSCP region in 15 years



Western Pond Turtle Monitoring

•Monitoring activity and habitat use:



•Monitoring for recruitment:

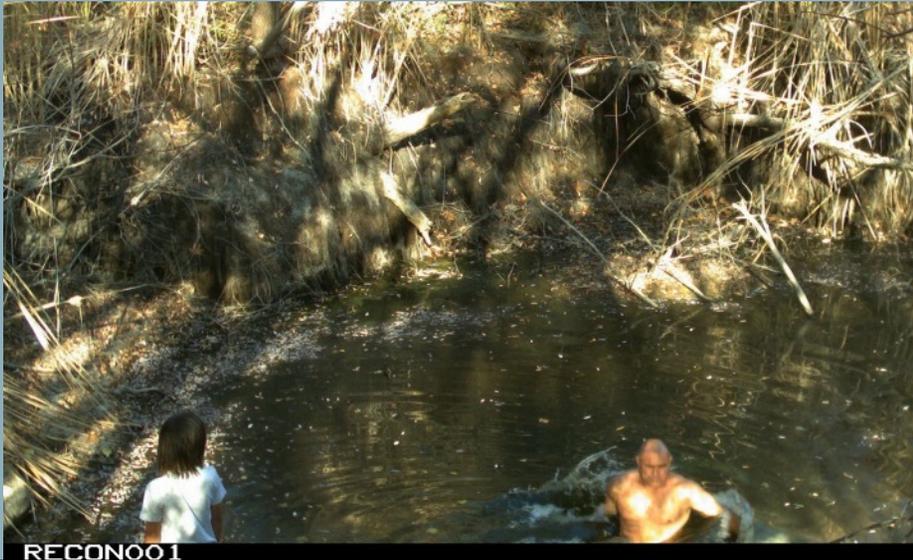


Invasive Species and Disturbance Monitoring

•Monitoring for nonnative aquatic species re-invasion:



•Monitoring for disturbance at the resource:



Invasive Species and Disturbance Monitoring

- Monitoring for nonnative aquatic species re-invasion:

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RECONYX

Incidental/Resource Monitoring

- Monitoring activity of other native species at the resource:



Western Pond Turtle Monitoring

- Turtles, crayfish, and bullfrogs can move too slowly to trigger motion sensors, need to use time lapse
- We detect juvenile pond turtles with cameras before they are captured in traps
- We detect bullfrogs with cameras before we hear or see them during visual encounter surveys
- We can detect preferred basking and foraging habitat with minimal disturbance

Proctor Valley Spring Monitoring

- I. Background and objectives
- II. Methods
- III. Results



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Proctor Valley Spring Monitoring

Background and objectives

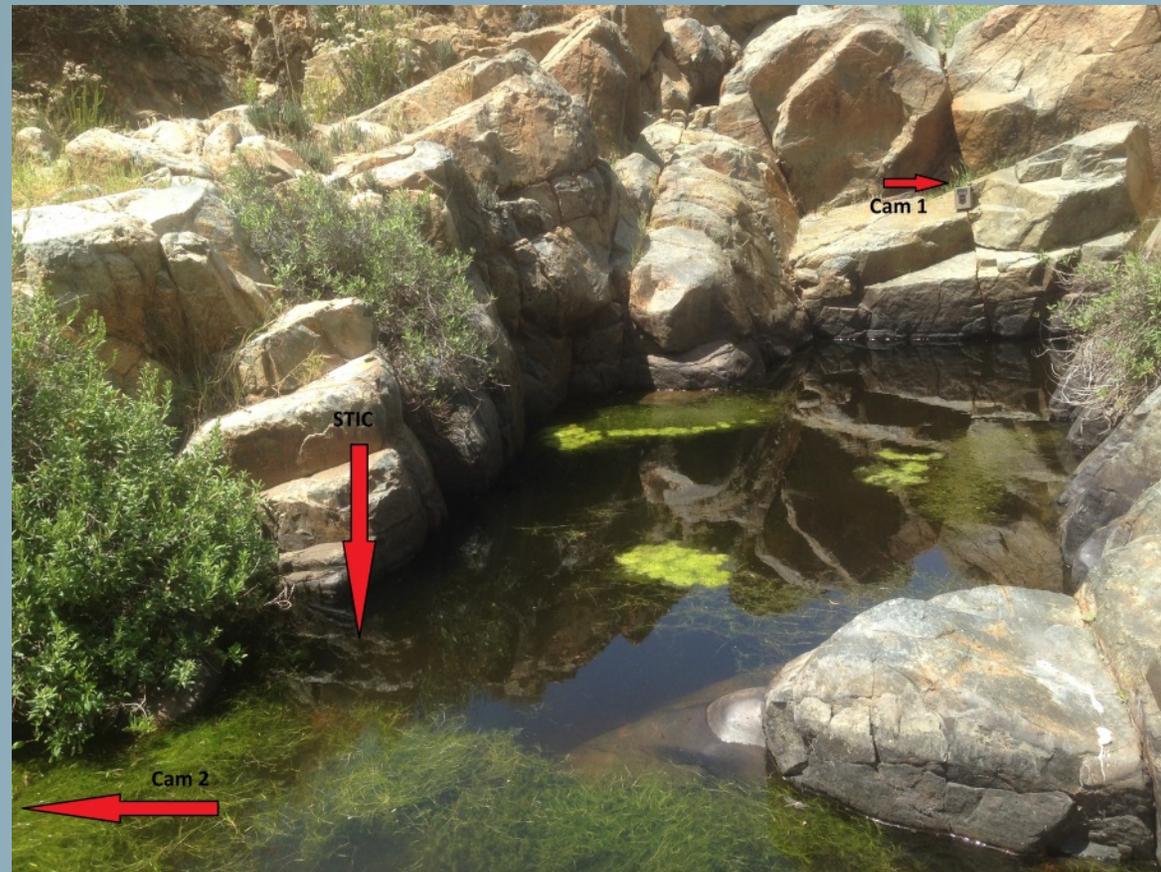
- Initially investigating relationship between surface water duration and native vs nonnative amphibians and invertebrates
- Identified as a permanent resource-rare in the area
- Cameras added to identify use by wildlife and humans



Proctor Valley Spring Monitoring

Methods

- **Two motion sensitive cameras, one each at lower and upper ends of pond**
- **4/15/2016 to 12/29/2016**
- **4/15/2016 to 10/02/2017**



Proctor Valley Spring Monitoring Results

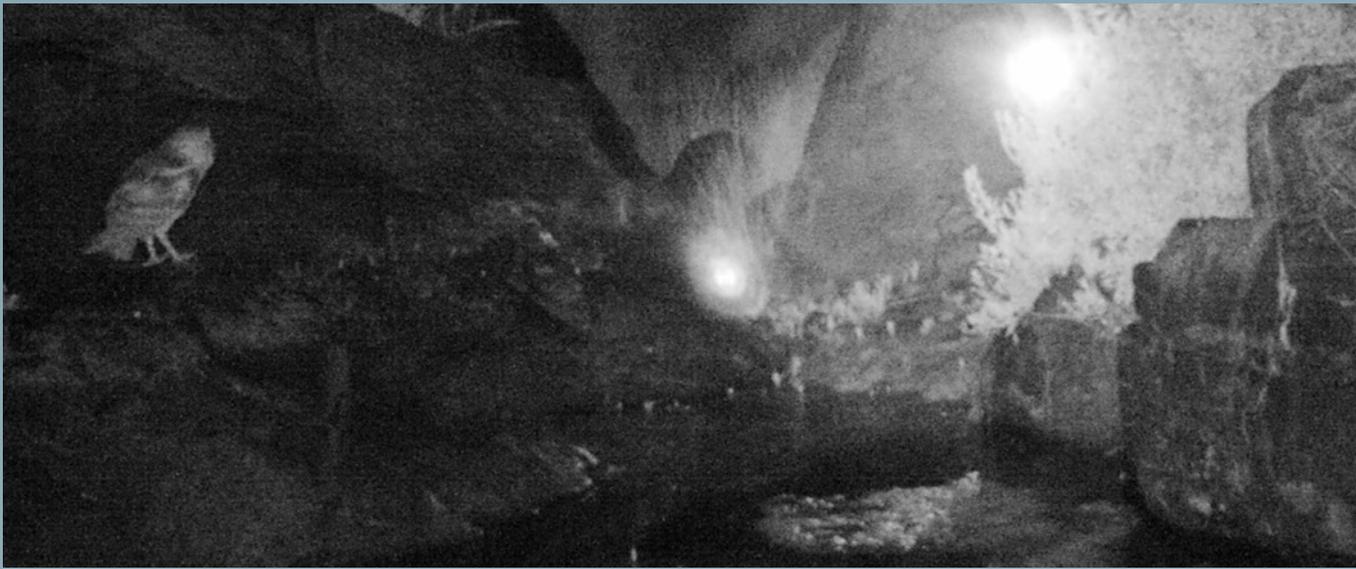
Type	Total Observations
Bird	3362
Human	4
Lizard	1
Med/Lg Mammal	715
Mouse/Rat	20
Grand Total	4102



Proctor Valley Spring Monitoring

Results

Type	Total Observations
Mourning Dove	2,400
Towhee	187
Raven	104
Red-tailed hawk	27
Barn owl	25
Great horned owl	17



Proctor Valley Spring Monitoring

Results



Type	Total Observations
Coyote	319
Mule deer	220
Cottontail/Jackrabbit	56/14
Domestic dog	49
Bobcat	19
Domestic cat	1



Resource Monitoring

- We can get observations of several different taxonomic groups with minimal disturbance
- We can determine if resource is being used by native or nonnative species or both
- We can gather data on baseline conditions prior to management action

Acknowledgements

USGS: James Molden, Angelica Aguilar-Duran, Jennifer Kingston, Carlton Rochester, Denise Clark, Lizzie Grolle, Omar Guerra-Salcido

DFW: Tracie Nelson, Tim Dillingham, Rich Burg,

SANDAG & SDMMP: Keith Greer, Kim Smith, Yvonne Moore, Kris Preston

