

4. Subbasin Assessment – Summary of Past and Present Pollution Control Efforts

There are active bull trout restoration efforts in many parts of the Subbasin. In particular, since the Clark Fork Settlement Agreement, there have been staff and funds dedicated to restoration by Avista Utilities and prioritization of native fisheries protection and restoration efforts by the Water Resources Technical Advisory Committee established by the Settlement Agreement.

Point Source Pollution Permits

There are two permitted point sources of pollution in the Lower Clark Fork Subbasin – the Cabinet Gorge Fish Hatchery and the Cabinet Gorge Power station. In addition, if a construction project disturbs more than one acre of land (or is part of a larger common development that will disturb more than one acre), the operator is required to apply for a pollution permit from EPA after developing a site-specific Storm Water Pollution Prevention Plan. A Construction General Permit has been issued by EPA, so that construction operators in Idaho that meet specific requirements to control sediment and other best management practices, document these measures in their Storm Water Pollution Prevention Plan and monitor their implementation for the life of project, will receive coverage in this permit.

Cabinet Gorge Hatchery (Permit number ID-002661-1) is currently being revised and will be covered under a general Aquaculture permit for Idaho. No TMDL pollutants are expected from the hatchery.

Idaho Fish and Game's Clark Fork Hatchery was covered under the Aquaculture Facilities in Idaho General NPDES Permit No. ID-G-13-0021 until the permit expired in September 2004, when the permit was placed on administrative hold due to a temporary shutdown of the hatchery that went into effect in August 2000. Effluent inputs from the hatchery went directly into Spring Creek. Since the hatchery is not in operation, some water quality improvements can be expected. If/when the hatchery begins operation again, a revised permit would account for the information presented in this TMDL.

A Voluntary Nutrient Reduction Program (VNRP) is in place for the Clark Fork River in Montana. This agreement calls for site-specific measures to be taken by the four major point-source dischargers (Butte, Deer Lodge, and Missoula wastewater treatment facilities and Smufit-Stone Container) and for significant reductions by key non-point sources. In 2002, the State of Montana adopted the nutrient and algae targets of the VNRP as water quality standards for the Clark Fork River, making the VNRP targets applicable to all point sources. Some \$62 million will be spent by the VNRP signatories to meet the agreement. Actions taken include:

- The City of Butte augmented flows with clean water from a nearby lake, and has applied its nutrient-rich wastewater onto a sod farm.
- The City of Deer Lodge removed its entire discharge from the river during critical summer months and has applied its wastewater onto hayfields at a nearby ranch.

- The City of Missoula installed a biological nutrient removal system at its wastewater treatment facility, which is meeting nutrient reduction targets.
- Smurfit-Stone Container has regulated its discharge to coincide with higher river flows and reduced seepage from its storage ponds near the river.
- Missoula County has taken the lead in an aggressive schedule to address non-point loading from septic systems in the Missoula valley. (Tri-State Water Quality Council 2006).

Nonpoint Source

Forested Land/Roads

Due to the importance of the Lower Clark Fork, and the Lightning Creek watershed in particular, to bull trout, extensive efforts are underway to improve water quality and restore habitat in the Lower Clark Fork drainage. In the past ten years, significant data collection and planning for restoration have occurred, and several projects are underway or have been completed over the past five years with many more in the works. Restoration projects in the Lightning Creek watershed focus primarily on reducing the impacts of the road system on the streams in the watershed. This includes decommissioning roads and culvert repair, as well as improved maintenance. Over time, efforts such as these will reduce sediment pollution both directly from roads and as a reduction in road related mass wasting. Reductions in sediment pollution will also increase the potential of reaching shade targets and cooling efforts because of the relationship of excessive sediment to stream widening.

All forested land managed the Forest Service and the Bureau of Land Management must meet INFISH (the federal Inland Native Fish Strategy) guidelines. These guidelines prescribe 300-foot buffers for fish-bearing streams. These buffers contribute to increases in shade and to reaching temperature TMDL targets. Current and proposed timber sales within the basin include road projects aimed at improving water quality and reducing landslide risk and delivery of sediment to streams. In 2007, a new Forest Management Plan that removed INFISH requirements for Forest Service lands was proposed. While a court order has put the new Forest Plan guidance on hold, INFISH is still in practice. The revised plan does not specify riparian buffer widths, but does specify protection of ecological function in riparian areas. Regardless of which plan is in place, both plans contain USFS commitments to implementing the Clean Water Act and continued protection and enhancement of stream shading is expected.

Agricultural

On agricultural lands under federal management, the attention is being given to road impacts. On private land, a stream realignment project and conservation easement to restore riparian areas in lower Twin Creek was completed in 2001. The project was a partnership between the landowner, Idaho Fish and Game and the Technical Committee implementing the Clark Fork Settlement agreement. The conservation easement limits development in the riparian area of lower Twin Creek, and there is continued maintenance and riparian plantings in the restoration area.

In 1979 the original Idaho Agricultural Pollution Plan (Ag Plan) was developed in response to Section 208 of the Clean Water Act and represents the agricultural portion of the State

Water Quality Management Plan. Subsequently, the plan was revised in 1983 and 1991. The most current Ag Plan, *Idaho Agriculture Pollution Abatement Plan, 2003*, sets goals and provides guidance for the management of all nonpoint source related activities throughout the state.

Bull Trout Restoration Projects

As a result of the Avista Clark Fork Settlement Agreement, there have been numerous projects completed to benefit bull trout populations, many of which are directly related to improving water quality in the Subbasin (Avista 2003-2006). The projects fall into several general categories. Land parcels in prime bull trout habitat have been acquired in Idaho and Montana. Placement of lands in conservation easements or ownership reduces pressures from development in these areas and protects critical riparian areas. A native salmonid restoration strategy is in place, which includes genetic studies, telemetry and development of methods to pass fish upstream and downstream of the dams. Extensive monitoring of tributary and mainstem fish population abundance and habitat use is ongoing. Several watershed councils and Montana and Idaho fish and game agencies are supported for on-the-ground restoration and education projects.

Nutrient Reduction Projects

The states of Idaho and Montana, facilitated by the Tri-State Water Quality Council, have a Memorandum of Agreement that documents the parties' commitments and intent to protect and maintain water quality in Pend Oreille Lake by establishing and attaining nutrient loading goals and targets for the Clark Fork watershed in Montana and local sources in Idaho. Specific loading targets are set to reduce the amount of nitrogen and phosphorus in the Clark Fork - Pend Oreille system. These targets are discussed more fully in the TMDL Section 5.7.

Total Dissolved Gas Reduction Projects

The Clark Fork Settlement Agreement required development of a *Final Gas Supersaturation Control Program for the Clark Fork Project* (GSCP, Avista 2004b). This plan was approved by Idaho DEQ and the USFWS and submitted to the Federal Energy Regulatory Commission as a condition of the project license. It outlines activities that will reduce production of excess TDG at the Cabinet Gorge Dam in Idaho. With the establishment of the Settlement Agreement, operations at Noxon dam upstream of Cabinet Gorge in Montana were altered so that there is little to no elevated TDG production from the Noxon facility. Increases in flows through the Cabinet Gorge powerhouse and the change in spillgate operations are examples of efforts that "reduce, offset, or otherwise mitigate the increase in TDG due to spill at the Cabinet Gorge Dam," as required by the GSCP. The 2004 GSCP also proposes a bypass tunnel that will reduce TDG production at Cabinet Gorge dam, however, this plan is currently under review by Avista for its feasibility.

In addition, numerous studies to examine TDG's impact on fish populations have been conducted and are available in the Clark Fork Settlement Agreement Project record (Parametrix 1997, 1998, 1999, 2000).

Summaries of these reports are in Avista (2004b, p. 24-25), and conclusions include:

Avista and Parametrix have both expressed the opinion that the results of the biological studies support the conclusion that the elevated TDG levels occurring

downstream of Cabinet Gorge Dam are likely having little, if any, effect on fish populations, and almost no effect on individual fish when levels are below 120 to 125 percent of saturation. The IDEQ, IDFG, and USFWS have indicated that they view the biological studies as somewhat limited in scope, and the results of questionable value for determining the actual impacts of elevated TDG levels on fish populations because of various sampling limitations. The USFWS has indicated on several occasions that because there are very few downstream migrating juvenile bull trout or westslope cutthroat trout available below Cabinet Gorge HED, an important segment of the potentially affected fish species were not available for study (L. Lockard, pers comm.; USFWS comments on GSCP review draft, mark-up dated August 25, 2001). They note that downstream migrating juvenile bull trout are known to move along the margins of large rivers where water depths are shallow (Mulfield et al. 2002). Pointing out that substantial efforts are underway to restore and enhance these fish populations and increased numbers of fish are likely in the future, they have stated that the potential effects of elevated TDG levels on these fish remains “a major concern”. Avista has suggested however that releases of hatchery reared fish into the river (kokanee fry and juvenile cutthroat trout) indicate that downstream migrating fish are likely to exit the relatively short reach of river below the Cabinet Gorge HED and disperse into Lake Pend Oreille rather quickly, particularly during the high flow periods when elevated TDG levels occur. Their potential exposure to elevated TDG levels might be minimal, and any symptoms that do develop are ameliorated if they seek only moderately deeper water within the lake.