

Koppi River Expedition 2005









IUCN World Conservation Union

- Introduce the Salmonid Specialist Group
- Four step process
 - Identify unit for listing (species, populations)
 - Assess status & trends
 - Quantify reduction of population
 - Determine geographical extent
 - Total population size
 - Categorize
 - Extinct or Extinct in Wild
 - Threatened
 - Critically Endangered
 - Endangered
 - Vulnerable
 - Near Threatened
 - Least Concern
 - Data Deficient
 - Not Evaluated
 - Establish recovery plans/conservation planning

Sakhalin taimen (*Hucho perryi*)

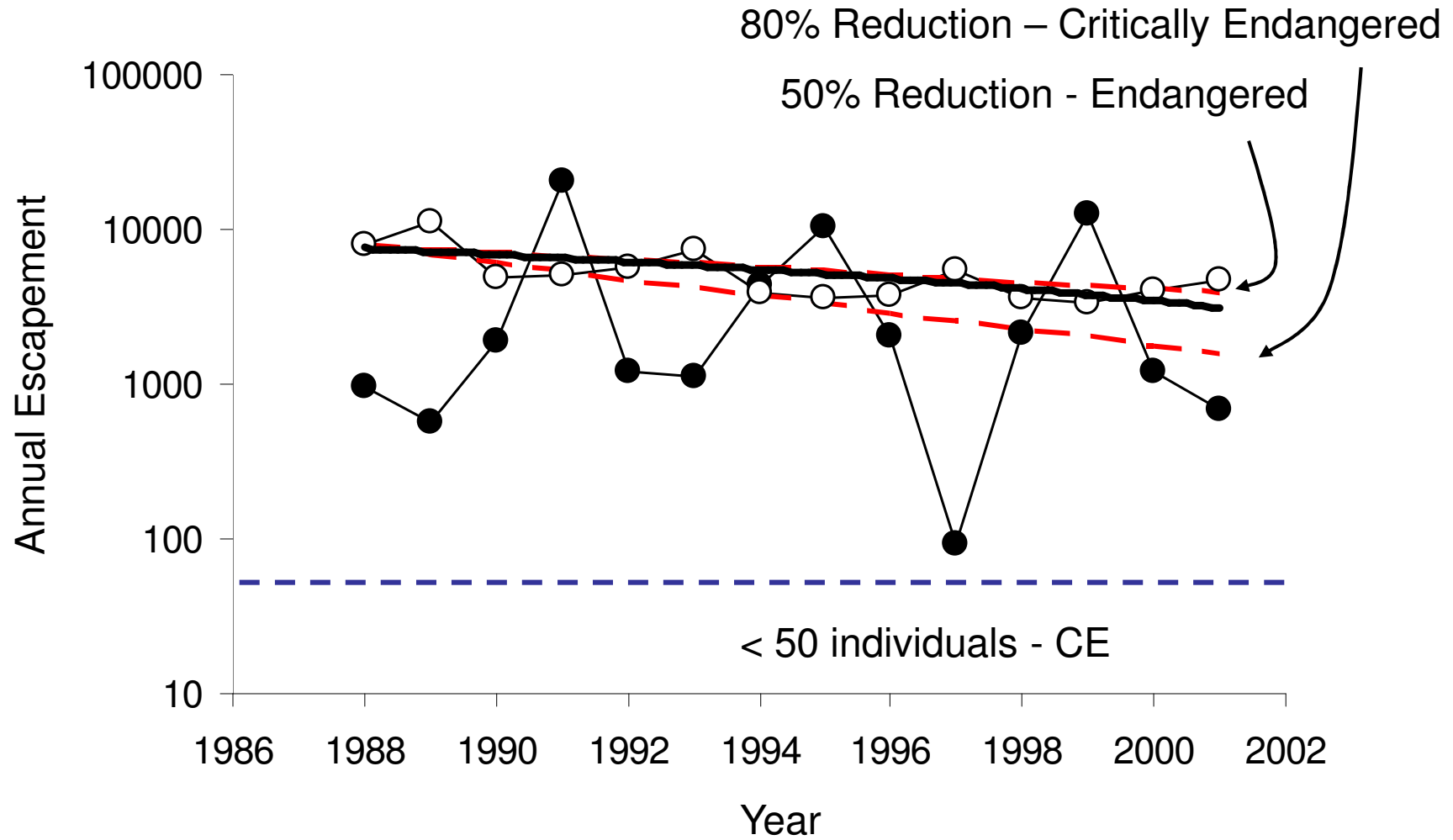


- Ancestral salmonid
- Limited range; Russian Far East mainland seaward to Sakhalin and Hokkaido;
- Anadromous, repeat spawner;
- Very large adult sizes (80 kg, 160 cm);
- Late age at maturity (6 yrs); lifespan 20-30 yrs(?)

Criteria Used for Red List Assessment

- Decline in population (10 years or three generations, whichever is longer)
 - >80% - Critically endangered
 - >50% - Endangered
 - >30% - Vulnerable
- Geographic range size (Extent of occurrence)
 - <100 km² – Critically endangered
 - <5000 km² – Endangered
 - <20,000 km² – Vulnerable
- Small population size
 - <250 – Critically endangered
 - <2,500 – Endangered
 - <10,000 - Vulnerable
- Quantitative analysis of extinction risk
 - 50% probability of extinction in 10 years or three gen. – CE
 - 20% probability of extinction in 10 years or three gen. – E
 - 10% probability of extinction in 10 years or three gen. - V

Example of Red List Assessment



Summary of status of Hokkaido taimen

River	Population Size	RL Category
Sorachi	211	Critically Endangered
Uryu	264	Endangered
Bekanbeushi	306	Endangered
Telkanbetsu	422	Endangered
Kushiro	21	Critically Endangered
Tokachi	21	Critically Endangered
Shirebetsu	-	Extinct in the Wild?

Status of Hokkaido Taimen

- YOY (0+) taimen observed in 13 of 30 study rivers (57% of populations extinct)
- Assuming ca. 57% reduction in overall population, Hokkaido taimen would be considered endangered
- Assuming average river watershed area at 80 km² and 13 rivers, total extent of occurrence would be 1,040 km². Based on area, Hokkaido taimen would be considered endangered.

Key question for red list assessment for taimen

- At what scale do we conduct red list assessment (species, regional populations, individual river populations)?
- What is the most appropriate criteria to use?
- What is the generation time for taimen?
- How do we define “mature individuals”?
- How do we define geographical range (e.g. watershed area, river surface area, river kilometers)?

Taimen Monograph

- Introduction
- Systematics and genetics (S. Weiss)
- Biology/ecology and status by region
 - Hokkaido (K. Edo)
 - Primorye (A. Semenchenko)
 - Khabarovsk (S. Zolotukhin)
 - Sahkalin (?)
- Conservation planning and action

Taimen Monograph

- Assign writing tasks
- GIS support through Ecotrust
- Establish deadlines for completion
- Find a publisher

Importance of establishing collaboration for genetics work

- Describing the current population structure is best done using new DNA laboratory techniques
- Our current tissue archive is limited but growing
 - 12 juveniles from Koppi (+ 3 juveniles and 4 adults)
 - 12 juveniles from Samarga
 - Hokkaido?
 - Target is ca. 30 fish per river from as many rivers as is feasible
 - Most robust results if analysis is done through a single lab.
- Ultimately, we need to define degree of independence of river populations (IUCN subpopulation defined by restricted gene flow – 1 effective migrant per generation). We can estimate this using results from genetic analysis.