

# Tribal Cultural Landscapes: A Case Study for the North Oregon Coast

Today we find ourselves at the nexus of converging concerns for renewable energy sources, population growth, and global sea level changes. The resulting image of the landscape is one of potential and dramatic change over the next several generations. To paint the picture;

- Currently more than 39% of the US population lives in coastal based counties (2013- National Coastal Population Report: NOAA),
  - This is projected to increase by 10% by 2020 (NOAA 2013)
- By 2100 it is projected that ocean levels will rise 1-4 Feet (0.3 - 1.2 meters) (2014)
- Simultaneously recent Executive Orders<sup>1</sup> issued from the White House call for an ‘shift to renewable energy sources’
  - This has led to a greater interest and exploration of maritime based energy sources.

The likely outcome is increased pressure and associated impacts to cultural resources of significance to Tribal and Indigenous populations; particularly those at or near coast lines.

Recognizing the pressures currently underway and seeing the results of similar impacts over the past decades it has become a critical mission to identify potential impacts zones and where possible bring to light lessons previously learned. To this end The Confederated Tribes of Grand Ronde partnered with two other Tribes on a Bureau of Ocean Energy Management (BOEM) project administered by NOAA’s Marine Sanctuaries Program.

Understanding the types and locations of significant archaeological and cultural resources is essential to their preservation, protection and consideration during the planning process for offshore renewable energy development. The goal of this project is to develop a proactive approach to working with Native American Communities and identify areas of Tribal significance that need to be considered in the planning process. Information from this effort will help facilitate decision making processes that take into consideration the importance of these locales. It also gives Tribal communities the ability to better convey understanding of place, during regional energy planning.

At the root of this project is a desire to develop a tool for Tribes and Agencies to communicate more effectively with each other about Cultural Resources – specifically those resources at risk of adverse impacts by offshore energy projects. To accomplish this the Tribes developed the concept of Tribal Cultural Landscapes (TCL) into a methodological framework.

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<sup>1</sup> Executive Order 13514 - Focused on Federal Leadership in Environmental, Energy, and Economic Performance  
Executive Order 13693 - Federal Leadership on Climate Change and Environmental Sustainability

From this stemmed several different implementations of the methodology by Tribes as case studies.

***Tribal Cultural Landscape:*** Any Place in which a relationship, past or present, exists between a spatial area, resource, and an associated group of indigenous people whose cultural practices, beliefs, or identity connects them to that place. A tribal cultural landscape is determined by and known to a culturally related group of indigenous people\* with relationships to that place.

\* This is intended to be inclusive of Native Hawaiians and Alaskan people.

*Characterizing Tribal Cultural Landscapes: documenting culturally important areas – for Tribes, by Tribes* is a unique project for two specific reasons. First, the definition and methodology of the TCL project was developed and vetted by Tribes. Second, implementation of the methodology and resulting case studies exemplify the ability for Tribes to demonstrate their own cultural practices in a manner that does not violate confidentiality or cultural concerns today.

The approach and methodology are intended to have applicability and help facilitate the existing processes of the National Historic Preservation Act (NHPA) more often referred to as ‘106 Process’ and the National Environmental Protection Act (NEPA). These two processes account for the majority of cultural resources related identification and investigations throughout the United States.

Out of respect for our neighboring sovereigns and full recognition for their own abilities, the focus here are the methods developed and implemented by the Confederated Tribes of Grand Ronde and summary results. Beginning in 2013 the Grand Ronde Tribal Historic Preservation Office (THPO)<sup>2</sup> set out to demonstrate the applicability of the methodology and develop a system that would facilitate the necessary conversations with federal and state agencies charged with NHPA and EPA processes. For the Tribe that was refining the *Stages of Data Collection and Retention*.

Conceptualization was an iterative process. As scale and scope of the project was determined there were four constants.

1. The need for information protection.
2. The need for process replicability.
3. Ease of use.
4. Broader application and contribution to other projects.

As part of contextualizing this project and the work undertaken by the Tribe there are three salient points to be raised. First, the THPO approaches resource identification based on understanding cultural practice. An understanding of *actions and cultural practices* will lead to

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<sup>2</sup> Today this is the Historic Preservation Department (HPD)

identification of a greater number of resources<sup>3</sup>. This steps away from an archaeologically centered interpretation; rooted in the presence of artifacts to be identified and cataloged. Second, Cultural Resources include plants and animals as well as places holding significance but may not have associated material remains present. This also includes tangible and intangible resources such as lines of sight, weather, songs, and stories. Third, the location in time for source material may not conform to western traditions of history and sources. In the case of Grand Ronde the *Ikanam* is the time of the Animal People, the ones who set the ways and places in order for man to follow. This 'Storied Time' has a great deal of relevance for understanding the landscape. The practices, resources, and places in the stories are the same ones of use and concern today.

Information security and protection was addressed by choosing to use only information already in the public domain. Since this project is to yield information for conversations and reports outside the secure confines of the THPO, use of information readily available through on-line, libraries, or other public venues minimized the need to consider protected or taboo cultural information. To the contrary, this was an opportunity to correct previously misinterpreted cultural information about the Tribes and Bands of the Confederation of Grand Ronde. Much has been collected and documented since the time of Hudson's Bay Trading Company establishment of Fort Vancouver in 1820s. As a result, there are hundreds, if not thousands, of source documents available in libraries and collections throughout the world today.

The need for *process replicability* and *ease of use* was largely facilitated by the use of ArcGIS. Choosing a Geographic Information System as the 'tool' or platform for the project ensured the development of a consistent workflow easily divided into modular components. From this was developed a template for the kinds/types of data collected that is now available to be shared and modified by other Tribes to meet their needs and source materials. An added feature of this process is the ability to continue to add data as time, staff and resources are available. In essence it is a growing document.

Because so much of the work conducted by the THPO is collected and recorded in GIS the broader applications were easily identified. The upshot Conceptualization was to 'mine through' ethno-historical accounts and records and maps dating back to the 1850s. As source documents these range from the original field-notes of ethnographers to their unpublished and published descriptions resulting from observations and interviews with Tribal Members. Today, these are largely underutilized sources that are readily available.

The first step in the 'mining' process was to develop the information capture format. In this case the development of four identical 'databases'- actually spreadsheets. Though not ideal it was the solution to software access and experience base of our reviewers/catalogers as well as the macro process developed for the project at this stage. In hind sight using an .SDE database file format would have been ideal it was not practical based on software access. Each

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<sup>3</sup> Edwards and Thorsgard 2012

spreadsheet was assigned a Resource Theme Heading – Fauna, Flora, Geography, and Other. With this in hand catalogers, University interns, were assigned a book or manuscript and directed to read line-by-line and record the relevant information in each of the appropriate ‘database-sheets’. Sentences yielding information about multiple Resource themes were recorded in each corresponding sheet. The attributes of each resources were recorded as reported in the document and generally grouped as *Resource, Temporal, Location, Use, Association with other, Source*. Each *Group* is comprised of multiple attributes reflective of increased refinement of information for each entry.

Currently there are close to 5000 entries originating from eight ethno-historic text based sources and another 600 from historic map sources. The map sources do not include the original surveyor’s notes and records, only the visual information- mostly from the Government Land Office Maps.

From this, a list was generated. Using the list and a printed map (8’ by 18’) of the study area, resource locations were identified and hand-drawn. In this day of technology this step of paper, markers and mylar, was by design ‘old-school’. It was successful in its intent to facilitate conversations, identify new places, and engage staff that otherwise would not have been involved.

Once the interaction Phase was concluded those resources with a geo-referenceable loci were assigned polygons within the GIS and linked to the spreadsheet data attributes. As noted previously this would be best done as an .SDE database from the outset for stability purposes; however, the participatory engagement with staff and elders would have been lost.

At this point data was ‘cleaned’ and spot checked for consistency of input and attribute assignments within the appropriate data sheets. The result were maps of Faunal, Floral, and Named Place resources. Using centroids of the polygons the number of overlapping polygons for the same resource were calculated and converted to scaled point data - the more mentions of the same resource at the same location resulted in a larger point value.

The **Synthesis Phase** built further upon the ‘as known’ information gleaned through the ethno-historic records and sources. A secondary set of ‘*Interpretive*’ attributes were added allowing for explanation and analysis as appropriate. For instance, if a particular plant species was described or noted as being ‘collected’, the recorder using his/her cultural knowledge could note a month or season as appropriate. Through this it was possible to retain the original voice as much as possible and begin to introduce a contextualization of the historic information – place, practice, and resource alike.

It was not appropriate to turn over a series of data layers depicting cultural world views and a literal map to some of the Tribes most sensitive locations and practices. It was necessary to convert the information into a usable layer appropriate for developing conversations and proposing directions for future development. As a consequence, it was determined the best approach was to develop a sensitivity map that could be shared for conversational purposes.

In this case, the resulting map is deliberately simplified and based on view sheds and lines of sight. Part of the simplification was to avoid weighted values and interpretations of the information collected. As an example – the mention of a village site and a plant gathering location are equal. Line of site was used as the medium of understanding the landscape, and by extension the likely to generate points of cultural concern where they intersect. Today, as well as historically, for the Tribes comprising the Grand Ronde being able to see places of importance is necessary for teaching and learning - all part of reading the storied landscape. As one project contributor noted: until recent times, Tribal history was not written in books it was written on the landscape.

As part of this understanding places for gathering are generally within sight of other places of gathering, Places of hunting are within sight of other places of hunting, etc. As a result, identifying points of intersecting sight lines between places are likely to also be significant. By counting the number of intersects at any given point within the study area it is possible to suggest a quantification of the number of resources that are likely to be effected. Additionally, a higher intersect number may identify places of significance that have gone undocumented through time.

To develop the **Sensitivity Model** – A 30m raster DEM of the study area (the North Oregon Coast - 30 miles inland and 50 miles seaward) was developed based on available LiDAR data. For each layer (Fauna, Flora, and Named Places and Known Sites) an intersecting line of site calculation was run between each polygon. Because each polygon had varied perimeter boundaries the midpoint of each boundary segment was used for the calculations. (Again, the resulting map was to serve as starting point for discussions. As a result, the summary calculations generated were considered sufficient, particularly in light of the incomplete nature of the data set from the outset). The result was a sensitivity value resulting from the number of intersect for a particular layer (Fauna, Flora, Named Places).

However, because the intent of the project was to discuss potential impacts to all cultural resources it was necessary to conduct one more step. The values for each data layer at each raster cell were added together to generate a single value representative of all the cultural resources visible from that cell. Based on this information, for any given 30m raster within the study area it is possible to know how many cultural resources are visible and potentially be impacted by actions at that location.

## **Results –**

The results of the project thus far have been very successful. First, this project has demonstrated that it old historically data is viable and applicable today. It has provided an opportunity to collect and in some instance go to the words of individuals describing their land as they saw and interacted with it 150 years ago. This has been an opportunity to record, for its use and protection of resources a tribal world view held at the time of pioneer settlement. Though the study area was relatively small, the data capture begins to chronicle just how wide and detailed that world view was.

This project has demonstrated that within the study area there is a range of between 30 and 2700 places at risk of visual impact. So, even though a raster may present as 'Green' the mean number of places visually connected is 102. Aside from the cumulative effects that can be quantified, the information (distribution and setting- slope, aspect, etc.) provides a refined understanding for the likely settings in which other previously unidentified sites may be present.

This information has been used in consultation to illustrate the Tribe's perspective for the landscape as a whole. Agency representatives have expressed an understanding of the Tribe's concerns for the varied resources and sought to integrate the multiple strands of understanding into project specific plans.

Opportunistic field visits have identified at least two previously unreported archaeological sites based on the intersect model. The same intersect model coupled with a simple bathtub model of sea level rise has helped identify species and habitat resource 'winners' and 'losers'. This has served to facilitate conversations about next steps in light of climate change as well as begin conversations regarding tipping points.

#### **Examples of Applications of Information –**

The use of this information and the development of a 'sensitivity' model based on cultural understanding and use of the landscape has potential applicability in contributing to the exploration of now submerged paleo-shorelines. The proverbial 'needle in the haystack' scenario presents itself as interests increases in offshore development for energy resources concern for potential impacts to now inundated archaeological sites. The usual response is to either shrink the haystack or enlarge the pin. This information coupled with detailed mapping and other modeling has the potential do both. The re-gathering/ re-collecting of cultural understanding, as close to original source and as far back as possible, and as inclusive as possible shifts the model away from a targeted hunt for a singular resource type. It broadens the understanding to one of Large area understanding and the interconnection of the component parts first. By interjecting this step of understanding it is then possible to seek the loci may yield the physical remains of past uses now submerged.

As sea level rise and climatic conditions change the information collected for this project are in a format that could be coupled with other models for identify specific resource species habitats for management now in anticipation of future changes. It can be used in collaboration with other land managing agencies to identify priority areas and help define species characteristics of cultural significance. This in its own way helps to contribute to identification and demonstration of habitat resilience.

Although this study has focused on coastal resources the same climatic changes will also result in changing environments and habitats of inland terrestrial species thus affecting practices of tribes and indigenous groups throughout the continent.



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