

Pacific Lamprey *Lampetra tridentata* Status and Distribution in the Clearwater River Drainage, Idaho

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STATUS OF LAMPREY IN THE COLUMBIA RIVER AND SNAKE RIVER

- Three species of lamprey present historically in the Columbia River basin, river lamprey, *Lampetra ayresi*, brook lamprey, *Lampetra richardsoni*, and Pacific lamprey *Lampetra tridentata*.
- Pacific lamprey Columbia River and Snake River declines since 1960's
- Hydropower development, habitat alterations, and land management practices (irrigation, etc.) are thought to be driving decline
- Little is known about life history, habitat utilization, and distribution of the three species.

INTRODUCTION

- Objectives

1. Determine life history of Pacific lamprey and ammocoetes and macrothalmia in the Clearwater River drainage.
2. Determine habitat utilization and preference of Pacific lamprey ammocoetes in Red River.
3. Determine distribution of Pacific lamprey ammocoetes and macrothalmia in the Clearwater River drainage.
4. Develop and implement strategies to protect Pacific lamprey ammocoete and macrothalmia habitat in the Clearwater River drainage.

Pacific Lamprey Adult

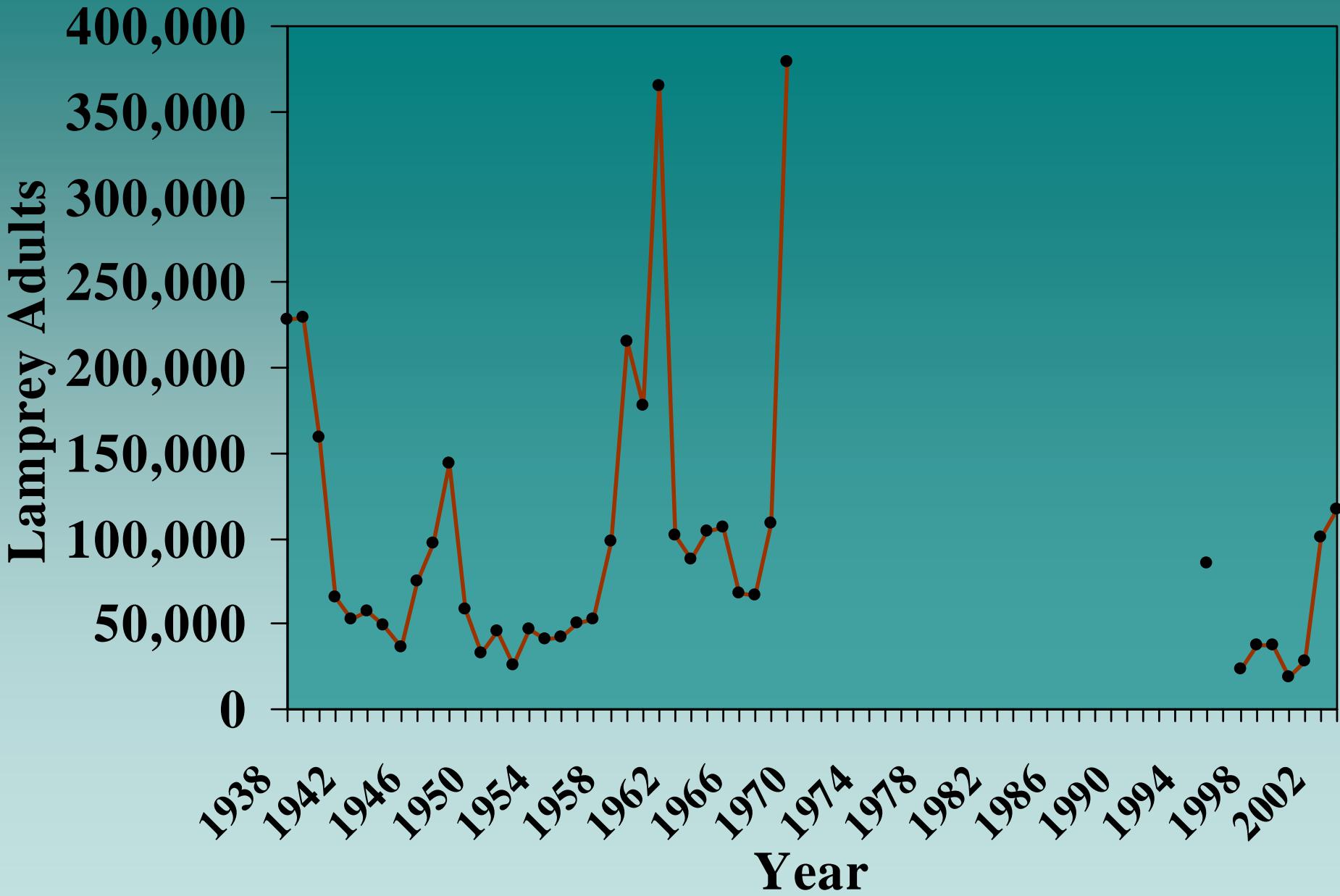




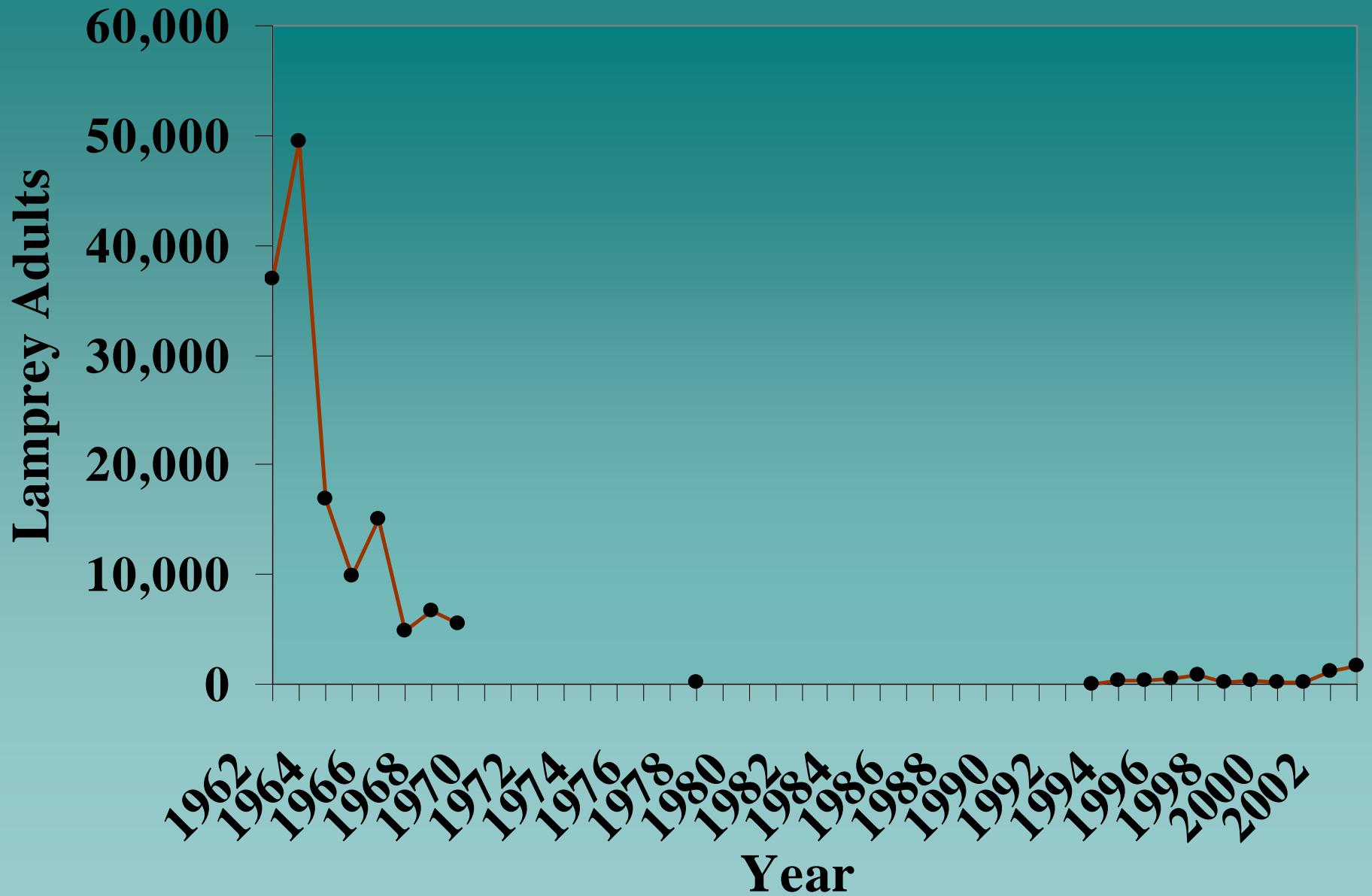
PACIFIC LAMPREY LIFE HISTORY

- Anadromous, spawn in salmon and steelhead streams in April, May, and June.
- Eggs hatch in ~ 20 days, ammocoetes are eyeless, live in finer substrates (Scott and Crossman 1973)
- Transform at age 4-7 (Beamish and Levings 1991)
- Juveniles migrate in late fall and spring
- 1-2? years in ocean feeding on herring, hake, salmon, and steelhead; marks found on mammals
- Return to rivers to spawn

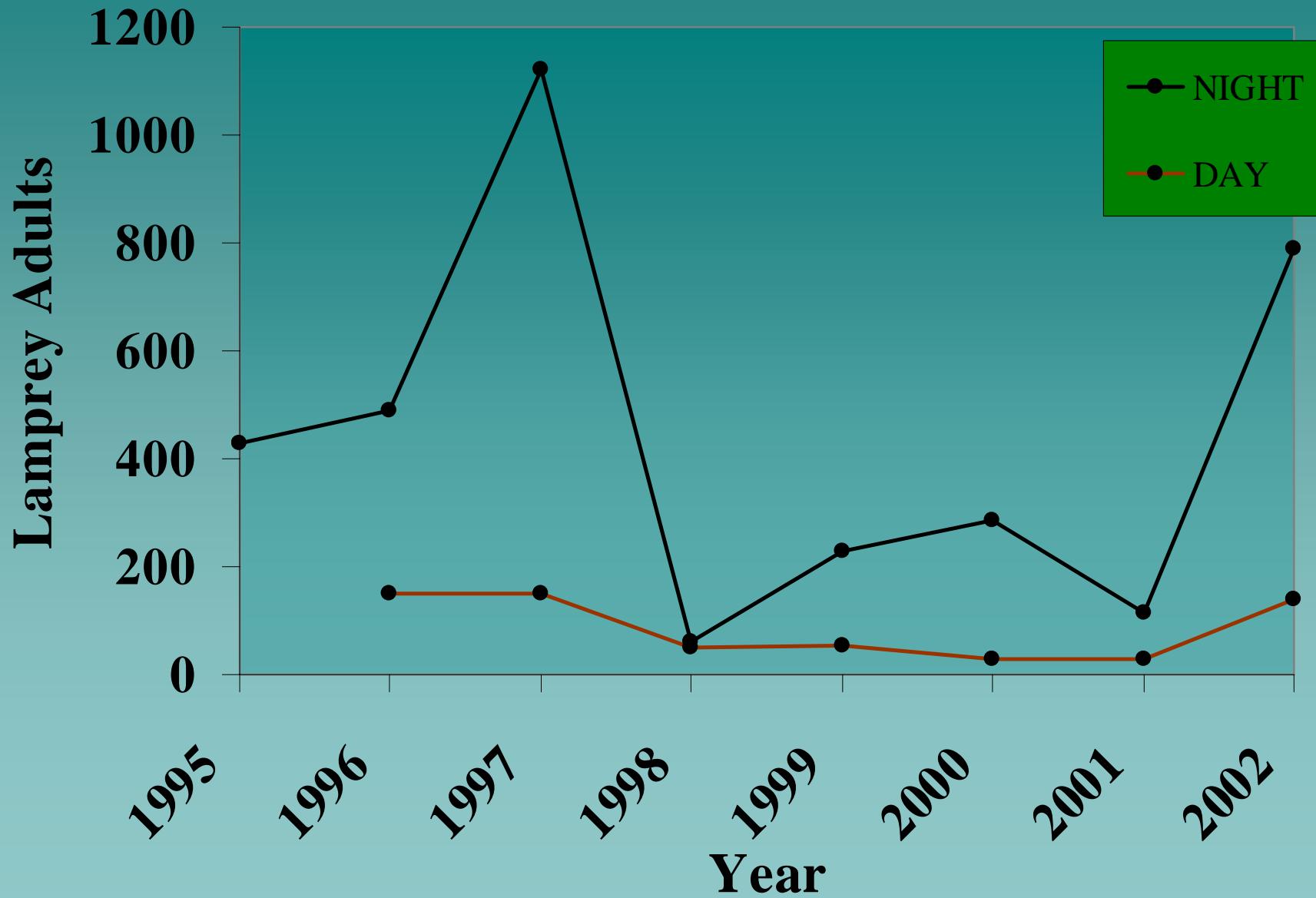
Bonneville Dam

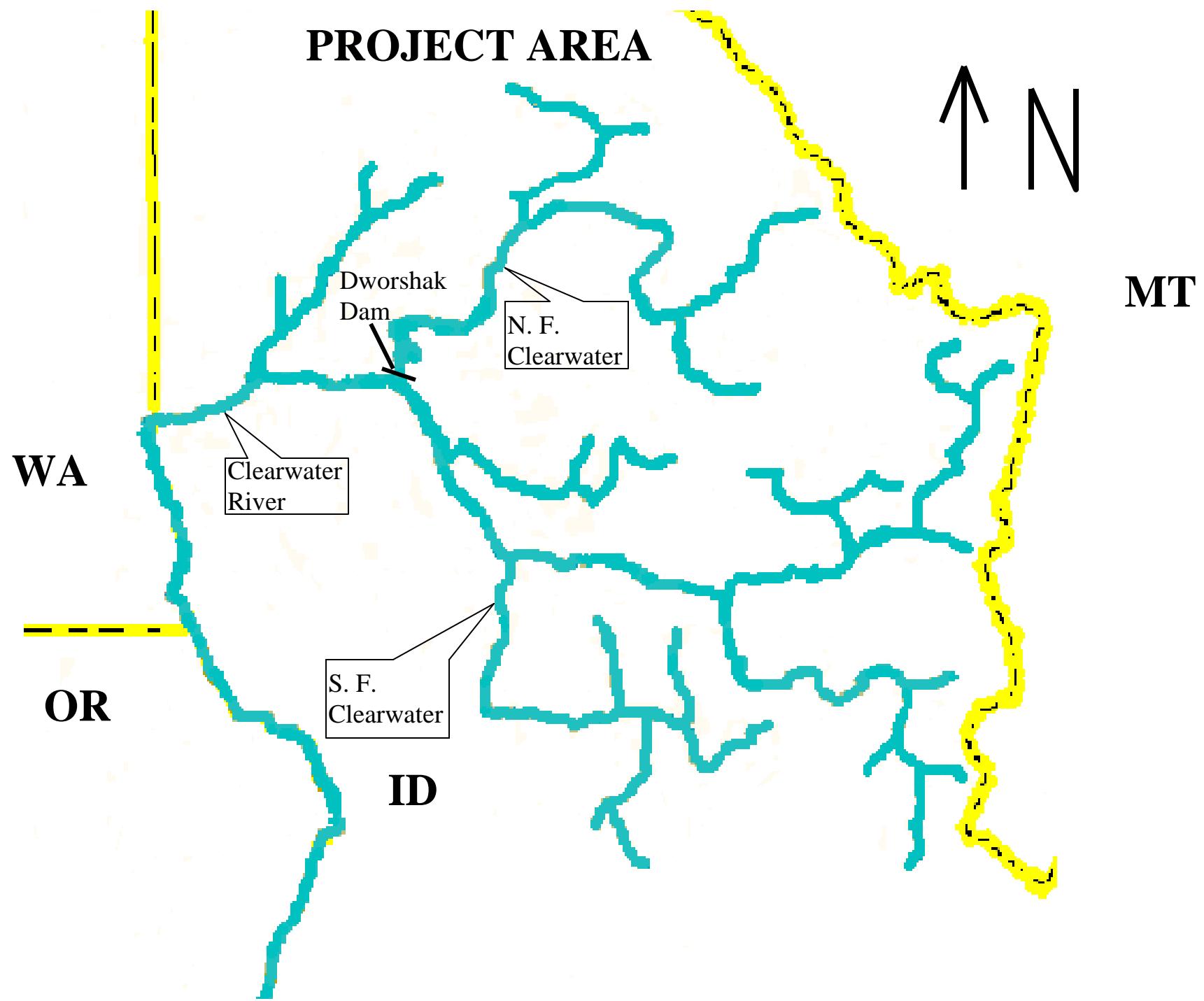


Ice Harbor Dam



Lower Granite Dam





PROJECT AREA HISTORY

- White settlement of Clearwater River drainage 1860-1920, habitat alterations predominantly 1920-2002
- Lewiston Dam on main Clearwater 1927-1972
- Harpster Dam on South Fork Clearwater River rkm 32.0 Grangeville Electric Light and Power Company 1910, removed 1963

HARPSTER DAM



METHODS

- Life History, Distribution, and Habitat Utilization assessment
 - Trapping and electrofishing
- Habitat Utilization in Red River:
 - Red River segmented into 1 km sections, randomly selected 100 m reach within km
 - Classify stream habitat, (riffle, pool, etc.) based on Platts et al. (1983) and Overton et al. (1997).

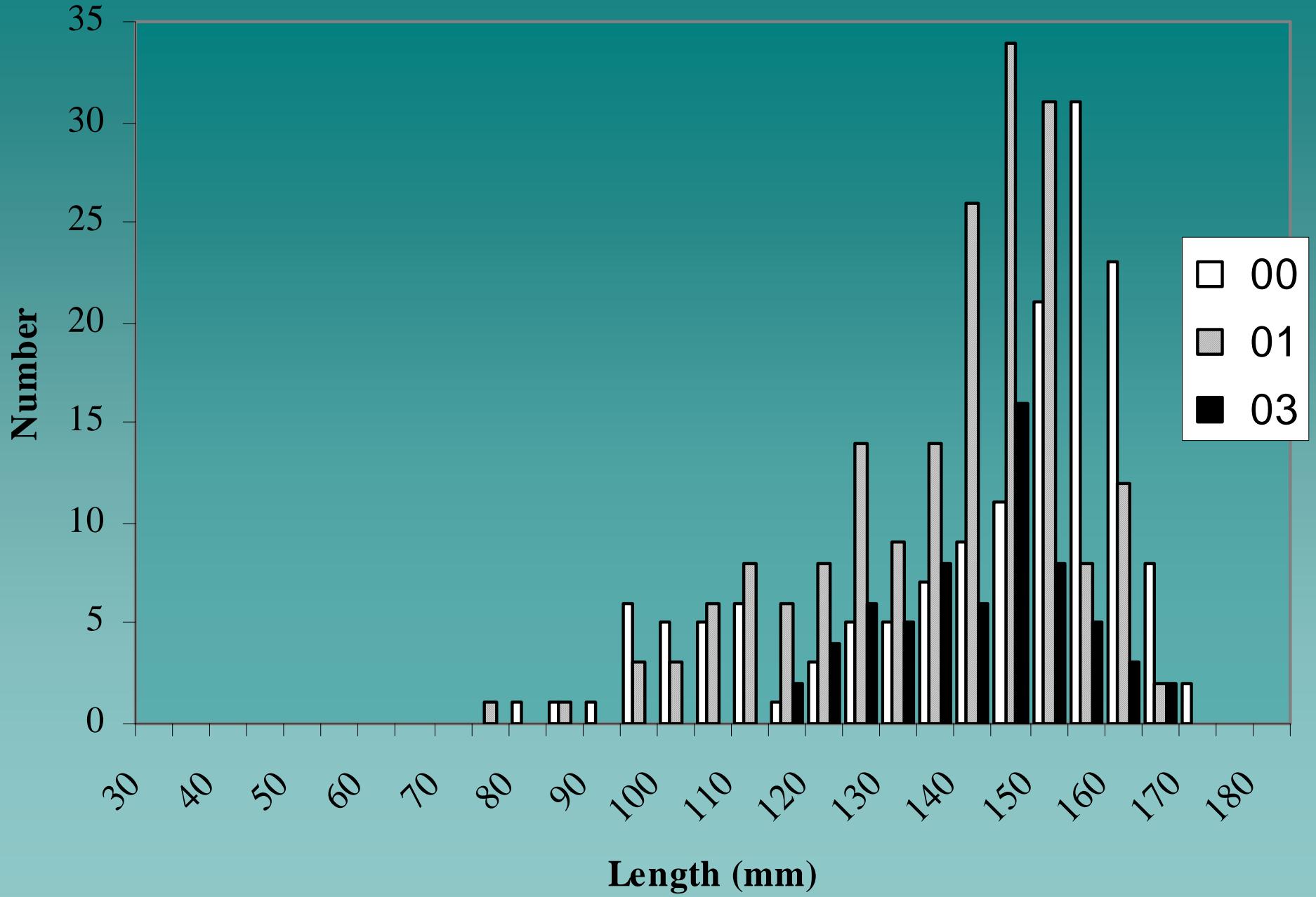
RESULTS

- Captured 1301 (2000-02) total ammocoetes and macrothalmia electroshocking and trapping in Clearwater River drainage
 - 614 ammocoetes and macrothalmia electroshocking Red River
 - 456 ammocoetes and macrothalmia electroshocking South Fork Clearwater River
 - 207 ammocoetes and macrothalmia in Red River trap
- Pacific lamprey ammocoete density:
 - decreased with increasing flow velocity
 - decreased with increasing coarse substrate
 - increased with increasing riparian canopy cover “shade”

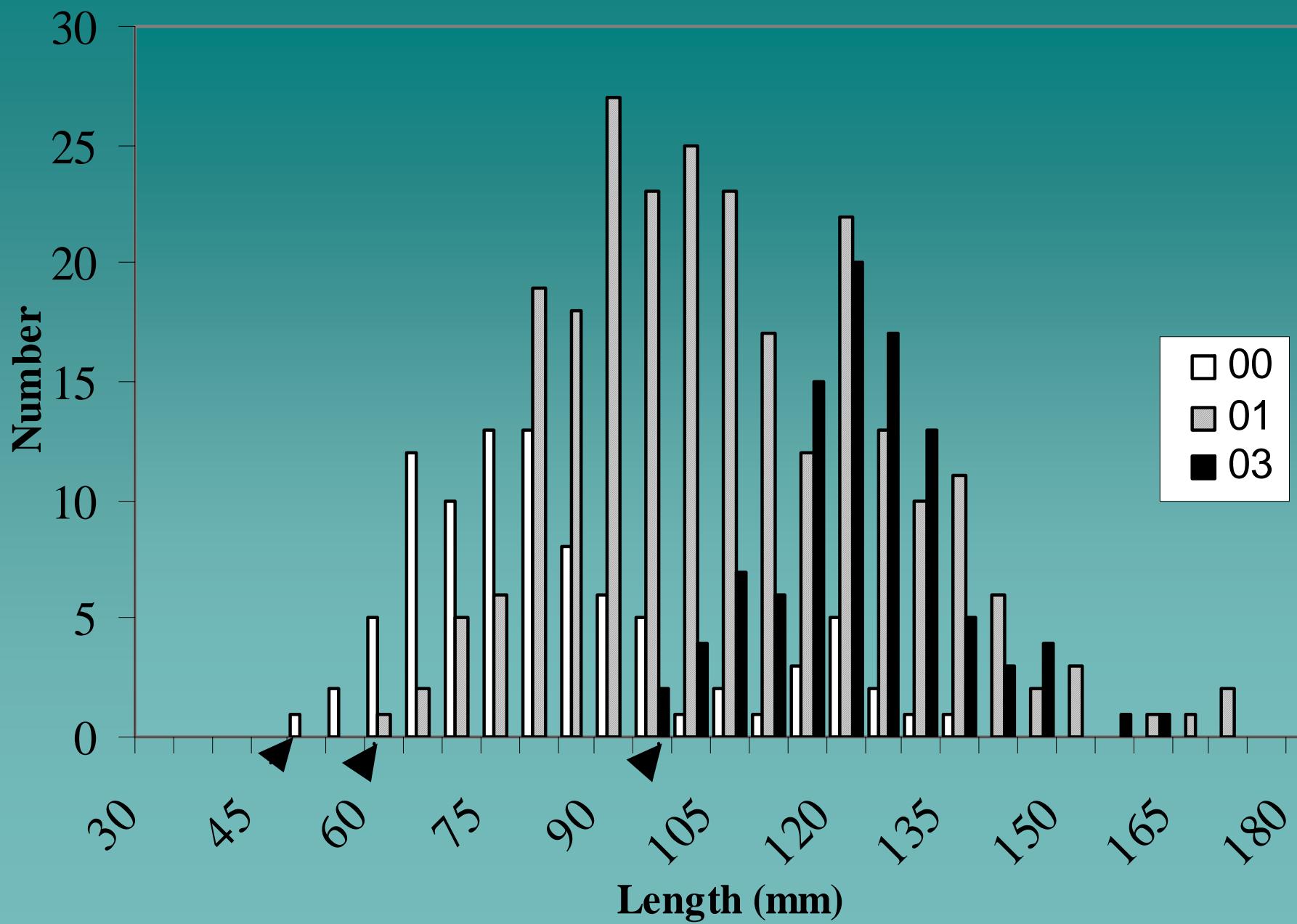




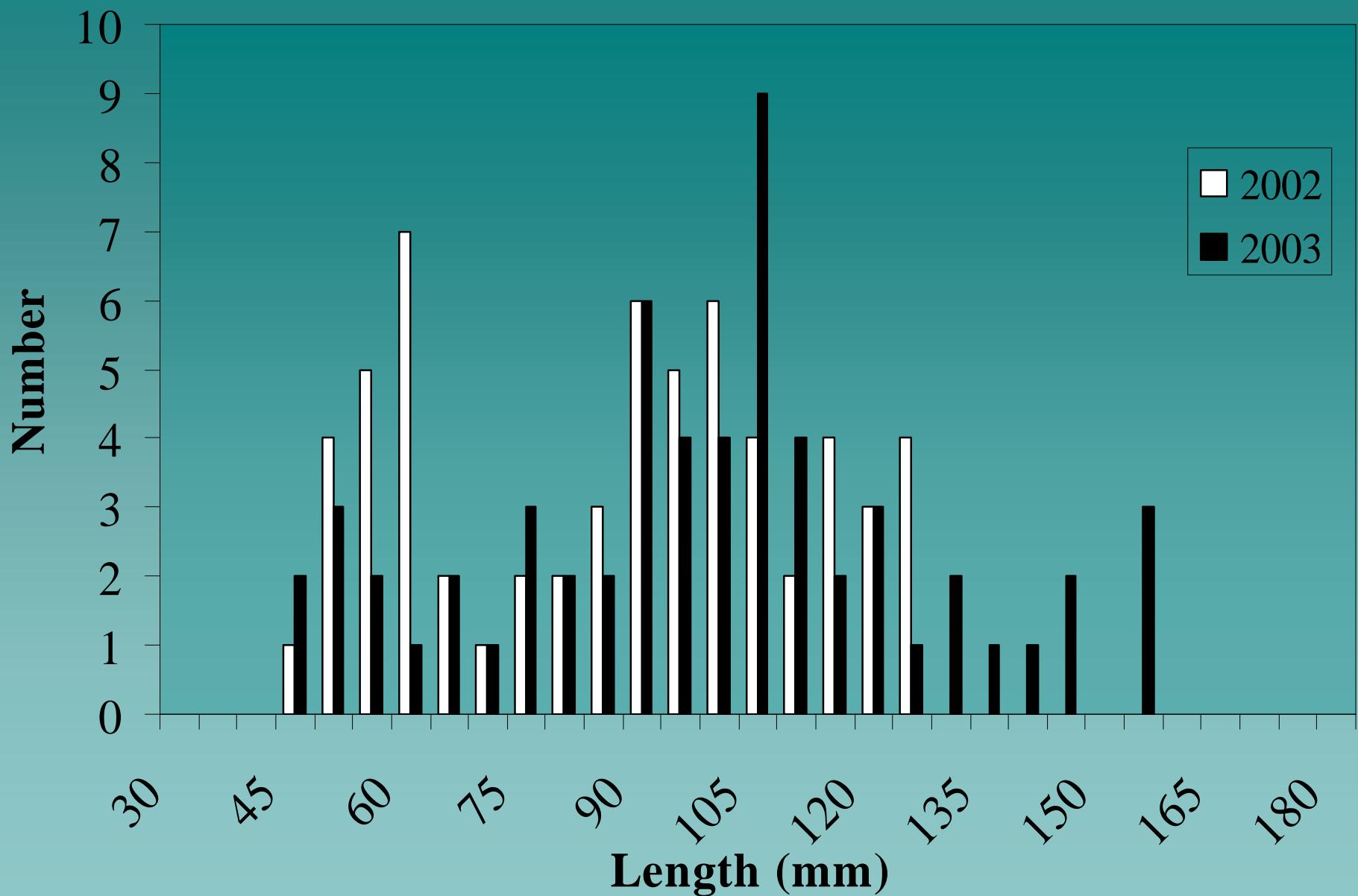
Red River 2000-03



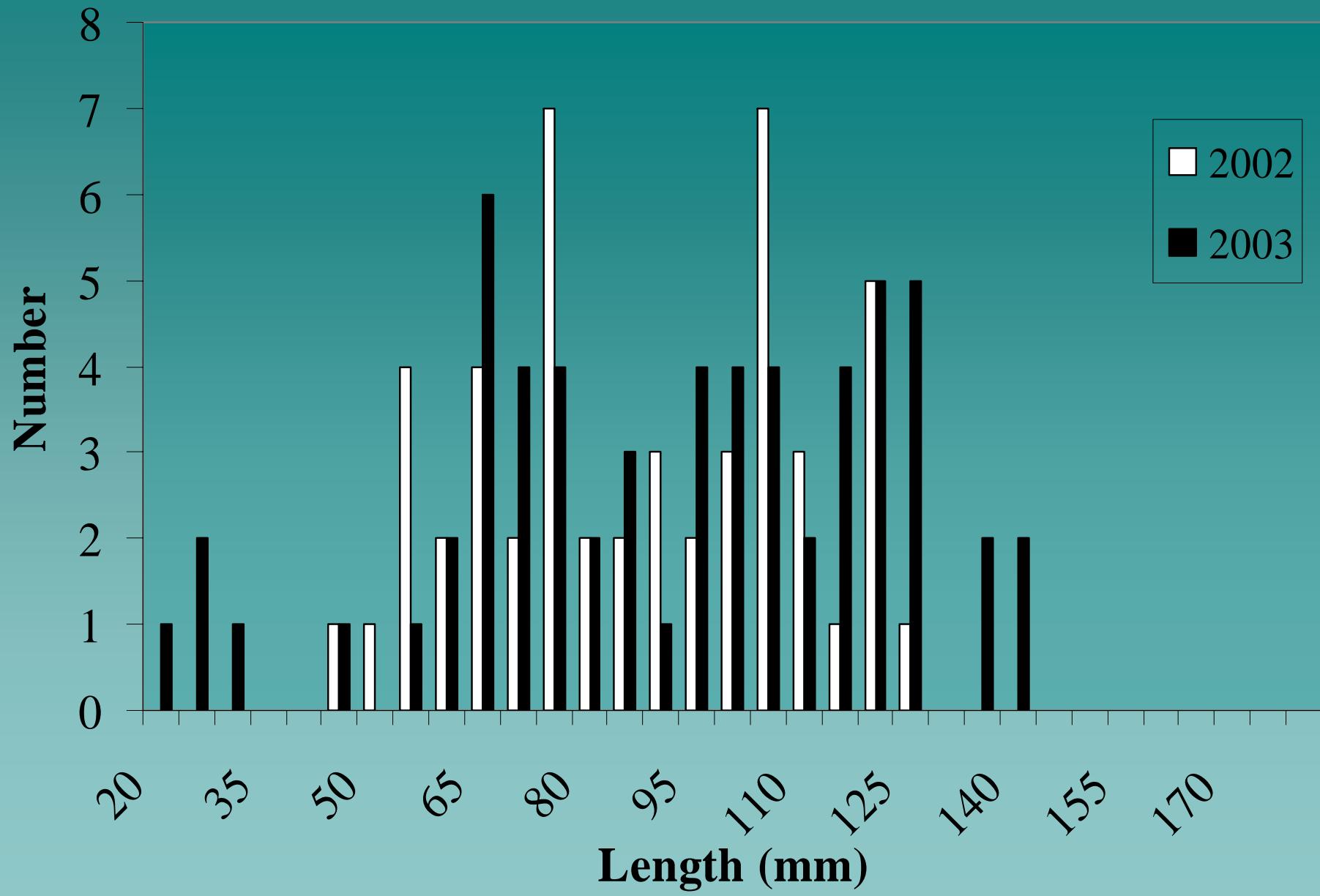
South Fork Clearwater River 2000-03



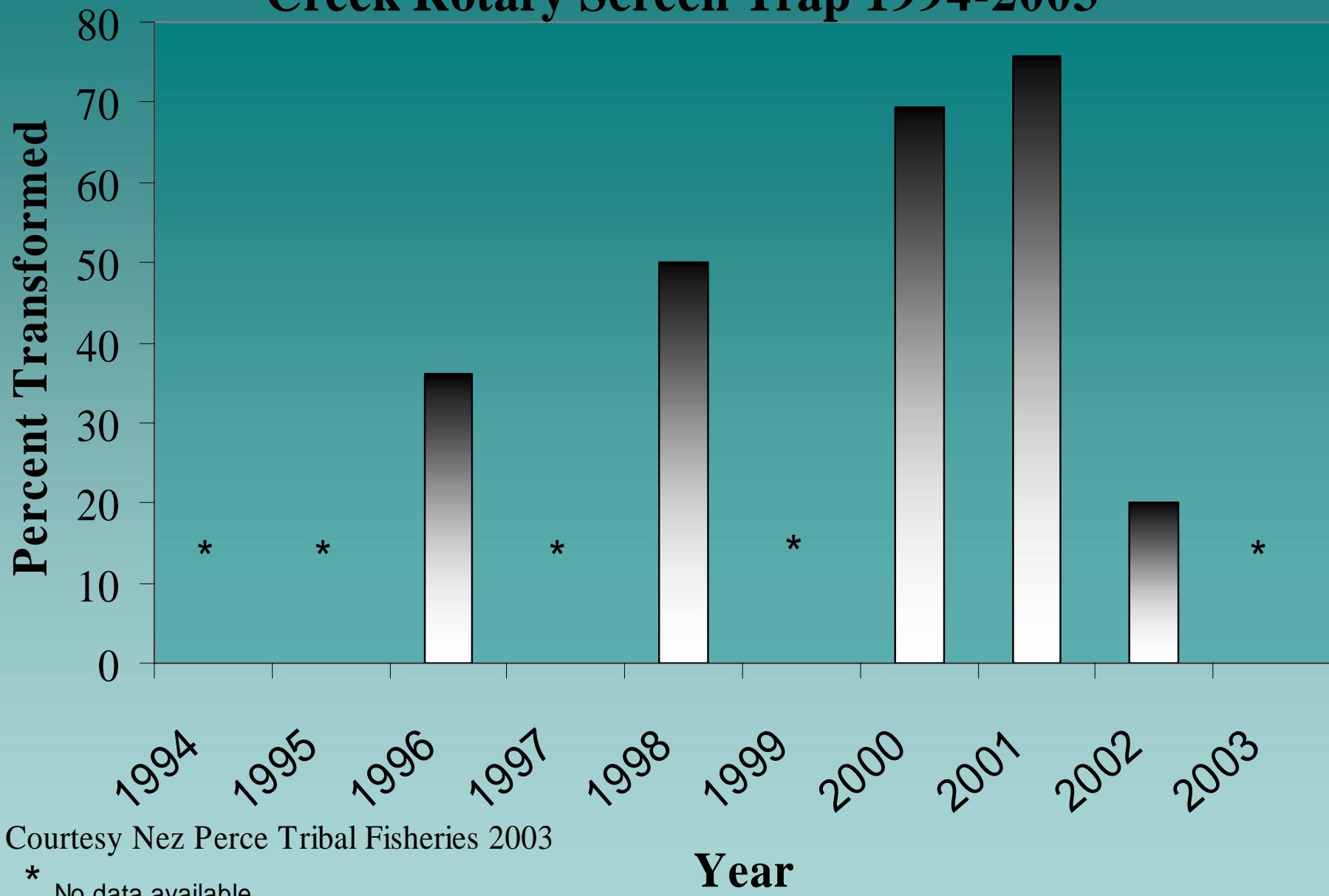
Selway River 2002-03



Lochsa 2002-03



Pacific Lamprey Percentage Transformed, Lolo Creek Rotary Screen Trap 1994-2003

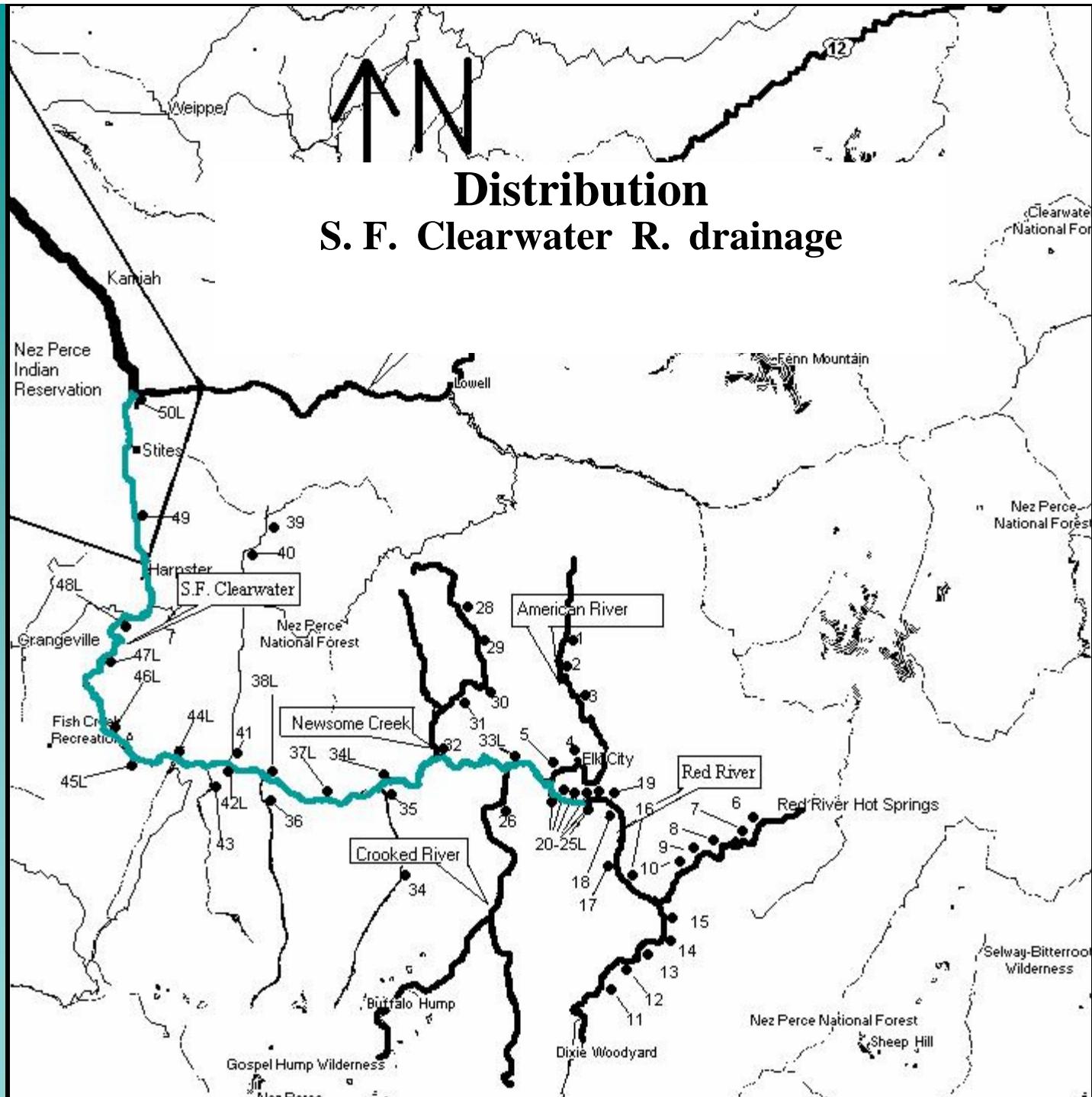


Courtesy Nez Perce Tribal Fisheries 2003

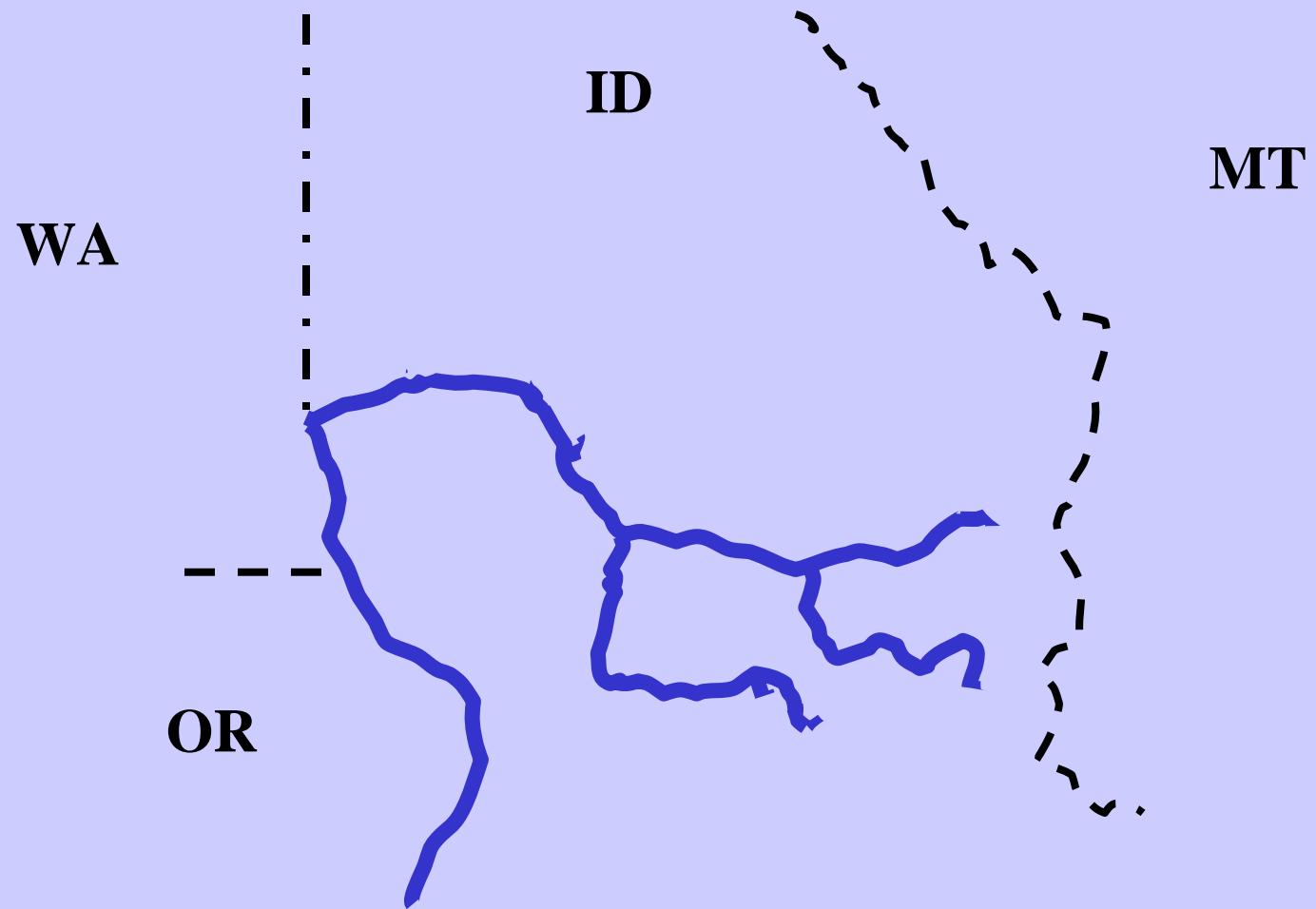
* No data available



Distribution S. F. Clearwater R. drainage



PACIFIC LAMPREY DISTRIBUTION 2003



SUMMARY

- 2000-03 sampling indicates possible low densities and lack of recruitment
- Lower Granite Dam counts in 1995-2003 continue to average <600, (Adults)
- Distribution restricted to mainstem Selway, Lochsa, Rivers, Middle Fork Clearwater, and S. F. Clearwater River