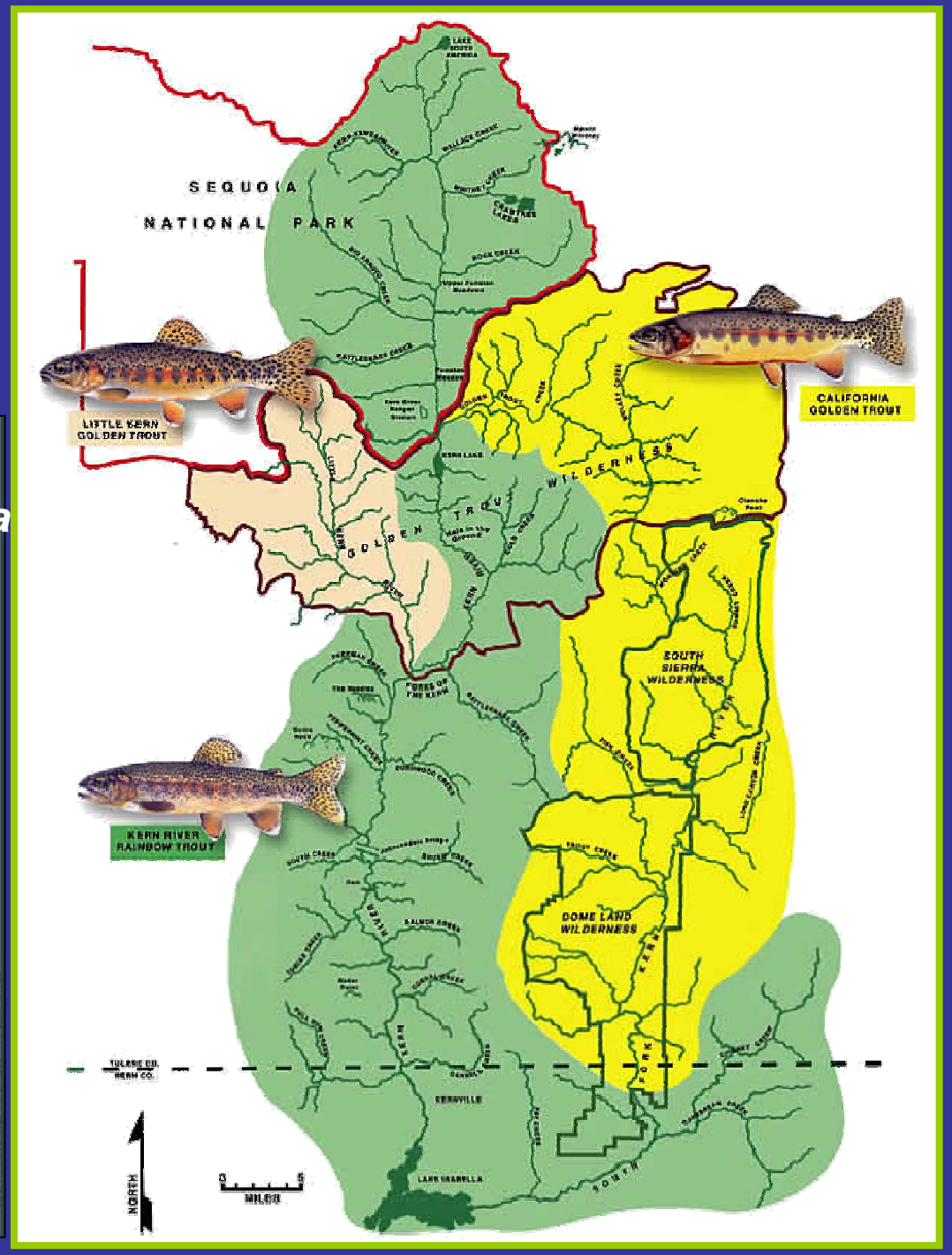
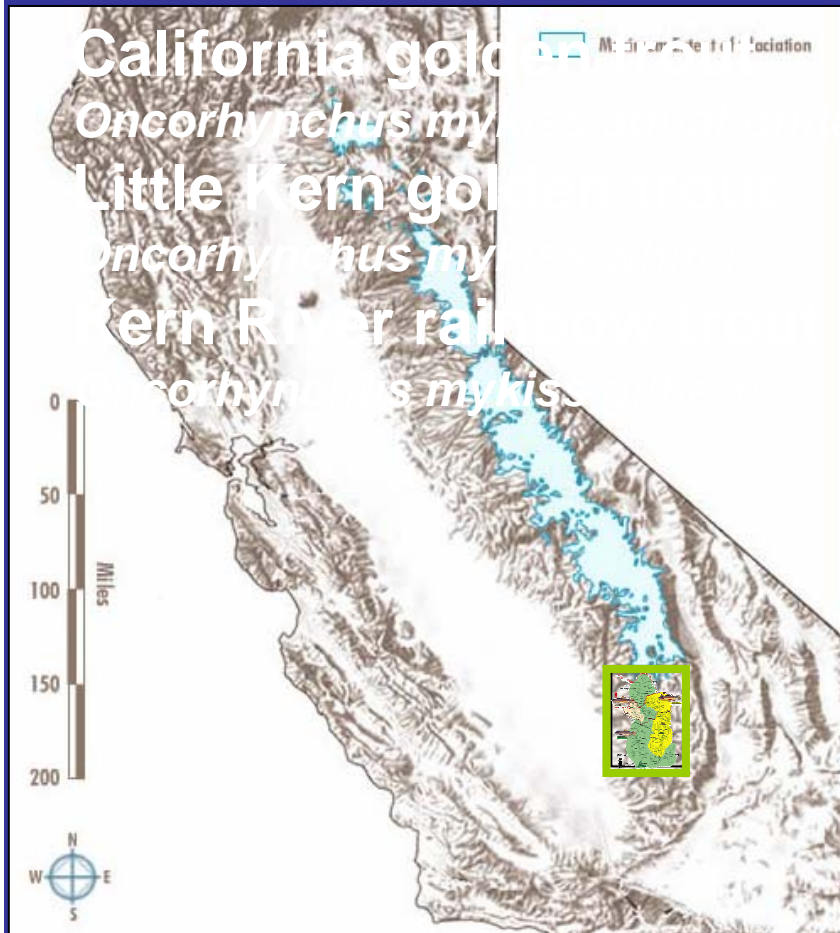


Restoration of Cottonwood Lakes California Golden Trout Brood Stock

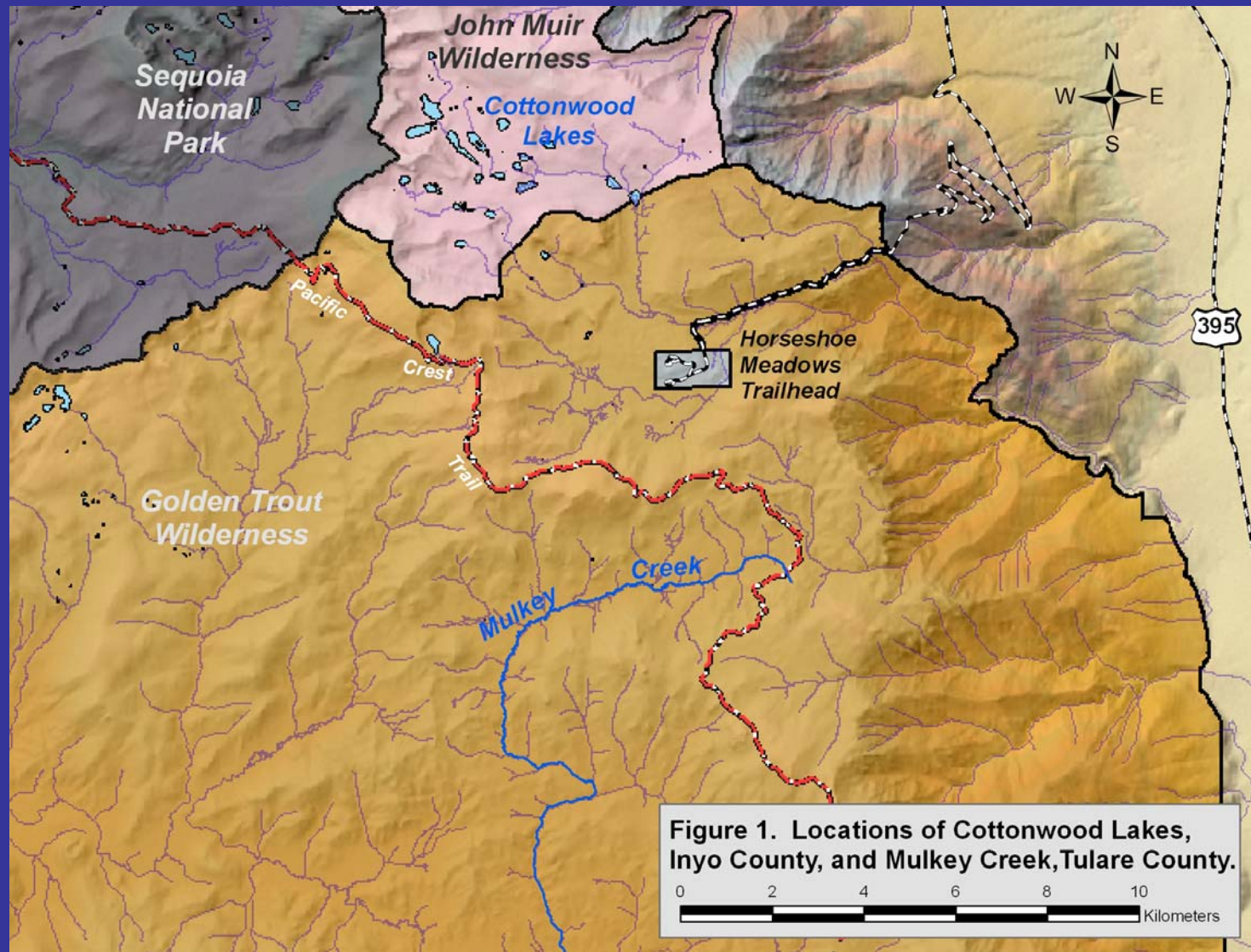


Background

Evolution of coastal rainbow trout, Kern River Basin



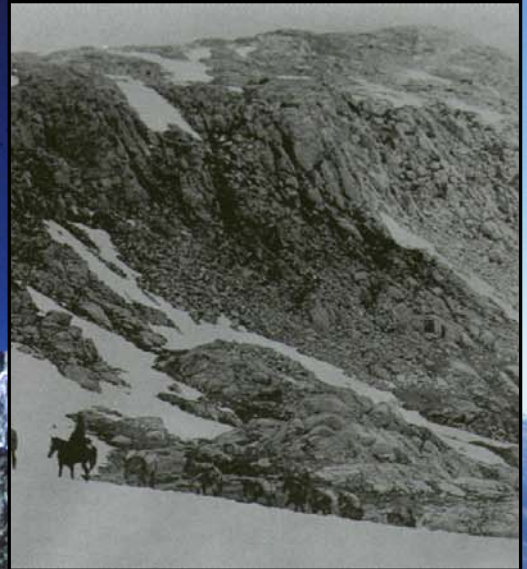
Mulkey Creek GT transfer to Cottonwood Creek - 1876





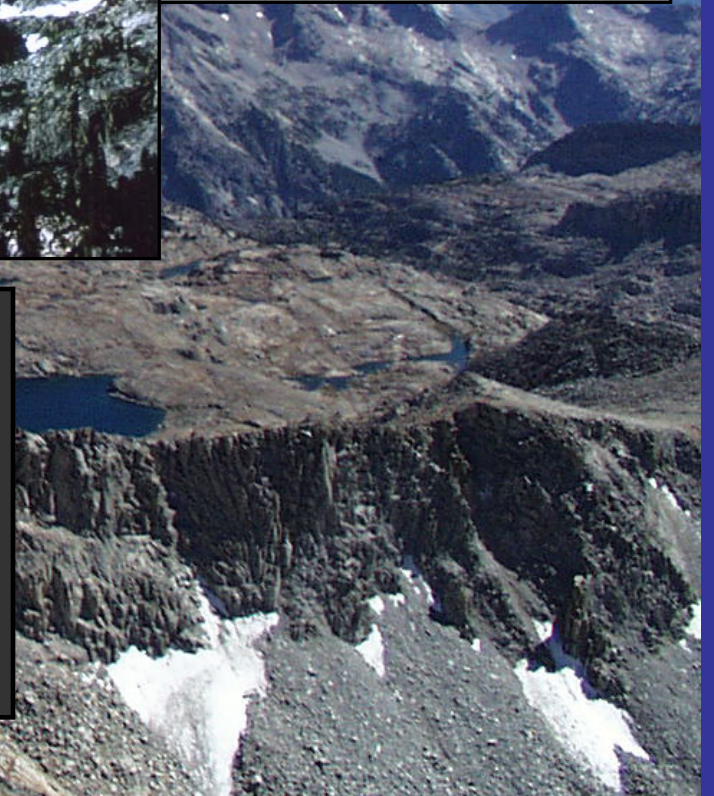






History of High Country Management

Animal Stocking
Aerial Stocking

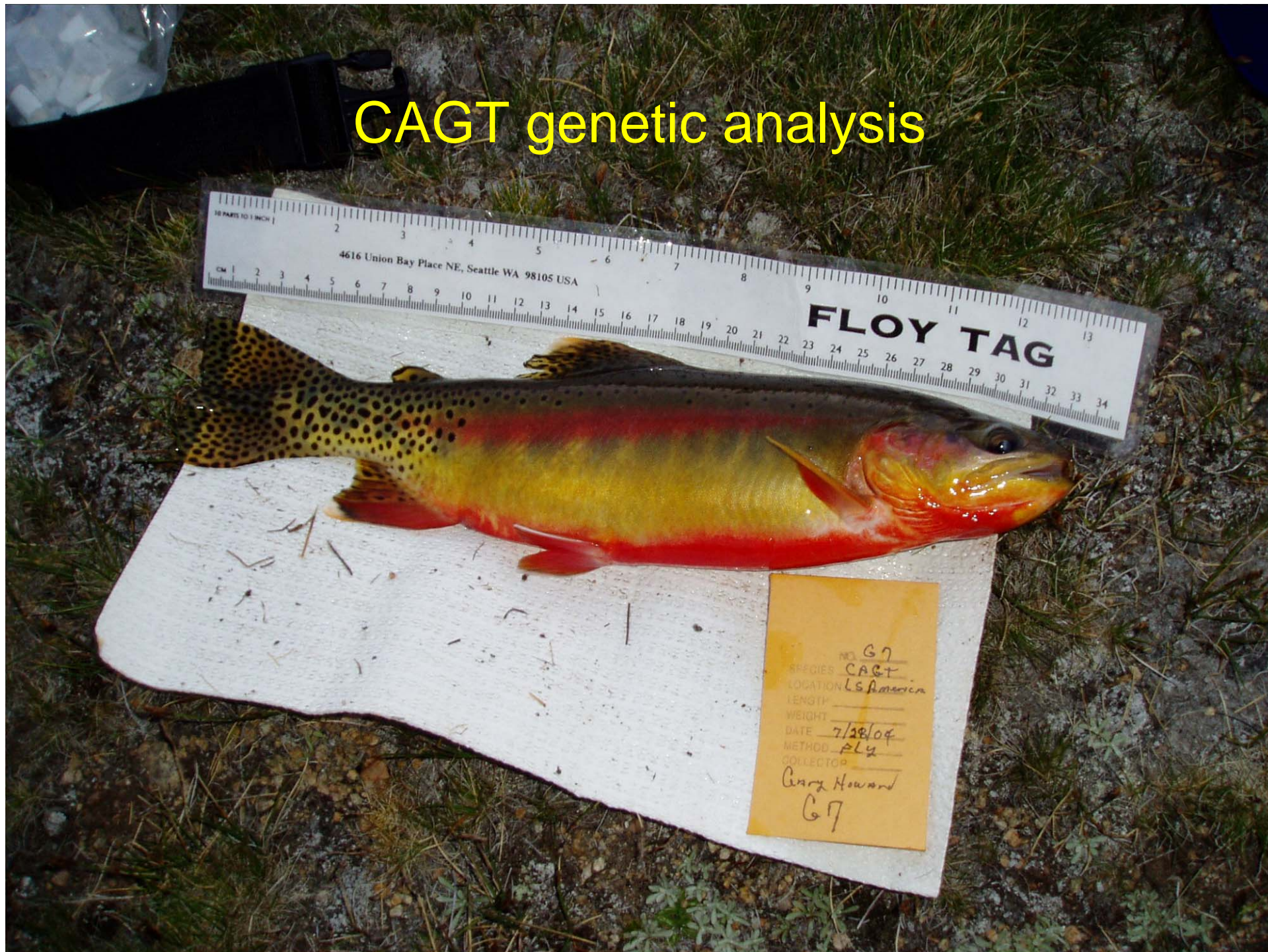




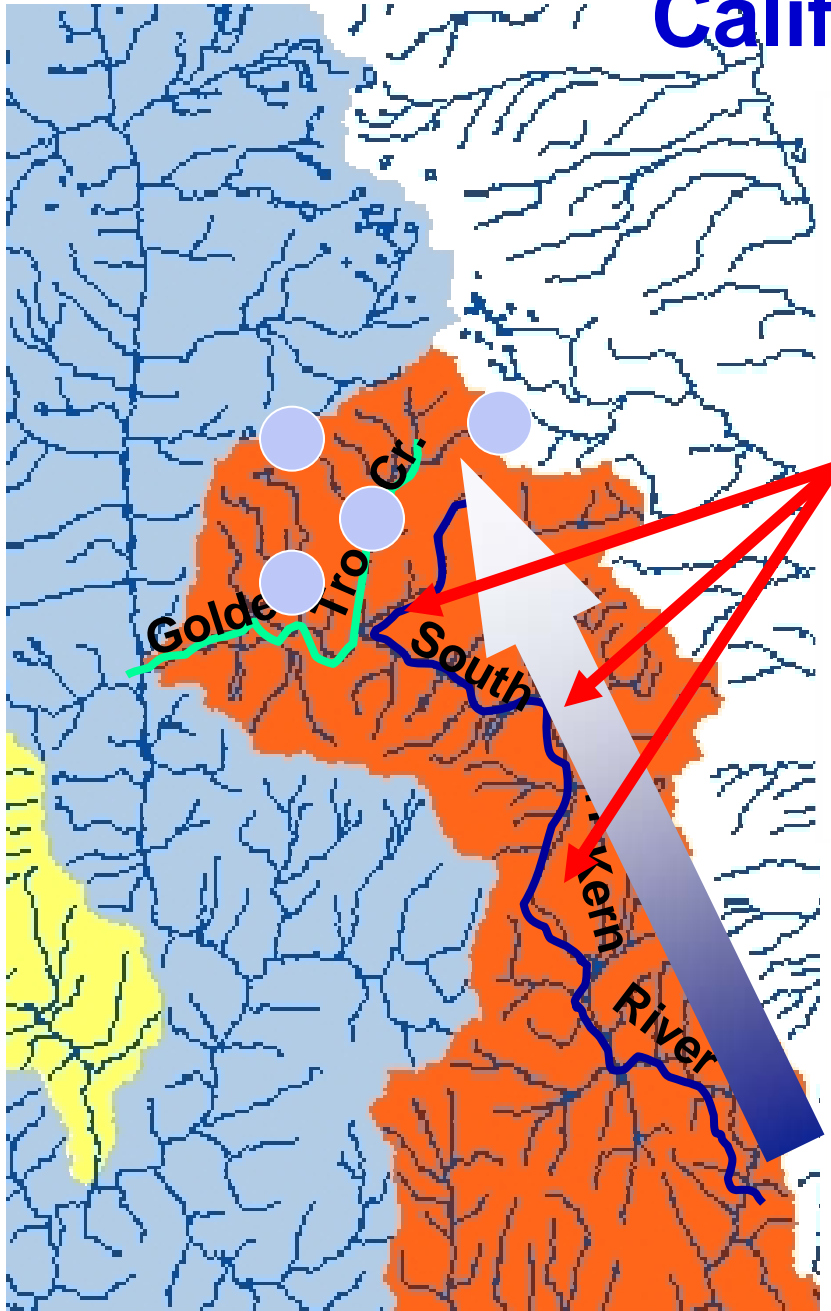
Cottonwood #

Cottonwood #4-5, 7/8/63. Specimen # 111

CAGT genetic analysis



Previous microsatellite results for California golden trout



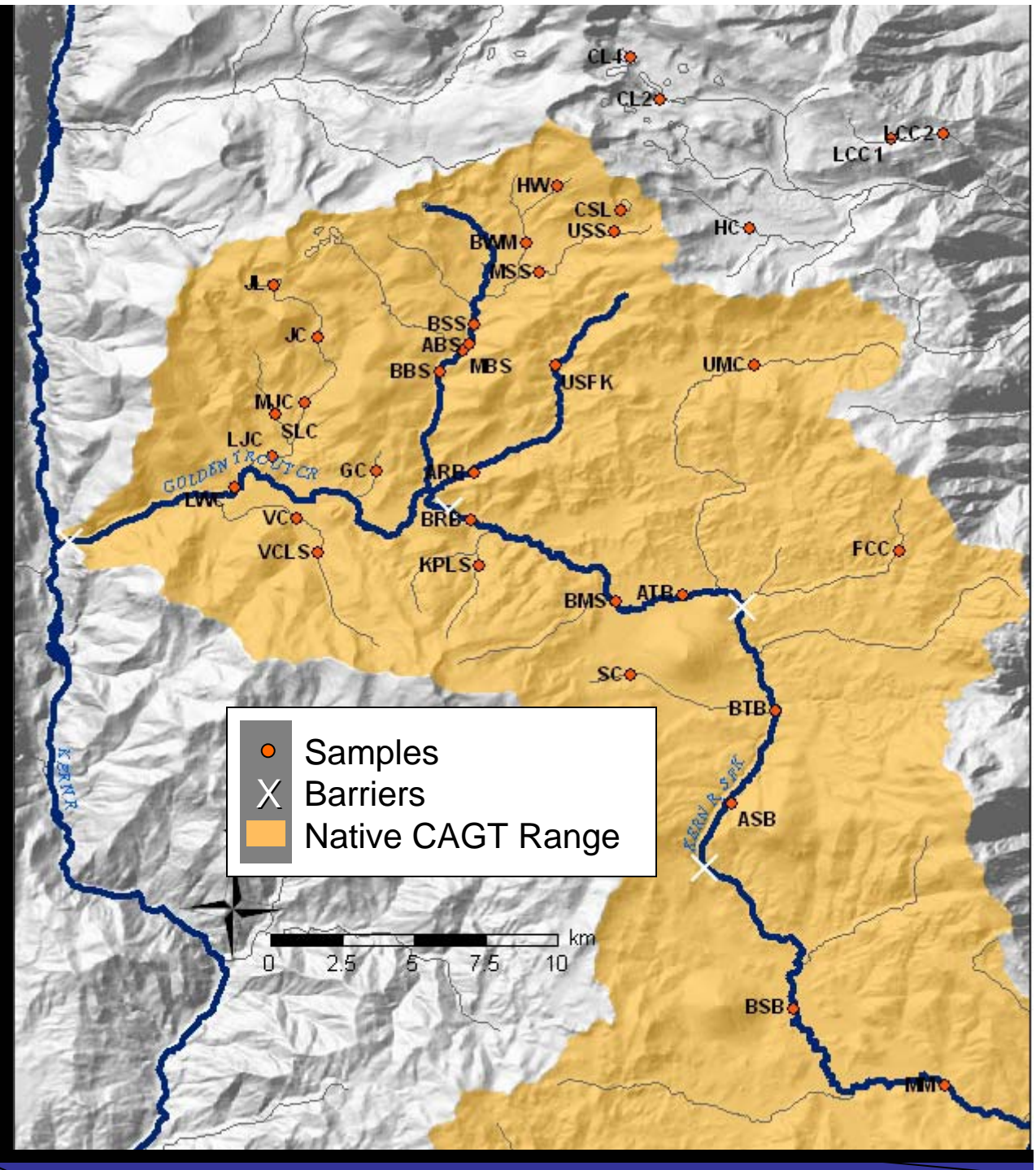
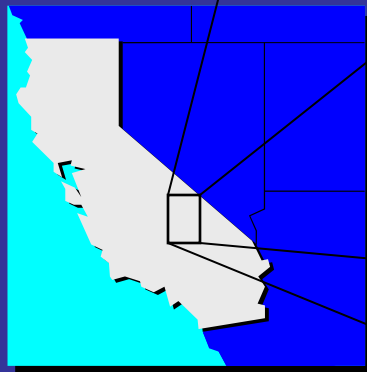
- Cordes et al. 2006 (TAFS 135:110-128)
 - hybridization localized in GTC headwater lakes
- Cordes et al., *in review*
 - introgression gradient in SFK

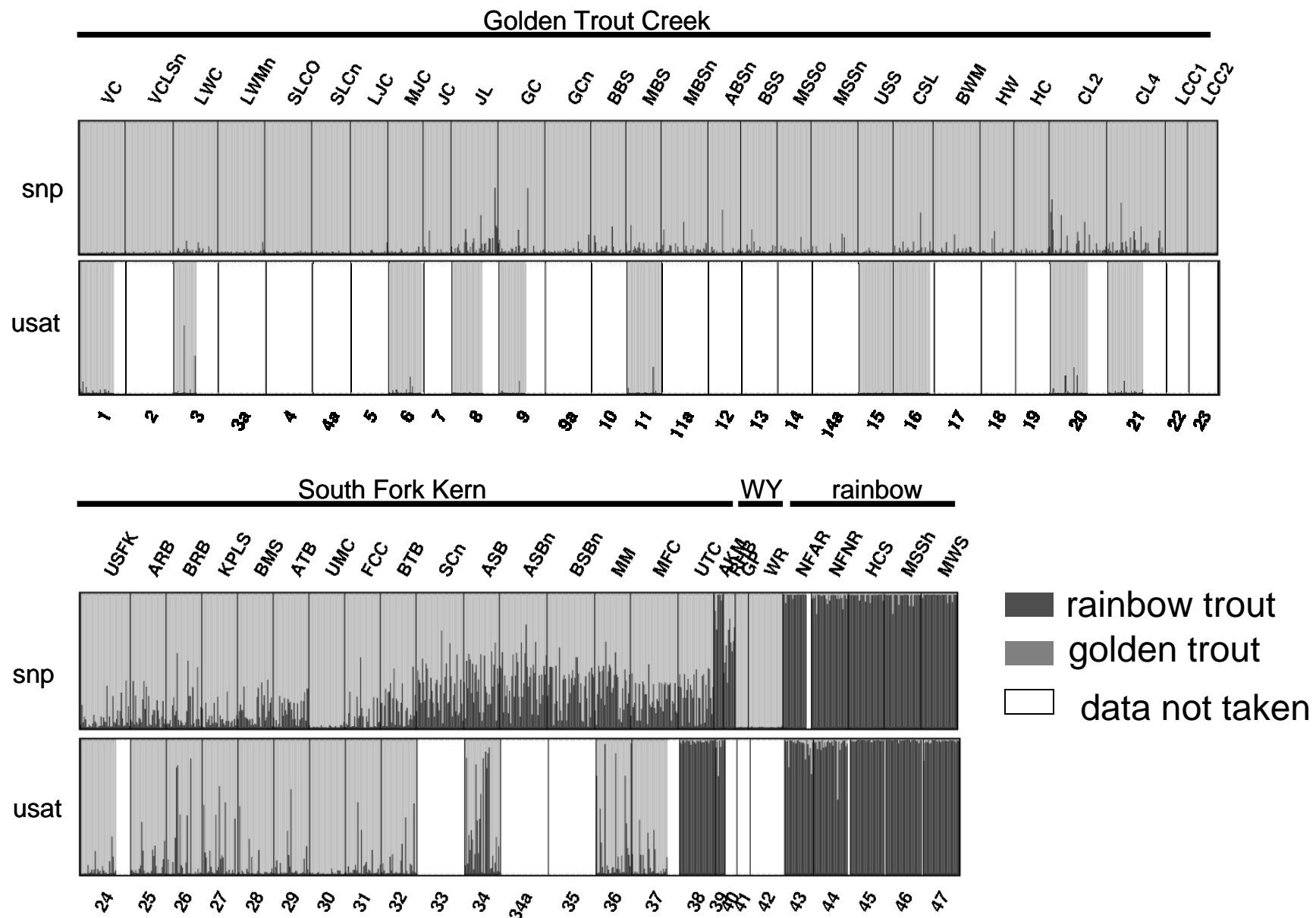
pure golden

rainbow

Application of SNP markers: California golden trout

- 42 CAGT (8 SNPs)
 - 24 CAGT (previous microsatellite data)
 - 6 monitoring
- 2 WY samples
- 5 rainbow reference
 - 3 hatcheries (MSS, MWS, HCS)
 - 2 wild (N.F. Amer., N.F. Navarro)
- Bayesian analysis of Admixture (STRUCTURE)



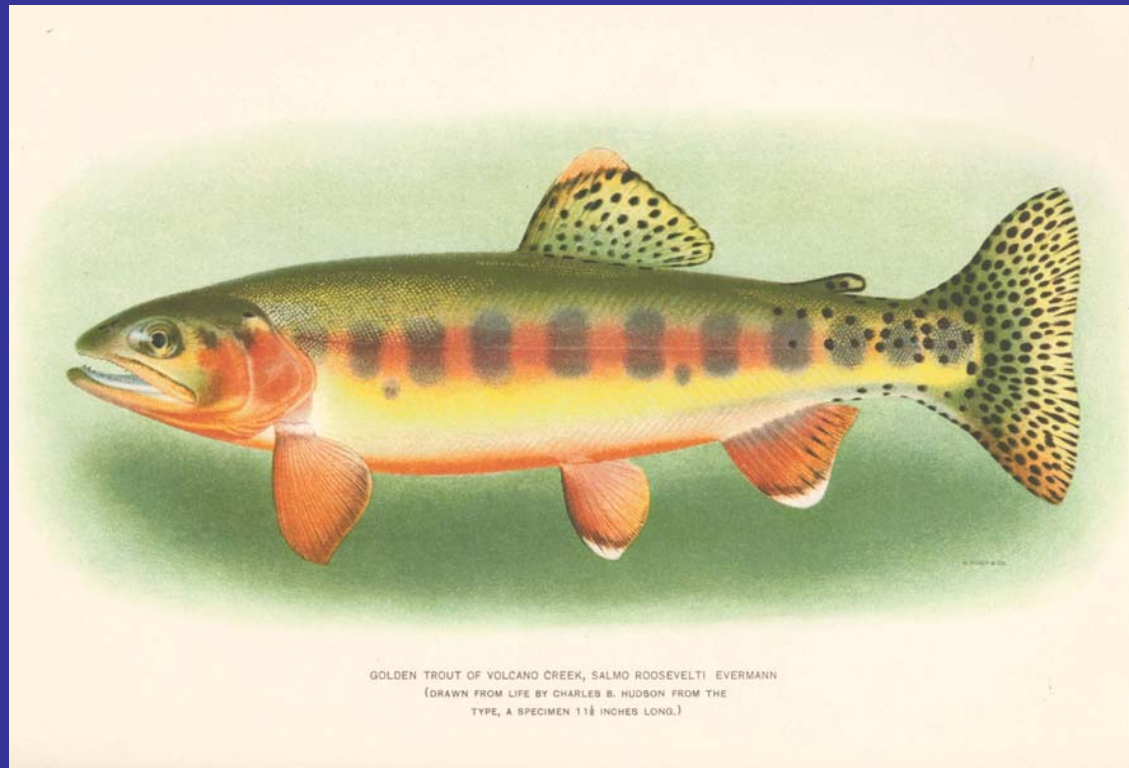


Samples ordered from headwater to mouth for each major drainage for Golden Trout Creek and South Fork Kern River; Wyoming samples from Wind River, WY

Stephens, M.R. 2007. "Systematics, genetics, cultural history and conservation of golden trout." Dissertation, University of California, Davis.

Conservation Assessment and Strategy
for the
California Golden Trout
(*Oncorhynchus mykiss aguabonita*)
Tulare County, California

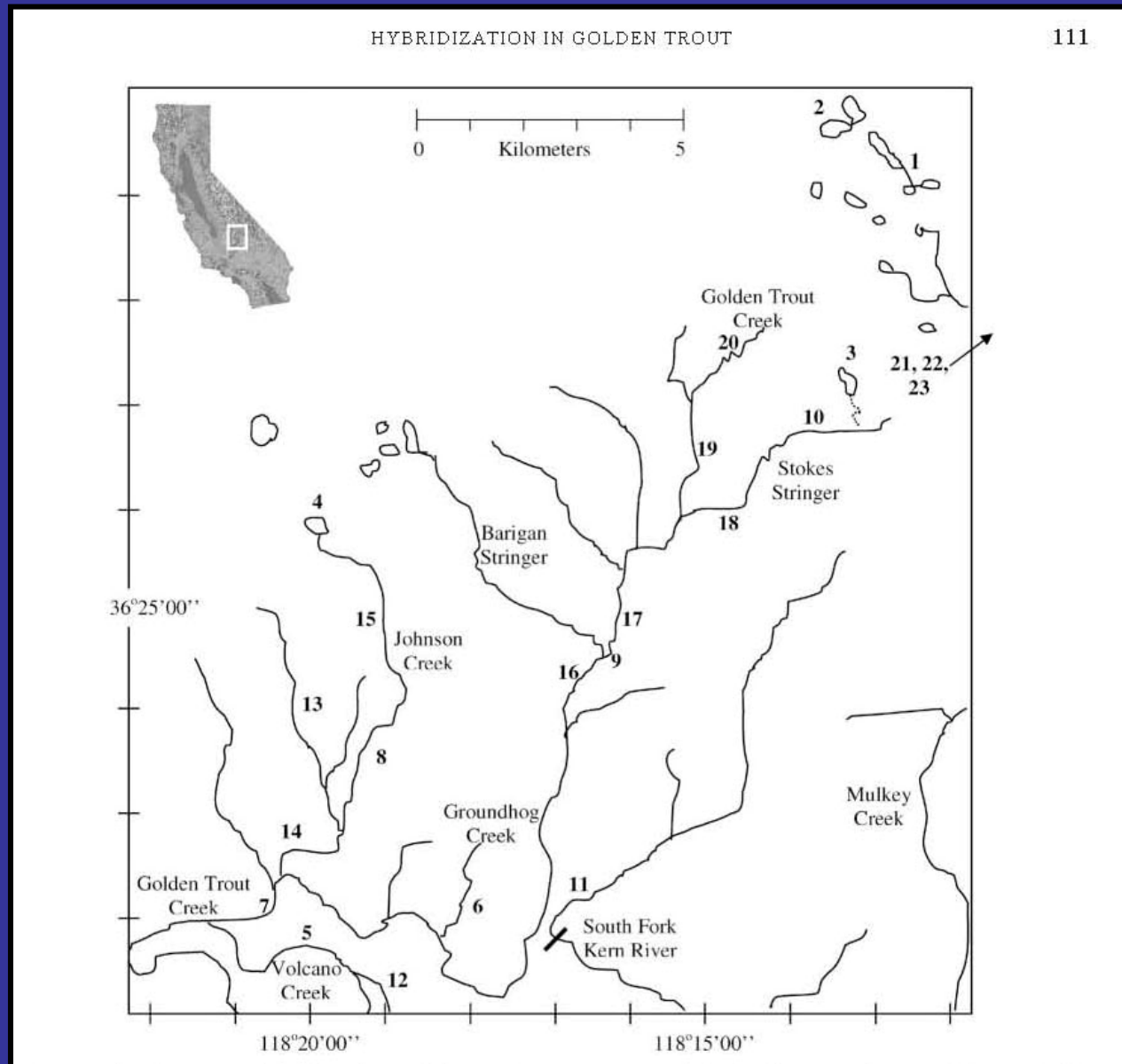
California Department of Fish and Game
San Joaquin Valley and Southern Sierra Region
USDA Forest Service, Pacific Southwest Region
Inyo National Forest
Sequoia National Forest
U. S. Fish and Wildlife Service
Sacramento Office



GOLDEN TROUT OF VOLCANO CREEK, SALMO ROOSEVELTI EVERMANN
(DRAWN FROM LIFE BY CHARLES B. HUDSON FROM THE
TYPE, A SPECIMEN 11½ INCHES LONG.)

September 17, 2004

Best GT-C Population



Task 1.2k – Establish refuges for California golden trout

- Refuges for California golden trout will be established
- The genetics management plan will provide recommendations for numbers of adult fish needed to replicate the genetic diversity of the donor population.
- Transplants will be made over multiple years to strengthen this genetic diversity.
- Five years after refuges are established, genetic characteristics will be compared with the donor populations. Additional fish will be transplanted if the refuge population does not represent the genetic diversity of the donor population.

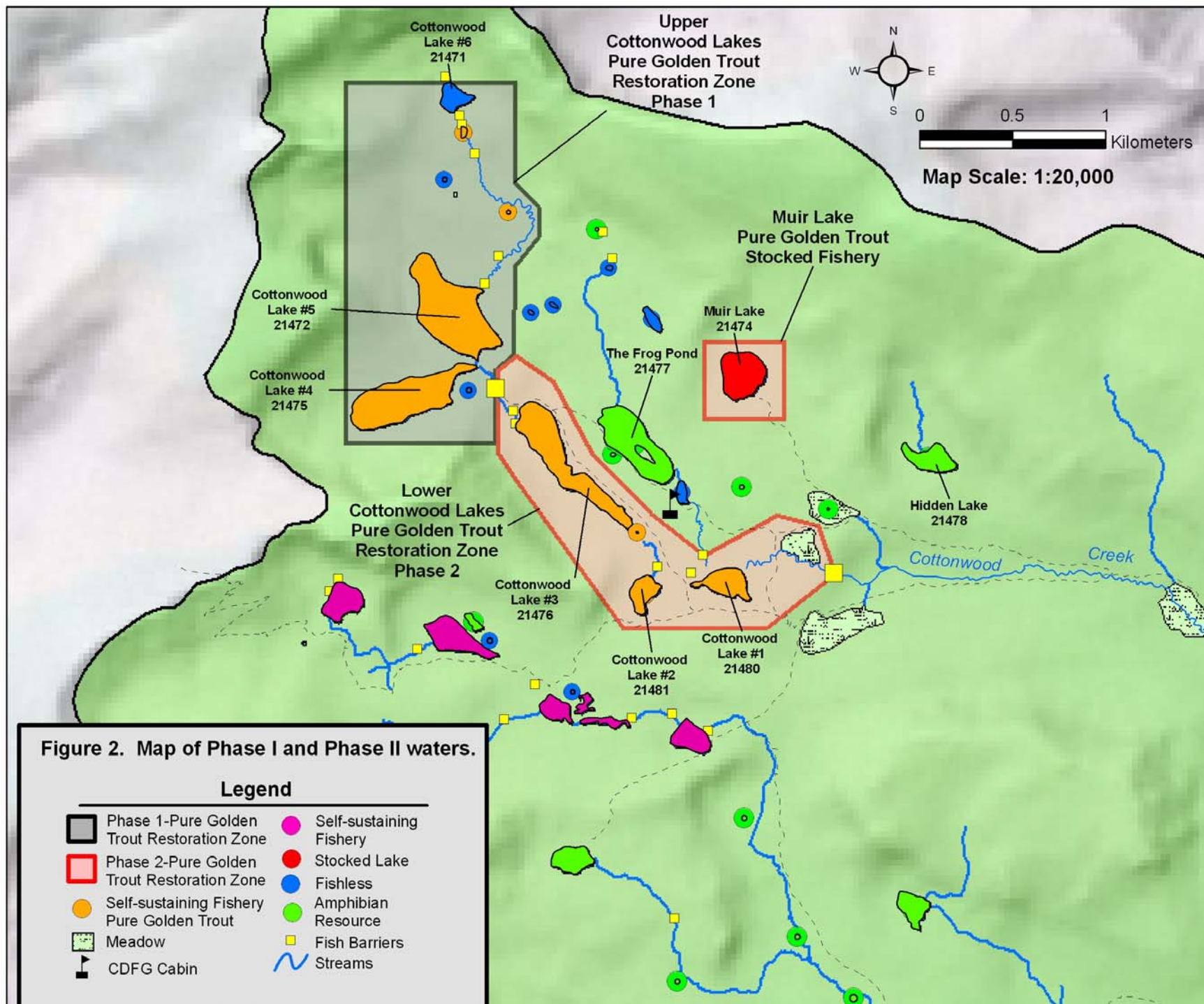
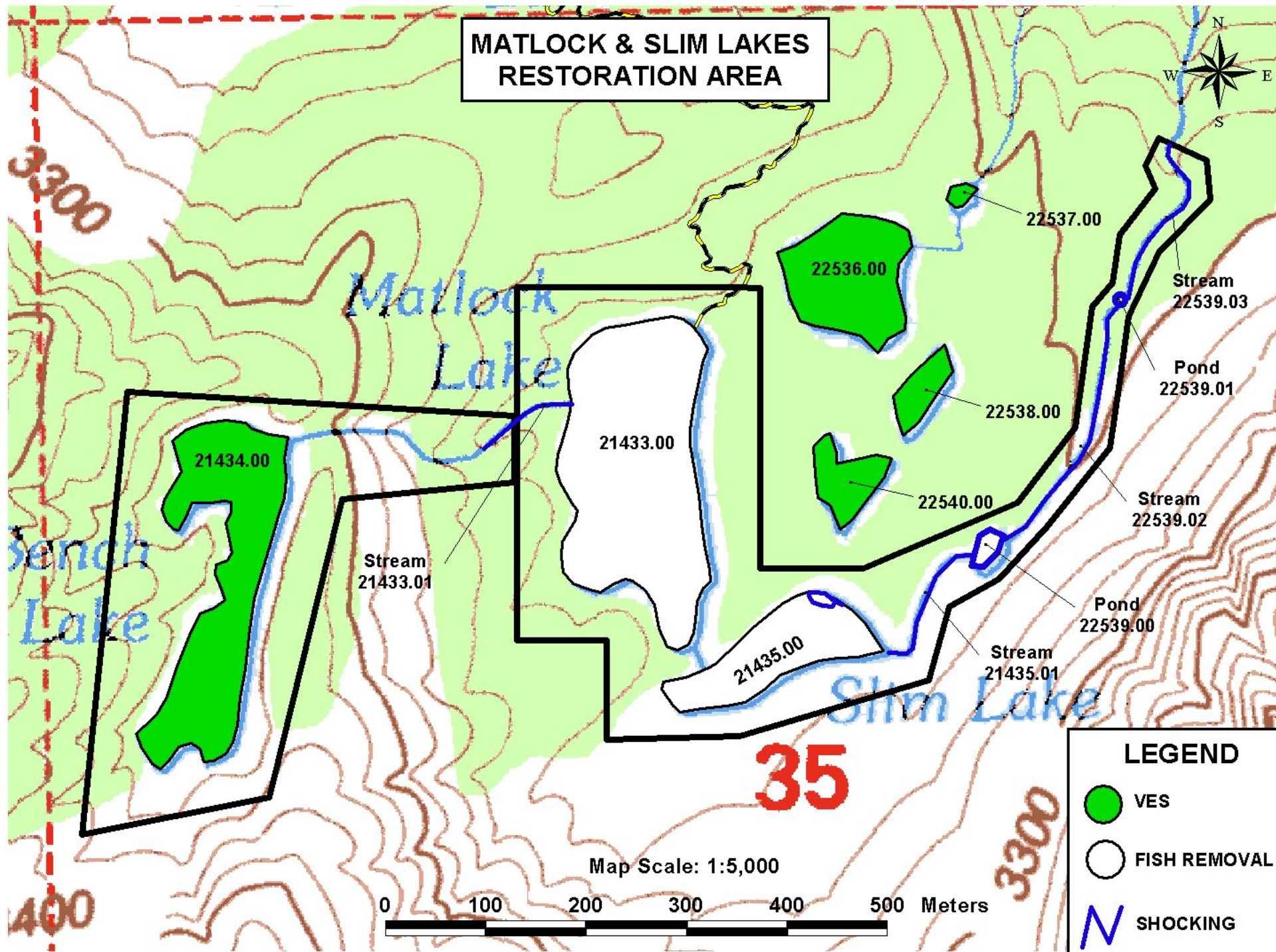
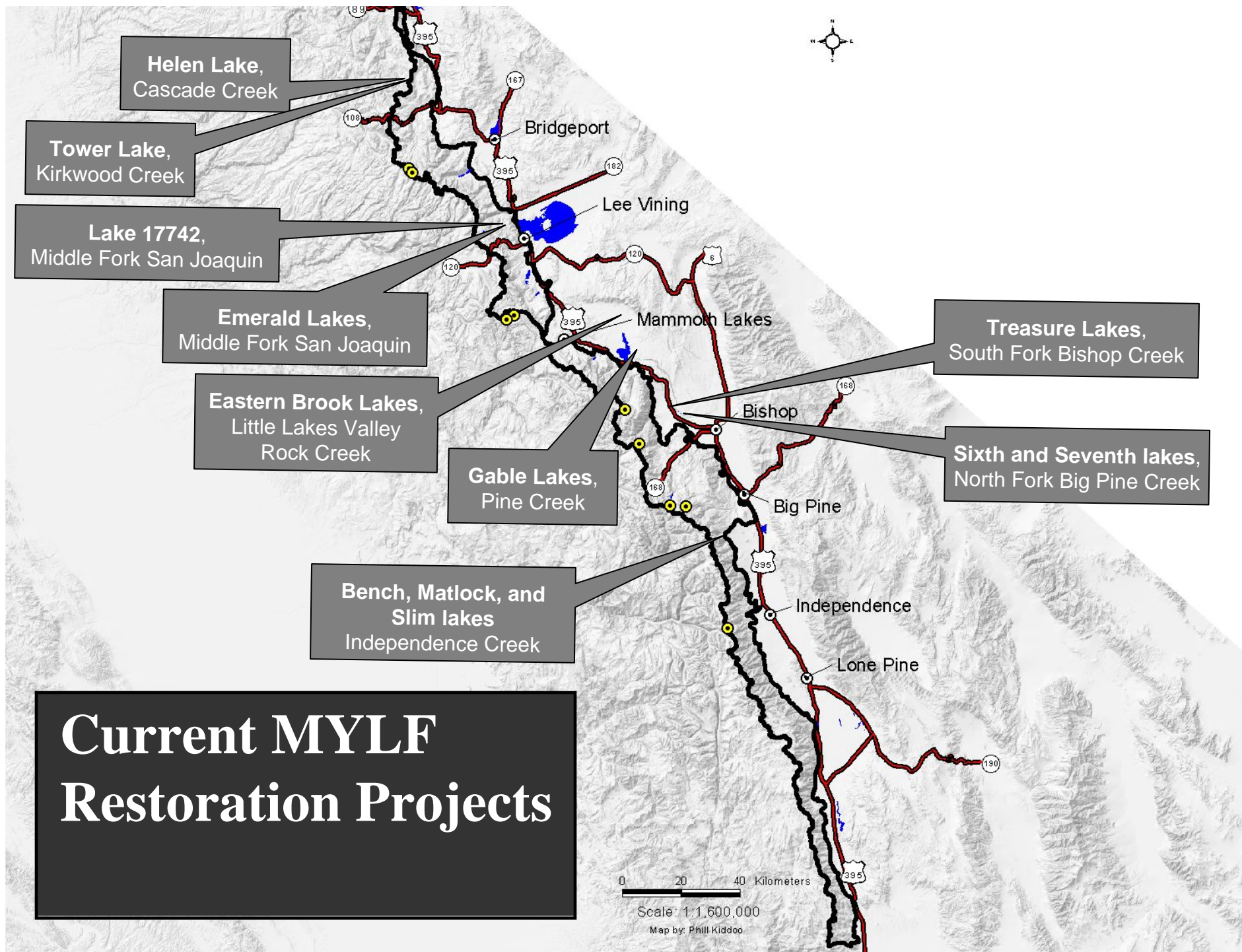
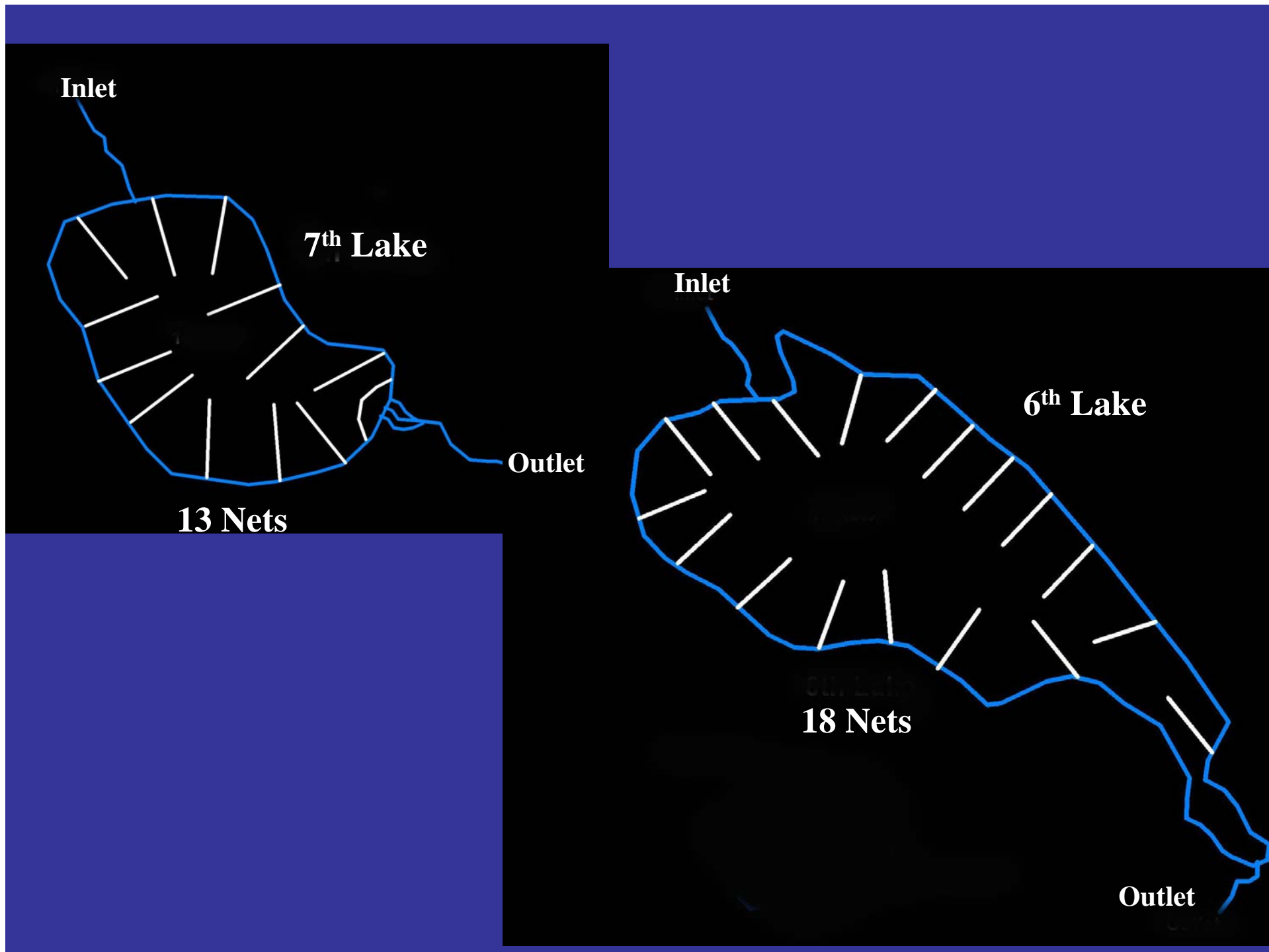


Figure 2. Map of Phase I and Phase II waters.







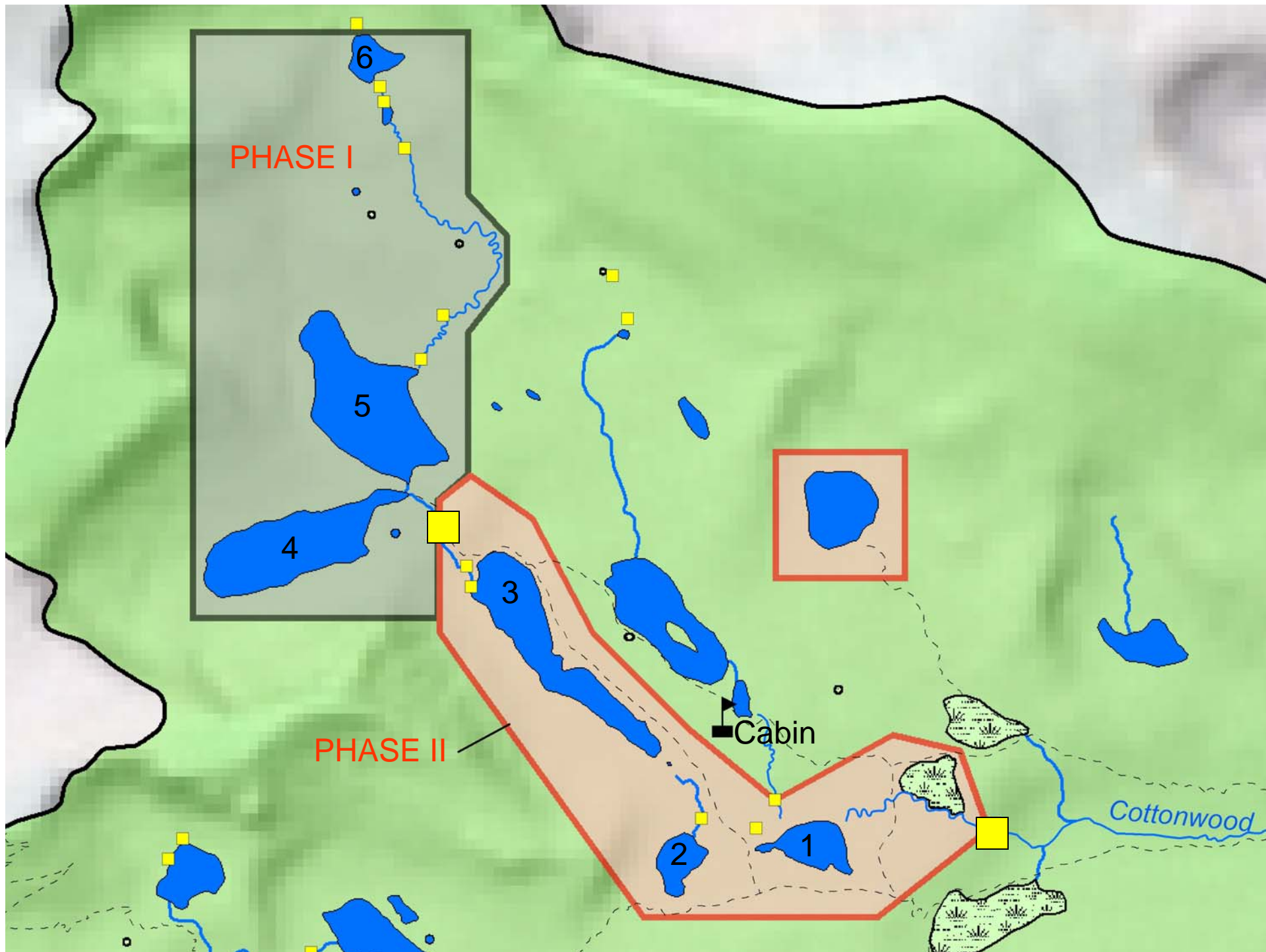


Over-Winter Netting



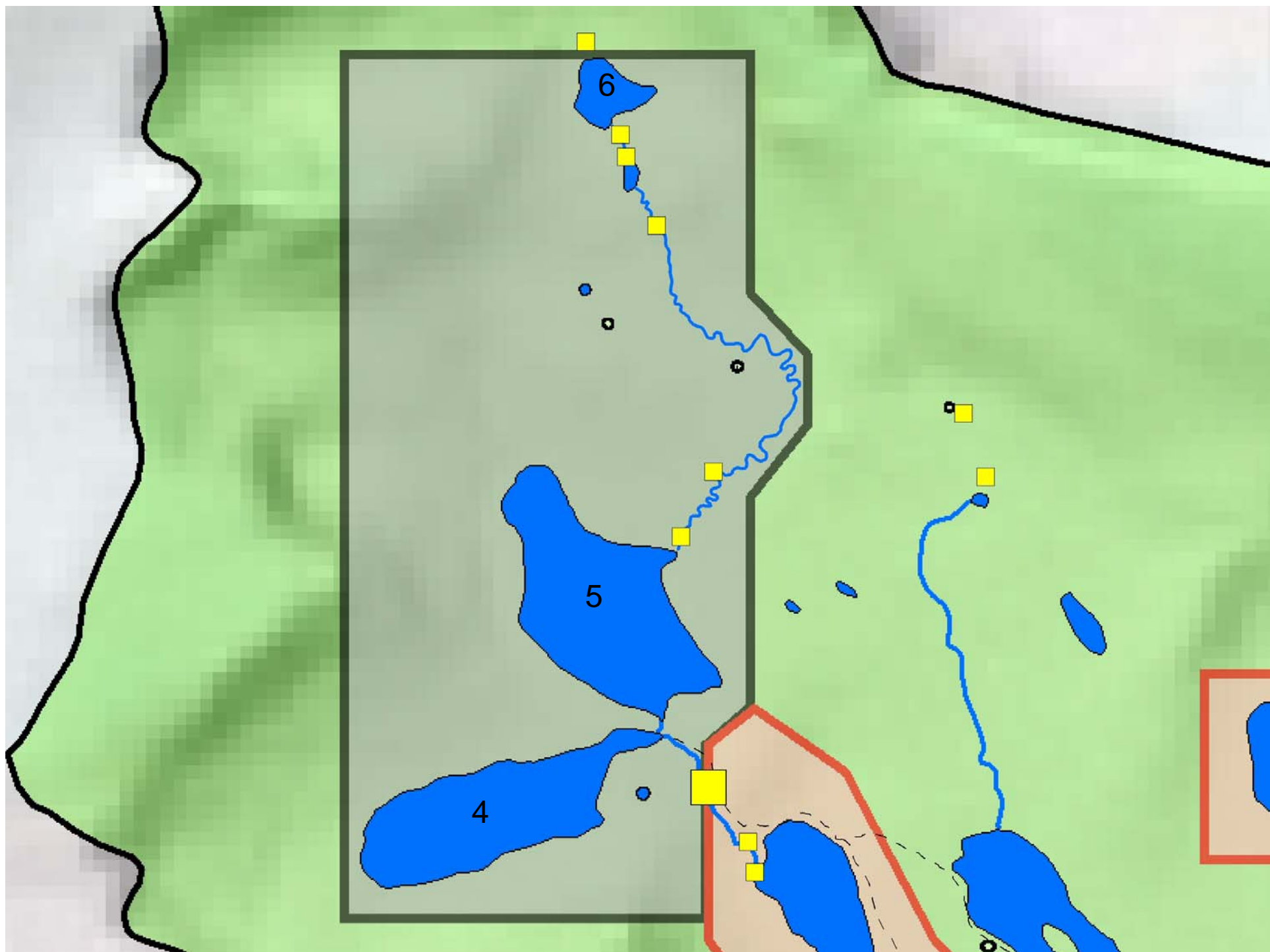






Why should we do this project?

- Establish GT refuge populations
- Meet AB7 mandates of increased use of native trout. GT is one of the native trout that would meet the mandate, however, there is some question about using highly introgressed trout
- Proven performance for hatchery broodstock
- This is our State fish, yet it is poorly represented in our High Elevation Lakes Management program



Fish barrier between Cottonwood lakes 3 and 4





0 40 80 120 160 200 Meters



1: 5,000

Hatchery broodstock trapping
Cottonwood Lake 4



Cottonwood Lake 6

Fishless



2007/08 Winter fish kill in pond below Cottonwood Lake 6

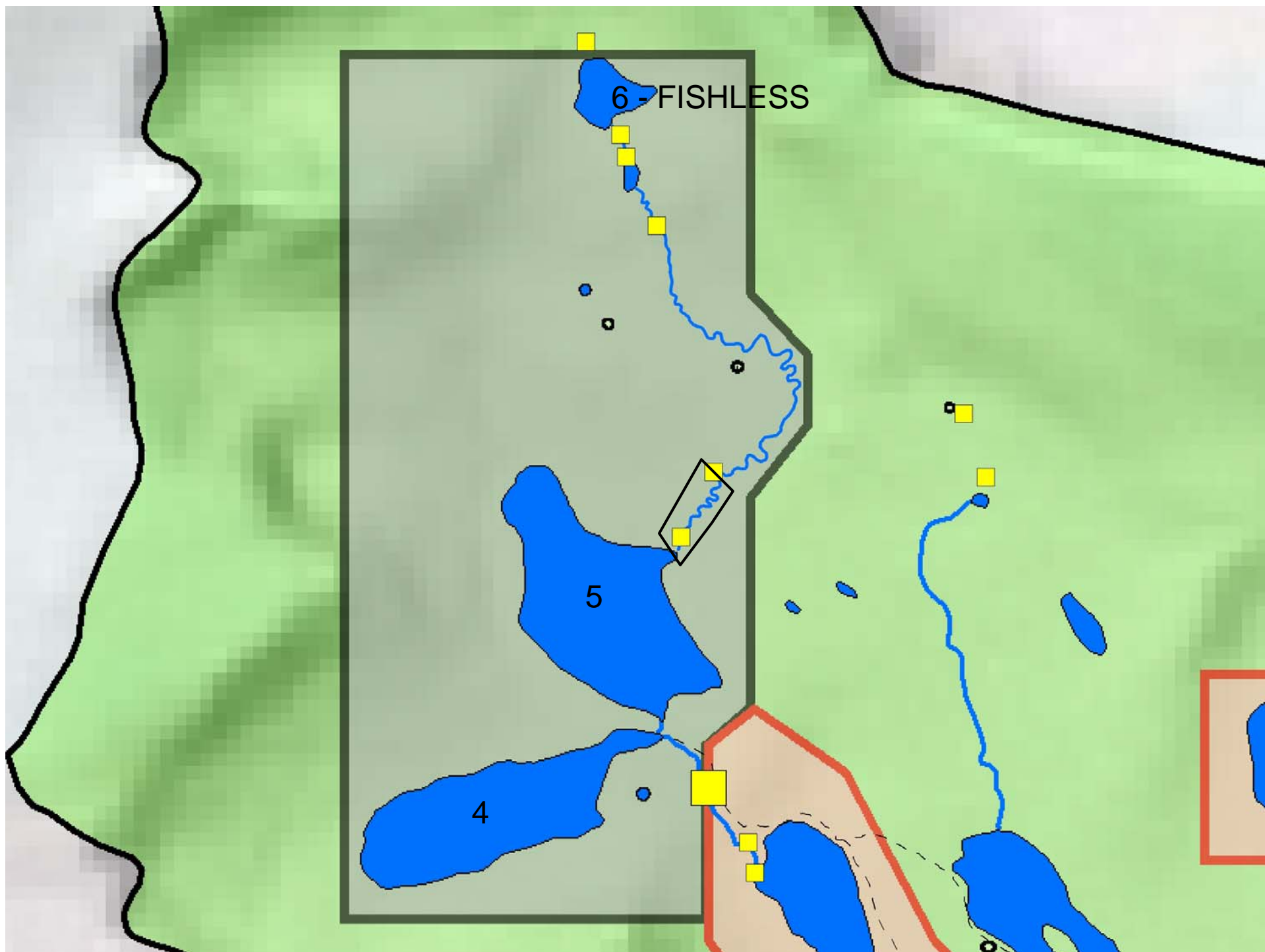




CDFG Cabin







- Rotenone needed for stream reach between lakes 5 and 6 – Phase I only
- Could be minimized to ~300 meters
- Would save money to treat this entire stream reach ~1700 meters versus just 300 meters
- BUT, not at the expense of doing the project
- 2009 would be CEQA/NEPA compliance and chemical treatment proposal application, including any needed invertebrate impact analysis

- Personnel and Funding sources
 - SWG
 - SFRA
 - Kern River Fund
 - Hatchery personnel assistance
 - Multiple regions involved



GT X RT caught at Big Desolation Lake, September, 2008
Cottonwood Lakes broodstock offspring



