BIBLIOGRAPHY OF TECHNIQUES APPLICABLE TO

CALIFORNIA RED-LEGGED FROG (*RANA DRAYTONII*)

STUDY AND MANAGEMENT

1. **Blomquist, S.M. & M.L. Hunter Jr. 2007. Externally attached radio-transmitters have limited effects on the antipredator behavior and vagility of *Rana pipiens* and *Rana sylvatica*. Journal of Herpetology 41:430-438.**

   Radio-transmitters had little effect on movement patterns of two frog species.

2. **Bury, R.B. & J.A. Whelan. 1984. Ecology and management of the bullfrog. U.S. Fish and Wildlife Service Resource Publication 155. 23 pp.**

   Summary of bullfrog biology and management.

3. **Camper, J.D. & J.R Dixon. 1988. Evaluation of a microchip marking system for amphibians and reptiles. Texas Parks and Wildlife Department. Research Publication 7100-159. Austin, Texas.**

   Passive integrated transponder (PIT) tag technology.

4. **Corben, C. & G.M. Fellers. 2001. A technique for detecting eyeshine of amphibians and reptiles. Herpetological Review 32(2): 89-91.**

   Evaluates the lighting equipment available for nocturnal frog surveys, and suggests using a light in combination with binoculars.

5. **Fellers, G.M. & K.L. Freel. 1995. A standardized protocol for surveying aquatic amphibians. Technical Report NPS/WRUC/NRTR-95-001. National Biological Service, Cooperative Park Studies Unit, University of California, Davis, CA. 123 pages.**

6. **Fellers, G M., & P.M. Kleeman. 2003. A technique for locating and recovering radiotransmitters at close range. Herpetological Review 34(2):123.**

   A technique for precisely locating and retrieving transmitters from difficult situations.

7. **Fellers, G.M. & P.M. Kleeman. 2006. Diurnal versus nocturnal surveys for California red-legged frogs. Journal of Wildlife Management 70:1805-1808.**

Many more frogs were detected during nocturnal surveys. However, diurnal surveys provided information on habitat structure, eggs and tadpoles that was difficult to secure at night.

8. **Ferner, J.W. 2007. A review of marking and individual recognition techniques for amphibians and reptiles. Herpetological Circular 35, Society for the Study of Reptiles and Amphibians. 72 pages.**

An up-to-date manual for marking and identifying individual amphibians.

9. **Gosner, N. 1960. A simplified table for staging anuran embryos and larvae with notes on identification. Herpetologica 16:183-190.**

The standard method for expressing the stages of amphibian embryos and tadpoles.

10. **Guttman, S.I., & W. Creasey. 1973. Staining as a technique for marking tadpoles. Journal of Herpetology 7:388.**

Use of vital stains to temporarily mark cohorts of tadpoles.

11. **Heyer, W.R., M.A. Donnelly, R.W. McDiarmid, L-A.C. Hayek, & M.S. Foster (eds.). 1994. Measuring and monitoring biological diversity: Standard methods for amphibians. Smithsonian Institution Press, Washington D.C. 364 pp.**

The bible for working with amphibians and their populations.

12. **Knapp, R.A. & J.A.T. Morgan. 2006. Tadpole mouthpart depigmentation as an accurate indicator of chytridiomycosis, an emerging disease of amphibians. Copeia 2006:188-197.**

Lack of pigment in the mouthparts of tadpoles was a very accurate symptom of chytrid infection in *Rana muscosa* populations in the Sierra Nevada. See Padgett-Flohr & Goble (2007).

13. **Letcher, J. & S. Amsel. 1989. Practitioners guide to anesthesia in anurans. Companion Animal Practice 19:21-24.**

    Tricaine methanesulfonate (MS 222) is the drug of choice for safely immobilizing *Rana*.

14. **Nishikawa, K.C. & P.M. Service. 1988. A fluorescent marking technique for individual recognition of terrestrial salamanders. Journal of Herpetology 22:351-353.**

    A further refinement of Taylor and Deegan (1982).

15. **Padgett-Flohr, G.E. & M.E. Goble. 2007. Evaluation of tadpole mouthpart depigmentation as a diagnostic test for infection by *Batrachochytrium dendrobatidis* for four California anurans. Journal of Wildlife Diseases 43:690-699.**

    Study of mouthparts of tadpoles of California *Bufo boreas*, *Bufo canorus*, *Pseudacris regilla*, and *Rana catesbeiana* concluded that mouthpart defects were not a good indicator of chytrid fungus infection. See Knapp & Morgan (2006).

16. **Rathbun, G.B. & T.G. Murphey. 1996. Evaluation of a radio-belt for ranid frogs. Herpetological Review 27:187-189.**

    Description of a method for attaching radios to frogs.

17. **Sjögren, P. 1991. Extinction and isolation gradients in metapopulations: The case of the pool frog (*Rana lessonae*). Biological Journal of the Linnaean Society 42:135-147.**

    Best study of a ranid frog metapopulation. Ponds greater than 4 km from another pond with a frog population uniformly lacked frogs.

18. **Taylor, J. & L. Deegan. 1982. A rapid method for mass marking of amphibians. Journal of Herpetology 16:172-73.**

Pressurized spray gun used to inject fluorescent pigments into amphibian larvae and adults. See Nishikawa and Service (1982) for a further refinement.

19. **U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California red-legged frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. 173 pp.**

Appendix D: Guidelines for voluntary pond management for the benefit of the California red-legged frog.

Appendix E: Private landowner incentives for implementation of conservation measures.

Appendix G: General guidelines for reestablishment of California red-legged frog populations.

20. **U.S. Fish and Wildlife Service. 2005. Revised guidance on site assessments and field surveys for the California red-legged frog. Web site: http://www.fws.gov/sacramento/es/documents/crf_survey_guidance_aug2005.doc.**

Current Fish and Wildlife Service protocol for the conduct of red-legged frog surveys.

21. **Woolley, H.P. 1973. Subcutaneous acrylic polymer injections as a marking technique for amphibians. Copeia 1973:340-341.**

Injections of colored pigment used to mark salamanders. The technique can be used to mark tadpoles, also.

Norman J. Scott
Galen B. Rathbun
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