

FY 2022 Hanford Natural Resource Damage Assessment

Activity and Accomplishment Report

Prepared by the Hanford Natural Resource Trustee Council, March 2023

Summary

This report provides a summary of the Hanford Natural Resource Damage Assessment (NRDA) activities and accomplishments during fiscal year 2022. The Hanford Natural Resource Trustee Council (HNRTC or Council), composed of the State of Oregon, State of Washington, Nez Perce Tribe, Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation (CTUIR), U.S. Fish and Wildlife Service, NOAA, and U.S. Department of Energy (DOE), is implementing the NRDA process at Hanford.

Council work in FY 2022 focused on continuing the injury determination phase of the assessment process. Most of the ongoing or newly-implemented studies are based on the Injury Assessment Plan (IAP), approved by the HNRTC in 2013.

Trustee organizations established Three distinct teams, which have submitted reports (below): 1) Terrestrial Working Group coordinates and advances injury assessment in upland habitats; 2) Aquatic Working Group coordinates and advances the injury assessment in riparian and aquatic habitats; and 3) Other technical trustee teams meet as needed, such as the Data Management Team and teams working on individual scopes of work, studies, or administrative tasks. In addition, trustee attorneys convene as an Attorney Working Group, and senior-level decision makers meet as a Senior Trustee Council.

In FY 2022, HNRTC made progress in these major areas:

- The HNRTC finalized a scope of work (SOW) for contracting NRDA expertise to help with injury assessment and case management.
- The HNRTC worked with the Senior Trustees to clarify priority items for the Attorney workgroup to focus on.
- The Aquatic Working Group assisted in the procurement of the Aquatic Baseline and GW/SW SOW. In addition, a white paper on aquatic bioassays was completed for future reference.
- The HARP Team completed the Phase 1 work for aquatic restoration planning in December 2021.
- The Terrestrial Working Group updated its work plan, began drafting two SOWs (baseline and terrestrial disturbance HEA), continued work on terrestrial data compilation, and had a series of discussions about vadose zone compensability.
- The terrestrial restoration team completed several deliverables associated with Phase 2 work.

The accomplishments report is organized by the technical working groups and major scopes of work. The project execution plan (PEP) is the document the HNRTC has utilized for long term planning and baselining. The document contains study numbers that are references for certain pieces of work for the readers conveyance. This type of cross reference is also used in the Terrestrial and Aquatic workplans.

Terrestrial Working Group: coordinates and advances injury assessment in upland habitats, including upland aquatic habitats

A Terrestrial Working Group (aka Terrestrial Team) formed in February 2020 to focus on a strategic and cohesive approach to assessing terrestrial injury. The working group meets approximately monthly to review information and make decisions needed for execution of injury assessment studies. The working group operated in accordance with its work plan, which was approved in January 2022. There were no terrestrial resolutions passed for FY2022.

Terrestrial Data Compilation (Studies 55 and 56)

The purpose of this work is to evaluate and compile existing Hanford soil and tissue data and to upload NRDA-relevant, quality data into the HNRTC database, Project Portal.

Council Resolution

There were no resolutions in FY 2022

FY 2022 Accomplishments

The working group decided which existing Hanford terrestrial data to continue the contracted data compilation effort into FY 2023. In addition, there were discussions regarding whether HNRTC should acquire any of the data deemed not useable for the River Corridor Baseline Risk Assessment (it's possible some of that data would be informative for the NRDA). The working group also spent time discussing the SESP and HEDR datasets and made decisions on which of those data to compile. Finally, the working group asked Alta to compare biological data in Project Portal to what is in HEIS; their resulting spreadsheet shows there are thousands of biological records that we are missing and could compile if we decide they are relevant to the assessment.

A new contract was awarded for Phase 1 (data review) in May of 2022. Using a list of reports provided by HNRTC, the contractor began reviewing these reports and made a recommendation for which ones to start with. The Council approved the recommendation and the contractor proceeded with Phase 1 for a subset of the reports.. Concurrently, a terrestrial task team began meeting regularly to discuss other terrestrial data compilation needs in order to complete Phase 1 (see discussion below).

Remaining Work, Deliverables, Milestones for FY 2022

After the contractor completes Phase 1, they will move onto Phases 2 and 3. The objective of Phase 2 is to address the formal acquisition process to search for, obtain, or extract original sources of analytical data; including GIS layers, project metadata, maps, images, and other information, that will require any form of manipulation and configuration management to be submitted to the HNRTC data management system in Project Portal. Phase 3 of this project focuses on submitting the acquired data and information into the HNRTC Case User Library within Project Portal. Phase 2 and Phase 3 of the terrestrial data compilation project will continue through at least FY 2023. Recommendations from the Terrestrial Task Team will need to be considered by the Council.

Terrestrial Task Team Work

The Hanford Natural Resource Trustee Council (HNRTC) has been working with contractors to evaluate and acquire existing terrestrial data collected on or near the Hanford Site. This compilation effort has largely focused on data from the major Hanford Site remedial investigations (e.g., River Corridor Baseline Risk Assessment). Most of the analytical and field data acquired are from waste sites listed in the Waste Information Data System (WIDS) and represent various stages of cleanup. The Council's Project Portal environmental database does not include all terrestrial data collected by DOE and its contractors. Its expected that a NRDA Expert will be able to provide recommendations, guidance and assistance to the Terrestrial Team and the HNRTC on future tasks.

Council Resolution

There were no resolutions in FY 2022

FY 2022 Accomplishments

In late 2021, the HNRTC approved the formation of two terrestrial task teams that would focus on the need for and nature of additional terrestrial data compilation from waste sites. One task team was to identify and recommend the types of existing waste site terrestrial sampling data needed for the Hanford NRDAR. The second task team was to identify assertions and assumptions related to waste site injuries for the Hanford NRDA. Because of a high amount of personnel overlap between the two teams, and the benefits of the teams coordinating with each other, it was decided that the two teams would merge and work together.

The goals of the task team were to:

1. better understand the environmental sampling that has occurred at Hanford waste sites over the decades, and clarify which waste site data are available,
2. evaluate whether the Council should compile additional, existing waste site data not already in the Project Portal database (and if so, recommend and justify which particular types of data),
3. develop methodology and line out assertions and assumptions that can be used in place of additional data compilation, and
4. produce a white paper of recommendations for the Council to consider, regarding the compilation of additional data and/or use of assertions and assumptions for terrestrial injury assessment and restoration planning.

The task team met approximately every other week for the first half of 2022 and then focused on writing up their findings as a white paper.

Remaining Work, Deliverables, Milestones for FY 2023

This work is slated to be finished in the FY 2023 timeframe, and outcomes implemented at the terrestrial work group level once agreements are made. The outcomes will influence how much additional data compilation the Council will conduct to populate the Project Portal database.

Terrestrial Disturbance (Study 18a)

The purpose of this study is to assess the nature and extent of injury caused by remedial activities at Hanford Site. This is a complex, multi-year study to assess when and where physical disturbance of terrestrial habitat occurred as a result of cleanup, and to evaluate how long there will be effects into the future where baseline services have not been restored.

Council Resolution

There were no resolutions in FY 2022

FY 2022 Accomplishments

A draft scope of work for this study was started in FY2022. The subcontractor, in coordination with members of the HNRTC, is expected to develop and perform a HEA for CERCLA injuries associated with terrestrial disturbance conducted within agreed upon Hanford Site areas. Specifically, the subcontractor will evaluate the range of CERCLA terrestrial disturbance injuries at agreed upon areas in order to calculate natural resource service losses in discounted terms. There are several important tasks associated with this effort that include geographic and temporal coverage of disturbances, ecological benefits of response or response like actions, current service levels, baseline service levels, and future service levels. This effort will inform inputs for the broader assessment of injuries across the Site. The

analysis methodology shall be consistent with the law, industry standards, and the results will be documented in terms of a range of service losses, based upon uncertainties in the technical inputs.

Remaining Work, Deliverables, Milestones for FY 2023

This work is intended as a multi-year contract. As the scope of work drafting continues, Trustees will need to decide on an area to be evaluated at Hanford which may be the first area to implement work at: 1100 Area, the 300 Area, the 100-BC Area, the 100-K Area, the 100-N Area, the 100-DH Area or the 100-F Area, etc.,

Terrestrial Baseline Scope of Work

The terrestrial environment is a dynamic system that is always changing and so are baseline conditions within it. However, at this point the HNRTC does not have a synthesis of how much and how often baseline conditions change on the Hanford Site and similar, adjacent lands. For example, fire and invasive plants have changed the landscape and receptor uses of that landscape over time.

Council Resolution

There were no resolutions in FY 2022.

FY 2022 Accomplishments

A draft scope of work is underway, with comments on the draft being reviewed. This scope of work focuses on outlining the Columbia Basin ecosystem in Washington State, including receptors, landscape-level changes, point and non-point source pollution, and other NRDAR baseline issues. Many existing summaries of the ecological setting in the vicinity of Hanford have been compiled by the HNRTC and can be incorporated by reference. Subcontractor will be provided relevant information and an initial list of relevant documents and other resources.

There are 4 main objectives:

1. Describing changes in the terrestrial conditions at the Hanford Site and expected receptor distributions during 1944 - 2020. The evaluated area will include the upland aquatic portions of the Hanford Site but not the Columbia River or its riverine islands and riparian shoreline
2. Describing conditions of possible terrestrial reference or control areas
3. Outlining species-specific factors affecting the terrestrial community
4. Develop decision framework for defining Hanford baseline terrestrial conditions

The scope intends that the work product clearly distinguish Hanford operational-related impacts from other major changes affecting the terrestrial ecosystem. The level of detail in the written product shall be similar to a robust background conditions chapter in an Environmental Assessment or Environmental Impact Statement, and the written product should include key graphics, maps, and data tables.

Remaining Work, Deliverables, Milestones for FY 2023

The scope of work development and approval will continue into FY 2023. Once approved by Council the scope will need to be contracted and funded.

Vadose Zone Discussions

The amount of soil or vadose contamination existing in operable areas on the Hanford Site has been estimated but those values contain high uncertainties. Soil geophysical properties and surficial soils <15 feet below ground surface (bgs) present a source of surficial contaminants and represent a risk to any connected resources such as soil dwelling biota and depending on locations present a groundwater and

even surface water issues where groundwater resurfaces. The deeper vadose zone >15 feet bgs extending to saturated zone relate to contamination that has been released or that has infiltrated deeper in soils. This contamination presents a source of contaminants in dry portions of the vadose zone that may exist for eons depending on the contaminants of concern.

Source contamination has the potential to be re-mobilized with increased infiltration of surface water or rising of the groundwater table (i.e., due to Columbia River stage).

Uncertainties related to the total amounts of hazardous substances in surface and vadose zone repositories at Hanford, as well as the potential for future releases or re-release/mobilization of contamination, are an important consideration in the Hanford NRDA.

Council Resolution

There were no resolutions in FY 2022.

FY 2022 Accomplishments

Trustees discussed the report that was completed by Industrial Economics Inc (IEc) and WA entitled . Options for Addressing Vadose Zone Contamination in the Natural Resource Damage Assessment for the Hanford Site (September 2021). Discussions at Council with attorneys were undertaken on the report. Services associated and compensability with the particular resource were discussed. Attorneys acknowledged the complexity and uncertainties surrounding the topic, and it was decided that more attorney discussions could take place at a later time.

Remaining Work, Deliverables, Milestones for FY 2023

More discussions will need to take place with attorneys on compensability, baseline, and services. Trustees will begin framing and developing a scope of work.

Upland Aquatic Resources (Study 60)

Upland aquatic habitats occur outside of the Columbia River floodplain on the Hanford Site. They consist of natural and man-made surface waters. The purpose of this study is to determine where these habitats are located, to identify the resources associated with these habitats, to identify contaminant releases to these habitats, and to identify available environmental sampling data relevant to the NRDA. Because many upland aquatic habitats are ephemeral and/or have seasonal inhabitants, the approach to assessing injury may be unique and different from the rest of the terrestrial contaminant injury assessment.

Council Resolution

There were no resolutions in FY 2022.

FY 2022 Accomplishments

In FY 2022, a small team developed supporting materials and an outline for a scope of work to advance the study. The outline for a scope of work was presented to Council. Council decided to shelve the scope of work until higher priority work like terrestrial baseline and NRDA expertise was underway.

Remaining Work, Deliverables, Milestones for FY 2023

The terrestrial working group will need to decide whether to resume developing a statement of work for this study in FY 2023.

Terrestrial Habitat Restoration Planning (Study 18b)

The purpose of this study is to identify terrestrial habitat restoration metrics and services, develop a crediting framework, and create a process for selecting restoration projects. Following its development of recommendations for terrestrial restoration and preservation crediting in a 2019 report (*“Framework for*

Terrestrial Restoration Planning at Hanford”), the team focused on Tasks 8 and 9 in its Phase 2 funding proposal:

Task 8 – Identify potential terrestrial restoration areas and develop crediting templates;

As part of Task 8, it was important to identify areas of the Hanford Site in need of restoration and the team is using plant species cover as an indicator. Using the findings of its fall 2020 field trip to seven locations on Central Hanford, the team worked with CTUIR’s botanist to compare what was found in 2020 to available vegetative cover and habitat quality maps (which were based on older data). Another Task 8 work product was a HEA crediting spreadsheet based on the shrub-steppe habitat conditions, values, and recovery trajectories identified in the team’s 2019 report. The spreadsheet can be used by trustees to walk through the exercise of applying habitat values and recovery trajectories to areas identified for potential restoration.

Task 9 – Identification of priority geographic focus areas for NRDA shrub-steppe restoration.

For Task 9, the team worked with HNRTC’s GIS analyst to develop potential geographic focus areas for shrub-steppe restoration. The analysis was limited to areas within Central Hanford because relatively more ecological data is available there. The team identified key attributes considered important for identifying restoration areas. The analyst used these attributes, available GIS data, and a simple weighting method to identify polygons or geographic focus areas. While not a consensus product or final selection, it was a valuable exercise for understanding what different trustees consider important.

Council Resolution

There were no resolutions in FY 2022.

FY 2022 Accomplishments

The Study 18b team finished working on two deliverables that were part of the second of two phases of shrub-steppe restoration planning. In June of 2022 the team submitted a report entitled “*Field Evaluation of Data Layers for Potential Use in Identifying Non-native Habitat States Across the Hanford Site*”. Council agreed to accept the document in August 2022 as a final work product for Study 18b Task 8. The Study 18b team also completed a deliverable for Task 9 and submitted a report entitled: “*Terrestrial Restoration Planning at Hanford Site: Identification of Potential Geographic Focus Areas for NRDA Shrub-Steppe Restoration*” in February 2022. Council approved the final report in February 2022. Both reports were uploaded to Project Portal.

Remaining Work, Deliverables, Milestones for FY 2022

Study 18b was paused in FY 2022 so that trustees could focus on injury assessment. In future FYs the 18b team work will be re-evaluated and scoping will be decided. Future work that could be done to complete the study is identified in a note-to-file saved in the team’s folder on Project Portal.

Aquatic Work Group: coordinates and advances injury assessment in riparian and aquatic habitats along the Columbia River

The Aquatic Team focuses on a strategic and cohesive approach to assessing aquatic injury. The team met approximately monthly for discussion of progress and to make decisions needed for the execution of injury assessment studies. As part of Council's work planning effort, a new Aquatic Work Plan was finalized in FY 2022 and incorporated NOAA's Hanford Aquatic Administrative Record Structure (HAARS) document for near term and short term planning. The structure of the aquatic workplan was revamped in FY 2021 and has carried over to the FY 2022 aquatic workplan.

The major aquatic work items for FY 2022 included:

- Procurement for the Groundwater to Surface Water Evaluation SOW
- Continue work on aquatic data acquisition (Hard Copy data digitization for SESP)
- Development of an aquatic workshop for FY 2023
- Procurement for the Aquatic Baseline Conditions SOW
- Continue development of the Nearshore Habitat (formerly Chinook Spawning Habitat) Evaluation SOW

Hanford Sediment and Pore Water Toxicity Studies Review (Study 4)

The goal of this technical memo is to evaluate results of Hanford aquatic-oriented bioassay toxicity studies for use in the injury assessment. The River Corridor Baseline Risk Assessment used some data from these bioassay reports to draw conclusions for a risk assessment; these data in conjunction with others must be assessed for appropriate use in a natural resource damage assessment. The Trustees will apply the study results during injury determination and quantification.

Council Resolution

There were no resolutions in FY 2022.

FY 2022 Accomplishments

The review of original bioassay reports and summaries of other bioassays was accomplished in FY2021, and a draft technical memo was completed in FY 2021. It was initially identified as a potential contracted review/study in the IAP, however the Aquatic Team agreed individual trustees could develop a technical memo in an efficient manner. The technical memo went through several revisions but was completed in June of 2022. In the end, the memo provides the HNRTC's best understanding of the aquatic bioassay work that was conducted and raises several questions that will need to be considered in future work.

Remaining Work, Deliverables, Milestones for FY 2022

The report was completed in FY2022 and no work remains on the memo.

Aquatic Data Compilation (PEP Study 51)

The Council initially approved funding for Aquatic Data Compilation in 2017 (Resolution 2017-R-02). Since the completion of Phase 1 of the aquatic data compilation project in FY 2019, work has continued with identification and compilation of data through continued funding of contractors. The purpose of this work was to compile and review analytical data for their utility, quality, and relevance to injury assessment questions. Initial work resulted in the compilation and review of 19 data packages (or data utility assessments) that represent the most significant analytical data sets available for the Columbia River. In the past year, older SESP radiation data in air, soil, water, and biota was sorted so Trustees could decide which parcels of hardcopy data should be digitized and added to the HNRTC electronic database. This effort is about 25% complete and critical for performing time-series contaminant analyses at sampling stations and in selected geographic areas.

The second phase of the Aquatic Data Compilation continued into FY 2020. The objective of Phase 2 of this work is to address the formal acquisition process to search for, obtain, or extract original sources of analytical data; including GIS layers, project metadata, maps, images, and other information, that will require any form of manipulation and configuration management to be submitted to the HNRTC data management system in Project Portal.

The HNRTC lost the support of its data compilation contractor at the beginning of FY 2021, which was a significant setback for the completion of this task. The HNRTC developed a new scope of work to go out for bids to complete additional data compilation. Two major aquatic-related tasks included compiling specific pre-1980 site environmental surveillance (SESP) data and following up on open actions identified in the original data utility assessments already completed. The procurement of a new data compilation contractor was completed in FY2022.

Council Resolution

2022-R-02 The HNRTC increased the not to exceed funding amount from \$220,000 (2021-R-03) to \$315,000 in order to adjust to responses from the procurement process.

FY 2022 Accomplishments

Alta Sciences and Engineering Inc. was selected as the data compilation contractor for the Council in Spring FY 2022. Alta immediately began uploading the Columbia River Cumulative Impacts Assessment (CRCIA) data (DUA #47). The aquatic team also helped resolve numerous questions from our data management team regarding the CRCIA data before final acquisition. In addition, data from SESP pre-1980 has been queued up for data digitization and upload into the Project Portal environmental database.

Remaining Work, Deliverables, Milestones for FY 2022

The contract runs through FY 2023 and the work to finish the acquisition and uploading of data will continue through then.

Groundwater to Surface Water Evaluation (PEP Study 32)

The development of the groundwater to surface water evaluation SOW has been ongoing for several years. A small team of HNRTC groundwater experts began meeting in the summer of 2020 to review the SOW. The final SOW's tasks include:

1. Develop a range of analyses to extrapolate size and concentration of contaminants in the river based on shoreline data.
2. Identify the spatial extent of the river that is expected to have concentrations in the benthic zone pore water above the threshold levels.
3. Map the area relative to multiple scenarios for thresholds, background, regulatory contaminant cleanup levels.
4. Evaluate concentrations relative to time-series of events, such as known or suspected contaminant releases, releases during remediation, or seasonal river fluctuations.
5. Include extrapolated future impacts where supported data is available.

The funding for the scope of work was approved in FY2021. However, through the procurement process it was revealed that more funding would be required to implement the scope of work.

Council Resolution

2022-R-07 The HNRTC increased the not to exceed amount from \$225,000 (2021-R-05) to \$487,000 based on the results of the procurement process.

FY 2022 Accomplishments

The selection of S.S. Papadopoulos & Associates, Inc. was a major step forward to completing this work. It required substantial input from the aquatic team during the procurement process to provide the correct information and clarify the desired deliverables.

Remaining Work, Deliverables, Milestones for FY 2022

The substantial work for this contract will happen in FY 2023 and continue into FY 2024.

Aquatic Baseline Conditions (PEP Study 7)

A small team of the aquatic workgroup began drafting the Aquatic Baseline SOW in FY 2021. The goal of the aquatic baseline SOW is to help develop a framework for determining baseline in the aquatic environment. Due to the large timespan of releases, there is a wide range of physical, chemical, or biological conditions that would have or potentially will exist at the site but for the release of hazardous substances. Baseline is an integral piece to conducting a natural resource damages assessment and this scope of work can also serve as a model for the terrestrial team to consider.

Council Resolution

2022-R-01 The HNRTC recommend DOE fund the procurement of the Aquatic Baseline SOW with a not to exceed limit of \$150,000.

2022-R-05 The HNRTC increased the not to exceed funding limit from \$150,000 (2022-R-01) to \$295,000 based on results from the procurement.

FY 2022 Accomplishments

The HNRTC approved the Aquatic Baseline SOW and moved it to procurement. The selection of Abt Associates was a major step forward to completing this work. During the procurement process, members of the aquatic team were significantly involved to provide information and clarify questions with the procurement team. In addition, the HNRTC decided to raise the funding level to \$295,000 based on the results of the procurement process.

Remaining Work, Deliverables, Milestones for FY 2022

The substantive work of the SOW will not begin until FY 2023 and the contract is expected to complete fully in FY 2024.

Aquatic Workshop

The HNRTC approved funding for an aquatic workshop in FY2021 (2021-R-01) with a focus on benthic habitat. The work was given a lower priority than the Baseline and GW/SW SOW, however a focused effort began in the second quarter of FY 2022 to begin planning. The small group of the aquatic team helped develop summary slides to discuss different sources of data that exist at Hanford Site for the benthic environment. In addition, a 3-session outline was developed. Initial work to identify experts began in FY2022 but will continue in FY 2023

Council Resolution

No resolutions in FY 2022

FY 2022 Accomplishments

A small group developed slides summarizing information and data regarding different parts of Hanford benthic habitat. In addition, a 3-session outline has been developed and initial effort for expert identification has begun.

Remaining Work, Deliverables, Milestones for FY 2023

Finalization of the workshop format, material, and experts. The workshop is not expected to occur until the end of FY 2023.

Hanford Aquatic Restoration Planning (HARP) advances restoration crediting methods and planning for aquatic habitat

Hanford Aquatic Restoration Planning (Study 54)

The goal of HARP is to initiate aquatic restoration planning and develop an aquatic restoration crediting framework. Review of literature on ecological aquatic resources and services was led by NOAA with frequent participation by trustee organizations and contractor support. In Phase I (Literature and Data Review) the HARP team laid out in 3 tasks the foundation for development of a framework for crediting aquatic restoration. A future phase of the study would entail creating the crediting framework based on the findings of this first phase of the study.

Council Resolution

There were no resolutions in FY 2022.

FY 2022 Accomplishments

Trustee Council review of final deliverables from Task 3 of Phase 1 occurred in early FY 2022. Final Task 3 deliverables were completed for upload to Project Portal before December 31, 2021. These activities conclude Phase I of the Hanford aquatic restoration planning scope of work.

Remaining Work, Deliverables, Milestones for FY 2023

The HARP team does not intend to proceed with Phase II in FY 2023. A future phase of the study (expected to be implemented starting in FY 2024) would entail creating the aquatic restoration crediting framework based on the findings of this first phase of the study.

Tribal Lost Service (TLS) Studies

The three Hanford Tribal trustees [Yakama Nation (YN), Nez Perce (NPT) and Confederated Tribes of the Umatilla Indian Reservation (CTUIR)] have each continued studies to determine the nature and extent of potential impacts of Hanford releases on the cultural services provided to tribal communities by natural resources. These services may have been diminished in quality and/or are no longer present and are in need of restoration efforts, or were interrupted by the presence of contaminants released by Hanford operations.

Yakama Nation

The Yakama Nation began work on the update of the TLS workplan in fiscal year 2021. Major revisions are being pursued for some sections while others remain as originally drafted. Remaining clarity on how the work fits into the rest of the ongoing assessment is being evaluated. The Yakama Nation is working on a process to carry over funding originally approved for TLS to our new cooperative agreement.

Nez Perce Tribe

The NPT study was completed at the end of FY 2018. A SOW for a Restoration Plan for Tribal service losses was approved by the Council in February 2019. The project was approved for funding in the 4th quarter of FY 2020 and NPT received funding for one year of the 3 year project. NPT initiated hiring 2 of the 3 contractors identified in the project SOW and began preparation for hiring the third contractor on an open, competitive bid process.

For the hiring of the third contractor, the Team developed evaluation criteria to evaluate proposals sent in response to RFP. The Team evaluated the proposals for the third contractor, an Economist, and made the selection. The contract was approved by the Nez Perce Tribal Executive Committee by resolution signed August 26, 2022. The Team hosted meetings in September and October of 2022, with the three contractors to discuss implementing measures needed to bring the contractors up to speed to adequately have discussions regarding the development of strategies for the NPT Restoration Plan.

Confederated Tribes of the Umatilla Indian Reservation

The CTUIR TLS report is tasked under the CTUIR Department of Natural Resources (DNR), First Foods Policy Program (FFPP). The intent is to ensure the safety of CTUIR tribal members who will practice their treaty rights at Hanford as a part of the NRDA settlement.

The ongoing TLS report for the 100-F Area is focusing on a successful run of the Risk Calculator Tool (The Tool). In fiscal year (FY) 2022 CTUIR contractor, Alta Engineering Inc. (Alta), and their subcontractor, Innovate!, worked with the CTUIR GIS to run the tool and map. There continues to be glitches that required more time than is available. In 2020, the CTUIR worked with DOE-RL Finance representatives to ensure language in the CTUIR-DOE Cooperative Agreement was clear that Alta is a sole source contractor, so when budgets were released this language would be present. However, budget language did not include sole source contractors. Thusly, work on the TLS was delayed to the second quarter of the FY. Given the 2023 budget is expanded to 2025, delays will be less likely.

The CTUIR model holds thousands of data layers, it was created by the CTUIR Contractor and applied to The Tool in FY 2021 to generate the risk layers and overlaying of the results of cultural activities and other areas of concern to calculate risk. CTUIR GIS and CTUIR First Foods Policy Program worked together on a SOW to address glitches in the system from FY 2021, but were incomplete due to the late release of funds. The Tool is one part of the 100-F Area study and that area will be completed by FY 2024.

In FY 2022, FFPP staff and Alta edited the TLS narrative in the 100-F Project. The DNR Umatilla River Vision and Upland Vision, as well as the Tribal Ecological Knowledge management practices have been applied to the TLS 100-F report. Also in FY 2022, staff participated in one Hanford Site visit in September 2022. Two CTUIR FFPP staff were hosted by HMIS staff to the 100-F site and surrounding areas.

Project Management

Trustee Council Operations

Stacy James (U.S. Fish and Wildlife Service) was Chair of the Council for FY 2022, and McClure Tosch (Yakama Nation) was Vice-Chair. For FY 2023, McClure Tosch will serve as Chair and Troy Baker (NOAA) will be Vice-Chair. The full Council generally met on a monthly basis in FY 2022, to plan and oversee Hanford NRDA activities. A key Council objective for FY 2022 was to make improvements to Council function, including operational agreements, planning, and attorney workgroup priorities. The Council also was able to approve the NRDA expertise, aquatic baseline, and GW/SW scopes of work, representing a large amount of work.

The FY 2024 budget request was formulated around HNRTC's PEP and team workplans. The submission of the budget request to DOE was completed in Spring 2022 with consensus among all trustees.

Data Analysis (PEP Studies 1, 2,3 14, 15a, 16, 17, and 50)

The Council approved funding in FY 2021 for a task order in which PNNL assisted with technical refinements and methods of a data analysis SOW. This SOW combined several PEP studies and touches on all habitats (terrestrial and aquatic) for the assessment (additional information later in the Project Management section of this report). After Council approved the SOW, PNNL began the work in January, 2022, and work has been estimated to occur over a two-and-a-half year period.

Since that time there have been delays in tasking caused primarily by delays in acquiring data. PNNL has begun with Task 10, with Tasks 1, 2, 3 and so forth to follow (see list of tasks below).

Major tasks for the SOW include:

1. Identify additional background data and gage suitability of thresholds;
2. Media threshold selection by graphing distribution of Site data for COC/media combinations;
3. Compare site data to thresholds and identify provisional assessment areas;
4. Compare screened Site data to background data;
5. Receptor selection for tissue threshold development;
6. Develop tissue thresholds for selected receptors;
7. Model doses and tissue concentrations for selected receptors for which there is no tissue data;
8. Compare thresholds to actual and modelled receptor tissue concentrations;
9. Differentiate background and Hanford Site anthropogenic radionuclides;
10. Analysis of data from previous bioassays conducted on the Hanford Site.

These tasks were informed by studies listed in the Injury Assessment Plan, and referred to in Council's PEP

Aquatic Data Analysis (PEP Studies 1 & 2)

The purpose of these studies is to evaluate existing/compiled media and biota data to (1) compare measured and/or modeled concentrations of Hanford Site contaminants of potential concern (COPCs) to site-specific effects thresholds for sediment and water previously developed by HNRTC, (2) identify COPCs and aquatic receptors that may be most strongly associated with potential injuries (e.g., by virtue of having a greater magnitude and/or exceedance of effects thresholds), and (3) identify locations with higher or lower levels of exposure to hazardous substances, to help inform site selection in potential future injury studies.

Comparison of Aquatic Tissue Concentrations to Effects Thresholds (PEP Study 3)

The purpose of this study is to determine potential past, current, and future injuries to aquatic biota based on comparisons of measured tissue COPC concentrations to literature-based effects thresholds. This effort will also identify COPCs that may be most strongly associated with potential injuries (e.g., by virtue of having a greater magnitude and/or exceedance of effects thresholds). A geospatial analysis will help identify species and/or locations with higher or lower levels of exposure to hazardous substances, which may help inform site selection in potential future field studies of aquatic biota.

Council Resolution

There were no resolutions in FY 2022

FY 2022 Accomplishments

PNNL's Data Acquisition Plan, a search of Hanford data requested by the Council, the Task-10 Task Plan, and data for Task 1 and Task 10 were acquired (following DUAs). A revised timeline for the data analysis tasks will be provided by PNNL, which will reflect the delays in starting the work and the rearrangement of the order of the tasking.

Remaining Work, Deliverables, Milestones for FY 2023

This is a multiyear SOW which will be ongoing for the next several fiscal years and require trustee participation. None of the tasks were fully completed in FY 2022.

Data Management

Data management is essential to the injury assessment process. As such, the HNRTC operates and maintains a data management system as outlined in the Data Management Plan approved by the Council. Data management activities performed during FY 2022 included: 1) implementing, operating and maintaining a data management system; 2) providing data and document management; 3) GIS data stewardship; 4) quality assurance; and 5) data access coordination.

Council Resolutions

2022-R-02: Council recommend DOE expend up to \$315,000 to procure a contractor to complete the terrestrial and aquatic data compilation as described in the scope of work.

2022-R-09: Council recommend DOE authorize up to \$50,000 to fund HMIS's contract to operate and maintain the Data Management System.

2022-R-08: Council recommend DOE authorize up to \$388,000 to fund HMIS's contract for data management and GIS services.

FY 2022 Accomplishments

Notable HNRTC Data Management and GIS activities in 2022 included the start-up of a new data management and GIS services consultant, development and update of critical data management tracking tables, development and presentation of a Data and GIS Management workshop focused on DUA Data within and outside of the Project Portal Data Module and included user training, historical analytical data acquisition and upload to the Project Portal Data Module, and project-specific data exploration and data visualization support.

HNRTC Data Management-oriented work products included:

- "Data Management July 2022 Workshop" Webinar (including video recording and PowerPoint presentation saved to Project Portal)
- Updated blank/annotated template for Data Utility Assessment (DUA) process

- Improved Project Portal organization (created new DUA folder) and updated tracking spreadsheets
- Compiled information in a tracking table on various datasets (e.g., RCBRA not-usable, RCBRA tox, etc.) saved in the Project Portal Workspace that are not loaded in the Environmental Database, presented the information at Council meetings
- Prepared recommendations and presented information at Council meetings about past DUA data with outstanding data upload issues
- GIS “README” file and detailed spreadsheet describing the contents, origin, and location of the large GIS imagery files (available via flash drive) saved to the Project Portal Workspace/GIS Resources folder
- Created “README” files explaining the ‘Alicia Gorton’ coordinate data and unit standardization (wet weight vs dry weight)

HNRTC Project Team-Specific data management/GIS support and work products included:

- Data, documentation, graphic, and GIS support for numerous meetings and presentations
- Various exploratory data acquisition and summary tables for various WIDS sample types (sample collection purpose), including Characterization, Vertical Profile, Variance, and Confirmatory (Terrestrial Data Task Team)
- Created comparison table(s) of Project Portal vs HEIS biota data and investigated numerous discrepancies (Terrestrial Data Task Team). The end product contained README notes and was presented at working group meetings (Terrestrial Team)
- Data visualization support for the Terrestrial Data Task Team, including GIS visualization/mapping, uploading figures to Project Portal, informal reporting, and presentation (Terrestrial Data Task Team)
- Summarized all prior GIS work related to aerial rad surveys and presented findings during Terrestrial Team meeting, uploaded georeferenced figures and presentation to Project Portal (Terrestrial Team)
- Created “README” files explaining the terrestrial data visualization figures to Project Portal (verification, in process, characterization, and soil depth figures) and uploaded figures to Project Portal (Terrestrial Data Task Team)
- Review of CRCIA dataset(s) and revisions to DUA0047 form (Aquatic Team)
- Review and submission of DUA0048 (Bioassays) and DUA0049 (Background) to Project Portal (Terrestrial Team)

Remaining Work, Deliverables, Milestones for FY 2023

Trustees will continue to support the implementation, operation and maintenance of the Council’s data management system. This includes hiring contractors to provide management of data, documents and GIS data layers; quality assurance; and data access coordination. Data management activities for FY 2023 are expected to involve technical coordination between the Trustees, maintaining data sets and data quality, coordination with Data Management Solutions (DDMS), updating critical data management system documentation, and supporting PNNL and other consultants on study-specific projects as contracted data analysis work begins. FY 2023 data management activities will also include the revision of the HNRTC NRDA Data Management Plan, Quality Management Plan, and Content Submission Standard Operating Procedure documents, including appendices.

Facilitation Services

Facilitation services were procured at the end FY 2021 with the selection of Ross Strategic. Facilitation services helps the HNRTC conduct the natural resource damage assessment by shouldering a large part of

the administrative burden such as meeting scheduling, agenda development, tracking decisions/actions, and following operating procedures.

Council Resolution

2022-R-06: Trustees approved an amount not to exceed \$159,340 for facilitation services for Council activities throughout FY 2023.

FY 2022 Accomplishments

Facilitation services were provided for all full Council meetings in FY 2022 and for several Senior Trustee meetings. The facilitation team assisted the Council in coordinating and conducting Council meetings and maintaining Council records. Specific tasks included scheduling meetings, preparing agendas, tracking action items and maintaining logs, issuing meeting materials, facilitating meetings, preparing meeting summaries, and supporting the Council in issue resolution.

Substantial progress was made in updating the Council Administrative Record with Trustee decision-making and documentation of batches 1 – 3 more than half-way complete. The facilitation team also made substantial progress ensuring all past resolutions, meeting summaries, and meeting materials were obtained and uploaded to Project Portal. The facilitation team helped the Council launch a conversation on revisions to their Operational Agreements to bring them up-to-date with current practices, clarify the meaning of abstentions (at the request of the Senior Council) and clarify and update language on Council roles such as the point-of-contact. A process to update the Council public website was begun.

Remaining Work, Deliverables, Milestones for FY 2023

In FY 2023, the facilitation team will provide facilitation services to the HNRTC and the Senior Trustees. The facilitation team will work with the Council to complete the few remaining decisions needed to complete Administrative Record batches 1 and 2, make a determination as to how to proceed with batch 4, and deliberate and reach a decision on whether and how to update the Administrative Record approach and process. The update to Project Portal to capture all past work will be completed. The facilitation team will work with the Council to complete the revisions to the Operational Agreements and will complete the update to the Council public website.

NRDA Expertise

The non-federal trustees presented the idea of a NRDA expertise contractor in FY2020 and the discussions evolved into a NRDA expertise contractor for the entire Trustee council. The goal of the NRDA expertise SOW is to provide the HNRTC ready access to a contractor with experience in injury assessment and to help provide ideas and input into the assessment. Ultimately, the HNRTC will make final decisions on how to proceed with the work but expert advice and access to experts will help expedite the process.

Council Resolution

2022-R-08 The HNRTC approved the NRDA expertise SOW and authorized DOE spending up to \$500,000 on procurement for a NRDA expertise contractor.

FY 2022 Accomplishments

The HNRTC was able to resolved the priority work to focus the NRDA expertise contract on first and then created the ability for option years. The final scope of work had support for the entire HNRTC plus three specific aquatic tasks. The passing of the funding resolution at the end of FY 2022 moved the SOW to DOE contracting for final review.

Remaining Work, Deliverables, Milestones for FY 2023

In FY 2023, DOE will work with the HNRTC on getting to a final procurement package for the SOW. Once bidders have responded, members of the HNRTC will be allowed to review the bids as long as federal procurement laws are followed. In addition, once procurement is completed the NRDA contractor will be integrated into the HNRTC's work.

Attorney Working Group

The implementation of a NRDA requires that the trustees consider the interplay of legal and technical issues in injury determination and quantification and in developing restoration plans for the injured resources. In order to facilitate discussions and address complex legal issues important to advancing the assessment process, the HNRTC agreed in FY 2018 to establish an Attorney Working Group.

Council Resolution

There were no resolutions in FY 2022. DOE provided funding for the startup of the working group in FY 2019 and FY 2020 in accordance with the HNRTC budget. Subsequently, attorney expenses are being included in individual trustee participation agreements with DOE.

FY 2022 Accomplishments

Department of Justice (DOJ) and trustee attorneys convened in virtual meetings to continue discussions of broad legal principles bearing on the assessment process. The discussions focused on (1) the development of a "practical working understandings" approach to legal principles where appropriate, (2) development of an injury assessment screening tool based on CERCLA and Department of Interior NRDA rules to guide the selection of more detailed application of available assessment resources to priority and compensable injuries, (3) the identification of "test cases" for application of the screening tool, and (4) the identification of information requirements to run the test cases from available DOE-managed data bases. In addition, the attorneys have, at the request of senior trustee representatives, begun a process of coordination of the 2013 settlement agreement "baselining" commitments with the practical realities of conducting a NRDA in the face of scheduling and funding uncertainties.

Remaining Work, Deliverables, Milestones for FY 2023

Attorneys will continue to work with technical trustees to test and implement the injury assessment screening tool as a means of integrating legal and policy issues in the finalization of injury determination and quantification actions, particularly with respect to terrestrial and aquatic injuries. The attorneys will also work on implementation of the "practical working understanding" concept.

Problems/Challenges in FY 2022

The HNRTC has difficulties with long term cost estimation/planning due to the high degree of uncertainty in what projects will be implemented within any given fiscal year. This has created a lack of full implementation of part of the 2013 settlement agreement. The most recent version of the PEP did not include the long term baseline section and did not have a solution of how to address it. However, HNRTC did identify the item as requiring attorney workgroup support and it will be worked on in FY2023.

The HNRTC had several contracts run into different procurement issues. Regardless of the issues, it all resulted in delays in contractors being selected so work could begin. This is not something that HNRTC can resolve but it is important to consider when looking at long term planning and schedules.