NPS Form 10-900-b
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United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

X New Submission ___ Amended Submission

A. Name of Multiple Property Listing

Native American Archaeological Sites of the Oregon Coast

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

1) Terminal Pleistocene
2) Early Holocene
3) Middle Holocene
4) Late Holocene Precontact
5) Late Holocene Postcontact

C. Form Prepared by

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organization University of Oregon date August 31, 1996

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D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. (☒ See continuation sheet for additional comments.)

Signature and title of certifying official Deputy SHPO — Date July 20, 1997

Oregon State Historic Preservation Office
State or Federal agency and bureau

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

for Signature of the Keeper — Date of Action 9/10/97

NATIVE AMERICAN ARCHAEOLOGICAL SITES OF THE OREGON COAST MULTIPLE PROPERTY SUBMISSION
Ninety-three sites (89 newly proposed for nomination) located in 31 park units maintained by the Oregon Parks and Recreation Department in Clatsop, Tillamook, Lincoln, Lane, Coos, and Curry Counties.

COMMENTS OF THE STATE HISTORIC PRESERVATION OFFICE

This application represents the culmination of effort over a period of ten years to document significant coastal archeological sites in holdings of the Oregon Parks and Recreation Department. The effort was started by Dr. Rick Minor in 1986 with match-fund assistance from the Historic Preservation Fund. The work was refined, expanded and brought to completion with additional federal [HPF] assistance by Professor Jon Erlandson and Professor Madonna Moss in 1996. Professors Erlandson and Moss of the University of Oregon Department of Anthropology devoted at least four years to carrying out the field work and writing necessary to propose 89 new sites in State Park units along the Oregon coast to the National Register.

The parks contain shell middens, village sites, and lithic, or stone-working scatters representing an invaluable record of human experience on the Northwest Coast of America. The cultural material ranges in date from between 12,000 and 8,000 years ago to the time of first contact between the native cultures and Euro-Americans during the 18th century, a time when the coastal explorations and fur trade were at their height. It is planned that, in due course, the registered sites will be incorporated into park master plans so they can be better protected and managed. The 89 sites newly nominated to the National Register in this submission encompass, in all, 290.3 acres.

In keeping with State rule, this multiple property nomination was presented for review during two successive meetings of the State Advisory Committee on Historic Preservation. Minutes of the meetings held on October 10, 1996 and February 13, 1997 are attached hereto as part of the State's comments.

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E. Statement of Historic Contexts

The Native American Archaeological Sites of the Oregon Coast multiple property listing consists of archaeological sites located in the coastal zone of the State of Oregon. The historic context presented here is potentially inclusive of all archaeological sites of Native American affiliation in this region. However, the properties covered in this initial submission include only those located in Oregon State Parks and Waysides. Oregon is extremely fortunate to have diverse microenvironments preserved in its State Parks. These include rocky outer coast shorelines with dramatic seacliffs and headlands, extensive estuarine habitats around the mouths of rivers and creeks, and spectacular sandy beaches and dunes. Although the parks were set aside primarily for their scenic and recreational qualities, their varied geographic settings represent important locations of past Native American settlement and resource use. Because the State Parks contain a sample more or less representative of virtually all the major coastal habitats and archaeological site types, these properties provide a good starting point for this geographically defined historic context. The parks system includes properties located in almost all of the coastal Native American ethnographic and linguistic territories. Since many archaeological sites on private lands have already been destroyed by development, the sites on public lands represent the primary source of information about the prehistory and early history of Oregon Coast Native Americans. The chronological period encompassed in this historic context ranges from the earliest human occupation of the Oregon Coast ca. 12,000 years ago until AD 1900.

In this section, we:

1) describe Oregon Coast environments, both past and present;

2) discuss the cultural and archaeological background for the Oregon Coast;

3) define registration requirements;

4) define key property types;

5) outline current research topics and questions relevant to the research value of the property types;

6) describe the important categories data that exist in the property types, and

7) summarize the cultural and environmental influences that have influenced the potential of the sites to yield important information.

ENVIRONMENTAL SETTING

The modern Oregon Coast contains a variety of distinctive environments, derived from local differences in geology, hydrology, biology, and the dynamic nature of coastal processes. All physical environments found in coastal State Parks and Waysides are influenced by the Pacific Ocean, and this comprises the main unifying characteristic of the properties covered in the multiple property nomination. Individual Parks and Waysides contain or are influenced by a variety of estuaries, rivers, streams, and creeks. Terrestrial surfaces range from highly resistant volcanic bedrock to shifting sand dunes. Yet all properties are located within the Pacific coastal zone, where past Native Americans made productive use of a wide range of maritime, coastal, littoral, riverine, and terrestrial resources. The archaeological sites located in this zone contain substantial data regarding how Native Americans used coastal landscapes for the last three thousand years and also contain data pertaining to Native American occupation during earlier time periods when sea levels were different from their modern position.

The dynamic physical environments and ecosystems of coastal Oregon were constantly changing even before Euroamerican settlement. Perhaps the dominant factor in coastal environmental change has been postglacial sea level rise. The history of sea level change on the Oregon Coast is an intricate puzzle with many missing pieces. Relative sea level changes have been influenced by worldwide changes in sea level as well as local tectonic events. While general information on sea level change exists (e.g., Lyman 1991:12), research has demonstrated the complexity of deciphering the sequence of sea level changes and resulting geomorphological effects at the local level. Recent research on the impacts of earthquakes and subsidence (e.g., Nelson 1992) has demonstrated some of the variables confounding interpretation of sea level change. While most archaeologists assume that Oregon Coast sea levels stabilized 3000 to 5000 years ago, local studies indicate that changes have occurred since that time. The history of Oregon Coast vegetative and wildlife communities is perhaps even less well known, and archaeological research provides an important avenue to understanding the evolution and development of modern ecosystems.

The Oregon Coast comprises a portion of the convergent margin where the Juan de Fuca oceanic plate to the west is subducted beneath the North American plate to the east. The continental shelf is 58 km wide in the far north, 26 km wide at Newport, 65 km wide at Heceta Banks, 16 km wide at Cape Blanco, and 31 km wide at the California/Oregon border. Forty percent of Oregon's 480 km coastline consists of rocky shorelines, seacliffs, and headlands. The single longest beach extends from the mouth of Coos Bay for 80 km north to Heceta Head. The northern half of the coast consists of smaller beaches frequently separated by basaltic headlands (Lyman 1991:7-9).

The Oregon Coast includes portions of two physiographic provinces. The north and central coasts (from the Columbia River south to the Coquille River) are situated along the western margin of the Coast Range province. The south coast (south of the Coquille River) is the western margin of the Klamath Mountains

province. The Coast Range is a geanticline created by regional upwarping of Late Cenozoic formations. The mountains consist primarily of Eocene lava flows, tuffs and breccias, with scattered Oligocene igneous intrusions, and localized Miocene sedimentary and volcanic formations. Coast Range summits vary from 183 m to 1055 m above sea level, and average 457 m. The distances between the coastline and mountain summits also varies, from 22 km along the Salmon River to 80 km along the Siuslaw River (Baldwin 1981).

The Klamath Mountains of southwest Oregon and northern California are composed primarily of Paleozoic and Mesozoic geological formations of volcanic, sedimentary, and metamorphic origins. Rock types common in the area include granite, quartz, limestone, marble, sandstone, shale, serpentine, and cherts. To the east, the highest Klamath Mountains reach 2296 m in elevation. Summits closer to the coast gradually diminish to about 600 m before the land falls abruptly to form a narrow coastal plain (Baldwin 1981).

The Coast Range is bounded on the north by the Columbia River, the largest river on the Pacific Coast of North America. South of the Columbia, the Coast Range is drained by a number of smaller river systems that flow westward into the Pacific Ocean. From north to south, these are the Necanicum, Nehalem, Kilchis, Wilson, Trask, Tillamook, Nestucca, Salmon, Siletz, Yaquina, Alsea, Yachats, Siuslaw, Umpqua, Coos, and Coquille Rivers. All but two of these northern and central coast rivers have their principal headwaters near the crest of the Coast Range and meander westward to the Pacific Ocean. The Umpqua and Coquille Rivers are exceptions, with headwaters in the Cascade Mountains, they flow through the Coast Range on their way to the ocean.

The rivers of the south coast are mostly small, short streams with headwaters in the Klamath Mountains. From north to south these are the Sixes, Elk, Rogue, Pistol, Chetco, and Winchuk Rivers. The Rogue River is the exception, originating in the Cascades and flowing through the Klamath Mountains on its way to the sea.

Many of these rivers and streams flow into estuaries, with surface areas ranging from less than 2 to over 50 square kilometers. In general, the estuaries of the north and central coasts are substantially larger than those of the south coast. From north to south, the larger estuaries of the north and central coasts include Nehalem, Tillamook, Yaquina, Alsea, Winchester, and Coos Bays. These bays occur where rivers have cut broad meandering channels into the sedimentary rocks of the Coast Range. The bays formed when high interglacial sea levels drowned the lower portions of the coastal river valleys. The faster flowing streams of the south coast have cut narrower channels, which filled with sediments at rates roughly comparable to rising sea level, preventing the development of large bays and estuaries.

Many coastal lakes were formed along the Oregon Coast in a similar way. Large freshwater lakes including Woahink, Siltcoos, Tahkenitch, Tenmile, and Garrison Lakes formed in "drowned" valleys containing smaller streams. Accumulating sand dunes dammed these streams and flooded what had previously been

coastal bays or valleys. Study of shellfish assemblages from two central coast archaeological sites suggest that many of these drainages were blocked by coastal dunes during the Middle Holocene (Minor and Toepel 1986; Minor 1992).

On the west, the Oregon Coast is bordered by the North Pacific Ocean. Offshore waters are marked by pronounced coastal upwelling, which brings nutrient-laden deep ocean waters to the surface. This upwelling supports a relatively rich marine food chain, starting with marine zooplankton and phytoplankton and culminating in whales and humans. Except for protected bays or estuaries, the Oregon Coast faces predominantly westward and is exposed to the full force of winds and storms originating in the North Pacific. Waves generated by such winds and storms almost constantly barrage the outer coast, particularly from late fall to early spring. As a result, coastal erosion is pronounced along much of the coast, especially in areas of unconsolidated sediments. The combination of high surf and steep topography also limit the accessibility of marine habitats in many areas. Along the Oregon Coast, tides range from +3.5 m to -0.8 m relative to mean sea level. Tidal influence extends inland 40 km or more in some of the major Coast Range rivers, but only a few kilometers inland on the Rogue and other south coast rivers.

The climate of the northern and central Oregon Coast is temperate and maritime, with relatively wet, mild winters and dry, moderately cool summers. Annual precipitation ranges from 60 to 90 inches along the shoreline, but increases inland to as much as 200 inches in the Coast Range uplands. Approximately 80% of the annual precipitation falls as rain from October to March. The high annual rainfall and mild winters create favorable conditions for forest growth, and the northern and central coasts comprise one of the most densely forested regions in North America. The coastal forest is dominated by Sitka spruce (*Picea sitchensis*), western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), shore pine (*Pinus contorta*), and grand fir (*Abies grandis*). Common deciduous trees include red alder (*Alnus rubra*), Sitka alder (*A. crispa*), bigleaf maple (*Acer macrophyllum*), willow (*Salix* sp.), black cottonwood (*Populus balsamifera*), cherry (*Prunus emarginata*), crabapple (*Malus fusca*), and madrone (*Arbutus menziensii*). Understory plants include salal (*Gaultheria shallon*), false azalea (*Menziesia ferruginea*), rhododendron (*Rhododendron macrophyllum*), deer fern (*Blechnum spicant*), swordfern (*Polystichum munitum*), red and evergreen huckleberry (*Vaccinium parvifolium* and *V. ovatum*), salmonberry (*Rubus spectabilis*), thimbleberry (*R. parviflorus*), and red elderberry (*Sambucus racemosa*). Camas (*Camassia quamash*) was a primary root vegetable for many Oregon tribes, but it grows in limited quantities along the coast (Lindsay 1995:205).

Compared to the northern and central coasts, the climate of the southern Oregon Coast is somewhat warmer. Rainfall is heaviest from November through May, but frequent fogs during the drier summer months are important sources of moisture for coastal vegetation. As a result of its drier climate, the vegetation of the south coast is more Californian, with communities of herbs and shrubs mixed with Sitka spruce along the coast gradually giving way to coniferous forest dominated by Douglas fir, western hemlock, western red

cedar, ponderosa pine (*Pinus ponderosa*), and incense cedar (*Calocedrus decurrens*) in the interior. Forests with Port Orford cedar (*Chamaecyparis lawsoniana*) are found along the south coast, and extending north from California, coast redwoods (*Sequoia sempervirens*) can be found 15 to 20 km into coastal southwestern Oregon. Tanoak (*Lithocarpus densiflorus*), chinkuapin (*Castanopsis chrysophylla*), and California-laurel (*Umbellularia californica*) are intermixed with coastal forest plants mentioned above. On exposed slopes, juniper (*Juniperus occidentalis*), plantain (*Plantago subnuda*), hairy manzanita (*Arctostaphylos columbiana*), poison oak (*Rhus diversiloba*), and buckbrush (*Ceanothus cuneatus*) are also found. Oregon white oak (*Quercus garryana*) and California black oak (*Q. kellogii*) are common in pericoastal valleys. Oak trees provided starch-rich acorns important for south coast groups.

Terrestrial environments provide varied habitats for a wide range of land mammals, with 18 families and 60 species native to the Oregon Coast. Economically, the most important land mammals appear to have been Roosevelt elk (*Cervus canadensis roosevelti*), black-tailed deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), river otter (*Lutra canadensis*), and mink (Mustela vison). Bobcat (*Lynx rufus*), weasels (*Mustela* sp.), fox (*Vulpes fulva*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), and mountain beaver (*Aplodontia rufa*) are also common. A variety of rabbits, ground squirrels, chipmunks, mice, gophers, and voles are present.

The Oregon Coast is especially rich in marine and estuarine fauna. Common sea mammals include Stellar sea lion (*Eumetopias jubata*), California sea lion (*Zalophus californianus*), harbor seal (*Phoca vitulina*), northern fur seal (*Callorhinus ursinus*), sea otter (*Enhydra lutra*), harbor porpoise (*Phocoena phocoena*), gray whales (*Eschrichtius glaucus*), humpback whales (*Megaptera novaeangliae*), and other cetaceans. While sea lions, fur seal, and some whales are migratory, harbor seal, porpoise, sea otter, and other whales are year-round residents of coastal waters. R. Lee Lyman (1991:99) identified 13 important sea lion rookeries or haulouts based on historic or prehistoric records including: Fort Stevens, Sea Lion Rock, Three Arch Rocks, Cascade Head, Yaquina, Seal Rock, Sea Lion Caves, Simpson Reef, Blanco Reef, Orford Reef, Redfish Rocks, Island Rock, and Rogue River Reef.

A variety of fish also inhabit marine and estuarine waters of the Oregon Coast. The historically abundant anadromous salmon are the most famous, with four of the six Pacific salmon species occurring on the Oregon Coast, king, (*Oncoryhnchus tshawytscha*), chum (*O. keta*), silver, (*O. kisutch*), and steelhead (*Salmo gairdneri*). Other anadromous fish include sturgeon (*Acipenser medirostris, A. transmontanus*), eulachon (*Thaleichthys pacificus*), and Pacific lamprey (*Lampetra tridentata*). A wide variety of flatfish (Pleuronectidae), rockfish (Scorpaenidae), surfperch (Embiotocidae), cod (Gadidae), smelt (Osmeridae), greenlings (Hexagrammidae),and sculpins (Cottidae) are present. Many of these species, along with tuna (*Thunnus alalunga, T. thynnus*), herring (*Clupea harengus pallasi*), sardines (*Sardinops sagax*), and

anchovies (*Engraulis mordax*), were (and continue to be) economically important to Oregon's Native Americans.

Coastal waters also provide prime habitat for a variety of sea birds and waterfowl. Migratory waterfowl include Canada goose (*Branta canadensis*) and numerous species of ducks (Anatidae). Cormorants (*Phalacrocorax* spp.), gulls (*Larus* spp.), murres (*Uria aalge*), loons (*Gavia* spp.), albatross (*Diomedea* sp.), shearwaters and petrels (Procellaridae) and other seabirds are relatively common. Many of these nest in colonies on nearshore islands, where eggs or hatchlings could be collected by coastal peoples.

In the intertidal zone numerous species of mollusks and crustaceans provided abundant and easily gathered food. On the rocky outer coast, California mussels (*Mytilus californianus*), giant acorn barnacles (*Balanus nubilis*), gooseneck barnacles (*Pollicipes polymerus*), black katy chitons (*Katharina tunicata*), and a variety of limpets (Acmaeidae) are common. Razor clams (*Siliqua patula*) are found along sandy beaches of the outer coast. Species requiring more protected marine or estuarine habitats include butter clams (*Saxidomus giganteus*), littleneck clams (*Protothaca staminea*), gaper clams (*Tresus capax*), oysters (*Ostrea lurida*), bay mussels (*Mytilus edulis*), geoducks (*Panopea generosa*), softshell clam (*Mya truncata*), cockles (*Clinocardium nuttallii*), and bentnose clams (*Macoma nasuta*). Three sea urchin species prefer different habitats, with green sea urchins (*Strongylocentrotus droebachiensis*) found along quieter shores, purple sea urchins (*S. purpuratus*) in higher energy habitats, and red sea urchins (*S. franciscanus*) in various habitats. A variety of edible crabs (*Cancer* spp.) are also found in various intertidal or subtidal habitats.

Oregon Coast environments have changed dramatically since European settlement. Residential and commercial construction, road building, dredging and breakwater construction, reclamation of wetlands, agriculture, logging, commercial fishing and hunting, the introduction of exotic species, and other developments have altered the physical and biological landscapes of the Oregon Coast. While portions of the State Parks remain free from major architectural intrusions, alterations of shorelines, introduced plants, and reduction of native plants and animals have occurred.

A few of the introduced plant species include Scotch broom (*Cytisus scoparius*), gorse (*Ulex europaeus*), and European beach grass (*Ammophila arenaria*). Scotch broom, brought to the Pacific Northwest over 140 years ago, is common on disturbed sites and has invaded natural meadows, thickets, and open forest. Gorse, a "viciously spiny" and flammable plant that forms nearly impenetrable thickets (Pojar and MacKinnon 1994:83), is still expanding its range. European beach grass was introduced to Oregon for dune stabilization and/or to combat erosion about 80 years ago and has since taken over many coastal sand dunes and changed seashore topography. By forming huge mounds of grass and sand on foredunes, it has increased sand deposition and has radically changed patterns of sand movement in some dune systems (Pojar and MacKinnon 1994:364). Today, coastal land managers are trying to discourage its growth because it provides cover for predators of endangered species like the snowy plover (*Charidrius alexandrinus*).

Stocks of wild salmon, sturgeon, herring, and other fish have been significantly reduced over the past 150 years. Sea otters were abundant on the Oregon Coast prior to the late 18th and early 19th century, when hunting for the commercial fur trade largely eliminated them from the area. Lyman (1989) suggested that the current use of rookeries by seals and sea lions may not represent distributional patterns prior to commercial hunting. When studying the past, contemporary environmental information and wild resource distributions must be used with caution.

At the present time, the history of the dynamic physical environments and ecosystems of coastal Oregon is not known in detail. Archaeological research provides an important avenue to understanding the evolution and development of modern ecosystems. In particular, archaeological research allows for reconstructions of how humans have adapted to local environments and influenced ecosystemic relationships over a substantial period of time on the Oregon coast.

CULTURAL AND ARCHAEOLOGICAL BACKGROUND

Native American Cultures of the Oregon Coast

In the early 1800s, the Oregon Coast was occupied by a diverse array of Native American tribes, including (from north to south) various bands of the Chinook, Tillamook, Alsea, Siuslaw, Umpqua, Coos, Coquille, Tututni, and Tolowa peoples. These societies are all generally regarded as part of the distinctive Northwest Coast culture area (Suttles 1990). Prior to European contact, Northwest Coast peoples relied predominantly on fishing, hunting, gathering, and trading for sustenance. Northwest Coast peoples in general are most renowned, however, for their maritime lifeways, elaborate technology, high population densities, sophisticated art and architectural traditions, and sociopolitical complexity.

Despite the similarities implied by a unified Northwest Coast cultural construct, the Native American peoples of the Oregon Coast had distinctive lifeways. Their cultural diversity derives, in part, from the development of different adaptations to variation in Oregon Coast environments, but it is also related to their diverse origins. Interpretations of linguistic data suggest that representatives of three language phyla (Na-Dene, Salishan, and Penutian) and at least five language families (Athapaskan, Chinookan, Alsean, Siuslaw, and Coos) were spoken by Oregon Coast peoples (Thompson and Kinkade 1990). This linguistic diversity, accompanied by considerable cultural variation between different groups, suggests a relatively long and complex history for the peopling of the Oregon Coast and the subsequent development of coastal cultures. Archaeological research provides one of the best tools for the scientific reconstruction of that complex cultural history.

History of Archaeological Research

Archaeologists have worked on the Oregon Coast for over 120 years (Chase 1873; Schumacher 1874, 1877), but as recently as 1991, the area was described as "archaeologically unknown" (Lyman 1991:314). Several regional archaeological surveys have been conducted on the coast (e.g., Berreman 1935a; Collins 1953; Ross 1976a; Pullen 1982; Minor 1986; Erlandson and Moss 1993; Moss and Erlandson 1994, 1995a), many sites have been excavated (Leatherman and Krieger 1940; Berreman 1944; Cressman 1953; Newman 1959; Heflin 1966; Ross 1977; Draper 1981; Minor et al. 1985, 1987; Minor and Toepel 1986; Lyman 1991; Minor 1991a, 1991b, 1992, 1993, 1995a; Minor and Greenspan 1991, 1995; Connolly 1992; Hall 1995; Tasa and Connolly 1995; Tveskov et al. 1996; and others), and several regional syntheses have been written (e.g., Minor and Toepel 1983; Ross 1983, 1990; Connolly 1986, 1988; Minor 1983, 1989; Draper 1988; Lyman 1991; Aikens 1993). As Lyman (1991) stressed, however, many excavated Oregon Coast sites have not been fully reported or adequately dated and much of the work done lacks the broader theoretical framework American archaeologists have revered since the 1960s. Research on the Oregon Coast has accelerated recently, but researchers have yet to achieve the "critical mass" reached in neighboring areas like British Columbia or southern California.

The Oregon Coast sometimes has been viewed as something of a "cultural backwater," peripheral to the currents of cultural change demonstrated for the "classic" Northwest Coast cultures to the north or California cultures to the south. This attitude of anthropologists about the marginality of Oregon's coastal cultures has a long history, as exemplified by Drucker's (1939:81) description of the Alsea Indians of the Alsea and Yaquina River areas: "Alsea culture was definitely peripheral . . . a small nation in an isolated spot along the coast -- an eddy in the swirling current of North Pacific culture. It seems that little of historical importance ever happened there, and it does not seem likely that anything ever would have happened." This statement sounds patronizing in today's social and political climate, but it represents the view of many early scholars about the nature of Oregon Coast prehistory and ethnohistory. In part, such perceptions may be related to the lack of knowledge about the antiquity and nature of cultural developments along the Oregon Coast.

In addition, this marginalization reflects Oregon's ecological position in a broad geographic context. In Oregon, four major North American ecological zones merge: the Northwest Coast, the Plateau, the Great Basin, and California. The merger of the Northwest Coast and California ecological zones forms an ecotone along the Oregon Coast. Ecotones are often seen as peripheral to ecological zones, where cultural changes are perceived to occur first. Contemporary understandings of Oregon's cultural history are therefore reliant on models developed for the "centers" of cultural activity described for localities outside of Oregon.

Of the prehistoric Oregon Coast archaeological sites on record at the Oregon State Historic Preservation Office, relatively few have seen detailed archaeological investigation. Lyman (1991:42-44) listed 55 sites that had been excavated prior to 1989, 16 of which are located in State Parks. Of the 126 sites located in

State Parks that we have surveyed and evaluated (Erlandson and Moss 1993; Moss and Erlandson 1994, 1995a), 22 (17.6%) have experienced some level of systematic archaeological excavation (Table 1). Of the sites for which data are available, only six (4.8%) State Parks sites have had more than 30 square meters excavated. Only four (3.2%) State Parks sites are currently listed on the National Register of Historic Places: 35-CU-34 (Indian Sands), 35-CU-74 (Blacklock Point Shell Midden), 35-CU-75 (Blacklock Point Lithic Site) and 35-CU-82 (Cape Blanco).

Our 1992-96 research (Erlandson and Moss 1983; Moss and Erlandson 1994, 1995a), conducted with Historic Preservation Fund Grants-in-Aid and sponsored by the Oregon State Historic Preservation Office, was designed to evaluate the current condition of State Parks archaeological sites on the Oregon Coast. The project followed up on earlier State Parks surveys conducted in 1984-85 by Rick Minor (1986) and 1975-1976 by Richard Ross (1976a). We relied heavily on Minor's (1986) report, an invaluable source of concise, detailed, and clear information on the physical attributes of State Parks sites, their 1984-85 condition, and the history of their archaeological investigation. A major goal of our project was to evaluate the sites for their eligibility to the National Register of Historic Places, and ultimately to provide some measure of consideration and protection for the important historic legacy these properties represent. Minor (1986:141) estimated that the State Parks contained 40% of the known archaeological sites on the Oregon Coast. Of the 99 (of 105) sites on State Park Lands Minor examined, however, 59 were classified as destroyed or in serious danger of destruction by coastal erosion (11 destroyed; 20 in critical condition, 29 threatened). Many of the sites not immediately threatened with destruction had been damaged by construction activities, erosion, or the depredations of relic hunters, even though substantial portions of the sites remained intact. Unfortunately, comparable data on the condition of Oregon Coast sites located on lands outside of State Parks are not available.

For sites ranked as being in critical condition, Minor (1986) recommended immediate action to salvage samples of the site constituents. For threatened sites, sampling within the next five years was recommended. Since 1986, the State of Oregon has sponsored test excavations at six or seven coastal sites in State Parks (Minor 1991a, 1991b, 1993a, 1993b; Minor and Greenspan 1991; Tasa and Connolly 1995), but the vast majority of archaeological sites on State Parks Lands had seen little or no further work until our recent investigations. A number of non-State Parks sites have undergone some level of archaeological excavation since 1986 (Connolly 1992; Hall 1995; Minor 1992, 1993c, 1994, 1995a; Minor and Greenspan 1993, 1995; Tasa and Connolly 1994; Tveskov et al. 1996), roughly consistent with the proportion of sites found on non-State lands.

Our recent survey and evaluation efforts provided new information that allows us to evaluate the State Parks sites for their eligibility to the National Register. More specifically, we have obtained radiocarbon dates for a majority of State Parks sites, and this chronological information allows us to establish the historic context

of individual sites. This historic context statement provides background information for 89 archaeological sites found to be eligible to the National Register.

Table 1: Excavations of State Parks Sites on the Oregon Coast

Site #	Report Status	Area Excavated	Excavators/References
CLT-21	complete	10 m^2	Minor 1991a
TI-1	complete	32 m^2	Collins 1953
TI-1	complete	150 m^2	Newman 1959
TI-4	partial	95 m^2	Woodward 1986, et al. 1990
	partial	18 m^2	Scheans et al. 1990
TI-47	none	?	unknown
	partial	5 m^2	Zontek 1978
TI-57	complete	20 m^2	Minor 1991b
LNC-14	complete	96 m^2	Lyman 1991
LNC-45	complete	11 m^2	Tasa & Connolly 1995
LA-3	complete	25 m^2	Ross 245 pp. report ref in Lyman?
LA-10	complete	1 m^2	Harrison 1978
CS-3	partial	148.6 m^2	Leatherman and Krieger 1940
	complete	38 m^2	Ross 1976b
CU-9	complete	72 m^2	Ross 1977
CU-32	partial	?	Schumacher 1877
CU-33	partial	?	Berreman 1935a
CU-34	complete	6 m^2	Minor and Greenspan 1991
CU-35	partial	?	Berreman 1935b
CU-37	partial	?	Schumacher 1877
	partial	195 m^2	Berreman 1944
CU-61	partial	unknown	Schumacher 1877
	partial	?	Heflin 1966
	none	?	D. Cole
CU-62	partial	?	Heflin, Cressman 1977
CU-74	complete	2 m^2	Minor 1993b
CU-75	partial	8 m^2	Ross 1984
	complete	4 m^2	Minor 1993a
CU-82	complete	6 m^2	Minor and Greenspan 1991
CU-157	partial	unknown	Schumacher 1877
	none	unknown	Laughlin & Edmondson n.d.

Models of Oregon Coast Prehistory

The antiquity of human occupation of the Oregon Coast and issues of cultural chronology are important domains of regional archaeological research (see *Research Significance* below). Until relatively recently, radiocarbon dates available from the Oregon Coast indicated a time depth of human occupation for only 3000 years. Archaeological investigations at Tahkenitch Landing (35-DO-130) in 1984 produced the first evidence for early Holocene coastal occupation (Minor and Toepel 1986). Currently, 35-CU-67, a State Park site on the south coast has yielded the oldest radiocarbon dates for an Oregon Coast site, ca. 8200 B.P. (Moss and Erlandson 1995c). In the future, even older sites may well be found, more in line with the 9000 and 10,000 year old sites documented from nearby areas of the Pacific coast.

Two primary chronological schemes have been proposed for the Oregon Coast as a whole (Table 2, see Appendix). Lyman and Richard Ross (Lyman 1991; Lyman and Ross 1988; Ross 1990) divide the sequence into three chronological stages: a Pre-Littoral or Pre-Marine phase (8500-5000 B.P.), an Early Littoral phase (5000-2000 B.P.), and a Late Littoral phase (after 2000 B.P.) The term "Pre-Littoral" implies an adaptation that did not involve littoral resources, defined as those found within the intertidal zone. "Marine" in this usage indicates resources of the open sea. Lyman (1991) indicates that these early occupants originated in the interior and were heavily dependent on terrestrial resources for their subsistence needs. In this framework, the Early Littoral stage represents the first significant use of coastal resources. By the Late Littoral Stage, coastal peoples were much more effectively adapted to the coast, with larger and more sedentary populations than those of the earlier stages.

Alternatively, Minor (1995b) identified an Early Archaic Stage (10,000-5500 B.P.), a Middle Archaic Stage (5500-3000 B.P.), a Late Archaic Stage (3000-1500 B.P.), and a Formative Stage (1500-200 B.P.) for Oregon Coast prehistory. In this framework, Early Archaic coastal peoples subsisted primarily on aquatic resources, including fish, marine birds, and sea mammals. Terrestrial resources were also used, but there is little evidence for dependence on shellfish. During the Middle Archaic, substantial shell middens appear, with ample evidence of marine-oriented subsistence. The Late Archaic stage is characterized by more intensive marine subsistence, with evidence of more sedentary sites usually termed "villages." The Formative Stage is thought to reflect the full emergence of ethnographically known cultural patterns.

Both these chronological schemes assume a gradual, unidirectional, evolutionary model of cultural development that generalizes the relatively limited archaeological data currently available. Lyman's "Pre-Littoral" designation implies that the early people (presumed to be from the interior) who first occupied the Oregon Coast spent a few thousand years "settling in" to their new environment, then gradually developed a "littoral" adaptation in subsequent stages that span thousands of years. To us, it seems highly unlikely that early coastal peoples would have largely ignored the rich resources of Oregon's estuaries and seas for several thousand years. Comparative information from elsewhere on the Pacific Coast suggests that the earliest

Oregon Coast residents probably had the skills, technology, and knowledge to take advantage of some coastal resources. Lyman's scheme is based on an almost 40 year old model (Meighan 1959) for the development of southern California's coastal cultures -- a model long abandoned even by Meighan himself (1989, see also Raab et al. 1995). Gilsen (1996, pers. comm.) has characterized the Oregon coast resource system as a continuum encompassing marine to littoral to estuarine to riverine habitats with gradual changes up and down the system. He argues that there are many similarities in resources available in different parts of the system, and that adaptation to the coast did not require a fundamental change in human adaptive strategies requiring thousands of years of adjustment.

Minor's framework seems more compatible with information from the broader Pacific Coast region. It is consistent with a long tradition in North American archaeology of labeling preagricultural societies as "Archaic," although this term offends some contemporary Native Americans who consider the term synonymous with "primitive." Minor's use of the term "Formative" is also more typical of cultural evolutionary stages leading up to agriculture, a phenomenon not found on the Oregon Coast until historical times.

Other local and regional chronologies exist for parts of the Oregon Coast, the general Northwest Coast, or the northwest California areas (Chartkoff and Chartkoff 1984; Connolly 1986; Frederickson 1984; Matson and Coupland 1995; Minor and Toepel 1983; Pullen 1982; Wallace 1978; and others). Understanding the relationships between the plethora of named traditions, stages, complexes, periods, or phases in various cultural sequences can be difficult. For simplicity, we use a geological time scale. The *Terminal Pleistocene* ranges from 12,000 to 10,000 BP and, at the present, is represented by only a few isolated finds of Paleoindian artifacts in western Oregon. Although none of the State Parks sites nominated here contain such evidence, such sites may be found in the future. The subsequent Holocene period is divided into three roughly equivalent units but does not presume to characterize broadscale cultural developments for which little information is currently available (Erlandson 1988, 1994; Moss and Erlandson 1995b). This scheme does not imply a specific evolutionary trajectory for the Oregon Coast, which we feel would be premature. The *Early Holocene* is defined here as the period from 10,000 to 6700 B.P, the *Middle Holocene* from 6700 to 3300 B.P., followed by the *Late Holocene* after 3300 B.P. Within the Late Holocene, we later refer to the *Precontact* period (3300 to ca. 200 BP) and the *Postcontact* period (ca. 200 BP to the present). Those sites that have produced European trade goods or contain components radiocarbon dated after about 1792, when George Vancouver observed Native Americans near Cape Blanco, are considered to have components dating to the *Postcontact* period. This scheme provides only a general framework for understanding the archaeology of the Oregon Coast, but in the documentation for individual sites, we provide more specific age determinations when available.

Recent research has shown that the vast majority of dated Oregon Coast archaeological sites are Late Holocene in age (Lyman 1991; Moss and Erlandson 1995a). Our research has shown that over 87% of the

radiocarbon dates from archaeological sites on State Lands of the Oregon Coast fall within the last 1500 calendar years. Nonetheless, recent research has also identified several Early and Middle Holocene coastal sites on State Park Lands: the 8600 year old 35-CU-67 at Indian Sands (Moss and Erlandson 1995b, 1995c); 8300 and 5000 year old components at 35-CU-75 at Blacklock Point (Minor 1993a; Moss and Erlandson 1995a:103); a 6100 year old component at 35-CU-82 near Cape Blanco (Minor and Greenspan 1991; Moss and Erlandson 1995a:103); and the 4200 year old 35-LNC-45 at Boiler Bay (Tasa and Connolly 1995). Only the Indian Sands and Boiler Bay sites contain the remains of marine foods. The other two sites produced no faunal remains, but are currently located adjacent to productive coastal habitats. Recent investigations at these and other Oregon Coast sites suggest that coastal subsistence played a significant role in Early and Middle Holocene economies in the area, although this early use of marine resources may have been less intense than in other areas of the Pacific Coast (see Hildebrandt and Levulett 1996; Lightfoot 1993; Lyman 1991). The relative scarcity of Early and Middle Holocene sites along the Oregon Coast and of data relative to exploitation of marine resources may be due to a combination of processes including postglacial sea level rise, tectonic subsidence of the coast, severe coastal erosion, the accumulation of extensive dunes during the Middle and Late Holocene, the lower accessibility of rugged outer coast habitats to humans, and the relatively high productivity of terrestrial and riverine resources, especially when coastal terrestrial zones were more extensive during times of lower sea level.

REGISTRATION REQUIREMENTS

Individual sites from all eight of the property types discussed below are potentially significant for their capacity to yield important information relevant to the study of the prehistory and/or history of Native American occupation of the Oregon Coast (National Register Criterion D). To be eligible for inclusion on the National Register of Historic Places using Criterion D, individual Oregon Coast properties must meet the following minimum registration requirements:

(1) location within the coastal zone of Oregon, defined herein as that area within 10 km (6.2 mi.) of the shoreline of the Pacific Ocean or the numerous bays and estuaries of the Oregon coast.

(2) placement within the Late Pleistocene to Late Holocene time periods (12,000 years ago to A.D. 1900). For many sites, age estimates are provided by radiocarbon dates; for other sites, available data suggest a likely time period of occupation.

(3) represents one or more of eight property types defined below.

(4) possesses a minimum size and scope to yield data with the potential to contribute to knowledge of Oregon coast prehistory. This will follow the Oregon SHPO's guidelines that a site contain a minimum of one feature or 10 or more artifacts.

(5) possesses a minimum level of integrity or intactness. A site must retain its essential horizontal or vertical integrity, or be demonstrably derived from a discrete site deposit.

(6) demonstrates the potential to address one or more of the research problems outlined in Table 5 in *Research Significance*.

In addition to being found eligible to the National Register under Criterion D, some Oregon Coast archaeological sites may also be eligible based on their association with events that have made significant contributions to broad patterns of history (Criterion A). Occasionally, a site may be found eligible because it embodies distinctive characteristics of a type, period or method of construction, possesses high artistic values, or represents a significant distinguishable entity whose components may lack individual distinction (Criterion C). In these cases, justification for eligibility under Criteria A and/or C will be included on individual sites forms.

PROPERTY TYPES

Native American property types found on the Oregon Coast include shell middens, lithic sites, villages, ethnographic/ethnohistorical places, burial sites, intertidal fishing structures, quarries, and rock art sites. These property types were defined on the basis of variations in the physical structure and contents of individual sites, reference to previously defined archaeological site types utilized by Oregon Coast Native Americans, and the recognition that for those sites classified solely on the basis of archaeological attributes it is often difficult to differentiate between site types (e.g., village vs. campsite) commonly defined by archaeologists. These eight property types are not mutually exclusive. Theoretically, a single archaeological site might contain a shell midden, an ethnographic/ethnohistorical place, housepits indicating that it was once a village, isolated burials or a cemetery, rock art, and the remnants of a fishing weir in the intertidal zone. Most of these property types can also be described with reference to the nature of their deposits (as stratified sites, surface scatters, erosional exposures, redeposited sites, or submerged sites) or by the environmental context (estuarine, rocky outer coast, sandy outer coast, pericoastal, riverine, lacustrine, etc.) they are found in.

Shell Middens - Although there has been recent debate about the diversity of shell middens (Claassen 1991) and attempts to classify many subtypes (Widmer 1989), the definition used here is inclusive of any shell-bearing archaeological deposit. Oregon Coast shell middens are often conspicuous in erosional exposures because of the presence of dense shell (usually white) against dark surface soils. Shell middens often contain dark organic soils, charcoal, burned rock, vertebrate remains, and artifacts. Shell middens may vary from a localized, thin, and low-density stratum exposed in a seacliff profile or soil probe, to a large mound of accumulated refuse. This is the most common site type on the Oregon Coast, and occurs within the territories of all ethnographic groups.

Variation in the size and structure of Oregon Coast shell middens suggests that the function of these sites varied from shellfish processing stations, to short-term campsites, to seasonal encampments, to small hamlets and villages. The specific function of individual shell midden sites, however, cannot be determined without extensive excavations because: (1) the size, depth, and density of shell middens varies in a continuous fashion; (2) the function of some multicomponent sites may have changed over time; (3) some seasonal camps may have been occupied repeatedly over time, leading to large and deep accumulations of refuse that resemble villages; (4) large portions of some once extensive shell middens may have been lost to coastal erosion or other disturbance processes, leaving only peripheral deposits that resemble campsites; (5) a number of shell middens have been deflated by wind erosion or redeposited by wave or river action, leaving only lag deposits that are difficult to decipher. Due to these and other interpretive problems, we have limited functional identifications (ie., campsite, village) of shell middens except where substantial excavation data are available. Such identifications should be one of the goals of future archaeological research at specific sites.

Shell middens are rich sources of a variety of types of archaeological data. They always contain organic materials that can be radiocarbon dated; both shell and charcoal samples have yielded most of the chronometric data from archaeological sites of the Oregon Coast. These dates are used to establish the historic context for individual sites. Shell middens sometimes contain features indicative of activity areas (e.g., hearths) or architectural features (e.g., house pits). They usually contain a wide range of artifacts made of stone, bone, antler, and shell. While Oregon Coast shell middens frequently have relatively low artifact densities, with sufficient excavation, the study of artifact assemblages can yield information on cultural chronology, culture change, and sometimes, interaction with neighboring groups (e.g., through analysis of non-local or trade goods). The shell in shell middens provides an alkaline matrix which enhances the preservation of organic materials. Artifact analyses, along with the study of faunal remains (shell and bone) can provide information on the nature of past environments, patterns of resource use, subsistence activities, and the seasonality, duration, and nature of site occupation. At the level of the individual site, we can document the adaptive strategy and lifeways of local groups of people at specific times in the past. We can determine which food resources were used and which habitats were exploited. When such information is combined with study of other sites within a region, we can reconstruct prehistoric settlement systems characteristic of larger areas. Regional analyses also can identify diversity in subsistence-settlement systems and allow for study of some types of group interaction and variation.

Lithic Sites - On the Oregon Coast, lithic sites are usually defined by the absence of shell. These deposits contain lithic artifacts, burned rock, and charcoal, and more rarely, minor quantities of faunal remains. While these classes of data are more limited than those contained in shell middens, charcoal can be dated, and lithic artifacts can be analyzed. Most lithic sites are located on the southern Oregon Coast, but examples are also known from the central and north coasts.

Listed on the National Register of Historic Places, the Blacklock Point Lithic Site (35-CU-75) is considered the "type site" for this property type (see Minor 1993a). Ross (1984), who first characterized these sites as distinctive, described them as "bluff sites," since several occur on elevated landforms. Minor (1993a) preferred the term "lithic site" because not all these sites are located on bluffs. Ross (1984) also referred to these sites as "terrestrially-oriented," but the adaptive strategies of the groups that produced most of these sites are not known. Minor (1993a) proposed three main hypotheses to explain the relationship of lithic sites to shell middens: (1) they are older than shell middens, indicating a "pre-littoral" adaptation; (2) they are contemporaneous with shell middens but were occupied by terrestrially oriented people, perhaps from the interior; (3) the same people who produced shell middens also produced lithic sites, and these comprise two aspects of a settlement system.

For the Blacklock Point Lithic Site, Minor (1993a) suggested that the position of the shoreline when the site was occupied (ca. 7500 B.P.) was "somewhat west" of its present position, with the implication that the remains of littoral resource use may have been located closer to the ancient seashore, and would have been destroyed by rising sea levels. Minor (1993a) found nothing in the site's artifact assemblage to indicate an interior affiliation for the site's residents; any differences between artifact classes present at Blacklock Point Lithic site when compared to shell middens are best explained by differential preservation. While there is no direct evidence for subsistence activities at the site, Minor (1993a) suggested this particular lithic site represented a special aspect of the settlement system of people who relied on coastal resources and were responsible for roughly contemporaneous shell middens. Other Oregon Coast lithic sites warrant similar levels of investigation to evaluate these hypotheses and interpretations. Although archaeologists cannot yet offer definitive interpretations of lithic sites, they hold considerable potential for understanding Oregon Coast prehistory.

Villages - Villages are places where a reasonably large group of people (more than one or two nuclear families) lived for at least a substantial portion of the annual cycle. Although archaeologists frequently identify sites as "villages," this term is often applied too loosely. We are somewhat more restrictive in our use of this term, recognizing that the defining attributes are somewhat arbitrary. To be classified as a village, a property must satisfy at least one of the following criteria: (1) contain a minimum of one house (residence), identified by surficial or buried archaeological or architectural features; or (2) have ethnographic or ethnohistorical data indicating that it was a village or settlement with a minimum of one house. The presence of a house is the minimal characteristic of a village; such a structure may have been a semi-permanent or permanent residence, and a minimum house size is not specified here. The rationale behind these criteria is that a village is a place where a community of people live together or aggregate for a period of time, and that some Northwest Coast houses can be large, accommodating extended families (Suttles 1990). The specific evidence for identifying sites as villages will be described on individual property forms.

We have deliberately chosen to avoid making further distinctions within this category (eg., large or small village, hamlet, town, etc.) because any such labeling has specific functional and hierarchical implications that in our opinion are unjustifiable with current knowledge. This is especially true for those sites that have undergone substantial attrition over the last 100 years ago due to erosion, development, or looting (see section, *Cultural and Environmental Influences on State Parks Lands*).

Villages generally contain particularly large, rich, and diverse archaeological records. Most Oregon Coast villages contain shell middens, and some may contain localized "lithic areas." The types of data they contain may include all those previously discussed, as well as more substantial architectural remains (house pits, house floors, walls, structural elements, outbuilding remains, etc.) than those found at many shell middens and lithic sites. Ideally, these architectural data make possible more sophisticated spatial analyses of artifacts and faunal materials providing more specific interpretations of human behavior. In some cases, specialized activity areas might be defined inside and outside houses. In other cases, occupational specialization or status differences might be recognized between households. For villages known through ethnography, ethnohistory, or oral history, archaeologists can approach even more specific interpretations. The linguistic and/or ethnic affiliation of sites may be determined, and in some cases living descendents of the site occupants may be identified. Ethnographic and historical data on the nature and seasonality of site occupation, the types of activities performed, the spatial organization of these activities and relationships with other social groups might be tied to the archaeological record. Village sites generally have special significance for contemporary Native Americans, some of whom may be descended from the residents of such sites.

Ethnographic and Ethnohistorical Places - This property type includes sites for which specific ethnographic and ethnohistorical data can be linked to specific archaeological sites. Such data might take the form of a Native American placename, or information regarding specific attributes of a particular settlement, or who lived at the site, the nature of their activities on or near the site, their relationships with other individuals or communities, or associations between stories, legends or myths with landscape features. Sources of such information include accounts of explorers (DeVoto 1953; Elliot 1928, 1929), fur traders and military men (Abbott 1854; Davies 1961; McLoughlin 1941; Rich 1941; Smith 1854; Victor 1894), white settlers (Dodge 1898; Douthit 1987, 1992; Palmer 1854; Parrish 1854; Williams 1878) and ethnographers who worked with Native American informants (Beckham 1971, 1977, Boas 1898; Dorsey 1889, 1890, Drucker 1937, 1939, Farrand 1901; Frachtenberg 1914, 1920, 1922; Golla 1976; Harrington 1942; Hall 1991; Jacobs 1939, 1940; Pierce 1965; Waterman 1925). Secondary sources (Beckham and Minor 1980; Beckham et al. 1984; Caldera 1995; Hall 1995; McArthur 1992; Miller and Seaburg 1990; Robbins 1988; Zenk 1990) have also been used. When ethnographic and ethnohistorical information can be incorporated into the study of specific archaeological sites, more specific interpretations of archaeological traces often can be made. In addition, sites for which these kinds of data exist are often of special significance to contemporary Native Americans, because these places were frequently occupied by their recent ancestors.

Such places were often the settings for a variety of interactions between Native Americans and Euroamerican newcomers, and their study is important in reconstructing the cultural landscape of contact and colonization. Some placenames may also have been passed down from precontact times, and can provide valuable hints of ancient cognitive and ideological dimensions of prehistoric cultures.

Burial Sites - This property type is highly significant to both Native Americans and archaeologists. Compared to surrounding regions, we know relatively little about burial sites and practices along the Oregon Coast. However, the property type is known to include sites ranging from isolated interments to relatively large cemeteries, most of which appear to be associated with other property types (especially villages or shell middens). Prior to recent times, most Native Americans of the Oregon Coast seem to have practiced subsurface burials, interring their dead at a variety of depths below the ground surface, depending upon local conditions. This pattern of subsurface interment is known to date back at least 2,400 years (Hall 1995:44) and may well be much older. The details of burial practices also varied according to local customs. Near a Tillamook town in 1806, for instance, William Clark described a burial ground in which the dead were interred in plank boxes placed in an open canoe resting on the ground (Thwaites 1905:323). On the southern Oregon Coast, the deceased sometimes were buried in abandoned house depressions (Heflin 1966; Laughlin and Edmundson n.d.), at other times in formal cemeteries outside the main residential area (Schumacher 1874). In these cases, human burials were often marked by cobble cairns, imported sand lenses, split redwood planks, beads, and other burial accompaniments. Except where exposed by erosion or other ground disturbing activities, however, no surface indications mark the location of ancient Native American burials along the Oregon Coast. This makes them particularly susceptible to inadvertent disturbance by modern ground-altering activities.

Contemporary Native Americans generally consider sites containing human burials to be among the most sensitive of sites. Unfortunately, because they often contain concentrations of artifacts (mortuary goods), they are also especially vulnerable to the depredations of grave-robbers. For some of the same reasons, cemeteries were the focus of early archaeologists who sought specimens for museum displays or skeletal remains for comparative studies. Many of these museum collections may soon be returned to tribal authorities under the provisions of the Native American Graves Protection and Repatriation Act.

For the archaeologist, burial sites are significant for several reasons. In addition to their potential for chronological information, the study of funerary artifacts can often yield key insights to the nature of changing artistic traditions, wealth and status differences between individuals, social relations, and religious beliefs and practices. Physical anthropological data documented from human bones can be used to study the biological attributes of ancient populations, their genetic and ethnic affiliations, and intra- and inter-societal variation in health, diet, and cause of death. These sources of data can be used along with the study of funerary artifacts to reconstruct demographic history and social structure and relationships. While some Native Americans support such studies, others object to scientific studies of human bones and burial-related

artifacts. Archaeologists are required to work for the preservation of sites with burials, and plans for the scientific study of burial sites or collections must be negotiated with interested Indian Tribes, as authorized by the Native American Graves Protection and Repatriation Act.

Intertidal Fishing Structures - This property type comprises sites with linear alignments of wood stakes and related features found in the intertidal zone of many river mouths and estuaries on the Oregon Coast. Such sites are described in early ethnohistorical and/or ethnographic accounts as the remnants of weirs, traps, or other features designed to capture fish. Because these sites are submerged in water for substantial periods of time, wood and other organic artifacts that typically perish in terrestrial contexts in the Northwest, are often well-preserved in the dense anaerobic sediments along shorelines. This site type is widespread on the Northwest Coast of North America, and investigations in Southeast Alaska and British Columbia have shown that such sites were in use at least 3500 to 4500 years ago (Moss and Erlandson 1995d). Pullen (1985) did pioneering archaeological work on intertidal fishing sites along Oregon's south coast, but until recently little attention had been paid to such sites elsewhere in Oregon. Beginning in 1993, we began a SHPO-sponsored program to locate, map, and radiocarbon date intertidal fishing structures of the Oregon Coast (Erlandson and Moss 1993; Moss and Erlandson 1994, 1995a 1995d; Byram 1995). So far, this work has recorded over 30 fishing sites. Most of the dated wood stakes from fishing structures have produced ages of less than 1000 years, but two Yaquina Bay sites (35-LNC-78 and 35-LNC76) have produced dates of over 2000 years.

The study of intertidal fishing sites requires a range of special considerations when conducting archaeological survey, excavation, analyses, and conservation. These sites are exposed primarily during low tides, so the timing of archaeological investigation must be carefully planned and scheduled. Although wood stakes are often recovered and conserved relatively easily, other perishable materials from these water-saturated sites cannot be excavated using standard archaeological tools (eg., trowels), but require hydraulic equipment (eg., using water hoses, pumps, etc.). Once these perishable artifacts are removed from their context, material deterioration accelerates, requiring special handling, transportation, and storage arrangements to keep the objects wet. Basketry and latticework items must be stabilized and conserved in specialized facilities (e.g., storage tanks, freezers) as artifact analyses proceed.

Ethnographic and archaeological research suggests that several types of fishing structures may have been used along the Oregon Coast. A typology of intertidal fishing structures is being developed by Byram (1995). These archaeological sites hold great potential to contribute to our understanding of indigenous fishing technology and Native American patterns of resource use. These sites are also highly significant to the descendents of their builders, today's Oregon Coast Indian Tribes, especially in the context of current struggles over fishing rights and concern for declining fish stocks. Only a few fishing weir and trap sites have been located in State Parks, but we hope many of the identified sites will be nominated to the National Register in the future.

Quarries - Oregon Coast peoples made extensive use of a variety of stone raw materials in the manufacture of stone tools, ornaments, and other objects. The most widely used materials include: siliceous rocks (chert, quartzite, obsidian, etc.) used to make chipped stone tools such as projectile points, scrapers, and knives; sandstones used to make pestles, bowls, and ground stone tools; soft soapstones (talc schists, serpentines, etc.) used to make beads, ornaments, pipes, etc.; very hard schists used to manufacture adze blades, chisels, etc.; and red ochres and other mineral pigments used to make paints. Some of these raw materials (i.e., obsidian) are relatively rare along much of the Oregon Coast and were often obtained through trade with adjacent interior or coastal groups. Raw materials like schist are locally abundant along the coast, while quartzite and chert are relatively widely distributed in river gravels, cobble beaches, and marine terrace deposits of the Oregon Coast. Even for some of the more common raw materials, however, high quality sources are found only in localized outcrops.

When high quality raw materials are found in localized outcrops, they were often systematically quarried by Native Americans who excavated bedrock or alluvial deposits to obtain the materials. So far, few formal quarry sites have been identified along the Oregon Coast. Much more common are multipurpose sites containing abundant chipped stone toolmaking debris located adjacent to alluvial or beach deposits rich in secondary sources of raw material. As additional information comes to light on the geographic distribution of high quality mineral sources, however, it is expected that more quarry sites will be located. Such sites have the potential to inform studies of lithic technology, resource use patterns, and intertribal trade relationships in prehistory.

Rock Art Sites - Sites containing rock art are relatively unusual along the Oregon Coast, but two examples have been recorded on coastal State Park Lands. Both of these are petroglyphs, with motifs pecked or incised onto the surface of a bedrock outcrop. 35-CLT-65, a simple isolated motif reportedly found in Ecola State Park on the north coast (Loring and Loring 1982:153), has not been relocated by recent researchers (Minor 1986; Moss and Erlandson 1995a). The other example is part of 35-CU-142, found in association with a shell midden complex located in Humbug Mountain State Park on the southern Oregon Coast (Minor 1986; Moss and Erlandson 1994).

Future work along the Oregon Coast, especially in areas somewhat removed from the rapidly eroding shoreline, will almost certainly document additional examples of rock art. These sites will be highly significant as rare examples of the site type from the Oregon Coast. The design motifs represented, their spatial arrangements, and their relationship to other archaeological and landscape features can be compared to those of other rock art sites in a broad geographic context. Appropriately studied, such sites can provide a rare glimpse at the ceremonial and symbolic life of the people who made them, and for this reason, they are generally considered to be sacred by contemporary Native Americans of the area.

Property Types and Ecological Settings - As described above, an individual site may encompass a variety of property types. In addition to the types of properties described thus far, the ecological setting of individual sites will be systematically described. Oregon Coast site settings range from rocky shorelines and sandy beaches on the outer coast to estuarine shorelines to lakeshores to sites in the uplands or on terraces along rivers or streams. Sites are located on headlands, along river or stream banks, in sand dunes, or in the intertidal zone. An individual site may encompass a mosaic of several environments and these will be described as appropriate. In addition, contemporary environments may not reflect past environments. For example, a modern lakeshore may have been an estuarine shore 5000 years ago. When paleoenvironmental data are available, past environments will be described.

Table 3 lists all State Parks archaeological sites found eligible to the National Register of Historic Places. Information on the property types present and the associated ecological setting is indicated. This list contains 93 sites, four of which (35-CU-75, 35-CU-74, 35-CU-82 and 35-CU-34) have already been listed on the National Register. Property types represented in the 89 sites nominated in this document include:

shell midden:	80 sites
village:	21 sites
ethnographic/ethnohistorical place:	14 sites
lithic site:	10 sites
burial site:	9 sites
intertidal fishing structure:	1 site
quarry	1 site
rock art:	1 site

As described earlier, an individual site can have multiple property types represented, and in fact, 29 sites have more than one property type represented.

Table 4 lists 33 State Parks archaeological sites for which available information precludes determining eligibility to the National Register of Historic Places at this time. In some cases, sites could not be relocated, and their current condition remains unknown. In other cases, the sites are thought to have been destroyed through a variety of processes. We stress that sites on this list *have not been determined ineligible to the National Register*. At this time, inadequate documentation of the location and/or condition of these sites does not allow a formal determination of eligibility.

Table 3: Archaeological Sites in Oregon Coast State Parks Eligible to the National Register of Historic Places
ordered from north to south

State Park	Site Number	Property Type	Ecological Setting
Ecola	35-CLT-12	shell midden, village ethnohistorical place	outer coast: mosaic of rocky & sandy shoreline
Ecola	35-CLT-23	shell midden	outer coast: mosaic shoreline
Ecola	35-CLT-21	shell midden, village	outer coast: mosaic shoreline
Oswald West	35-TI-46	shell midden	outer coast: semiprotected bay
Nehalem Bay	35-TI-57	shell midden	estuary: intertidal & terrestrial
Nehalem Bay	35-TI-62	shell midden	estuary: intertidal
Oceanside Beach	35-TI-47	shell midden	outer coast: mosaic shoreline
Cape Lookout	35-TI-1	village, shell midden	estuary, sandspit, sandy beach
Cape Lookout	35-TI-44	village, shell midden	estuary, sandspit, sandy beach
Cape Lookout	35-TI-68	lithic site, intertidal fishing structure	estuary, saltmarsh: intertidal
Cape Lookout	35-TI-67	lithic site	estuary, saltmarsh: intertidal
Cape Lookout	35-TI-39	shell midden	estuary, sandspit
Cape Lookout	35-TI-45	shell midden	estuary, sandspit
Cape Lookout	35-TI-66	lithic site	estuary, saltmarsh: intertidal
Cape Lookout	35-TI-65	lithic site	estuary, saltmarsh: intertidal
Cape Lookout	35-TI-38	shell midden	outer coast: rocky headland
Cape Lookout	35-TI-61	shell midden	outer coast: rocky headland
Cape Lookout	35-TI-35	shell midden	outer coast: rocky headland
Cape Lookout	35-TI-36	shell midden	outer coast: rocky headland
Cape Lookout	35-TI-54	shell midden	outer coast: rocky headland
Boiler Bay	35-LNC-44	shell midden	outer coast: rocky shoreline
Boiler Bay	35-LNC-45	shell midden	outer coast: rocky shoreline
Rocky Creek	35-LNC-43	shell midden	outer coast: rocky shoreline
Rocky Creek	35-LNC-68	shell midden	outer coast: rocky shoreline
Devil's Punch Bowl	35-LNC-19	shell midden	outer coast: mosaic shoreline
Seal Rock Wayside	35-LNC-14	shell midden, village ethnohistorical place	outer coast: mosaic shoreline
Yachats Trail #804	35-LNC-72	shell midden	outer coast: rocky shoreline
Yachats Trail #804	35-LNC-73	shell midden	outer coast: rocky shoreline
Yachats Trail #804	35-LNC-66	shell midden	outer coast: rocky shoreline
Smelt Sands	35-LNC-65	shell midden	outer coast: rocky shoreline
Yachats Ocean Wayside	35-LNC-48	shell midden, village, ethnographic place	outer coast: semi-protected bay
Yachats Ocean Wayside	35-LNC-63	shell midden	outer coast: mosaic shoreline
Neptune	35-LA-1 (229)	shell midden	outer coast: mosaic shoreline

Neptune	35-LA-228	shell midden	outer coast: mosaic shoreline
Neptune	35-LA-2	shell midden, village	outer coast: mosaic shoreline
Neptune	35-LA-3	shell midden, village	outer coast: mosaic shoreline
Neptune	35-LA-4	shell midden	outer coast: mosaic shoreline
Neptune	35-LA-5	shell midden, village	outer coast: mosaic shoreline
Neptune	35-LA-6	shell midden, village	outer coast: mosaic shoreline
Neptune	35-LA-7	shell midden, village	outer coast: rocky shoreline
Neptune	35-LA-8	shell midden	outer coast: mosaic shoreline
Neptune	35-LA-10	shell midden, burial site	outer coast: mosaic shoreline
Stonefield Beach	35-LA-227	shell midden	outer coast: mosaic shoreline
Stonefield Beach	35-LA-11	shell midden	outer coast: mosaic shoreline
Squaw Creek	35-LA-13	shell midden	outer coast: mosaic shoreline
Washburne	35-LA-16	shell midden	outer coast: sandy beach
Heceta Head Beach (Devil's Elbow)	35-LA-17	shell midden, village burial site	outer coast: semiprotected bay
McCullough Bridgehead	35-CS-24	shell midden	estuary: mudflats
Yoakam Point	35-CS-129	shell midden	outer coast: rocky shoreline
Yoakam Point	35-CS-34	shell midden, ethnographic place	outer coast: rocky shoreline
Shore Acres	35-CS-138	shell midden	outer coast: mosaic shoreline
Shore Acres	35-CS-67	shell midden	outer coast: rocky shoreline
Shore Acres	35-CS-66	shell midden	outer coast: rocky shoreline
Cape Arago	35-CS-10	shell midden	outer coast: mosaic shoreline
Bullards Beach	35-CS-39	lithic site, quarry	estuary/sandspit
Bullards Beach	35-CS-3	village, shell midden, ethnohistorical place, burial site	estuary
Bullards Beach	35-CS-131	shell midden	estuary/sandspit
Bandon	35-CS-9	lithic site	outer coast: mosaic shoreline
Bandon	35-CS-8	shell midden	outer coast: sandy beach
Floras Lake	35-CU-209	lithic site	outer coast: mosaic shoreline
Floras Lake	**35-CU-75***	**lithic site**	**outer coast: rocky shoreline**
Floras Lake	**35-CU-74***	**shell midden**	**outer coast: mosaic shoreline**
Cape Blanco	35-CU-83	lithic site	estuary
Cape Blanco	35-CU-1	shell midden	estuary/outer coast
Cape Blanco	**35-CU-82***	**lithic site**	**estuary/outer coast**
Port Orford Heads	35-CU-9	shell midden, village ethnographic place burial site	outer coast: rocky shoreline

Humbug Mountain	35-CU-13	shell midden	outer coast: mosaic shoreline
Humbug Mountain	35-CU-14	shell midden, village	outer coast: mosaic shoreline
Humbug Mountain	35-CU-156	shell midden	outer coast: mosaic shoreline
Humbug Mountain	35-CU-16	shell midden	outer coast: rocky shoreline
Humbug Mountain	35-CU-153	shell midden	outer coast: rocky shoreline
Humbug Mountain	35-CU-142	shell midden, rock art	outer coast: mosaic shoreline
Cape Sebastian	35-CU-78	shell midden ethnographic place	outer coast: rocky shoreline
Cape Sebastian	35-CU-77	shell midden ethnographic place	outer coast: mosaic shoreline
Pistol River	35-CU-61	village, shell midden, ethnohistorical place, burial site	outer coast: mosaic shoreline
Pistol River	35-CU-73	shell midden, burial site, ethnographic place, village	outer coast: mosaic shoreline
Pistol River	35-CU-31	shell midden, ethnohistorical place	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-32	shell midden	outer coast: rocky shoreline
Samuel H Boardman	35-CU-157	village, shell midden, ethnographic place, burial site	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-33	shell midden, village	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-71	shell midden	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-70	shell midden	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-67	shell midden, lithic site	outer coast: rocky shoreline
Samuel H Boardman	**35-CU-34***	**shell midden, lithic site**	**outer coast: rocky shoreline**
Samuel H Boardman	35-CU-35	shell midden, burial site village, ethnohistorical place	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-208	shell midden	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-207	lithic site	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-36	shell midden	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-69	shell midden	outer coast: mosaic shoreline
Samuel H Boardman	35-CU-37	village, shell midden, burial site, ethnographic place	outer coast: mosaic shoreline
Harris Beach	35-CU-38	shell midden	outer coast: mosaic shoreline
Harris Beach	35-CU-80	shell midden	outer coast: mosaic shoreline
Harris Beach	35-CU-79	shell midden	outer coast: mosaic shoreline

* Site already listed on the National Register of Historic Places.

Table 4: Archaeological Sites in Oregon Coast State Parks Currently Not Found Eligible to the National Register of Historic Places

State Park	Site Number	Property Type	Status
Ecola	35-CLT-65	rock art	unknown
Nehalem Bay	35-TI-5	shell midden?	unknown
Nehalem Bay	35-TI-4	lithic site, village, ethnohistorical place	requires additional documentation
Nehalem Bay	35-TI-55	lithic site	requires additional documentation
Cape Meares	35-TI-50	shell midden	requires additional documentation
Cape Lookout	35-TI-41	shell midden	unknown
Cape Lookout	35-TI-43	shell midden, village	unknown
Cape Lookout	35-TI-40	shell midden	unknown
Cape Lookout	35-TI-42	shell midden	requires additional documentation
Cape Lookout	35-TI-64	fishing structure	State tidelands
Cape Lookout	35-TI-37	shell midden	unknown
Devil's Punch Bowl	35-LNC-67	shell midden	land status unclear
Yaquina Bay	35-LNC-47	shell midden	questionable integrity
Lost Creek	35-LNC-13	shell midden	destroyed
Yachats Bay	35-LNC-24	shell midden	questionable integrity
Neptune	35-LA-1097	lithic site	inadequate size
Sunset Bay	35-CS-137	shell midden	land status unclear
Sunset Bay	35-CS-86	shell midden ethnohistorical place	destroyed
Seven Devils	35-CS-55	shell midden	destroyed
Bullards Beach	35-CS-4	lithic site	destroyed
Bullards Beach	35-CS-5	village, shell midden burials, ethnohistorical place	destroyed
Bullards Beach	35-CS-120	shell midden	not on State Parks
Bandon	35-CS-14	lithic site	unknown
Bandon	35-CS-6	lithic site	destroyed?
Bandon	35-CS-35	lithic site	destroyed?
Bandon	35-CS-38	lithic site	requires additional documentation
Floras Lake	35-CU-76	lithic site	requires additional documentation
Cape Blanco	35-CU-3	shell midden	destroyed
Battle Rock Wayside	35-CU-12	shell midden, village, ethnohistorical place	not on State Parks
Humbug Mountain	35-CU-155	shell midden	not on State Parks
Pistol River	35-CU-62	shell midden, village	destroyed
Samuel H. Boardman	35-CU-158	village, ethnohistorical place	unknown
Samuel H. Boardman	35-CU-68	shell midden	unknown

Note: Sites on this list have not been determined ineligible to the National Register. Current data on the location and/or condition of these sites does not allow a formal determination of eligibility.

RESEARCH SIGNIFICANCE

The property types defined above have the potential to contribute important information towards the resolution of a variety of significant research questions that can be organized within a framework of larger research questions or topics. The research questions range from highly specific questions about the age, function, or ethnic affiliation of individual sites, to broader questions of the role each site played within regional settlement, economic, or sociopolitical systems, to general questions relating to the resolution of theoretical and methodological problems in archaeology, anthropology, and other disciplines. In this section, we discuss the research topics and questions that may be addressed with information generated from Oregon Coast archaeological sites nominated in this Multiple Property National Register Nomination. We begin with site-specific questions and end with general research questions. Although these research questions and topics cannot be completely comprehensive or encyclopedic, they provide a framework for establishing the importance of individual sites nominated to the National Register of Historic Places and lay the foundation for future study of the Oregon Coast archaeological record.

The research questions are organized within a framework of topics, some of which are also written in the form of questions. These topics and questions are summarized in Table 5. The research questions assist us in accumulating and organizing data, which in turn, reveal patterns of information that help resolve questions broader than those related to a specific site. Shedding light on regional questions, in turn, allows us to fill in the gaps in our understanding of the themes of Oregon Coast prehistory and North American Pacific Coast prehistory, more generally. The questions in Table 5 discussed below illustrate the key applications of data from Oregon Coast sites, and provide a set of criteria by which the importance and eligibility of individual archaeological sites can be determined. Oregon coast sites should contain data capable of addressing the following research questions to be eligible to the National Register of Historic Places.

Site Specific Research Questions - Before an understanding of the broader significance of an individual archaeological site can be gained, certain basic questions must be answered. Among these are questions related to the age, structure, contents, function, and ecological context of the site. How old is the site, and how many discrete occupational components does it contain? How large is the site, what types of artifacts, ecofacts, and features does it contain, and what does this tell us about the function of the site? What time(s) during the year was this site occupied and what does this tell us about its function? How have the structure or contents of the site changed since it was abandoned and what effects might these changes have on attempts to reconstruct a comprehensive picture of the site and the people who lived there? Can the ethnic affiliation of a group be identified based on material culture represented in a site? How does the ethnic or linguistic group (or groups) identified by archaeological or other evidence relate to the history of contemporary Native Americans in the area? What was the nature of the environment in the site vicinity at the time (or times) it was occupied and how did site inhabitants use local resources? What was the relative contribution of terrestrial, riverine, estuarine, littoral, and marine resources to the group's subsistence economy? Is there

Table 5: Research Topics and Questions Used to Evaluate the Eligibility of Native American Archaeological Sites of the Oregon Coast

Topic #1: How have Oregon Coast environments occupied and/or used by Native Americans varied through space and time?

1a. During the past 12,000 years, how has the structure, distribution, and productivity of various terrestrial and aquatic habitats used by Native Americans changed?
1b. How have sea level changes, tectonic subsidence, marine erosion, dune building, and other geomorphological processes affected coastal landscapes?
1c. When did estuaries first form along various parts of the coast and how have they changed over time?
1d. When did key aquatic resources (e.g., salmon, shellfish) first become productive?
1e. When did the "essentially modern" coastal geography develop and how stable were populations of key resources that Native American peoples depended upon?
1f. How has the distribution and productivity of sea mammal rookeries and haulouts changed over time?
1g. How have human activities, both historic and prehistoric, altered coastal landscapes and the distribution and abundance of key subsistence resources?
1h. How have environmental changes affected the preservation and condition of archaeological sites, the information generated from their study, and interpretations of prehistory made by archaeologists?

Topic #2: When and how did coastal adaptations develop along the Oregon Coast?

2a. When, how, and why did humans first colonize the Oregon coast and where did they come from?
2b. What was the nature of early human adaptations to the coast: did early coastal peoples focus on terrestrial resources, with marine resources used sporadically or not at all, or were aquatic foods always an important part of their diet?
2c. When coastal economies became established, how important were various terrestrial, riverine, estuarine, littoral, and maritime resources? Was this resource mix variable over space and time?
2d. Were sheltered estuaries and river mouths the focus of early coastal settlement, with outer coast localities settled later?
2e. When were boats first used by Oregon Coast peoples and what were they used for?
2f. Is there local variability in early adaptations to Oregon Coast environments?
2g. How do the patterns evident along the Oregon Coast compare to those from adjacent areas and why?

Topic #3: How did Oregon Coast settlement and subsistence change through time?

3a. How did human population levels change along various parts of the Oregon Coast over time?
3b. What affects did human population changes have on coastal settlement and subsistence patterns?
3c. What was the range of site types used by coastal peoples at any given point in time and how did these sites function within a seasonal round or other settlement system?
3d. Do "bluff" or "lithic" sites represent different adaptive strategies, variations in faunal preservation, different activity areas or aspects of a seasonal round, or any of the above under different circumstances?
3e. How and why did settlement mobility or sedentism vary through space and time?
3f. When do large shell middens or evidence for substantial architecture first appear along the Oregon Coast?
3g. Does the appearance of large shell middens imply shoreline stabilization, increased population, and/or greater sedentism?
3h. What variations in house size, shape, internal organization, and construction techniques are evident through space and time?
3i. How and why did patterns of resource use vary along the Oregon Coast through space and time?
3j. How important were salmon, or other key animal resources, to Oregon Coast peoples through time?
3k. What was the nature and extent of plant use along the Oregon Coast and how did it vary through space and time?

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3l. Is there faunal or technological evidence for diversification or intensification of resource use through time?
3m. When do fishing weirs and traps or other evidence for mass harvest of animal resources first appear in the archaeological record?
3n. Is there evidence for prehistoric overexploitation of resources such as shellfish, fish, sea mammals, or land mammals?
3o. Was there competition over productive resource territories or did inequities in resource availability contribute to the development of trade or other social relationships between groups?
3p. Are there significant differences between lifeways of people on the north, central, and south coast?

Topic #4: When did ethnographic patterns first develop on the Oregon Coast?

4a. When do the hallmarks of ethnographically-documented Oregon Coast cultural patterns first appear in the archaeological record?
4b. When, how, and why did various linguistically distinct Native American groups first appear on the coast?
4c. Are ethnic boundaries evident in the archaeological record during the precontact era and how are these related to geographic or ecological factors?
4d. What is the evidence for craft or other occupational specialization in the archaeological record?
4e. Is there archaeological evidence for wealth or status differences within or between Oregon coast groups?
4f. Is the archaeological record from the precontact era consistent with patterns of technology, resource use, settlement, and social organization described ethnographically?
4g. What was the size and spatial distribution of Oregon Coast populations just prior to European contact?

Topic #5: How did Euroamerican colonization affect Oregon Coast Native Americans and how did Native Americans affect the course of colonization?

5a. When and where did significant contact between Oregon Coast Native Americans and European and American maritime expeditions take place?
5b. How extensive were such contacts and what effects did they have?
5c. Is there archaeological evidence for Old World epidemic diseases transmitted to Oregon Coast peoples during protohistoric times, and did these result in archaelogically detectable population loss?
5d. What effects did the extensive contacts associated with the land-based fur trade have on various Oregon Coast peoples during the early 1800s?
5e. Is there archaeological evidence for shifts in settlement, subsistence, technology, trade, or social organization attributable to fur trade activities?
5f. When were firearms first obtained by Oregon Coast peoples and what effects did they have on subsistence practices and/or intergroup relationships?
5g. What do archaeological data tell us about events associated with Euroamerican settlement of the coast, the Rogue River Wars, removal and confinement of Oregon Coast Natives on reservations, and the later resettlement of many areas by Indian people?
5h. How and why did such patterns of contact and conflict vary along different parts of the Oregon Coast?

Topic #6: Questions related to general archaeological method and theory

6a. What does the Oregon Coast archaeological record tell us about the importance of environmental change to human societies? How did past human societies react or adapt to environmental changes of varying magnitude and how does this inform understandings of current environmental problems and/or land and resource use issues?
6b. How does the Oregon Coast archaeological record inform current models for the development of coastal adaptations, the relative productivity of marine vs. terrestrial resources, and maritime cultural ecology?

6c. Where do Oregon Coast cultures fit into the broader continuum of "cultural complexity" that characterizes the hunting/gathering/fishing societies of the Pacific Coast of North America?

6d. How did historical contacts between Native American, European, and American cultures contribute to the development of the multiethnic communities that characterize Oregon, North America, and much of the modern world today?

6e. How might studies of Oregon Coast archaeological sites contribute to methodological advances in dating, faunal analyses, and in understanding taphonomic and site formation processes?

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evidence for changes in the local environment, patterns of resource use, site function, or ethnic affiliation through time? Finally, is there evidence at the site for relationships with communities or environments located beyond the local area?

Cumulative information derived from individual sites creates opportunities to derive statistical patterns unavailable in the study of any one site. Many research topics require large samples to create information, and these samples are only available on a regional scale. Many of the research questions described below can only be addressed with regional samples, but of course study of individual sites creates the building blocks of regional models. Since this multiple property nomination encompasses a large region-- the Oregon Coast-- regional research questions seem most important in assessing the significance of individual sites.

Regional Research Topics - Once the age, structure, contents, function, ethnic affiliation, and environmental context of an individual site have been addressed, comparative analyses can address broader questions. The scale of such regional analyses can vary from the level of a single bay or estuary, to that of an entire drainage basin, to a physiographic province such as the Klamath Mountains, to even broader regions such as the Oregon Coast, or the larger Northwest Coast which extends from southeast Alaska to northern California. Spatially, such comparative analyses often expand outward to assess the role of a site or sites in a local settlement system (perhaps defined by a single bay, drainage, or an ethnographically defined tribal territory), to examine the relationship of sites in that settlement system to those located in surrounding areas, to regional studies that analyze variation in site types, site structure, site contents, and patterns of resource exploitation in a variety of different environments of the Oregon or Northwest Coast. A common feature of many comparative regional analyses is an evolutionary examination of cultural and environmental changes that took place in a given area through time.

Regional research questions might include some of the following: What role did this site play in a regional settlement system and what is its functional or temporal relationship to nearby sites? How does this site relate to the historical development of contemporary Indian tribes in the region and what can it tell us about such demographic, economic, technological, and sociopolitical developments? How does the site assemblage fit within existing chronologies, cultural sequences, or models archaeologists have proposed for the area? When compared with other sites in the same geographic area, what can be said about the development of the landscape over time? Given what is known about such landscape change, does a representative sample of

sites exist for the region under study? Is there evidence for shifts in resource use through time and how might these be related to environmental changes documented for the area? What relationships exist between the density and distribution of various site types in major landforms or habitats? How abundant are sites dating to various time periods and what does this imply about human population changes through time? What evidence is there for interaction -- trade, intermarriage, raiding or warfare, etc. -- between various communities in a region? Are patterns evident in the direction and intensity of trade or other interaction through time? How might such patterns be related to geographic or cultural barriers that inhibited interaction in some directions? When does evidence for Euroamerican contact first appear in the region and what effects did this have on traditional Native American cultures in the area? When did Native American groups in the area first come into sustained contact with Euroamericans and what were the consequences?

Many of these same questions can be adapted to broader regions like the Oregon Coast, the Northwest Coast, or the Pacific Coast of North America (see Lightfoot 1993; Moss and Erlandson 1995b). Regional research questions related to the Oregon Coast in general can be organized around a series of topics, including (1) changes in Oregon Coast environments through time; (2) the antiquity of coastal adaptations; (3) regional developments in settlement and subsistence; (4) the antiquity and origins of ethnographic cultural patterns; and (5) the effects of European contact and colonization on Native Americans and Oregon Coast environments.

Regional Topic #1: Changes in Oregon Coast Environments through Time

Oregon Coast environments have changed dramatically through time. Just as it is necessary to understand the environmental context of individual sites, it is crucial to understand the regional environmental contexts in which broad cultural patterns developed. Data on past environments come from a variety of sources, but archaeological sites often contain a wealth of paleoecological data. Many Oregon Coast archaeological sites contain the remains of plants and animals that can be used to reconstruct paleoenvironments, and they also provide sedimentary and soils data that can contribute to the reconstruction of past geological processes and landscape evolution. Shell middens are an especially rich source of data on animal distributions, since the remains of shellfish, fish, mammals, and other vertebrates tend to preserve relatively well within them.

On a regional scale, how have Oregon Coast environments evolved over the period of human occupation? How have postglacial sea level rise, tectonic subsidence, and marine erosion affected the coastal landscape? Is there evidence for shifts in the availability or productivity of various types of flora and fauna through time? When did Oregon's coastal estuaries first form and when did salmon and other anadromous fish populations first become relatively productive? At any given time, how much local variation existed within the broad geographic patterns typical of the larger coastal region? When did Oregon Coast environments assume an essentially modern configuration, similar to the landscapes occupied by Native American peoples at the time of European contact? How strong an influence have environmental changes over the last 12,000 years had on

the developmental trajectories of Oregon Coast peoples? How have environmental changes associated with the historic development of the coast -- the construction of levees, dikes, and jetties; logging and commercial fishing and hunting, fire suppression, the introduction of exotic species, etc. -- altered the landscape and natural resource distributions along the Oregon Coast? Finally, what effects have environmental changes had on the archaeological record of the Oregon Coast and on interpretations of that record by archaeologists?

Regional Topic #2: The Antiquity of Coastal Adaptations

The discovery of a few isolated Clovis-like fluted projectile points along the Oregon Coast suggests that Paleoindian peoples were in the area by about 11,000 to 12,000 years ago (Moss and Erlandson 1995a). Unfortunately, we know virtually nothing about the economies of these early peoples. Like a broader debate among anthropologists (e.g., Osborn 1977; Perlman 1980; Yesner 1987), a current issue in Oregon Coast archaeology is when people first systematically exploited marine resources. On the northern Northwest Coast and in southern California, 7,000 to 9,000 year old coastal sites are relatively common (Fladmark 1986; Moss 1993; Erlandson 1994; Erlandson and Moss 1996). Erlandson's (1994) synthesis for the entire California Coast, for instance, identified over 80 coastal sites between 7,000 and 10,000 years old. In contrast, the coasts of Washington, Oregon, and northern California have produced just a few coastal sites earlier than 5,000 years old (Erlandson and Yesner 1992:269; Lightfoot 1993; Moss and Erlandson 1995b). Until 1986, no coastal shell middens predating about 3,500 years had been identified from San Francisco Bay to the Canadian border. The differential distribution of early Pacific Coast sites led some investigators to propose that coastal adaptations developed relatively late along the Oregon Coast (e.g., Ross 1990; Lyman 1991; Lightfoot 1993; Hildebrandt and Levulett 1996). Ross (1984) defined a "Pre-Marine" stage and Lyman (1991) a "Pre-Littoral" stage for the early phases of Oregon Coast prehistory, proposing that people occupying the Oregon Coast before 5,000 years ago focused primarily on the hunting of land animals and riverine fishing. Hildebrandt and Levulett (1996) also suggest that the higher productivity of elk, deer, salmon, and other anadromous fish drew people to terrestrial and upriver areas along the northern California and Oregon Coasts.

Others have argued that sea level rise, coastal erosion, subsidence, and dune building have obliterated much of the early record of coastal adaptations on the Oregon Coast (e.g., Minor 1995; Moss and Erlandson 1995b). For the northern California Coast, Jones (1991) felt too few coastal sites had been excavated to determine the temporal priority of terrestrial or marine economies, a statement that could also apply to the Oregon Coast. Given the relatively poor preservation of bone and shell in the mostly acidic soils along the Oregon Coast, it is possible that some early shell middens have completely deteriorated, especially if they were small or low density sites. In the last decade, research on both the Oregon and northern California coasts has documented a few coastal sites dated between 5,000 and 9,000 years ago (Minor and Toepel 1986; Minor 1993a; Schwaderer 1992; Moss and Erlandson 1995b), suggesting that early peoples of the area did not completely eschew marine resources. However, results from the investigation of the 7,500 year old

component at Blacklock Point (Minor 1993a) indicate that faunal remains were completely absent, leaving uncertainties about the economic focus of the early site occupants. Our recent survey and dating program of Oregon Coast archaeological sites has also shown that the vast majority of Oregon Coast sites are less than 1500 to 2000 years old (Moss and Erlandson 1995a).

Consequently, it is not clear when the Oregon Coast was first occupied or if the handful of known early coastal sites represent occasional use of marine resources by early land and river-based peoples (Lyman 1991:79-80) or the few preserved remnants of a broader coastal adaptation during the Middle and Early Holocene. More archaeological and geological research is needed before the issue of when the first Oregonians focused on coastal resources can be resolved. When did people first settle the coast, where did they come from, and how did they live? When did they first begin to use littoral and maritime resources? Did the early occupants of the coast focus primarily on terrestrial and riverine resources? Or is the dearth of evidence for Early and Middle Holocene coastal economies due to sea level rise, tectonic subsidence, coastal erosion, and the deterioration of faunal remains? Were the relatively protected estuaries and river mouths the focus of the earliest coastal settlement, with exposed outer coast localities settled later in time? What coastal resources (shellfish, fish, sea mammals, or others) were most heavily used by the earliest coastal peoples, and how important were plants and animals from riverine or terrestrial habitats? Were these early peoples highly mobile, relatively sedentary, or highly variable in their settlement strategies? How did the mix of resources influence adaptive strategies to Oregon Coast environments? What evidence might there be for significant local variations in the broad patterns of early coastal settlement and subsistence along the Oregon Coast? Were early settlements located primarily around the protected habitats of Oregon's coastal bays and estuaries, for instance, or were marine resources more important on the south coast than they were on the north?

Regional Topic #3: Regional Developments in Settlement and Subsistence

Understanding some of the broad patterns of Oregon Coast prehistory is limited by several problems, including the relative dearth of sites older than about 3500 years. This lack of Early and Middle Holocene sites has led to only provisional outlines of cultural developments during the first two-thirds of the cultural sequence. Another problem is that archaeologists have excavated primarily in large shell middens (Ross 1984; Lyman 1991:35). Many excavated sites are apparently the remnants of substantial villages, a site type expected to have developed relatively recently, when peoples up and down the Pacific Coast were most numerous, most sedentary, and most complex socially, politically, and economically. Smaller and less conspicuous sites (small shell middens, lithic sites, intertidal fishing structures) have often been overlooked by archaeologists choosing sites to excavate. However, these smaller sites may represent activities, settlement types, or time periods poorly represented in the archaeological record.

Although ecological perspectives became widespread in American archaeology in the 1960s, substantial subsistence studies of individual Oregon Coast archaeological sites date primarily to the 1980s and 1990s

(e.g., Minor and Toepel 1986; Minor et al. 1987; Lyman 1991; Minor and Greenspan 1991; Connolly 1992; Hall 1995). Regional settlement studies are even fewer (Minor and Toepel 1983; Draper 1988), although Lyman (1991) has provided a general cultural evolutionary model for the Oregon coast. Subsistence reconstructions have been made from the analysis of faunal remains and subsistence technology, but no Oregon Coast studies have reconstructed human diet based on the analysis of isotopic or trace element content of human bones.

While subsistence change is generally conceived of as evolutionary in nature, and trends toward intensification, specialization and/or diversification have been suggested across the Pacific Coast, they have not been convincingly demonstrated for Oregon. Lyman and Ross's (1988; Lyman 1991) model, for example, progresses from a hypothetical prelittoral stage to littoral foraging to littoral collecting. The littoral stage is thought to post-date 3500 B.P., when shell middens are said to first occur. Lyman (1991:77) contends that Native Americans of the Oregon Coast never achieved a "maritime adaptation," which Lyman restricts to groups who exploit offshore resources. Even groups who intensively exploited sea mammals, like the residents of Seal Rock, are classified as "littoral collectors." Alternatively, Moss and Erlandson (1995b) and Minor (1993a) suggest that Early Holocene peoples did exploit coastal resources, and that a wide range of such resources were used at places like Tahkenitch Landing by 5000 years ago (Minor and Toepel 1986). These opposing models will remain provisional and speculative until more information is available.

Oregon Coast sites contain a wealth of data relevant to these topics. What was the subsistence orientation of the first Oregon Coast peoples and what kind of settlement system did they have? Were they highly mobile hunter-gatherers with relatively large territories or did they settle the most productive and diverse Oregon Coast environments first and spread into less productive areas through time? How did subsistence and settlement strategies develop during the Middle and Late Holocene? Can technological changes, and increased exploitation of certain faunal categories be identified? When did people exploit shellfish to the extent that substantial shell middens accumulated? Does the appearance of shell middens imply shoreline stabilization, increased population, and/or greater sedentism? When does the first evidence for substantial architecture first appear in coastal sites? Was coastal subsistence always "littoral" as defined by Lyman, with people collecting shellfish, fishing, and hunting sea mammals exclusively from the shoreline or in nearshore waters? Is there evidence for offshore resource use requiring boat technology? How important were salmon to Oregon Coast peoples? How important were interior and/or terrestrial resources over the course of Oregon Coast prehistory? How did seasonal rounds change over time? Did available niches fill in the Late Holocene (or earlier?) circumscribing group movements across the landscape? Is there any evidence over the course of Oregon Coast prehistory for overexploitation of particular food resources? How did subsistence and settlement patterns structure intergroup relations? Was there competition over resource territories or patches? Did inequities in resource availability contribute to trade interrelationships between groups? While regional zooarchaeological studies may stand the best chance of identifying long term subsistence and settlement changes, these are likely to apply to local areas, and we should expect some diversity across the

Oregon Coast. Identification of regionwide trends in subsistence and settlement change remains an important goal awaiting additional research on Oregon Coast sites.

Regional Topic #4: The Origins and Development of Ethnographic Cultural Patterns

While the Pacific Coast in general is characterized by rich historical and ethnographic records, those of the Oregon Coast are comparatively limited in breadth, depth, quality, and detail. This is largely due to mid-19th century efforts of miners, settlers, military, and government administrators to forcibly remove Native Americans from their homelands to facilitate white settlement. This "removal' ranged from wars of extermination to forcible relocation to concentration camp-like settlements (see below). While Indian survivors were described by some 19th century observers and worked with anthropologists more recently, deliberate efforts to destroy their cultures have taken their toll. Consequently, anthropological characterizations of Oregon Coast societies tend to portray these groups as less socioculturally complex than groups located in neighboring areas of the Northwest Coast and California.

Peoples of the Oregon Coast are often omitted from discussions of Northwest Coast cultural complexity. Where they are discussed, they seem to fall short of the "classic" Northwest Coast societies where people lived in large sedentary villages or towns, had social groups organized into extended corporate households, and belonged to various social ranks with differential access to wealth and prestige. In such societies, critical resource patches were owned rather than communal, key foods were exploited intensively and stored, and wealth was redistributed through potlatches and/or trade alliances. Some societies had occupational and craft specialization, and ceremonial and artistic traditions were often highly developed. Regional interaction among such groups involved intermarriage, trade, slave-raiding, and warfare. Whether or not such lifeways characterized Oregon Coast prehistory is currently unknown, yet archaeological data do bear on these questions.

One approach to the archaeological study of ethnographic cultural patterns is to identify the most ancient example of traits that might be considered hallmarks of sociocultural development (Moss and Erlandson 1995b). On the Northwest Coast, for example, where weir fishing, slave-raiding, storage technology, large plank houses, and warfare are known ethnographically, archaeologists have tried to identify the oldest examples of such in the archaeological record. At this time, the question, "was the level of sociocultural complexity achieved by Oregon Coast societies comparable to those of the Northwest Coast or California?" is not answerable. However, study of specific technological, adaptational, social, and political developments can be approached by comparative study of certain architectural, artifactual, subsistence, and settlement characteristics. How did house and settlement size and internal organization of houses and settlements change over time? Were extended family households characteristic of particular places at particular times in Oregon Coast prehistory? Can artifact assemblages be used to address the degree of contact and trade with groups beyond the Oregon coast in the past? Were manufacturing techniques and artistic traditions shared

between groups to the north and south? Is there evidence for craft or occupational specialization? Were Oregon Coast people essentially egalitarian throughout prehistory or can differences in wealth and status be identified in the archaeological record? Was subsistence conducted to meet only the basic needs of survival, or was wealth accumulated, redistributed, and manipulated? Is there evidence for resource stress and intergroup competition? Did Oregon Coast people locate their settlements based on resource access and control, or were defensible locations preferred at some times in prehistory? Is there evidence for intragroup competition, violence, raiding, slaving, or warfare in prehistory? Because Oregon Coast Native Americans experienced such rapid cultural loss in the early historical period, archaeological evidence may be the best source of information on precontact life, and may contribute to more complete knowledge of the meaning of ethnographic data that do exist.

Regional Topic #5: The Effects of European Contact and Colonization on Native Americans and their Resources

While the first historically documented European contact with Oregon Coast Native Americans occurred in 1792, it is possible that earlier contacts occurred. Pacific Coast waters were plied by Manila galleons and other European vessels during the 16th and 17th centuries, for instance, and at least one shipwreck may have occurred about AD 1620 in the Nehalem Bay area on the northern Oregon Coast (Woodward 1986). Most of the Manila galleon traffic probably was limited to the waters of California and Mexico, however, and contacts along the relatively rough Oregon Coast are likely to have been limited and sporadic. Minor (1995) has suggested, however, that the comparatively lower levels of complexity that seem to characterize ethnographic societies of the Oregon Coast may result from the relatively early decimation of these groups by European diseases. Currently there is little archaeological evidence to support this provocative proposal, but archaeological and physical anthropological data may eventually allow an assessment of this issue. Elsewhere in North America, European diseases reached Native Americans substantially earlier than face-to-face contact.

Up and down the Oregon Coast, the nature and timing of sustained contacts between peoples of Native American and European ancestries were quite variable. Early encounters between Indian people and explorers like Lewis and Clark or fur trappers and traders like Alexander McLeod were relatively limited and often quite brief, with the whites often hiring Indian guides and trading for food and supplies. Native Americans soon suffered from epidemics of Old World diseases to which they had little or no immunities: smallpox, tuberculosis, influenza, syphilis, and others. In the early 1840s, emigrants streamed into Oregon, and in 1848, the U.S. Congress passed the Organic Act which created the Oregon Territory. Oregon settlers staked claims to Indian lands, and in 1850, the Oregon Donation Land Act authorized the federal government to give away huge tracts of Indian land to settlers prior to any treaty negotiations (Beckham 1991). Treaty programs were initiated in 1851, but none were ratified with tribes of the Oregon Coast. Nevertheless, the federal government and Oregon settlers acted as if Indian lands had passed into public domain.

By the 1850s, historical accounts clearly document some of the tragic consequences that European contact had on Oregon's coastal Native Americans (e.g., Beckham 1971; Wasson 1991). Early in the 1850s, discoveries of gold and other minerals along the Oregon Coast led to an influx of miners and other settlers who quickly came into conflict with Oregon's coastal tribes. This resulted in a series of skirmishes and massacres along the Umpqua and Rogue Rivers in southwest Oregon between 1852 and 1856 (Beckham 1991), often referred to as the "Rogue River Wars." In 1855, the Coast Reservation (later known as Siletz) was established on the central Oregon Coast through Executive Order. Shortly thereafter, most Native Americans of the Oregon Coast were forcibly removed from their traditional territories and transported to the reservation. This was dramatically reduced in size during ensuing decades, with the highly productive 200,000 acre Yaquina Bay area removed from the Coast Reservation in 1865, and another 700,000 acres removed in 1875. The 1887 General Allotment Act (the "Dawes Act") divided up Indian reservations into allotments assigned to individuals to end communal living practices and tribal integrity. The Siletz Reservation still contained 250,000 acres in 1892 when the Indians agreed to the allotment program. After then, over 75% of reservation lands fell to non-Indians, with 44,000 acres to individuals and 3,000 acres for the tribes (Beckham 1991:49). After 1887, some members of the Coquille, Coos, Lower Umpqua, and Siuslaw tribes obtained public domain allotments along the central and southern Oregon Coast. Nevertheless, by the 1940s, very little land remained in Indian ownership, and in the 1950s, the federal government launched a program to terminate Indian tribes. Oregon Coast tribes were disenfranchised from most of their lands and their rights to fish and hunt even on their own lands were restricted by the State of Oregon.

Restoration and self-determination for Oregon Coast Indian tribes has come only recently, with Congressional recognition of the Siletz in 1977, Confederated Tribes of Coos, Lower Umpqua, and Siuslaw in 1984, and the Coquille Tribe in 1989. While most members of the Confederated Tribes of Grande Ronde Community (recognized in 1983) are the descendents of Willamette Valley and Upper Rogue River groups, descendents of Oregon Coast peoples, including those of Clatsop, Chinook, and Tillamook affiliation are also represented among the Grande Ronde.

Archaeological data contained in Oregon Coast archaeological sites can be combined with the study of historical records to explain how these policies and broad patterns of history impacted the lives of Native Americans, those who were removed, those who intermarried with Whites, and those who applied for allotments in their traditional territories. Archaeological studies can also contribute to understanding the interaction between Native and non-Native communities. Some archaeologists have observed that most early historic Native American sites on the Oregon Coast contain relatively few items of Euroamerican origin. Perhaps this is not surprising, since most intercultural contacts were relatively brief prior to the violent 1850s after which many Indians died or were removed. Nonetheless, we know that some of these events were played out at coastal archaeological sites. One example is 35-CU-61, the historic Tututni Athapaskan village of *Chetlessentan*, burned to the ground in 1856 by a party of white men (Heflin 1966:160). Other examples

include a number of intertidal fishing structures recorded near old Indian allotments, some of which are also mentioned in ethnographic accounts. Radiocarbon dates for stakes from some of these structures, and the presence of milled lumber in others, suggest that traditional fishing practices continued into the late 19th or early 20th centuries in some areas (Byram 1995; Tveskov 1995). These archaeological sites are of special interest to many contemporary Native Americans and they provide important opportunities to examine cultural change and continuity during the period of colonization.

While the official history of the region is fairly well-documented, how these events played themselves out in the lives of people can be approached through the study of archaeological sites. Such sites are an important source of history, pride, cultural identity, and land and resource claims data for the living members of Oregon's coastal tribes. The descendants of those Native peoples who occupied archaeological sites of the Oregon Coast have a strong desire to preserve them. Members of the general public also are interested in learning about the cultural heritage and recent history of Oregon Coast tribes. Such information can only be interpreted for the public after careful archaeological research has been completed. Such research is contingent on the protection or preservation of sites, such as those discussed in this document.

To address such questions, we must identify and investigate archaeological sites from the precontact and postcontact eras in various areas along the Oregon Coast. Where are such sites located, when were they occupied, and what can be learned from relevant ethnohistorical or ethnographic accounts? When did European trade goods first appear, what were they, and what is their abundance at sites from various time periods? What do these patterns reveal about the timing and magnitude of cultural changes associated with European contact and colonization? How can interpretations of archaeological data contribute to knowledge of the history and prehistory of Native Americans of the Oregon Coast? How effective were government efforts to remove Indians to Reservation lands in the Alsea and Siletz areas? How and when did Euroamerican land and resource use practices and industries affect fish, wildlife, and forest resources upon which Oregon Coast Native Americans relied for thousands of years? What was the extent and nature of Indian participation in these practices and industries? What effects did such changes have on indigenous subsistence practices and technologies along the Oregon Coast?

General Topics in Archaeological Method and Theory - Using information from site-specific and regionally oriented studies of Oregon Coast sites, a variety of methodological and theoretical topics in archaeology and anthropology can be addressed. Prominent examples of such studies that have incorporated Oregon Coast data include: Lyman's (1991) exploration of issues related to shell midden sampling, zooarchaeological methods, and coastal adaptations, Hildebrandt and Jones (1992; Jones and Hildebrandt 1995) and Lyman's (1995) debate about prehistoric patterns of pinniped distributions and exploitation; Lightfoot's (1993) and Moss and Erlandson's (1995b) examination of broad themes in Pacific Coast prehistory, and Moss and Erlandson's (1995a) methodological work in developing a regional reservoir correction for improving the applicability and resolution of radiocarbon dating in coastal archaeological sites.

For the most part, the key to applying information from Oregon Coast sites to broad theoretical or methodological questions, is placing them within a broad comparative framework. Some of the broader topics that can be addressed with the Oregon Coast archaeological record, each of which is a natural extension of some of the questions posed in previous sections, are outlined below.

General Topic #1: Environmental Changes and Human Adaptations

Evidence for Late Quaternary environmental and cultural changes along the Oregon Coast can help flesh out the broader picture of such changes along the Pacific Coast of North America, in western North America, or around the Pacific Rim (see Erlandson and Moss 1996). How did Oregon Coast environments evolve during the last 12,000 years and how do these patterns compare to those reconstructed for adjacent regions? How did changes in climate, landscape, and biological populations affect the adaptations of humans living along the Oregon Coast and how do these relationships compare to adjacent regions? What role does the environment or environmental change play in conditioning or causing cultural developments along the Oregon Coast? How does this compare to anthropological theories of the relationships between hunter-gatherer societies and the environments they occupy? What does the archaeological evidence for environmental changes and related cultural developments (e.g., evidence for catastrophic earthquakes and the flooding of sites by tsunamis or subsidence), have to contribute to the understanding of modern environmental or land use problems?

General Topic #2: Coastal Adaptations and Maritime Cultural Ecology

As noted earlier, the debate about the antiquity and nature of adaptations to the Oregon Coast mirrors a broader debate about the development of aquatic adaptations worldwide (see Sauer 1962; Parmalee and Klippel 1974; Bailey 1975; Meehan 1977; Osborn 1977; Perlman 1980; Yesner 1980; Quilter and Stocker 1983; Waselkov 1987; Erlandson 1988, 1994; Glassow and Wilcoxon 1988; Jones 1991; Moss 1993; and others). What do archaeological studies of Oregon Coast sites have to contribute to this debate? How does evidence from Oregon's coastal archaeological sites fit into existing models for the development of coastal adaptations, the relative productivity of marine vs. terrestrial resources, and maritime cultural ecology? What can such information tell us about local and regional variations in the way that people adapted to the highly diverse coastal landscapes in various parts of the world?

General Topic #3: Cultural Complexity and its Origins

Studies of Oregon Coast archaeological sites can be used to examine theories of the development of cultural complexity among hunter-gatherer societies. Up and down the Pacific Coast of North America and over broader areas of western North America and beyond, there is considerable evidence that cultural complexity varied tremendously through space and time. How do the Native American cultures of the Oregon Coast fit

into this broader picture? Are the criteria archaeologists use to measure cultural complexity applicable to the archaeological record of the Oregon Coast? Are archaeological findings on late Holocene cultural complexity along the Oregon Coast consistent with ethnohistorical or ethnographic accounts?

General Topic #4: "European Radiation" and Indigenous Societies

European exploration and colonization in Oregon was part of a much larger series of explorations, migrations, and other cultural interactions between Europeans and indigenous peoples of the Americas, the Pacific Islands, Australia, Africa, and Asia (Wolf 1982). Over the past millennium, this radiation of European peoples and traditions affected many indigenous peoples, often with tragic consequences, but it also dramatically changed the historical development of European or European-derived cultures. Better understanding the effects of this European radiation on both European and indigenous cultures around the world is a goal of many historians, anthropologists, and other scholars. The timing and nature of such interactions and cultural changes varied widely from region to region and historical data from the Oregon Coast are unfortunately limited. Consequently, archaeological studies can greatly enrich our knowledge of the effects of contact and colonization along the coast. How do historical and archaeological data from the contact era along the Oregon Coast compare to similar data from other regions? Were there significant differences in the timing, nature, or magnitude of cultural changes along the Oregon Coast during the contact and colonization eras? What historical processes are responsible for differences and similarities?

CATEGORIES OF VALUABLE ARCHAEOLOGICAL DATA

The research questions discussed above allow us to identify, accumulate, and organize the types of data contained in Oregon Coast archaeological sites described below. In this section, we describe how analyses of these data can reveal patterns of information that help resolve the site-specific, regional, and more general research questions. The significance of the information potential of the Oregon Coast archaeological sites is described with relevance to the research questions. Oregon coast sites should contain data of the following types to be eligible to the National Register of Historic Places.

Stone Artifacts - Artifacts made from stone -- including chipped stone tools, ground stone tools, stone toolmaking debris, burned rock, minerals, and others -- are one of the more common constituents in Oregon Coast archaeological sites. This is especially true of chipped stone tools and manufacturing debris, because they served a variety of purposes and many of the raw materials used to make them are relatively abundant on the Oregon Coast or nearby areas. Because they were widely used, and because they preserve well in the archaeological record, stone tools can occur in all property types, including *shell middens, lithic sites, villages, ethnographic and ethnohistorical places, burial sites, intertidal fishing structures, quarries* and *rock art sites*.

The analysis of stone artifacts from Oregon Coast archaeological sites can provide a wide range of data applicable to site-specific, regional, and general research questions. For instance, because they are often limited to certain time periods or exhibit stylistic changes through time, many formal stone tool types (projectile points, stone beads, etc.) are good chronological indicators that can contribute to the development of individual site or regional settlement chronologies. Many stone tools are functionally diagnostic, as well, so projectile points, mortars and pestles, notched stone net sinkers, and other artifact types provide important insights into the range, organization, or relative importance of activities carried out at a site. Recent technological advances have also led to the development of techniques for the study of microscopic polishes and residues that may identify the specific function of a stone tool, as well as the type of materials it was used to work. Inferences based on such information can then contribute to reconstructing the function of a site, changes in site function through time, and the role of various sites in a broader settlement system. Some stone artifacts are also made from raw materials that are relatively rare and come from geographically discrete and identifiable sources. Geochemical analysis of obsidian artifacts, for instance, can often identify a specific source from which the obsidian was obtained, data that can then be used to reconstruct patterns of land use, travel, and trade among various Oregon Coast groups and their neighbors. Finally, stone tools and toolmaking debris can be studied to reconstruct the specific manufacturing techniques Oregon Coast peoples used, how these were related to the distribution and abundance of raw materials in the local environment, and how such techniques varied between groups or through time.

These and other types of inferences derived from the analysis of stone tools can be used to examine spatial and temporal variations in the broad patterns of land use (settlement and subsistence), technological evolution, societal organization, cultural interaction, and cultural change along the Oregon Coast and adjacent regions.

Bone, Antler, and Shell Artifacts - Oregon Coast soils, especially those formed in forested environments, tend to be naturally acidic, conditions that normally lead to the deterioration of bone, antler, and shell. However, in *shell middens*, the presence of substantial quantities of shell can counteract this acidity and allow for the preservation of bone, antler, and shell artifacts and substantial quantities of faunal remains (see below). Bone and antler artifacts include punches, wedges, chisels, perforators, awls, needles, points, harpoon parts, gorges, fishhooks and other tackle, net gauges, pins, tubes, beads, pendants, and other ornaments. Artifacts fashioned of shell include dishes, spoons, rattles, knives, harpoon blades, beads, pendants, or other ornaments. All of these artifact classes can be found in *shell middens*, some of which comprise part of or all of several other property types including *villages, ethnographic and ethnohistorical places*, and *burial sites*.

The analysis of bone, antler, and shell artifacts from Oregon Coast archaeological sites can provide a wide range of data applicable to site-specific, regional, and general research questions. Types of harpoons, fish hooks, shell beads, or tooth ornaments might be limited to certain time periods or exhibit stylistic changes

that provide chronological indicators that can contribute to the development of site or regional chronologies. Bone and shell tools like harpoons used in sealing, hooks used in fishing, and needles used in sewing or basketmaking, may be functionally diagnostic and provide important information on the range, organization, or relative importance of activities carried out at a site. Such functional information helps reconstruct the function of a site, changes in site function through time, and the role of various sites in settlement systems. Some shell artifacts are made from relatively rare raw materials (dentalia, abalone) that may come from distant sources. Such information can be used to trace patterns of land use, travel, and trade among various Oregon Coast groups and their neighbors. Although not well-documented in Oregon Coast contexts, bone and shell toolmaking debris can be studied to reconstruct the specific manufacturing techniques Oregon Coast peoples used, and how such techniques varied between groups or through time.

These and other types of inferences derived from the analysis of bone, antler, and shell tools can be used to examine spatial and temporal variations in the broad patterns of resource use, subsistence strategies, technological evolution, societal organization, cultural interaction, and cultural change along the Oregon Coast. Studies of these artifact classes are probably more advanced in adjacent regions, where comparative analyses should be particularly productive.

Wood and other Vegetal Artifacts - Certain Oregon Coast archaeological sites have extraordinary conditions where wood and other artifacts of vegetal materials that normally deteriorate are preserved. *Intertidal fishing structures* are a type of water-saturated or "wet site" found in the estuaries and rivers of the Oregon Coast. Perishable artifacts are protected by the dense estuarine muds in which they occur and their submergence at all but the lowest of tides. The most common artifacts found in these sites are vertically emplaced wood stakes, which often form fence-like alignments. Other perishable artifacts found at these sites include basketry traps and features, woven latticework panels, brush fencing, cordage, and rope. Occasionally wood hand tools are also found in some sites.

The analysis of wood and vegetal artifacts from *intertidal fishing structures* can provide information applicable to site-specific, regional, and general research questions. Wooden stakes or other plant remains can be radiocarbon dated, for instance, to establish site or regional chronologies. Certain types of wood stakes (eg., milled lumber splints) are excellent indicators of historical site use and provide information on changes in traditional technologies due to Euroamerican contact and settlement. Different types of fishing structures may be diagnostic of certain time periods, affiliated with specific groups, or used to target certain varieties of fish. Changes over time can contribute to understanding the evolution of fishing technologies on the Oregon Coast. Patterns of wood stakes or types of basketry traps may be functionally diagnostic and provide important information on technology, species targeted, season of use, organization, and importance of fishing at these sites. With such information, the respective roles of various fishing sites can be placed within the framework of settlement systems. Studies of prehistoric and historic fishing hold great interest to members of Oregon Indian tribes, to fisheries biologists, and to others concerned with reduced fish stocks,

especially with competing demands of sport, commercial, and subsistence fishing interests. The absence of *intertidal fishing structures* in some areas is also potentially informative regarding the nature and impact of historic changes to shoreline topography resulting from dredging, diking, logging, oyster farming, and other industrial practices.

Spatial and temporal variations in patterns of these fishing sites will provide information regarding fishing strategies, technological evolution, societal organization, cultural interaction, and cultural change along the Oregon Coast. Studies of such sites must be placed within the broader context of regional studies of intertidal fishing structures, especially those elsewhere on the Northwest Coast.

Other types of wet sites are undoubtedly present along the Oregon coast. In Washington, for example, the Ozette site produced the structural remains of houses and numerous wood and basketry artifacts buried under a prehistoric mudslide that destroyed a whaling village. An analogous site has yet to be identified in Oregon, but with the history of earthquakes, floods, and landslides, such a site may someday be discovered. In fact, oral histories or ethnographic accounts record at least two Oregon Coast villages reportedly buried by mudslides, one on the south coast near Brookings and another on the central coast near Yachats. Isolated fragments of basketry have also been found in the saturated muds of Oregon Coast estuaries. Such finds provide valuable information on the materials and construction techniques used by Oregon Coast peoples in making basketry. Because basket-making techniques are relatively sensitive ethnic markers, the analysis of such finds may help reconstruct the movements of various linguistic groups along the Oregon Coast prior to European contact.

Historic Artifacts - Many historic artifacts are made of glass, metal, and ceramics, relatively durable materials that can be expected in historic era occupation levels of a wide range of property types, including *shell middens, villages, ethnographic and ethnohistorical places, burial sites*, and *intertidal fishing structures*. Some common artifact classes include bottle glass, window glass, glass beads, metal utensils, axes, kettles, gun parts, stove parts, coins, ceramic dishes, containers, pipes, bricks, and on some areas of the Oregon coast, beeswax. Recovered from intact deposits, some artifact types (coins, some ceramics, bottle glass, etc.) are well suited to stylistic analyses that can yield fairly precise chronological information. These artifacts can be used to trace initial European contact, or trade with Indian groups who had already acquired such items. The quantities in which historic artifacts are found are sometimes used to estimate the nature and extent of contact, and the rate at which Indian groups incorporated new materials into their technological and social systems. In this way, the material record of the colonization period can be documented for individual sites representing individual Indian groups for particular time periods. Eventually, the larger picture of culture change during the 19th and 20th centuries can be reconstructed in detail and compared within and beyond the region.

More recent historic artifacts can inform archaeologists about the history of disturbance to particular sites. When concrete and asphalt fragments, plastic, and aluminum cans are found mixed in an archaeological deposit, we know that the integrity of sites has been compromised. In some cases, important archaeological data may be recoverable in spite of these disturbances. In other cases, the scale of the impacts may be severe enough to reduce site integrity to the extent that a site fails to retain the qualities that made it potentially eligible to the National Register.

Faunal Remains - Faunal remains are the bone and shell debris remaining from the animals people used for food, and whose products were used to manufacture clothing, shelter, and other artifacts. Since shellfish were regularly eaten by most coastal peoples and the resulting shell refuse counteracts natural soil acidity, faunal remains are often relatively well preserved in *shell middens*. By far the most abundant faunal constituent in most coastal sites is unmodified food refuse, the shells and bones discarded by a site's occupants after animal carcasses are processed and/or consumed. Faunal remains are common constituents of a variety of Oregon Coast property types, including *shell middens, villages, ethnographic and ethnohistorical places,* and *burial sites*. Faunal remains of natural (non-human) origin are also found at Oregon Coast sites, but usually these are distinguishable from faunal remains deposited by humans. By definition, faunal remains are either absent or rare at *lithic sites*.

Faunal remains can provide samples for radiocarbon dating, yielding relatively precise chronological information for deposits within archaeological sites. While shell and bone can both be radiocarbon dated, bone is highly susceptible to contamination and difficult to decontaminate. Dating of marine shell is preferred, and when shell samples are appropriately selected and pretreated, and when correction measures are used, shell samples provide accurate chronometric information. Radiocarbon dating of shell is well-suited to both intrasite and intersite chronological studies on the Oregon Coast because it is usually abundant and samples can be easily selected from different horizontal and vertical units within archaeological deposits.

Faunal remains are valuable sources of information on past environments and the manner in which humans adapted to those environments. Many types of shellfish are relatively sensitive environmental indicators and their skeletal remains can be used to reconstruct coastal or riverine environments in the vicinity of a site during the period or periods it was occupied. Shellfish remains found at the Tahkenitch Landing site (35-DO-130) were used by Minor and Toepel (1986), for example, to document the evolution of the Tahkenitch Lake area from a salt water embayment to a freshwater lake during the last 5,000 years. The bones of vertebrates, especially land mammals, sea mammals, fishes, birds, etc., can also be used to reconstruct paleoenvironments, although they are generally less sensitive environmental indicators than many types of shellfish remains. In some cases, faunal studies can reveal significant differences in the distribution and abundance of different species in prehistoric and early historic eras compared with modern times. Often such studies are of interest to fisheries and wildlife biologists and managers working to understand contemporary ecological relationships.

Faunal remains from archaeological sites are a primary source of information on the structure of Native American economies, subsistence, and land and resource use patterns along the Oregon Coast. On a site-specific level, detailed studies of cut marks on animal bones can document butchery practices, study of skeletal part representation can yield information on hunting and transport practices, and study of fragmentation can relate to processing or other taphonomic factors. Studying the types and distributions of faunal remains can be used to reconstruct the landscape around a site, the diversity and relative economic importance of animal resources used, the organization and relative importance of various activities at a site, the season or seasons of site occupation, the degree of sedentism or duration of occupation, and the effects of human exploitation on local animal populations. In *villages* containing several discrete houses and refuse areas, intrasite variation in the distribution of faunal remains may be used to examine dietary differences among households reflecting differential access to animal resources and possibly differences in socioeconomic or political status.

In comparative studies, archaeologists may discern differences in the composition, taxonomic diversity, and fragmentation of faunal assemblages resulting from both natural and cultural factors. The study of faunal remains should provide important information for examining variation in human adaptations through time or space. In recent years, faunal studies have also contributed significantly to the development of general methods and theories related to site formation processes, sampling and recovery methods, and the development of coastal adaptations. Such studies of Oregon Coast faunal remains can contribute to the larger body of anthropological and biological knowledge regarding interactions between humans and other animals.

Botanical Remains - Many Oregon Coast sites contain botanical remains (charcoal, wood, seeds, etc.) that can contribute valuable data about past environments, site formation processes, human subsistence, and land and resource use patterns. These property types include *shell middens, villages, ethnographic and ethnohistorical places, burial sites, lithic sites,* and *intertidal fishing structures.* Charcoal preserves relatively well, and is relatively common in Oregon Coast sites. The incidence of other botanical remains is not well-documented on the Oregon Coast, but such materials have been found in adjacent regions.

Charcoal samples are commonly chosen for radiocarbon dating. However, charcoal dates may be affected by the "old wood problem" (Schiffer 1986), because these dates measure the average age for the growth of the plants, not their use by humans. This can be a serious problem along the Oregon Coast where some conifer trees live for centuries. Archaeologists can control this problem by dating associated marine shell samples and selecting charcoal from short-lived species for radiocarbon dating.

Although studies of other types of archaeological botanical remains have not been common on the Oregon Coast, work at coastal sites in Washington (Stenholm 1987, 1995) has demonstrated that the remains of wood, bark, seeds, nuts, and fruits do preserve especially in *shell middens.* Among other things, parts of various trees and shrubs were used as fuel for heating shelters or cooking, as sources of food and medicine,

and for tool manufacture. Edible tissues identified to species indicate the types of roots, nuts, seeds, berries and other plant foods eaten and processed. Whether or not these were consumed fresh or preserved for storage can sometimes be determined. Such botanical data can provide information relating to the seasonality and duration of site occupation. All of these types of information contribute to understanding subsistence practices that focused on plants, site function, and land and resource use. While the research potential of such studies has not been fully exploited in studies of Oregon Coast sites, this is a promising arena for future research.

Structural Remains - Structural remains are broadly defined here to include features like hearths, rock concentrations, structural walls, surface pits and depressions, traces of architectural materials, buried floors, pits, etc. Such features might be the remains of houses, shelters, outbuildings, processing areas, storage facilities, or other activity areas. While not ubiquitous, such features may be found at a wide range of property types including *shell middens, villages, ethnographic and ethnohistorical places, burial sites, intertidal fishing structures*, and *lithic sites*. Such features may be identified in surface exposures, but most commonly, only large areal excavations will reveal these features. Such features may contain other classes of data previously described including various types of artifacts, faunal remains, and botanical remains. These types of data can be studied in ways described above, but their special context within features can be especially informative. These contexts provide data related to the spatial organization of activities at individual sites, and understanding the layout of such a site allows robust interpretations of how a site or sites functioned in larger settlement systems. Some types of cultural practices identified in such features (e.g., house type) may be temporally or ethnically diagnostic. While the comparative study of such features has not been explored on the Oregon Coast, it is another promising domain of future research.

Burial Remains - Human skeletal remains can occur under a wide range of circumstances; as a single individual buried in an isolated grave, the scattered remains of a cremation, several people whose burials are marked by rock cairns or a burial mound, individuals buried in house pits or shell midden areas, or a large cemetery set aside on a prominent landform. The presence of human remains is the defining characteristic of a *burial site*, which can be found in association with any other property type.

Burial remains are unique sources of data. Physical anthropological data from studies of human bones can be used to study the biological attributes of ancient populations, their genetic and ethnic affiliations, and intra- and intersocietal variation in health, disease, diet, and cause of death. The study of associated funerary artifacts can yield chronological information and insights into the nature of changing artistic traditions, wealth and status differences between individuals, and religious beliefs and practices. Taken together, the skeletal and artifactual data can be used to reconstruct demographic history and social relations.

Contemporary Native Americans often consider the excavation and study of burial remains a sensitive and difficult issue. Burial remains are especially vulnerable to the depredations of looters, and were often the

primary focus of early archaeologists who collected these materials with no regard to Native American concerns or interests. Some contemporary Native Americans support scientific studies of burial remains when they have the promise of revealing knowledge of topics of interest to them. For example, understanding the history and impact of an introduced disease, or documenting the results of a massacre, may find support in some situations. However, some Native Americans find scientific analyses of human bones and associated artifacts as deeply offensive. Archaeologists are authorized under the Native American Graves Protection and Repatriation Act to work to preserve burial remains *in situ* wherever possible. When burial remains are exposed by natural processes, by looters, or scheduled to be destroyed through development, plans for the scientific study of burial remains must be carefully negotiated with interested Native Americans.

Site Setting, Stratigraphy, and Sediments- Study of the setting, stratigraphy, and sediments of archaeological sites can provide important information on the geological context, occupational history, formation processes, and integrity of a site. Geoarchaeological studies of geomorphological relationships, stratigraphy, grain-size, soil structure, pH, phosphate concentrations, organic content, and other attributes can provide valuable data on the age, structure, function, and postdepositional alterations of a site. Such analyses are often crucial to paleoenvironmental reconstructions, understanding the environmental context of cultural behaviors, distinguishing between natural vs. cultural site constituents, and identifying the processes (and their effects) that altered an archaeological deposit after site abandonment. Consequently, the careful study of the setting, stratigraphy, and sediments of Oregon Coast sites can contribute valuable information applicable to a wide range of scientific topics, including environmental change, the antiquity of coastal adaptations, changes in settlement and subsistence, and other regional, methodological, or theoretical subjects.

CULTURAL AND ENVIRONMENTAL INFLUENCES ON STATE PARK LANDS

Virtually all archaeological sites on State Park Lands have been subjected to destructive processes of one kind or another. Some sites have been or appear to have been entirely destroyed, while the condition of several others is currently unknown. Table 6 (Appendix) summarizes the current condition of all known State Parks archaeological sites, including the types of impacts that have affected individual sites. This list includes: (1) 89 sites eligible to the National Register; (2) four sites already listed on the National Register; and (3) 33 sites for which current information precludes a determination of National Register eligibility.

A total of 43 archaeological sites have suffered damage due to construction of State Park facilities (roads, parking lots, picnic areas, restrooms, trails, lawns, etc.). At 15 of these sites, the impact of initial park construction overshadows that of all other impacts. This is true for 35-CLT-12 (Ecola), 35-TI-46 (Oswald West), 35-TI-47 (Oceanside Beach), 35-LNC-19 (Devil's Punch Bowl), 35-LNC-47 (Yaquina Bay Lighthouse), 35-LNC-24 (Yachats Bay), 35-CS-24 (Conde McCullough Bridgehead), 35-CS-3 (Bullards Beach), 35-CU-12 (Battle Rock), 35-CU-33, 35-CU-35, and 35-CU-37 (Boardman). 35-CU-9 (Port Orford

Heads), sustained comparable damage during construction of the U.S. Coast Guard facilities. Both 35-CU-61 (Pistol River) and 35-CU-157 (Houstenader Creek) suffered damage during construction of U.S. Highway 101. Nevertheless, each of these sites still contains significant remnants which retain research potential warranting their listing on the National Register.

Although most park construction occurred years ago, regular maintenance and modifications continue to occur and can pose hazards to archaeological sites. Routine activities such as landscaping, sign installation, and fence replacement can result in impacts to important archaeological deposits. During our surveys (Erlandson and Moss 1993:69; Moss and Erlandson 1994:78, 1995a:54), we witnessed park maintenance activities impacting sites, apparently without any archaeological review at 35-TI-47 (Oceanside Beach), 35-LNC-47 (Yaquina Bay Lighthouse), 35-LNC-72 (Yachats Trail #804), and 35-CU-35 (Boardman).

The most frequently observed ongoing impacts currently damaging archaeological sites in the State Parks of the Oregon Coast are slopewash, trampling, and seacliff retreat. Slopewash was noted at 89 sites, trampling at 86 sites, and seacliff retreat at 72 sites. These three inter-related destructive processes were noted together at 54 sites. An increase in one of these processes often causes an increase in the others.

Pedestrian trampling usually affects both formal and informal trails and paths along the seacliff or bay shore, and those leading to the beach and intertidal zones from parking lots and picnic areas. Such traffic patterns often become concentrated in a few areas and commonly traverse a seacliff or bay shore bank, where exposed archaeological deposits are already suffering loss. Trampling contributes to slumping and can increase the rate of seacliff retreat and slopewash. Pedestrian trampling is severe at popular State Parks that attract heavy use by hikers or others, like 25-CLT-12 (Ecola), 35-TI-36 and 35-TI-54 (Cape Lookout), 35-LA-10 (Neptune), 35-LNC-44 (Boiler Bay), 35-LNC-43 (Rocky Creek), 35-LNC-65 (Smelt Sands), 35-LA-17 (Devil's Elbow), 35-CS-10 (Cape Arago), 35-CU-12 (Battle Rock), 35-CU-77 and 35-CU-78 (Cape Sebastian), and 35-CU-35, 35-CU-36, and 35-CU-37 (Boardman). At 35-CU-1, 35-CU-82, and 35-CU-83 (Cape Blanco State Park), trampling damage is attributable to cattle allowed to roam freely across these sites. Sheep have trampled 35-CU-32 (Boardman), denuded the site of vegetation, and increased the rate of gullying. At 35-CS-38 (Bandon), the soft dune sediments are being trampled by vehicles, destabilizing the dunes and increasing the rates of deflation.

In some areas of the Oregon Coast, rapid rate seacliff retreat is partially due to the presence of unconsolidated sediments which are extremely vulnerable to marine erosion. The most destructive erosional episodes probably occur during winter storms and spring tides (Komar 1979), when water levels can reach high up on the seacliff undermining it and precipitating landslides and slumping. As Komar (1979:50) noted, the extent of talus accumulation at the base of a seacliff indicates the frequency of wave attack. Many Oregon Coast sites undergoing seacliff retreat and river bank erosion are characterized by nearly vertical seacliffs in at least some site areas, with little protection in the way of talus accumulation. This is true for

35-CLT-12 and 35-CLT-23 (Ecola), 35-TI-39 and 35-TI-45 (Cape Lookout), 35-CS-34 and 35-CS-129 (Yoakam Point), 35-CS-137 and 35-CS-138 (Shore Acres), 35-CU-76 and 35-CU-209 (Floras Lake), 35-CU-12 and 35-CU-155 (Battle Rock), 35-CU-156 (Humbug Mountain), 35-CU-34, 35-CU-35, 35-CU-67, and 35-CU-70 (Boardman), and 35-CU-80 (Harris Beach).

Active slumping of archaeological material is occurring at 35-LNC-67 (Devil's Punch Bowl), 35-LNC-14 (Seal Rock), 35-LA-1/229, 35-LA-2, 35-LA-5, and 35-LA-10 (Neptune), 35-LA-16 (Washburne), 35-CS-6 (Shore Acres), 35-CS-10 (Cape Arago) and 35-CU-209 (Floras Lake). Graffiti carved into seacliffs of eolian material, like that observed at 35-LA-16 (Washburne), also accelerates seacliff retreat.

Digging and mounding of soil by rodents was witnessed at a minimum of 34 sites. While rodent damage is most severe on the south coast and is a significant impact on the central coast, it does not appear to be as serious a problem on the northern Oregon Coast. This activity causes exposure and mixing of archaeological materials in addition to erosion from slopewash. Extremely heavy rodent activity was observed at 35-CU-73 (Pistol River), and 35-CU-33, 35-CU-37, and 35-CU-70 (Boardman).

Wind erosion is contributing to the deterioration of at least 34 Oregon Coast sites. This impact is most frequently observed at sites underlain by eolian deposits. Sites with active sand accumulation where deflation or burial of cultural materials and/or abrasion of artifacts is occurring include: 35-LA-3, 35-LA-7 and 35-LA-8 (Neptune), 35-LA-16 (Washburne), 35-CS-39, 35-CS-131, and 35-CS-120 (Bullards Beach), 35-CS-38 (Bandon), 35-CU-1 and 35-CU-82 (Cape Blanco), 35-CU-12 (Battle Rock), 35-CU-31 (Pistol River), and 35-CU-34, 35-CU-35, and 35-CU-67 (Boardman). Other archaeological deposits underlain by eolian deposits and badly exposed to wind impacts include sites in Floras Lake and Cape Blanco State Parks, and 35-CU-80 in Harris Beach State Park.

Evidence for recent looting was noted at 27 Oregon Coast sites. Looting at some sites has a long history and persists at widely known sites such as 35-CLT-21 (Ecola), 35-TI-1 (Cape Lookout), 35-LNC-14 (Seal Rock), 35-LA-3 (Neptune), 35-CU-74 (Floras Lake), 35-CU-71, 35-CU-34, and 35-CU-36 (Boardman), and 35-CU-80 (Harris Beach). Intertidal sites are vulnerable to looting because of their high visibility and accessibility (e.g., 35-TI-62 in Nehalem Bay). Intertidal sites are also damaged by clam diggers and oyster farmers.

River bank erosion was noted at 25 sites and is probably responsible for the destruction of sites such as 35-CS-4 (Bullards Beach) and 35-CS-6 and 35-CS-35 (Bandon). Massive attrition of 35-CU-31 by the Pistol River has been witnessed over the past few years (Moss and Erlandson 1994), although the river recently cut a new channel that may spare the site from further major riverine erosion.

Tidal inundation was found to impact at least 10 sites, most all of which occur on the northern Oregon Coast. These sites, located along the shores of Netarts and Nehalem Bays, are suffering continuing attrition of site deposits through tidal inundation and tidal currents. The most destructive erosional episodes probably occur during winter storms and spring tides (Komar 1979), when water levels can reach high up on the seacliff or bay shore precipitating landslides and slumping.

In general, environmental changes have dramatically altered Oregon Coast landscapes over the millennia. Tectonically active and erosionally unstable, most of the coast today is very different from the coast Native Americans adapted to 9,000 or even 4,000 years ago. Post-glacial global sea level rise of 100-120 m has transformed extensive coastal plains into submerged continental shelves and may have destroyed or inundated many archaeological sites. Rising sea levels were accompanied by changes in the configuration of the coast, the nature of coastal habitats, and sedimentary regimes in Oregon's coastal rivers and beaches. In some areas, vast fields of dunes or beach ridges accumulated during the Holocene (Cooper 1958; Connolly 1992), burying any sites that existed on the landforms beneath them. Where large dunes built up, they blocked coastal drainages, changing estuaries or river valleys into lakes (Minor and Toepel 1986; Lyman 1991:12), and possibly submerging archaeological sites. Recent geological research also suggests that much of the Oregon Coast is subject periodically to major earthquakes generated by the tectonic dynamics of the offshore Cascadia Subduction zone. Atwater (1987), Nelson (1992), Darienzo and Peterson (1990) and others have proposed that large earthquakes have led to widespread subsidence, tsunamis, and flooding along the Oregon Coast. Coastal subsidence (in effect a sudden sea level rise) has caused rapid erosion in many coastal habitats, which has almost certainly destroyed many coastal sites.

Our studies have shown that very few Oregon Coast archaeological sites are not actively eroding through the sometimes combined effects of seacliff retreat, riverine erosion, slopewash, trampling and wind erosion. Many State Parks sites have been damaged through construction of roads, parking areas, restrooms, picnic areas, and other park facilities. Intertidal fishing structures are endangered by coastal erosion, weathering, sedimentation, dredging, clam digging, shipping, logging, oyster farming and other destructive processes.

The combined threats of coastal erosion, rapid development, and systematic looting require a cooperative partnership between state and federal agencies, university based research programs, archaeologists working in the private sector, and Oregon's coastal tribes to protect and preserve archaeological sites for future generations.

Concern for the rapid destruction of Oregon Coast archaeological sites goes back more than 60 years. Berreman (1935) noted, for instance, that erosion, agriculture, construction, and looting were heavily impacting coastal sites. Over 40 years ago, Collins (1953:55) wrote:

> I haven't presented a bright picture of the situation, but one that spells doom for the prehistory of the coastal region of Oregon.... In a few years the site count and excavatable sites will drop 50 percent .... I recommend that excavation procedures be instituted immediately. I fear, if some action is not taken, that in the not too distant future, knowledge of the cultural position, culture, and chronology of the Oregon Coast will be as they are today - mostly theoretical.

In 1971, Thomas Newman estimated that less than 20% of the known major occupation sites of the Oregon Coast still existed. Twenty years after that, Lyman (1991:308) stated "if the loss of coastal archaeological resources even approximates the rate indicated by Collins, Berreman, and Newman, the profession has an obligation to sample those resources still extant in such a manner as to preserve via collection as many data as possible."

This document nominating 89 archaeological sites to the National Register will not stop the destructive threats these sites currently face. However, we hope it will lead to greater awareness of the significance of Native American archaeological sites of the Oregon Coast and encourage careful attention to promoting their protection, conservation, and investigation.

F. Associated Property Types

The eight property types have been extensively discussed in section E of this document. They include *shell middens, lithic sites, villages, ethnographic and ethnohistorical places, burial sites, intertidal fishing structures, quarries,* and *rock art sites.* All of the 89 properties nominated here are significant for their research potential under National Register Criterion D, and their research values and the categories of archaeological data they contain have been described in section E as well. Some property types, including villages, ethnographic and ethnohistorical places, burial sites, and intertidal fishing structures may also be eligible under Criterion A. Rock art sites may be eligible under Criterion C. The physical and associative characteristics contributing to the significance of these property types have already been described.

G. Geographical Data

The geographical area encompassed by this multiple property nomination includes that portion of the State of Oregon that lies within 10 km (ca. 6.2 mi.) of the shoreline of the Pacific Ocean, including the numerous bays and estuaries that punctuate the coastline.

H. Summary of Identification and Evaluation Methods

This multiple property listing for Native American sites located in State Parks of the Oregon Coast is based primarily on data collected during a series of regional archaeological surveys (e.g., Berreman 1935a; Collins

1953; Ross 1976a; Minor 1986; Erlandson and Moss 1993; Moss and Erlandson 1994, 1995a). These surveys have collected extensive information on the location, size, structure, function, contents, and condition of individual sites. This nomination is the culmination of a four year effort directed by Madonna L. Moss and Jon M. Erlandson, with support from Historic Preservation Fund Grants-in-Aid administered by the Oregon State Historic Preservation Office. The 1993-96 survey and evaluation project included the analysis of over 180 radiocarbon dates for coastal sites on State Lands, providing important chronological information for evaluating the significance of scores of State Park sites. We have also summarized the information available from a number of archaeological excavations conducted in coastal State Park sites over the years, as well as available ethnohistorical information on the relationship between individual properties and ethnographically documented places, people, or events. The 1993-96 survey evaluated the condition of 126 Native American archaeological sites in State Parks of the Oregon Coast. Using maps and records provided by the Oregon SHPO, as well as previous survey reports (e.g., Minor 1986), we attempted to relocate every Native American archaeological site known to exist on State Park lands. These included 105 sites evaluated by Minor (1986:138), as well as 21 newly identified sites. We used standard background research and archaeological reconnaissance techniques to document the nature, integrity, size, structure, and contents of each site located, noting the types of disturbance processes that have impacted each site. Wherever possible, radiocarbon samples were collected and analyzed to place individual sites or site loci in a chronometric framework. These classes of information were then used to evaluate the eligibility of individual properties for inclusion on the National Register of Historic Places.

This evaluation process relied on the potential of individual sites to contribute to the exploration of research questions delineated in the Historic Context Statement (Section E), developed explicitly for Native American archaeological sites of the Oregon Coast. The historic context of sites located in Oregon Coast State Parks was defined within a chronological framework that includes five periods:

(1) the *Terminal Pleistocene* (ca. 12,000 to 10,000 BP) which includes a very small number of apparent Paleoindian sites identified along the Oregon Coast;

(2) the *Early Holocene* (ca. 10,000 to 6700 BP) during which coastal sites appear to be relatively rare;

(3) the *Middle Holocene* (6700 to 3300 BP) during which coastal sites appear to increase only slightly in number;

(4) the *Late Holocene Precontact* period (3300 to about 200 BP) during which coastal sites become increasingly common through time; and

(5) the *Late Holocene Postcontact* period (ca. 200 BP to the present), which includes properties occupied during the period of European contact and colonization.

Within this chronological framework, the National Register eligibility of individual sites was determined based on the potential for data from such sites to contribute to a series of research questions related to local, regional, or general scientific topics (see Section E).

The property types identified, *shell middens, lithic sites, villages, ethnographic and ethnohistorical places, burial sites, intertidal fishing structures, quarries*, and *rock art sites*, were defined on the basis of variations in the physical structure and contents of individual sites, reference to previously defined archaeological site types utilized by Oregon Coast Native Americans, and the recognition that for those sites classified solely on the basis of archaeological attributes it is often difficult to differentiate between site types (e.g., village vs. campsite) in the absence of data from large areal excavations.

To be eligible for inclusion on the National Register of Historic Places using Criterion D, individual Oregon Coast properties had to: (1) retain some level of spatial integrity so the original location and geographic context of the site could be reconstructed; (2) have the potential to be placed within a secure chronological framework, either through radiocarbon dating of associated organic remains or through the presence of temporally diagnostic objects or assemblages; and (3) have contributed, or have the potential to contribute, to one or more local, regional, or general scientific research questions such as those defined in Section E. Most of the State Parks sites described and evaluated in this and accompanying documents were found eligible to the National Register using Criterion D.

Some State Parks sites were also found eligible for inclusion on the National Register of Historic Places using Criteria A and C. When ethnographic, ethnohistorical, oral historical, or historical data can be used to associate a site with a specific event or a pattern of events that have made a significant contribution to the history of the Oregon Coast, the site would be found eligible under Criterion A. For example, in 1856 a party of white men burned the Tututni Athapaskan village of *Chetlessentan* (35-CU-61) during the Rogue River Wars. Based on its association with this specific event, we found 35-CU-61 eligible according to Criterion A (as well as D).

A property might also be found eligible because it embodies distinctive characteristics of a type, period or method of construction, possesses high artistic values, or represents a significant distinguishable entity whose components may lack individual distinction (Criterion C). The rock art site at 35-CU-142 has been found eligible under this criterion because embodies distinctive characteristics of petroglyphs that can be studied within the larger context of rock art sites found across the western United States.

To summarize, the registration requirements which individual sites must meet are as follows:

(1) location within the coastal zone of Oregon, defined herein as that area within 10 km (6.2 mi.) of the shoreline of the Pacific Ocean or the numerous bays and estuaries of the Oregon coast.

(2) placement within the Late Pleistocene to Late Holocene time periods (12,000 years ago to A.D. 1900). For many sites, age estimates are provided by radiocarbon dates; for other sites, available data suggest a likely time period of occupation.

(3) represents one or more of eight property types: shell middens, lithic sites, villages, ethnographic and ethnohistorical places, burial sites, intertidal fishing structures, quarries, and rock art sites.

(4) possesses a minimum size and scope to yield data with the potential to contribute to knowledge of Oregon coast prehistory. This will follow the Oregon SHPO's guidelines that a site contain a minimum of one feature or 10 or more artifacts.

(5) possesses a minimum level of integrity or intactness. A site must retain its essential horizontal or vertical integrity, or be demonstrably derived from a discrete site deposit.

(6) demonstrates the potential to address one or more of the research problems outlined in Table 5 in Section E.

The significance of individual properties as they relate to these registration requirements and the National Register criteria will be discussed on accompanying forms for individual properties.

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Table 2. Some chronological sequences for the Oregon Coast.

^{14}C Years/ AD-BC*	Regional NW Coast Sequence	Ross and Lyman Coastal Sequence	Minor's Oregon Coast Sequence	Northwest CA Coast Sequence	Geological Time Scale
150 BP/ AD 1800 -	Historic (Sustained Contact) Cultures				
300 BP/ AD 1650 -	Protohistoric (Sporadic Contact) Period				
	Developed	**Late Marine/**		**Emergent**	
			Formative Stage	*Gunther Pattern*	
	Northwest Coast	**Late Littoral**			
1500 BP/AD 500 -			---- 1500 BP ----	---- 1500 BP ----	**LATE**
	Pattern	**Cultures**			
			Late Archaic		**HOLOCENE**
	---- 2000 BP ----	---- 2000 BP ----		**Upper Archaic**	
			Stage	*Berkeley Pattern*	
3000 BP/1000 BC -	**Emergent**		---- 3000 BP ----	---- 3000 BP ----	
		Early Marine/			--- 3350 RYBP ---
	Period	**Early Littoral**			
				Middle Archaic	
		Cultures	**Middle Archaic**	*Borax Lake Pattern*	
	---- 4500 BP ----		**Stage**		
					MIDDLE
5000 BP/3000 BC -		---- 5000 BP ----		---- 5000 BP- ----	**HOLOCENE**
			---- 5500 BP ----		
				Lower Archaic	
	Old	**Pre-Marine/**			
				Borax Lake Pattern	--- 6650 RYBP ---
	Cordilleran	**Pre-Littoral**			
		Cultures			
			Early Archaic		
8000 BP/6000 BC -				---- 8000 BP ----	
			Stage		**EARLY**
					HOLOCENE
				Paleoindian	
	---- 9000 BP ----			**Period**	
		?			
				Post Pattern	
10000 BP/8000 BC -			--- 10,000 BP ----	?	--- 10,000 BP ----
			Pre-Archaic		**TERMINAL**
	Clovis Pattern		**Stage**	*Clovis Pattern*	**PLEISTOCENE**

Note: All dates uncorrected; adapted from Frederickson (1984), Ross (1990), Lyman (1991), Minor (1995); and Erlandson (1988).

	Table 6: Major Impacts to Archaeological Sites in State Parks								
	Park Construction	Trampling	Looting	Sea Cliff Retreat	River Bank Erosion	Slopewash	Wind	Rodent Burrowing	Tidal Inundation
35-CLT-12	X	X		X	X	X			
35-CLT-65	UNKNOWN----------								
35-CLT-23		X		X		X			
35-CLT-21	X	X	X	X		X			
35-TI-46	X	X				X			
35-TI-4		X	X		X	X			X
35-TI-57	X	X	X		X	X			X
35-TI-55		X			X				X
35-TI-62	X	X	X		X				X
35-TI-5	UNKNOWN----------								
35-TI-50	X	X							
35-TI-47	X	X		X		X			
35-TI-1		X	X			X			
35-TI-41	UNKNOWN----------								
35-TI-44			X			X			
35-TI-68					X				X
35-TI-43	UNKNOWN----------								
35-TI-40	UNKNOWN----------								
35-TI-67		X		X					X
35-TI-39		X		X					X
35-TI-42								X	
35-TI-45			X	X		X	X		
35-TI-66		X		X		X			X
35-TI-65				X		X			X
35-TI-64									X
35-TI-38		X	X	X		X		X	
35-TI-61		X			X	X			
35-TI-35		X		X	X	X			
35-TI-37	UNKNOWN----------								
35-TI-36	X	X		X		X			
35-TI-54	X	X		X		X			
35-LNC-44	X	X		X		X	X		
35-LNC-45	X	X						X	
35-LNC-43	X	X		X		X		X	
35-LNC-68				X		X	X		
35-LNC-19	X	X		X		X		X	
35-LNC-67				X		X			
35-LNC-47	X	X							
35-LNC-13	DESTROYED----------								
35-LNC-14		X	X	X		X	X		
35-LNC-72	X	X		X		X	X		
35-LNC-73		X		X		X	X		

	Table 6 (continued): Major Impacts to Archaeological Sites in State Parks								
	Park Construction	Trampling	Looting	Sea Cliff Retreat	River Bank Erosion	Slopewash	Wind	Rodent Burrowing	Tidal Inundation
35-LNC-66		X		X		X			
35-LNC-65	X	X		X		X	X		
35-LNC-24	X			X					
35-LNC-48	X	X		X	X	X			
35-LNC-63	X	X		X	X	X			
35-LA-1		X		X		X	X	X	
35-LA-228		X		X	X				
35-LA-2		X		X		X			
35-LA-3	X	X	X	X	X	X	X	X	
35-LA-4		X		X	X	X			
35-LA-5	X	X		X		X		X	
35-LA-6		X		X		X	X		
35-LA-7		X		X		X	X		
35-LA-1097				X	X	X			
35-LA-8	X	X		X		X	X	X	
35-LA-10	X	X		X	X	X		X	
35-LA-227		X		X	X	X	X		
35-LA-11	X	X	X					X	
35-LA-13	X			X		X			
35-LA-16		X		X		X	X		
35-LA-17	X	X	X	X		X	X	X	
35-CS-24	X	X				X			
35-CS-129		X		X		X		X	
35-CS-34		X		X		X		X	
35-CS-86	DESTROYED----------								
35-CS-137		X		X		X	X		
35-CS-138		X		X		X			
35-CS-67	X	X		X		X	X		
35-CS-66		X							
35-CS-10	X	X		X		X		X	
35-CS-55	DESTROYED----------								
35-CS-39						X	X		
35-CS-3	X	X			X	X			
35-CS-4	DESTROYED----------								
35-CS-5	DESTROYED----------								
35-CS-131						X	X		
35-CS-120		X	X			X	X		
35-CS-9	X	X		X		X		X	
35-CS-8		X			X	X	X		
35-CS-14	UNKNOWN----------								
35-CS-6	DESTROYED?----------								
35-CS-35	DESTROYED?----------								
35-CS-38		X				X	X		

	Table 6 (continued): Major Impacts to Archaeological Sites in State Parks								
	Park Construction	Trampling	Looting	Sea Cliff Retreat	River Bank Erosion	Slopewash	Wind	Rodent Burrowing	Tidal Inundation
35-CU-76		X		X		X	X		
35-CU-209		X	X	X		X	X		
35-CU-75		X	X	X		X	X		
35-CU-74			X					X	
35-CU-83		X		X	X				?
35-CU-1		X	X			X	X		
35-CU-82		X				X	X		
35-CU-3	DESTROYED----------								
35-CU-9	X			X		X		X	
35-CU-12	X	X		X		X	X		
35-CU-155				X		X			
35-CU-13		X	X	X			X	X	
35-CU-14				X	X	X			
35-CU-156				X		X			
35-CU-16		X			X	X			
35-CU-153		X	X			X			
35-CU-142		X	X	X		X		X	
35-CU-78		X		X		X		X	
35-CU-77		X		X		X		X	
35-CU-62	DESTROYED----------								
35-CU-73		X		X		X		X	
35-CU-61	X					X		X	
35-CU-31		X			X	X	X		
35-CU-32		X				X		X	
35-CU-157	X			X	X				
35-CU-33	X	X		X		X		X	
35-CU-71	X	X	X	X	X	X		X	
35-CU-70		X		X		X		X	
35-CU-158	UNKNOWN----------								
35-CU-67		X	X	X		X	X		
35-CU-34		X	X	X		X	X		
35-CU-35	X	X	X	X	X	X	X	X	
35-CU-208	X	X						X	
35-CU-207						X		X	
35-CU-36	X	X	X			X			
35-CU-69				X		X		X	
35-CU-68	UNKNOWN----------								
35-CU-37	X	X	X	X		X		X	
35-CU-38	X	X				X		X	
35-CU-80		X	X	X		X	X		
35-CU-79	X	X				X			
Total	43	86	27	72	25	89	34	34	10