

**Alberta Conservation Association
2008/09 Project Summary Report**

Project name: *Alberta Northern Leopard Frog Recovery Program*

Project leader: Kris Kendell

Primary ACA staff on project (including seasonals):

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Partnerships:

Alberta Sustainable Resource Development

Calgary Zoo

Government of Canada - Habitat Stewardship Program for Species at Risk

MULTISAR

Parks Canada Species at Risk Recovery Action and Education Fund

TD Friends of the Environment Foundation

Key Findings:

- The observation of a lone NLF in June 2008 confirmed that successful reintroduction and over-winter survival had occurred at the egg deposit site on Buffalo Creek in Waterton Lakes National Park.
- An off-site gravity-fed cattle watering system was installed to improve northern leopard frog (NLF) breeding habitat at a pond along Trout Creek.
- Three NLF interpretive signs were created for the Galt Canal Nature Trail associated with the Magrath NLF reintroduction site, within the Town of Magrath. The signs highlight the habitat needs, conservation issues, and natural history of the NLF.

Abstract

The northern leopard frog (NLF) (*Rana pipiens*) has suffered dramatic population declines in many parts of its range in Alberta, and while little studied, the decline does not appear to be part of a natural cycle. Alberta Conservation Association (ACA) is a member of the provincial recovery team for NLF and collaborates with partners to develop and implement actions to recover viable NLF populations. Our actions focus primarily on reintroductions, habitat enhancement, outreach initiatives, and population surveys.

We coordinated two stewardship initiatives in 2008. One was an off site watering system designed to reduce the damage caused by cattle to riparian habitat important for NLF breeding. The second was an outreach initiative involving the deployment of a series of signs developed to raise the profile of the NLF at a public reintroduction site. ACA also contributed data to a

provincial disease surveillance program designed to minimize disease transmission among amphibians during reintroductions.

Attempts to re-establish NLF populations with egg mass deposits in 2007 and 2008 have been met with limited success; however, a lone NLF was located in 2008 at the egg deposit site on Buffalo Creek in Waterton Lakes National Park.

Introduction

The northern leopard frog (NLF) (*Rana pipiens*) has suffered dramatic population declines in many parts of its range in Alberta. Although little studied, the decline in Alberta does not appear to be part of a natural cycle. The species' reduced area of occupancy and fragmented populations led to its listing as *Threatened* under Alberta's *Wildlife Act* in 1996, and reaffirmation in 2003.

The Alberta Conservation Association (ACA) is a member of the Alberta Northern Leopard Frog Recovery Team (ANLFRT) and is involved in the delivery of several strategies and actions outlined in the species' Recovery Plan (ANLFRT 2005). ACA is playing a key role in the implementation of NLF stewardship projects including the identification of NLF source and reintroduction sites, disease monitoring, and population inventories and habitat assessments.

Methods

We conducted visual encounter surveys for NLF at egg source sites, reintroduction sites initiated in 2007, and at never-before surveyed areas within the historical NLF range between late April and August (Kendell 2002; ACA and ASRD 2006). To solicit sightings from the public we placed NLF "Wanted" posters in select regions of the province. At high priority sights, we initiated stewardship opportunities through one-on-one meetings with local landowners to implement an off-site gravity-fed cattle watering system and worked with partners to develop a series of interpretative signs.

We collected tissue samples from amphibians, regardless of age or species, at select sites to test for chytrid fungus (*Batrachochytrium dendrobatidis*) (Bd) and Ranavirus (Whiteside et al. 2007). All amphibians captured were sampled for the amphibian disease Bd, but only the NLF were sampled for both Bd and Ranavirus.

Following methods outlined in the Northern Leopard Frog Reintroduction Strategy for Alberta (Kendell and Prescott 2007), we translocated NLF eggs from source sites to reintroduction sites in Waterton Lakes National Park (WLNP).

We recorded all NLF sightings and provided these data for inclusion in the provincial database (Fish and Wildlife Management Information System database). All collected disease tissue samples were submitted to Alberta Sustainable Resource Development for molecular diagnostics.

Results

Egg surveys commenced on 30 April and ended on 4 June 2008. In total, 12 bodies of water in four river basins (South Saskatchewan, Milk, Oldman, and Bow River) were surveyed for NLF eggs. Seven egg masses, totaling 31,370 eggs, were collected and transported into WLNP for release at the Buffalo Creek and Spring Creek reintroduction sites.

Amphibian tissue samples were collected between 17 July and 18 August 2008 at 15 sites in southern and central Alberta. In total, we collected 534 amphibian tissue samples from 10 sites occupied by the NLF and five general amphibian sites not occupied by the NLF. We conducted visual encounter surveys at 20 historical and/or potential NLF sites and at three NLF reintroduction sites. In June 2008, a lone NLF was observed at the egg deposit site on Buffalo Creek in Waterton Lakes National Park and confirmed that successful reintroduction and over-winter survival had occurred.

To improve habitat at a NLF breeding pond along Trout Creek we worked with a local landowner to develop an off-site gravity-fed cattle watering system. We also developed and installed three NLF interpretive signs for the Galt Canal Nature Trail associated with the Magrath NLF reintroduction site, within the Town of Magrath. These signs were designed to highlight the habitat needs, conservation issues, and natural history of the NLF.

Conclusion

The ACA is working cooperatively with our partners and stakeholders to ensure that the NLF remains part of Alberta's natural heritage. This work includes habitat enhancement at targeted locations, as well as the coordination of reintroductions to help alleviate concerns associated with current populations, such as vulnerability to disease, human disturbance, and habitat changes. Through collaborative research, the ACA is also contributing to an increased understanding of the distribution and relative size of NLF populations in Alberta, as well as disease issues associated with the recovery of the species.

Communications

Papers and reports:

- Wilson, G.A., T.L. Fulton, K. Kendell, G. Scrimgeour, C.A. Paszkowski, and D.W. Coltman. 2009. Genetic assessment of potential source populations for the reintroduction of northern leopard frogs (*Rana pipiens*) to sites in Alberta, T-2009-000, produced by the Alberta Conservation Association, Edmonton, Alberta, Canada. 39 pp + App.
- Wilson, G.A. Fulton, T.L. Kendell, K. Schock, D.M. Paszkowski, C.A. Coltman, D.W. 2008. Genetic Evidence for single season polygyny in the northern leopard frog (*Rana pipiens*). Herpetological Review, Volume 39, Number 1. pp 46-49

- Wilson, G. A., T. L. Fulton, K. Kendell, G. Scrimgeour, C. A. Paszkowski, D. W. Coltman. 2008. Genetic diversity and structure in Canadian northern leopard frog (*Rana pipiens*) populations: implications for reintroduction programs. Canadian Journal of Zoology, Volume 86, Number 8. pp. 863-874

Oral presentations and news media:

- Canadian Amphibian and Reptile Conservation Network annual general meeting. Alberta's northern leopard frog recovery program (K. Kendell and D. Prescott). Montreal, Quebec, 23-28 July 2008.
- Calgary Herald: Bringing back threatened frog species proves difficult leap. By Michelle Butterfield. 13 August 2008.
- Canwest News Service: Northern leopard frogs thin on Alberta ground. 12 August 2008.
- CTV News TV (taped interview – northern leopard frog / environment week): 6 June 2008

Literature cited

Alberta Conservation Association and Alberta Sustainable Resource Development. 2006. Alberta Volunteer Amphibian Monitoring Program - participants manual. Alberta Conservation Association, Edmonton, AB. 46 pp.

Alberta Northern Leopard Frog Recovery Team. 2005. Alberta Northern Leopard Frog Recovery Plan, 2005-2010. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species at Risk Recovery Plan No. 7. Edmonton, AB. 26 pp.

Kendell, K. 2002. Survey protocol for the northern leopard frog. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species at Risk Report No. 43, Edmonton, AB. 30 pp.

Kendell, K., and D. Prescott. 2007. Northern leopard frog reintroduction strategy for Alberta. Technical Report, T-2007-002, produced by Alberta Conservation Association, Edmonton, Alberta, Canada. 31 pp + App.

Whiteside, D.P., D. Prescott, K. Kendell. 2007. Diagnostic testing for emerging amphibian diseases in Alberta. Calgary Zoo Animal Health Centre, Calgary, Alberta. 6 pp.



Kelly Boyle (ACA), Jennifer Stroh (ACA), and Shane Mascarin (Range Biologist, CFB/ASU Wainwright) conducting northern leopard frog (*Rana pipiens*) surveys on CFB Wainwright. (Photo: Kris Kendell)



Cattle use and damage of a spring located along Trout Creek; and site of a stewardship project along Trout Creek. (Photo: Kris Kendell)



A lone northern leopard frog (*Rana pipiens*) keeps careful watch of Len Peleshok (ACA) as he undertakes a frog survey of a small beaver pond that is the focus for a stewardship project along Trout Creek. (Photo: Kris Kendell)



A researcher collects tissue samples from a Canadian toad (*Bufo hemiophrys*) to test for chytrid fungus (*Batrachochytrium dendrobatidis*) (Bd). (Photo: Kris Kendell)



Acclimatizing recently translocated northern leopard frog (*Rana pipiens*) eggs at the Waterton Lakes National Park reintroduction site. (Photo: Jennifer Stroh and Kelly Boyle)