



# Truckee River Flood Management Authority

## **FLOOD PLAIN AND RIVER ECOSYSTEM RESTORATION PROJECTS – FACT SHEET**

### What is floodplain ecosystem restoration?

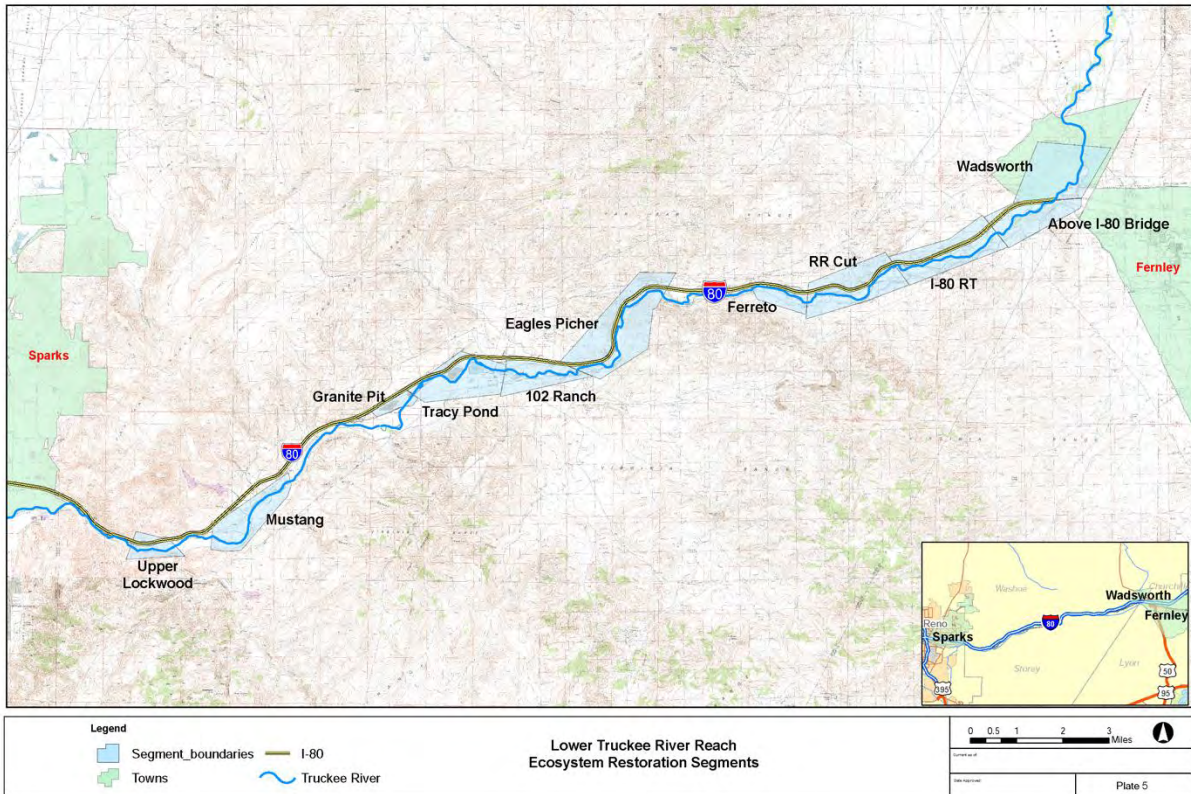
- Floodplain and River Ecosystem restoration is a series of actions taken to reestablish the general structure, function, and dynamic but self-sustaining behavior of the ecosystem. In this case it is the floodplain and channel of a river.
- The primary purpose of riverine ecosystem restoration projects is to restore the physical and biological functions of the river channel and floodplains; thereby improving water quality and enhancing habitat for native species of fish and wildlife.
- Other benefits include flood attenuation, decreased risk of developed property damage (floodplain preservation), riverbank stability, sediment retention (water quality improvement).
- The community's vision for the Truckee River Flood Project is to achieve flood protection goals through a combination of set-back levees, floodwalls, river terracing, Bridge replacements, floodplain land acquisitions, instream and riparian restoration, and urban parkways.



Before & after ecosystem restoration. (Photo courtesy of The Nature Conservancy)

### Where are the riverine ecosystem restoration projects?

- The Truckee River Flood Management Authority (TRFMA) is working with many other agencies and entities to restore the lower Truckee River, starting near Vista Narrows just east of Sparks, downstream all the way to Wadsworth, Nevada.



### What do these projects include?



Each restoration project includes major earthwork to excavate new river meanders (S-curves in the channel), install rock riffles, create wetland areas, and stabilize eroding banks. After construction is complete, the site is revegetated with selected native wetland, riparian, and upland plant species. It takes several years of weed treatment, supplemental irrigation, and herbivory control to establish a healthy, self-sustaining native plant community.



### Why should we restore the lower Truckee River ecosystem?

- Functional river systems can slow runoff and absorb excess water during floods (this is called attenuation). Flood attenuation means that the river captures stormwater and releases it slowly, and further flooding is prevented. In the Truckee Meadows, large floods (100-year flood, 1997 Flood) can cause significant property damage and negatively impact the region's economy.
- In Nevada, rivers and floodplain ecosystems are rare and highly valuable. These riparian corridors support most of the state's biodiversity, and provide a variety of economic, social, and cultural benefits (such as drinking water, power generation, and recreational opportunities).
- The Truckee River Basin is a closed system, with no outlet to the ocean. Its headwaters are Lake Tahoe, a national treasure protected under a bi-state compact between Nevada and California. Its terminus, Pyramid Lake, is sacred to the Pyramid Lake Paiute Tribe and home to two federally-listed fish species – the Lahontan cutthroat trout and cui-ui sucker. Because of these unique features the system requires special treatment and work.
- Significant damage to the Truckee River occurred as part of a 1960s federal flood control project that straightened and widened the river channel. This work caused severe downcutting of the river channel (roughly 3 feet) and lowered the groundwater table, which led to loss of riparian habitat (plant roots left high and dry) and riverbank erosion (little to no vegetation to hold soils in place).

### What is the status of this work?

- Several high-priority restoration projects have already been completed: Lockwood, Lower Mustang Ranch, Tracy Power Plant, and 102 Ranch (total of 8 miles of river restoration and 450 acres of habitat created in/along the river).
- Monitoring is ongoing to ensure the projects are functioning as designed.
- TRFMA is now focusing its efforts on the Vista Narrows Project, which includes excavation of several floodplain terraces to attenuate floodwaters from upstream; these terraces will also create approximately 13 acres of wetlands and restore habitat for fish and wildlife.
- Similar ecosystem restoration features are planned in the Truckee Meadows reach of the Flood Project.
- Future work may include a partnership with the Pyramid Lake Paiute Tribe to implement another Truckee River ecosystem restoration project at Wadsworth.





### How much does restoration cost and what are the sources of funding?

- TRFMA has partnered with The Nature Conservancy and numerous other local, state, and federal agencies and non-profit organizations to help restore the lower Truckee River ecosystem (from Vista to Pyramid Lake). Partners include US Fish & Wildlife, US Bureau of Land Management, Nevada Division of Environmental Protection, Washoe County, City of Reno, City of Sparks, Pyramid Lake Paiute Tribe
- To date, the partners have invested more than \$28 million to create more than 450 acres of habitat and restore more than 8 miles of the lower Truckee River. An estimated 216 jobs were created as a result of this work (full-time equivalents).
- The agency has contributed about \$2.1 million in sales tax funds for land acquisition, planning, and construction—less than 8% of the overall cost of restoration project implementation. In addition, TRFMA contributed \$4.775 million in grant funds to implement ecosystem restoration projects via Assembly Bill No. 5 (AB-5), passed by the Nevada State Legislature in 2007.
- This relatively small investment may result in significant returns for TRFMA. The ecosystem restoration work could potentially satisfy a portion of the environmental mitigation required to obtain permits and construct the Flood Project.