

DRAFT
Bull Trout Metapopulation Delineations and Risks
on the Clearwater and Nez Perce National Forests

Data sources:

- Danielle Schiff, IDFG - Lewiston, September 23, 2004
- Pat Murphy, USFS Clearwater National Forest, Orofino, September 23, 2004
- Karen Smith, USFS Clearwater National Forest, Kamiah, September 23, 2004
- Scott Russell, USFS Nez Perce National Forest, Grangeville, Sep. 23, and Oct. 1, 2004
- Garry Seloski, USFS Nez Perce National Forest, White Bird, September 24, 2004

Procedure:

First, the fisheries biologists listed above delineated the bull trout metapopulations. These metapopulations generally follow subbasin boundaries or combination of subbasins; they were based upon data and professional observations. Second, I had the biologists assign risk ratings to the metapopulations following criteria defined in Shepard et. al and FHR14.

References:

- Rieman, Bruce, Danny Lee, Jack McIntyre, Kerry Overton, and Russ Thurow. 1993. Consideration of extinction risks for salmonids. Fish Habitat Relationships tech. Bull. No. 14, USDA Forest Service, Boise, ID. 12 p.
- Shepard, Bradley B., Bruce E. May and Wendi Urie. 2003. Status of Westslope Cutthroat Trout (*Oncorhynchus clarki lewisi*) in the United States: 2002. Montana, Fish, Wildlife and Parks Montana Cooperative Fishery Research Unit, Bozeman, MT. 94 p.

Table 1. Relative Risk of extinction for metapopulations of bull trout based upon a variety of populations characteristics (see table and figure below).

Metapopulation Name	Population Size	Population Productivity	Temporal Variability	Isolation	Replication	Synchrony
Clearwater	4	2	4	1	Extreme	High
Lochsa	2	2	2	2	Moderate	Low
Lower Salmon	3	2	2	2	Moderate	Low
Middle Salmon	3	2	2	1	Moderate	Low
NF Clearwater	2	2	1	1	Moderate	Low
SF Clearwater	3	2	2	1	Moderate	High
Selway	2	2	1	1	Moderate	Low

Table 2. Ranks and descriptions of risks to designated bull trout metapopulations within the Clearwater and Nez Perce National Forests planning area in 2004 (table modified from Shepard et.al 2003; Rieman et. al 1993).

Type of Risk	Rank	Criteria
Population Size	1	> 2,000 adults
	2	500-2,000 adults
	3	50-500 adults
	4	< 50 adults
Population Productivity	1	Population is increasing or fluctuating around an equilibrium that fills available habitat that is near potential. No nonnative competing or predating species present.
	2	Population has been reduced from potential, but is fluctuating around an equilibrium (population relatively stable and either habitat quality is less than potential, or another factor - disease, competition, etc. - is limiting the population).
	3	Population has been reduced and is declining (year-class failures are periodic; competition may be reducing survival; habitat limiting population).
	4	Population has been much reduced and has either been declining over a long time period or has been declining at a fast rate over a short time-period (year-class failures are common; competition or habitat dramatically reducing survival).
Temporal Variability	1	At least 75 km of connected habitats
	2	25-75 km of connected habitats
	3	10-25 km of connected habitats
	4	< 10 km of connected habitats
Isolation	1	Migratory forms must be present and migration corridors are open (connectivity maintained).
	2	Migratory forms are present, but connection with other migratory populations disrupted at a frequency that allows only occasional spawning.
	3	Questionable whether migratory form exists within connected habitat; however, possible infrequent straying of adults from other populations into area occupied by population.
	4	Population is isolated from any other population segment, usually due to barrier, but may be related to lack of movement or distance to nearest population.
Replication	Low	Multiple (5 or more) local populations each of at least several thousand animals. Each of the relevant local populations has a low risk of extinction.
	Moderate	Multiple populations but a small number (1 or 2) represent most of the fish production in the regional population.
	Extreme	Only a single population, several very small populations, or populations otherwise at high risk remains.
Synchrony	Low	Environmental variation is low. Populations are found in high quality/complex habitats. Little evidence that populations fluctuate together. Frequency of large scale catastrophic events (flood, low flows, fire) is low throughout all populations. No evidence of regional decline in species.
	High	Populations are clustered in close proximity and likely respond to same environmental variations. Frequent floods or droughts producing highly variable and unpredictable flows throughout the region

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