

Relict Leopard Frog Conservation



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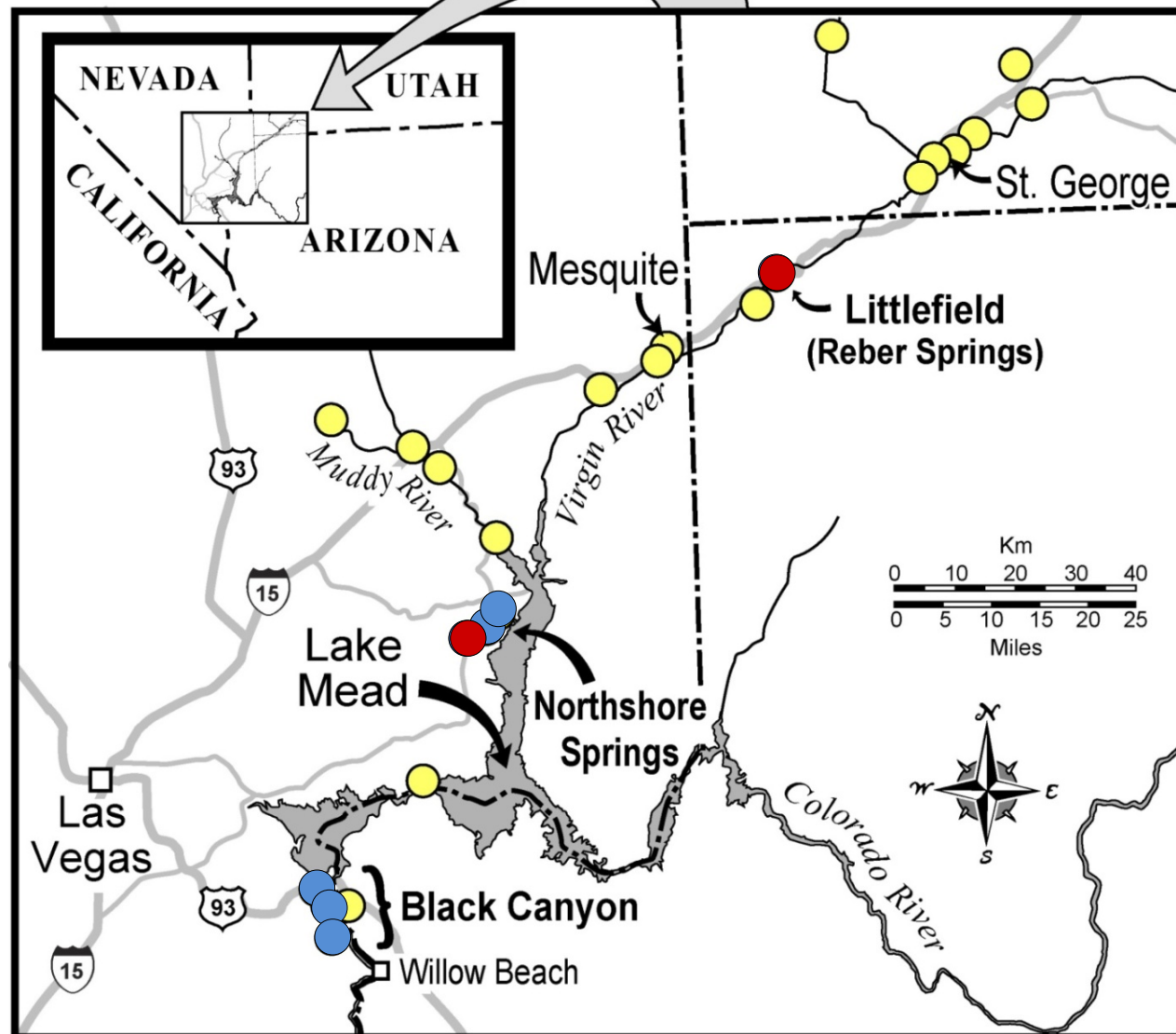
³ Nevada Department of Wildlife

Clark County MSHCP Annual Project Progress Report Symposium
22 August 2013, Project: 2009-NPS-810A

Background

- 1990s
Frogs known from 3 areas
- 2001
Frogs known at only 2 areas
~ 1100
- 2002
Petitioned for listing under ESA

Minimum Historical Locations



From Bradford, Jaeger, & Jennings 2004

Background

Voluntary CAS signed in 2005

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

CONSERVATION AGREEMENT AND
RANGEWIDE CONSERVATION ASSESSMENT AND
STRATEGY FOR THE RELICT LEOPARD FROG (*RANA ONCA*)



FINAL

Prepared by the Relict Leopard Frog Conservation Team

July 2005



Outline – Actions over the last year

- ✓ Habitat management
- ✓ Headstarting and Translocation
 - Facilities and rearing
 - Status of experimental sites
 - Assessment on new sites
- ✓ Monitoring efforts
 - Visual Encounter Surveys
 - Population estimates (Mark-Recapture)
- ✓ Other actions
 - *Bd* (chytrids) sampling
 - Las Vegas Springs Preserve
- ✓ All data presented are provisional



Habitat Management

Blue Point



Maintain open breeding pools

Habitat Management

Pupfish Refuge Spring



Ongoing project led by BOR to remove tamarisk from site and establish native trees

Habitat Management

Perkins Pond



NDOW efforts in January 2013

- Added cottonwood logs
- Trimmed vegetation near exclusion fence

Habitat Management

Horse Spring



Save the Frog Day with Boy Scout Troop (BLM)



Habitat Management

Minor actions at Boy Scout Hot Spring (UNLV)

- Keeping important breeding pools clear of vegetation and sediments





Headstarting and Translocation

Eggs collected from wild, reared to late-stage tadpoles or small frogs, then released



Headstarting and Translocation

Rearing Facilities

Raceways at Lake Mead
State Fish Hatchery, 2012



NPS facility, 2011

Raceway at Willow Beach National
Fish Hatchery, 2012



Headstarting and Translocation

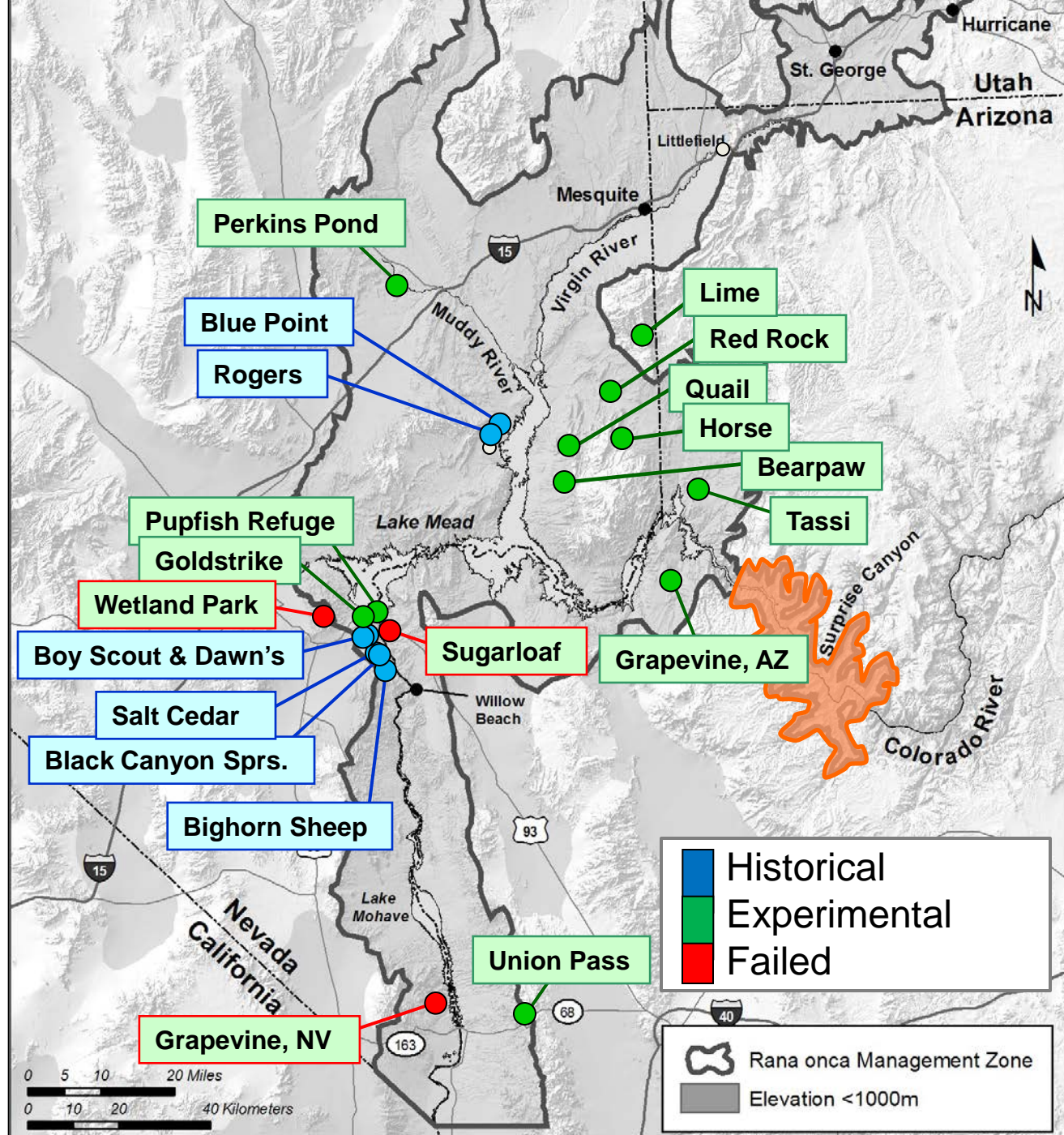
This year: 213 late-stage tadpoles & 468 frogs released to 7 experimental sites & back to Blue Point Spring



Current Status

Sites:

- ~ 6 historical
- 14 Experimental
- 11 Exp. Extant



■ Jaeger & Drost 2010, Unpublished

Status of Experimental Sites

Sites of active augmentations

Site Name	Release Years	Larva	Frogs	Over-Winter	Breeding	Recruiting	Current Status
Bearpaw*	2012-13	0	459	Yes	-	-	Active
Horse*	2012-13	272	63	Yes	Yes	-	Active
Lime	2012-13	231	131	Yes	-	-	Active
Union Pass	2011-13	480	255	Yes	Yes	-	Active
Perkins*	2010-13	1267	377	Yes	-	-	Active
Red Rock	2005-10, 2013	109	541	Yes	Yes	-	Active
Goldstrike	2004-09, 2013	2185	88	Yes	Yes	Yes	Active

* Animals from Blue Point, other sites received Black Canyon animals

Status of Experimental Sites

Augmentations complete

Site Name	Release Years	Larva	Frogs	Over-Winter	Breeding	Recruiting	Current Status
Quail	2008-12	324	273	Yes	Yes	Yes	Active
Tassi	2006-10	479	719	Yes	Yes	Yes	Active
Grapevine, NV	2006-07	895	250	Yes	-	-	Failed
Grapevine, AZ	2004-09	3820	0	Yes	Yes	Yes	Active
Pupfish	2003-08	0	541	Yes	Yes	Yes	Active
Sugarloaf	2002-05	0	539	Yes	Yes	-	Failed
Wetland Park	2000-01	0	297	-	-	-	Failed

Records from 2000-2004 are not clear

Headstarting and Translocations

Assessing potential translocation sites:

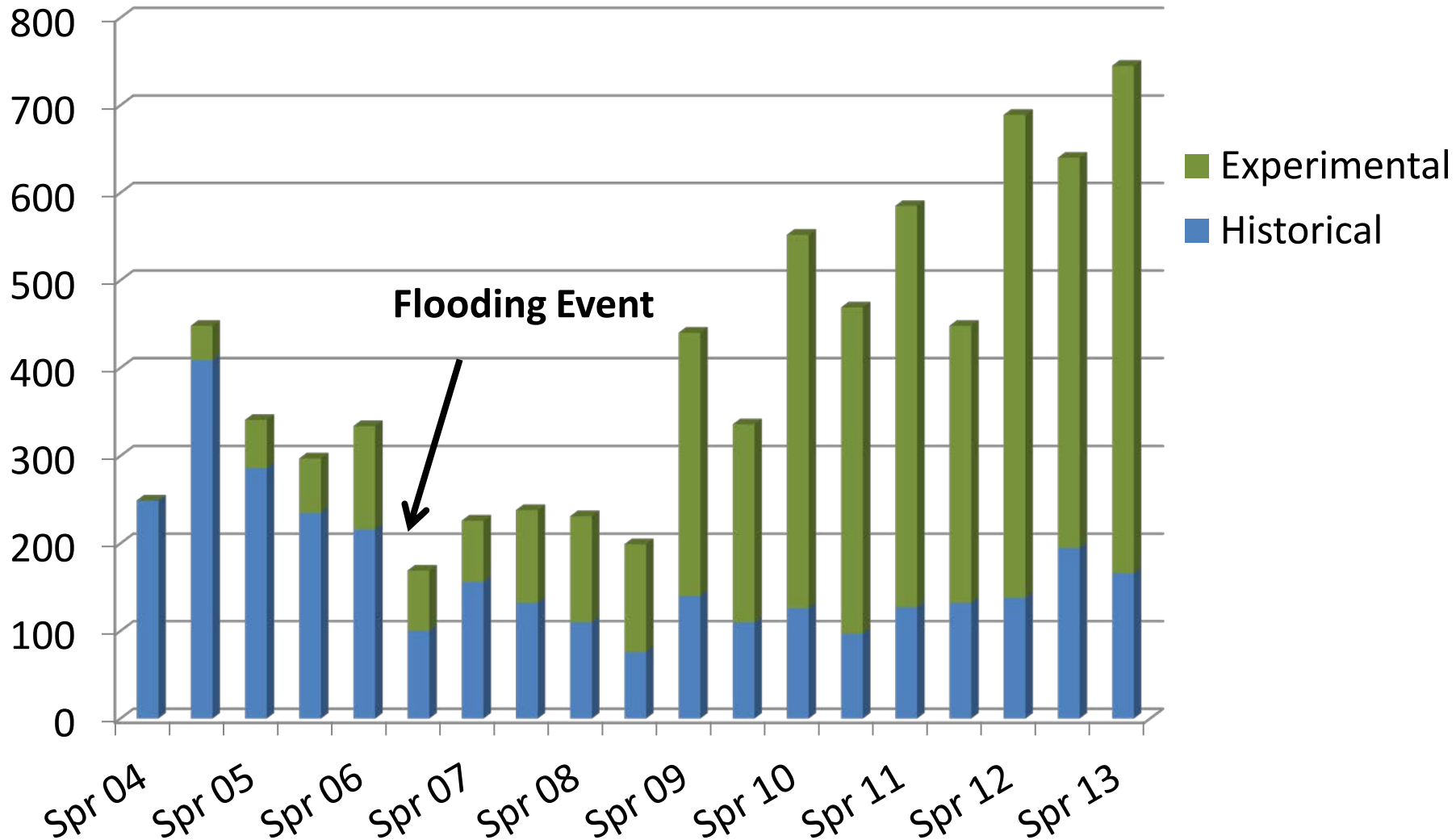
- Chill Heel Spring, Grand Wash area (UNLV, BLM, USFWS)
- Black Mountains, AZ (AGFD)

Chill Heel Spring,
April 2013



Monitoring Efforts

High counts (VES) of adult & juvenile frogs



Monitoring Efforts

Estimates from 2012 using full-likelihood, closed capture model

Site	VES High Count	Number Marked	Estimate	95% C.I.
Upper Blue Point	26	48	57	50-86

- Mark-recapture study to evaluate the meaning of VES results
- UNLV & USFWS effort to derive estimates from: Blue Point, Grapevine Canyon, Red Rock, Pupfish, Bighorn Sheep



Bd (fungus pathogen) Sampling

Initial sampling in 2008, improved protocol 2010-2013
(MSHCP and FWS funding)

- Sampled at four sites this year
- *Bd* detected repeatedly on Relict Leopard Frogs at one site
- *Bd* detected in other anurans regionally: Muddy River
- Ongoing UNLV/BLM research into the potential impacts of *Bd* infection on Relict Leopard Frogs



Las Vegas Springs Preserve

Public Display of Relict Leopard Frogs



Frog Terrarium Photo: Rachel Vanhorn



Major Support

Clark County, MSHCP

Lake Mead N.R.A.

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Nevada Dept of Wildlife

Lower Colorado River, MSCP

Bureau of Land Management

Other major contributors:

Willow Beach Fish Hatchery

Lake Mead State Fish Hatchery

Arizona Game & Fish Dept

Bureau of Reclamation



Captive reared metamorph

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Carla Wise

Everyone on the Relict Leopard Frog Conservation Team ...and many others...



Photos credits Jef Jaeger or Rebeca Rivera, unless otherwise noted