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Coast of Oregon

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ENVIRONMENTAL FACTORS IN COASTAL AND ESTUARINE WATERS BIBLIOGRAPHIC SERIES - VOLUME I COAST OF OREGON

by

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FOREWORD

According to current forecasts, the Nation's people will continue their movement into concentrated urban areas. By the year 2000, vast super-cities will spread for hundreds of miles along the coasts and inland along rivers and major highways. As we proceed in this direction, the estuaries and adjacent coastal areas will be required to serve more people in more different ways--for recreation, for food production, as sources of minerals, as sites for cities and industries, as places of beauty to admire, and at some points, as desalinated water supplies. Pollution problems have already arisen because coastal waters have not been used wisely.

For coastal waters to serve these valuable functions, there must be effective and intelligent planning based on sound scientific knowledge. The Pacific Northwest Water Laboratory is initiating a research program to develop such knowledge in order that coastal and estuarine waters can be protected while we also use them to meet the needs of the Nation.

This bibliography is the first in a series on the marine waters of the Pacific Northwest. It is believed that bibliographies such as this will serve not only the research planning needs of this Laboratory, but also the needs of all scientists who are planning or conducting research involving the coastal and estuarine areas of the State of Oregon.

A. F. Bartsch
Director of Research
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ABSTRACT

Indexed herein are references to literature pertaining to the marine waters of Oregon. References to papers, depending on the subject matter contained in the paper, are indexed under one or more of the following headings: Marine Biology, Climate, Fisheries, Geology, Hydrology, Chemical and Physical Oceanography, and Bibliographies, Literature Surveys and Compilations.

ENVIRONMENTAL FACTORS
IN COASTAL AND ESTUARINE WATERS
COAST OF OREGON

INTRODUCTION

This bibliography brings together in one volume references to published and readily accessible unpublished literature pertaining to research and engineering on the natural phenomena of Oregon's coastal and estuarine waters and their adjacent land masses. It is believed that the bibliography will serve future investigators by allowing them to learn of previous research without undertaking extensive literature surveys of their own.

References are listed under one or more of the seven subject headings given in the index. In most cases a reference is indexed under a single heading only. However, some papers containing information pertinent to more than one subject are indexed in each of the appropriate sections.

A brief description of the content of each entry is given and notations indicate if data are presented in charts, graphs, or tables.

All located references dealing specifically with the Oregon coast are included. Many investigators, however, dealt with the entire Pacific Coast. In general these references have been included if the paper devotes several paragraphs to phenomena of the Oregon coast. However, those papers which deal only casually with the coastal area are not included.

References included in the bibliography were located by systematically searching the publications listed below. The procedure was to examine the table of contents of each issue for titles, authors, or subjects that suggested work on the Pacific Coast. These articles were then scanned to determine if they pertained to the Oregon coast. In addition to articles found in this manner, others were located by obtaining references from articles reviewed.

The following publications were systematically searched:

- American Fisheries Society, Transactions
- Deep Sea Research
- Ecology
- Ecological Monographs
- Journal of Marine Research
- Limnology and Oceanography
- Monthly Weather Review
- Northwest Science
- Oregon Fish Commission
  - Research Briefs
  - Contributions
- Oregon State University Monographs
- Theses
  - Oregon State University
  - University of Oregon
- U. S. Army Corps of Engineers, Senate, and House of Representatives documents pertaining to River and Harbor Projects in Oregon
- U. S. Department of Interior, Fish and Wildlife Service Special Scientific Reports
- Weatherwise

In addition to the material indexed herein, there are open-file data and reports in the files of various individuals, university departments, State and Federal agencies, and private companies that were not reviewed. Information of this type, although not considered readily available, might be made available to investigators for on-site examination.

Most of the literature search was done in the Oregon State University Library; lesser amounts were done at the U. S. Army Corps of Engineers Portland District Library, the University of Oregon Library, and the State Library in Salem. In addition, much information was made available by various State and Federal agencies and departments at Oregon State University. The cover picture, Heceta Head, Oregon, has been reproduced by permission of Pacific Studio, Newport, Oregon.

Some important references have undoubtedly been overlooked or omitted and errors probably occur in the description. If users of the bibliography will note such errors, the compiler will appreciate hearing of them in order that they can be corrected in future editions. Also, it will be appreciated if users will communicate to the compiler any reference information not listed herein for inclusion in supplementary bibliographies.

Until recent years the majority of marine biological studies along the Oregon coast were confined to commercially important species and species easily collected from the intertidal zone. Investigations of this nature, although important, share the spotlight with biological studies of benthic, planktonic, and nektonic biota in the open ocean and estuaries and their environmental relationships.

Papers dealing with any phase of marine biology, except the fishing industry and fisheries management, are indexed in this section. There are exceptions, however. Some papers concerned primarily with fisheries management contain much information on fisheries biology and ecology. These have been included here.

* * *

Alverson, D.L. and S.J. Westrheim. 1961. A review of the taxonomy and biology of the Pacific Ocean perch and its fishery. Extrait Rapp et Proc. Verb. 150:12-27.

Description of the fishes and discussion of the fishery off Oregon. Biology and life history are discussed. Charts and diagrams.

Anderson, G.C. 1964. The seasonal and geographic distribution of primary productivity off the Washington and Oregon coasts. Limnology and Oceanography 9:284-302.

Discussion of the distribution of chlorophyll-a and phytoplankton, their seasonal variations and the effect the Columbia River has on them.

Barnard, J.L. 1954. Marine amphipods of Oregon. Oregon State Monographs: Studies in Zoology, no. 8. 103 p.

Descriptions of marine amphipoda which are found in the Coos Bay region of Oregon. Diagrams.

Brock, V.E. 1941. Note on the young of the sable fish. Fish Comm. of Oregon, Contr. no. 4.

Description of fish taken at the surface about 100 miles off Cascade Head. This paper also appears in 1941 Copeia no. 4, pp. 268-270.

_____. 1943. Contribution to the biology of the albacore (Germo alalunga) of the Oregon coast and other parts of the North Pacific. Fish Comm. of Oregon. Contr. no. 10 in the Stanford Ichthyological Bulletin 2(6):199-248.

Summarized in this paper are length-frequency and landing statistics of the Oregon albacore tuna fishery from its inception in 1937 through 1940. Resumes of the tuna fisheries of California, Hawaii, and Japan are also given. Tables, charts, and graphs.

Boden, B.P., M.W. Johnson, and E. Brinton. 1955. The euphausiacea (crustacea) of the North Pacific. Scripps Inst. of Ocean. Bull. 6(8): 287-400. University of California Press, Berkeley and Los Angeles.

Classification keys as well as descriptions of euphausiids found in the North Pacific are given. Diagrams of the species described. Depth and geographical distributions are given.

Castenholz, R.W. 1961. The effect of grazing on littoral diatom populations. Ecology 42:783-794.

A field experiment was conducted to evaluate the grazing effect on littoral diatoms by littarines and limpets. Graphs, charts, and pictures.

_____. 1962. Ecology and physiology of marine littoral diatoms of the southern Oregon coast. Proc. First National Coastal and Shallow Water Research Conference, Baltimore, Md., Los Angeles, Calif., and Tallahassee, Fla. pp. 709-712.

This work was done in Coos Bay.

_____. 1963. An experimental study of the vertical migration of littoral diatoms. Limnology and Oceanography 8:450-462.

The effects of exposure on the vertical distribution of diatoms in the intertidal zone are evaluated. Graphs, pictures, and tables.

Cross, F.A. 1964. Seasonal and geographical distribution of pelagic copepods in Oregon coastal waters. M.S. Thesis, Oregon State University, Corvallis.

During 1962, zooplankton collections were made from the shoreline to 105 miles at sea along lines extending seaward from Astoria, Newport, Coos Bay, and Brookings. Oblique tows with Clark-Bumpus samplers were made at least once each season except on the Brookings line, where no winter cruise was made. Forty-six species of copepods are identified. Seasonal and geographic distributions of several species are discussed.

Cupp, E.E. 1943. Marine plankton diatoms of the west coast of North America. Scripps Inst. of Ocean., Bulletin, Vol. 5, No. 1. University of California Press, Berkeley and Los Angeles. 237 p.

A classification key as well as descriptions are given. There are diagrams of all diatoms described. Diatom biology and physiology are discussed in general terms and rather detailed explanation of diatom morphology is given.

Cutress, C.E. 1949. The Oregon shore anemones (Anthozoa). M.S. Thesis, Oregon State College, Corvallis.

Descriptions of 11 species of anemones which inhabit the tidal waters of Oregon. The habitats and distributions of the anemones are discussed as are the techniques used in the study. Many drawings and photographs.

Dales, R.P. 1952. The distribution of some heteropod molluscs off the Pacific Coast of North America. Proc. Zool. Soc., London 122:1007-1015.

Discussion of two genera (Pterotrachea and Piroloidea) which are found along the Oregon Coast. Distributions are shown by diagrams and populations are shown by bar graph.

Detling, M.R. 1958. Some littoral foraminifera from Sunset Bay, Coos County, Oregon. Contributions from the Cushman Foundation for Foraminiferal Research 9(2):25-31.

Thirty-one species and varieties are described.

Dimick, R.E., G. Egland, and J.B, Long. 1941. Native oyster investigations of Yaquina Bay, Oregon. Prog. Report II, Oregon Agriculture Experiment Station. 152 p.

History of the oyster industry in Yaquina Bay and environmental characteristics of the beds. Limited water temperature and salinity data are given.

Doty, M.S. 1946. Critical tide factors that are correlated with the vertical distribution of marine algae and other organisms along the Pacific Coast. Ecology 27:315-328.

Between Boiler Bay, Oregon (latitude 44°55'N) and Carmel Bay, California (latitude 36°31'N) 40 vertical transects extending from below the lowest low water mark to the upper limit of the spray zone were studied. Depending on the local topography, the vertical distribution of biota appeared to correlate with daily, monthly, and annual tidal variations. Plant and animal zonations agreed well except that motile animals were less sharply zoned than were sessile forms.

Edmondson, C.H. 1920. Edible mollusca of the Oregon Coast. Occasional Papers of the Bernice Pauahi Museum of Polynesian Ethnology and Natural History Vol. 7, no. 9. 25 p. plus 6 plates.

The geographical and ecological ranges and the relative abundances of the edible mollusca are discussed. There is also a brief discussion of spawning and growth periods. Plates show the geographical distributions of species and development of spermatozoa and eggs.

Fasten, N. 1931. The Yaquina oyster beds of Oregon. The American Naturalist 65:434-468.

Discusses the Yaquina River environment, the ecology and biology of oysters, and the economic and conservation aspects of the oyster industry. Limited salinity data are presented. Pictures, diagrams, and tables.

Frank, P.W. 1964. On the home range of limpets. The American Naturalist 98:99-104.

During a three-year period beginning in 1961, several thousand limpets (Acmaea digitalis) found on a rock face near Coos Bay, Oregon were marked. Every two weeks a census was taken to determine the limpets'

movements. Depending on physical factors, primarily wave action, the extent of movement varied considerably with time. Although the limpets did not appear to home on one spot, they did seem to have a home range. Tables.

Frolander, H.F. 1964. Biological and chemical features of tidal estuaries. Jour. Water Pollution Control Federation, Aug. 1964, pp. 1034-1048.

Temperature, salinity, and zooplankton distributions are given for Yaquina Bay, Oregon. Diagrams and tables.

Gharrett, J.T. 1955. The transfer of hatchery fish to estuarine waters. Fish Comm. of Oregon Research Briefs 6(1):14-18.

Discussion of the project. Tables show mortalities of the transplanted fish and diagrams show the water temperature and density on July 20, 1948 and August 17, 1949 in the Nehalem River Estuary.

Giesler, J.C. 1952. Summering birds of the Cape Arago region, Coos Bay, Oregon. M.S. Thesis, Oregon State College, Corvallis.

Birds observed in the area during the summer of 1951 are listed. A ship wreck at sea on June 28, 1951 resulted in oil slicks that coated many birds and prevented them from flying or foraging.

Halstead, B.W. 1959. Dangerous marine animals. Cornell Maritime Press, Cambridge, Md. 146 p.

Included in this book are discussions of sea animals in the Pacific Northwest waters which are dangerous in one of the following ways: (1) poisonous to eat (certain mollusca); (2) predaceous (killer whale); (3) venomous (ratfish, sting rays, jellyfish).

Heg, R. and J. Van Hyning. 1951. Food of the chinook and silver salmon taken off the Oregon coast. Fish Comm. of Oregon Research Briefs 3(2):32-40.

Between 1948 and 1950 the contents of 319 silver salmon stomachs and 125 chinook salmon stomachs were examined. It was found that the silvers fed on small pelagic fish, crab larvae, euphausiids, and squid. Chinook food consisted of a greater percentage of pelagic fish, about the same amounts of the euphausiids, and negligible amounts of crab larvae. Tables and graphs.

Henry, K.A. 1953. Analysis of factors affecting the production of chum salmon (Oncorhynchus keta) in Tillamook Bay. Fish Comm. of Oregon, Contr. no. 18. 37 p.

A resume of the chum fishery in Tillamook Bay, the largest of its kind on the Oregon coast, summary of annual commercial landings, amount of time fingerlings spend in the bay, and several factors which may affect the fishery are given. Predictions, based on these several factors, of returning salmon are statistically determined. Tables, charts, and graphs.

Henry, K.A. 1954. Age and growth study of Tillamook Bay chum salmon. Fish Comm. of Oregon, Contr. no. 19. 28 p.

Ages of returning salmon to the rivers are given and the ratios of males to females are computed; growth rates were determined by scale measurements and weight/length ratios were computed.

Hitz, C.R. 1962. Seasons of rockfish (Sebastodes spp.) in Oregon coastal waters. Trans. Am. Fish. Soc. 91:231-233.

Between April 24 and May 16, 1961, 13 species of Sebastodes, caught by the John H. Cobb in otter trawls, were sexed and measured. The females were classified according to the condition of their ovaries; stage 1, maturing; stage 2, embryo present in ovaries; stage 3, spent; and stage 4, transitional.

Hobson, L.A. 1964. Some influences of the Columbia River effluent on marine phytoplankton during January 1961. Dept. of Oceanography, Univ. of Washington, Tech. Rept. no. 100. 46 p.

The phytoplankton populations from offshore stations along the Oregon and Washington coasts are correlated with physical, chemical, and other biological factors. These are photosynthesis, respiration, water column stability, grazing by zooplankton, and sinking of phytoplankton. Tables, graphs, charts, and vertical and horizontal distribution diagrams.

Johnson, J.H. 1962. Sea temperatures and the availability of albacore off the coasts of Oregon and Washington. Trans. Am. Fish.Soc. 91:269-274.

Wide variations of albacore landings in Oregon and Washington are attributed to several factors, one of which is the seawater temperature. Analyses of surface water temperatures between 1947 and 1960 suggest that, if surface water anomalies in June are large enough, it is possible to predict whether or not seawater temperatures will be favorable for albacore in mid-July and August. Diagrams and graphs.

Johnson, M.E. and J.H. Snook. 1927. Seashore animals of the Pacific Coast. The MacMillan Co., New York. 658 p.

Descriptions of animals from 12 phyla which are found along the Pacific Coast of North America. Ecological and geographical distributions are given. Color plates, pictures, diagrams, and an extensive bibliography.

Keen, A.M. 1963. Marine molluscan genera of western North America. Stanford University Press. 126 p.

An identification key.

_____ and C.L. Doty. 1942. An annotated checklist of the gastropods of Cape Arago, Oregon. Oregon State Monographs: Studies in Zoology, no. 3. 16 p.

In addition to the list of gastropods the environment where each species was located is briefly described. Pertinent literature on each species is cited.

Kilburn, P.D. 1961. Summer phytoplankton at Coos Bay, Oregon. Ecology 42:165-166.

During July and August 1959, phytoplankton samples were taken at least weekly at two stations in Coos Bay and at one offshore station. Data are tabulated.

Magill, A.R. and M. Erho. 1963. The development and status of the pink shrimp fishery of Washington and Oregon. Pacific Mar. Fish. Comm. Bull. no. 6, pp. 62-80.

Brief history of the shrimp fishery, regulations, and fishing beds of Oregon and Washington. Discussion of shrimp biology and landings. Tables, graphs, and diagram.

Marriage, L.D. 1954. The bay clams of Oregon. Fish Comm. of Oregon Contr. no. 20. 47 p.

General descriptions of species of bay clams found in Oregon, the bays where they are found and the clam fishery, both sport and commercial.

McCauley, J.E. 1954. Some hemiurid trematodes of Oregon marine fishes. Ph.D. Thesis, Oregon State College, Corvallis.

One hundred fifty-six marine fish, representing 34 species, were examined. Most of the fish came from Yaquina Bay and the Pacific Ocean near the bay. Eight species of trematodes are described.

_____. 1962. Ellobiopsidae from the Pacific. Science 137: 867-868.

The first reported occurrence, in the northeastern Pacific Ocean, of the parasite Amallocystis capillosus.

McCormick, J.M. 1965. Some aspects of marine hydroid ecology off Oregon. M.S. Thesis, Oregon State University, Corvallis.

Twenty-six species of hydroids were collected and all identified to at least their genus. The bathymetric and coastal distribution and substrate and interspecific relationships were studied.

McHugh, J.L. and J.E. Fitch. 1951. An annotated list of the clupeoid fishes of the Pacific Coast from Alaska to Cape San Lucas, Baja California. Calif. Fish and Game 37:491-495.

McKernan, D.L., D.R. Johnson, and J.L. Hodges. 1950. Some factors influencing the trends of salmon populations in Oregon. Fish Comm. of Oregon, Contr. no. 12. 22 p.

Twenty-six years of silver salmon catch data for nine river fisheries and the ocean troll fishery were analyzed to determine fluctuations and trends in the catch. Three factors, logging, stream flows, and fishing intensity, were found to significantly correlate with fluctuations in the catch.

Murphy, D.C. 1961. Taxonomy of marine nematodes occurring along Pacific Northwest coast. Ph.D. Thesis, Oregon State University, Corvallis.

Twenty-seven species of nematodes from 30 localities are described and classified. Eighteen of the species are newly described. Techniques of collection and study are described. Diagrams show nematode anatomy.

_____. 1962. Three undescribed nematodes from the coast of Oregon. Limnology and Oceanography 7:386-389.

A new subspecies and two new species of free-living marine nematodes are described and illustrated.

Oldroyd, I.S. 1927. The marine shells of the west coast of North America. Vol. II, parts I, II and III. Stanford University Press. Part I, 297 p. plus plates; part II, 304 p. plus plates; part III, 339 p. plus plates.

All three parts of this volume deal with marine gastropods that are found from the Arctic Ocean to the Mexican border. Taxonomic characteristics and geographic ranges are given.

Osterberg, C.L. 1962. Radioactivity in oceanic organisms. Ph.D. Thesis, Oregon State University, Corvallis.

Organisms taken in midwater trawl tows off Astoria, Newport, and Coos Bay, Oregon between June 1961 and April 1962 were analyzed for zinc-65, chromium-51 (principally from the Columbia River), zirconium-95--niobium-95, ruthenium-103, and cerium-141 (principally from fallout of Russian nuclear tests). Radionuclides from three trophic levels (phytoplankton, euphausiids, and lantern fish) were measured. Radionuclide concentrations in second trophic level organisms were greatest near the mouth of the Columbia River. A sharp increase was also detected after the nuclear testing.

_____. 1962. Zn-65 content of salps and euphausiids. Limnology and Oceanography 7:478-479.

Gamma-ray spectra determinations on euphausiids and salps show gradual decreases in Zn-65 away from the Columbia River mouth. Suggests that the Columbia River is the main source of Zn-65 in this part of the Pacific Ocean.

_____. 1962. Fallout radionuclides in euphausiids. Science 138:529-530.

Radioanalyses by gamma-ray spectrometry were carried out on Euphausia pacifica which were collected in November 1961 and March and April 1962. Results show that Zn-65, introduced from the Columbia River was ubiquitous and has no relation to other radionuclides. Amounts of Zr-95-Cb-95 varied directly with amounts of Cr-141 and were the most abundant radionuclides found. Concentrations were highest in November, about two months after the start of Russian nuclear tests and then gradually diminished. Graphs.

Osterberg, C.L., L.D. Kulm, and J.V. Byrne. 1963. Gamma emitters in marine sediments near the Columbia River. Science 139:916-917.

Twenty-six sediment samples collected in and around Astoria Submarine Canyon during the period August 22-24, 1962 were analyzed for gamma emitters. Chromium-51 and zinc-65 were the principal radionuclides found. Radioactivity decreased rapidly with distance from the river mouth, indicating that it is the source of radionuclides.

_____, J. Pattullo and W. Pearcy. 1964. Zinc-65 in euphausiids as related to Columbia River off the Oregon coast. Limnology and Oceanography 9:249-257.

Most of the Zn-65 in the northeast Pacific Ocean is discharged from the Columbia River. Euphausiids, because they accumulate Zn-65, were used as monitors. Zn-65 is present not only in euphausiids associated with seawater diluted by the Columbia River, but in the more saline surface waters. Because of mixing, vertical migration of animals, and seasonal reversal of currents, the supply of euphausiids containing Zn-65 is maintained along the coast.

_____, W.G. Pearcy and H. Curl, Jr. 1964. Radioactivity and its relationship to the oceanic food chains. Sears Foundation: Jour. of Marine Research 22(1):2-12.

The study shows that fission products Zr-95-Nb-95 and Cr-141 are concentrated by primary producers (single cell plants) and herbivores but not carnivores. Zn-65, a nonfission radionuclide, was found in all levels of marine life examined. The conclusion is made that in the event of severe nuclear fallout, the higher levels of sea life would be a suitable food source.

Pearcy, W. 1962. Species composition and distribution of marine nekton in the Pacific Ocean off Oregon. Dept. of Oceanography, Oregon State University, Progress Report no. 1. 14 p.

Results of 171 collections made with Isaac-Kidd midwater trawl are given. Collections were made at various depths along lines of stations extending more than 100 miles seaward from Astoria, Newport, and Coos Bay, respectively. Lists of animals caught are given and variations of the catch of selected species are related to depth and to night and day.

Pearcy, W.G. 1965. Species composition and distribution of pelagic cephalopods from the Pacific Ocean off Oregon. Pacific Science 19:261-266.

Between June 1961 and July 1963, 17 species of squid were taken from the upper 200 meters of water between the California-Oregon border and the Columbia River and as far as 65 miles offshore. Species taken are listed and the geographic and depth ranges, seasonal variations, and size frequencies are discussed.

Queen, J.C. 1930. Marine decapod crustacea of the Coos Bay, Oregon district. M.A. Thesis, University of Oregon, Eugene.

Forty-nine species of decapod crustaceans from the bay, ocean, and

beaches are described. Stations where they were collected are given as are the geographic ranges of the various species. Pictures.

Radovich, John. 1961. Relationships of some marine organisms of the northeast Pacific to water temperatures; particularly during 1957 through 1959. State of California Dept. of Fish and Game marine resources operations. Fish Bull. no. 112. 62 p.

During 1957, 1958, and 1959, sea water temperatures in the northeastern Pacific Ocean were as much as 1°C, or more, warmer than normal. Associated with this warming trend were many forms of sea-life, notably fish, but including whales and turtles, whose northern range does not customarily extend to N. California, Oregon, and Washington.

Reish, D.J. 1949. The intertidal polychaetous annelids of the Coos Bay, Oregon region. M.S. Thesis, Oregon State College, Corvallis.

Fifty-nine species of polychaetes are described. Keys for identifying families and species are given as are geographical and ecological distributions.

Ricketts, E.F. and Jack Calvin (Revised by J.L. Hedgpeth). 1962. Between Pacific tides. Stanford University Press, Stanford, California. 516 p.

A comprehensive book on the intertidal animals of the Pacific Coast of the United States. Descriptions, including pictures of many of the common forms, are included as well as discussions of environmental and ecological requirements for the animals. An extensive annotated bibliography on the marine biology of the Pacific Coast is included.

Riechers, M. 1943. A survey of the genera of the foraminifera of the littoral zone in the Coos Bay area. M.S. Thesis, University of Oregon, Eugene.

Taxonomic study of several genera of foraminifera from the area.

Ronholt, L.L. and A.R. Magill. 1961. Biological observations and results of the 1960 John N. Cobb exploratory shrimp cruise off the central Oregon coast. Fish Comm. of Oregon Research Briefs 8(1):31-52.

Fishing was done between the Yaquina and Coquille Rivers. Fishing areas are shown in diagrams. Results are tabulated and presented in graphs. A complete log of each tow is given.

Rulifson, R.L. and R.W. Schoning. 1963. Geophysical offshore oil explorations and associated fishery problems. Fish Comm. of Oregon, Invest. Report no. 1. 46 p.

Discussion of oil exploration activities off Oregon and its effect on the fishery.

Russell, H.J., Jr. 1964. The endemic zooplankton population as a food supply for young herring in Yaquina Bay. M.S. Thesis, Oregon State University, Corvallis.

Herring and endemic zooplankton were sampled concurrently. Stomach analyses of the herring showed that the endemic copepod Acartia clausii as well as the copepod Pseudocalanus minutus constituted a major part of their food.

Sanborn, E.I. and M.S. Doty. 1944. The marine algae of Coos Bay-Cape Arago region of Oregon. Oregon State Monographs: Studies in Botany. 66 p.

The ecological distributions of algae in the Coos Bay area are given as well as tables which show the geographic ranges of species found.

Setchell, W.A. and N.L. Gardner. 1919. The marine algae of the Pacific Coast of North America, Part I: Myxophyceae. University of California Publications in Botany 8:1-138, plates 1-8.

Specimens of these blue-green algae collected along the Oregon coast are described and a brief account of their habitat given. This is the first of three parts.

_____. 1920. The marine algae of the Pacific Coast of North America, Part II: Chlorophyceae. University of California Publications in Botany 8:139-374, plates 9-33.

This, the second of the three-part volume, includes descriptions of green algae found on the Oregon coast.

_____. 1925. The marine algae of the Pacific Coast of North America, Part III: Melanophyceae. University of California Publications in Botany 8:383-898, plates 34-107.

Brown algae found on the Oregon coast are described in this publication.

Shearer, G.M. 1943. A study of marine isopods of the Coos Bay region. M.S. Thesis, Oregon State College, Corvallis.

Descriptions of isopods living in the Coos Bay region and discussion of their ecology. According to the author this is the first detailed study of isopods in the area. Tables show the abundance of isopods in various environments.

Shotwell, J.A. 1950. Distribution of volume and relative linear measurement changes in Acmaea, the limpet. Ecology 31:51-61.

This work, done in June and July 1947, found that limpet size was a result of growth rather than environment. The vertical distribution of limpets in the intertidal zone is largely controlled by their resistence to desiccation. Smaller ones have a relatively higher water storage capacity and are thus found higher in the zone.

Small, L.F. and H. Curl, Jr. 1963. Energy conversion and element transfer in lower trophic levels in the marine environment. Oregon State University, Dept. of Ocean., Progress Report no. 3. 3 p.

A proposal for the study.

Sowell, R.R. 1949. Taxonomy and ecology of the nudibranciate mollusca of the Coos Bay, Oregon region. M.S. Thesis, Oregon State College, Corvallis.

Of 30 to 35 species of nudibranchs expected to occur in the Coos Bay region (based on distribution records of the Pacific Coast), 20 or 21 are described. Species identification, based on external characteristics, are given in an "artificial key." Species variations, biology, and ecological and geographical distributions are discussed. Pictures of some species are presented.

Steffanson, U. and F. Richards. 1964. Distribution of dissolved oxygen, density and nutrients off the Washington and Oregon coasts. Deep Sea Research 11:355-380.

Discussion of the effect of upwelling, Columbia River water, biological activity, temperature change, and anomalous surface exchange on the distribution of nutrients. Observations taken during 13 cruises between January 1961 and June 1962. Diagrams, charts, and graphs.

Tollefson, R. and L.D. Marriage. 1949. Observations on the effect of intertidal blasting on clams, oysters, and other shore inhabitants. Fish Comm. of Oregon Research Briefs 2(1):19-23.

Test blasting, conducted to determine effects on the biota, showed that no animals more than 30 feet from the blast were killed and only within 10 feet of the blast were all animals killed.

Toner, R.C. 1961. An exploratory investigation of the embryonic and larval stages of the bay mussel, Mytilus edulis L., as a bioassay organism. M.S. Thesis, Oregon State University, Corvallis.

Mussels induced to spawn in salt water containing 4 percent sulfite waste liquor were allowed to complete spawning in clean seawater. Eggs and sperm were then transferred to various concentrations of sulfite waste liquor (0 to 100 ppm) and at 48 and 72 hours after spawnings mortalities were determined.

Waldron, K.D. 1955. A survey of the bull kelp resources of the Oregon Coast in 1954. Fish Comm. of Oregon Research Briefs 6(2):15-20.

Geographic distribution and abundance of bull kelp (Nereocystis luetkeana) along the Oregon coast. Locations of kelp beds and their acreages are given in a table and the locations are shown in a diagram.

Waldron, K.D. 1958. The fishery and biology of the Dungeness crab (Cancer magister Dana) in Oregon waters. Fish Comm. of Oregon, Contr. no. 24. 43 p.

Discussion of the crabbing industry from its start in about 1888 to 1955, the gear used, fishing techniques, regulations, and landings at various ports. Crab movements, growth characteristics, and predators are also discussed. Tables, graphs, diagrams, and pictures.

Washburn, F.L. 1900. Present condition of the eastern oyster experiment and the native oyster industry. Report of the State Biologist. 13 p.

Attempts to grow eastern oysters are discussed. Limited water temperature and density data for several bays and complete temperature data for several stations in Yaquina Bay, both surface and bottom, are given for the period January 1, 1897 to August 3, 1897.

Watson, D.G., J.J. Davis, and W.C. Hanson. 1961. Zinc-65 in marine organisms along the Oregon and Washington coasts. Science 133: 1826-1828.

Animals from the intertidal areas of the beaches of Oregon and Washington were analyzed. Highest concentrations were found in plankton, algae, and molluscs. Of the human food animals, oysters had the highest content.

Westrheim, S.J. 1955. Size, composition, growth and seasonal abundance of juvenile English sole (Parophrys vetulus) in Yaquina Bay. Fish Comm. of Oregon Research Briefs 6(2):4-9.

Postulates that pelagic eggs and larvae are transported into the bay where they grow into juveniles. The juveniles then migrate back to the sea.

CLIMATE

The coastal area of Oregon is characterized by mild, wet winters and cool, relatively dry summers. Nearly 50 percent of the annual precipitation falls during the winter months and less than 10 percent falls during the summer. Wind can be expected on the coast during every month of the year. The strongest winds, which occur during the winter, blow from a southerly direction. Velocities in excess of 100 m.p.h. have been measured. During the summer, cool northwest breezes are common.

Few climatic studies relating specifically to the Oregon coast were located. Most reports pertained to the general meteorological conditions of the North Pacific which causes weather for the entire west coast of the United States and Canada. Because of their general nature, they were not included.

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U.S. Dept. of Commerce, Weather Bureau. (monthly) Climatological data, Oregon.

This publication, published monthly, contains tabulated daily climatic data for each weather bureau station in the state. In addition, a summary of the month's weather is presented.

Lane, R.K. 1965. Climate and heat exchange in the oceanic region adjacent to Oregon. Ph.D. Thesis, Oregon State University, Corvallis.

Ships' weather observations between 1953 and 1962 were used to analyze climatic conditions as well as atmospheric-oceanic heat exchange in a large area off Oregon and Washington.

_____. 1965. Wind, nearshore ocean temperature, and the albacore tuna catch off Oregon. Fish Comm. of Oregon Research Briefs 11:25-28.

By utilizing wind forecasts to predict upwelling variations, fishermen would have another tool with which to predict the availability of tuna.

Minard, D.R. 1965. Solar radiation measured at the sea surface off Oregon during summer 1963. M.S. Thesis, Oregon State University, Corvallis.

Calculated and observed radiation values are given. Details of the technique and equipment used are described.

FISHERIES

Marine fisheries are an important source of income to the State of Oregon economy. Since before the coming of white man the salmon has been the most sought after fish and is still today the most important fish in the annual seafood catch. Rockfish and bottom fish, long ignored by many fishermen, are becoming increasingly important to the fishery. Shellfish, crabs, clams, shrimp, and, to a limited extent, oysters are also important to the marine fishery of the state. Indexed in this section are references to the fishing industry and its management. In general, fish biology is excluded here and included in the marine biology section.

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Adams, E.H. 1885. Salmon canning in Oregon. U.S. Fish Comm. Bull. 5:362-365.

Abstract of a report on the fishing industry in the Columbia River.

Alverson, D.L., R.L. McNeely, and H.C. Johnson. 1960. Results of exploratory shrimp fishing off Washington and Oregon (1958). Comm. Fish. Rev. 22(1):1-11. Separate 574.

During 1958, the R.V. John N. Cobb made four exploratory fishing cruises between Cape Beale, B.C. and Newport, Oregon. Results of the trips are discussed. Diagrams show fishing areas; pictures show fishing gear. Complete log of the field work is shown in Table 2 which accompanies the reprint.

Alverson, D.L. and S.J. Westrheim. 1961. A review of the taxonomy and biology of the Pacific Ocean perch and its fishery. Extrait Rapp et Proc. Verb. 150:12-27.

Description of the fishes and discussion of the fishery off Oregon. Biology and life history are discussed. Charts and diagrams.

Ayres, R.J. and J.M. Meehan. 1963. Catch locality, fishing effort, and length frequency data for albacore tuna landed in Oregon 1951-60. Fish Comm. of Oregon Investigational Report no. 2, 180 p.

Tabulated data, graphs, and charts.

Cleaver, F.C. 1951. Fisheries statistics of Oregon. Fish Comm. of Oregon, Contr. no. 16, 176 p.

Tabulated data on the fish and shellfish catch through 1949. Brief discussion of each species of fish in the fishery.

Dimick, R.E., G. Egland, and J.B. Long. 1941. Native oyster investigations of Yaquina Bay, Oregon. Prog. Report II, Oregon Agriculture Experiment Station. 152 p.

History of the oyster industry in Yaquina Bay and environmental

characteristics of the beds. Limited water temperature and salinity data are given.

Edmondson, C.H. 1920. Edible mollusca of the Oregon coast. Occasional Papers of the Bernice Pauahi Museum of Polynesian Ethnology and Natural History Vol 7, no. 9. 25 p. plus 6 plates.

The geographical and ecological ranges and the relative abundances of the edible mollusca are discussed. There is also a brief discussion of spawning and growth periods. Plates show the geographical distributions of species and development of spermatozoa and eggs.

_____. 1923. Shellfish resources of the northwest coast of the United States. Appendix III to the Report of the U. S. Commissioner of Fisheries for 1922. Bur. of Fisheries Document no. 920. 21 p.

Discussion of shellfish resources in several Oregon bays.

Fasten, N. 1931. The Yaquina oyster beds of Oregon. The American Naturalist 65:434-468.

Discusses the Yaquina River environment, the ecology and biology of oysters, and the economic and conservation aspects of the oyster industry. Limited salinity data are presented. Pictures, diagrams, and tables.

Fish Comm. and Game Comm. of Oregon. 1946. The Umpqua River Study. 74 p.

The study, a result of continually decreasing numbers of chinook and silver salmon and cutthroat trout, describes factors which contributed to the decrease and gives recommendations for alleviating the situation. Migrating fish count data and fish catch data (commercial and sport) are given in tables and graphs.

Gharrett, J.T. 1950. The Umpqua River shad fishery. Fish Comm. of Oregon Research Briefs 3(1):3-13.

Discussion of the fishery, its management, and economics. Statistics of annual catches. Charts, graphs, and tables.

_____ and J.I. Hodges. 1950. Salmon fisheries of the coastal rivers of Oregon south of the Columbia. Fish Comm. of Oregon Contr. no. 13. 31 p.

A discussion of the species of salmon important to the Oregon fishery, their migration habits, regulations, landings, management program, and factors affecting salmon runs in rivers.

Harry, G.Y., Jr. 1948. Oregon pilchard fishery. Fish Comm. of Oregon Research Briefs 1(2):10-15.

Discussion of the fishery; size of fish, landings, and prospects for future development. Charts.

Harry, G.Y., Jr. 1949. The pilchard situation in Oregon. Fish Comm. of Oregon Research Briefs 2(2):17-22.

Discussion of the decline of the industry. Tables and graphs.

_____. 1956. Analysis and history of the Oregon otter trawl fishery. Ph.D. thesis, University of Washington (Abstract in Dissertation Abstracts).

The work on which this paper is based was conducted out of Astoria, Oregon. A summary of gear used is given and the biology of the species important to the fishery is discussed. Use of trawl caught fish (petrale sole, Dover sole, English sole, and rockfish) for commercial and mink food purposes is discussed.

Hayden, M.V. 1932. History of the salmon industry in Oregon. The Commonwealth Review, Eugene, Oregon, 14:84-107.

Discussion of the industry from its start. Tables show the value of the annual fish pack from 1866 to 1927.

Heg, R. and J. Van Hyning. 1951. Food of the chinook and silver salmon taken off the Oregon coast. Fish Comm. of Oregon Research Briefs 3(2):32-40.

Between 1948 and 1950 the contents of 319 silver salmon stomachs and 125 chinook salmon stomachs were examined. It was found that the silvers fed on small pelagic fish, crab larvae, euphausiids, and squid. Chinook food consisted of a greater percentage of pelagic fish, about the same amounts of the euphausiids, and negligible amounts of crab larvae. Tables and graphs.

Herrman, R.B. and G.Y. Harry. 1963. Results of a sampling program to determine catches of Oregon trawl vessels. Pacific Mar. Fish. Comm. Bull. no. 6, pp. 40-60.

Results from 41 commercial otter-trawl fishing trips during six years between 1950 and 1961 are tabulated. Results for each trip are tabulated and annual landings are shown in graphs. Pictures show typical catches.

Hodges, J.I. and J.T. Gharett. 1949. Tillamook Bay spring chinook salmon. Fish Comm. of Oregon Research Briefs 2(2):11-16.

Discussion of the fishery, sport and commercial, regulations, and spawning areas. Tables and diagrams.

Johnson, J.H. 1962. Sea temperatures and the availability of albacore off the coasts of Oregon and Washington. Trans. Am. Fish. Soc. 91:269-274.

Wide variations of albacore landings in Oregon and Washington are attributed to several factors, one of which is the seawater temperature. Analyses of surface water temperatures between 1947 and 1960 suggest that, if surface water anomalies in June are large enough, it

is possible to predict if seawater temperatures will be favorable for albacore in mid-July and August. Diagrams and graphs.

Lane, R.K. 1965. Wind, nearshore ocean temperature, and the albacore tuna catch off Oregon. Fish Comm. of Oregon Research Briefs 11:25-28.

By utilizing wind forecasts to predict upwelling variations, fishermen would have another tool with which to predict the availability of tuna.

Magill, A.R. and M. Erho. 1963. The development and status of the pink shrimp fishery of Washington and Oregon. Pacific Mar. Fish. Comm. Bull. no. 6, pp. 62-80.

Brief history of the shrimp fishery, regulations, and fishing beds of Oregon and Washington. Discussion of shrimp biology and landings. Tables, graphs, and diagrams.

Marriage, L.D. 1954. The bay clams of Oregon. Fish Comm. of Oregon Contr. no. 20. 47 p.

General descriptions of species of bay clams found in Oregon, the bays where they are found, and the clam fishery, both sport and commercial.

McCauley, J.E. and L.D. Marriage. 1955. The intertidal mussel, piddock, and abalone resources of Oregon's outer coast. Oregon Fish Comm. Research Briefs 6(1):4-13.

Geographical distribution and abundance of the shellfish.

McKernan, D.L., D.R. Johnson, and J.L. Hodges. 1950. Some factors influencing the trends of salmon populations in Oregon. Fish Comm. of Oregon Contr. no. 12. 22 p.

Twenty-six years of silver salmon catch data for nine river fisheries and the ocean troll fishery were analyzed to determine fluctuations and trends in the catch. Three factors, logging, stream flows, and fishing intensity, were found to significantly correlate with fluctuations in the catch.

Morgan, A.R. and D.E. Gates. 1961. A cooperative study of shrimp and incidental fish catches taken in shrimp fishing gear in California and Oregon, 1958. Pacific Marine Fish. Comm. Bull. no. 5, pp. 85-106.

Experimental fishing off Coos Bay, Oregon and Trinidad Head, California compared the effectiveness of beam trawls, otter trawls and semi-balloon trawls in catching shrimp. Equipment is shown in pictures and catch results are tabulated and shown in graphs.

_____ and A.R. Gerlach. 1950. Striped bass studies on Coos Bay, Oregon in 1949 and 1950. Fish Comm. of Oregon Contr. no. 14. 31 p.

Striped bass, introduced to the Pacific Coast in 1879, have provided a sport and commercial fishery in Coos Bay since the late 1920's.

Biological studies and catch statistics evaluations indicate that the species is maintaining itself in suitable numbers for the fishery to continue.

Oregon State Board of Health. 1939. Regulations governing the sanitary control of shellfish. 8 p.

Regulations which prescribe the sanitary conditions under which shellfish can be grown and processed.

Reardon, C.M. 1951. Seattle and Astoria landings, receipts, and value of fishery products. Bur. of Comm. Fish.

Tabulated data for all fish and shellfish landings at Seattle and Astoria. A brief discussion pertinent to each year's fishery is also given. The report, first published in 1951, is published annually.

Ronholt, L.L. and A.R. Magill. 1961. Biological observations and results of the 1960 John N. Cobb exploratory shrimp cruise off the Central Oregon coast. Fish Comm. of Oregon Research Briefs 8(1):31-52.

Fishing was done between the Yaquina and Coquille Rivers. Fishing areas are shown in diagrams. Results are tabulated and presented in graphs. A complete log of each tow is given.

Rulifson, R.L. and R.W. Schoning. 1963. Geophysical offshore oil explorations and associated fishery problems. Fish Comm. of Oregon Invest. Report no. 1. 46 p.

Discussion of oil exploration activities off Oregon and its effect on the fishery.

Smith, H.S. 1956. Fisheries statistics of Oregon 1950-1953. Fish Comm. of Oregon, Contr. no. 22. 33 p.

Tabulated data of all fish and shellfish landings in several Oregon estuaries.

Van Hyning, J.M. 1951. The ocean troll fishery of Oregon. Fish Comm. of Oregon Contr. no. 15. 76 p.

Description of the industry, landings, and tagging programs.

Waldron, K.D. 1958. The fishery and biology of the Dungeness crab (Cancer magister Dana) in Oregon waters. Fish Comm. of Oregon Contr. no. 24. 43 p.

Discussion of the crabbing industry from its start in about 1888 to 1955, the gear used, fishing techniques, regulations, landings at various ports. Crab movements, growth characteristics, and predators are also discussed. Tables, graphs, diagrams, and pictures.

Westrheim, S.J. 1955. Size, composition, growth and seasonal abundance of juvenile English sole (Parophrys vetulus) in Yaquina Bay. Fish Comm. of Oregon Research Briefs 6(2):4-9.

Postulates that pelagic eggs and larvae are transported into the bay where they grow into juveniles. The juveniles then migrate back to the sea.

The terrestrial geology of the Oregon coastal area has been studied for nearly a century. Basic research on layered rock sequences and their included fossils has resulted in exploratory drilling for oil. Beach sands have been mined for precious metals and other metals and the coal beds near Coos Bay have been mined and studied since the middle of the last century.

By contrast, investigations of the sea floor have been in progress only a few years. The quest for knowledge of submarine geology of the area has been stimulated by oil and mineral prospectors.

References to terrestrial and submarine geology are found in this section. Generally the references are concerned with descriptions of the physical geology of the area. However, papers on paleontological and geophysical studies have been included if their content relates to the physical geology.

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Baldwin, E.M. 1945. Some revisions of the Late Cenozoic stratigraphy of the southern Oregon coast. Jour. of Geol. 53:35-46.

Discussion of the geology of the Cape Blanco region.

_____. 1950. Pleistocene history of the Newport, Oregon region. Geological News Letter 16:77-81.

The events which have formed the present landscape are described.

_____. 1956. Geologic map of the lower Siuslaw River area, Oregon. U.S. Geological Survey Oil and Gas Invest. map. O.M. 186. 1 sheet.

This map shows the surface geology of the area bounded by the following latitude and longitude lines: latitude 43°45'N. and 44°15'N.; longitude 123°30'W. and 124°15'W.

_____. 1961. Geologic map of the lower Umpqua River area, Oregon. U.S. Geological Survey Oil and Gas Invest. map. O.M. 204. 1 sheet.

This map shows the surface geology of the area bounded by the following latitude and longitude lines: latitude 43°30'N. and 43°45'N.; longitude 123°30'W. and 124°15'W.

_____. 1964. Geology of Oregon. University of Oregon Coop. Bookstore, Eugene, Oregon. 165 p.

Includes a section on the Oregon coast. An extensive bibliography is included in this book.

Bandy, O.L. 1941. Invertebrate paleontology of Cape Blanco. M.S. Thesis, Oregon State College, Corvallis.

Invertebrate fossils from the area are described.

Bushnell, D.C. 1963. Continental shelf sediments in the vicinity of Newport, Oregon. M.S. Thesis, Oregon State University, Corvallis.

Bottom sediments taken between 44°20'N. and 44°48'N. latitudes and up to 50 miles offshore were studied. Sediment found on the continental shelf was well sorted, fine-grained, subangular sand. Further seaward it was found to grade uniformly into silty clay.

Byrne, J.V. 1962. Geomorphology of the continental terrace off the central coast of Oregon. The Ore-Bin 24(5):65-74.

Description of the geomorphic features off the Oregon coast between 44.5°N. and 45°N. latitudes and the shoreline and 125.3°W. longitude. A bathymetric chart and several east-west bottom profiles are given.

_____. 1963. Coastal erosion, northern Oregon. In essays in Marine Geology in honor of K.O. Emery, Los Angeles, University of Southern California Press, pp. 11-33.

Erosion along the northern coast of Oregon is controlled by climatic, oceanographic, and geologic factors. The most important geologic factors are rock structure, durability, and bedding.

_____. 1963. Geomorphology of the Oregon Continental Terrace south of Coos Bay. The Ore-Bin 25(9):149-157.

Description of geomorphic features. A bathymetric chart and several east-west bottom profiles are given.

_____. 1964. The oceans, a neglected mining frontier. The Ore-Bin 26(4):57-69.

Descriptions of minerals that could be mined from the sea floor. Pictures, tables, and diagrams show the distribution of selected minerals and mining localities.

_____. 1964. An erosional classification for the northern Oregon coast. Annals of the Association of American Geographers 54(3):329-335.

Erosion is classified according to its relationship to rock lithology, structure, or stratigraphy.

Callaghan, Eugene. 1927. Geology of the Heceta Head District. M.A. Thesis, University of Oregon, Eugene.

The general geology, geologic history, and stratigraphy of the district are discussed. A brief account of beach erosion by winter storms is given.

Cooper, W.S. 1958. Coastal sand dunes of Oregon and Washington. Geological Society of America Memoir no. 72. 169 p.

This comprehensive study of the coastal sand dunes of Oregon and Washington is divided into three parts. Part one discusses the environments in which the dunes are formed. Part two describes the processes active in forming the dunes. Part three is a description of the dune localities. Dune localities are shown in maps and pictures show dune formations and stabilization.

Cross, M.G., D.A. McManus, and J. Creager. 1963. Preliminary report on the sediments and radioactivity in the vicinity of the Columbia River effluent. Dept. of Ocean., Univ. of Wash., Tech. Rept. no. 84. 32 p.

Sandy sediments on beaches adjacent to the Columbia River have low radionuclide activity. Highest radioactivity was found in fine-grained sediments in and near the mouth and consisted of Zn-65 and Cr-51. These concentrations decrease by a factor of 10 within 100 miles seaward. Activity in silt and clay is five times as great as activity in the sand.

Cummings, J.C. 1962. Review of current research for the First National Shallow Water Research Conf.--Estuarine and Marine Sediments--Coos Bay area, Oregon. Proc. First National Coastal and Shallow Water Research Conference, Baltimore, Md., Los Angeles, Calif., and Tallahassee, Fla. pp. 721-722.

A brief discussion of the project is given.

Daugherty, L.F. 1951. The mollusca and foraminifera of Depoe Bay, Oregon. M.S. Thesis, University of Oregon, Eugene.

Mollusca and foraminifera dredged from Depoe Bay were used to establish the age of sedimentary rocks in the area. The stratigraphy and structure of the area are discussed.

Detling, M.R. 1946. Foraminifera of the Coos Bay Lower Tertiary, Coos Co., Oregon. Journal of Paleontology 20:348-361.

Forty-seven species and subspecies are discussed. An ecological analysis of the association suggests deposition in a shallow, temperate sea.

Dicken, S.N. 1959. Oregon Geography. Univ. of Oregon Coop. Bookstore, Eugene, Oregon. 140 p.

Includes a section on the Oregon coast.

_____. 1961. Some recent physical changes of the Oregon coast. Report of Invest., Univ. of Oregon, Dept. of Geography. 151 p.

Changes of the Oregon coast line, especially as related to human handiwork. Charts, diagrams, pictures. Excellent and extensive bibliography.

Dicken, S.N. 1962. Some recent physical changes of the Oregon coast. Proc. First National Coastal and Shallow Water Research Conf., Baltimore, Md., Los Angeles, Calif., and Tallahassee, Fla. pp. 712-713.

Changes of the coast line resulting from man's work.

Diller, J.S. 1901. Coos Bay, Oregon. U.S. Geological Survey Folio no. 73 of the geologic atlas of the United States. 5 p. 4 maps.

Summary of the topography and the regional, historical, and economic geology of the quadrangle. Cross sections show the geologic structure and stratigraphic relationships of rocks in the area.

_____. 1903. Port Orford, Oregon. U.S. Geological Survey Folio no. 89 of the geologic atlas of the United States. 6 p. 4 maps.

Summary of the topography and the regional, historical, and economic geology of the quadrangle. Cross sections show geologic structure and stratigraphic relationships of rocks in the area.

_____. 1914. Mineral resources of southwestern Oregon. U. S. Geological Survey Bulletin 546. 147 p.

Included in this report is a resume of beach placer operations of southwestern Oregon.

_____ and M.A. Pishel. 1911. Preliminary report on the Coos Bay coal field, Oregon. U. S. Geological Survey Bulletin 431. pp. 190-228.

Geology of the area is discussed, chemical analyses of 18 coal samples are given. Coal is subbituminous. Detailed stratigraphy, lithology, and structure are discussed.

Duncan, D.C. 1963. Geology and coal deposits in part of the Coos Bay coal field, Oregon. U.S. Geological Survey Bulletin 982-B. pp. 53-73.

Resume of the history of coal mining, geology of the beds, reserves, and heat value are discussed.

Griggs, A.B. 1945. Chromite-bearing sands of the southern part of the coast of Oregon. U.S. Geological Survey Bulletin 945-E. pp. 113-150.

Discussion of the occurrence of black sands on beaches and terraces. Geologic cross sections of several deposits are presented.

Heacock, R.L. 1952. Stratigraphy and foraminifera of the upper part of the Nye Formation, Yaquina Bay, Oregon. M.S. Thesis, Oregon State College, Corvallis.

The formation, a greenish-gray, fossiliferous mudstone of Oligo-Miocene age, is well exposed along the north side of Yaquina Bay between McLean Point and the Pacific Ocean.

Jarman, G.D. 1962. Recent foraminifera and associated sediments of the continental shelf in the vicinity of Newport, Oregon. M.S. Thesis, Oregon State University, Corvallis.

Benthic foraminifera and sediments from 25 offshore stations and two Yaquina Bay stations are described. Pictures of the foraminifera. A chart shows bathymetry and station locations.

Kulm, L.D. 1965. Sediments of Yaquina Bay, Oregon. Ph.D. Thesis, Oregon State University, Corvallis.

Descriptions of the sediments, their distribution in the bay, and the physical processes which transport sediments into and out of the bay. Tables, charts, graphs, pictures, and diagrams.

Maloney, N.J. 1965. Geology of the continental terrace off the central coast of Oregon. Ph.D. Thesis, Oregon State University, Corvallis.

The rocks, sediments, and geologic structure of the continental shelf and slope off Oregon between 43°50'N. and 44°40'N. were studied.

_____ and J.V. Byrne. 1964. Sedimentary rocks from the continental shelf and slope off the central coast of Oregon. The Ore-Bin 26:76-81.

Rock sample localities are shown on a chart and a table lists the O.S.U. sample numbers, the latitude and longitude where samples were obtained, the type of sampler used, and the kind of rocks found.

McLaughlin, W.T. and R.L. Brown. 1942. Controlling coastal sand dunes in the Pacific Northwest. U.S. Dept. of Agriculture Circular no. 660. 46 p.

Sand dunes along the Oregon and Washington coasts are discussed. Factors which cause the dunes and methods of controlling the dunes are given. Dune growth, destruction, and control are shown in photographs.

McManus, D.A. 1964. Major bathymetric features near the coast of Oregon, Washington and Vancouver Island. Northwest Science 38(3):65-82.

Brief description of bathymetric features between the coast and 132°W. longitude.

Neal, D.W. 1961. Waterpower resources of the Wilson River Basin, Oregon. U.S. Geological Survey Water Supply Paper 1329-B. pp. 31-62.

River flow data and power-generating potential are discussed. Only one reservoir site, that at Cedar Creek, was deemed feasible. The geology of the dam site and reservoir site are discussed.

North, W.B. 1964. Coastal landslides in northern Oregon. M.S. Thesis, Oregon State University, Corvallis.

Between Florence and the Columbia River, 47 percent of the coastline

is subject to landsliding and 53 percent experiences minor sand shifting along the beaches. Lithology, sea states, and precipitation are the principal controlling factors in determining sliding.

Oregon State Board of Higher Education. 1940. Physical and economic geography of Oregon. State Printing Office. 319 p.

Includes a section on the Oregon coast.

Pardee, J.T. 1934. Beach placers of the Oregon coast. U.S. Geological Survey Circular no. 8. 41 p.

Beach and terrace deposits contain gold and platinum as well as other heavy black minerals. No large scale mining operations have been successful to date. Small workings were in operation during the 1800's and again during the 1930's depression years. Practically all of the mining activity was confined to the coastal area south of Coos Bay.

Schlicker, H.G., R.E. Corcoran, and R.G. Bowen. 1961. Geology of the Ecola State Park Landslide Area, Oregon. The Ore-Bin 23:85-90.

In February 1961, rain-saturated sedimentary rocks began slipping slowly toward the ocean. The maximum rate of slippage was about three feet per day. The extensive movement and damage are shown in pictures.

Schenck, H.G. 1927. Marine Oligocene of Oregon. Univ. of Calif. Publications Bull. Dept. Geol. Sci. 16:449-460.

The stratigraphy and paleontology of western Oregon are discussed.

_____. 1928. Stratigraphic relations of western Oregon Oligocene formations. Univ. of Calif. Publ. Bull. Dept. Sci. 18:1-50.

Included in this report are descriptions of sedimentary rocks which are exposed along the Oregon coast and their stratigraphic relations.

Slabaugh, W.H. and A.D. Stump. 1964. Surface areas from the V/n ratio for marine sediments. Jour. of Physical Chemistry 68:1251-1253.

Surface area and pore-size distribution of marine sediments from the continental shelf off Oregon were determined by the Brunauer-Emmett-Teller method. Good agreements were obtained between this method and another, the V/n ratio.

_____. 1964. Surface areas and porosity of marine sediments. Jour. of Geophysical Research 69:4773-4778.

Surface areas and pore size distributions of marine sediments collected from the continental shelf off Oregon between 44°20'N. and 45°N. and seaward for 56 miles were determined by gas absorption. Generally it was found that particle surface areas and the amount of ferromagnetic material increased and the average particle size decreased with depth and distance from shore.

Smith, W.D. 1933. Geology of the Oregon coast line. Pan American Geologist 59:33-44.

General geology of the coastline and contiguous west slope of the Coast Range.

_____. 1933. Physiography of the Oregon coast. Pan American Geologist 59:97-114.

Description of the physiography of the coastal area and factors which have created and are changing it.

_____. 1933. Special physiographic features of the Oregon coast. Pan American Geologist 59:190-206.

Descriptions of the prominent physiographic features (headlands and sea-caves) and geologic explanations for their occurrence. Covers area from the Columbia River to the Siuslaw River.

_____. 1933. Special physiographic features of the Oregon coast. Pan American Geologist 59:241-258.

A continuation of the descriptions of prominent features of the Oregon coast between the Siuslaw River and the Oregon-California border.

_____ and F.G. Young. 1926. Physical and economic geography of Oregon; chapter XII, the Coast Range Province. The Commonwealth Review of the Univ. of Oregon VIII:256-297.

Discusses the geography, geology, and economic development of the area which is bounded by the Coquille and Columbia Rivers, the Coast Range summit, and the ocean.

Snavely, P.D., Jr. 1948. Coquille formation in the Nestucca Bay Quadrangle, Oregon. Geological News Letter 14:11-12.

Pleistocene estuarine deposits similar to those found along the southern Oregon coast occur here.

_____ and H.E. Vokes. 1949. Geology of the coastal area from Cape Kiwanda to Cape Foulweather, Oregon. U.S. Geological Survey Oil and Gas Invest. map no. 97. 1 sheet.

This map shows the surface geology of the area bounded by the following latitude and longitude lines: latitude 44°45'N. and 45°15'N.; longitude 123°45'W. and 124°55'W.

Stump, A.D. 1963. The microstructure of marine sediments. Ph.D. Thesis, Oregon State University, Corvallis.

Surface areas and pore size distribution of terrigenous marine sediments taken from the continental shelf of Oregon between 44°20'N. and 45°00'N. latitudes and up to 35 miles offshore were measured by gas absorption. Low angle X-ray diffraction was used to identify clay minerals. Surface

area, porosity, and X-ray diffractograms were correlated with average grain size, percent ferromagnetic material, depth and distance from shore. A rapid technique for measuring surface areas was developed.

Twenhofel, W.H. 1943. Origin of the black sands of the coast of southwest Oregon. Oregon State Dept. of Geology and Mineral Industries Bulletin no. 24. 25 p.

The black sands, consisting of high specific gravity minerals (principally magnetite, chromite, and ilmenite) have been concentrated by ocean currents on the present and ancient beaches. The largest present day concentrations are on the north sides of embayments and the south sides of headlands. Most of the minerals have been derived from the metamorphic rocks of the Klamath Mountains of northwestern California and southwestern Oregon.

_____. 1946. Mineralogical and physical composition of the sands of the Oregon Coast from Coos Bay to the mouth of the Columbia River. Oregon State Dept. of Geology and Mineral Industries Bulletin no. 30. 64 p.

Sand from the beaches was sampled and analyzed for mineral and physical composition. Results of several mechanical analyses are given. There are also several microphotographs of sand grains taken from various sections of the beach.

_____. 1946. Beach and river sands of the coastal region of southwest Oregon with particular reference to black sands. American Jour. of Science 244:114-193 and 200-214.

The black and associated sands of the beaches and old placer gold mines of southwest Oregon from Coos Bay to Pistol River are described and mechanical and mineral analyses of these sands are presented.

Vokes, H.E., H. Norbisrath and P.D. Snavely, Jr. 1949. Geology of the Newport-Waldport area, Lincoln and Lane Counties, Oregon. U.S. Geological Survey Oil and Gas Invest. map no. 88. 1 sheet.

This map shows the surface geology of the area bounded by the following latitude and longitude lines: latitude 44°15'N. and 44°45'N., longitude 123°45'W. and 124°10'W.

Whitcomb, J.H. 1965. Marine geophysical studies offshore--Newport, Oregon. M.S. Thesis, Oregon State University, Corvallis.

Shallow seismic reflection, gravity, and magnetic surveys were utilized to chart subsurface structures in the offshore area.

Young, R.A. 1961. Hydrogeologic evaluation of the streamflow records in the Rogue River Basin, Oregon. U.S.G.S. open-file report. 111 p.

The geology of the Rogue River Basin is reviewed and geologic conditions are given at each of 89 stream gauging stations. Information for each station includes location, records available, geology at station, and hydrogeologic factors influencing records at each station.

Estuarine environments are influenced by land drainage as well as by oceanic waters. The land drainage influence varies markedly throughout the year, depending on the precipitation in the stream basins. It is greatest during the winter, the period of maximum precipitation, and least during the summer, the period of minimum precipitation.

Referenced in this section are those publications pertaining to the hydrology of basins in the Coast Range whose streams end in estuaries.

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Anon. 1958. Water laws of Oregon: Oregon Revised Statutes. 116 p.

Laws governing surface and ground water of the state.

Helland, R.O. 1953. Water power of the coast streams of Oregon. U.S.G.S. preliminary report. 46 p.

A study of nine coastal streams was made to determine the possibilities of power developments. Possible dam sites are described, as are plans for development. Stream flows are given. Maps of the area and vertical profiles of the rivers are shown.

Hutchinson, J.M. 1965. Basin investigations: Middle Coast Basin. Oregon State Game Commission, Portland. 38 p. plus appendices.

Report on fish conditions and requirements in the coastal streams of Oregon between the Salmon River and the Tahkenitch Lake area. Included are maps, tables, graphs, and pictures.

Johnson, A.F. 1933. Hydrology studies applicable to Oregon. M.S. Thesis, Oregon State College, Corvallis.

Discussion of several hydrologic techniques which are useful in predicting stream flows and in planning the disposition of water resources in a watershed.

Jones, B.E. and H.T. Stearns. 1930. Water-power resources of the Umpqua River and its tributaries, Oregon. U.S. Department of the Interior, Geological Survey Water-Supply paper 636. pp. 221-330.

Potential dam sites on the river are discussed. Resumes of the geology, power potential, and water storage capacity of the dam-sites are given. Although most dam sites studied were upstream from Roseburg, sites near Elkton and Scottsburg on the lower river were also investigated.

Neal, D.W. 1961. Waterpower resources of the Wilson River Basin, Oregon. U.S. Geological Survey Water Supply paper 1329-B. pp. 31-62.

River flow data and power-generating potential are discussed. Only one reservoir site, that at Cedar Creek, was deemed feasible. The geology of the dam site and reservoir site is discussed.

Oregon State Water Resources Board. 1958. Umpqua River Basin. 200 p.

A comprehensive study of the Umpqua River Basin. Tables, maps, charts, and graphs.

_____. 1959. Rogue River Basin. 440 p.

A comprehensive study of the Rogue River Basin. Tables, maps, charts, and graphs.

_____. 1961. North Coast Basin. 142 p.

A comprehensive study of the Lower Columbia River, Nehalem and Tillamook River Basins. Tables, maps, graphs, and charts.

_____. 1963. South Coast Basin. 125 p.

A comprehensive study of the Coos-Coquille and Chetco River Basins. Maps, tables, graphs, and charts.

_____. 1965. Mid-Coast Basin. 122 p.

A comprehensive study of streams in the middle coastal area of Oregon. It includes a study of all streams that empty into the Pacific Ocean. The basin extends from the Salmon River on the north to the Tahkenitch Lake area on the south. Maps, graphs, tables, and charts are included.

U.S. Army, Corps of Engineers. 1897. Preliminary examination of Alsea River, Oregon. House of Representatives Document no. 111, 55th Congress, 2d Session. 3 p.

Report on improvement of river channel above tidewater. Map.

_____. 1931. Coquille River, Oregon. House of Representatives Document no. 78, 73rd Congress, 1st Session. 33 p.

Proposal for improvement of the river for navigation with provision for flood control, power development, and irrigation. Climatic data. Map of lower Coquille River.

_____. 1942. Coquille River and tributaries, Oregon. House of Representatives Document no. 620, 77th Congress, 2d Session. 22 p.

Proposal for flood control in the basin. Map of lower Coquille River Valley.

_____. 1913. East Fork of the Coquille River, Oregon. House of Representatives Document no. 197, 63rd Congress, 1st Session. 4 p.

Proposal to improve the channel.

U.S. Army, Corps of Engineers. 1913. North Fork Coquille River, Oregon. House of Representatives Document no. 192, 63rd Congress, 1st Session. 7 p.

Proposal to improve the channel of the North Fork.

_____. 1879. Rogue River, Oregon. House of Representatives Document no. 97, 45th Congress, 3rd Session. 9 p.

The first report of any kind, apparently, on the Rogue River from Rock Point, near Grants Pass, to the sea. It is a physical description of the stream and the country through which it passes.

_____. 1892. Rogue River, Oregon. House of Representatives Document no. 51, 52nd Congress, 2d Session. 5 p.

General description of the economy, commerce and population of the river basin below Grants Pass and a report of a survey of the river.

_____. Portland District. 1961. Rogue River and tributaries, Oregon and California. Transcript of public hearing held at Grants Pass, Oregon, Sept. 25, 1961. 193 p.

Testimony of Federal, State, county, and local officials and opinions of private citizens on the effects dams will have on the Rogue River.

_____. 1962. Rogue River Basin, Oregon and California. House of Representatives Document no. 566, 87th Congress, 2d Session.

A report of a survey in the Rogue River Basin to determine the need and desirability of constructing dams in the upper Rogue River Basin. Resumes of the physiography, geology, and economics of the area are given. Maps show the dam locations and cross sections of the dam construction.

_____. Portland District. 1956. Project report on Stillwell Drainage District, Tillamook Bay, Oregon. 27 p.

Study of the possibility of rehabilitation of the levee surrounding the drainage district which is located west of Tillamook and between the Trask and Tillamook Rivers.

_____. 1871. "Letter to the Secretary of War on the probable cost of improvement of the Umpqua and Willamette Rivers." Senate Ex. Document no. 14, 41st Congress, 3rd Session. 12 p.

Report of survey to determine the feasibility of removing rapids from the Umpqua River to improve navigation.

_____. 1890. Survey of Umpqua River, Oregon. House of Representatives Ex. Document no. 199, 51st Congress, 1st Session. 6 p.

Report of survey of the Umpqua River between Scottsburg and Gardiner. Proposal to improve navigation.

U.S. Army, Corps of Engineers. 1895. Preliminary examination of Umpqua River, Oregon. House of Representatives Ex. Document no. 229, 53rd Congress, 3rd Session. 3 p.

A report of a proposal to improve the rapids between Scottsburg and Elkton.

_____. 1911. Umpqua River, Oregon. House of Representatives Document no. 276, 62nd Congress, 2d Session. 7 p.

Report of survey of the river between Roseburg and Scottsburg.

_____. 1940. Umpqua River and tributaries, Oregon. House of Representatives Document no. 684, 76th Congress, 3rd Session. 22 p.

Survey of the Umpqua River Basin. Resume of physical and cultural features and a proposal for flood control work in the basin. Map of the basin.

_____. 1941. Yaquina River and tributaries, Oregon. House of Representatives Document no. 304, 77th Congress, 1st Session. 19 p., 2 plates.

Study of proposed flood control projects in the Yaquina River Basin. Maps.

_____. North Pacific Division. 1961. Water resource development by the U.S. Army Corps of Engineers in Oregon. 75 p.

This report by the Corps of Engineers discusses navigation and flood control projects in Oregon. Pictures and location map.

U.S. Geological Survey. Annual. Surface water records of Oregon.

Stream flow records are tabulated annually. In addition, maximum and minimum water temperatures are recorded for the following coastal rivers: Trask, Alsea (at several points in the watershed), Coquille, and Rogue.

Young, R.A. 1961. Hydrogeologic evaluation of the streamflow records in the Rogue River Basin, Oregon. U.S.G.S. open-file report. 111 p.

The geology of the Rogue River Basin is reviewed and geologic conditions are given at each of 89 stream gauging stations. Information for each station includes location, records available, geology at station, and hydrogeologic factors influencing records at each station.

CHEMICAL AND PHYSICAL OCEANOGRAPHY

Prior to the acceleration of oceanographic research during the past decade, most physical and chemical measurements were made in conjunction with biological studies or harbor improvement projects. In recent years specific studies on the chemical and physical characteristics of the marine waters have been undertaken; many of these are still in progress and more are started each year.

Most of the earliest physical measurements in the bays and estuaries were made by the U.S. Coast and Geodetic Survey in their hydrographic charting programs and the U.S. Army Corps of Engineers in their rivers and harbors improvement programs. Many Senate and House of Representatives Documents are included in this section. Although they do not often contain specific data, they do give historical background information and, for a few bays, are still the only information available.

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Budinger, T.F., L.K. Coachman, and C.A. Barnes. 1964. Columbia River effluent in the northeast Pacific Ocean 1961, 1962: Selected aspects of physical oceanography. Dept. of Ocean., Univ. of Wash., Tech. Rept. no. 99. 78 p.

Observations from 12 oceanographic cruises are used to describe the dispersion of Columbia River water off Oregon and Washington. Graphs, charts, and diagrams.

Burt, W.V. 1956. Hydrography of Oregon estuaries prior to 1956. School of Science, O.S.C., Data Rept. no. 2. 22 p.

Temperature, salinity, and current velocity data for 10 Oregon estuaries are tabulated.

_____. 1962. Proc. First National Coastal and Shallow Water Research Conference, Baltimore, Md., Los Angeles, Calif., and Tallahassee, Fla. pp. 715-719.

Discussion of the oceanographic program at O.S.U.

_____ and L.D. Marriage. 1957. Computation of pollution in the Yaquina Bay Estuary. Sewage and Industrial Wastes 29:1385-1389.

Using Stommel's general equations for pollution in estuaries, predicted pollution loads are made for high and low river flows and for different points of discharge into the bay.

_____ and B. McAlister. 1958. Hydrography of Oregon estuaries June 1956 to September 1958. School of Science, O.S.C., Data Rept. no. 3. 18 p.

Water temperature and salinity are tabulated for 10 estuaries.

Burt, W.V. and W.B. McAlister. 1959. Recent studies in the hydrography of Oregon estuaries. Fish Comm. of Oregon Research Briefs 7(1):14-17.

Description and classification of Oregon estuaries according to Pritchard's method. There are diagrams of the types of estuaries, a tabulation of Oregon estuaries, and salinity diagrams describing selected estuaries.

_____, _____, and J. Queen. 1959. Oxygen anomalies in the surf near Coos Bay, Oregon. Ecology 40:305-306.

A combination of unseasonal, local upwelling, and river runoff may cause the abnormally low oxygen values observed during the winter months.

_____ and J. Queen. 1957. Tidal overmixing in estuaries. Science 126:973-974.

Flood tide excursion in Coos Bay, Oregon is more rapid at the surface than near the bottom. This water, saltier and denser than the estuary water, sinks and causes mixing throughout the water column.

Callaway, R.J. 1960. Prospectus for an oceanographical investigation of the Umpqua River Estuary and related studies of the Umpqua River Basin. U.S. Dept. H.E.W., PHS, WSPC, Portland, Oregon. 23 p.

_____. 1961. Physical and chemical oceanographic data: Umpqua River Estuary, Oregon: Part I, December 14-15, 1960. U.S. Dept. H.E.W., PHS, WSPC, Portland, Oregon. 15 p.

Data taken at four stations in the lower estuary are tabulated. Data include water temperature, salinity, dissolved oxygen, and current velocities at various depths from the surface to the bottom.

_____. 1961. Physical and chemical oceanographic data: Umpqua River Estuary, Oregon: Part II, January 25-26, 1961. U.S. Dept. H.E.W., PHS, WSPC, Portland, Oregon.

_____. 1961. Physical and chemical oceanographic data: Umpqua River Estuary, Oregon: Part III, March 21-22, 1961. U.S. Dept. H.E.W., PHS, WSPC, Portland, Oregon.

_____. 1961. Physical and chemical data: Umpqua River Estuary, Oregon: Part IV, April 26-27, 1961. U.S. Dept. H.E.W., PHS, WSPC, Portland, Oregon.

Tabulated temperature, salinity, dissolved oxygen, velocity are given for various depths at an anchor station near the mouth of the estuary. Graphs of time-series current measurements are also presented.

Denner, W.W. 1963. Sea water temperature and salinity characteristics observed at Oregon coastal stations in 1961. M.S. Thesis, Oregon State University, Corvallis.

Analyses and comparisons of salinity and temperature measurements at several coastal stations are made. Factors which cause variations at the various stations (upwelling, climatic, and meteorological conditions, and river discharges) are discussed. Temperature and salinity data are statistically analyzed and presented in charts and graphs.

Frolander, H.F. 1964. Biological and chemical features of tidal estuaries. Jour. Water Pollution Control Federation, Aug. 1964, pp. 1034-1048.

Temperature, salinity, and zooplankton distributions are given for Yaquina Bay, Oregon. Diagrams and tables.

Gharrett, J.T. 1955. The transfer of hatchery fish to estuarine waters. Fish Comm. of Oregon Research Briefs 6(1):14-18.

Discussion of the project. Tables show mortalities of the transplanted fish and diagrams show the water temperature and density on July 20, 1948 and August 17, 1949 in the Nehalem River Estuary.

Gladwell, J.S. and E.R. Tinney. 1962. Umpqua estuary model study. Washington State Institute of Technology Bull. 265.

A small scale, highly distorted model was constructed to determine if it would operate satisfactorily and to determine the pollution potential of the Umpqua Estuary under certain outfall conditions. Pictures, graphs, and charts.

Hobson, L.A. 1964. Some influences of the Columbia River effluent on marine phytoplankton during January 1961. Dept. of Ocean., Univ. of Wash., Tech. Rept. no. 100. 46 p.

The phytoplankton populations from offshore stations along the Oregon and Washington coasts are correlated with physical, chemical, and other biological factors. These are photosynthesis, respiration, water column stability, grazing by zooplankton, and sinking of phytoplankton. Tables, graphs, charts, and vertical and horizontal distribution diagrams.

Johnson, J.H. 1962. Sea temperatures and the availability of albacore off the coasts of Oregon and Washington. Trans. Am. Fish. Soc. 91:269-274.

Wide variations of albacore landings in Oregon and Washington are attributed to several factors, one of which is the seawater temperature. Analyses of surface water temperatures between 1947 and 1960 suggest that, if surface water anomalies in June are large enough, it is possible to predict if seawater temperatures will be favorable for albacore in mid-July and August. Diagrams and graphs.

Jones, E.L. 1918. The neglected waters of the Pacific Coast. Dept. of Commerce, Coast and Geodetic Survey, Wash., D.C. Spec. Pub. no. 48.

Discussion of the need for more accurate bathymetric and hydrographic data on the Pacific Coast of the United States. This paper pertains to navigation problems and shipwrecks that have occurred because of insufficient information.

Kujala, N. and B. Wyatt. 1961. Surface temperature and salinity observations at shore stations on the Oregon coast. Dept. of Ocean., O.S.U., Prog. Rept. no. 6. 23 p.

Data from daily observations at nine Oregon coastal stations are tabulated. Stations are located between Bandon and Astoria. Periods of observation vary. The longest interval, at the Seaside aquarium, was from January 21, 1945 to December 31, 1961; the shortest, at Bandon, was from September 17 to October 9, 1960.

Lane, R.K. 1965. Wind, nearshore ocean temperature, and the albacore tuna catch off Oregon. Fish Comm. of Oregon Research Briefs 11:25-28.

By utilizing wind forecasts to predict upwelling variations, fishermen would have another tool with which to predict the availability of tuna.

Marmer, H.A. 1926. Coastal currents along the Pacific Coast of the United States. U.S. Dept. of Commerce, Coast and Geodetic Survey, Spec. Pub. no. 121. 80 p.

Tidal and nontidal currents in the vicinity of the Columbia River Lightship are discussed.

Matson, A.L. 1964. Dissolved silicate in waters offshore Oregon and in four adjacent rivers. M.S. Thesis, Oregon State University, Corvallis.

Ocean water taken at various depths along five lines running west from Brookings, Coos Bay, Umpqua River, Newport, and Astoria were analyzed for dissolved oxygen, salinity, phosphate, and silicate. Water samples from Yaquina and Coos Bays and the Alsea and Columbia Rivers were also analyzed. Linear relations between the dissolved silicate and salinity were found to be 225_uM/L at 0 °/oo salinity and 0_uM/L at 33 °/oo. Silicate also increases with depth. Tables, charts, and graphs.

Maughan, P.M. 1963. Observations of ocean currents above 250 meters off the Oregon coast. M.S. Thesis, Oregon State University, Corvallis.

Parachute drogues were released at various depths to a maximum depth of 250 meters during six cruises throughout 1962. Five sets of observations were made off Newport near 44.5°N.-125°W. These were the points of drogue release. It was found that currents below the surface to about 100 meters are geostrophic. Between 100 and 250 meters depth the currents are nongeostrophic. Diagrams of current flows are presented.

McAlister, W.B. and J. Blanton. 1963. Temperature, salinity and current measurements for Coos Bay, Oregon. Dept. of Ocean., O.S.U., Data Rept. no. 10. 33 p.

Tabulated data and diagrams of the seasonal temperature and salinity structure. Observations were made at three shore stations and nine mid-channel stations during 1960, 1961, and 1962.

Oliphant, M.B. Wyatt and N.F. Kujala. 1963. Surface temperatures and salinity observations at shore stations on the Oregon coast for 1961. Dept. of Ocean., O.S.U., Data Rept. no. 8. 16 p.

Data are tabulated for 12 stations, located between Crescent City, California and Astoria, Oregon.

Osterberg, C., J. Pattullo, and W. Pearcy. 1964. Zinc-65 in Euphausiids as related to Columbia River off the Oregon coast. Limnology and Oceanography 9:249-257.

Most of the Zn-65 in the northeast Pacific Ocean is discharged from the Columbia River. Euphausiids, because they accumulate Zn-65, were used as monitors. Zn-65 is present not only in euphausiids associated with seawater diluted by the Columbia River, but in the more saline surface waters. Because of mixing, vertical migration of animals, and seasonal reversal of currents, the supply of euphausiids containing Zn-65 is maintained along the coast.

Park, K., J.G. Pattullo, and B. Wyatt. 1962. Chemical properties as indicators of upwelling along the Oregon coast. Limnology and Oceanography 7:435-437.

The hydrogen ion concentration of coastal waters is compared with other chemical properties and water temperature which indicate upwelling. Because of its ease of determination aboard ship, it is suggested it be used as an upwelling indicator.

Pattullo, J.G. and W.V. Burt. 1962. The Pacific Ocean. In Highsmith (Ed.), Atlas of the Pacific Northwest. Oregon State University Press. pp. 93-95.

Brief description of the geological, physical, and chemical features of the ocean off Oregon and Washington. Location maps and current bathymetric charts.

_____ and W.B. McAlister. 1962. Evidence for oceanic frontogenesis off Oregon. Science 135:106-107. Also as Dept. of Ocean., O.S.U., Tech. Rept. no. 12.

As summer upwelling diminishes, a shoreward sloping shear zone develops that extends from the surface to the bottom. This shear zone or "front" is attributed to the effects of climatic conditions which cause the sinking of previously upwelled water which has been modified by mixing at the surface and the shoreward movement of warmer oceanic water.

Pattullo, June and Warren Denner. 1965. Processes affecting seawater characteristics along the Oregon coast. Limnology and Oceanography 10:443-450.

Precipitation during the winter months and upwelling and mixing with fresh water runoff (principally from the Columbia River) during the summer months are the principal modifiers of Oregon coastal waters. Temperature and salinity data obtained during 1933-1934 and 1961-1962 were analyzed statistically to arrive at these conclusions.

Pytkowicz, R.M. 1964. Oxygen exchange rates off the Oregon coast. Deep Sea Research 11:381-389.

In the summer of 1962, it was found that a subsurface oxygen maximum formed with the increase of water temperature and was a result of loss of oxygen above the layer in which the maximum occurred. Charts and diagrams.

Queen, J. and W. Burt. 1955. Hydrography of Coos Bay. School of Science, O.S.C. Data Rept. no. 1. 16 p.

Temperature, salinity, current velocity, tide stage and height, hydrogen sulphide, pH, and meteorological data are tabulated. Eleven stations were occupied several times daily at bi-weekly intervals over a three-year period.

Radovich, John. 1961. Relationships of some marine organisms of the northeast Pacific to water temperatures; particularly during 1957 through 1959. State of California Dept. of Fish and Game marine resources operations. Fish Bull. no. 112. 62 p.

During 1957, 1958, and 1959, sea water temperatures in the northeastern Pacific Ocean were as much as 1°C., or more, warmer than normal. Associated with this warming trend were many forms of sea-life, notably fish, but including whales and turtles, whose northern range does not customarily extend to N. California, Oregon, and Washington.

Reid, J.L., Jr., G.I. Roden, and J.G. Wyllie. 1958. Studies of the California Current System. Scripps Inst. of Oceanography contribution no. 998, pp. 298-321.

General discussion of the physical, chemical, and biological characteristics of the current and conditions which cause variations in these features.

Rosenberg, D.H. 1963. Characteristics and distribution of water masses off the Oregon coast. M.S. Thesis, Oregon State University, Corvallis.

Four water masses are found offshore from Oregon. The most extensive, the Subarctic, is driven southward by the California Current and mixes in varying degrees with the Pacific Equatorial Water. During the winter a coastal water mass forms and is driven northward by the Davidson Current. The fourth water mass, found about 800 kilometers offshore, is a mixture of Subarctic and Eastern North Pacific Polar Water. Diagrams and tables.

Schatz, C.E. 1965. Source and characteristics of the tsunami observed along the coast of the Pacific Northwest on March 28, 1964. M.S. Thesis, Oregon State University, Corvallis.

In addition to a study of the cause and mechanics of the tsunami, the paper describes the effects on the Oregon coast.

_____, Herbert Curl, Jr., and W.V. Burt. Tsunamis on the Oregon coast. The Ore-Bin 26:231-232.

Discussion of the tsunami of March 28, 1964 which struck the Oregon coast.

Scripps Institute of Oceanography, University of California. 1960. Oceanic observations of the Pacific: 1949. Univ. of Calif. Press, Berkeley and Los Angeles. 363 p.

Included in this publication are tabulated data from cruises made off Oregon by the California Cooperative Oceanographic Fisheries Institute and the U.S. Navy Electronics Laboratory. CCOFI cruises were made monthly from April through November, excepting June. One N.E.L. cruise was made during March. Tabulated data include meteorological, depth, temperature, salinity, dissolved oxygen, and phosphate (PO_4), sigma-t, specific volume anomaly, and geopotential anomaly. Samples were taken at standard depths and the maximum depth sampled was 2934 meters. The station nearest shore was about 30 miles at sea.

_____. 1960. Oceanic observations of the Pacific: 1950. University of Calif. Press, Berkeley and Los Angeles. 508 p.

Included are physical oceanographic and meteorological measurements taken in offshore Oregon waters during August and September 1950 by Calif. Co-op Oceanic Fisheries Investigations.

_____. 1960. Oceanic observations of the Pacific: 1955. The NORPAC data prepared by the NORPAC COMMITTEE. University of Calif. Press and the Tokyo Press, Berkeley and Tokyo. 532 p.

During the period August 8-27, 1955 the CCOFI vessel Horizon occupied seven stations off Oregon. The closest station to shore was about 20 miles at sea. Data tabulated includes meteorological, depth, temperature, salinity, dissolved oxygen, phosphate (PO_4), sigma-t, specific volume anomaly, and geopotential anomaly.

_____. 1961. Oceanic observations of the Pacific: Pre-1949. University of Calif. Press, Berkeley and Los Angeles. 349 p.

During 1935 the University of Washington vessel Catalyst occupied six stations off Coos Bay. Data gathered included temperature, salinity, dissolved oxygen, phosphate (PO_4), nitrogen (NO_2-N), and alkalinity. In 1939, it occupied five stations off Coos Bay and five stations off Tillamook Head. The same measurements were taken.

Scripps Institute of Oceanography, University of California. 1962. Oceanic observations of the Pacific: 1955. University of Calif. Press, Berkeley and Los Angeles. 477 p.

Included in this report are data collected during a June-July cruise of the University of Washington vessel Brown Bear. During this cruise nine stations were taken along the coast approximately 15 miles offshore. Maximum depth sampled was 1589 meters. Data tabulated include meteorological, depth, temperature, salinity, dissolved oxygen, phosphate (PO_4), sigma-t, specific volume anomaly, and geopotential anomaly.

_____. 1963. Oceanic observations of the Pacific: 1956. University of Calif. Press, Berkeley and Los Angeles. 458 p.

During the period July 19--August 27, 1956, the University of Washington vessel Brown Bear occupied 44 stations off Oregon and Washington. The nearest station to shore was located at 46°00'N.-124°13'W. The John N. Cobb, Bureau of Commercial Fisheries vessel, occupied 13 stations off northern Oregon coast during the period July 18--August 7, 1956. Maximum depth sampled was 996 meters. The following data were tabulated for both cruises: meteorological, depth, temperature, salinity, dissolved oxygen, phosphate (PO_4), sigma-t, specific volume, and geopotential anomaly.

Smith, R.L. 1964. An investigation of upwelling along the Oregon coast. Ph.D. Thesis, Oregon State University, Corvallis.

Theories on upwelling, and upwelling around the world, are reviewed. Upwelling off Oregon, along the coast, and in the open ocean, is described and the factors which cause it are analyzed mathematically.

Steffanson, U. and F. Richards. 1963. Processes contributing to the nutrient distributions off the Columbia River and Strait of Juan de Fuca. Limnology and Oceanography 8:394-410.

Observations on nutrients, dissolved oxygen, and salinity are given for 12 cruises between January 1961 and April 1962. The paper discusses the horizontal distribution of nutrients in the upper 10 meters, processes affecting nutrient distribution, seasonal changes, and nutrient relationships. Charts, graphs, and diagrams.

_____. 1964. Distribution of dissolved oxygen, density and nutrients off the Washington and Oregon coasts. Deep Sea Research 11:355-380.

Discussion of the effect of upwelling, Columbia River, water biological activity, temperature change, and anomalous surface exchange on the distribution of nutrients. Observations taken during 13 cruises between January 1961 and June 1962. Diagrams, charts, and graphs.

Still, R., B. Wyatt, and N. Kujala. 1963. Surface temperature and salinity observations at shore stations on the Oregon coast for 1962. Dept. of Ocean., O.S.U., Data Rept. no. 11. 15 p.

U.S. Dept. of Commerce, Coast and Geodetic Survey. 1948. Surface water temperatures at Coast and Geodetic Survey Tide Stations, Pacific Ocean. U.S.C.G.S. publication TW2.

Includes tabulated average monthly surface water temperatures for varying periods of time at several Oregon coast stations.

_____. 1962. Surface water temperature and salinity North and South America and Pacific Ocean islands. U.S.C.G.S. publication 31-3. 71 p.

Included are surface temperature and salinity mean monthly, mean annual and annual extreme measurements from 10 Oregon coastal stations between Bandon and the Columbia River.

_____. 1963. United States Coast Pilot 7: Pacific Coast, California, Oregon, Washington, Hawaii. U.S. Govt. Printing Office.

Descriptions of the coast lines, especially prominent landmarks, and harbors and their facilities.

_____. 1965. Tide tables, high and low water, 1965: West Coast of North and South America including Hawaiian Islands. U.S. Govt. Printing Office, Wash., D.C.

Published annually for the current year.

_____. 1965. Tidal Current tables 1965: Pacific coast of North America and Asia. U.S. Govt. Printing Office, Wash., D.C.

Published annually for the current year.

U.S. Army, Corps of Engineers. 1880. Reports of surveys of the Cowlitz River, Washington Territory and Umpqua River and Alsea Harbor and Bar, Oregon; also survey of the bar at the mouth of the Columbia River. Senate Ex. Document no. 34, 46th Congress, 2d Session. 13 p. and chart.

Reports of surveys of the Umpqua River between Scottsburg and the mouth and of Alsea Bay and Bar and the Columbia River Bar in Oregon. Chart of Alsea Bay.

_____. 1890. Alsea Bay and River, Oregon. House of Representatives Ex. Document no. 85, 51st Congress, 2d Session. 5 p.

Description of the bay and valley included in this document.

_____. 1892. Alsea River, Oregon. House of Representatives Ex. Document no. 53, 52nd Congress, 2d Session. 6 p.

Report of survey and benefits to be derived from improving the upper river channel and improving the bay up to tidewater.

U.S. Army, Corps of Engineers. 1895. Survey of Alsea River, Oregon. House of Representatives Ex. Document no. 235, 53rd Congress, 3rd Session. 5 p.

Report of survey to determine the work necessary to make the Alsea River navigable to river boats. Map of river.

_____. 1915. Alsea Bay and Bar, Oregon. House of Representatives, Document no. 1593, 63rd Congress, 3rd Session. 15 p.

Reports and letters pertaining to bar and channel improvements in the bay. Chart.

_____. 1898. Preliminary examination of Cape Lookout Harbor, Oregon. House of Representatives Document no. 197, 55th Congress, 2d Session. 4 p.

Proposal to construct a harbor of refuge at Cape Lookout. Chart of area and cross section of proposed breakwater.

_____. 1892. Chetco River, Oregon. House of Representatives Ex. Document no. 92, 52nd Congress, 2d Session. 5 p. and map.

Preliminary survey of the river and harbor.

_____. 1942. Chetco River, Oregon. House of Representatives Document no. 817, 77th Congress, 2d Session. 15 p.

Report of survey of the channel entrance.

_____. 1965. Chetco River, Oregon. 89th Congress, 1st Session, Senate Document no. 21. 109 p. and chart.

The Chetco River has a drainage basin of 365 square miles. The head of tide is 3½ miles above the mouth and the mean tidal range is 6.9 feet. The estimated stream flow is 100 second feet during minimum and 10,000-15,000 second feet during extreme. The maximum ever estimated is 80,000 second feet. The area economy is discussed.

_____. 1892. Coos River, Oregon. House of Representatives Document no. 42, 52nd Congress, 2d Session. 4 p.

Proposal to improve the tidal portion of the Coos River.

_____. 1895. Survey of Coos River, Oregon. House of Representatives Document no. 237, 53rd Congress, 3d Session. 4 p.

Proposal to clear the river of snags and boulders. Chart.

_____. 1908. Coos Bay and Bar entrance, Oregon. House of Representatives Document no. 958, 60th Congress, 1st Session. 12 p.

Report of a study to improve the harbor.

U.S. Army, Corps of Engineers. 1911. Coos Bay and Entrance, Oregon. House of Representatives Document no. 284, 62nd Congress, 2d Session. 6 p.

_____. 1916. Coos Bay and Bar Entrance, Oregon. House of Representatives Document no. 1701, 64th Congress, 2d Session. 20 p.

Chart of Coos Bay entrance.

_____. 1917. Coos Bay Harbor, Oregon. House of Representatives Document no. 325, 65th Congress, 1st Session. 18 p.

Review of commerce, industries, resources, and a proposal to improve the channel. Charts of Coos Bay.

_____. 1918. Coos River (East Channel), Oregon. House of Representatives Document no. 150, 67th Congress, 3rd Session. 13 p.

Proposal to improve the channel.

_____. 1922. Coos Bay Harbor and Isthmus Slough, Oregon. House of Representatives Document no. 150, 67th Congress, 2d Session. 38 p.

Proposal to deepen the navigation channel across the bar to 30 feet, extend the jetty, and provide for a channel 22 feet deep in Isthmus Slough.

_____. 1927. Coos Bay, Oregon. House of Representatives Document no. 110, 70th Congress, 1st Session. 37 p.

Proposal to deepen channel in Coos Bay. Chart with wind diagram.

_____. 1934. Coos Bay, Oregon Inner Harbor. Senate Committee Print, 73rd Congress, 2d Session. 34 p.

Chart of Coos Bay.

_____. 1948. Coos and Millicoma Rivers, Oregon. Senate Document no. 124, 80th Congress, 2d Session. 16 p. and chart.

Review of project and proposal to improve navigation in lower reaches of the Millicoma and Coos Rivers.

_____. 1946. Coos Bay, Oregon. Senate Document no. 253, 79th Congress, 2d Session. 33 p.

Review of reports, work done, and proposal to deepen the channel to 40 feet across the outer bar. Chart.

U.S. Army, Corps of Engineers. 1948. Coos Bay at Charleston, South Slough, Oregon. House of Representatives Document no. 646, 80th Congress, 2d Session. 20 p.

Proposal to improve the slough from the Coos Bay channel to Charleston. Chart.

_____. 1874. Coquille River, Oregon. House of Representatives Ex. Document no. 216, 43rd Congress, 1st Session. 5 p.

Proposal to build a canal from the Coquille River to Isthmus Slough in Coos Bay.

_____. 1874. "Letter from Brig. Gen. A.A. Humphrys, Chief of Engineers, transmitting a report on survey at the mouth of the Coquille River." Senate Misc. Document no. 120, 43rd Congress, 1st Session. 5 p.

Report on a proposal to build a canal from the Coquille River to Coos Bay.

_____. 1907. Coquille River, Oregon. House of Representatives Document no. 399, 60th Congress, 1st Session. 8 p.

Proposal to remove dangerous rocks in the channel and to deepen the channel.

_____. 1910. Coquille River, Oregon. House of Representatives Document no. 673, 61st Congress, 2d Session. 10 p.

Proposal to dredge a 10 feet deep channel to Riverton.

_____. 1914. Coquille River and Bar entrance, Oregon. House of Representatives Document no. 890, 63rd Congress, 2d Session. 17 p.

Proposal to improve the existing channel.

_____. 1917. Coquille Bar and Harbor, Oregon. House of Representatives Document no. 207, 65th Congress, 1st Session. 14 p.

Proposal to improve the channel.

_____. 1917. Coquille River, Oregon from Coquille to the Entrance. House of Representatives Document no. 70, 65th Congress, 1st Session. 14 p.

Proposal to dredge channel to 12 feet depth to Coquille. Chart.

_____. 1928. Coquille River, Bar and Entrance, Oregon. House of Representatives Document no. 186, 70th Congress, 1st Session. 32 p.

Proposal to increase the entrance channel to 16 feet depth. Chart with wind diagram.

U.S. Army, Corps of Engineers. 1935. Coquille River Bar and Entrance, Oregon. Senate Committee Print, 74th Congress, 1st Session. 30 p.

Request for modification of the entrance channel.

_____. 1940. Coquille River, Oregon. House of Representatives Document no. 672, 76th Congress, 3rd Session. 12 p.

Proposal for deepening channel to 13 feet from the sea to the Coquille River lighthouse and removing snags to the bridge at Coquille. Chart.

_____. 1937. Depoe Bay, Oregon. House of Representatives Document no. 202, 75th Congress, 1st Session. 15 p.

Survey of the harbor. Chart.

_____. 1941. Depoe Bay, Oregon. House of Representatives Document no. 350, 77th Congress, 1st Session. 14 p.

Recommendation to improve Depoe Bay. Chart.

_____. 1878. Reports of surveys on the ports of Foulweather, Port Orford, Coos Bay, Alsea and Coquille River, Oregon. Senate Ex. Document no. 14, 45th Congress, 3rd Session. 23 p.

Proposals for harbor improvements or ports of refuge.

_____. 1859. Examination of Nehalem Bay and Bar, Oregon. House of Representatives Document no. 70, 51st Congress, 1st Session. 7 p.

Report of an examination of the lower Nehalem Bay. A survey was made, principally soundings, to prepare a chart of the lower bay and determine what improvements would be necessary to provide a suitable channel for ocean-going vessels and barges.

_____. 1912. Nehalem Bar and entrance to Nehalem Bay, Oregon. House of Representatives Document no. 623, 62nd Congress, 2d Session. 14 p. plus chart.

Recommendation that jetties be built at the mouth of the river. Chart of lower bay and ocean with soundings.

_____. 1912. Nehalem River, Oregon. House of Representatives Document no. 1104, 62nd Congress, 3rd Session. 6 p.

Report on a proposal based on a request from the local citizens to clear lower river of snags and dredge shoal areas in order that vessels can navigate safely to Nehalem. A brief description of the economic and physical geography is given.

U.S. Army, Corps of Engineers. 1914. Nehalem Bay and River, Oregon. House of Representatives Document no. 1455, 63rd Congress, 3rd Session. 12 p. with chart.

Report of a survey of the bay between Wheeler and Nehalem. No data are presented; however, it is noted that tide readings were taken. A topographic map and bathymetric chart of the area are given. Soundings are shown on the chart.

_____. 1918. Nehalem Bay and River, Oregon. House of Representatives Document no. 759, 65th Congress, 2d Session. 26 p. and chart.

Proposal to improve the navigation channel in the lower bay. The chart gives soundings and has a wind diagram.

_____. 1892. Nestucca River, Oregon. House of Representatives Ex. Document no. 97, 52nd Congress, 2d Session. 8 p. and chart.

Report of survey to determine the feasibility of improving the channel to the town of Woods. The physiography and economy of the area are described.

_____. 1895. Survey of Nestucca River, Oregon. House of Representatives Ex. Document no. 224. 53rd Congress, 3rd Session. 2 p.

A proposal to remove a rock ledge in the channel.

_____. 1873. Letter from the Secretary of War communicating in compliance with Senate Resolution of Jan. 7, 1873, information relative to Port Orford, Oregon as a harbor of refuge. Senate Ex. Document no. 41, 42nd Congress, 3rd Session. 7 p.

_____. 1886. A letter from the Secretary of War in response to Senate Resolution Jan. 25, 1886 relative to appropriation for breakwater at Port Orford, Oregon. Senate Ex. Document no. 63, 49th Congress, 1st Session. 84 p.

Discussion of the need for a harbor of refuge along the Oregon coast and a description of the coast with emphasis on the Port Orford area.

_____. 1890. Port Orford Harbor, Oregon. House of Representatives Document no. 56, 51st Congress, 2d Session. 9 p.

Review of the proposed breakwater. Chart and cross section of the breakwater.

_____. 1895. Survey at Port Orford, Oregon. House of Representatives Ex. Document no. 313, 53rd Congress, 3rd Session. 12 p.

Chart and cross sections of the wharves at Port Orford.

U.S. Army, Corps of Engineers. 1898. Survey of Port Orford Harbor, Oregon. House of Representatives Document no. 247, 55th Congress, 2d Session. 4 p.

Industry and economics of Port Orford. Chart.

_____. 1913. Port Orford at Graveyard Point, Oregon. House of Representatives Document no. 1351, 62nd Congress, 3rd Session. 11 p.

Review of the proposal for a harbor refuge at Port Orford. Chart.

_____. 1913. Port Orford Harbor, Oregon. House of Representatives Document no. 1352, 62nd Congress, 3rd Session. 11 p.

Review of the economics, industry, and previous surveys in the Port Orford area. Chart.

_____. 1915. Port Orford Harbor, Oregon. House of Representatives Document no. 527, 64th Congress, 1st Session. 8 p.

Includes a review of the economy of the area.

_____. 1964. Port Orford, Oregon. Senate Document no. 62, 88th Congress, 2d Session. 73 p. plus chart.

Report on review of reports pertaining to the request for establishing a breakwater at Port Orford, Oregon. Chart with soundings and diagram of proposed breakwater.

_____. 1916. Rogue River, Oregon. House of Representatives Document no. 491, 64th Congress, 1st Session. 7 p.

A general description of the economy of the Rogue River Basin below Grants Pass, major products, tonnages, and kinds of imports and exports during 1914. This is a preliminary examination of the bar and entrance to determine the feasibility of improving the navigation channel by constructing jetties at the mouth.

_____. 1954. Rogue River Harbor at Gold Beach, Oregon. Senate Document no. 83, 83rd Congress, 2d Session. 29 p. and chart.

A proposal to improve the channel and harbor by building jetties and dredging a turning basin. The river basin is described. The paper notes that tidal intrusion extends upstream about four miles, the tidal prism volume is estimated at 2200 acre-feet, the mean tide range at Wedderburn is 5.5 feet with an extreme range of about 14 feet. The mean annual discharge is 3500 cubic feet per second; the minimum is 1200 cubic feet per second; and the extreme maximum, 200,000 cubic feet per second. The chart shows soundings, cross sections of the jetties, and a wind diagram from Port Orford.

U.S. Army, Corps of Engineers. 1940. Salmon River, Oregon. House of Representatives Document no. 551, 76th Congress, 3rd Session, 7 p. plus chart.

The following data are given for the river: Area of drainage basin 78 square miles, tidal influence extends 4½ miles upstream, the mean tidal range is 6 feet and the extreme range is 13 feet, the tidal prism is estimated to be 500 acre-feet, and the river discharge is estimated to be 50 second feet during minimum flows and 8000 second feet during extreme flows. An accompanying chart shows soundings in the river.

_____. 1897. Preliminary examination of Siletz River, Bar and Entrance, Oregon. House of Representatives Document no. 107, 55th Congress, 2d Session. 3 p. with sketch chart.

Report of a survey to determine if the bar is worthy of improvement. Abbreviated description of the area.

_____. 1924. Siletz River, Bar and Entrance, Oregon. Document no. 478, 68th Congress, 2d Session. 9 p.

This report, a proposal to improve navigation over the bar, describes the bar and gives the following data on the Siletz watershed: 300-square mile drainage area, minimum flow of 130 second feet, maximum flow of 30,000 second feet, tidal effect 18 miles above the mouth and average tidal range of seven feet.

_____. 1889. Examination of Siuslaw River and Bar, Oregon. Ex. Document no. 71, 51st Congress, 1st Session. 8 p.

Report of survey of Siuslaw River. Notes a tidal influx of about 20 miles.

_____. 1910. Siuslaw River, Oregon, House of Representatives Document no. 648, 61st Congress, 2d Session. 10 p. and chart.

A report of a survey of Siuslaw Bay to determine if jetties should be constructed to improve the navigation channel. A resume of the shipping and industry of the area are given. Chart shows soundings.

_____. 1913. Siuslaw River, Oregon from Florence to Acme. House of Representatives Document no. 113, 63rd Congress, 1st Session. 12 p. with chart.

Report of a survey to have the channel deepened to 10 feet to the town of Acme. Soundings shown on chart.

_____. 1917. Siuslaw River, Acme to Entrance. House of Representatives Document no. 173, 65th Congress, 1st Session. 12 p. with chart.

The economy, natural resources, and shipping are described in terms to demonstrate the need for channel improvement to the town of Acme. Chart shows sounding and sections where dredging would be done. The report notes the mean tide range in the bay is 6.4 feet and that head of tide is near Mapleton.

U.S. Army, Corps of Engineers. 1957. Siuslaw River and Bar, Oregon. House of Representatives Document no. 204, 85th Congress, 1st Session. 32 p. and chart.

Report of survey to construct a jetty. Resume of the economy, the projected economy, the geography, and transportation of the area are given. Chart shows work to be done and soundings which were taken.

_____. 1888. Tillamook Bay and Bar, Oregon. House of Representatives Ex. Document no. 185, 50th Congress, 1st Session. 5 p.

This is the first report on Tillamook Bay. It is a proposal for channel improvement by removing snags and deepening the channel.

_____. 1891. Tillamook Bay and Bar, Oregon. House of Representatives Ex. Document no. 35, 52nd Congress, 1st Session, 12 p.

Report on the geography, economy, and commerce of the bay and surrounding area and a survey of the bay and bar. Charts.

_____. 1898. Survey of Tillamook Bay, Oregon. House of Representatives Document no. 217, 55th Congress, 2d Session. 3 p.

Description of the entrance to Tillamook Bay. Chart.

_____. 1908. Tillamook Bay and Bar, Oregon. House of Representatives Document no. 965, 60th Congress, 1st Session. 10 p.

Report on request for channel improvements.

_____. 1909. Tillamook Bay and Bar, Oregon. House of Representatives Document no. 13, 61st Congress, 2d Session. 3 p.

Report on request for channel improvements.

_____. 1911. Tillamook Bay and Bar, Oregon. House of Representatives Document no. 349, 62nd Congress, 2d Session. 12 p.

Proposal for channel improvement.

_____. 1918. Tillamook Bay and River and Hoquarton Slough. House of Representatives Document no. 1344, 65th Congress, 2d Session. 11 p.

Proposal to improve the channel. Chart.

_____. 1918. Hoquarton Slough, Oregon. Document no. 730, 65th Congress, 2d Session. 13 p.

Report of preliminary examination of the slough to determine the feasibility of dredging a navigation channel to Tillamook. A general description of the bay and the surrounding country is given.

U.S. Army, Corps of Engineers. 1925. Tillamook Bay and Entrance, Oregon. House of Representatives Document no. 562, 68th Congress, 2d Session. 27 p.

Proposal for improvement of the navigation channel.

_____. 1948. Tillamook Bay and Bar, Oregon. House of Representatives Document no. 650, 80th Congress, 2d Session. 35 p.

Review of work done and proposals to improve the channel on the bar and in the bay and elimination of erosion on Bay Ocean Peninsula. Chart with wind diagram.

_____. 1954. Tillamook Bay and Bar, Oregon. Senate Document no. 128, 83rd Congress, 2d Session. 33 p.

Proposal to close the breach in Bay Ocean Peninsula. There is a review of the work done in the bay, the economy, and geography. Chart shows cross sections of the proposed dike, area where dike will be constructed, and the extent of oyster beds in the bay.

_____. 1897. Preliminary examination of Umpqua River Bar and Entrance, Oregon. House of Representatives Document no. 122, 55th Congress, 2d Session. 4 p.

Report of survey in response to a proposal to improve the entrance. Chart.

_____. 1904. Umpqua River, Oregon. House of Representatives Document no. 310, 58th Congress, 2d Session.

This paper gives the following data for the Umpqua River. Head of tide is 26 miles above the mouth, the drainage area is about 4000 square miles, the mean tide range at the mouth is 5 feet, there are 10 square miles of tidal area and the discharge into the ocean from the river is 65,000 second feet.

_____. 1910. Umpqua River Bar, Oregon. House of Representatives Document no. 811, 61st Congress, 2d Session. 5 p.

Proposal for improvement of navigation on the Umpqua River Bar.

_____. 1918. Umpqua River, Bar and Entrance, Oregon. House of Representatives Document no. 913, 65th Congress, 2d Session. 21 p.

Report of survey of mouth of the Umpqua and proposal to improve the channel. Chart.

_____. 1926. Umpqua Harbor and River, Oregon. House of Representatives Document no. 320, 69th Congress, 1st Session. 54 p.

Proposal to increase the length of the north jetty and improve the navigation channel.

U.S. Army, Corps of Engineers. 1932. Umpqua River, Oregon. House of Representatives Document no. 9, 72nd Congress, 1st Session. 14 p.

Proposal to extend the south jetty and deepen the channel to 26 feet. Map of drainage area.

_____. 1938. Umpqua Harbor and River, Oregon. Senate Document no. 158, 75th Congress, 3rd Session. 22 p.

Proposal to modify channel from the bar to Reedsport to 200 feet wide and 22 feet deep. Chart.

_____. 1939. Umpqua River and Harbor, Oregon. Senate Document no. 86, 76th Congress, 1st Session. 12 p.

Proposal to dredge a spur channel into Gardiner from the main navigation channel. Chart.

_____. 1942. Umpqua Harbor and River, Oregon. Senate Document no. 191, 77th Congress, 2d Session. 11 p.

Proposal to dredge a channel 100 feet wide and 10 feet deep from the main channel into Winchester Bay and dredge a turning basin there. Chart with wind diagram.

_____. 1948. Umpqua Harbor and River, Oregon. Senate Document no. 154. 80th Congress, 2d Session. 18 p.

Proposal to improve the channel and to dredge a channel into Winchester Bay. Chart with wind diagram.

_____. 1949. Umpqua Harbor and River, Scholfield River at Reedsport, Oregon. Senate Document no. 133, 81st Congress, 2d Session. 18 p.

Proposal to dredge a channel 12 feet deep up Scholfield River from the main channel. Chart.

_____. 1961. Wave statistics for three deep water stations along the Oregon-Washington coast. Prepared for the Dept. of the Army, U.S. Army, Corps of Engineers District, Seattle, Washington-Portland, Oregon by National Marine Consultants, Santa Barbara, California, May 1961. 17 p., table and figures.

The latitude and longitude of each of the stations is as follows:

44°40'N 124°50'W 46°12'N 124°30'W 47°40'N 125°00'W

The data tabulated include the average monthly height, period and directions of the sea and swell, the frequency distribution (percent) for several wave periods, heights and directions for each month of the year. Data are presented in histograms and rose diagrams.

U.S. Army, Corps of Engineers. 1961. Oceanographic study for breakwater sites located at Yaquina Bay, Siuslaw River, Umpqua River and Coos Bay, Oregon.

Prepared for the U.S. Army Engineers District, Portland, Oregon, by National Marine Consultants, Santa Barbara, California, January 1961. 14 p., 5 figures and tables.

Wave refraction diagrams for breakwater design sites at the four stations are given.

_____. 1880. Report on entrance to Yaquina Bay. Senate Ex. Document no. 148, 46th Contress, 2d Session. 3 p. and chart.

Report of survey.

_____. 1890. "A report on improvements to the entrance to Yaquina Bay." Senate Ex. Document no. 47, 51st Congress, 1st Session. 6 p.

Report of work that is necessary to improve the jetties.

_____. 1892. Report on improvement of the entrance of Yaquina Bay, Oregon. Senate Ex. Document no. 30, 52nd Congress, 1st Session. 8 p.

Included is a description of the entrance and the bay.

_____. 1892. Bar at entrance to harbor at Yaquina Bay, Oregon. House of Representatives Ex. Document no. 96, 52nd Congress, 2d Session. 8 p.

Report on jetty improvement.

_____. 1895. Preliminary examination of Yaquina Bay, Oregon. House of Representatives Ex. Document no. 227, 53rd Congress, 3rd Session. 4 p.

Report of work to date on Yaquina Bay.

_____. 1895. Preliminary examination of Yaquina Bay, Oregon. House of Representatives Document no. 68, 54th Congress, 1st Session. 26 p.

Letters from proponents of harbor improvement. Chart.

_____. 1897. Examination of Yaquina and Big Elk Rivers, Oregon. House of Representatives Document no. 112, 55th Congress, 2d Session. 3 p. with chart.

A description of the rivers. Notes that head of tide is 26 miles above the mouth and four miles above the Yaquina-Big Elk confluence. Also notes that the Yaquina is a quarter of a mile wide at Yaquina, an

eighth of a mile wide at Toledo and about 100 feet wide at Big Elk River. The tidal range at Elk City is six feet.

U.S. Army, Corps of Engineers. 1899. Examination of Yaquina Bay, Oregon. House of Representatives Document no. 110, 56th Congress, 1st Session. 22 p. with chart and pictures.

A physical description of the bay notes that the major part is about three miles long and one mile wide with a tidal area of five square miles. Notes tidal influence 20 miles upstream. The mean tide range in the bay is noted at 7.1 feet with an extreme range of 5 to 11 feet. The mean discharge from the bay is 40,000 second feet.

_____. 1903. Yaquina Bay, Oregon. House of Representatives Document no. 158, 58th Congress, 2d Session. 17 p.

Arguments for improving navigation channel in Yaquina Bay. Chart.

_____. 1903. Yaquina River, Oregon. House of Representatives Document no. 240, 58th Congress, 2d Session. 4 p.

Description of river up to Elk City.

_____. 1909. Yaquina River, Oregon. House of Representatives Document no. 351, 61st Congress, 2d Session. 4 p.

Description of river up to Elk City.

_____. 1912. Yaquina River, Oregon from Toledo to Yaquina. House of Representatives Document no. 519. Letter from the Secretary of War. 12 p.

Proposal to dredge a channel from Yaquina to Toledo. Charts.

_____. 1913. Yaquina Bay and Bar Entrance, Oregon. House of Representatives Document no. 1358, 62nd Congress, 1st Session. 12 p.

Report on river survey, river traffic, and desires of local interests.

_____. 1917. Yaquina Bar, Bay and Harbor, Oregon. House of Representatives Document no. 109, 65th Congress, 1st Session. 18 p.

Description of bay and work which has been done. Charts.

_____. 1930. Yaquina River, Oregon from Toledo to Yaquina Bay. Senate Document no. 159, 71st Congress, 2d Session. 26 p.

Plan to improve channel to Toledo. Value of commerce is given.

_____. 1937. "Review of reports on Yaquina Bay." Senate committee print, 75th Congress, 1st Session.

U.S. Army, Corps of Engineers. 1941. Yaquina Bay and Harbor, Oregon. Senate Document no. 119, 77th Congress, 1st Session. 19 p.

Proposal for expanding improvement work in the bay. Chart.

_____. 1946. Yaquina Bay and Harbor, Oregon. Senate Document no. 246, 79th Congress, 2d Session. 16 p.

Report of survey to determine the feasibility of establishing a small boat basin in Yaquina Bay. Chart.

_____. 1957. Yaquina Bay and Harbor, Oregon. Senate Document no. 8, 85th Congress, 1st Session. 46 p. with chart.

Chart has soundings and shows proposed dredge areas. A brief physical description of the bay is given as is a dissertation on the benefits that will accrue from harbor improvement.

University of Washington. 1963. Physical and chemical and biological data from the northeast Pacific Ocean: Columbia River effluent area: January-June 1961. Dept. of Ocean., Univ. of Wash., Tech. Rept. no. 86. 405 p.

Tabulated, observed, and computed oceanographic data collected on five cruises are presented. Area covered extends from Vancouver Island, B.C. to the Siuslaw River, Oregon and seaward to 131°W longitude.

Washburn, F.L. 1900. Present condition of the eastern oyster experiment and the native oyster industry. Report of the State Biologist. 13 p.

Attempts to grow eastern oysters are discussed. Limited water temperature and density data for several bays and complete temperature data for several stations in Yaquina Bay, both surface and bottom, are given for the period January 1, 1897 to August 3, 1897.

Wyatt, B. and R. Callaway. 1961. Physical hydrographic data offshore from Newport, Oregon for July 1958-July 1959. Dept. of Ocean., O.S.U., Data Rept. no. 4. 15 p.

Five stations, at about five-mile intervals, on a line extending seaward from Newport were sampled to maximum depths of 100 feet during nine cruises. Temperature, salinity, dissolved oxygen, and sigma-t data are presented in tables and graphs.

_____ and N. Kujala. 1961. Physical oceanographic data offshore from Newport and Astoria, Oregon for July 1959 to June 1960. Dept. of Ocean., O.S.U., Data Rept. no. 5. 17 p.

Five stations, at approximately 10-mile intervals, on lines running seaward from Newport and Astoria, respectively, were sampled to maximum depths of 200 meters. Three cruises were made off Astoria and eight off Newport. Temperature, dissolved oxygen, salinity, and sigma-t data are presented in tables and graphs. Note is made of upwelled water, Columbia River influence, and temperature inversion.

Wyatt, B. and N. Kujala. 1962. Hydrographic data from Oregon coastal waters June 1960 through May 1961. Dept. of Ocean., O.S.U., Data Rept. no. 7. 77 p.

Temperature, salinity, dissolved oxygen, sigma-t, and meteorological data are tabulated for 167 stations which were sampled to depths of 50 meters or more (maximum depth 607 meters). Selected horizontal and vertical sections of the data are given. Results of current studies (drift bottles) are presented. Stations were located along the entire length of the Oregon coast and seaward to about 127°W. longitude.

_____. 1963. Hydrographic data from Oregon waters. Dept. of Ocean., O.S.U., Data Rept. no. 12. 36 p.

Physical and chemical oceanographic data from 45 stations, which were located along lines running seaward from Brookings, Coos Bay, Newport, and Astoria, respectively, are presented. Maximum depth sampled was about 1000 meters.

BIBLIOGRAPHIES, LITERATURE SURVEYS, AND COMPILATIONS

No earlier bibliographies were located which referenced publications for the entire coast of Oregon. The Department of Oceanography, University of Washington, however, has published bibliographies concerning specific areas of the coast. These are "Coos Bay, Oregon, A Literature Survey" published in 1954 and "The Columbia River Discharge Area of the Northeast Pacific Ocean, A literature Survey" published in 1961. Both of these bibliographies are annotated. The State of California, Department of Natural Resources, Division of Mines published "Bibliography of Marine Geology and Oceanography, California Coast" in 1954. This nonannotated bibliography contains many references to the Oregon coast.

In addition to the bibliographic and literature survey references, this section contains references to collected reprints and other publications which have extensive bibliographies.

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Allen, J.E. 1947. Bibliography of the geology and mineral resources of Oregon. (Supplement) July 1, 1936 to December 31, 1945. State Department of Geology and Mineral Industries Bulletin no. 33. 108 p.

This is the first supplement to this bibliography. It is not annotated as was the first edition.

Anon. n.d. Publications of the Geological Survey 1879-1961. 457 p.

Indexed in this publication are all published papers and maps, exclusive of topographic maps, that have been published by the Geological Survey of the United States Department of the Interior. Annual supplements will be published.

Anon. 1962. Publications and graduate theses in water research at Oregon State University. Water Resources Institute, O.S.U., Corvallis, Oregon.

Anon. 1963. Publications of the Geological Survey 1962. 43 p.

This is the first supplement to Publications of the Geological Survey 1879-1961.

Anon. 1964. Geological Survey Research Chapter A. Geological Survey Professional Paper 501-A. 367 p.

Included in this publication are summaries of significant scientific and economic results, a list of publications released in fiscal 1964, a list of geologic and hydrologic investigations in progress, and a report on the status of topographic mapping.

Anderson, G.C., C.A. Barnes, T.F. Budinger, C.M. Love, and D.A. McManus. 1961. The Columbia River discharge area of the Northeast Pacific Ocean; a literature survey. Univ. of Washington, Dept. of Ocean. 99 p.

Abstracts of the current state of knowledge (1961) and annotated bibliographies of the subjects studied are given. Three major subjects are physical and chemical oceanography, biological oceanography, and geological oceanography. Each of these is further subdivided into specific subjects.

Baldwin, E.M. 1964. Geology of Oregon. University of Oregon Coop. Bookstore, Eugene, Oregon. 165 p.

Includes a section on the Oregon coast. An extensive bibliography is included in this book.

Dicken, S.N. 1961. Some recent physical changes of the Oregon Coast. Rept. of Invest., University of Oregon, Dept. of Geography. 151 p.

An extensive bibliography is in this paper.

Dixon, D.E. 1925. Bibliography of the geology of Oregon. University Press, Eugene. 125 p.

The first comprehensive bibliography on Oregon geology. Several of the entries are briefly annotated.

Hodge, E.T. 1932. Progress in Oregon geology since 1925. Northwest Science 6:44-53.

Includes a nonannotated bibliography of papers in geology published between 1925 and 1931.

_____. 1936. Bibliography of Oregon geology. The Geological News Letter 2(6):1-21.

Discussion of geological investigations in the State during the period 1925-1934. A nonannotated bibliography of the publications during this period is included.

Johnson, M.E. and J.H. Snook. 1927. Seashore animals of the Pacific Coast. The MacMillan Co., New York. 658 p.

Descriptions of animals from 12 phyla which are found along the Pacific Coast of North America. Ecological and geographical distributions are given. Color plates, pictures, diagrams, and an extensive bibliography.

Kulm, S.A. (Ed.) 1965. Collected reprints; Department of Oceanography, Oregon State University, O.S.U. Dept. of Printing. 348 p.

This publication includes all papers published by staff members in various professional magazines and journals during 1964. A list of

theses and dissertations accepted during 1964 is also included. Those papers dealing with the environmental or ecological characteristics of the Oregon coastal waters are indexed in this bibliography.

Love, C.M. 1956. Sources of oceanographic data for a portion of the North Pacific Ocean: Area from 20°N to 55°N latitude and the west coast of North America to 150°W longitude for years 1916-1954. Univ. of Wash. Spec. Rept. no. 25.

This report has annotated bibliographies of publications which list sources of data, publications or charts showing average conditions, publications and manuscripts listing coastal data, temperature studies based on bathythermograph data, data available from the U.S. Weather Bureau, McEwen's temperature charts, and data from oceanographic observations made prior to 1916. It also lists the names of ships, expeditions and organizations that have gathered data, the year of data collection, the locations where data were gathered, the observations taken, and the locations where the data are now available.

McCauley, J.E. (Ed.) 1964. Collected Reprints, Department of Oceanography, Oregon State University, Vol. 2, 1963. O.S.U. Dept. of Printing. 230 p.

Publications of staff members which have appeared in various professional magazines and journals in 1963. Those papers concerned with the Oregon coast are indexed in this bibliography.

_____. 1964. Collected reprints. Oregon State University, Dept. of Oceanography, Vol. 1. 254 p.

Publications of staff members which have appeared in various professional magazines and journals. Many of the papers concerned with the Oregon coast are indexed in this bibliography.

Moore, H.L. (Compiler). 1959. Doctoral dissertations on the management and ecology of fisheries additional listings 1952-1955. U.S. Dept. of the Interior, Fish and Wildlife Service, Special Scientific Report--Fisheries no. 272. 31 p.

Nonannotated list of Ph.D. theses written in the United States and Canada during 1952-1955.

Oregon State System of Higher Education. 1946. Graduate theses, University of Oregon, Oregon State College, University of Oregon Medical School. 1932-1942. Oregon State System of Higher Education, Eugene, Oregon. 196 p.

Lists all graduate theses accepted during this period as well as abstracts of doctoral dissertations.

Peterson, E.R. and A. Powers. 1952. A century of Coos and Curry. Binfords and Mort, Portland, Oregon. 599 p.

History of Coos and Curry Counties.

Ricketts, E.F. and Jack Calvin (Revised by J.L. Hedgpeth). 1962. Between Pacific tides. Stanford University Press, Stanford, California. 516 p.

A comprehensive book on the intertidal animals of the Pacific Coast of the United States. Descriptions, including pictures of many of the common forms, are included as well as discussions of environmental and ecological requirements for the animals. An extensive annotated bibliography on the marine biology of the Pacific Coast is included.

Schlicker, H.G. 1959. Bibliography of theses on Oregon geology. Oregon State Department of Geology and Mineral Industries. Misc. Paper no. 7. 13 p.

A nonannotated list of theses. An index map shows where work was done.

Steere, M.L. 1953. Bibliography of the geology and mineral resources of Oregon (second supplement) January 1, 1946 to December 31, 1950. Oregon State Department of Geology and Mineral Industries. Bulletin no. 44. 61 p.

A continuation of the bibliography on Oregon geology. It is not annotated.

_____ and L.F. Owen. 1962. Bibliography of the geology and mineral resources of Oregon (third supplement) January 1, 1951 to December 31, 1955. Oregon State Department of Geology and Mineral Industries. 97 p.

Continuation of the bibliography on Oregon geology. It is not annotated.

Treasher, R.C. and E.T. Hodge. 1936. Bibliography of the geology and mineral resources of Oregon. Oregon State Planning Board. 224 p.

An annotated bibliography of all reports on geologic investigations within the State of Oregon that were published by July 1, 1936.

Terry, R.D. 1955. Bibliography of marine geology and oceanography, California coast. State of California, Department of Natural Resources, Division of Mines. 131 p.

This nonannotated bibliography contains several references to the Oregon coastal area.

U.S. Dept. of the Interior, Fish and Wildlife Service. 1950. Doctoral dissertations on the management and ecology of fisheries. Special Scientific Report--Fisheries no. 31. 35 p.

A nonannotated bibliography of theses written between 1934 and 1939, in the United States and Canada.

U.S. Dept. of the Interior, Fish and Wildlife Service. 1952. Doctoral dissertations on the management and ecology of fisheries. Special Scientific Report--Fisheries no. 87. 44 p.

A nonannotated bibliography of theses on subjects related to the ecology and management of fisheries written between 1934 and 1951, in the United States and Canada.

University of Washington. 1955. Coos Bay, Oregon: A literature survey. Dept. of Ocean., Univ. of Wash. 142 p.

Abstracts of the current state of knowledge (1955) and annotated bibliographies of the subjects studied are given. Subjects include geography, climatology, hydrography, regional geology, geophysics, recent sedimentation, hydrology, physical oceanography, and marine biology.

Wilimovsky, N.J. and W.G. Freihofer. 1957. Guide to literature on systematic biology of Pacific salmon. U. S. Dept. of Interior, Fish and Wildlife Service. Special Scientific Report--Fisheries no. 209. 266 p.

A comprehensive subject index and annotated bibliography on Pacific salmon. Included are references from over 100 journals and serials that were searched systematically. In addition, several individual articles are indexed.

BIBLIOGRAPHIC: Ditsworth, George R. Environmental factors in coastal and estuarine waters. Bibliography series - volume I. Coast of Oregon. FWPCA Publication WP-20-2. 1966. 61 p.

ABSTRACT: Indexed herein are references to literature pertaining to the marine waters of Oregon. References to papers, depending on the subject matter contained in the paper, are indexed under one or more of the following headings: Marine Biology, Climate, Fisheries, Geology, Hydrology, Chemical and Physical Oceanography, and Bibliographies, Literature Surveys, and Compilations.

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KEY WORDS:

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