

East Turlock Subbasin Groundwater Sustainability Agency

Multibenefit Land Repurposing Program

FLOODPLAIN RECONNECTION AND RELATED SPREADING AND RECHARGE

How it Works

Floodplain reconnection involves modifying stream channels and repurposing agricultural lands on adjacent floodplains to restore natural flood hydrology by slowing down flows and encourage spreading of flood waters onto connected floodplain areas during regular and high flow events. This practice can provide water benefits including groundwater recharge and reduction in downstream flood risk. Additional benefits from establishing riparian vegetation on repurposed lands include improved habitat and soil quality.



+ Benefits



Water Storage – Increased floodplain surface area allows spreading and slowing of water flow; more soil becomes saturated, supporting vegetation during dry periods and enhancing the riparian area's water retention.



Groundwater Recharge – Slower water movement through a channel and across a floodplain increases recharge.



Soil Health Improvements – Fertile soil in floodplains formed by historic flooding in channels, when high flows carry sediment and nutrients, then deposit them on the slow-flowing floodplain.



Habitat and Biodiversity – Riparian areas in arid climates supported by frequent flooding are refuge areas for many species; vegetation slows flow, improving sediment deposition; some plants are groundwater-dependent and their roots aid in recharge.

Additional Considerations



Maintenance – Ongoing and adaptive maintenance of constructed features is required.



Long-term Sustainability Planning – Consideration for future maintenance needs and changing climate conditions.



Potential for Weed Growth – Invasive species can compete with native plantings.



Flow Regimes from Water Releases – Flows from controlled water sources may impact the volume of flow and flooding patterns within the floodplain.



Stream Channel Migration and Erosion – Diversion and control of flood flows on fields may cause migration of the stream channel and erosion along the channel.



Implementation Incentive Payment

The ETSGSA will be able to provide incentive payments to growers to implement multibenefit land repurposing using funding from a grant awarded to the GSA by the CA Department of Conservation.

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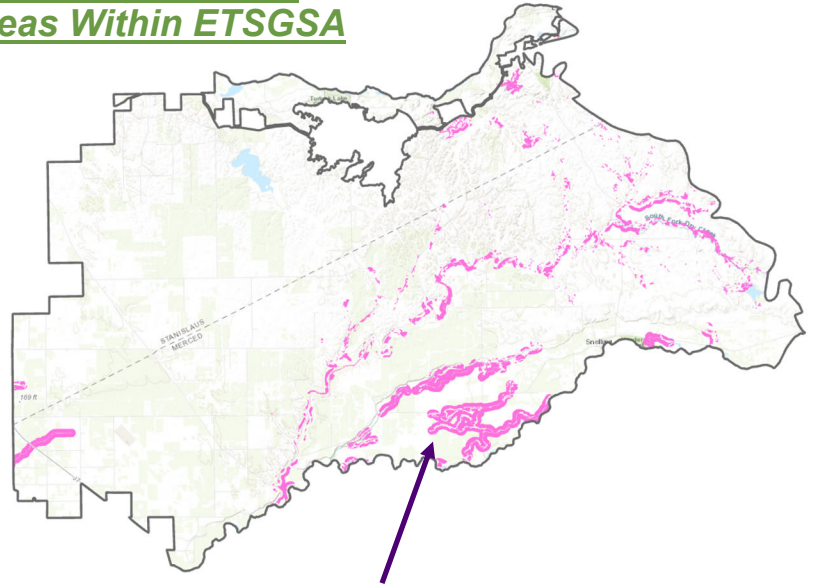
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Implementation Steps

- 1) **Planning and Design** – Evaluate existing floodplain, demarcate areas, design beaver dam analogs, woody revetments (woody debris or willow walls), and other land modifications.
- 2) **Site Preparation** – Remove crops and existing irrigation infrastructure from floodplain.
- 3) **Construction** – Construct beaver dam analogs to slow flows and woody revetments against stream embankments to protect channels from erosion and stabilize the shoreline.
- 4) **Vegetation Establishment** – Plant or seed resident / native vegetation (riparian).
- 5) **Maintenance & Monitoring** – Maintain constructed features and monitor hydrologic and habitat conditions.
- 6) **Adaptive Management** – Continually adjust and modify project features, as needed, based on monitoring data.

Potentially Suitable Areas Within ETSGSA

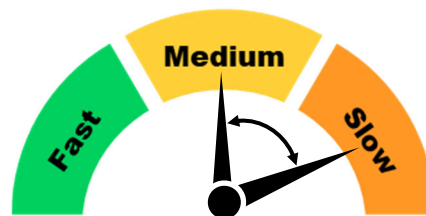


Priority Areas (5,712 acres identified): Low-lying areas prone to seasonal flooding, where there is a need to enhance groundwater recharge and improve soil health.

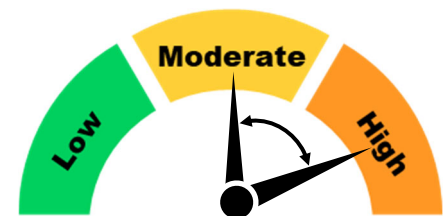
¹ Land area estimation from Formation Environmental Land Suitability Assessment. MLRP mapping is provided for preliminary planning purposes only. Project designs will need to be based on parcel-specific analysis.

Potential Permitting and CEQA Process

The general permitting and CEQA timeframe and complexity are shown below. However, permitting and CEQA requirements for specific projects may vary based on site- and project-specific conditions, and may be greater than indicated.



Permitting / CEQA
Timeframe



Permitting / CEQA
Complexity

Additional Information / Resources:

- [NRCS Conservation Practice Standard | 395 Stream Habitat Improvement and Management](#) (USDA)
- [NRCS Conservation Practice Standard | 412 Grassed Waterway](#) (USDA)
- [National Engineering Handbook | Stream Restoration Design Process](#) (USDA)



For more information on the ETSGSA Multibenefit Land Repurposing Program visit: <https://turlockgroundwater.org/multibenefit-land-repurposing>