

Hat Creek Planning Unit

Fish, Plant, and Wildlife Habitat

Potential Measure:

- *Conduct surveys of the planning unit to identify biological resources and enable their protection.*

Though a partial survey of botanical resources was done in 1996, the entire planning unit was not surveyed and there is potential for the presence of special status and traditional use plants. It does not appear that avian or amphibian surveys were completed during relicensing of Hat Creek, though amphibian surveys were completed in the adjacent Pit 1 Project and Pit 3, 4, 5 Project relicensing efforts. Therefore, the Stewardship Council recommends conducting surveys of the planning unit (particularly lands outside the FERC boundary) to identify biological resources, including traditional use plants, and enable their protection. These surveys would provide vital baseline information for future management decisions.

Potential Measure:

- *Restore unauthorized OHV roads to enhance habitat and reduce habitat fragmentation.*

There are a few OHV roads through the meadow south of Crystal Lake and in the area near Hat Creek #1 Forebay, which are likely unauthorized roads and may be degrading habitat. Therefore, the Stewardship Council recommends restoring these unauthorized OHV roads to enhance habitat and reduce habitat fragmentation. Restoration of these roads would also discourage further unauthorized OHV use.

Potential Measure:

- *Assess potential for restoration of Cinder Flats and Corral Creeks to restore hydrologic function and enhance riparian habitat.*

The lower one-third of the Hat Creek Watershed area is especially susceptible to increased sediment loading. Corral Creek was found to be one of the largest point sources of sediment to the Hat Creek Wild Trout Area in the 1998 Assessment of Erosion and Sedimentation in the Hat Creek Hydroelectric Project Vicinity. This creek is located on the west side of Hat Creek near the Carbon Bridge Fishing Access. Erosion in upper Corral Creek was found to be accelerated in the upper drainage area primarily due to a poorly engineered road. In the lower drainage area, the channel is headcutting and producing sediment at greater than normal baseline levels. Headcutting is an erosional process that deepens a streambed as the stream channel attempts to achieve a base level and leads to sedimentation and reduced aquatic habitat quality, and disconnects the water table from the surrounding floodplain. This prompted the placement of check dams to catch sediment, but cutting from high flows may put these dams at risk for washouts. Another creek in the area, Cinder Flats Creek, was found to have active headcuts working up through the drainage and an extremely degraded floodplain and channel due to previous overgrazing. It is unknown how much recovery has taken place in the creek with the elimination of grazing. To reduce headcutting and sedimentation, the Stewardship Council recommends assessing the potential for restoration of Cinder Flats and Corral Creeks to restore hydrologic function and enhance riparian habitat.

Potential Measure:

- *Remove unnecessary fencing within the planning unit to improve movement of wildlife.*

Remnant fencing related to previous grazing use can be found in the planning unit, which could be a barrier to wildlife movement. Fencing within the planning unit is not necessary as grazing is no longer permitted, though fencing may be needed on the perimeter of the planning unit to keep any adjacent cattle use out of the planning unit. To improve the movement of wildlife, the Stewardship Council recommends removing any unnecessary fencing. This would also improve the recreation setting.

Potential Measures:

- *Use silvicultural practices to encourage bald eagle nesting and perching tree propagation and cultivation.*
- *Cease harvest of trees along waterway shorelines.*

Forest resources within the planning unit include stands of Jeffrey and ponderosa pine. Currently, there is a lack of replacement nesting trees for the Hat Creek bald eagle nesting territory. Though eagles currently nest on adjacent U.S. Bureau of Land Management (BLM) land, silvicultural practices could be used on planning unit lands to provide nesting trees. As there are already perching trees in existence within the planning unit, silvicultural practices could be implemented to design and maintain perching trees. The Stewardship Council recommends using silvicultural practices to encourage bald eagle nesting and perching tree propagation and cultivation, as well as the cessation of harvesting trees along waterway shorelines as these trees are important for foraging bald eagles, unless harvesting is necessary for public safety or to comply with applicable laws. Preventing logging along waterway shorelines would also protect habitat for the endangered Shasta crayfish.

Potential Measure:

- *Develop a noxious weed management plan for the planning unit consistent with the Yellow Starthistle Control Plan for the Hat Creek Project.*

A Yellow Starthistle Control Plan was developed in 2003 to control the spread of yellow starthistle within three areas: Cassel Pond, Hat Creek #1 Forebay, and Baum Lake Fishing Access. Upon a visit to the Carbon Bridge Fishing Access site, it was noted that the area was highly infested with yellow starthistle, which could potentially prevent recreation use of the site if not controlled. Yellow starthistle is also visible along Hat Creek in the Hat Creek #2 Powerhouse area. Though yellow starthistle has been identified within the planning unit, there could be other noxious weeds as well. Therefore, to enhance habitat for native plants, the Stewardship Council recommends developing a noxious weed management plan for the planning unit consistent with the Yellow Starthistle Control Plan for the Hat Creek Project. Development of the noxious weed management plan should be coordinated with existing PG&E noxious weed efforts, and the wildlife and habitat, fuels, and forest management plans.

Potential Measure:

- *Evaluate extending muskrat control activities to the area downstream of Hat Creek #2 Powerhouse to improve bank stability.*

Current management includes trapping and removing muskrats, a non-native species that burrows into streambanks, within the Hat Creek FERC Project boundary. Burrowing causes bank

instability and thus erosion and sedimentation into the creek. There may be additional areas susceptible to muskrat damage, as identified by the California Department of Fish and Game (DFG), within the planning unit. If the current program is successful, then the Stewardship Council recommends evaluating extending muskrat control activities to the area downstream of Hat Creek #2 Powerhouse to improve bank stability. Evaluation of extending muskrat control activities would need to take into consideration impacts of muskrat control activities on other resources.

Potential Measure:

- *Support Rock Creek Shasta crayfish habitat restoration efforts.*

The endangered Shasta crayfish, the only remaining native California crayfish, is under constant threat of extinction. Currently, the Shasta Crayfish Technical Review Committee, formed by the Hat Creek and Pit 1 Project New Licenses, is working on a project to re-water 600 feet of Rock Creek to provide additional Shasta crayfish habitat. Rock Creek is entirely located within the planning unit and provides water to the Crystal Lake State Fish Hatchery located at the terminus of Rock Creek. Surveys regarding whether or not sufficient water would be available to the hatchery downstream of the proposed re-watering area are needed to determine the feasibility of the project. To promote habitat enhancement for an endangered species, the Stewardship Council recommends supporting the Rock Creek Shasta crayfish habitat restoration efforts by potentially providing access to the area for restoration efforts or accommodating other project-related needs that would enhance the recovery of the imperiled crayfish. Additionally, if the Rock Creek project is completed, interpretive programs could be developed regarding the Shasta crayfish at the restoration site to encourage further public support for restoration and protection of this species.

Potential Measure:

- *Develop a wildlife and habitat management plan for the planning unit.*

The Stewardship Council also recommends using biological resource survey data to create a wildlife and habitat management plan. This planning unit contains excellent habitat, and there are many species that use this area including several special status species (e.g., yellow warblers, osprey, pale big-eared bat, Cascades frog, eel-grass pondweed); recommended surveys may reveal additional special status plants and wildlife. Once surveys are completed, potential habitat enhancements could be identified and developed into a comprehensive plan describing habitat and species goals and objectives, as well as measures needed to enhance and protect habitat for plant and wildlife species. Monitoring of species and/or habitats would also be developed as a component of the plan. The wildlife and habitat management plan should be developed in conjunction with noxious weed, forest, and fuels management plans as well as habitat enhancement and protection measures already described herein. The wildlife and habitat management plan should also be consistent with relevant FERC license required Hat Creek Project plans.

Open Space**Potential Measure:**

- *Apply permanent conservation easements to ensure a higher level of open space protection.*

The Stewardship Council recommends preserving open space values through permanent conservation easements. Conservation easements would describe all prohibited uses to maintain open space values, including the level of uses allowed. Recommendations include restoration with little development and are therefore not expected to decrease the scenic quality of the viewsheds.

Outdoor Recreation

Potential Measure:

- *Install interpretive signage regarding wildlife, native species, and traditional use at Crystal Lake, Baum Lake, and along the Pacific Crest Trail.*

As mentioned previously, the planning unit contains habitat for several special status species including birds, fish, and a crustacean, and the area was traditionally used by the Astuge and Illmawi bands of the Pit River Tribe. The Stewardship Council recommends installing interpretive signage at several locations to make recreation users aware of the outstanding habitat, species values, and traditional use of the area, thereby enhancing the recreation experience. Signage regarding wildlife, native species, and traditional use is recommended for the Crystal Lake parking areas, Baum Lake Fishing Access, and two points on the Pacific Crest Trail along the Baum Lake shoreline. This would provide hunters, hikers, and anglers with information on the species they may see and the habitat which they are surrounded by while participating in recreation activities, as well as offer some history on the use of the planning unit by Native Americans. Additional opportunities may exist to coordinate interpretive signage with the Volcanic Legacy Scenic Byway or provide additional signage related to the byway. Signage should be coordinated with the USFS as the Pacific Crest Trail is maintained by the USFS.

Potential Measure:

- *Revegetate disturbed areas and evaluate creating a shore access trail by the picnicking area at the Baum Lake Fishing Access.*

Baum Lake Fishing Access has recently been improved with the addition of an ADA fishing platform, ADA parking and restroom modifications, expanded parking for boat trailers, and historical signage. However, these modifications have left some bare ground along the edge of the lake that could be revegetated to reduce erosion. There are also some soil compaction and erosion problems near the shore by the picnic tables. Therefore, the Stewardship Council recommends revegetating disturbed areas and evaluating the creation of a shore access trail by the picnic tables to reduce compaction and erosion.

Potential Measure:

- *Reinstall signage on fishing regulations at the Hat Creek #2 Powerhouse informal angler access trailhead.*

The Hat Creek #2 Powerhouse area has also recently been enhanced with new parking, trails, signage, and an ADA fishing platform. This site is a main access point for anglers to fish upstream of the powerhouse toward the Carbon Bridge Fishing Access. In particular, access to upstream areas is provided by trails that originate near the northwest corner of the parking area. Recently, PG&E removed a small kiosk with fishing regulation signage at the informal trailhead and posted the signage at the restrooms. As many anglers may bypass the main signage regarding regulations at the northeast side of the parking area and the restrooms, the Stewardship Council

recommends reinstalling (and enlarging) signage regarding fishing regulations in the Hat Creek Wild Trout Area at the informal angler access trailhead. This would ensure that a greater number of anglers see the regulation signage.

Potential Measure:

- *Encourage DFG to update Hat Creek Wild Trout Project signage at Hat Creek #2 Powerhouse regarding access points.*

In conjunction with recommended signage in the previous measures, the Stewardship Council also recommends encouraging DFG to update the existing Hat Creek Wild Trout Project signage at Hat Creek #2 Powerhouse. The signage contains a map that displays parking and road locations that are no longer correct due to closures.

Potential Measure:

- *Provide restroom and trash facilities at the Carbon Bridge Fishing Access from April to June.*

Other than a parking lot, the Carbon Bridge Fishing Access does not currently contain developed facilities. To encourage use of this site and potential use of the Carbon Bridge site as an overflow for the heavily used Hat Creek #2 Powerhouse area, the Stewardship Council recommends providing restroom and trash facilities at the Carbon Bridge Fishing Access during April, May and June when the site receives the highest use. PG&E has stated that there is low use at the Carbon Bridge site during the rest of the year; therefore creation of permanent restroom and trash facilities is not warranted. Restrooms at the Carbon Bridge site were also suggested by DFG in the Hat Creek Wild Trout Management Plan. Prior to development of additional facilities, impacts on other resources would need to be evaluated.

Potential Measure:

- *Assess the potential for youth program opportunities.*

The presence of existing recreation facilities offers an opportunity to educate youth on a variety of topics such as wildlife, endangered species, and cultural resources, as well as the fish hatchery. Therefore, the Stewardship Council recommends assessing the potential for youth programs, possibly in conjunction with DFG and local schools. Programs could teach youth about topics such as wildlife and botanical resources, including threatened and endangered species, cultural resources, and fish production at the hatchery.

Sustainable Forestry

Potential Measures:

- *Evaluate existing timber inventory data and supplement as appropriate.*
- *Develop a forest management plan for the planning unit to promote natural forest development and structural and physical diversity in forests for long-term ecological, economic, social, and cultural benefits.*

Currently, the planning unit contains one Timber Management Unit (TMU) that is managed for emergency salvage harvesting only. However, there is no overall documented vision for the TMU within the planning unit. The Stewardship Council recommends developing a forest management plan for the Hat Creek Planning Unit through the evaluation of existing forest

inventory data and supplemental information, when appropriate. In addition to supporting natural forest development, the forest management plan would promote holistic watershed management, supporting the enhancement of other beneficial public values over the long-term. As this is an area managed under the Salvage prescription, snags and downed, woody debris would be maintained in the planning unit when not deemed a safety, fire, or disease hazard as this is important for wildlife habitat and forest regeneration. Development of the forest management plan should be coordinated with development of the wildlife and habitat, noxious weed, and fuels management plans.

Potential Measure:

- *Develop a fuels management plan for the planning unit to ensure long-term forest health and reduce fuel loading and fire hazard.*

Due to the location of the planning unit adjacent to and within the town of Cassel and presence of rural residential development nearby, reduction of fuels within the planning unit is important. Therefore, the Stewardship Council recommends developing a fuels management plan for the planning unit that would address fuels reduction, special status species' requirements, and viewshed protection. The fuels management plan would help ensure long-term forest health and reduce fuel loading and fire hazard within the planning unit. Development of the fuels management plan should be coordinated with development of the noxious weed, forest, and wildlife and habitat management plans.

Potential Measure:

- *Develop a fire management and response plan for the planning unit to ensure fire preparedness.*

As previously mentioned, the planning unit includes lands surrounding and within the town of Cassel as well as lands adjacent to or near other rural residential developments. The planning unit also contains recreation facilities that receive heavy recreation use during certain times of the year. Therefore, the Stewardship Council recommends a fire management and response plan to ensure fire preparedness and enhance fire prevention. The plan would include appropriate actions to take when a fire occurs and reporting procedures that would be useful for the community and Cassel Campground host.

Agricultural Uses

None recommended.

Preservation of Historic Values

Potential Measures:

- *Conduct surveys outside the FERC Project APE to identify cultural resources and enable their protection.*
- *Coordinate with Native American entities when conducting cultural resource measures.*

It is likely that surveys conducted for relicensing efforts were limited to the Hat Creek Project Area of Potential Effects (APE), defined as all lands within the FERC boundary. Therefore, lands outside the FERC Project APE were likely not surveyed. To enhance knowledge and protection

of cultural resources, the Stewardship Council recommends conducting surveys of lands outside the Hat Creek Project APE to identify cultural resources and enable their protection. Documentation of cultural sites should be coordinated with Native American entities.

Potential Measures:

- *Conduct an ethnographic study of the planning unit to identify traditional use areas.*
- *Coordinate with Native American entities when conducting cultural resource measures.*

There are many cultural resources within this planning unit, as well as the potential for traditional plants or the cultivation of plants traditionally used by Native Americans. To increase traditional use of this area, the Stewardship Council recommends conducting an ethnographic study of the planning unit (particularly outside the FERC boundary) to identify traditional use areas, most notably identifying ethnobotanical sites. The ethnographic study should be coordinated with Native American entities.

Potential Measures:

- *Develop a cultural resources management plan for lands outside the FERC Project APE consistent with the Hat Creek Project Programmatic Agreement.*
- *Coordinate with Native American entities when conducting cultural resource measures.*

Assuming that the recommended surveying and ethnographic study identify cultural sites and traditional use areas, the Stewardship Council recommends developing a cultural resources management plan for the area outside the Hat Creek Project APE to ensure that cultural resources are provided adequate protection in the future. The plan would include appropriate measures for the identification, evaluation, and treatment of cultural resources (archaeological and historical) and traditional use areas. Treatment measures could include avoidance, specific protective measures (e.g., fencing), site monitoring, and methods to preserve, restore, or enhance cultural resource values through conservation easements, management agreements, or through public interpretation and education programs. Development of the cultural resources management plan should be consistent with the Hat Creek Project Cultural Resources Management Plan and should be coordinated with Native American entities.