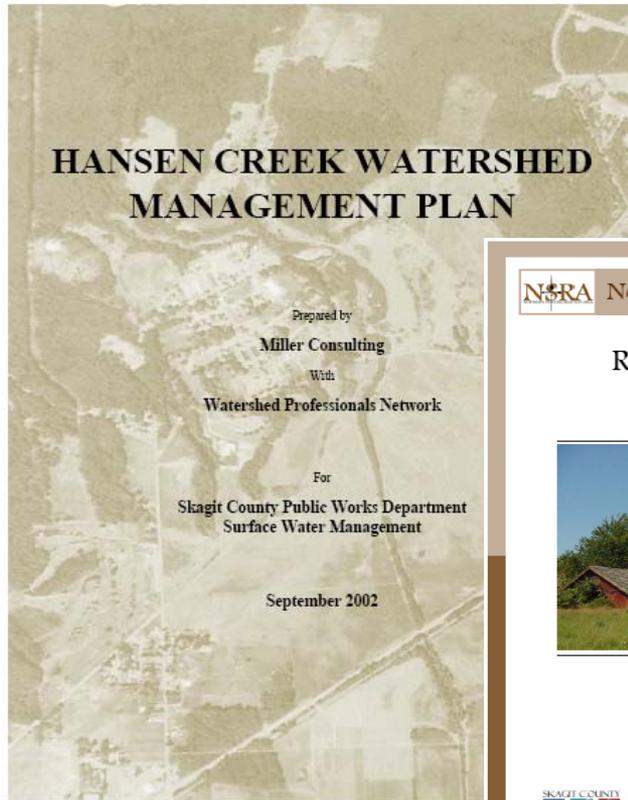


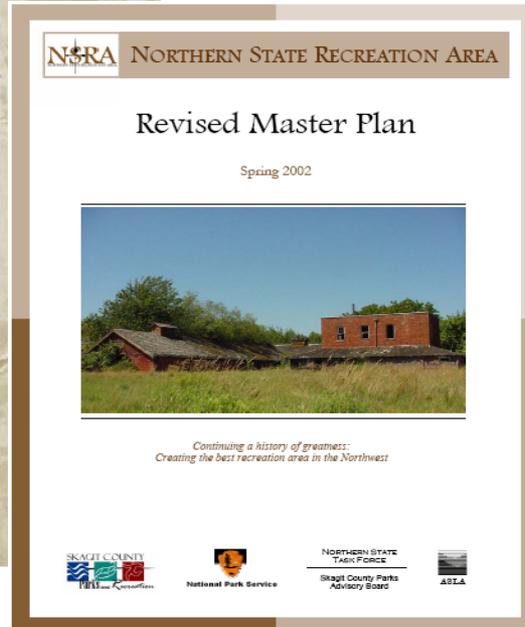
# Hansen Creek Floodplain Restoration

- Upper Skagit Tribe in partnership  with Skagit County
- The cornerstone restoration project for watershed health
- 140 acres of isolated floodplain restored to 53 acres of alluvial fan and 87 acres of forested flow-through wetlands



Recovery of lower elevation freshwater floodplain functions recognized as essential by:

- Skagit Chapter, Chinook Recovery Plan
- WDFW Steelhead Management Plan



Floodplain and Riparian recovery supports recovery of surface water quality standards under the Lower Skagit Tributaries TMDL Action Plan

Freshwater Riparian recovery will improve site utilization for numerous other species included in the State Priority Habitats Plan, and Federal Migratory Bird Habitat Plans

# Hansen Creek Floodplain Restoration

## Project Elements:

Freshwater riparian floodplain habitats restored by:

- Levy breaching,
- Large woody debris & grade controls

Restoration of pasture & isolated wetland to floodplain functions offers:

- Suspension of 60+ years of dredging
- Functional habitat recovery
  - Vegetative mosaic restoring plant richness and diversity – emergent, shrub & forest
  - Aquatic edge and shallow water habitat diversity
  - Spawning, nesting, shelter, rearing, forage for migratory or resident species
  - Stimulate species diversity, abundance, and spatial utilization
  - Stabilize hydro-geomorphic processes, restoring natural flood flow, sediment transport and deposition movements, sediment sorting
  - Restoring groundwater recharge, low-flow discharge
  - Restoring water quality impairments

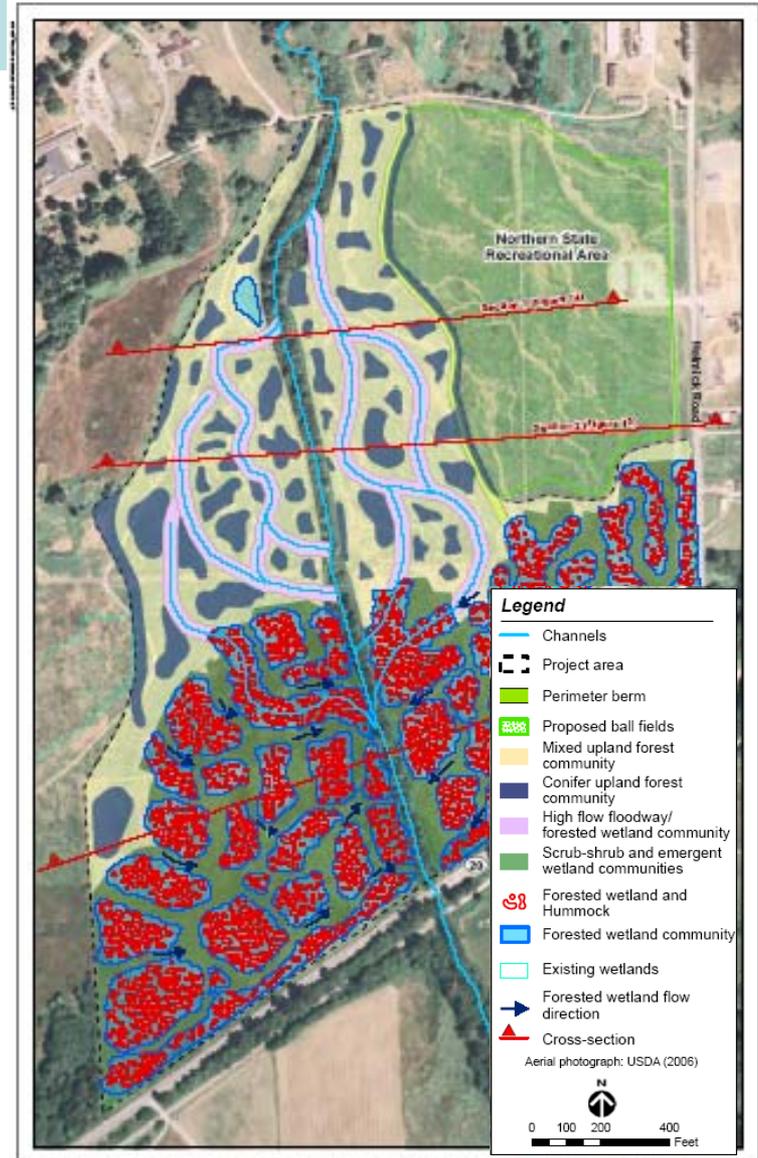


Figure 17. Conceptual vegetation restoration proposal for the Hansen Creek channel and wetland restoration project.

# Hansen Creek Floodplain Restoration

## Ecological/Biological ~ Uniqueness/Significance:

- Freshwater riparian floodplain habitats have sustained significant losses in Puget Sound
- The size, scale, location and public support are unique
- Restores documented GLO floodplain, historic functions
- Benefited by and contributes benefits to complimentary adjacent restoration sites
- Located in permanently protected public land with public viewing and educational opportunities

## Partners/Leverage:

Washington State Department of Ecology, Fish and Wildlife, and Salmon Recovery Funding Board

Skagit County Parks and Public Works

NOAA – Coastal Counties Initiative +Open Rivers request

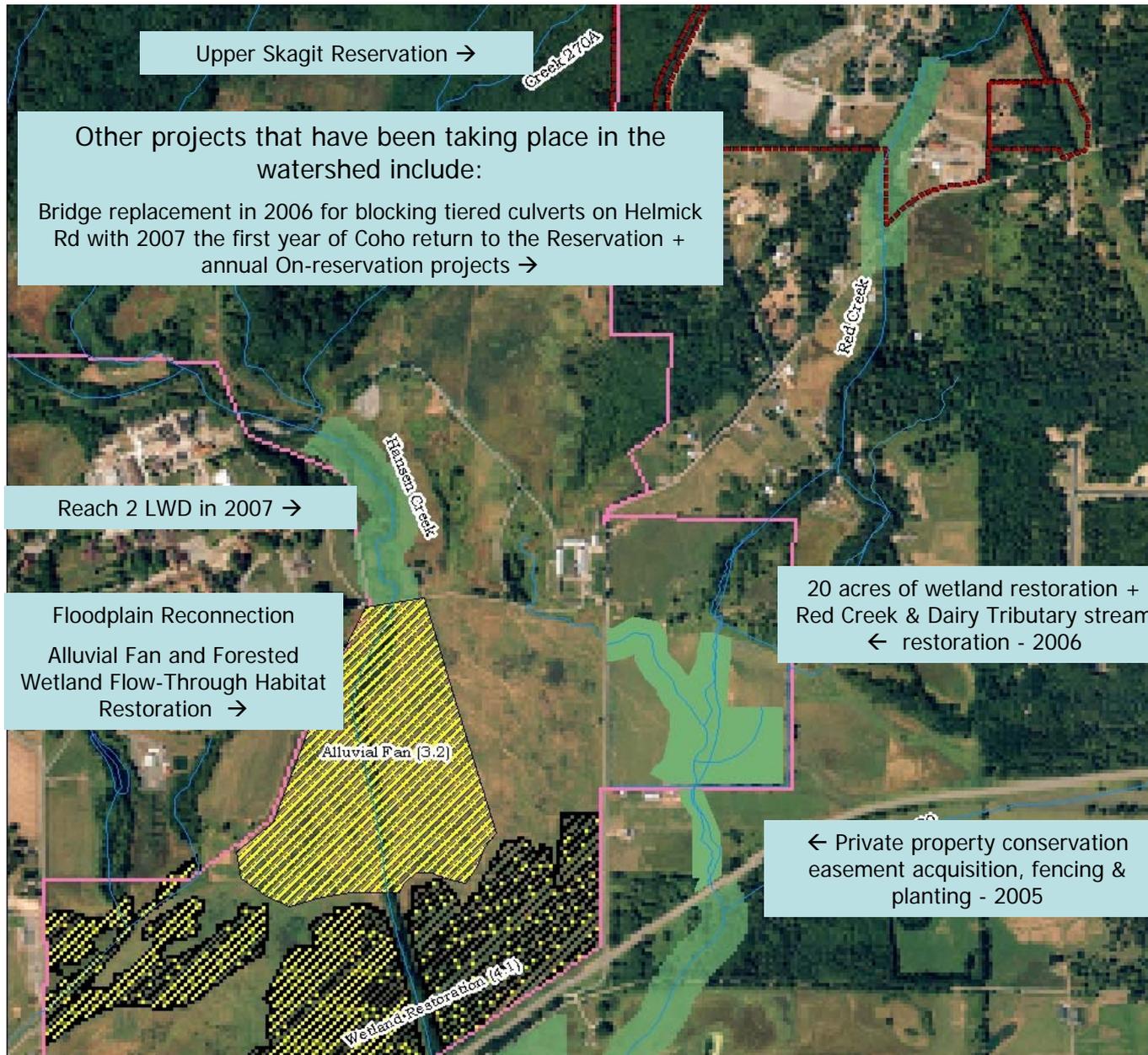
EPA – Nonpoint Source Pollution and Puget Sound Partnership

Burlington & Sedro-Woolley H.S., Skagit Comm. College

Skagit Fisheries Enhancement Group



Alluvial fan (Reach 3) existing grassland to be restored



# Hansen Creek Floodplain Restoration

## Scientific Value/Public Benefit/Education ~ Timeline:

- Project monitoring will lead to significant insights into floodplain restoration applicable throughout the Puget Sound, information sharing with federal, state, tribal, local jurisdictions and Environment Canada
- Monitoring LWD effectiveness entails characterizing pool-riffle formations, sediment deposits, wetted width of the mainstem and initiated off-channel habitat, and LWD retention
- Monitoring riparian plant restoration effectiveness requires measuring the overall survival of planted species, proportion of shading within the project, duration of inundation and/or saturation in wetland habitats, increasing over time
- Monitoring water quality includes: Temperature, pH, Dissolved Oxygen, Conductivity and Turbidity, augmented by the Ecology flow station at the northern apex of the project site
- Monitoring species utilization involves: Spawner surveys for all anadromous species conducted September through July; Macroinvertebrate surveys for changes over time in mainstem and off-channel habitats

Task	Timeline
<b>Design/Engineering/Permitting</b>	2007 - 2008
<b>Phase 1</b> Pre-construction funding secured	Spring 2008 – Spring 2009
<b>Phase 2</b> Permit and Construction funding secured	December 2008 – April 2009
Bid documents prepared and advertised	February – April 2009
Construction award completed, Notice to proceed issued	May – June, 2009
Project mobilization and construction	June – September, 2009
Project planting	September 2009 – November 2010
<b>Phase 3</b> project monitoring	2008 - 2024



- Project boundary trail provides ecological observation to the public, connects access to adjacent site habitats, use areas, and area trails