

Relict Leopard Frog Conservation, Finishing almost Five Years of Implementation

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desert conservation
PROGRAM
respect, protect and enjoy our desert!



Clark County MSHCP Annual Project Progress Report Symposium
13 August 2015, Project: 2009-NPS-810A

Agreements

Conservation efforts from 2011 through August 2015

- NPS-810A – Clark County and NPS
- Subsequent agreement – NPS and UNLV
- Synergistic agreement – NDOW and UNLV
1/3 match with funding from USFWS, allowed extension into 2015

County personnel releasing frogs at Corn Creek, 2015



Conservation Agreement and Strategy (CAS)

Voluntary signed in 2005

Conservation Team (RLFCT)

Objectives:

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



NPS, BLM and UNLV personnel releasing frogs at Bearpaw Poppy Spring, 2012

What has ~5 years of conservation actions accomplished?

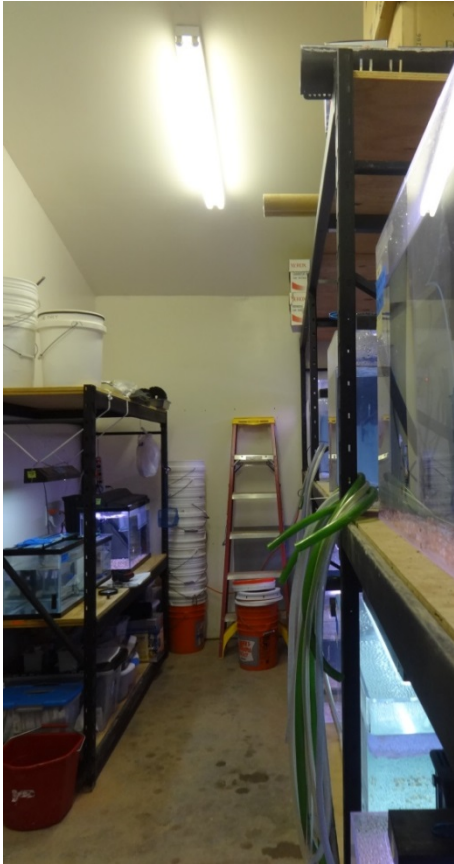
“More frogs! More places!”

- Jon Sjöberg



Headstarting & Translocation

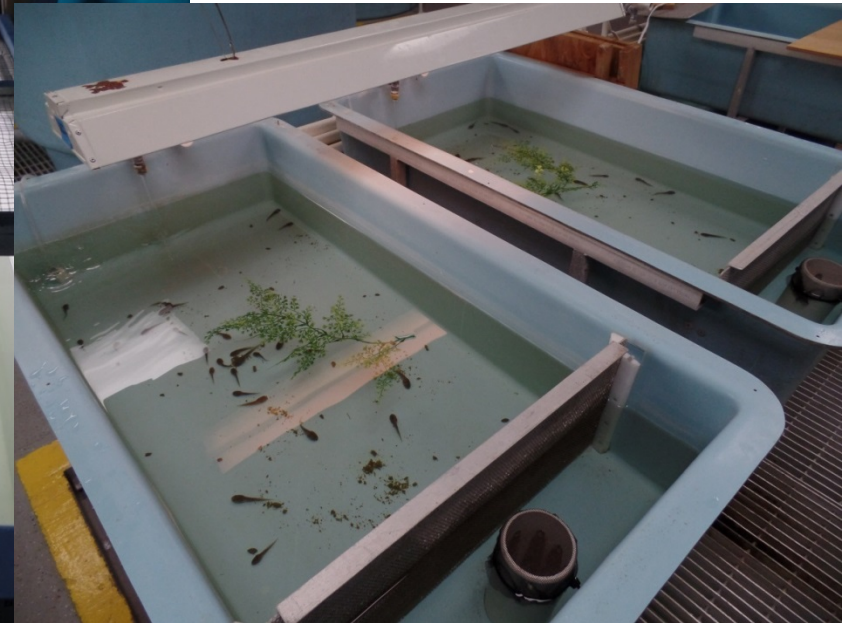
Eggs collected from wild each year, reared to late-stage tadpoles or small frogs...



LMNRA facility, 2015



Raceway at Lake Mead
State Fish Hatchery, 2015



Tubs at Willow Beach
National Fish Hatchery, 2015

Headstarting & Translocation

Then released...



Distribution

Sites in 2010

7-9 Historical

7 Experimental

(+ 3 failed)

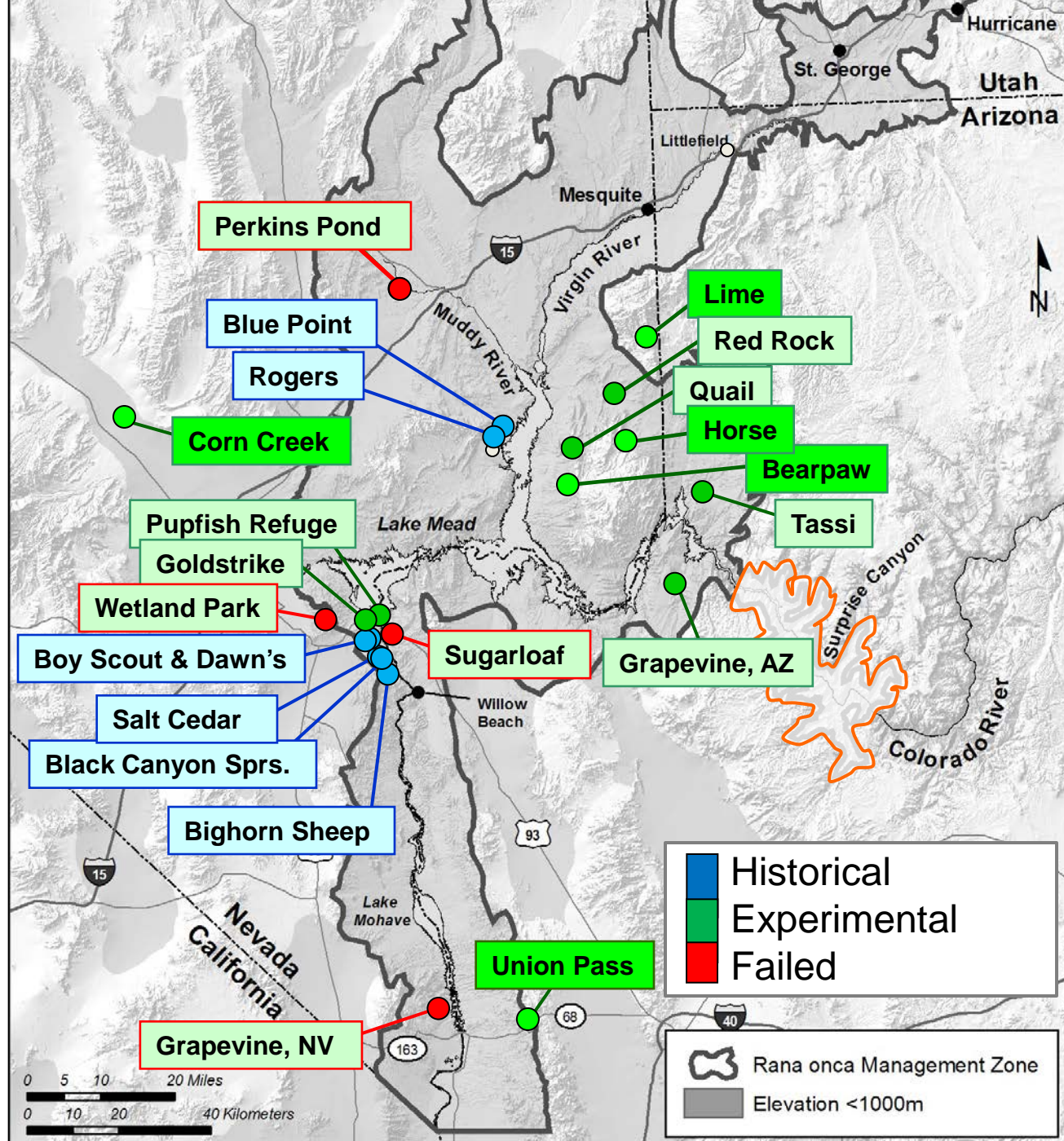
Sites in 2015

7-9 Historical

11 Experimental

(+ 4 failed)

□ Jaeger & Drost 2010
Unpublished



Status of Experimental Sites

Translocations completed by 2010

Site Name	Release Years	Animals Released	Over-Winter	Breed.	Recruit.	Frog Count Spring 2015
Tassi	2006-10	1198	Yes	Yes	Yes	45
Grapevine, NV	2006-07	1145	Yes	–	–	Failed
Red Rock	2005-10, 13-14	813	Yes	Yes	–	13
Goldstrike	2004-09, 13	2296	Yes	Yes	Yes	19
Grapevine, AZ	2004-09	3820	Yes	Yes	Yes	159
Pupfish	2003-08	541	Yes	Yes	Yes	30
Sugarloaf	2002-05	539	Yes	Yes	–	Failed
Wetland Park	2000-01	297	–	–	–	Failed

Status of Experimental Sites

Experimental sites, augmentations from 2011-2015

Site Name	Release Years	Animals Released	Over-Winter	Breed.	Recruit.	Frog Count Spring 2015
Corn Creek	2015	109	–	–	–	–
Bearpaw	2012-15	595	Yes	Yes	–	51
Horse	2012-15	414	Yes	Yes	–	37
Lime	2012-15	436	Yes	Yes	–	7
Union Pass	2011-15	868	Yes	Yes	–	137
Perkins	2010-14	1819	Yes	–	–	Failed
Quail	2008-12	597	Yes	Yes	Yes	122

Perkins Pond an Unsuccessful Experiment

- Owned by Clark County
- Bullfrog exclusion fence
- Translocations from 2010 – 2014 (1819 animals)
- Minimal success documented
- **Low survivorship** – Possible factors: high predation, poor water quality, instability of water level, pathogenic fungus



Monitoring

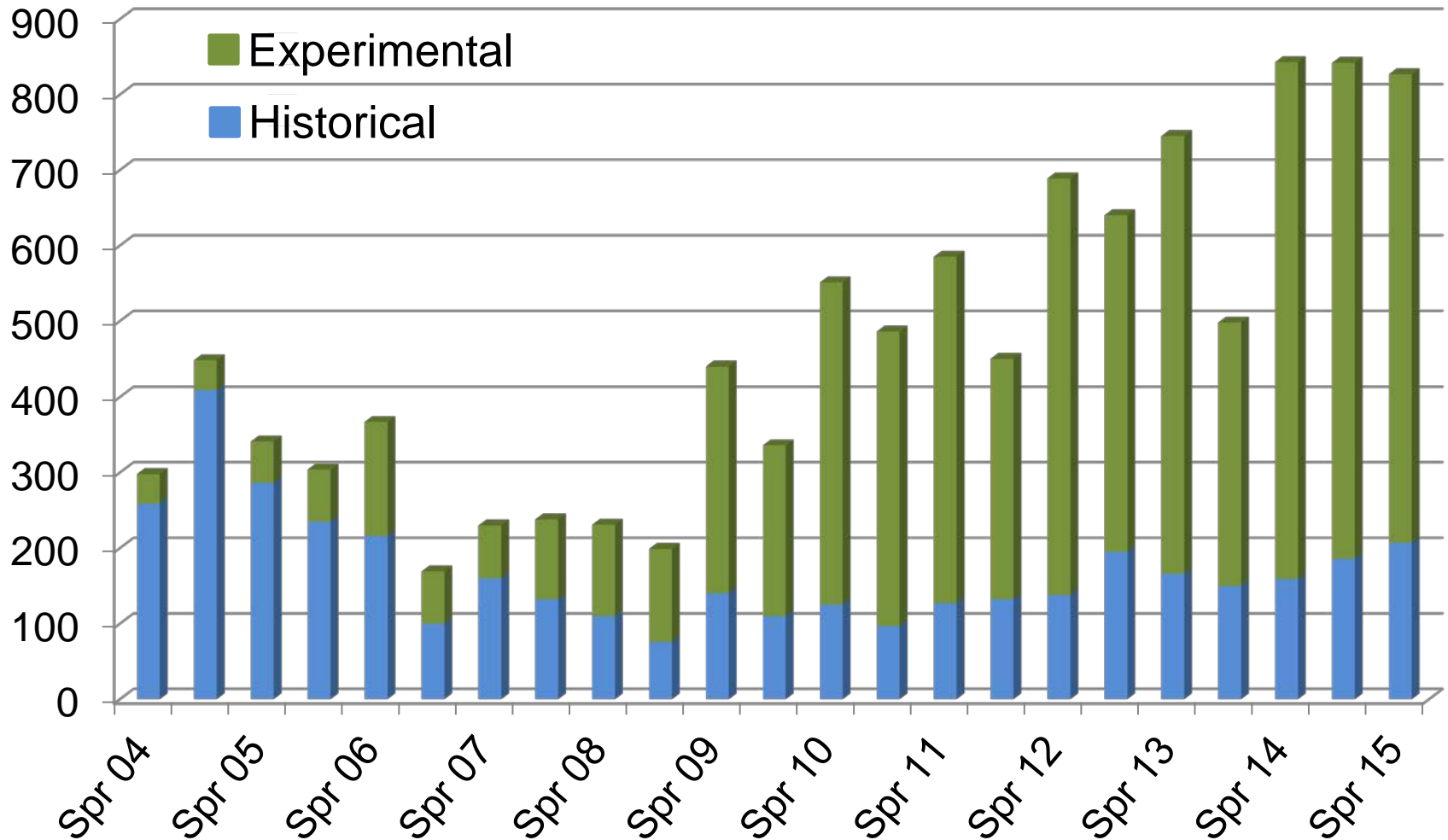
- Visual encounter surveys, both diurnal and nocturnal
- Conducted in spring and fall
 - Breeding, recruitment
 - Relative abundance
 - Habitat changes

UNLV personnel conducting egg mass survey at Union Pass Spring, February 2015



Monitoring

High counts (VES) of adult & juvenile frogs



Overall Population Estimation

UNLV effort completed in 2012 with funding from USFWS

2012 Estimate (by Jaeger & Rivera 2013)

- Double Sampling approach
- 14 sites (historical & experimental)
- Estimated ~ 1500 or 1700 adults (range 1381–2326)

2001 Estimate (by Bradford et al. 2004)

- 5 sites (all historical)
- Estimated ~ 1100 adults (range 693 – 1833)

“More frogs! More places!”

- Jon Sjöberg



Habitat Management

Minor component of project

- Assist agency actions
- Maintain important breeding pools

Efforts occurred:

- Bighorn Sheep Spring, Boy Scout Canyon, & Pupfish Refuge
- Blue Point Spring (Upper & Lower)
- Bearpaw Poppy, Horse & Quail springs
- Union Pass Spring
- Perkins Pond

NDOW person maintaining breeding habitat at Pupfish Refuge, December 2014



Habitat Management

BLM-led efforts at sites in Gold Butte



Horse Spring, March 2015



Bearpaw Poppy Spring, March 2015

Detecting the Pathogenic Amphibian Fungus

UNLV effort with funding mostly from NDOW

Batrachochytrium dendrobatidis (*Bd*)

- Causes the disease chytridiomycosis

Bd detected at Relict Leopard Frog sites

- Blue Point, Perkins Pond (& Muddy River) & Corn Creek



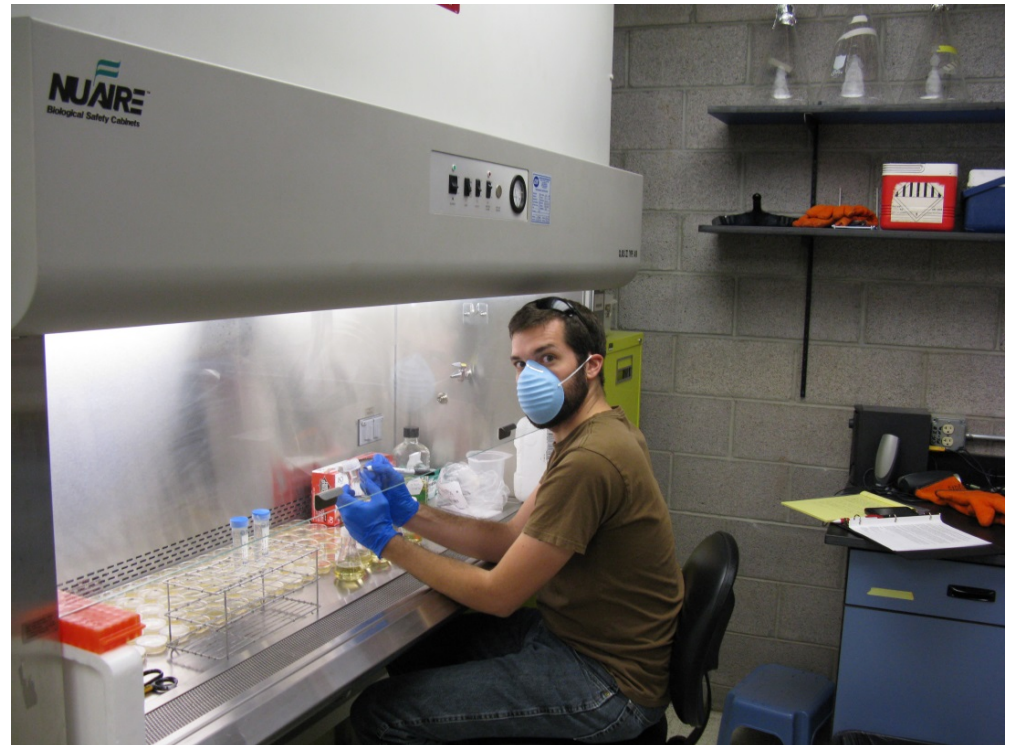
USFWS and UNLV personnel at
Corn Creek, March 2015

Relict Leopard Frog Susceptibility to *Bd*

UNLV effort with funding from BLM

- Laboratory experiments in 2013, 2014
- Two fungal strains
- Relict Leopard Frogs became infected
- But no mortality observed due to infection

UNLV post-bac assistant growing
Bd, October 2014



Future Direction

- Petitioned for listing under ESA in 2002
 - Warranted but precluded
- Multi-district Litigation Species
- Species status review underway
- Listing decision expected in 2016-17

Relict Leopard Frog egg masses at
Horse Spring, February 2015



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- Clark County Desert Conservation Program
- Nevada Department of Wildlife
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- Bureau of Reclamation
- Bureau of Land Management
- Arizona Game & Fish Department

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and many more over the years!!



Photos credits: Jef Jaeger and Rebeca Rivera