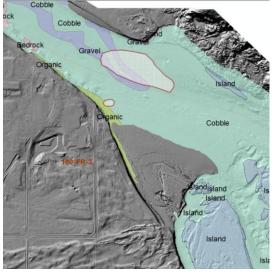
Oregon Department of ENERGY

Natural Resource Damage Assessment at Hanford

Sara Lovtang November 13, 2025









OUTLINE OF PRESENTATION

- Brief explanation of Natural Resource Damage Assessment
- History of Hanford Natural Resource Trustee Council
- Brief update of NRDA at Hanford
- Questions



NATURAL RESOURCE DAMAGE CLAIMS



- NRD claims are brought by governments on behalf of their public for harm to natural resources
- Hanford trustees use CERCLA guidelines to determine injury:
 - From exposure to contaminants;
 - From physical damage caused by cleanup;
 - From time of release (or December 1980);
 - Until ecosystem services are restored.



REMEDIAL ACTIONS vs. NRDA RESTORATION

Remedial actions:

- Eliminate/control risks to human health and environment
- Preliminary Assessment/Site Inspection uses existing data on risks
- Remedial Investigation/Feasibility Study does extensive sampling and analysis, modeling, and other data methods
- Remedial Design/Remedial Action ensures no unacceptable risks to human health or the environment from remaining contaminants

NRDAR:

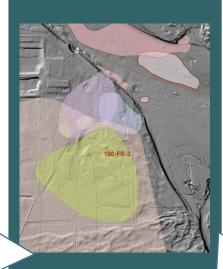
- Restore injured natural resources to baseline conditions
- Preassessment Screen uses existing data on injuries
- Assessment Plan identifies sampling, analysis, etc. to quantify injury
- Restoration and Compensation
 Determination Plan focused on
 returning ecosystem services to pre release conditions

NATURAL RESOURCE DAMAGE CLAIMS

Source Release

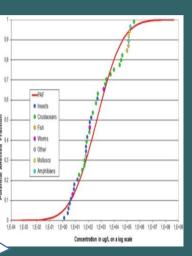


Pathway Migration

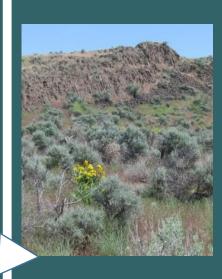








Restoration quality and seed a





NATURAL RESOURCE DAMAGE ASSESSMENT AT HANFORD

Eight trustees in the Hanford Natural Resource Trustee Council

- 2 states (Oregon and Washington)
- 3 Native American tribes (Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe, Yakama Nation)
- 3 federal agencies (US Department of Energy, US Fish and Wildlife Service, National Oceanic and Atmospheric Administration)



TIMELINE: NRDA AT HANFORD

- 1993: Hanford Natural Resource Trustee Council trustee organizations invited by DOE
 - Advise in cleanup and future use of Site
- 2007: Complete pre-assessment screen and determination
 - Decision to proceed with formal NRDA
- 2012: legal settlement requires DOE to fund trustee participation upfront
 - HNRTC becomes more active
- 2013: Injury Assessment Plan approved

TRUSTEE COUNCIL TASKED WITH:

- Define scope and scale of injury at Hanford;
- Design restoration to return injured resources to baseline (as if no releases occurred);
- Share restoration plans, with public review period;
- Work cooperatively, but be prepared for litigation.



WORKING GROUPS WITHIN HNRTC

| | Source & | Identify | Quantify | Restoration | Assess \$ |
|---------------------|----------|----------|---------------|-------------|-----------|
| | Pathway | Injury | Injury | Planning | Damages |
| Groundwater | X | X | X (min range) | X | |
| Aquatic/near-shore | X | X | | | |
| Terrestrial | X | X | | | |
| Tribal service loss | | | | | |



GROUNDWATER CLAIM

Injury minimum range, 2017

- Total unconfined aquifer at Hanford Site
 - volume = 3.5 km^3 (2.84 million acre-ft.)
- 2014 contaminated aquifer
 - volume = 0.55 km^3 (445,890 acre-ft.)
 - 0.04 km³ in the 100 area
 - 0.51 km³ south of 100 area
- 17% of aquifer contaminated above thresholds in perpetuity
- Estimated annual recharge is 6,000-18,000 acre-feet per year
- Future impacts from tanks leaking into vadose zone?

CURRENT FOCUS

- Groundwater restoration planning proposing projects;
- Determining areas and magnitude of contaminated groundwater upwelling into river;
- Other injury to river, including physical disturbance and population changes;
- Opportunities for early restoration (in shrub steppe);
- Tissue thresholds



ESTIMATING INJURY IS COMPLICATED

- Challenges in:
 - Getting data from DOE/contractors
 - Agreeing on assumptions (legal and technical)
 - Estimating past injury using old/incomplete data
 - Estimating future injury (cleanup is not complete)
 - Estimating "but for the release" (differing interpretations)
 - Estimating recovery time to baseline state
 - Simplifying complicated analyses in large legal settlement
 - Building trust with responsible party



WHY HNRTC HASN'T MOVED FASTER

- Under-funded: 2014 Project Execution Plan forecasts completion of Restoration Plan in 2024 – IF fully funded.
- All data/analyses must go through quality control
- Contracting through DOE is slow (sometimes years)
- The HNRTC operates under consensus

