

Relict Leopard Frog Monitoring and Management

2005-NPS-476-P



Ross Haley

Lake Mead National Recreation Area

Dana Drake and Jef Jaeger

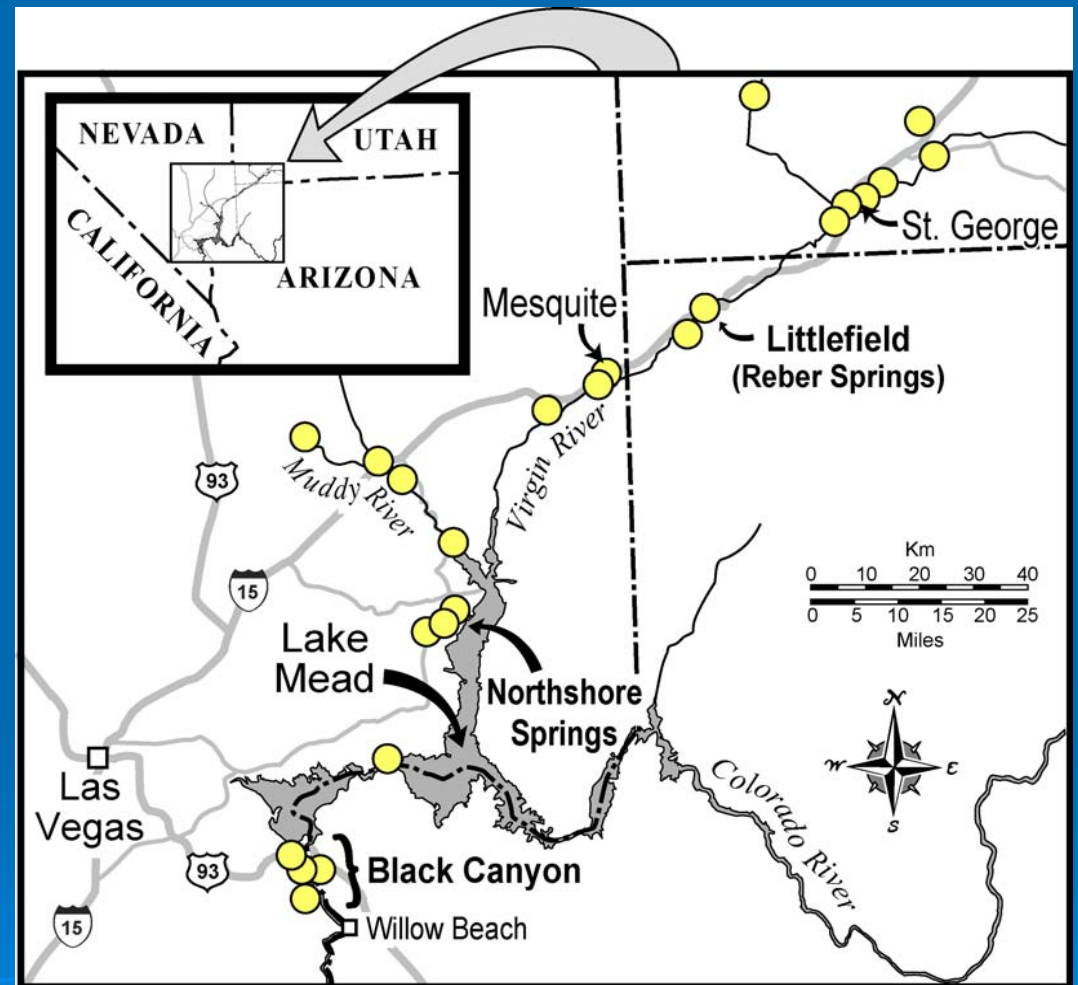
Public Lands Institute, University of Nevada, Las Vegas
under Task Agreement with NPS



Relict Leopard Frog Monitoring and Management

Background

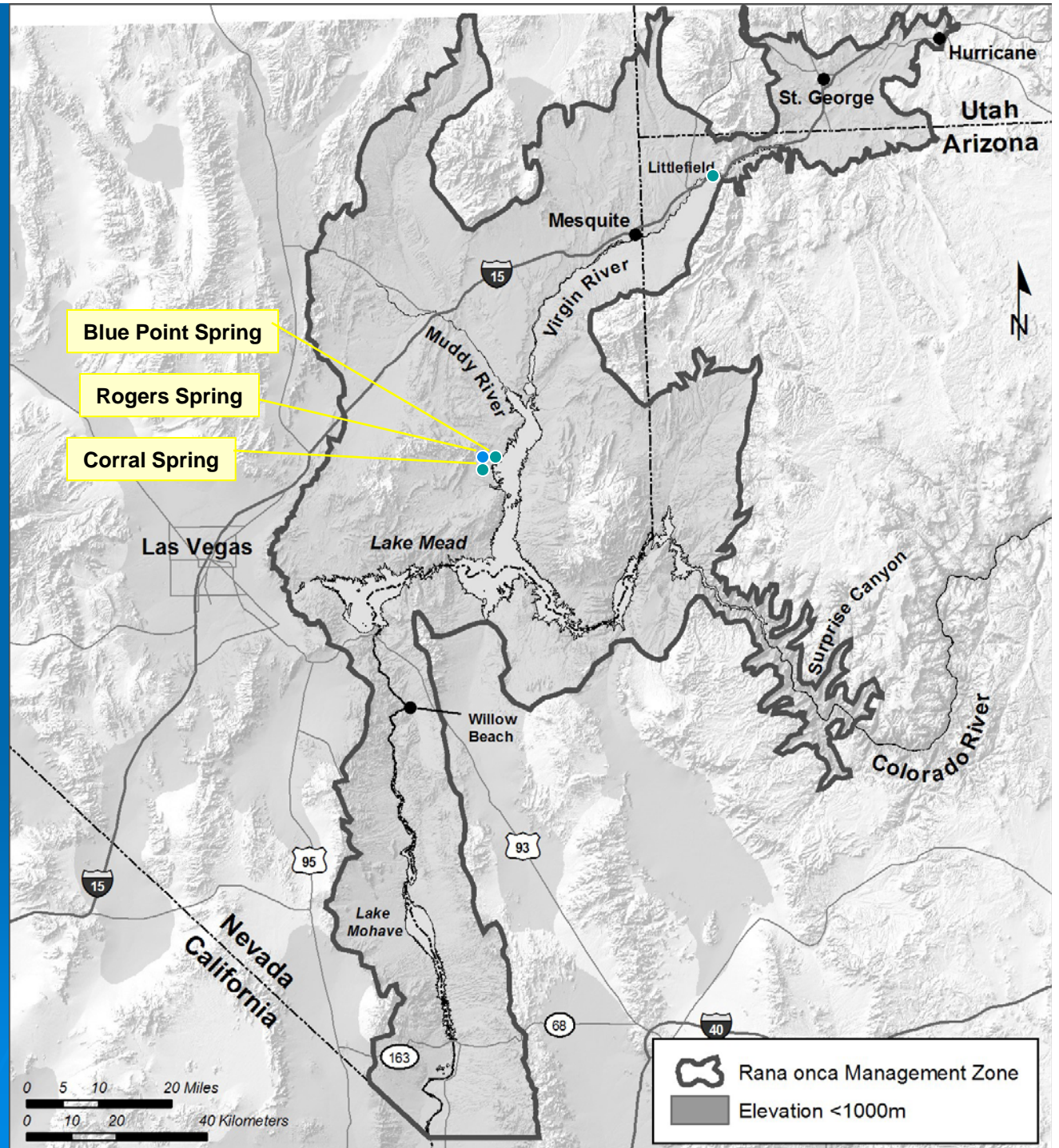
- Thought to be extinct, since 1950, the Relict Leopard Frog was rediscovered in the early 1990s
- Currently covered under interagency Conservation Assessment and Strategy (CAS)
- Managed Cooperatively with the Relict Leopard Frog Conservation Team



Modified from Bradford et al. 2004

Known Distribution 1991

Northshore Springs Complex

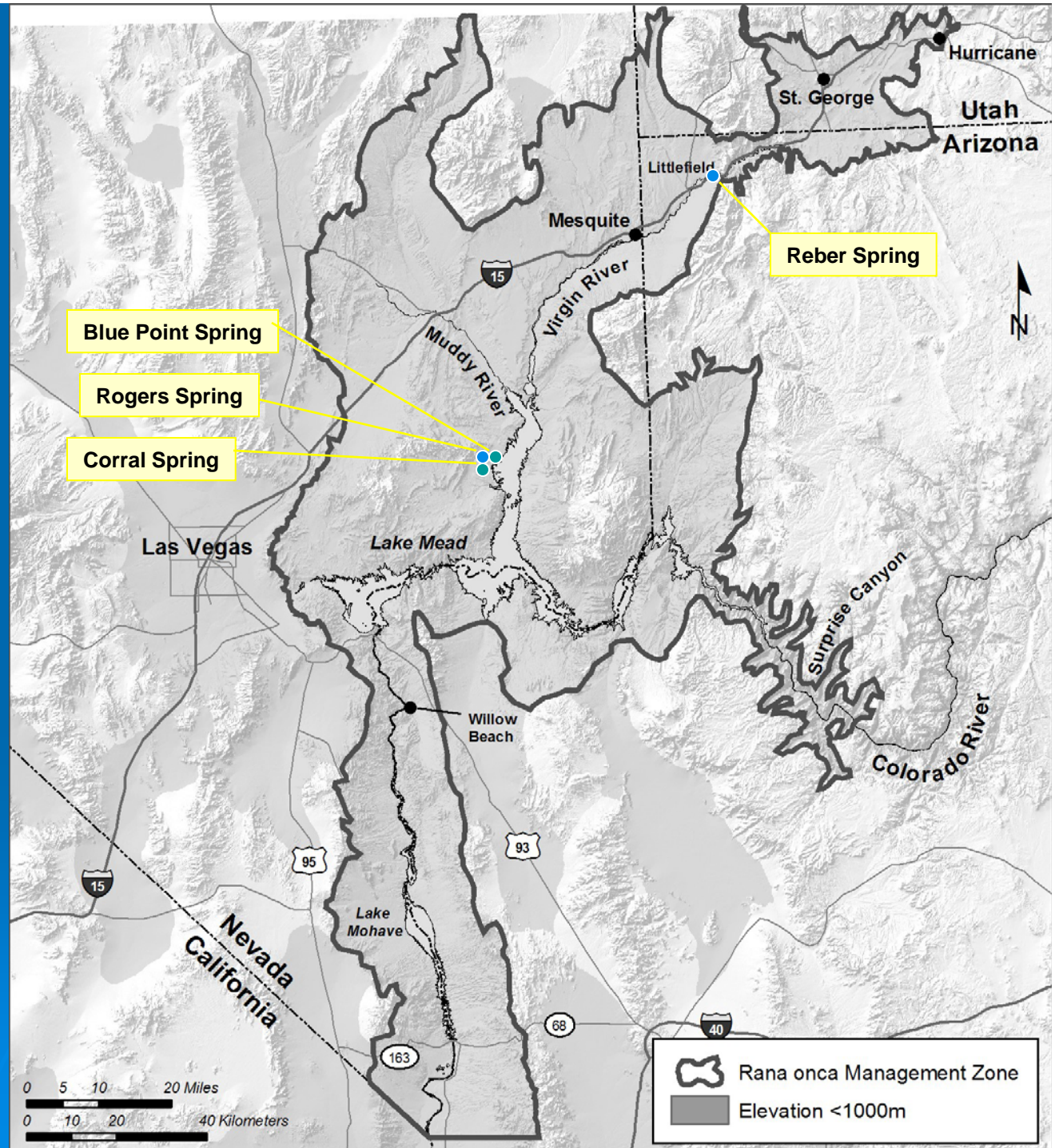


Known
Distribution 1992

Northshore Springs
Complex

+

Reber Springs AZ

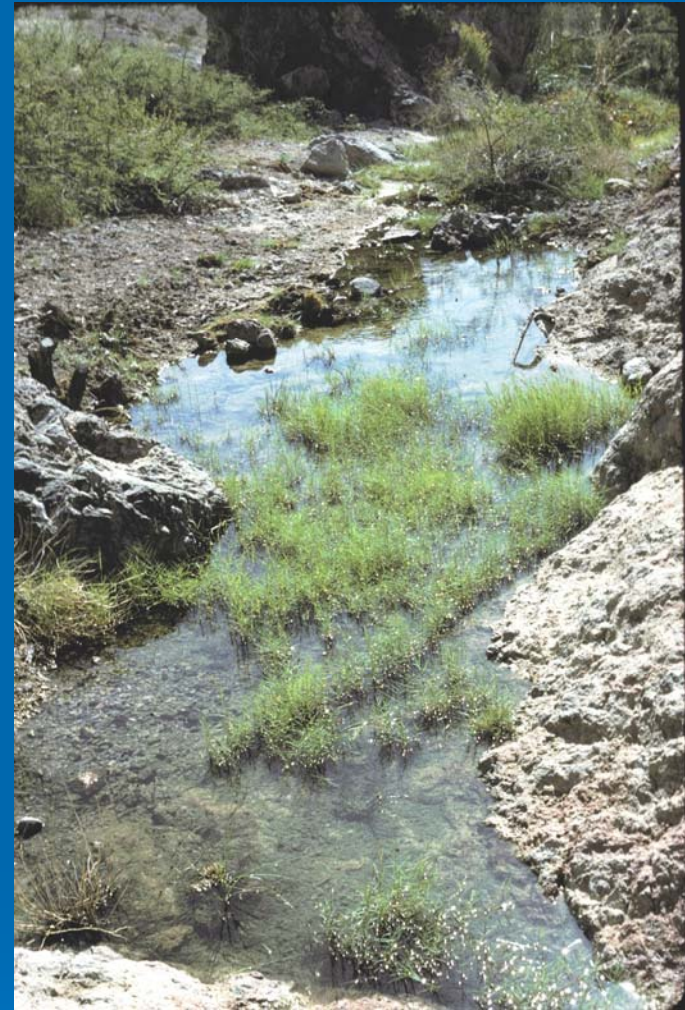




Rogers Spring



Blue Point Spring



Corral Spring



Rogers Springs Exotics

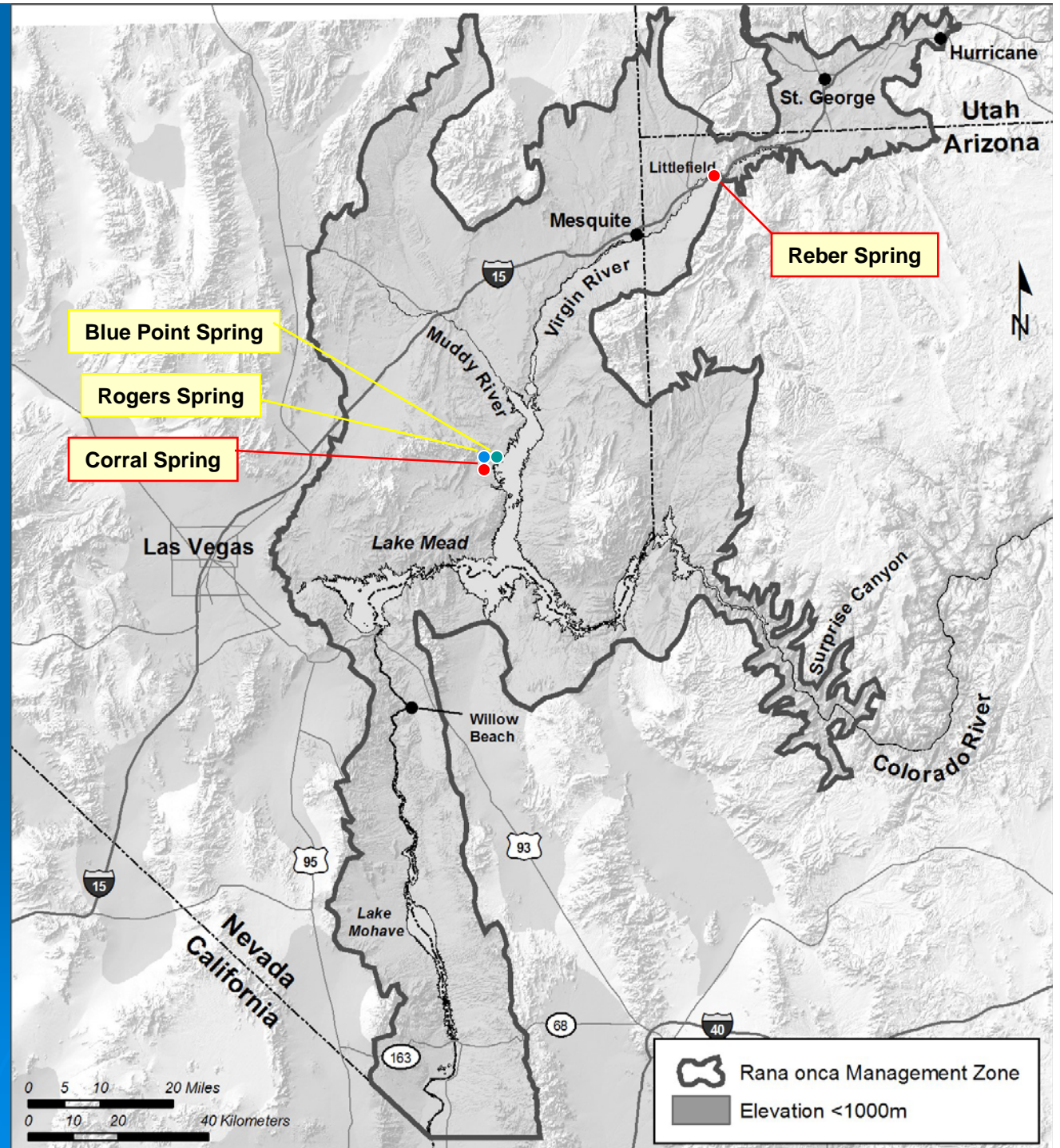


Vegetation Encroachment



Two of Original four natural Populations extirpated by 2001

Corral Spring – 1994
Reber Spring – 1998?



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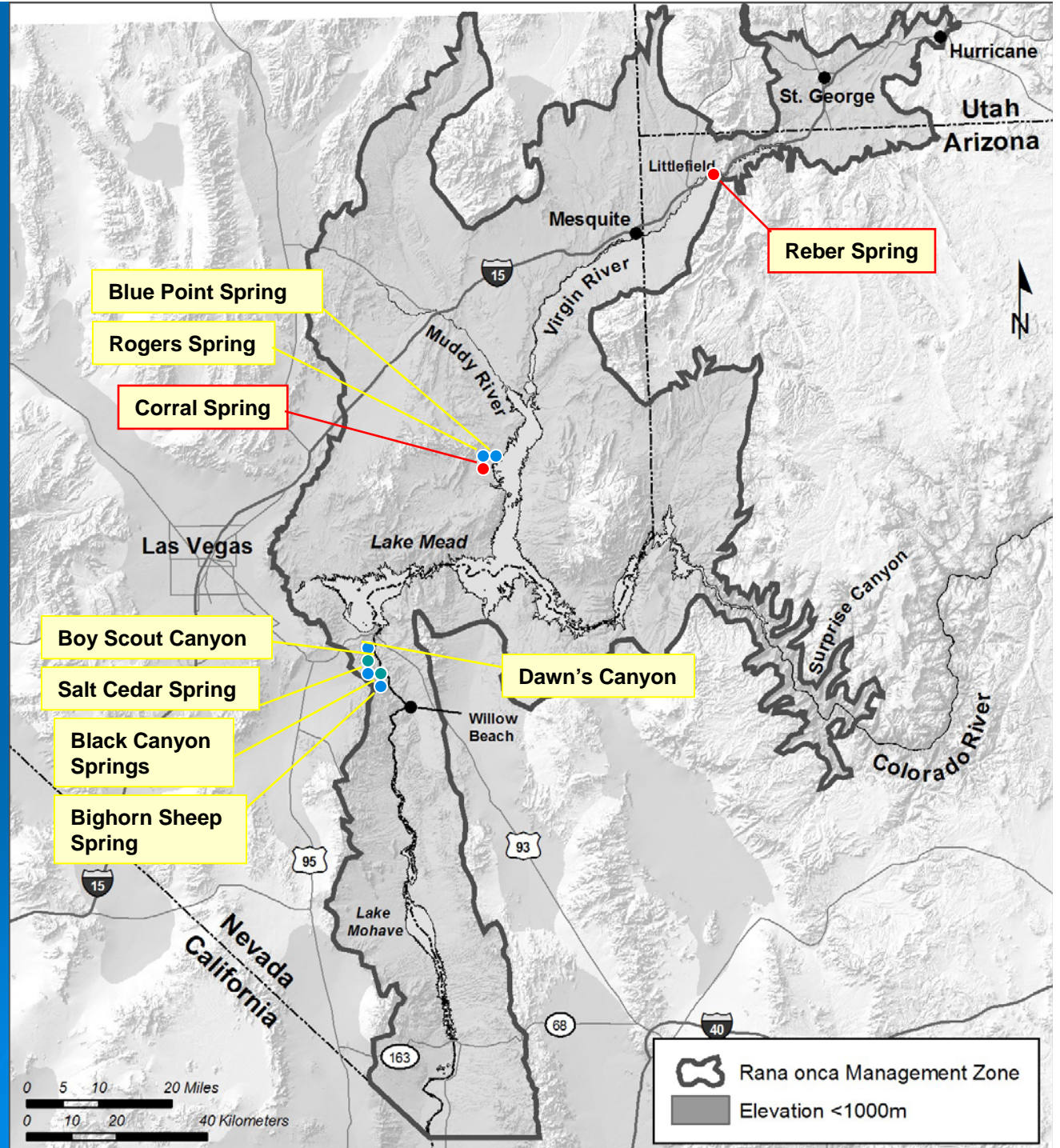
Habitat Management Activities



Drake 2007

Black Canyon Springs Complex

4 – 6 populations discovered 1997 - 2008



Dawn's Canyon



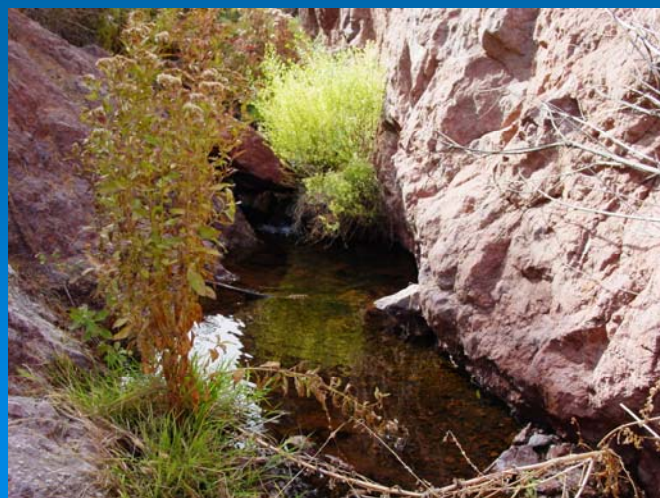
Boy Scout Canyon



Black Canyon



Bighorn Sheep Canyon



Salt Cedar Spring



History

Petition to list as endangered filed in 2002

CAS signed in 2005

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

Bighorn Sheep Spring 2005





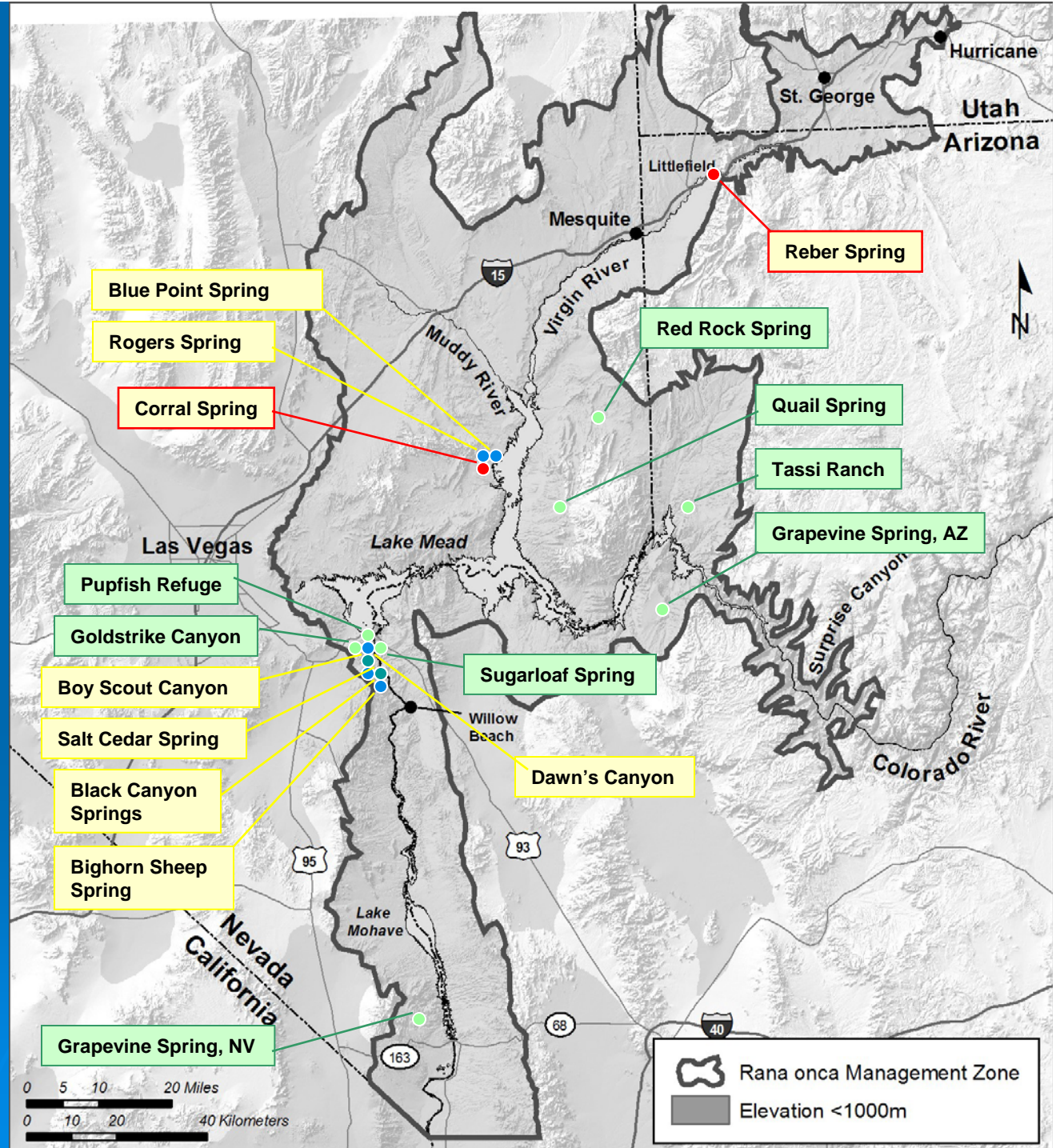
Lake Mead Frog Lab

Willow Beach National Fish Hatchery



Eight Experimental Populations 2002-2008

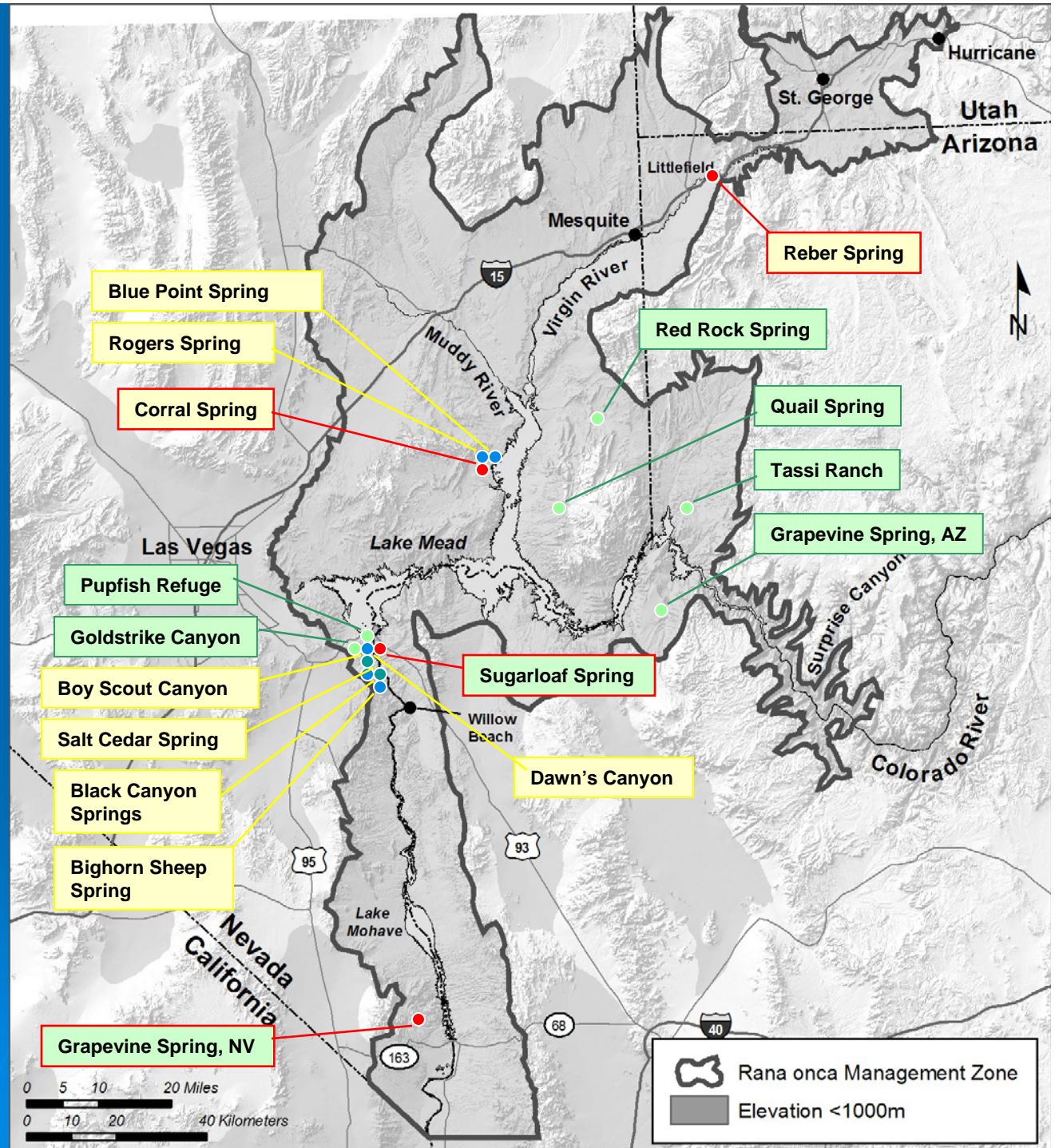
- Experimental
- Natural



Eight Experimental Populations 2002-2008

Two have failed

 Extirpated



Sugarloaf Spring



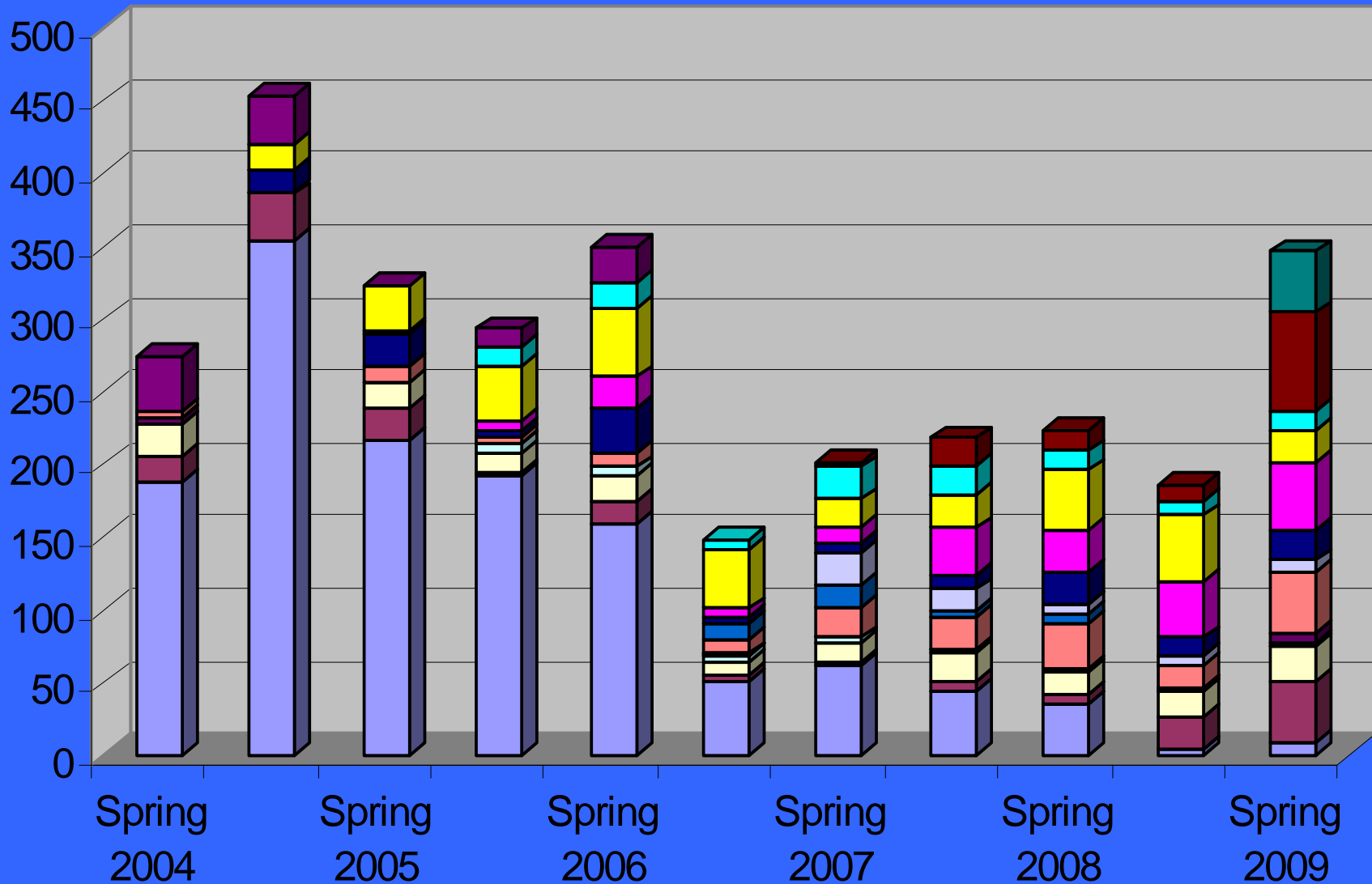
2002



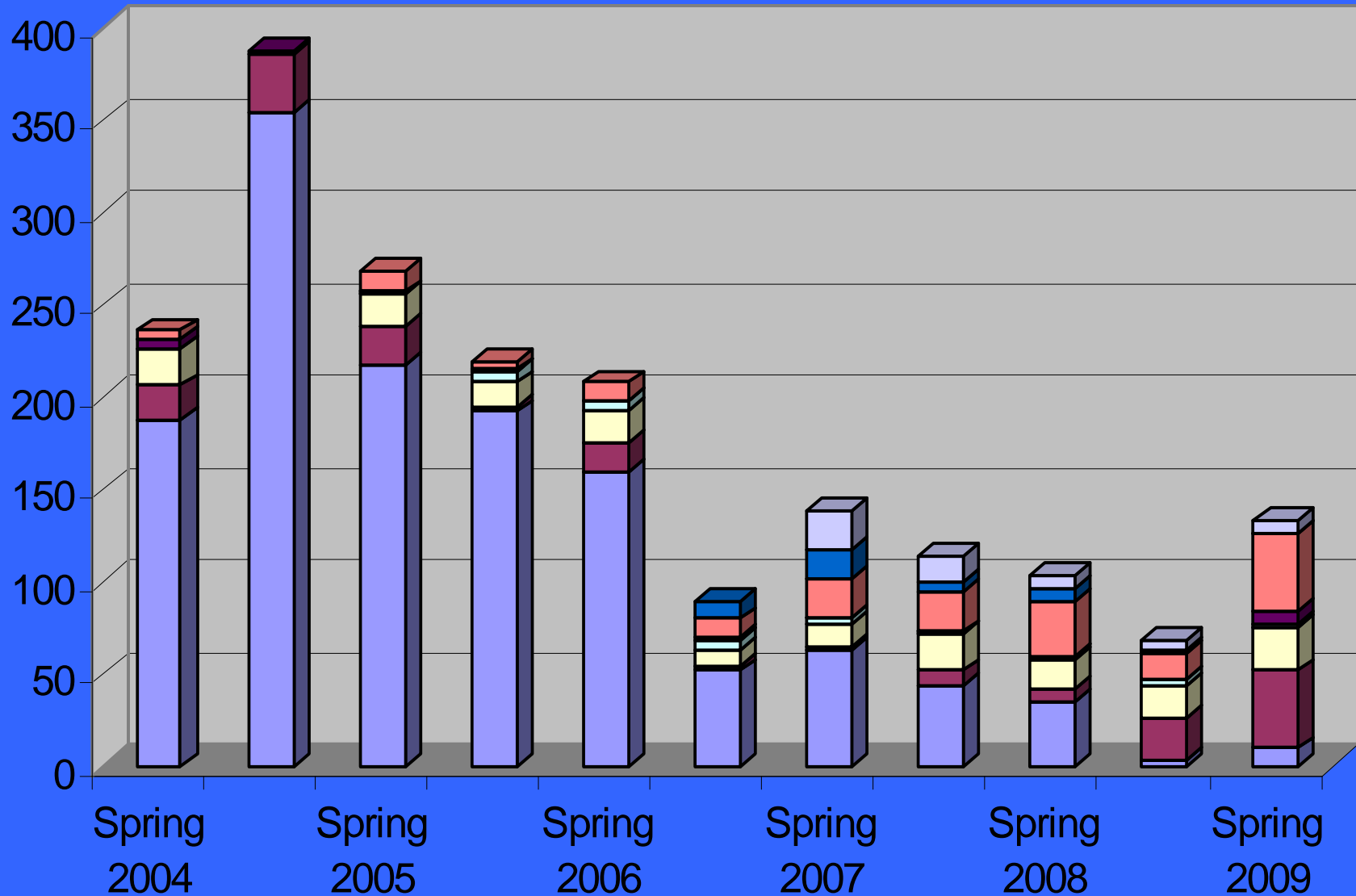
2006



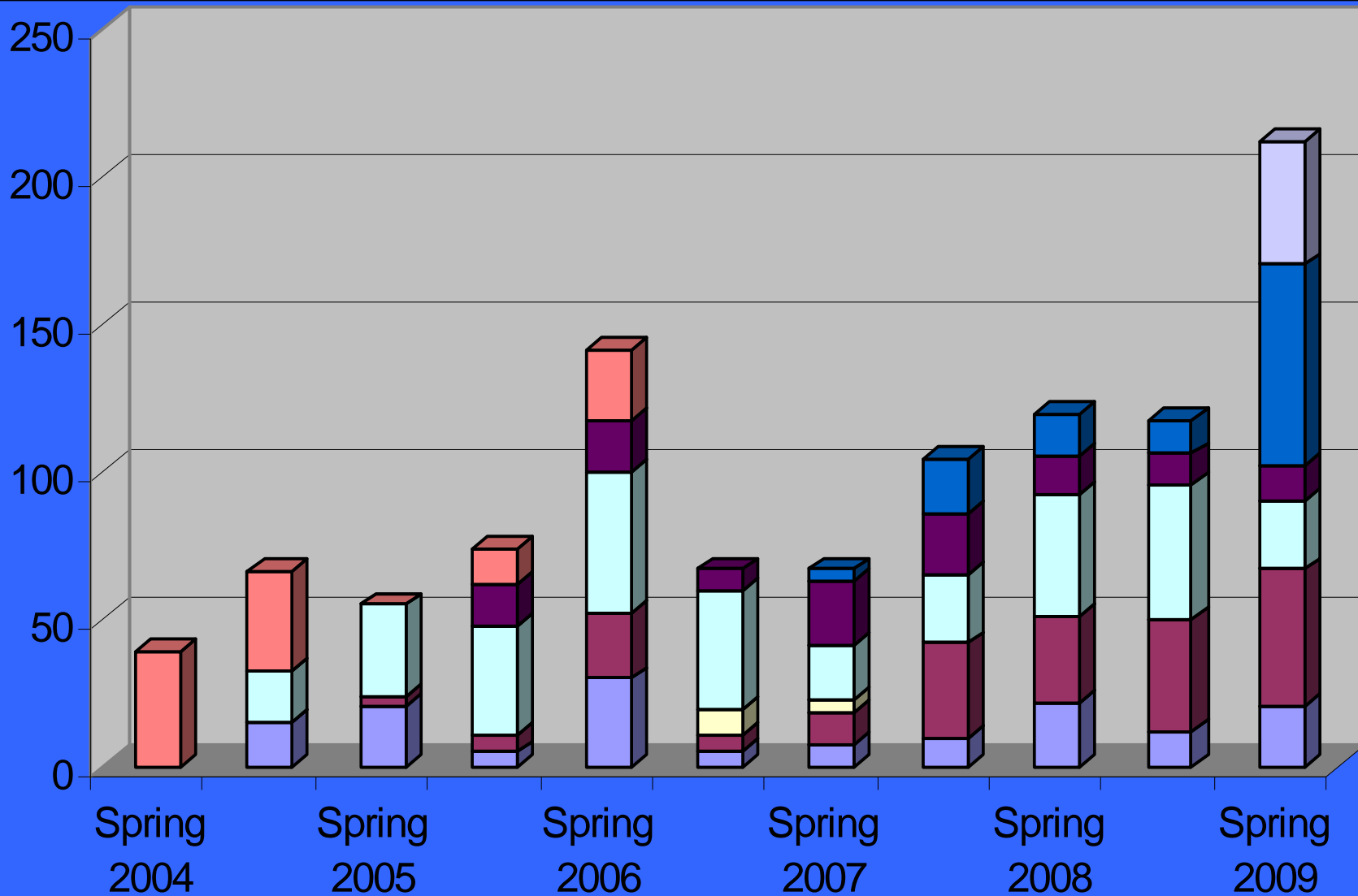
MNKA - Adult Frogs (VES)



MNKA – Adults in Natural Populations (Nocturnal VES)

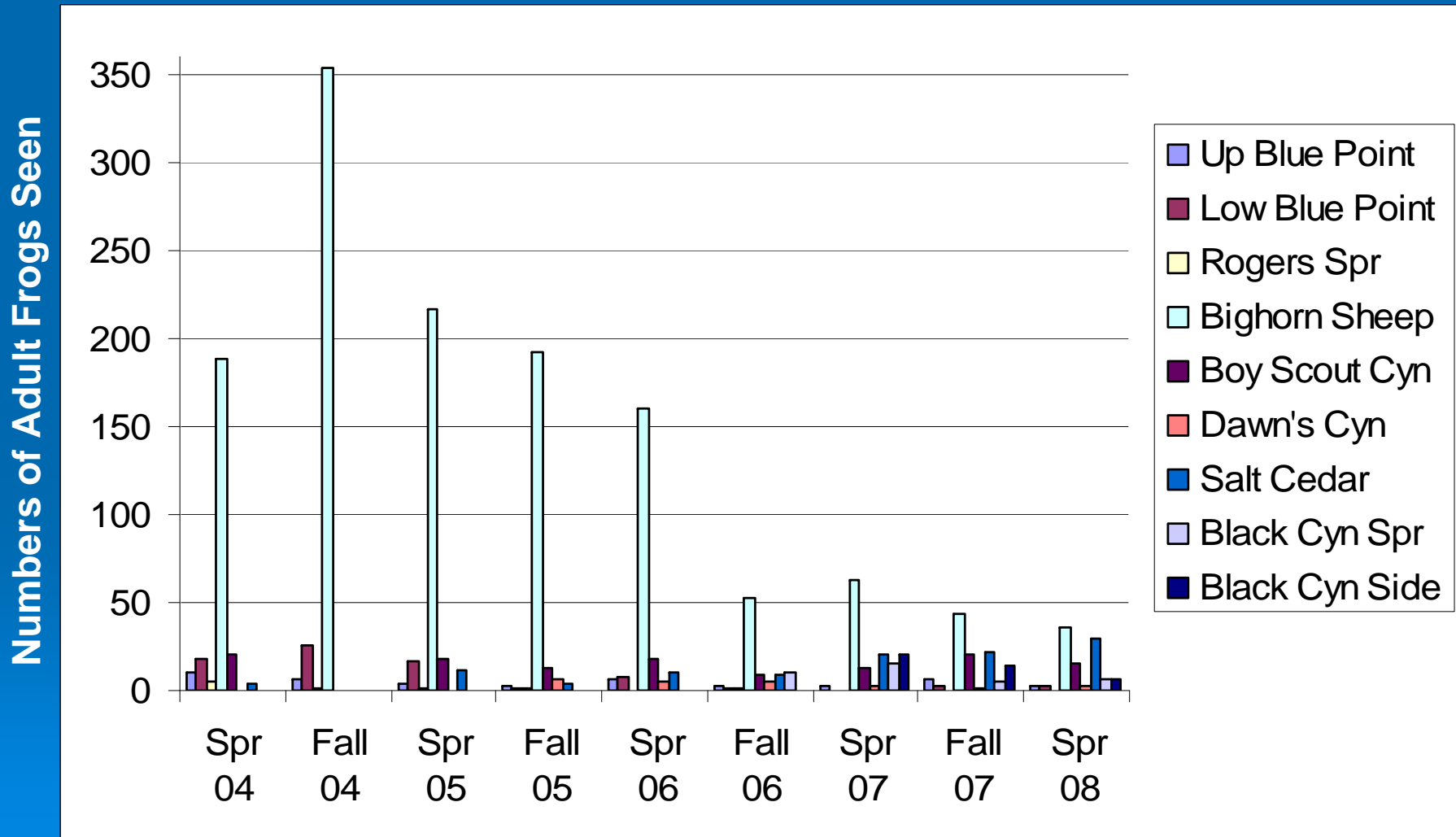


MNKA – Adults at Experimental sites (Nocturnal VES)



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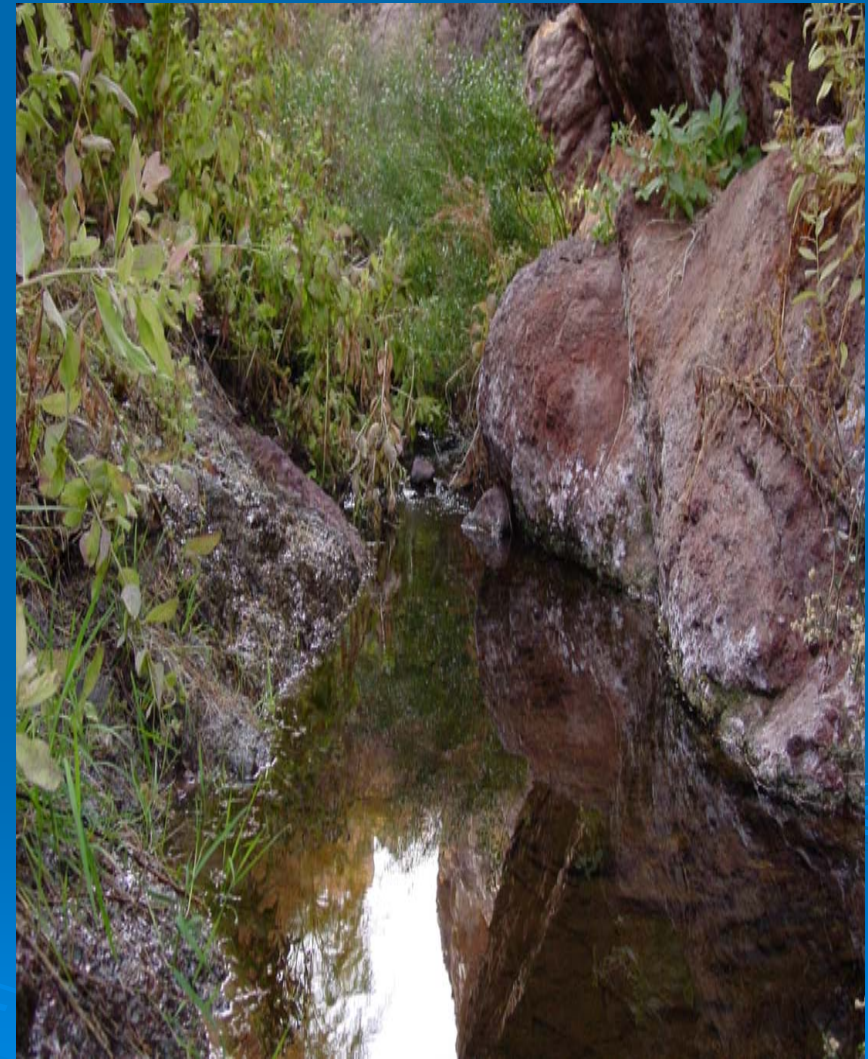
Nocturnal Visual Encounter Surveys Natural Populations



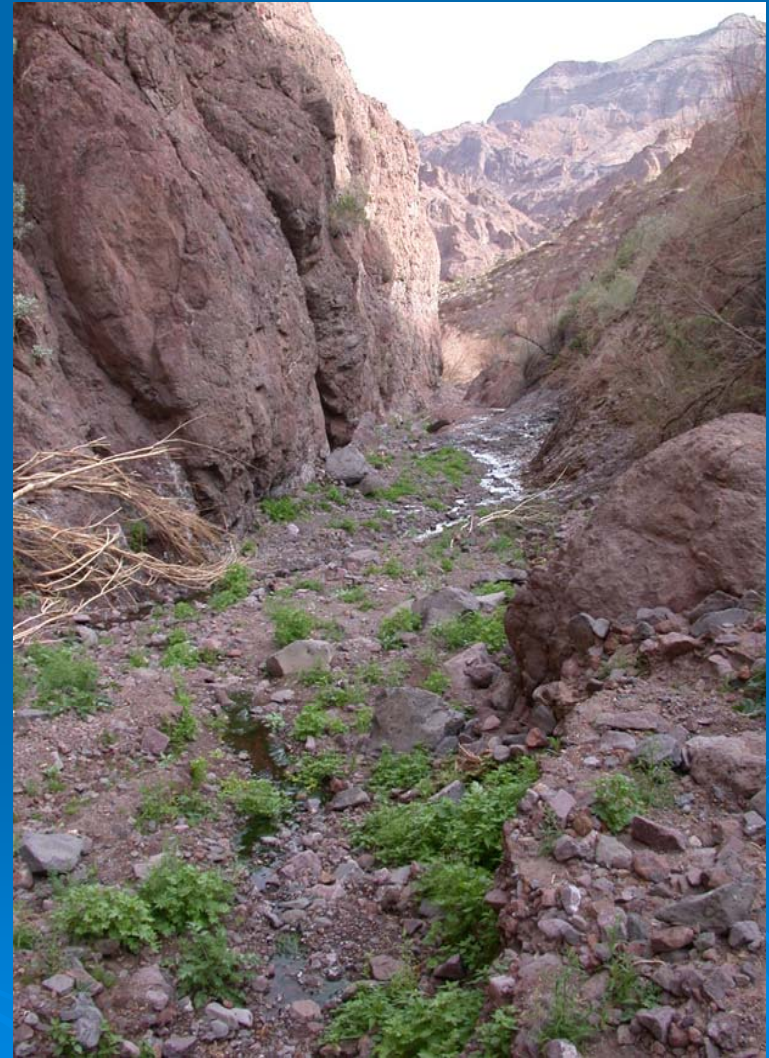
Willow beach 10/14/06



Bighorn Sheep Spring 2005



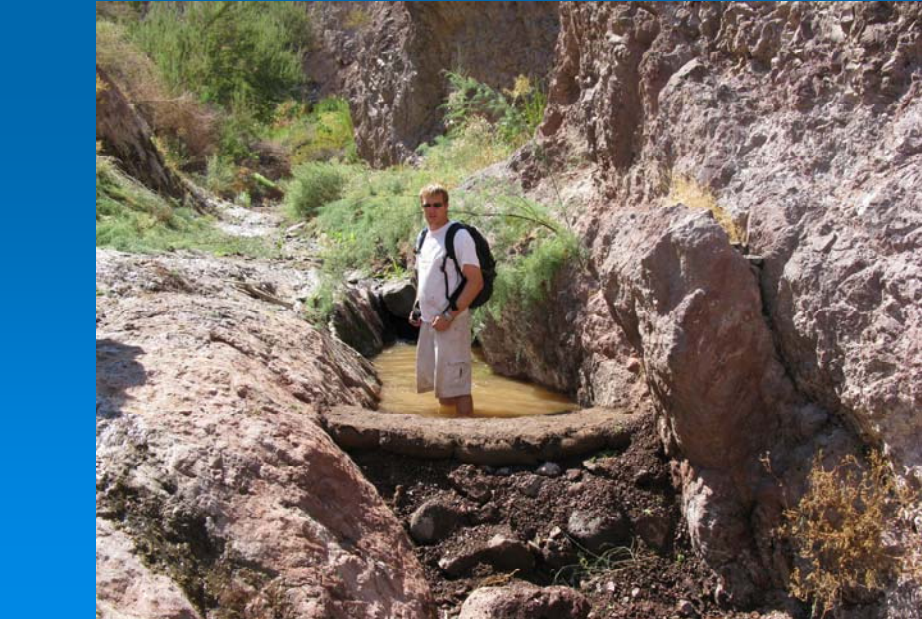
Bighorn Sheep Spring after Flood of 2006



Bighorn Sheep Spring Habitat Improvement Project



9/30/08



Relict Leopard Frog Translocation Efforts and Status

Site Name	Release Years	Numbers Released (preliminary data)	Over-Winter	Breeding & Recruit to Tadpoles	Recruit to Adult Stages	Current Status
Goldstrike Canyon	2004-09	2189 Tadpoles	Yes	Yes	Yes	Repeated Breeding
Grapevine Spring, AZ	2003-09	3820 Tadpoles	Yes	Yes	Yes	Repeated Breeding
Grapevine Spring, NV	2006-07	895 Tadpoles 250 Frogs	Yes	?	?	Failed (water loss)
Pupfish Refuge	2003-08	541 Frogs	Yes	Yes	Yes	Repeated Breeding
Quail Spr	2008-09	253 Frogs	Yes	Yes	?	Repeated Breeding
Red Rock Spring	2005-09	511 Frogs	Yes	Yes	Yes	Repeated Breeding
Sugarloaf Spring	2003-05	372 Frogs	Yes	Yes	Yes	Failed (water loss)
Tassi Spring	2006-09	699 Frogs	Yes	Yes	Yes	Repeated Breeding



Quail Spring



Goldstrike Canyon



Tassi Spring



Red Rock Spring



Pupfish Refugium Spring



Grapevine Spring AZ

Perkins Pond Bullfrog Exclusion Fence

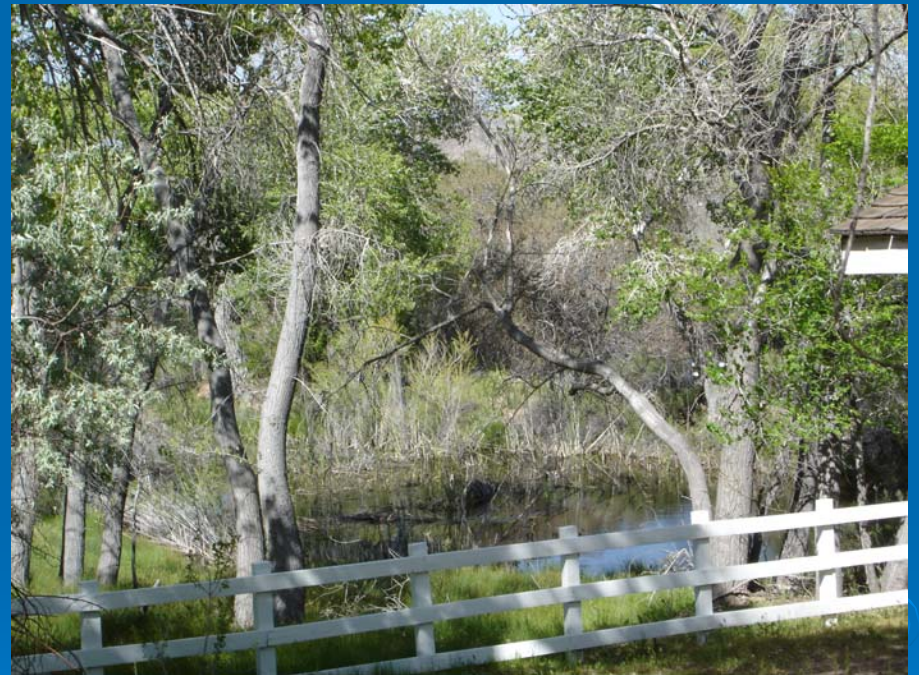




Union Pass Spring



Spring Mountain Ranch State Park





Acknowledgments



Public Lands Institute, UNLV
Relict Leopard Frog Conservation
Team

Bureau of Land Management
U.S. Fish & Wildlife Service
Nevada Department of Wildlife
Arizona Game & Fish Department
Southern Nevada Water Authority
Bureau of Reclamation
Clark County

Additional Support:

Mike Burrell
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Mitch Urban
David Bradford
Cristina Velez
Nevada Conservation Crew
NPS fire crew
Willow Beach Fish Hatchery
Lake Mead Vegetation crew

