Salmon Ranching in Oregon: State and Federal Regulations

by Don Hornstein
Research Assistant, Ocean and Coastal Law Center
University of Oregon School of Law

Oregon State University
Extension Marine Advisory Program
A Land Grant / Sea Grant Cooperative
(Special Report 1573 January 1980)
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>The Private Hatchery Permit</td>
<td>3</td>
</tr>
<tr>
<td>The Application</td>
<td>3</td>
</tr>
<tr>
<td>Departmental Review: Resource and Economics</td>
<td>3</td>
</tr>
<tr>
<td>Departmental Review: Land Use Considerations</td>
<td>3</td>
</tr>
<tr>
<td>The Public Hearing</td>
<td>4</td>
</tr>
<tr>
<td>The Decision</td>
<td>5</td>
</tr>
<tr>
<td>The Permit's Conditions</td>
<td>5</td>
</tr>
<tr>
<td>The Wildlife Propagation License</td>
<td>5</td>
</tr>
<tr>
<td>State Dredge and Fill Permits</td>
<td>5</td>
</tr>
<tr>
<td>Federal Dredge and Fill Permits</td>
<td>6</td>
</tr>
<tr>
<td>Permit To Construct a Reservoir</td>
<td>6</td>
</tr>
<tr>
<td>Water Rights</td>
<td>6</td>
</tr>
<tr>
<td>Water Discharge Permit</td>
<td>7</td>
</tr>
<tr>
<td>Fishing Licenses</td>
<td>7</td>
</tr>
<tr>
<td>Processing and Marketing: State Regulations</td>
<td>7</td>
</tr>
<tr>
<td>Processing and Marketing: Federal Regulations</td>
<td>8</td>
</tr>
<tr>
<td>Salmon Ranching, the Regulatory Process, and Real Life</td>
<td>8</td>
</tr>
</tbody>
</table>
INTRODUCTION

In 1971, the Oregon legislature legalized a new type of private industry: the ocean ranching of salmon. Private individuals and companies could apply for permits to operate their own hatcheries, raise young salmon from eggs, and then release them from facilities near the ocean. The young fish are released to grow in the Pacific Ocean, the "open range", and then to return by instinct to their point of release: the salmon rancher's release-and-recapture facility. There, some of the returning fish will be separated and used for propagation, as seed stock from which the next generation of fish will be spawned. The remainder are marketed: prime salmon are killed and sold as seafood while lower grade fish are processed into products such as animal food. Although the 1971 law only authorized permits for chum salmon hatcheries, it was amended in 1973 to include coho and chinook, and, in 1979, pink salmon permits as well.

Most of the fish a salmon rancher releases will not return. Many will fall prey to disease, natural predators or the fishing efforts of sports and commercial fisheries. While they are in the wild, salmon released from private facilities are considered public property and may be caught by any fishermen. The Oregon Department of Fish and Wildlife estimates that, at 1978 catch rates, fishermen will catch four out of every five adult salmon. Nevertheless, it has been predicted that an ocean ranch may be profitable if only one to five percent of its fish return to the recapture facility.

Not all ocean ranch operations are identical. Yet all have certain features in common and it is helpful to envision a complete operation. It has four basic parts.

1. An initial source of seed stock
2. A hatchery, in which to incubate eggs and rear fingerlings
3. A release-and-recapture facility near the coast
4. A marketing operation

A variety of legal procedures and regulations correspond to each of these four parts. A prospective salmon ranch must be within two years of receiving eggs from an approved source before its permit application will be considered. A public hearing will be held which considers the environmental effects of the proposed operation. Siting of the ocean ranch must comply with appropriate land-use and estuary plans. The operation will require a source of incubation and rearing water for which it must obtain a legal water right. At the other end, it will discharge water that requires a discharge permit and, perhaps, some type of pollution control. Parts of the operation may have to be approved and constructed in accordance with state and federal dredge and fill permit procedures. Finally, wholesale dealer and commercial fishing licenses are required to harvest the returning fish; processing and storage regulations must be followed in marketing them.

Although each of these legal requirements may be supported by rational public policy, taken together, they form a bureaucratic maze through which many a would-be ocean rancher may choose not to wander. The maze leads through local, state, and federal public agencies. Permits or authorization are required from local zoning agencies, the state departments of Fish and Wildlife, Water Resources, and Environmental Quality, the Division of State Lands, and the U.S. Army Corps of Engineers. The ocean ranch may also be affected by regulations of the federal Environmental Protection Agency, Department of Agriculture, and Food and Drug Administration.

This pamphlet attempts to identify and describe the various administrative permits required for a salmon ranch operation in Oregon. It also describes the administrative procedures by which agencies make their decisions. Lastly, it includes representative samples of application forms, copies of particularly significant legislation and regulations, and information about state agencies and programs which can be of assistance to prospective salmon ranchers.

* This report does not discuss local requirements such as building codes and land-use plans which, needless to say, may vary. Such requirements apply to the private hatchery operation, however, and inquiries concerning them should be made to appropriate local agencies. It should also be noted that while this pamphlet describes current state and federal regulations, these regulations may change in the future. Prospective and present salmon ranchers should keep abreast of such changes.
THE PRIVATE HATCHERY PERMIT

A commercial salmon ranch must have a private salmon hatchery permit for each species of salmon it releases. These permits are issued and administered by the Oregon Department of Fish and Wildlife and are the most demanding of all the permits for which an ocean rancher must apply. The Department requires a minimum of six months for review and evaluation and a public hearing is required by law.

The Application

Applicants must work closely with the Oregon Department of Fish and Wildlife in completing their applications: the Department will not schedule a public hearing until an application is complete. Moreover, no application is even reviewed until the applicant is within two years of receiving eggs. At the present time, a shortage of available salmon eggs is the most significant biological limiting factor in the development of private hatcheries.

Private operators may not take wild coho or chinook salmon as a source of seed stock. The Department, however, is authorized to obtain seed stock from these species and to make the eggs available to private operations. In practice, wild stock have been taken only if their natural production is replaced. Similarly, private operators may take chum salmon for seed stock only if their removal from a stream will not adversely affect the natural chum production. The terms and conditions under which native chum may be taken by private operators, if allowed at all, are part of the individual hatchery permit.

Most applicants seek eggs from public and private hatcheries, both within and out of the state of Oregon. The Department is authorized to sell only those eggs which are surplus to the fish production program of the state. Available surpluses are sold according to strict priority as provided in Oregon Administrative Rules (OAR) 635-40-015. Current surpluses are limited, when they occur at all, and the Department estimates that the situation may get worse if more permits are granted. The prospective applicant should inquire of the Department concerning the availability of acceptable eggs.

Assuming a source of eggs can be found, an application is not complete unless it identifies a site for the proposed operation in which the applicant has sufficient property rights. A sufficient property right may be demonstrated by an instrument such as a lease, option, or easement. The Oregon Department of Fish and Wildlife does not find sites for applicants but the Department of Economic Development has indicated it might be able to provide such information.

By law, a release-and-recapture facility must be in "close proximity to the ocean." This requirement was envisioned to prevent genetic mixing and competition of the privately raised fish with wild or public hatchery stocks. This might occur if the privately raised fish were released, and subsequently strayed, far upstream in spaw-ning and nursery grounds used by other salmon stocks.

The Department of Fish and Wildlife has further defined where the release-and-recapture site may be located. It may not be located above the head of tidewater in any stream, except sites may be located a short distance above the mouths of small direct tributaries to the ocean which have no tidal influence. Operations may not be located next to wild, scenic, or wilderness areas or on streams which enter the ocean through tourist facilities such as state parks or waysides. In addition to these general rules, certain streams, rivers, and estuaries are specifically closed to ocean ranching. A list of these areas may be found in (OAR) 635-40-020.

Departmental Review: Resource and Economic Considerations

Once an application is complete, it is reviewed by the Department. Each application is examined in terms of its effect on the overall public fisheries of the state, the state's management of those fisheries, and the economic benefit to the state. In particular, Oregon Revised Statutes (ORS) 508.710 stipulates that permits must be denied if any of the following five conditions exist:

1. If the private hatchery may tend to deplete any natural run of anadromous fish or any population of resident game fish.
2. If the private hatchery might result in waste or deterioration of fish.
3. If the operation would be located on the same stream or river (or on one of their tributaries) on which a state or federal fish hatchery is established or planned.
4. If the operation would not be consistent with sound resource management or would not be located in close proximity to the ocean.
5. If the Commission determines the applicant does not have the financial capability to successfully construct and operate the hatchery or may not properly conduct the operation. (The state Attorney General issued an Opinion in 1975 in which he stated that this provision authorized the Commission to require a bond or public liability insurance from a permit holder, as an indication of adequate financial capability.)

Departmental Review: Land Use Considerations

In addition to reviewing applications from a resource and economic viewpoint, the Department is required to determine the consistency of a permit with applicable state-wide planning goals. These goals were promulgated by the Land Conservation and Development Commission (LCDC) and have the force of law. State action which affects land use, such as granting a permit to a private
salmon hatchery operation, must be consistent with LCDC’s goals. The Department of Fish and Wildlife gives particular attention to Goals 3, 16, 17, and 19. The Department considers input to be preceded by a clear presentation of the impacts of the alteration, and a demonstration of the public’s need and gain which warrant it.

Goal 5, the Open Spaces Goal, seeks to conserve open space and protect natural and scenic resources. It is concerned with values such as fish and wildlife habitat, ecologically and scientifically significant natural areas, outstanding scenic views and sites, wetlands, groundwater resources, cultural and historic areas and energy sources, as well as with land needed or desirable for open space. If an ocean ranching operation is in conflict with these values, then the economic, social, environmental and energy consequences of the conflicting uses are identified and weighed. Uses which do not exceed the air, land, and water carrying capacities of the area are favored. Fish and wildlife habitat is managed with guidance from the Oregon Fish and Wildlife Department through development of fish and wildlife management plans.

Goal 16, the Estuarine Resources Goal, states that estuary plans and activities shall protect the estuarine ecosystem, including its natural biological productivity, habitat, diversity, unique features and water quality. Generally, Goal 16 requires actions which would potentially alter the integrity of an estuarine ecosystem to be preceded by a clear presentation of the impacts of the alteration, and a demonstration of the public’s need and gain which warrant it.

In addition to these general provisions, Goal 16 classifies estuaries into three management units: natural, conservation, and development. Natural units must be managed to preserve the natural resources in recognition of dynamic, natural, geological, and evolutionary processes. Interestingly, aquaculture operations are specifically sanctioned if they are consistent with both this purpose and the resource capabilities of the area. As a point of clarification, however, releasing large numbers of fish into a natural estuary would not be consistent with maintaining that estuary in a natural condition. Conservation units are those designated for long-term uses of renewable resources that do not require major alterations of the estuary. Aquaculture operations are also listed as a permissible use in these units. Development units are those designated to provide for public navigation needs and for commercial and industrial water-dependent uses. If appropriate to the particular estuary, aquaculture is listed as a permissible use. Overall, the nature and scope of an aquaculture operation may be limited by the unit designation of the estuary in which the operation is proposed.

Goal 19, the Ocean Resources Goal, seeks to conserve the long-term values, benefits, and natural resources of the nearshore ocean and continental shelf. Priority is given to renewable ocean resources and uses such as food production, water quality, recreation, and aesthetic enjoyment. The Ocean Resources Goal states that actions affecting ocean resources be based on sound information. This information must be sufficient to describe the long-term impacts of a proposed operation on resources and uses of the continental shelf and nearshore ocean.

The Public Hearing

Once a completed application is filed, the Department of Fish and Wildlife may take six months or more in which to review it and issue a preliminary report. Within the next sixty days the applicant must resolve differences he has with this report and the Department must issue a final report. The Department must publish a notice of public hearing within one month after it issues this final report. There is no time limit, however, between this publication of notice and the time when the hearing is actually held.

A public hearing is mandatory prior to issue of a private salmon hatchery permit. This formal hearing is held before the Fish and Wildlife Commission itself or a designated hearings officer. Parties who establish an interest in the case may be heard. Individuals with personal interests in the outcome of the hearing and individuals or groups representing a public interest must petition the Commission in order to intervene and participate in the hearing.

The actual conduct of the hearing is governed by the Attorney General's Model Rules of Procedure applicable to contested cases, supplemented by specific administrative rules adopted by the Fish and Wildlife Commission and found in OAR 635-40-100 to 635-40-185. These rules establish the overall purpose of the hearing, the criteria and procedure for intervention, and the parties' rights of presentation of evidence, cross-examination, objection, motion, and argument.

Public hearings are formal legal proceedings and may be more complex and lengthy than court trials. The transcript of one private hatchery permit hearing covered over 700 pages. An applicant is well advised to anticipate the formal adversarial character of these hearings and to enlist the aid of counsel in presenting his application. The hearing procedure may be very expensive for all parties.
The Decision

Following the hearing, the Department prepares a proposed order including findings of fact and conclusions of law, which it files with the Fish and Wildlife Commission. Copies of this order are also given to all the parties to the hearing who have fifteen days in which to comment on the proposed order. The Commission then reviews these comments, the proposed order, and the record of the hearing. The Commission may further require the parties to brief any or all of the issues at this point. The Commission is free to adopt, reject, or modify the Department's proposed order, as long as its action is consistent with the facts presented at the hearing and contained in the record. Finally, the Commission enters its final order granting or denying the permit and sets forth its reasons.

An applicant or any of the parties to the hearing may file a petition with the Oregon Court of Appeals for judicial review within sixty days of the final order. Such an appeal should be handled by an attorney for the party requesting review.

If a permit is granted, it is granted only to the applicant and is not transferable without Commission authorization. The Department of Fish and Wildlife must be notified of the names of any individuals, corporations, or other entities which gain a major interest or control, through stock purchases or otherwise, of either the hatchery permit or of the site designated in the permit.

Once the permit is issued, it is still possible for the Commission to alter or even terminate it, if the operation is discovered not to be in the public interest. Proceedings to change or terminate a permit are conducted according to the state Administrative Procedure Act relating to contested cases, O.S. 183.300 - .500, and the Attorney General's Model Rules of Procedure. Should an operation be terminated, the permit holder is allowed to take returning salmon for up to four years, but may not release any new fish.

The Permit's Conditions

The Oregon legislature passed the Private Hatchery Act amidst concern that ocean ranching might adversely affect other stocks of fish and the traditional commercial and recreational salmon fisheries. This concern is reflected in the numerous conditions of law which apply to a private hatchery permit.

Once privately-raised fish are released into the ocean, they become "public" fish and may be taken by anyone, in accordance with the angling or commercial fishing laws of Oregon, until they return to the private hatchery. This is a significant condition. It has been estimated that four out of every five adult fish will be taken by commercial or recreational fishermen. Although the private hatchery is required, as far as the Department determines practical, to mark its fish prior to release, the mark does not give the private operation a proprietary interest in the fish while they are in the wild. Upon the salmon's return, the ocean ranch may be authorized to divert returning fish to an identification area, but may only keep those fish the Department determines were propagated by the permittee.

Prior to release into state water, the young salmon must be examined for disease by an approved fish pathologist. No fish can be released without written approval from the Department. Thus the Department can restrict releases within any permit limits. Should the fish be found diseased, the Department may order them destroyed without compensating the grower. In addition to these conditions, the salmon rancher is responsible for the costs of all services rendered by the Department, such as inspections or services.

On an even larger scale, if the Department finds that a private operation, within the waters covered by its permit, has caused deterioration of the natural run of anadromous fish or of any population of resident game fish, it may require the operator to return the fish populations to the same condition that previously existed. If the operator fails to take action, the Department may take such action and charge the operator with all costs.

THE WILDLIFE PROPAGATION LICENSE

If a salmon rancher contracts out his fish rearing to a separate rearing operation, owned by someone else or by himself, at a location other than the release site, the separate rearing operation requires a Wildlife Propagation License. These licenses are also issued and administered by the Oregon Department of Fish and Wildlife and must be renewed annually. Public hearings are not required. The Fish and Wildlife Department may refuse a license if the propagation of wildlife would tend to be harmful to existing wildlife populations. To implement this standard, the Commission has adopted administrative rules covering the inspection of fish, eggs, and the transport of fish (both into and within Oregon). These regulations are found in OAR 635-44-060 to 635-44-125. Additionally, specific reports are required of private salmon hatchery operators whether they grow their own seed stock or buy them from others. Together, these requirements limit the potential for a private enterprise to rear salmon with the prospect of selling them for release. Stocks are closely controlled.

STATE DREDGE AND FILL PERMITS

If any party in Oregon, including a salmon ranch operator, must remove or fill more than fifty cubic yards of material (combined) from or on the beds and banks of state waters, a dredge and fill permit is required from the Division of State Lands. The general policies governing these permits are the protection, conservation, and best use of the water resources of the state. To determine if a permit holder would not adversely affect these goals, the Director of State Lands consults with other state agencies such as the Department of Fish and Wildlife, Department of Water Resources, and Department of
Environmental Quality. A public hearing is not required but once an application is filed, the applicant or any person with a legally protected interest which could be adversely affected may request a hearing.

A permit from the state Division of Lands does not excuse the operation from the further requirement of obtaining a dredge and fill permit from the U.S. Army Corps of Engineers if it falls within the Corps' jurisdiction.

FEDERAL DREDGE AND FILL PERMITS

The Corps of Engineers (COE) may be the federal agency with which the salmon rancher will have the most contact. A permit must be obtained for structures or work and for dredge and fill activities in "the waters of the United States." This requires a Section 404 permit, pursuant to the Federal Water Pollution Control Act Amendments of 1972.

The phrase, "waters of the United States" is quite broadly defined, and almost certainly encompasses either riverine or estuarine sites in which the salmon rancher operator must place his water intake and outfall piles, release-and-recapture facility, and any protection or reclamation devices for bank or beach stabilization such as riprap, seawalls, or vegetation. "Waters of the United States" include all coastal and inland waters, lakes, rivers, and streams that are "navigable" waters (including their adjacent wetlands). "Navigable waters" have been defined to include all waters subject to tidal influence and any waters that have been, are, or might be used to transport interstate or foreign commerce.

The application process begins by submitting Engineering Form 4345 to the District Engineer in Portland. This form must be prepared in accordance with the instructions in Engineer Pamphlet 1145-2-1, entitled, "A Guide for Applicants." Both the form and the pamphlet can be obtained from the COE District Office in Portland. When an application form is complete, the District Engineer issues public notice of the proposed permit and is required to consider all public comments received in response.

No permit may be granted that is not in the public interest. The determination of the public interest is a balancing process which weighs the protection and utilization of important resources. Among the factors which must be considered in this process are conservation, economics, aesthetics, general environmental concerns, energy needs, food production and fish and wildlife values. If the requested permit affects wetlands, then particularly stringent and protection-oriented regulations must be considered.

In making its determination, the COE must consult with the Regional Directors of the U.S. Fish and Wildlife Service and the National Marine Fishery Services, as well as with other agencies, concerning the environmental effects of the proposed operation. The COE must also consult with the Oregon Department of Fish and Wildlife and other state agencies through a state clearing-

PERMIT TO CONSTRUCT A RESERVOIR

A permit is required to store water for uses such as a hatchery's fish holding ponds. Applications for this permit are made to the Oregon Department of Water Resources. The legislative and administrative guidelines which the Department follows are found in ORS 537.300 and in OAR 690-20-025 to 690-20-045. The Application for a permit to construct a reservoir must be accompanied by another application for a permit to make use of stored water.

A private hatchery operator should be aware that the common law takes a special view of water impoundments. A person is strictly liable for any damage caused by the escape of water from his reservoir, whether by a sudden cataclysmic crack in the structure or by slow seepage, and regardless of any precautions that may have been taken.

WATER RIGHTS

Rearing young salmon demands a reliable source of fresh water. To the extent a salmon ranch raises its own fish, it will require a steady flow of water for incubating eggs and rearing fingerlings. Especially in the hot summer months, an assured flow of clean water is vital for the temperature, dissolved oxygen, and waste removal requirements of the growing fish. Whether a salmon rancher utilizes surface water or digs a well to tap ground water, legally recognized water rights must be obtained from the Oregon Department of Water Resources.

With certain exceptions, all waters within Oregon may be appropriated for beneficial use. To the extent minimum stream flows are in effect, the fact that most of the water diverted for hatchery operations is returned to the source is considered.

Oregon follows the "prior appropriation" doctrine of water rights. This means that the person who first files a valid claim to water has the superior right to its use, regardless of that person's position on the stream (upstream, downstream, near the source, etc.). Much of the water in Oregon today has already been "claimed." Thus, a hatchery operator should take pains to ascertain the extent of prior appropriation rights to the stream from which he hopes to divert water. If all the water rights for a
stream have been appropriated, the salmon rancher may still be able to buy the water rights he needs from someone else. Water rights are freely trans- ferable.

To acquire a legal water right, one files an application for a permit with the Director of the Oregon Department of Water Resources. An informal hearing may be held but is not required. If a permit is granted, work must begin within one year to appropriate the water or the permit will lapse. Similarly, if a water right is unused for five years, it is presumed abandoned and reverts to the public.

Once a permit is granted, a water right must be "perfected" by actually appropriating the water to the beneficial use. When this happens, a certificate is issued by the Water Resources Director. This certificate should be promptly recorded with the county clerk in the county where the use occurs. The recording process provides official notice of appropriation to subsequent users.

Over the years, court decisions have refined Oregon water law. Several of these refinements are particularly applicable to a salmon ranch operation. First, water may only be used as it is needed and may not be wasted. Second, the right to appropriate water may not be year-round but may be limited to the actual season when the water is used. Third, Oregon law makes a distinction between consumptive and non-consumptive uses. Any use of water that requires a diversion from its source is defined as a consumptive use. Salmon ranching, despite the fact that it returns most of the water to its source, is a consumptive use. Fourth, even though a water right is "prior in time," subsequent users must be respected. This means that one cannot change or extend one's use to the detriment of subsequent users. Fifth, water rights may be changed but only after a public hearing which determines if the change will interfere with others' rights.

WATER DISCHARGE PERMIT

At the other end of a hatchery's water works is the outfall pipe. In Oregon, water quality standards are the responsibility of the Department of Environmental Quality. The Department issues National Pollutant Discharge Elimination System (NPDES) permits for the federal Environmental Protection Agency. This permit system was created by the Federal Water Pollution Control Act of 1972.

NPDES permits are required before wastes may be discharged from a commercial facility (which includes fish hatching and rearing facilities of a certain capacity or structure). "Wastes" means anything that tends to be detrimental to public health, wildlife, fish, or other legitimate and beneficial uses of water. Such changes may include changes in temperature, pH, dissolved or settleable solids, and dissolved oxygen content all of which a fish hatchery is capable of inducing. Oregon legislation concerning the NPDES permit is found at ORS 468.700-.775 and at OAR 340-45-005 to 340-45-070.

Applications must be submitted to the Department of Environmental Quality at least six months before the permit is needed. Once an application is complete, it is reviewed in terms of all applicable statutes, rules, regulations, and effluent guidelines of the state of Oregon and of the U.S. Environmental Protection Agency. These applications are circulated to the Oregon Department of Fish and Wildlife and other agencies for comment.

If a tentative decision in favor of issuing the permit is made, notice is given to the public of opportunities for public comment. If either the applicant or an interested member of the public requests a public hearing, it will be held if the Director determines useful information may be produced. It is possible for a permit, once issued, to be modified due to new information and changing standards or conditions.

Salmon hatcheries which produce less than 20,000 pounds of salmon annually and whose input of feed is less than 5,000 pounds during its month of maximum feeding are exempt from the NPDES permit requirement. This may be particularly applicable to chum salmon operations due to the short rearing period and relatively small poundage of fry produced. In any case, a statement of exemption must be filed with the Department of Environmental Quality.

FISHING LICENSES

Ocean ranching may seem to be an innovative way to catch fish, but it is a way of catching fish nonetheless. The operator must have a wholesale dealers license and each person working in the trap must have a commercial fishing license. Poundage fees must be paid on the fish taken. Commercial fishing and wholesale dealers licenses are obtained from the Department of Fish and Wildlife in accordance with a fee schedule listed at ORS 508.285.

PROCESSING AND MARKETING: STATE REGULATIONS

The Oregon Department of Agriculture regulations for sanitary conditions for food processing establishments apply to the processing of salmon. These regulations may be found in OAR 603-23-321 to 603-23-397. Furthermore, fresh fish and seafood products are subject to the Department's packing date labeling requirements found in OAR 603-23-565 to 603-23-585. The Department's Food Storage Sanitation standards may also apply (OAR 603-23-317).

In addition to these Department of Agriculture requirements, the processing and marketing operation is required to obtain a food fish canner license from the Department of Fish and Wildlife if any fish are canned (ORS 509.070 et.
Additionally, the Department of Fish and Wildlife is authorized to regulate processing operations of both human food fish and of fish reduction facilities (for reduction into fish flour, fish meal, fish Scrap, fertilizer, or fish oil) to prevent deterioration or waste of fish and to insure that processing is done in a wholesome and sanitary manner. The terms of this authorization are found at ORS 513.010 - 040.

PROCESSING AND MARKETING: FEDERAL REGULATIONS

Because salmon is a food fish which might be consumed anywhere in the United States, the U.S. Food and Drug Administration's regulations on animal drugs are relevant to the salmon rancher. The Federal Food, Drug and Cosmetic Act requires that new animal drugs - including those for use on fish intended for human consumption - have FDA approval prior to their use. As a general rule, drug companies, rather than individual hatcheries, seek FDA approval. The use of an unapproved drug by a hatchery, however, would be the responsibility of the user. Should residues of such a drug be found in the returning salmon, they could be declared "adulterated" and destroyed. As of this writing, formalin and malachite green (which have been used in some public hatcheries in the past) do not have FDA approval. Tolerances and regulations have been established, however, for tricaine methanesulfonate, oxytetracycline, and Diquat.

The use of vaccines is common in salmonid aquaculture, particularly for vibriosis. A vaccine, however, is classified a "biological product" by the 1913 Federal Serum-Toxin Act and, as such, is under the control of the U.S. Department of Agriculture. Its production requires a USDA license. The licensing procedure is similar to FDA approval of new animal drugs: the drug company, rather than the individual user, usually applies. To date, several firms have applied for vibrio vaccine licenses. Once a vaccine is licensed for sale, a hatchery may use it.

SALMON RANCHING, THE REGULATORY PROCESS, AND REAL LIFE

To prospective salmon ranchers, the variety and detail of the regulations, permits, and licenses to which a salmon ranch is subject may seem an insurmountable barrier. It is significant to note, therefore, that since 1971, twenty-two salmon hatchery permits have been authorized for fourteen separate sites along the Oregon coast. Private salmon hatcheries have been authorized to release close to 190 million fish, almost three times the number released by public hatcheries in Oregon. As of 1979, however, most private operators have released relatively few fish.

On the other hand, the limiting realities of ocean ranching must be squarely faced. The current shortage of salmon eggs is clearly the most immediate limiting factor. Then, the political climate which surrounds ocean ranching must be considered. Salmon ranching has become a controversial issue. Commercial fishermen, environmental organizations, and professional biologists have expressed concern that salmon ranching will have deleterious effects on wild salmon populations, the ecological integrity of estuaries, and perhaps on the ocean environment itself. A bill was introduced in the recent Oregon legislature seeking a two-year moratorium on any new private hatchery permits. Although the bill died in committee, it indicates the controversial nature of the issue.

Moreover, there can be little doubt that the complexity of the regulatory process itself is somewhat of a constraint on the industry's development. This is not necessarily an improper or unnecessary situation. Salmon ranching is a complex proposition that affects coastal and fishery resources and may potentially affect commercial and recreational salmon fishing in unknown ways. The number of regulations which surround ocean ranching, in large measure, reflects public concern about the values and resources which are potentially affected. These are legitimate and important public concerns.

A prospective salmon rancher, however, should not be discouraged merely by the prospect of a tortuous journey through a regulatory maze. In Oregon, the situation is improved by the state Permit Coordination Center in Salem. The Center can identify the major state permits a salmon ranch requires, offer candid appraisal of the regulatory climate, and aid in moving applications and forms through the state bureaucracy. Although the Center cannot guarantee favorable action on applications, it can insure that they are being given the proper attention. Prospective salmon ranchers should contact The Manager, State Permit Center, 306 State Library Building, Salem, Oregon, 97310, (503) 378-3732.

The author gratefully acknowledges the assistance of Ed Cummings, Oregon Department of Fish & Wildlife.
Extension Service, Oregon State University, Corvallis, Henry A. Wadsworth, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.

Extension's Marine Advisory Program is supported in part by the Sea Grant Program, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Extension invites participation in its programs and offers them equally to all people, without discrimination.