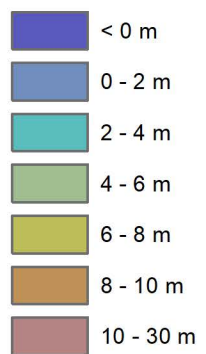
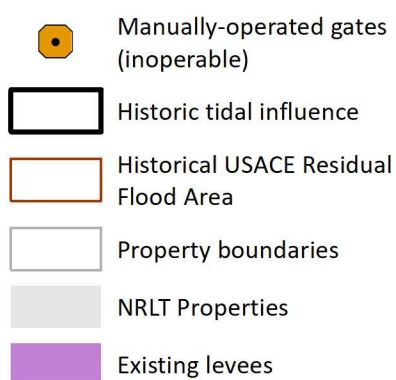


## Redwood Creek Estuary

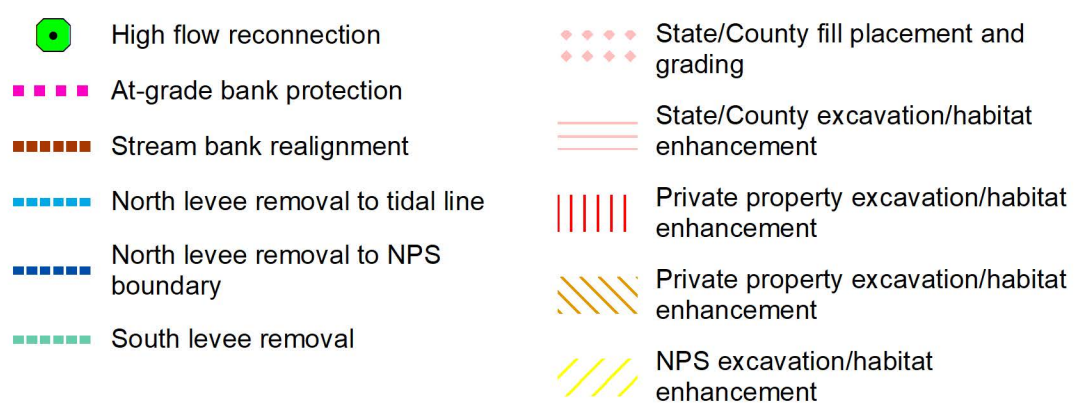
### Elevations



### Existing Conditions



### Proposed/Potential Modifications



Author: L. Raine Leblanc  
Data sources: RNSP, USGS, Humboldt County GIS

Date: 9/9/2020 Time: 12:26:23 PM

## Redwood Creek Estuary Map - Expanded Key

### Map info

Author: Raine Leblanc, California Trout

Data Sources: RNSP, USGS, HumCo GIS, Laird (2009)

Date: 9/9/20 12:26 pm

The Redwood Creek Estuary (RCE) Map has been developed to support the RCE Stakeholder Group discussions.

### Existing Conditions

**Elevations.** The basemap is a LiDAR dataset (USGS) with a layer of color breakdowns according to elevation with color breaks at 2-meter intervals. The color layer is discontinued above 30m in order to use a full spectrum to more clearly define the elevations within the estuary.

**Manually operated gates (~~inoperable~~ not currently operating).** Installed in approximately 1986, these culverts through the levees with gates were installed to manage summer water quality in the estuary and south slough. Operation of these gates has been halted.

**Historical tidal influence.** The Laird (2009) report to the State Coastal Conservancy provided the historical images that indicate the extent of the estuary as visible in photographs from 1941, 1958, and 1966. NPS staff georeferenced 1941 and 1958 aerial photographs to depict pre-levee conditions of Redwood Creek and associated estuary.

**Historical USACE Residual Flood Area.** This line was digitized by CalTrout from a photocopy of a USACE plan set page for the levee project.

**Property boundaries.** Sourced from Humboldt County GIS portal.

**Northcoast Regional Land Trust (NRLT) properties.** Purchased in 2008, by the NRLT with CA State Coastal Conservancy funding for the purpose "1) to preserve the McNamara Dairy as productive, coastal agricultural property, and 2) to promote lower Redwood Creek estuary enhancement opportunities. (SCC Staff Report for acquisition dated August 2011).

**Existing levees.** The GIS specialist from CalTrout has digitized current levee configurations (purple polygons) and potential project actions that are intended to provide perspective on possible options for levee modification. Any geometry presented is hypothetical and should only be used for planning purposes.

## Proposed/Potential Modifications

**High flow reconnection.** A variety of options are being considered for this location with the intent to support a process-based solution that flushes sediment out of Sand Cache Creek to maintain the creek as a functional drainage and tributary aquatic habitat.

**At-grade bank protection.** The black lines of the 'historical tidal influence' indicate that the main RCE flow was routed through what is currently known as the south slough. The Stakeholder Group is in consensus that the main flow will be returned to the south slough and the 'at-grade bank protection' feature is provided to protect the south (left) bank of what will be the mainstem channel from additional erosion and encroachment onto agricultural land.

**Stream bank realignment.** Associated with 'north levee removal' lines and the 'historical tidal influence', the 'stream bank realignment' crosses the current main channel to direct the main flow into the south slough. This feature continues upstream to the 'high flow reconnection' to protect current agricultural land while at the same time allow high flow to enter Sand Cache Creek. The current mainstem would become a high flow channel, also see 'State/County fill placement and grading.'

**North levee removal to (above) tidal line.** The extent of levee removal shows two alternatives in order to determine the appropriate amount of levee removal that will support recovery of long-lasting process-based estuarine process recovery. Additional alternatives may be modeled as needed to best meet objectives for a process-based project.

**North levee removal to NPS boundary.** See above. This line indicates the limit of levee removal located adjacent to NPS property.

**South levee removal.** Levee removal to the upstream side of the south slough channel.

**State/County fill placement and grading.** Associated with the 'stream bank realignment', this area would be filled and graded to encourage the main Redwood Creek to enter the south slough while supporting a high flow channel in the location of the current main channel, similar to the historic, pre-levee condition.

**State/County excavation/habitat enhancement.** This polygon is the wedge of area between the NPS property boundaries. Jurisdiction needs to be determined between County, the State Lands Commission, and USACE. Proposed actions are undefined but are expected to include such things as excavation and revegetation to support recovery of ecosystem processes.

**Private property excavation/habitat enhancement – vertical lines.** This area is a private property owner that has not yet been included in the Stakeholder Group discussions or informed of this process. Proposed actions are undefined but are expected to include such things as excavation and revegetation to support recovery of ecosystem processes.

**Private property excavation/habitat enhancement – slanted orange lines.** Private property where project actions are proposed. Proposed actions are undefined but are expected to include such things as excavation and revegetation to support recovery of ecosystem processes.

**NPS excavation/habitat enhancement – slanted yellow lines.** Proposed actions are undefined but are expected to include such things as excavation and revegetation to support recovery of ecosystem processes. Although not shown on the map, the NPS Kuchel Visitor Center is planned for removal.