

McArthur Swamp Planning Unit

Fish, Plant, and Wildlife Habitat

Potential Measure:

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

Most of the McArthur Swamp land acreage is outside the FERC boundary and therefore was not studied during relicensing efforts. Surveys were conducted from 1991 to 1992 regarding threatened, endangered, and sensitive species within the Pit 1 Project area. Surveys for rare plants were undertaken in 1995 within the Pit 1 Project area. Though studies on waterfowl usage of the swamp were undertaken in 1991 and 1992, there appears to be a lack of data on other avian usage of the planning unit. Therefore, the Stewardship Council recommends conducting surveys of the planning unit (particularly for lands outside the FERC boundary) to identify biological resources and enable their protection.

Potential Measure:

- *Develop a wildlife and habitat management plan for lands outside the FERC boundary that balances agricultural use with protection and enhancement of habitat.*

McArthur Swamp is an important wildlife area, particularly for migrating raptors and migrating birds. PG&E has developed the McArthur Swamp Management Plan (MSMP), which proposes many improvements to canals, drains, the Wildlife Habitat Improvement Program (WHIP), and Rat Farm Pond. These improvements will enhance riparian habitat and provide waterfowl and upland bird nesting, brood, and escape habitat, as well as winter waterfowl feeding and resting areas. However, these improvements are only proposed for lands within the FERC boundary. To maximize the potential for habitat enhancement throughout the rest of the planning unit, the Stewardship Council recommends developing a wildlife and habitat management plan for lands outside the FERC boundary. The plan would focus on protecting and enhancing habitat for raptors and migratory/nesting birds, as the improvements already proposed in the MSMP focus on waterfowl habitat. Development of habitat enhancements would have to be balanced with continuing to allow agricultural use throughout the planning unit that is similar to current levels. The plan would also identify the feasibility of enhancements with the limited water supply available (seasonal rainfall). Once biological resource surveys are completed, potential habitat enhancements and restoration opportunities can be identified and developed into a comprehensive plan describing goals and objectives for habitat and species, as well as measures to enhance and protect habitat. Monitoring of species and/or habitats would also be developed as a component of the plan. The plan should be developed to be complementary and not in conflict with the existing MSMP and should be developed in coordination with the Noxious Weed Management Program and development of the rangeland management plan.

Potential Measure:

- *Extend the Noxious Weed Management Program developed with the FERC Technical Review Team under the 2003 McArthur Swamp Management Plan to the entire planning unit.*

The existing MSMP also addresses noxious weed management, including the use of best management practices and development of a weed management program in consultation with the FERC Technical Review Team, an advisory group composed of members representing several entities. As noxious weeds have been a problem at McArthur Swamp, the Stewardship Council recommends extending the Noxious Weed Management Program developed with the FERC Technical Review Team to the entire planning unit, beyond the FERC boundary (which is the limit of the MSMP). This would reduce noxious weeds and enhance habitat for native species. Extending the Noxious Weed Management Program should also be coordinated with the Pit River Tribe and the Fall River Resource Conservation District, as well as development of the rangeland and wildlife and habitat management plans.

Potential Measures:

- *Assemble a management team to deal with Eurasian watermilfoil infestations.*
- *At both boat launches, install interpretive signage regarding Eurasian watermilfoil.*

One particular non-native invasive plant that has become a problem in recent years at McArthur Swamp is Eurasian watermilfoil. This aquatic plant has grown so much in the Tule River that it has restricted the flow of the Fall and Tule Rivers and is putting increased pressure on the McArthur Swamp levees. To reduce growth of this plant, reduce the potential for additional levee breaches, and educate the public on the spread of this plant, the Stewardship Council recommends assembling a management team to deal with Eurasian watermilfoil infestations and installing interpretive signage at both boat launches regarding Eurasian watermilfoil. The many uses and species present in the planning unit would be taken into account by the management team when dealing with Eurasian watermilfoil infestations.

Potential Measure:

- *Assess the potential for restoration of Bowman Ditch to enhance habitat and connectivity.*

Surrounded on three sides by Ahjumawi Lava Springs State Park, Bowman Ditch functions to collect spring water and funnel it into the Little Tule River. The ditch is surrounded by grass and wetlands. PG&E has stated that the ditch is no longer needed for Project operations and has proposed that it be removed from the FERC boundary; however, FERC denied PG&E's request. When there was a PG&E house camp located nearby, PG&E employees used water from the ditch for domestic and irrigation purposes. Further investigation is needed to determine if this manmade ditch could be restored to a natural state without reducing water flow into the Little Tule River and thereby infringing on water rights. The Stewardship Council recommends assessing the potential for restoration of the ditch, which could provide not only additional habitat, but a greater landscape and habitat continuity to Ahjumawi Lava Springs State Park.

Potential Measure:

- *Support recovery efforts for Shasta crayfish.*

The Shasta crayfish is found within the waters of the planning unit at Ja-She Creek, upper Big Lake, and in the Tule River Levee System. These subpopulations have two major threats: further invasion by signal crayfish and absence of lava substrate. Currently, the Shasta Crayfish Technical Review Committee, formed by the Pit 1 Project and Hat Creek Project License Orders, is reviewing potential locations for barriers that would stop signal crayfish from invading populations of Shasta crayfish. Potential barrier locations include Bowman Ditch and Ja-She

Creek, likely on property adjacent to the planning unit. To help maintain and enhance habitat for the endangered Shasta crayfish, the Stewardship Council recommends supporting recovery efforts in any manner needed, such as access to planning unit lands or waters or removal of invasive signal crayfish.

Potential Measure:

- *Assess the potential to enhance habitat for Shasta crayfish within Big Lake and upper Tule River.*

In regard to the absence of lava substrate, substrate could be added to planning unit waters to create additional habitat or restore habitat that has been covered up by sediment. The Recovery Plan for Shasta Crayfish states that protection of the Big Lake and Ja-She Creek headwater subpopulations of Shasta crayfish is essential to the recovery effort, and that habitat could be enhanced in Big Lake and along the upper Tule River by adding appropriate substrate. However, addition of substrate in the Tule River could negatively affect the ability of PG&E to maintain levees. Therefore, the Stewardship Council recommends assessing the potential to enhance habitat for Shasta crayfish within Big Lake and upper Tule River to determine appropriate locations and details based on feasibility and effect on Project operations.

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 only minor additions of recreation facilities and are not expected to decrease the scenic quality of the viewsheds.

Outdoor Recreation

Potential Measure:

- *Assess the potential for developing a wildlife viewing platform, boardwalk, and viewing blind with interpretive signage regarding wildlife stewardship at the Rat Farm Pond area.*

McArthur Swamp is home to many species of wildlife, most notably a large variety of birds that live or migrate through the planning unit. Due to the tremendous opportunities for wildlife viewing over the expansive grassland and wetland areas within the planning unit, the Stewardship Council recommends assessing the potential for developing a wildlife viewing platform, boardwalk, and viewing blind in the Rat Farm Pond area. These facilities would provide visitors with a chance to view wildlife over less distance than what is generally visible from levee tops, the other primary wildlife viewing locations within the planning unit. There are no other known facilities provided for wildlife viewing activities in the local area. The MSMP proposes several enhancements for the Rat Farm Pond, and development of wildlife viewing facilities could be coordinated with these enhancements. Location of the facilities could also be planned to provide minimal intrusion on wildlife. If the facilities are found to be feasible, the existing Pit 1 Project

Recreation Plan should be updated as necessary to include the recommended wildlife viewing facilities to ensure long-term management, maintenance, and monitoring of use of the facilities.

Potential Measure:

- *Install interpretive signage regarding wildlife stewardship along levee tops and at both public accesses.*

The Stewardship Council also recommends installing interpretive signage regarding wildlife stewardship along levee tops, at both public accesses, and at the recommended wildlife viewing platform; such signage would complement already proposed signage about endangered species and wildlife viewing opportunities. Wildlife stewardship signage would describe efforts that the general public can take to protect wildlife, the excellent wildlife habitat available at McArthur Swamp and in the greater Fall River Valley area, as well as some of the “birds of the swamp,” the presence of which makes McArthur Swamp unique and an important migratory stop on the Pacific Flyway.

Potential Measures:

- *Install interpretive signage at the Rat Farm building describing the history of the muskrat farm.*
- *Install interpretive signage regarding levee history, hydropower generation, habitat restoration, fishing and hunting use, Native American heritage in the area, traditional plants, and noxious weeds to levee tops.*

To enhance the recreation experience and educate visitors on historic use of the planning unit, the Stewardship Council recommends installing interpretive signage at the Rat Farm building and on levee tops. Signage at the Rat Farm building could describe the history of the building and how the Rat Farm was the site of one of the first introductions of muskrats to California in the early 1930s. Location of signage at the building would need to be carefully placed so as not to disturb the site. Signage along the levee tops could describe the history of the levees and history and functioning of the Pit 1 Hydroelectric Project, as well as the role the levees play in the Project system. Signage could also describe habitat restoration efforts, fishing and hunting use within the planning unit, Native American heritage in the area, as well as plants traditionally used by Native Americans. In conjunction with information on traditional plants, signage could also describe noxious weeds and their effects on native plants. Development of signage should be coordinated with the Pit River Tribe.

Potential Measure:

- *Install a dock at the Big Lake Access boat launch.*

As the boating speed limit is five miles per hour on Big Lake, much of the use is by boaters in non-motorized or trolling boats. The existing car-top boat launch at Big Lake Access is dirt and can be very muddy for boaters trying to get into their boats. Therefore, to enhance the recreation experience for boaters, the Stewardship Council recommends installing a dock at the boat launch at Big Lake Access to facilitate boat loading and unloading.

Potential Measure:

- *Install tables and shade structures at Big Lake Access.*

Currently, there are no day use facilities at McArthur Swamp. The Stewardship Council recommends installing day use facilities consisting of tables and shade structures at Big Lake Access to provide users a convenient place to picnic, rest, or use as a gathering place. As this site is currently the only public access point to the Ahjumawi Lava Springs State Park, day use facilities would provide State Park visitors a staging area to organize gear and prepare for their visit. It would need to be determined if such facilities could be reasonably maintained given the area's history of unauthorized use. Development of additional facilities at Big Lake Access would need to be consistent with the Pit 1 Historic Properties Management Plan (HPMP).

Potential Measure:

- *Assess the potential for youth program opportunities.*

McArthur Swamp provides great opportunities for youth to learn about birds of prey, waterfowl, migration, northwestern pond turtles, Shasta crayfish, native fishes, water quality monitoring and water management, and grazing. Therefore, the Stewardship Council recommends assessing the potential for youth program opportunities within the planning unit. The recommended tables and shade structures at Big Lake Access could serve youth programs by providing a meeting, launching, and gathering site for program activities.

Potential Measure:

- *Assess the potential for developing hunting blinds within the land portion of the planning unit.*

McArthur Swamp is the most popular waterfowl hunting location in the area and is one of the few free hunting areas in the Fall River Valley. Though hunting is allowed, there are no specific hunting facilities within the planning unit. There is potential to develop hunting blinds within the land portion of the planning unit to enhance the hunting experience. Development of blinds would require gated access into grazing areas, and this would need to be assessed for safety and effects on grazing. Therefore, the Stewardship Council recommends assessing the potential for developing hunting blinds within the planning unit to determine their compatibility with grazing, identify management controls that would be required for implementation, as well as identify appropriate locations and construction.

Sustainable Forestry

None recommended.

Agricultural Uses

Potential Measure:

- *Develop a baseline conditions report that describes current agricultural, physical, and overall biological conditions of the area, including current uses and state of improvement.*

The McArthur Swamp Planning Unit provides significant cattle forage for nine local ranchers. It is unknown if range assessments have been conducted for the planning unit. Thus, the Stewardship Council recommends developing a baseline conditions report that describes current agricultural, physical, and overall biological conditions of the area, including current uses and

state of improvement. This report would help determine appropriate grazing practices, regime, and management.

Potential Measure:

- *Develop a rangeland management plan for grazing use that includes goals and objectives and a monitoring and adaptive management strategy, as well as specifies grazing practices that address soil and water conservation, erosion control, pest management, nutrient management, vegetation management and habitat protection.*

Once the recommended baseline conditions report is completed, the Stewardship Council recommends developing a rangeland management plan for grazing use that includes goals and objectives and a monitoring and adaptive management strategy, as well as specifies grazing practices that may address topics including soil and water conservation, erosion control, pest management, nutrient management, vegetation management, habitat protection, and cultural resources management. This plan would ensure that grazing use within the planning unit meets Stewardship Council policy for agricultural uses on Watershed Lands. Development of the rangeland management plan should be coordinated with the wildlife and habitat management plan, existing Noxious Weed Management Program, and development of recommended recreation facilities within the planning unit to ensure consistency and complementary measures.

Preservation of Historic Values

Potential Measures:

- *Conduct surveys outside the FERC Project APE and beyond 50 meters from the inland toe of levees to identify cultural resources and enable their protection.*
- *Coordinate with Native American entities when conducting cultural resource measures.*

As part of the relicensing process, cultural resources were surveyed within the Pit 1 Project Area of Potential Effects (APE), which generally coincides with the FERC boundary. The Pit 1 Levee Maintenance Plan proposes undertaking additional surveys of lands adjacent to levees within the planning unit out to 50 meters from the inland toe of the levees. This still leaves much of the planning unit unsurveyed. The Stewardship Council recommends conducting surveys outside the Pit 1 Project APE and beyond 50 meters from the inland toe of the levees 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 lands outside the FERC Project APE to identify traditional use areas.*
- *Coordinate with Native American entities when conducting cultural resource measures.*

The planning unit may also include traditional use areas, including ethnobotanical sites. An ethnographic study was conducted as part of the relicensing process for the Pit 1 Project; however, this study focused only on lands within the Pit 1 Project APE, and thus most of the planning unit was not studied. Therefore, the Stewardship Council recommends conducting an ethnographic study of lands outside the Pit 1 Project APE to identify traditional use areas. 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 Pit 1 Project Programmatic Agreement.*
- *Coordinate with Native American entities when conducting cultural resource measures.*

Assuming that recommended surveys identify cultural sites within the planning unit, the Stewardship Council recommends developing a cultural resources management plan for lands outside the Pit 1 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), as well as 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 Pit 1 Project Programmatic Agreement and HPMP and should be coordinated with Native American entities.