

Relict Leopard Frog Conservation Planning and Implementation



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Clark County MSHCP Annual Project Progress Report Symposium
23 August 2016, Project: 2015-UNLV-1550A

2001, Rediscovering of *Rana onca*

Publication in Copeia

“Rediscovering *Rana onca*: Evidence for phylogenetically distinct leopard frogs from the border region of Nevada, Utah, and Arizona” Jaeger et al. 2001

Only 1100 relict leopard frogs known from a few sites in southern Nevada

Conservation team formed

Interagency participation

Began developing conservation agreement, strategies, and protocols



2002, Petition for ESA Listing

Petitioned by Center for Biological Diversity
and Southern Utah Wilderness Alliance

USFWS – Listing **warranted**, but precluded by
other higher priorities

RLF Candidate Species under ESA

Management continued...



2004, Specific NPS Funded Project (to UNLV)

2005, Desert Conservation Program Funding

County funding over three bienniums:

2005-2007, 2007-2009, 2009-2011

Project extended into 2015 with
matching funds (and actions)

Actions extended through June 2016

New biennium funding started July 2016



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2005, Conservation Agreement and Conservation Assessment and Strategy

Agreement

Ten-years

Existing laws and regulations

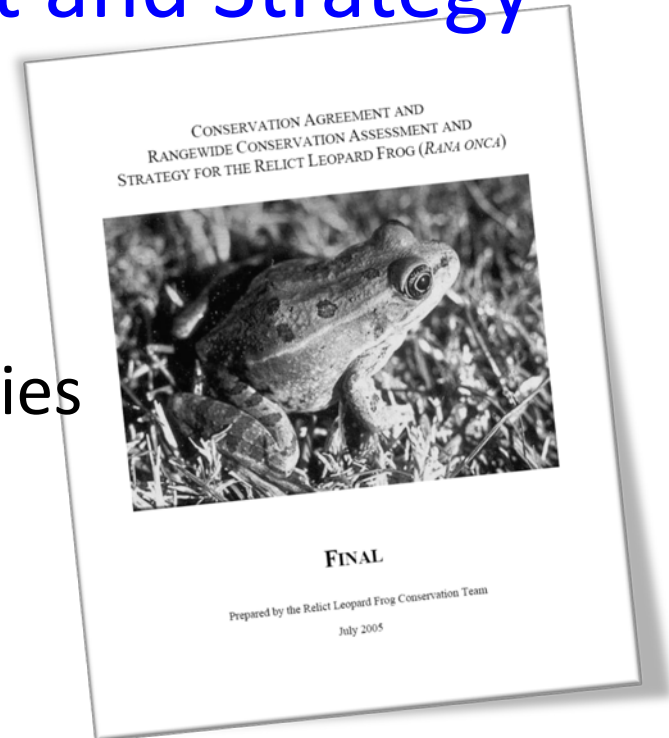
Responsibilities of Signatory Parties
and Conservation Team

Assessment

Status of current distribution
and populations

Likely current threats

Mitigation needs



2005, Voluntary Conservation Agreement and Conservation Assessment and Strategy

Strategy

Team oversight

Monitor populations

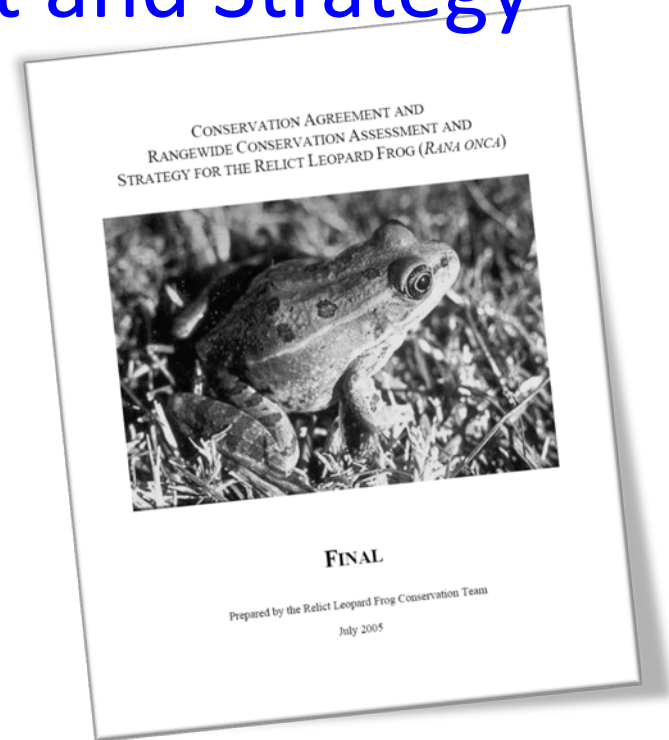
Establish additional populations
headstart/translocations

Enhance or create habitat

Minimize or eliminate threats

Manage habitats and promote sustainability

Investigate species biology to inform management



2015, What has been Accomplished?

Voluntary conservation team

Semi-annual meetings and reporting

Annual work plans since in 2003

Active management for > 15 years

Consistent, specific funding since 2004

Substantial increase in number of occupied sites

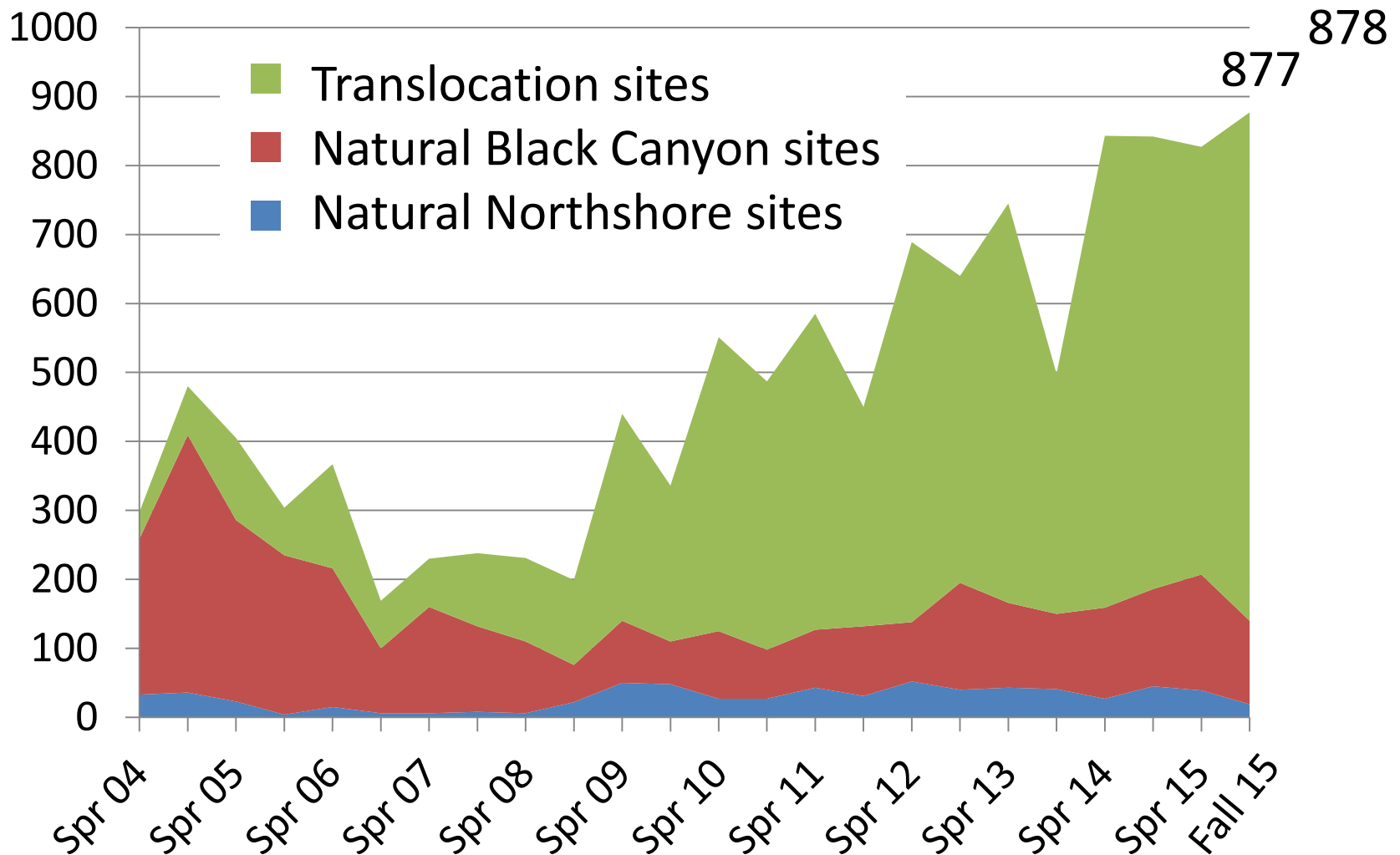
7 sites in 2001 → 18 sites in 2015

Plus an additional site in 2016

Upward trend in overall relative abundance

Monitoring – Relative Abundance

High-counts of frogs from visual encounter surveys



Increase in Overall Population Estimates

Date	Approaches	Overall Estimate (Range)
2001	<ul style="list-style-type: none">• Mark-recap• Selective ratio• Density	1077 (693 – 1833)
2012	<ul style="list-style-type: none">• Mark-recap• Selective ratios• Average ratio	1584 (1381 – 2082) 1682 (1442 – 2326)
2015	<ul style="list-style-type: none">• Selective ratios• Average ratio	2404 (2041 – 3165) 2048 (1810 – 2792)

Current Actions under the ESA



2011, USFWS Multidistrict Litigation

USFWS agreement with WildEarth Guardians to conduct actions under ESA for 251 Candidate Species by 2017

2016, USFWS conducted a **Species Status Assessment (SSA)** for *R. onca* to inform listing decision

Listing decision expected (September)

Revision and Renewal

Currently entering
signatory phase

CONSERVATION AGREEMENT
AND
CONSERVATION ASSESSMENT AND STRATEGY
FOR THE RELICT LEOPARD FROG, *RANA ONCA*
(=*LITHOBATES ONCA*)



DRAFT

Prepared by the Relict Leopard Frog Conservation Team

2016

Threats Identified in 2016 CAS

From assessment of “stressors” identified in SSA by USFWS

Five factor assessment

- A. Present or threatened destruction or curtailment of habitat or range
- B. Overutilization
- C. Disease or predation
- D. Inadequacy of regulatory mechanisms
- E. Other natural or manmade factors affecting continued existence

Current Threats

A. Present or threatened destruction or curtailment of habitat or range

Habitat degradation

Ground water diversion and withdrawal

Overgrowth of emergent vegetation (Bradford et al. 2004)

Nonnative plants

Burro and cattle grazing (threat or beneficial)

Reduced connectivity of populations

Current Threats

C. Disease or predation

Amphibian chytrid pathogen

Crayfish, bullfrogs, nonnative predatory fishes

E. Other natural or manmade factors

Small Population Size

Flash flood events (+/-)

Drought

Wildfire

} Climate Change

General Locations, Sites Names	Connectivity	Overgrowth of vegetation	Nonnative plants	Groundwater	Disturbance ¹	Disease	Bullfrogs	Crayfish	Nonnative fish	Small population	Climate change	Flash floods	Wildfire
<i>Northshore</i>													
Upper Blue Point	L	H	M	M	L	L	L	L	M	H	M	L	L/M
Lower Blue Point	L	H	M	M	L	L/M	L	L	M	H	M	L	L/M
Rogers Spr.	L	H	M	M	L	L	L	L	M	H	M	L	L/M
<i>Black Canyon</i>													
Pupfish Refuge Spr.	L	L/M	L/M	L	L	L	L	L	L	H	M	M	L
Goldstrike Canyon	L	L	L	L	L	L	L	L	L	H	M	M	L
Dawn's Canyon	L	L	L	L	L	L	L	L	L	M	M	L/M	L
Boy Scout Sprs.	L	L	L	L	L	L	L	L	L	M	M	L	L
Salt Cedar Canyon	L	M	M	L	L	L	L	M	L	M	M	M	L
Bighorn Sheep Spr.	L	L	L	L	L	L	L	L	L	M	M	H	L
Black Canyon Spr.	L	M	M	L	L	L	L	L	L	M	M	M	L
<i>South of Black Canyon</i>													
Union Pass Spr.	M	L	L	L	L	L	L	L	L	M	M	L	L
<i>Grapevine Mesa</i>													
Grapevine Spr.	M	L	L	L	L	L	L	L	L	M	M	L	L
<i>Gold Butte</i>													
Quail Spr.	M	L/M	L/M	L	L	L	L	L	L	M	M	L	L
Horse Spr.	M	L/M	L	L	L/M	L	L	L	L	H	M	L	L
Bearpaw Poppy Spr.	L	L	L	L	L	L	L	L	L	H	M	L	L
Red Rock Spring	M	L	L	L	L/M	L	L	L	L	H	M	L	L
<i>Grand Wash Drainage</i>													
Tassi Spr.	M	L/M	M/L	L	L	L	L	L	L	M	M	L	L
Lime Spr.	M	L	L	L	L	L	L	L	L	H	M	L	L
<i>Refuge Sites</i>													
Corn Creek	M	L	L	L	L	L	L	M	M	H	M	L	L/M

Severity of
threat at
each site

High

Medium

Low

¹ Includes excessive disturbance by livestock and burros, and excludes flash flood disturbance

To list or not to list..?

- ✓ Substantial increase in number of sites occupied
- ✓ Overall upward trend in abundance
- ✓ Active, dedicated voluntary conservation team
- ✓ Renewal of conservation agreement and strategy
 - Ten year commitment
- ✓ Funding commitment over next ~ three years
 - Continuation of management at current levels



Acknowledgments

Current funding sources:

Clark County

Arizona Game & Fish Dept.

Bureau of Land Management, AZ & NV



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Other contributors (including previous funding sources):

National Park Service, Lake Mead N.R.A.

Nevada Dept. of Wildlife

U.S. Fish & Wildlife Service

Lake Mead State Fish Hatchery

Willow Beach National Fish Hatchery

Bureau of Reclamation

University of Nevada, Las Vegas

Relict Leopard Frog Conservation Team

Agency partners, Volunteers, Student participants



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