Chapter 3

State(s): Montana, Idaho, and Washington

Recovery Unit Name: Clark Fork River

(Including Lake Pend Oreille, Priest Lake, and Flathead Lake and their respective watersheds)

Region 1
U S Fish and Wildlife Service
Portland, Oregon

DISCLAIMER PAGE

Recovery plans delineate reasonable actions that are believed necessary to recover and protect listed species. Plans are prepared by the U.S. Fish and Wildlife Service, sometimes with the assistance of recovery teams, contractors, State agencies, Tribal agencies, and others. Objectives will be attained and any necessary funds made available subject to budgetary and other constraints affecting the parties involved, as well as the need to address other priorities. Recovery plans do not necessarily represent the views or official positions or indicate the approval of any individuals or agencies involved in plan formulation, other than the U.S. Fish and Wildlife Service. Recovery plans represent the official position of the U.S. Fish and Wildlife Service *only* after they have been signed by the Director or Regional Director as *approved*. Approved recovery plans are subject to modification as dictated by new findings, changes in species status, and the completion of recovery tasks.

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CLARK FORK RIVER RECOVERY UNIT CHAPTER OF THE BULL TROUT RECOVERY PLAN

EXECUTIVE SUMMARY

CURRENT SPECIES STATUS

The U.S. Fish and Wildlife Service issued a final rule listing the Columbia River and Klamath River populations of bull trout as threatened species on June 10, 1998 (63 FR 31647). The Clark Fork River Recovery Unit (often referred to in this chapter as the Clark Fork Recovery Unit) forms part of the range of the Columbia River population segment. The Clark Fork Recovery Unit is the largest and one of the most diverse recovery units in the species' range, encompassing four recovery subunits (Upper Clark Fork, Lower Clark Fork, Flathead, and Priest) and including 38 existing core areas and about 150 currently identified local populations. Within the Clark Fork Recovery Unit, the historical distribution of bull trout is relatively intact, with some notable exceptions in the headwaters, but abundance has been reduced and some remaining populations are highly fragmented.

HABITAT REQUIREMENTS AND LIMITING FACTORS

Dams have been one of the most important factors in reducing the bull trout population of the Clark Fork Recovery Unit. Large hydroelectric dams permanently interrupted established bull trout migration routes, eliminating access from portions of the tributary system to the productive waters of Lake Pend Oreille and Flathead Lake. Additionally, these dams impacted the habitat that was left behind, affecting reservoir and lake levels, water temperature, and water quality. Smaller irrigation storage dams further fragmented some of the watersheds and made migration for bull trout increasingly difficult. At a few locations, however, benefits have resulted from some dams forming isolation barriers that have prevented the movement of nonnative fish.

The risk of core area and local population extirpation from isolation and fragmentation of habitat in the Clark Fork Recovery Unit is generally increasing, especially where populations of bull trout are in decline. Major dams were the catalyst for much of this disruption, and fragmentation has continued at a finer scale, caused by habitat decline and introductions of nonnative species. While bull trout are present in most historical core areas, substantial evidence indicates that local populations have been extirpated in major portions of this recovery unit, and many populations are at low enough levels to seriously reduce the chances of recolonization. The threat from isolation and fragmentation is real, and as more data are gathered, scientists will gain a better understanding of how bull trout migrate and interact between patches.

Of particular concern is the expansion of congeneric lake trout and brook trout populations in portions of the Clark Fork Recovery Unit. Scientists currently have limited tools available to deal with these intruders, and in many cases there is strong public opposition to controlling or eliminating other salmonids that provide sport fisheries. Though an improving trend is being realized in the quality of stream habitat for bull trout in many watersheds, introductions of nonnative species, particularly in large lakes, has reduced the carrying capacity for bull trout. A key to successful bull trout restoration is the education of both anglers and the nonangling public about the values of native species. Intact native fish ecosystems are increasingly rare, and we must allocate substantial resources to protecting and restoring those that remain.

For over 100 years, forestry practices have caused major impacts to bull trout habitat throughout the Clark Fork Recovery Unit. Because forestry is the primary landscape activity in the basin, the impacts have been widespread. The negative primary effects of past timber harvest, such as road construction, log skidding, riparian tree harvest, clear-cutting, and splash dams, have been reduced by the more progressive practices that have since been developed. But the legacy of the past century has resulted in lasting impacts to bull trout habitat, including increased sediment in streams, increased peak flows, hydrograph and thermal modifications, loss of instream woody debris, channel instability, and increased access by anglers and poachers. These impacts will continue, and they are irreversible in some drainages.

Livestock grazing has had the greatest impact to bull trout in the upper portion of the Clark Fork Recovery Unit. It is of particular concern where allotments are located along spawning and rearing streams. However, though severe site-specific problems may occur, livestock impacts are generally being reduced through better management practices on public and, to a lesser extent, private lands.

Agricultural impacts to bull trout in the Clark Fork Recovery Unit are primarily a result of water demand. Diversions for irrigation can destabilize stream channels, severely interrupt migratory corridors (blockages and dewatering) and, in some cases, entrain fish that are then lost to the ditches. A second, and potentially more serious issue, is the increased water temperature regime common to streams that are heavily diverted and/or subject to receiving irrigation return flows. All of these problems occur and are widespread in much of the Clark Fork Recovery Unit. Some of the worst impacts are in the upper drainages, and these problems are then transmitted to the receiving waters downstream. Overall, agricultural practices continue to represent a significant threat to bull trout recovery in this recovery unit.

Transportation systems are also a major contributor to the decline of bull trout in this recovery unit. Separating the direct effect of the roads and railroads from the human development associated with their construction is difficult. Construction methods during the late 19th and early 20th century, primarily channelization and meander cutoffs, caused major impacts to many of these streams, impacts that are still being manifested. Such impacts seldom occur with new roads. However, significant problems remain that are associated with passage barriers, sediment production, unstable slopes, improper maintenance, and high road densities, all of which impact bull trout. These problems can be addressed only on a site-by-site basis.

The legacy of mining, particularly in the upper portions of the Clark Fork River drainage, will continue to impact bull trout for many centuries to come. Extreme water quality degradation dates back to the 19th century, and purposeful improvement and continued vigilance will be required for many decades before the full potential of the aquatic resources can be restored. Some other portions of the Clark Fork River watershed (*e.g.*, the Flathead and Priest Recovery Subunits)

have not been materially impacted by mining. Meanwhile, existing mines and new mine proposals continue to develop and have the potential to negatively impact some core areas and local bull trout populations.

Ultimately, unmanaged growth and residential sprawl may be one of the biggest threats to the recovery of bull trout in this recovery unit. The entire Clark Fork Recovery Unit holds many of the attributes that increasingly attract people seeking relief from the urban environment. Human population growth in western Montana and northern Idaho has accelerated. The way in which this growth is managed, and our ability to limit the impacts of growth, in particular on bull trout spawning and rearing streams, is pivotal to the success of the bull trout recovery effort.

Increasing human populations have a direct impact on all of the other categories of risk that affect bull trout. Both legal and illegal angling (*i.e.*, poaching) have direct impacts on bull trout populations, despite the implementation of restrictive fishing regulations and strong educational efforts. The problem of illegal take of bull trout is intensified in stream corridors where roads provide access to highly visible (and therefore vulnerable) spawning stocks.

RECOVERY OBJECTIVES

The goal of the bull trout recovery plan is to **ensure the long-term persistence of self-sustaining, complex, interacting groups of bull trout distributed throughout the species' native range so that the species can be delisted.** Specifically, the recovery subunit teams for the four Clark Fork subunits (Upper Clark Fork, Lower Clark Fork, Flathead, and Priest) adopted the goal of **a sustained net increase in bull trout abundance and increased distribution of some local populations within existing core areas in this recovery unit (as measured by standards accepted by the recovery subunit teams, often referred to collectively as the Clark Fork Recovery Unit Teams).**

RECOVERY CRITERIA

To assess progress toward recovery objectives, the Clark Fork Recovery Unit Teams adopted recovery criteria. The recovery unit teams assumed that no

core area is viable with a population of fewer than 100 adults (see explanation within Recovery Criteria section of this chapter) because of the inherent stochastic and genetic risks associated with populations lower than that amount. The recovery criteria are applied on a core area-by-core area basis. In this recovery unit, a distinction has been made between two types of core areas—primary and secondary core areas—based mostly on the size, connectedness, and complexity of the associated watershed and the degree of natural population isolation.

The following have been designated as primary core areas under recovered conditions in the Clark Fork Recovery Unit: the upper Clark Fork River, Rock Creek, Blackfoot River, Bitterroot River, lower Clark Fork River, Lake Pend Oreille, Priest Lakes and Priest River, Flathead Lake, Swan Lake, and Hungry Horse Reservoir.

The following have been designated as secondary core areas, for the purposes of recovery, in the Clark Fork Recovery Unit: the Clearwater River and associated chain of lakes, West Fork Bitterroot River upstream of Painted Rocks Dam, and 22 lakes in the Flathead Recovery Subunit.

1. **Distribution criteria will be met when the total number of identified local populations (currently numbering about 150) has been maintained or increased and when local populations remain broadly distributed in all existing core areas**.

2. **Abundance criteria will be met when, in all 10 primary core areas, each of at least 5 local populations contains more than 100 adult bull trout. In the Lake Pend Oreille core area, each of at least 6 local populations must contain more than 100 adult bull trout. In the Flathead Lake core area, each of at least 10 local populations must contain more than 100 adult bull trout. In each of the 10 primary core areas, the total adult bull trout abundance, distributed among local populations, must exceed 1,000 fish, and adult bull trout abundance must exceed 2,500 adult bull trout in each of the following lakes: Lake Pend Oreille, Flathead Lake, and Swan Lake.**

The abundance criteria for 24 secondary core areas will be met when each core area with the habitat capacity to do so supports at least one local population containing more than 100 adult bull trout and when total adult abundance in the secondary core areas collectively exceeds 2,400 fish.

3. **Trend criteria will be met when the overall bull trout population in the Clark Fork Recovery Unit is accepted, under contemporary standards of the time, as stable or increasing, based on at least 10 years of monitoring data**.

4. **Connectivity criteria will be met when functional fish passage is restored or determined to be unnecessary to support bull trout recovery at Milltown, Thompson Falls, Noxon Rapids, Cabinet Gorge, and Priest Lake Dams and when dam operational issues are satisfactorily addressed at Hungry Horse, Bigfork, Kerr, and Albeni Falls Dams (as identified through Federal Energy Regulatory Commission license conditions and U.S. Fish and Wildlife Service Biological Opinions).** Restoring connectivity to the extent that the abundance and distribution requirements above are met will probably require that additional passage barriers, identified as inhibiting bull trout migration on smaller streams within the Clark Fork Recovery Unit, be remedied. Restored connectivity of the mainstem of the Clark Fork River will consolidate six existing core areas, which are a result of fragmentation caused by the dams, into two (recovered) core areas in the upper and lower Clark Fork River.

ACTIONS NEEDED

Recovery for bull trout will entail reducing threats to the long-term persistence of populations and their habitats, ensuring the security of multiple interacting groups of bull trout, and providing habitat conditions and access to them that allow for the expression of various life-history forms. The seven categories of actions needed are discussed in Chapter 1; tasks specific to this recovery unit are provided in this chapter.

ESTIMATED COST OF RECOVERY

Total cost of bull trout recovery in the Clark Fork Recovery Unit is estimated at $71.9 million spread over a 25-year recovery period. Total cost includes estimates of expenditures by local, Tribal, State, and Federal governments and by private businesses and individuals. These costs are attributed to bull trout conservation, but other aquatic species will also benefit. Cost estimates are not provided for tasks which are normal agency responsibilities under existing authorities.

ESTIMATED DATE OF RECOVERY

Expected times necessary to achieve recovery will vary among recovery units because of differences in bull trout status, factors affecting bull trout, implementation and effectiveness of recovery tasks, and responses to recovery tasks. In the Clark Fork Recovery Unit, the current status of bull trout is better than in many other portions of the range, but a tremendous amount of work remains to be done to reconnect and restore impaired habitat and to cope with threats from nonnative species. It may be 3 to 5 bull trout generations (15 to 25 years), or possibly longer, before significant reductions can be made in the identified threats to the species and bull trout can be considered eligible for delisting.