

Relict Leopard Frog

Conservation Planning & Implementation



Rebeca Rivera and Jef Jaeger
School of Life Sciences, University of Nevada, Las Vegas

Clark County MSHCP Annual Project Progress Report Symposium
28 August 2019, Project: 2015-UNLV-1550A

Conservation & Management

Multiagency conservation agreements,
assessments, and strategies – 2005, 2016

Voluntary multiagency conservation team

Objectives:

- Monitor populations
- Establish additional populations
- Enhance or create habitat
- Promote population sustainability
- Investigate species biology and apply findings to management



Funding

Clark County Desert Conservation Program

Funding: 2005, 2007, 2009, 2011, 2016 – April 2020



Activities 2016 – August 2019

Major Accomplishment:

Non-Listing of the Relict Leopard Frog under the Endangered Species Act and removal from candidate status

Decision in Federal Register, October 2016



Headstarting & Translocation



Headstarting facility at Lake Mead State Fish Hatchery, 2019

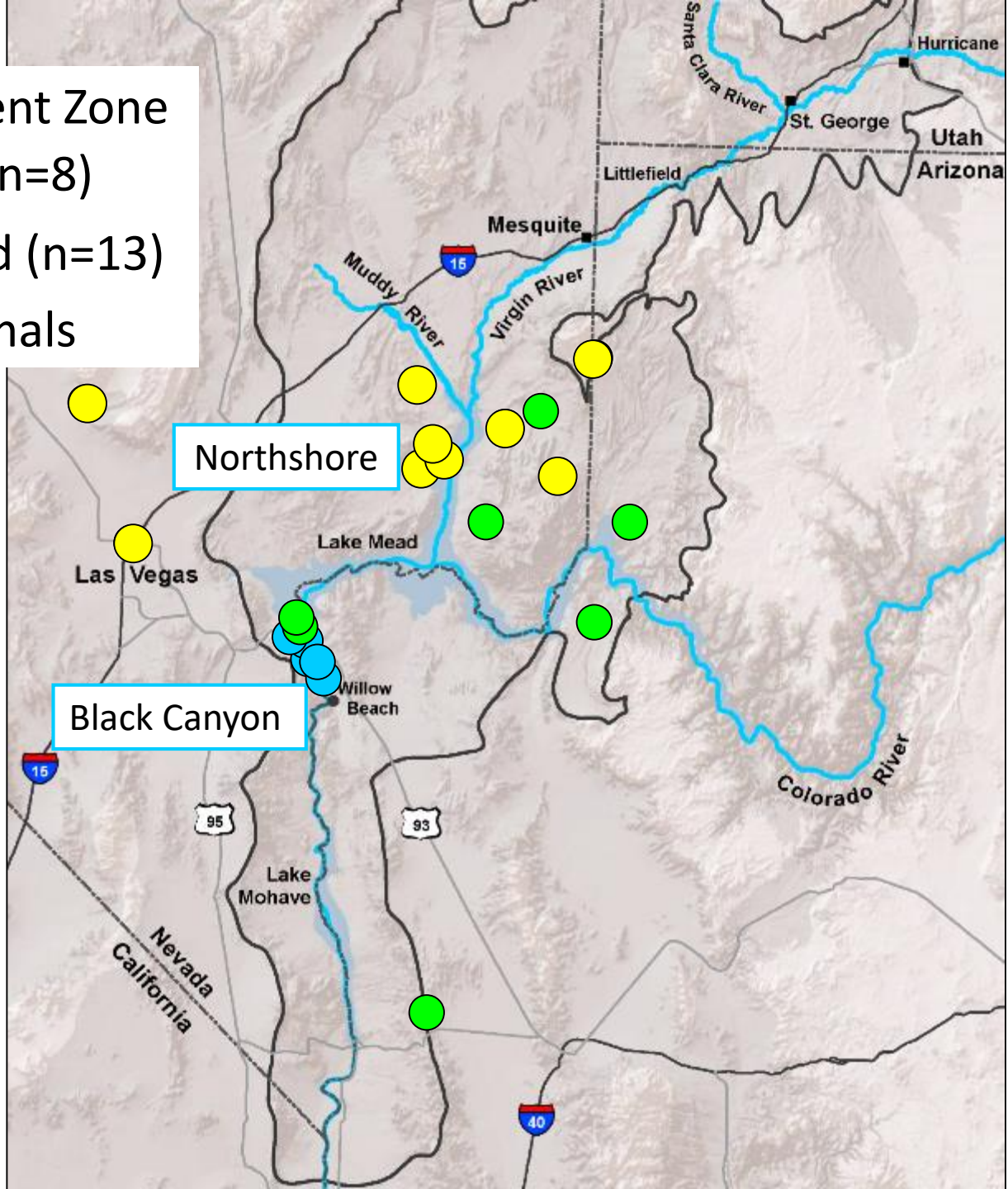
Headstarting & Translocation

2016 – 2019

- 3,347 juvenile frogs & late-stage tadpoles released
 - Translocations to 6 sites, including refuge sites, and augmentations at 3 'natural' sites
- 19 juvenile frogs for public display
- 487 animals for research into pathogenic amphibian chytrid fungus (240 to be released)



- Priority Management Zone
- Historical-Natural (n=8)
- Active-Translocated (n=13)
- Sites receiving animals 2016 – 2019 (n=9)



Assessments for Potential Translocations

15 sites formally assessed 2016 – 2019

- 2016
 - Spring Mountain State Ranch
 - Lake Mead State Fish Hatchery Overflow
 - Magnesite Spring, Valley of Fire State Park
 - Columbine Spring, Black Mtns, AZ
- 2017
 - Bird Song Trail area, DNWR
 - Burns & Warm springs, Black Mtns, AZ
 - Pakoon Springs, AZ
- 2018
 - Grapevine & Ki-up springs, Spring Range
 - Las Vegas Springs Preserve
- 2019
 - South Dike Overflow, Quail Creek Reservoir, UT
 - Grapevine Pass Wash, UT
 - Indian Pond, Little Creek Mesa, UT
 - Red Hills Desert Garden Stream, UT

Monitoring – Visual Encounter Surveys

2016 – August 2019

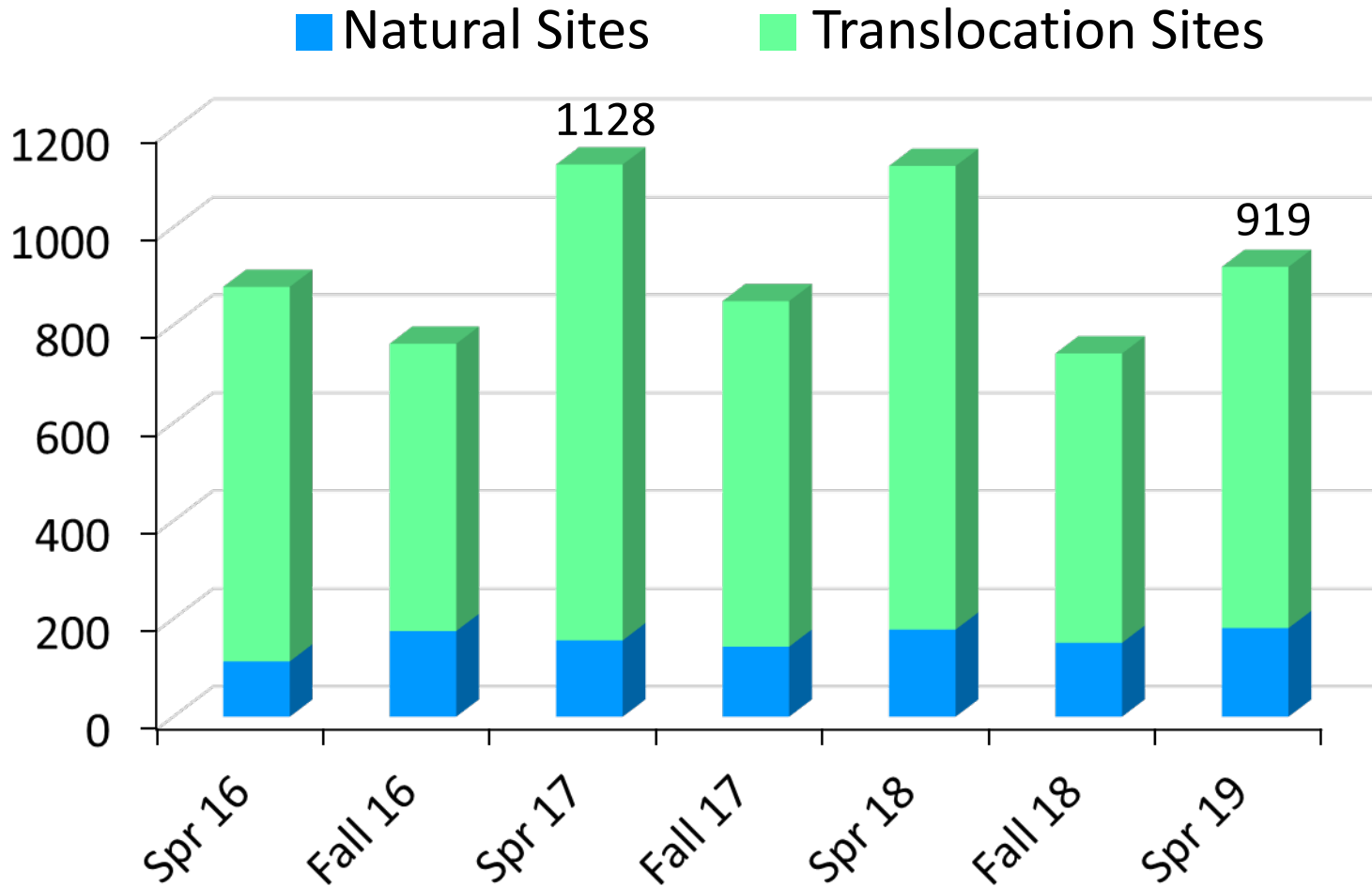
- 297 Visual Encounter Surveys
- 67 Other site visits (e.g. releases, habitat work)



UNLV assistant on nocturnal survey, 2019

Monitoring

High-counts of adults and juveniles from VES



Main pool at Horse Spring,
August 2018



Habitat Management

Maintenance of important breeding habitat



Efforts at:

- Bearpaw Poppy 2017, 2019
- Bighorn Sheep 2016, 2018
- Boy Scout Canyon 2016, 2017, 2018
- Horse Spring 2016
- Lower Blue Point 2019
- Upper Blue Point 2016, 2018, 2019
- Pupfish Refuge 2016, 2017
- Quail 2017
- Salt Cedar 2016

Investigate Species Biology

Assisted with research into impacts of pathogenic amphibian fungus (*Bd*) on the Relict Leopard Frog

- Research funded by BLM, USFWS
- Field surveys for *Bd* conducted at 9 sites
- Animals provided for laboratory experiments

Assisted field sampling for conservation genetic research

- Research funded by NPS
- 319 frogs sampled from 15 sites

Research into breeding biology

- Data from surveys and headstart/translocation efforts
- Additional surveys conducted during summer months
- Manuscript in preparation

Publications

Batrachochytrium dendrobatidis and the decline and survival of the relict leopard frog (2017) [EcoHealth](#), Jaeger, JR, Waddle AW, Rivera R, Harrison DT, Ellison S, Forrest MJ, Vredenburg VT, and van Breukelen F.

Systematic approach to isolating *Batrachochytrium dendrobatidis* (2018) [Diseases of Aquatic Organisms](#), Waddle AW, Sai M, Levy JE, Rezaei G, van Breukelen F, and Jaeger JR.

Population resistance to chytridiomycosis is life-stage dependent in an imperiled anuran (*in press*) [EcoHealth](#), Waddle AW, Levy JE, Rivera R, van Breukelen F, Nash M, and Jaeger JR.

Special mention of UNLV student volunteers and assistants, 2017 – August 2019

Scott Billings – UNLV undergrad
Mikee Gonzalez – UNLV undergrad
Kian Habashi – UNLV undergrad
DeJeigh Herrera – UNLV undergrad
Una Karanovic – UNLV undergrad
Emma Keenan – UNLV undergrad
Alexa Krauss – UNLV undergrad
Josh Levy – UNLV undergrad
Megan Locher – UNLV undergrad
Kristen McCarty – UNLV undergrad
Robert Pelletier – UNLV grad student
Tiffany Pereira – UNLV grad student
Matthew Radar – UNLV undergrad
Chase Robbins – UNLV undergrad
Hannah Rice – UNLV undergrad
Marlai Sai – UNLV undergrad
Yesenia Vasquez – UNLV undergrad

Daniel Villanueva – UNLV employee
Anthony Waddle – UNLV grad student
Alexandra Zmuda – UNLV undergrad
And many others over the years!

(Positions at time of effort)

We also thank all members of the RLFCT, agency personnel, and other volunteers that participated in the conservation of this species

Data presented are provisional

Video:

Translocation to Las Vegas Springs Preserve