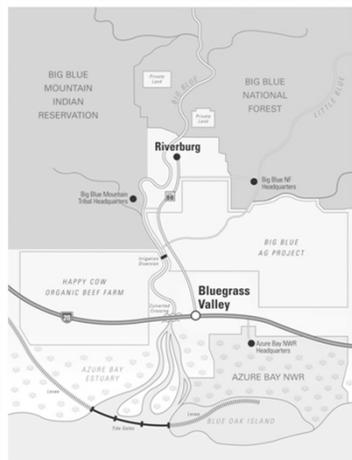


# AZURE BAY RESTORATION PLAN

## Steering Committee

- ◉ Daniel, NOAA NMFS biologist
- ◉ James, USFWS Partners restoration biologist
- ◉ Casey, Big Blue Mountain Tribe biologist
- ◉ Bryar, agriculture representative
- ◉ Kelly, consolidated local government planner

## Conservation Needs



The Big Blue Region faces numerous environmental challenges.

The Azure Bay Estuary itself has three main categories of degradation: hydrological impacts (altered flow and sediment regimes), water and soil contamination (including as a result of the oil spill), and diminished species diversity (from invasion among other threats).

## Goals and Objectives

- ⦿ Goal: A healthy Azure Bay estuary with greater ecological connectivity, improved water quality, and greater native species diversity.
- ⦿ Objectives:
  - Increase flow through the marshes.
  - Restore a more natural sediment transport regime.
  - Decrease impairment caused by contaminants in the marshes.
  - Improve fish passage in the marshes.
  - Increase diversity of marsh habitats.

## Potential Restoration Actions

- ◎ Flow can be restored by:
  - altering the tide gate regime or removing tide gates entirely;
  - removing the levees or creating breaks in the levees;
  - reducing water use upstream (incentivize better water practices on ag lands);
  - buying and sequestering water rights;
  - improving/incentivizing urban water conservation.

## Potential Restoration Actions

- ◎ Water quality can be improved by:  
researching contaminants and their sources to determine restoration actions; addressing agricultural runoff; improving riparian conditions—revegetating streambanks will improve sedimentation, temp, DO; restoring native conifers and oak prairies on tribal and NF lands (burning and revegetation).

## Potential Restoration Actions



- ⦿ Fish passage can be improved by:
  - removing tide gates;
  - replacing irrigation diversion with wells;
  - modernizing the culverts under road;
  - creating in-stream habitat.

## Potential Restoration Actions

- ⦿ Marsh habitat diversity can be enhanced by addressing invasives (through herbicide, hand removal, or burning); natural revegetation or replanting (to be successful, new vegetation may need breakwaters to protect roots and reduce erosion).

## Roles and Assets

- ◎ Federal Agencies
  - USACE: permitting, engineering and design technical assistance
  - USFWS: partner lead; consultation and permitting; technical assistance; funding
  - EPA: technical assistance (contaminants, hydrology); compliance consultation; funding
  - US Coast Guard: technical assistance
  - NOAA NMFS: EFH consultation, technical assistance
  - USDA NRCS: land management incentives (water and soil conservation)
  - US Forest Service: land management practices (stop clear cutting)
- ◎ Tribal, State, and Local Agencies
  - Tribal Council: cultural resource consultation, survey and monitoring assistance, streambank restoration
  - State environmental agency: permitting, technical assistance, grant funding
  - State fish and game agency: permitting related to state-listed species, technical assistance, funding
  - Local governments: runoff management, low impact development policies, apply to fed/state funding opportunities
  - Fire Battalion Chief: Rx burn assistance (permitting, equipment, manpower)
- ◎ Others
  - Academic partners: research, technical assistance, monitoring
  - Water users: implementing improved water conservation practices
  - Riverburg-Blue River Stewards: promoting a water conservation program—outreach and education; providing volunteer labor for vegetation management and citizen-science monitoring program
  - Friends of Azure Bay NWR: volunteer labor for vegetation management, funding
  - Recreational anglers NGO
  - Big Blue Ag Project landowner: improved land management practices
  - Bird Joint Venture: identify restoration actions, funding opportunities

## Tools in the toolbox



- ◎ Prescribed fire for control of invasive species in marsh.
- ◎ IAAs between federal agencies to move funds.
- ◎ MOUs and MOAs between partners to formalize partnerships, memorialize responsibilities and commitments.
- ◎ Citizen-science initiatives to educate and engage the community as well as share in the work.
- ◎ Federal incentives programs to encourage good land management practices that improve water quality and flow, as well as species diversity.

## Restoration Alternatives

- ⦿ **Alternative A:** No action. Conditions in the estuary would be expected to remain on the same trajectory of impaired and declining conditions. Water quality would remain impaired and diversity would likely continue to decrease.
- ⦿ **Alternative B:** Pursue entire suite of possible projects (in estuary, upstream in river, and upland within the watershed).
- ⦿ **Alternative C:** Defer restoration for indefinite period of time in order to continue study.
- ⦿ **Alternative D:** Focus solely on select suite of in-estuary projects: tide gate and levees and marsh diversity projects (invasive removal).

## Monitoring

- ⦿ Pre-restoration: will rely on baseline information from the Refuge as well as NRDA pre-assessment and assessment data.
- ⦿ Compliance monitoring will be conducted during restoration.
- ⦿ Post-restoration monitoring will include performance monitoring as well as for assessing progress toward biological objectives.
- ⦿ Success criteria will be based on plant and animal species recruitment and abundance, with activities to include vegetation transects and bird surveys.
- ⦿ Elevation monitoring will be conducted in areas previously experiencing subsidence behind the levees.
- ⦿ Water quality monitoring will be conducted under a university CESU agreement.

## Environmental Compliance

- ⦿ EA to determine if an EIS is needed.
- ⦿ Compliance with other laws will be evaluated as part of NEPA process.
- ⦿ We expect needing authorization under CWA Section 404/Rivers & Harbors Act Section 10 for any dirt-turning activities with the levee; ESA (Section 7, Section 10); NHPA Section 106 (SHPO and THPO consultation); state dredge and fill permits; CZMA consistency determination for federally-permitted and – funded activities in the coastal zone; NPDES Section 402 if using herbicides to address the invasive plant species; burn permit.

## Environmental Compliance

- ⦿ Potential need for incidental harassment authorization under the MMPA, depending on disturbance to the Big Blue sea lion



## Funding Sources

- ⦿ NRDA Trustee Council
- ⦿ Friends, in partnership with industry
- ⦿ Local government will apply for state and federal grants (federal, state, private foundations)
- ⦿ Federal funding (including NRCS for agricultural operations and FWS partners program)
- ⦿ In-kind services (education and outreach, volunteer labor, citizen science) provided by the Friends and River Stewards
- ⦿ Creative fundraising through galas, festivals, merchandise, races, adopt-a-salmon, Coho Kolsch

## Outreach Plan

- ⦿ The FWS Partners biologist will serve as the outreach lead and single point of contact
- ⦿ Initial workshop with potential partners identified by the steering group (invitation-only)
  - Discuss restoration concepts
  - Share interests
  - Identify other potential partners
- ⦿ Regular follow-ups
- ⦿ Prior to public outreach, develop website and press releases, cultivate local media contacts
- ⦿ Engage public through periodic townhall-style meetings to present concepts and planning developments, solicit input, explain governmental processes and advise of opportunities to comment pursuant to law