

4.5 MULTIPLE-BENEFIT PROJECTS

One proven approach to supporting many of the Central Valley Joint Venture’s conservation objectives is to implement intentionally designed “multiple-benefit” projects. Much of California uses the term “multi-benefit” specifically in the context of flood protection projects. In this Implementation Plan (hereafter, “the Plan”), multiple-benefit projects are defined as land use projects designed to meet public safety needs, enhance ecological function, and improve habitat quality for fish and wildlife. Multi-benefit projects can provide benefits such as groundwater recharge, improved water quality, and enhanced access to recreation. Such projects in the Central Valley can combine bird conservation with flood protection, food production, water quality control, groundwater recharge and/or recreational opportunities.

Multiple-benefit projects break away from traditional single-focus management decision-making to use resources efficiently in pursuing multiple compatible public policy objectives. The concept is not new, though the terminology is not always consistent. The terms multi-functionality and co-benefits are often used to capture the same idea (Fisher et al. 2011; Sayer et al. 2013). These approaches are especially critical when land and water are limited resources. They provide a broad suite of benefits to a diverse coalition of stakeholders (Postel 2000; Chan et al. 2006).

The habitat objectives set forth in this Plan are ambitious; thus, funding project implementation will be challenging. By pursuing a strategy of implementing multiple-benefit projects, the CVJV can align the Plan’s conservation goals for migratory birds with the needs of California residents in a manner that leverages investments to create added value to conservation projects. This approach is increasingly essential as the demand for and value of land and water in California continues to increase, making conservation projects more costly. A holistic approach to natural resources conservation enables the CVJV to achieve security for future migratory bird populations and their habitats, while also improving ecosystem functionality in a way that benefits people directly.

For multiple-benefit projects to be successful, they should incorporate the following elements:

- 1. SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) objectives** (Doran 1981), reflecting the contribution of a project to multiple planning goals within a region. The CVJV objectives for bird populations and habitats provide an excellent tie-in to existing SMART multiple-benefit objectives for water management in the Central Valley.
- 2. Engaged stakeholders cooperating in implementation.** For example, cooperation between rice producers and natural resource managers has resulted in management practices that meet both an agricultural need for postharvest straw decomposition and a wildlife need for surrogate wetlands to support migratory birds.
- 3. Shared financing that leverages multiple sources of funding.** For example, pooling funds for levee reinforcement projects for flood protection with conservation easement purchases for riparian restoration can bring ambitious projects within reach. Shared funding can facilitate multiple-benefit conservation projects, at scale, by incorporating setback levees and riparian restoration at the same site and at the same time.
- 4. Reduced need for mitigation through improvements in ecological conditions.** A multiple-benefit project can enhance the value of habitat in such a way that it largely offsets or even eliminates the need to mitigate for any environmental degradation caused by the project. For example, a flood-protection setback levee could create benefits for listed salmon.

Policies that may affect development and implementation of multiple-benefit projects are certain to evolve over the lifetime of the Implementation Plan. The CVJV must remain actively engaged in the development of policies and broad programs, not just when planning specific projects. This stance will provide for more opportunities to advocate for a multiple-benefit approach. For example, when the California Air Resources Board was considering greenhouse gas reduction measures for agriculture that included incentives not to flood rice fields during the winter, CVJV partners participated in discussions to inform the conversation. Those incentives would have been detrimental to the large populations of shorebirds and waterfowl that use postharvest-flooded rice fields for food during the non-breeding seasons. The board eventually decided not to adopt the incentives.

Today, there are a number of ongoing planning and restoration efforts that could be transformed into multiple-benefit projects. The following list is not exhaustive, but illustrates some possible opportunities.

Central Valley Flood Management

The spatial footprint of the Central Valley's flood management system overlaps with many of the best areas for providing habitat for waterfowl, shorebirds, waterbirds, and riparian landbirds. Already, the Central Valley Flood Protection Plan developed by the California Department of Water Resources (DWR) has used the CVJV habitat objectives to develop targets for riparian and wetland restoration within floodways. By working with levee districts and DWR, the CVJV can make sure upcoming flood protection projects integrate these habitat restoration targets, such that the projects also contribute to the CVJV's conservation goals (see Hamilton City text box).

Conservation of Other Species and Ecosystems

The Central Valley is not only important for migratory birds; it is also the focal point of significant efforts to recover populations of endangered fish, ensure the future of many rare plant species, and protect the unique biodiversity of the San Joaquin Desert. For example, in 2009, the San Joaquin River Settlement Act was passed to restore flows and salmon populations to California's longest river, the San Joaquin River. The settlement addresses the needs of native fish and wildlife, Central Valley farmers, anglers and other recreationists, and Central Valley residents. The settlement has two goals: (1) restoring and maintaining fish populations in the San Joaquin River, and (2) reducing or avoiding adverse water supply impacts to all long-term water contractors who may be affected.

By following the general approach used for San Joaquin River restoration, the CVJV can leverage conservation dollars and the limited land available for wildlife in a way that provides the greatest benefit for entire ecosystems.

Groundwater Management

California's Sustainable Groundwater Management Act of 2014 is leading to changes in how and where groundwater is used. The Act may lead to fallowing some agricultural land and developing projects designed to recharge groundwater. The CVJV may be able to use these fallowed lands to help meet habitat objectives for grassland or riparian birds and, at the same time, participate in the design and implementation of groundwater recharge projects that also provide waterbird habitat.

Multiple-benefit projects provide a mechanism for tackling the CVJV's ambitious goals. Research is needed to evaluate practices for increasing benefits to people and to wildlife as well as for decreasing the necessity or magnitude of trade-offs in delivery of multiple benefits (Liu 2016). The CVJV is uniquely positioned to identify these research needs. Central Valley-focused agencies and non-governmental organizations are developing growing alliances for implementing multiple-benefit projects. The CVJV has an important role to play in identifying and leveraging win-win solutions that result from these projects. Not every planning process will immediately reveal such synergies. Barriers to achieving multiple-benefit projects may continue or arise anew (Antos 2016). However, the CVJV can provide insight to overcoming these barriers. Complex trade-offs may be in play and require careful management, to ensure that a given project does ultimately serve the needs of migratory birds. Such trade-offs make it even more critical that multiple-benefit projects be identified and implemented to achieve the CVJV's goals.

Examples of multiple-benefit projects that successfully combine wildlife conservation and flood protection can be found at a website supported by a coalition of non-governmental organizations working on wildlife protection in the Central Valley, <http://www.multibenefitproject.org/>.

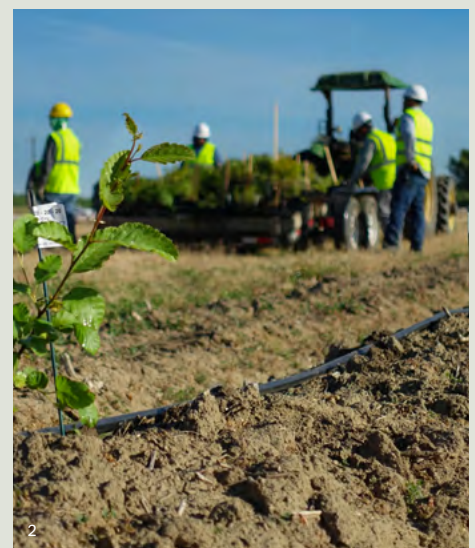
HAMILTON CITY: A BLUEPRINT FOR MULTIPLE-BENEFIT PROJECTS IN CALIFORNIA

Multiple CVJV partners and Reclamation District 2140 are successfully utilizing a non-regulatory approach to construct a new “setback” levee that will provide significant flood risk reduction to the community of Hamilton City, 10 miles west of Chico. The project also includes large-scale restoration of 1,500 acres of native riparian habitat. The project demonstrates multiple benefits supported by the CVJV, including flood risk management, groundwater recharge, conservation of species and their habitats, and opportunities for outdoor recreation.

Hamilton City has long been at risk of flooding from the Sacramento River, with extensive efforts required in multiple years to avoid failure of the 114-year-old levee. After repeated attempts to justify a single-purpose flood risk reduction project, the community took action to develop a cost-effective, multiple-benefit solution that included both economic and environmental benefits.

During the first phase of the project, a new setback levee will be constructed to provide greater flood protection for the community, and the existing “J Levee” (where the gravel road can be seen in the photo) will be removed to reconnect over 500 acres of floodplain to the river. Once this phase is completed, River Partners will restore approximately 770 acres of former agricultural land to high-quality riparian habitat. Levee construction is scheduled for completion in 2020.

The Hamilton City project plays a significant role in meeting the CVJV’s conservation objectives in the Sacramento planning region for reestablishment of habitat for waterbirds, riparian landbirds, and grassland-oak savannah landbirds. This habitat will benefit at-risk bird species contained within this Plan, as well as other wildlife. Importantly, reconnecting the floodplain with the river will support the recovery of endangered salmon. It will also allow the river’s floodwaters to dissipate, protecting nearby orchards.



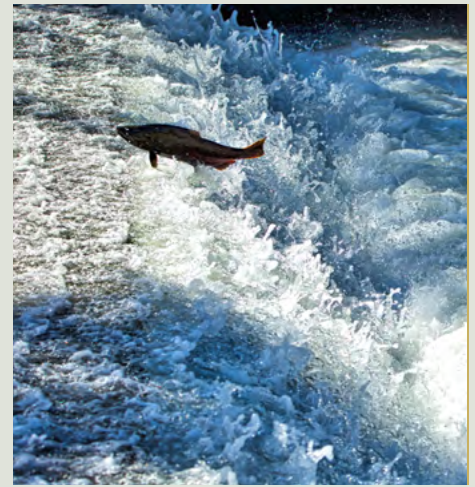
(1) The Sacramento River above Hamilton City, flowing past the Phase I restoration area/floodplain - River Partners. (2) A white alder awaits planting in the now-complete Phase I restoration area - River Partners



The giant garter snake is listed as a federally- and state-endangered species. The Yolo Bypass Wildlife Area provides habitat for this and other wildlife species, while also providing flood protection and recreation opportunities. *Dave Feliz*



Tule elk, an elk subspecies found only in California, benefit from grassland habitat management in the Central Valley. Hunters, many of whom are active conservationists, benefit in turn. *Dale Garrison*



Native salmon and steelhead benefit from intentionally designed multiple-benefit projects such as riparian restoration. *Steve Martarano, USFWS*



Some multiple-benefit projects can provide habitat for federally-listed species such as the valley elderberry longhorn beetle. *Steve Martarano, USFWS*



Boaters and anglers benefit from bird-friendly riparian habitat on the San Joaquin River. *Steve Martarano, USFWS*



Students help restore wetland habitat near Stockton. Multiple-benefit projects can provide opportunities for education and outreach. *Steve Martarano, USFWS*



High water on the Yolo Bypass floodplain. The Yolo Bypass is a successful multiple-benefit project, diverting Sacramento River floodwaters from Sacramento and other population centers while protecting habitat for birds and other wildlife. *Steve Martarano, USFWS*