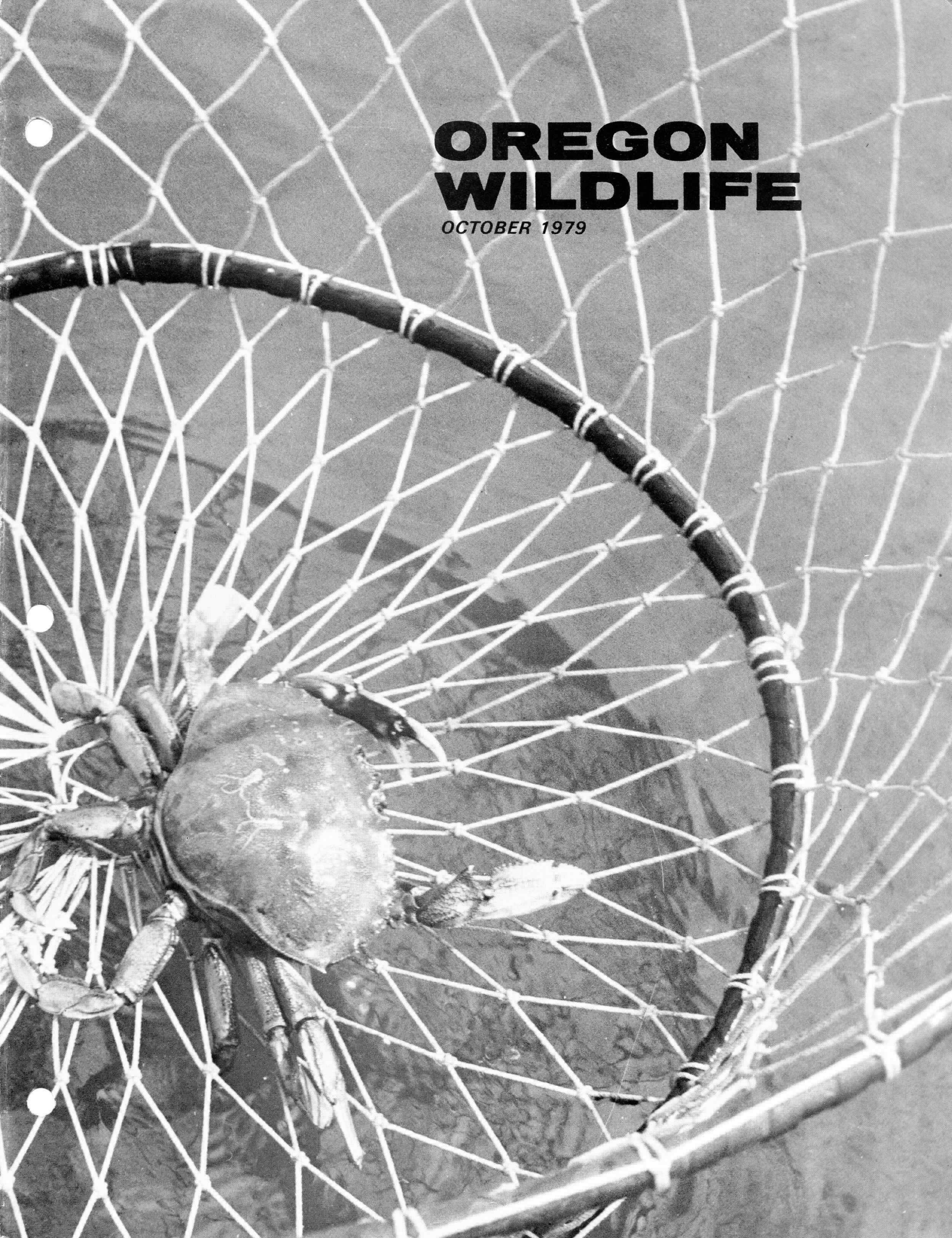


OREGON WILDLIFE

OCTOBER 1979

OREGON WILDLIFE

OCTOBER 1979
Volume 34, No. 10

Oregon Wildlife (ISSN 0094-7113) is published monthly by the Oregon State Department of Fish and Wildlife, Portland, Oregon. Volumes 1 through 28 were entitled Oregon Game Commission Bulletin. Oregon Wildlife is circulated free of charge with second class postage paid at Portland, Oregon. Material may be reprinted, credit would be appreciated.

Address changes and correspondence should be sent to:

Oregon Wildlife
P.O. Box 3503
Portland, OR 97208

When sending address changes, be sure to send in both old and new address complete with zip codes.

Ron E. Shay, Editor
Ken Durbin, Managing Editor

Cover Photo – Crabbing with simple ring nets provides both recreation and food for untold Oregonians and visitors. Darrell Demory takes a look at the resource in this issue.
Photographer unknown

RESPECT

Our major hunting seasons for the year have started. Unfortunately there have probably been some incidents that have cast a bad light on the sport.

It seems to us that the future of hunting may depend largely on how much respect each individual hunter has. Webster indicates that respect means both esteem and consideration. This leads us to look at what kinds of respect might be appropriate for the hunter.

As the Red Hat Days pledge of a number of years ago said, a good hunter should respect the rights and property of others. This has been discussed numerous times and in many different ways. It is a basic tenet of the true sportsman. It is a primary truth of sportsmanship that should not have to be discussed, but one that is too often ignored.

A second area of respect concerns the treatment of the bird or animal being hunted. In Europe, much of the training for hunting goes well beyond a simple course in how to safely handle firearms. The teachings try to instill in the hunter an appreciation for the species being hunted and some of the traditions of hunting. That leads us to respect for the hunted.

It seems apparent that some hunters have little respect for the game or they wouldn't resort to illegal and unsportsman like activities to try to be successful. Additionally, it would appear that an individual could have little respect for an animal if he leaves its decapitated head tied to the front of a vehicle. This may be an ego builder for the hunter, but it certainly isn't a stature builder in the eyes of non- and anti-hunters.

And finally, a hunter should have respect not only for the sport of hunting but respect for himself as he participates. This means exercising self control, abiding by the regulations, and following the ethical patterns of a sport with a history that goes well back into man's past.

Legal, controlled, sport hunting is not threatening the future of any of the wildlife species. With proper regulation and the application of sound wildlife management techniques there appears no reason that we should not have surpluses of game species to continue to provide hunting for many years to come.

Yet the hunter may end up the one responsible for the demise of sport hunting. Much of the anti-hunt sentiment is anti-hunter sentiment. Such feelings do not all arise from the city bred folks who do not understand the place of hunting and the controls put upon it. Some such feelings come from farm folks who well understand that surplus animals must be harvested. They only question the method in many cases.

The future of hunting may well depend on how much respect every hunter shows this autumn. If the reputation of hunters deteriorates because of the lack of respect many individuals have for property, the game, and their own image, the days of hunting in the future may be numbered!□

RES

HUNTER EDUCATION PROGRAM

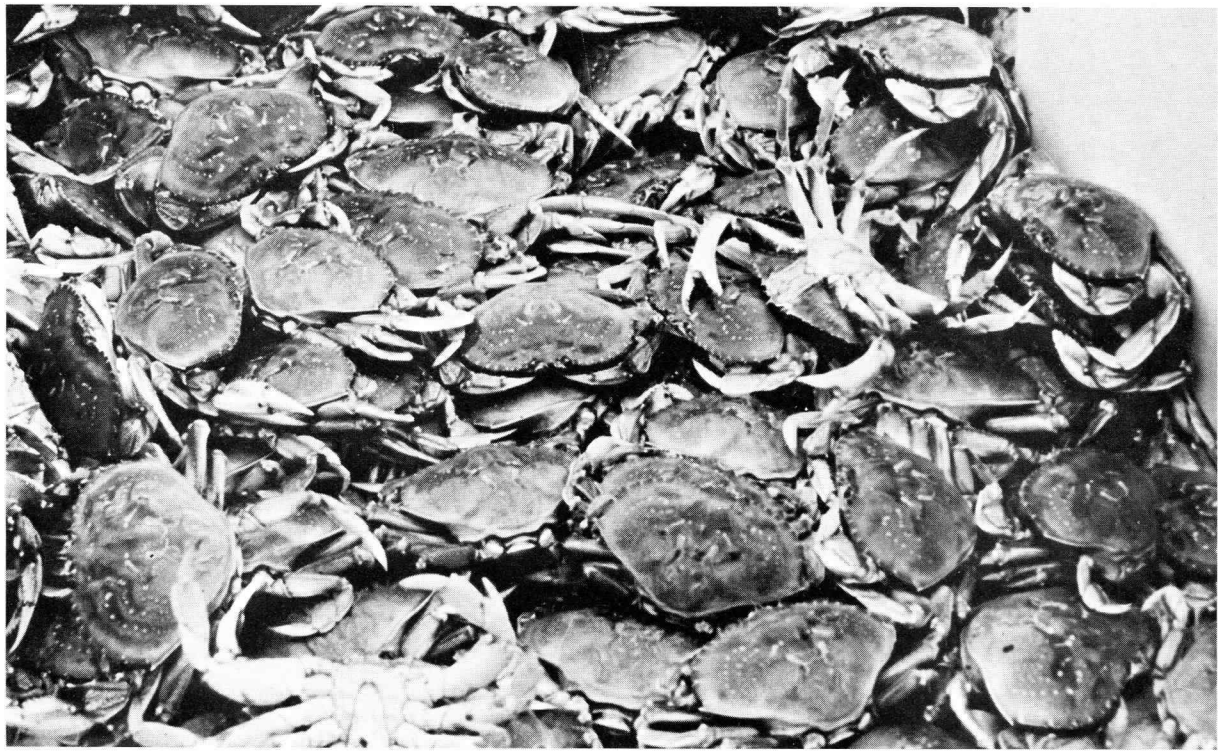
INSTRUCTORS APPROVED
Month of August 23
Total Active. 1,632

STUDENTS TRAINED
Month of August 850
Total to Date 265,204

HUNTING CASUALTIES REPORTED IN 1979
Fatal 1
Nonfatal 6

COMMISSION MEETINGS

The Fish and Wildlife Commission will conduct a general business meeting on Friday, October 19. The following day, Saturday, October 20, the Commission will meet again to conduct a public hearing and set the angling regulation for 1980. Both meetings will be held in the Department's Portland office at 506 SW Mill Street, and both will begin at 9 a.m.



Commercially caught Dungeness crabs

CRABBING

COMMERCIAL AND SPORT

by Darrell Demory
Shellfish Project Leader

The dead of winter; leaving port in the dark and often returning in the dark; long, cold days; wet, demanding work on an unstable platform; and an always present unforgiving ocean. This is what a commercial crab fisherman faces many days each year. His reward can range from a bumper catch to so few crabs that even fuel costs won't be met.

For the sport crabber, crab fishing can mean fun, food on the table, a thrilling recreational experience, or frustration, boredom, hard work, or hostility toward other users.

One common ground that all crabbers probably share is that when crabbing is good all the problems and concerns for the resource disappear. But when crabbing is poor a special significance is placed on every little quirk.

There are reasons for the quirks, but to understand them we must start at the beginning.

The beginning for the Dungeness crab is an egg attached to the broad flap on the underside of a female crab along with 700,000 to 2.5 million other eggs which form a sponge-like mass. A female crab with eggs is referred to as "berried". New eggs are bright orange in color, but in a few weeks they turn a dark brown. Eggs begin hatching in January and February. The resulting larvae are fierce looking critters with prominent spines and are called zoea. They drift with the ocean currents for 3-5 months then settle to the bottom as small crabs.

A crab's growing process is not simple because of its rigid shell. To grow the crab must escape from his old shell and grow a new one. This is called molting. To do this the crab first reabsorbs some of the calcium out of the old shell which makes it more flexible, especially where the rear of the shell attaches to the rest of the body. When the crab is ready to molt, the shell breaks along the rear and the new crab backs out of the old shell. These old shells often pile up on the beach and give the appearance of a mass die-off, but not so. Close inspection of an old shell shows that it is empty except for a few membranes.

Once the crab is out of the old shell, its new, flexible shell expands immediately. A 5-inch crab will expand to about 6 inches before the new shell becomes hard which takes 2-3 months.

The meat of a crab right after

A fierce-looking crab larva or "zoea" bridges the bag between egg and the crab we catch in our rings or buy in the market.

molting is very watery and gel-like and of very poor quantity and quality. Recently molted crabs are called softshells. To determine whether a crab's shell is hard or soft, pinch the large section of a rear leg or the edge of the shell near one of the spines. A soft crab shell will flex easily while one in between will flex only a little. A hard crab shell will not flex. It is difficult to let that jumbo crab go, but a soft crab will offer little reward and be a disappointment.

A crab will molt about six times during each of its first two years of life and once each year thereafter up to age six. A crab's life span is about 10 years. Most crabs in the sport fishery are age 3, but 4 or more in the commercial fishery. The largest male crab verified in Oregon was about ten inches straight line measurement across the back just in front of the lateral spines. Female crabs are considerably smaller, but have been measured up to about 7 inches.

A male crab is mature at about 3 years of age and 5½ inches in size. Generally, male crabs mate with small females which mature at age 2 or 3 and four inches in size. Mating takes place from February to June right after the female sheds its shell. Male crabs will mate with several females.

Like all living things crabs must eat. Their preferred food during the first few months as larvae is about anything they can catch, including each other. Once the adult form is reached, crustaceans and clams are preferred food. In a confined area, freshly molted crabs will be eaten by the hard crabs.

While some animals like to stay in one place, crabs do not. During the larval stages they are carried many miles by ocean currents both seaward and into the bays. This makes bays important nursery areas. As adults, crabs tend to migrate shoreward where most of the mating and spawning take place. Adult crabs also migrate along the coast, but no definite pattern has been detected as crabs tagged in Yaquina Bay were caught in Tillamook and Coos bays. Crabs also move in and out of the bays year round which can be frustrating to fishermen.

Many wild animals have a special significance by their mere existence, but Dungeness crab reigns supreme as a culinary delight. One may catch his own if so inclined and equipped, but most people who enjoy eating crab buy them from local markets or seafood outlets supplied by the commercial fishery.

The commercial catch in Oregon has ranged from 3.2 to 16.2 million pounds. The way things are going at this writing a new record high may be set this year. Of the three coastal states (Washington, Oregon, California) Oregon lands about one third of the total catch.

Over 98% of the commercial catch is taken from the Pacific Ocean. The remainder comes from Oregon bays, especially Tillamook and Coos. Small amounts are taken from Netarts Bay and on occasion from Yaquina, Alsea and Coquille bays.

Commercial crabbing in bays is sometimes a sore point with some sport crabbers. The common fear is that commercial pots will fish out an area. When bay crabbing falls off crabs have most likely wandered out of the area as is their nature. In time, more crabs will return and crabbing will pick up again. One advantage that sport crabbers have is that commercial crab pots must have escape ports that allow nearly all crabs under 6¼ inches to escape. This means that crabs between 5¾ inches and 6¼ inches are potentially available to the sport fishery.

Standard gear in the commercial fishery is the pot which ranges from 36 to 48 inches in diameter. Ring nets are used in some bays. Pots weigh about one hundred pounds each and cost about one dollar per pound including line and buoy. Each pot is required to have at least two escape ports which allow most sublegal crabs to escape before the pot is pulled. This accomplishes two things. First, it saves the fisherman a lot of time otherwise spent sorting his catch. Second, since male crabs under 6¼ inches are mature and able to reproduce and females cannot be taken, we have assurance that there will always be a spawning stock. In other words all male crabs over 6¼ inches could be caught without hurting the spawning stock. Pots are baited with clams, squid, or fish or a combination.

The latest innovation in crabbing was the use of helicopters to pull 6-8 foot pots in 1977. Much concern was expressed about what damage was

being done to the resource, but observation and some tests showed that helicopter crabbing was no more damaging than the boat fishery. Economics, however, was the deciding factor and helicopters have since disappeared from the scene, at least for now.

Looking at the big picture, only about two percent of the total crab catch is taken by sport crabbers. But a look at Tillamook, Netarts, Yaquina, or Coos bays during the spring and summer months or any sunny weekend will reveal many boats actively pursuing the wiley crab. And where fishing is allowed, docks and piers will be lined with people tossing and pulling ring nets or sometimes just relaxing in the sunshine. Whatever the method, many people of all ages enjoy sport crabbing.

The most popular crabbing bays were mentioned above, but excellent crabbing also occurs in the smaller bays at times. Of the two groups of sport crabbers, those using a boat catch far more crab than those without a boat. Over the past few years fishing access in several popular areas has been lost. Docks and piers in Yaquina and Coos bays offer about the only shore based areas where crabbing can be done with any success. Once an area is found and fundamentals learned, sport crabbing provides good clean recreation and gastronomic rewards.

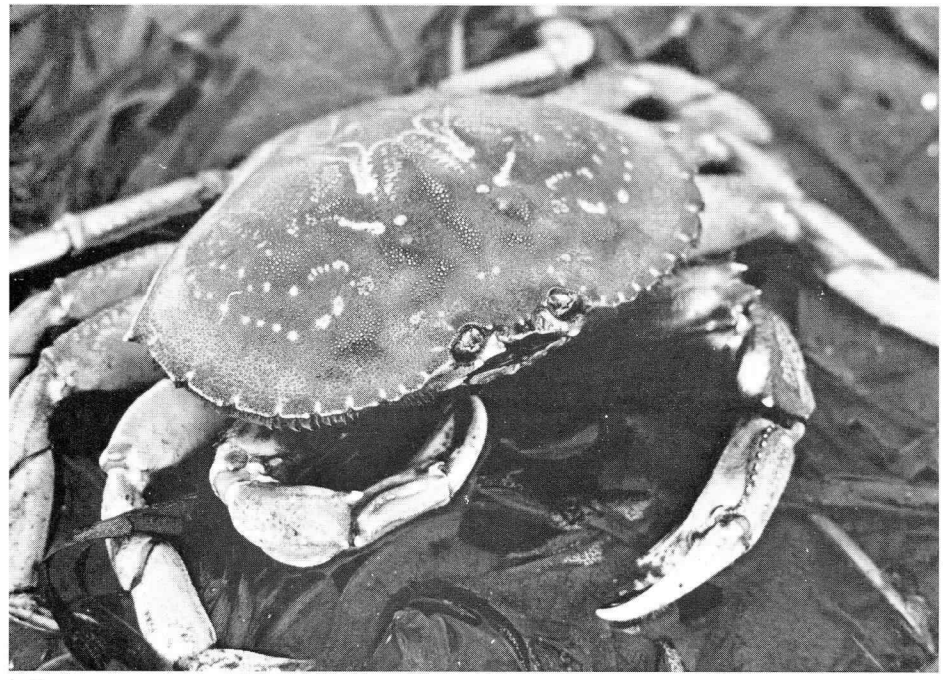
Most sport crabbing is done with ring nets which can be rented or bought at local bait and tackle shops. Sport pots and various types of traps are also available, but are generally more expensive than ring nets.

Bait is an important item. Some crabbers swear by rotten chicken entrails, last year's pork chops, or just about anything that has been in the freezer too long, but experience has shown that fresh or fresh frozen clams or fish will outfish everything else. If any frozen bait has been thawed, don't refreeze. Plant it in your garden for best results. Twice frozen bait is poor bait.

If you have the use of a boat then your chances of finding crab are much better than if fishing from a dock. Popular crabbing areas include the following:

Nehalem Bay – from Jetty Fishery to Fishery Point

Some recreational crabbing is available from docks and piers, but a small boat is a real asset to the sport crabber.



A Dungeness crab in all its splendor.

Commercial crabbing takes place in the ocean where relatively little sport crabbing is done, and also in a few bays. It provides a chance to eat crab for those who are not able or do not wish to catch their own.

Tillamook Bay – crab harbor
Netarts – channels from boat basin upbay
Yaquina Bay – 101 bridge to Coquille Point
Alsea Bay – mouth to boat ramp
Coos Bay – South Slough and main bay up to Empire

Crab fishing can be good at any time day or night; however, in some locations where the current is very strong crabs may bury into the bottom, move to a quieter area, or your ring may not fish properly. If nothing is caught, sometimes a move to another location can make a big difference.

With ring nets the usual method is to let the gear fish for about 10 minutes before pulling. If gear is pulled too soon the crabs may not have located your bait. If you don't pull soon enough the crabs will eat your bait, thank you kindly for a free meal, and move on. If pots are used, bait, set, and come back at your leisure. Be aware though that strong currents may drift your gear or drag your buoys under. Either way, gear may be lost.

Another crab that is often caught while fishing for Dungeness crab is the red rock crab. There is no bag limit, size or sex restriction on red rock crabs, and many crabbers have heard that the reason for this was that the Department of Fish and Wildlife was trying to get rid of the red rock crabs because they were killing off the Dungeness crabs. T'aint so! There are no restrictions on the red rock crabs because they are very abundant, reproduce in the bays, and they are caught only incidentally. They do compete with Dungeness crabs for space and food, but the Dungeness is more aggressive and very able to take care of himself. Since red rock crabs are considerably smaller than the Dungeness they also contain less meat, which is found mostly in the large pinchers. Flavor is good.

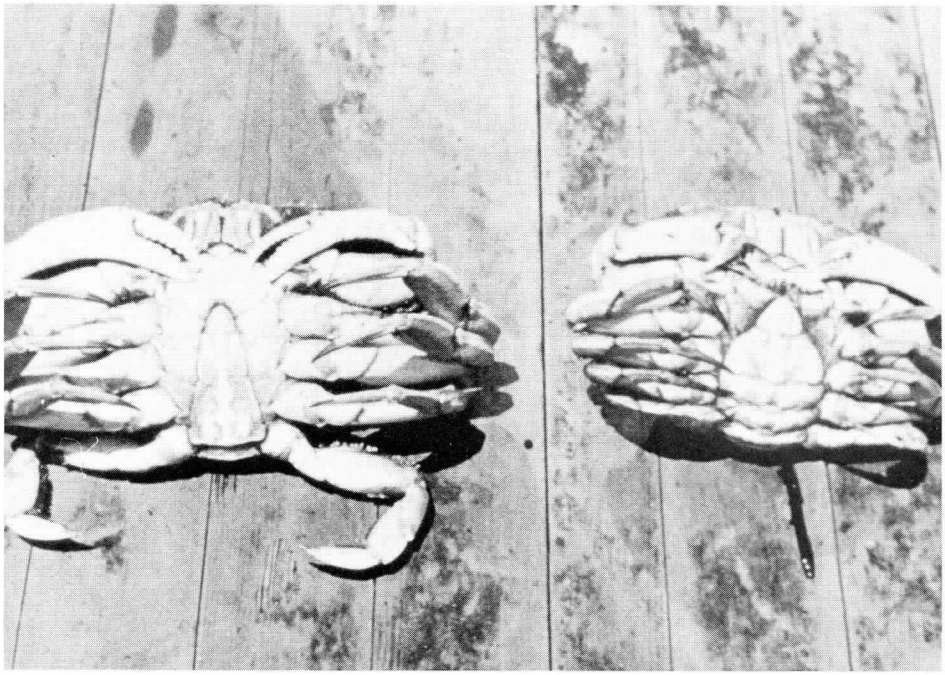
Many questions have been asked over the years on how to take care of the catch once in hand. The following tips may be of help.

If crabs are to be kept alive for a few hours the most important thing is to keep them cool. This can be done by keeping the crabs in a cooler or a burlap sack. A little ice can be placed in the cooler and the sack can be dunked in salt water periodically. Don't keep your crabs in a bucket of water. The crabs will use up the oxygen supply in the water and suffocate in a few minutes. A crab that has been dead for several hours and not cleaned can be dangerous to eat.

Some crabbers try to stockpile their catch by freezing for use at a later time. Many will be disappointed unless the crab has been canned. Freezing and storing for more than 60 days will dry the meat and reduce flavor. If freezing is done, first cook the crab (20 minutes in boiling salted water) then freeze whole or just the cleaned sections. The next day dip the crab in cold water to form a glaze then return to freezer. The shell with a layer of ice offers the best protection against drying. However, best results are obtained by fishing frequently and eating the crab right away.

For more information on recreational crabbing, readers may wish to obtain a copy of Oregon State University Extension Service Bulletin S.G. No. 30, "Catching, Cleaning, and Cooking Bay Crabs," by Jay B. Long. Single copies are available free from the Department or from O.S.U. Extension Service, Oregon State University, Corvallis, Oregon.□

Hold a Dungeness crab by the rear part of the shell and it won't be able to pinch you. The red rock crab has more reach with its pinchers, so be fast.



The male Dungeness crab on the left has a relatively long, narrow abdominal flap. The female has a much broader one. Only male Dungeness crabs may be kept.

Captive Breeding — To Save The California Condor

A last ditch effort to save the California condor from extinction will be launched in January with an attempt to capture a few immature birds to form a captive breeding flock, according to Lynn A. Greenwalt, Director of the Interior Department's U.S. Fish and Wildlife Service. Young produced by the flock will eventually be returned to the wild.

Fewer than 30 of North America's largest land birds are believed to survive in mountainous areas north of Los Angeles, down by 10 in the last decade. About 100 of the condors existed in 1940.

"It may already be too late to save this species," Greenwalt said. "But if there is any hope, it will be through captive breeding. We must try to save the condor now, before its number in the wild dips even lower and the chance for success diminishes further. There is no guarantee of success and there is a certain degree of risk. But we have no other choice."

*

Hay and Straw May Have a Hitchhiker!

If you are using pack animals on trips, the hay and straw you bring along can contain a poisonous weed.

Tansy Ragwort, which is common in some hay produced in the Willamette Valley area, is a serious weed pest which causes liver damage to horses and cattle, killing many of them each year. Once the weed is established, it competes with valuable forage plants for nutrients and moisture.

Hay fed to horses and pack animals already has brought Tansy Ragwort to several areas in central and eastern Oregon. Even if your livestock consumes hay containing Tansy Ragwort seed, the plant can establish itself through the manure.

If you find a plant in central or eastern Oregon that you think is Tansy Ragwort, please notify the *Oregon Department of Agriculture*. Do not dig up or destroy the plant, use the toll free number 1-800-452-7813 and ask the operator for extension 3774.

Be sure the hay and straw you take east of the mountains is Tansy free! Better yet, wait and buy it when you get there.

Another Good Waterfowl Migration Expected

by
Chet Kebbe
Staff Waterfowl Biologist

Another excellent water year in Alaska and the prairie provinces of Canada created ideal nesting habitat for a good breeding population of ducks. Spring and summer surveys of major breeding grounds in these areas show that production was high even though nesting had been delayed two to three weeks by a cold, wet spring. Mallards, pintails, and canvasbacks showed substantial increases in production from 1978 while widgeon and green-winged teal showed a slight decline. As a result of the successful nesting season, a fall flight of ducks comparable in size to the large flights of last year is expected down the flyway.

The favorable forecast prompted the U.S. Fish and Wildlife Service to again provide the states in the Pacific Flyway with a 93-day duck season, with species restrictions only on the canvasback and redhead. Two of these ducks in any combination are permitted in the daily bag.

Within the authorized federal framework the Wildlife Commission selected a duck and goose season extending from October 13 through January 13 with a bag limit of seven ducks per day and 14 in possession. The basic bag limit of geese, with exceptions to follow, is three dark geese and three white geese per day. In the Columbia Basin counties the season is extended to January 20.

Much of the goose production takes place north of the Arctic Circle where changing weather conditions frequently determine the success of the nesting season. Last spring the ice and snow cover thawed early and opened up most of the northern breeding grounds in time for nesting. Snow geese returned to bare nesting grounds on Wrangell Island in USSR where they had the highest nesting success since 1970.

White-fronted and cackling geese have declined sharply in the flyway during the last seven years and restrictions on hunting are warranted. To provide additional protection for these species the bag limit on geese in Lake and Klamath counties has been reduced to one white goose and one dark goose during the October 13-26 period.

A reduced bag and shortened season have also been applied to geese in Baker and Malheur counties to provide additional protection for the heavily hunted honkers along the Snake River.

In western Oregon the daily goose bag limit has been retained at two as a means of reducing the heavy hunting pressure on the dusky Canada goose.

During October and early November hunting of both ducks and geese is expected to be good in the large marshes of southeastern Oregon and should remain good until cold weather forces the birds to continue south.

In the remainder of the state waterfowl numbers will remain relatively low until the flights of wintering birds arrive in November. As populations increase, hunting success will also improve. By early December the best duck and goose hunting will be found in the Willamette Valley and along the Columbia and Snake rivers.□

Duck Stamp Increase to Offset Rising Land Costs

If you've bought your 1979-80 Migratory Bird Hunting and Conservation Stamp this year you've no doubt noticed something new. The price went up $2.50, from $5 last year to $7.50.

This year's price hike was authorized by Congress to offset spiraling land purchase costs which must be met in order to buy vital habitat for migratory waterfowl.

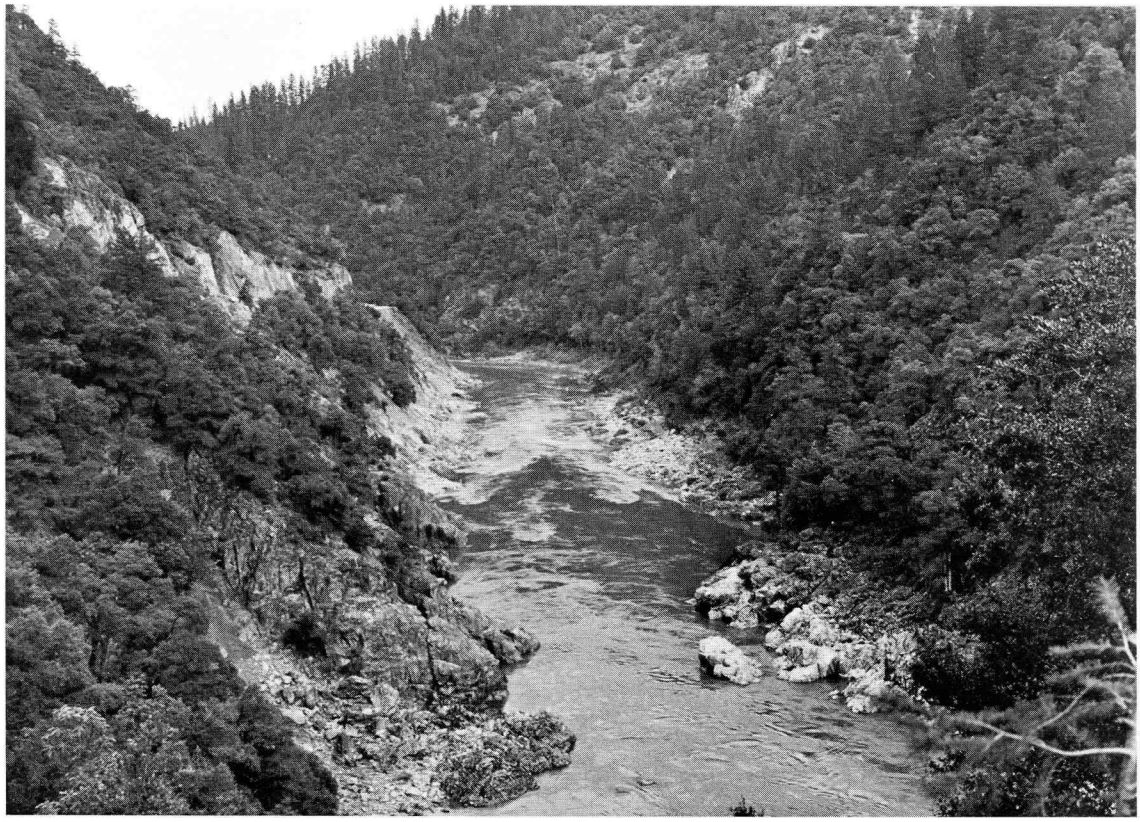
A "duck stamp," as it is popularly known, is required of everyone 16 years of age or older who hunts ducks, geese, or brant. The stamp sales create a continuing source of revenue for federal acquisition of waterfowl habitat.

The stamp was created by Congress in 1934 and its original purchase price was $1. The price was raised to $2 in 1949, to $3 in 1959, and to $5 in 1972.

Since 1934 more than 75 million "duck stamps" have been sold providing more than $210 million in revenue used to buy more than 2.3 million acres of habitat. Each year more than 2.4 million hunters, conservationists, and a growing number of stamp collectors buy the popular stamp. The price increase is expected to raise approximately $5 million in additional revenue this year.

More than 300,000 acres of wetlands are estimated to be lost each year to development, and acquisition with "duck stamp" revenue is one way to insure that some of this habitat is preserved. Refuges and waterfowl production areas purchased through the program are spotted strategically along the flight paths of migratory birds.

The annual competition from among hundreds of wildlife artists across the country constitutes the only art contest regularly sponsored by the federal government. These colorful stamps constitute the longest running, annually issued series of stamps in revenue or postage stamp history.□



The Rogue River canyon.

ROGUE RIVER SALMON SUFFER FISH DISEASE

A fish disease known as Columnaris has caused the death of more than 4,000 adult fall chinook salmon in the Rogue River from Graves Creek to the mouth, a distance of 68 miles.

Dead fish began turning up mid-August, but the disease took its heaviest toll during the first two weeks of September. A similar die-off occurred last fall, but it lasted only ten days when between 600 and 800 salmon were lost.

Columnaris is a bacterial disease that occurs naturally in most river systems of the state. No one knows exactly what causes an outbreak to occur or how the disease exists in the watershed between periods of outbreak. But it can be a highly virulent disease that kills fish within 48 hours after infection by damaging the tissues of the gills so oxygen cannot be absorbed.

The disease apparently does not appear until water temperatures reach about 58 degrees Fahrenheit and spreads progressively more quickly as temperatures rise above 65 F. Rogue water temperatures are cooler this year than in most years at this time, but a temperature of 69 F was recorded at Agness during the outbreak.

Although Columnaris can be controlled to some extent under hatchery conditions, no method has been found to control it in adult salmon in the river or to stop its spread. Water temperatures started to drop by mid-September, however, and the losses began to subside.

One reason losses may be particularly large this year is because the run of fall chinook into the river is unusually large. Research biologist Al Smith says this year's fall chinook run is the largest since 1974. The disease seems to spread faster and the spring chinook runs in the Rogue have also been large the last few years which may also be contributing to the spread of bacteria. In this most recent outbreak only fall chinook salmon have been killed. No dead steelhead have been observed although they can also contract Columnaris.

It is difficult to measure just what the impact of the disease or the fish losses will have on the fall chinook runs. Some fish will enter the river this month and most likely will not be affected in the cooler fall water. Last year when there was a similar though smaller die-off, biologists recorded the largest spawning ground counts in five years.

There have been other Columnaris die-offs of smaller magnitude in the Rogue in the mid-1940's and mid-1950's, and huge epidemics have historically occurred in the Columbia River and the Fraser River in British Columbia.□

THIS AND THAT

compiled by Ken Durbin

Speed Limit Helps Wildlife

Proponents of the 55 m.p.h. speed limit say it saves gasoline and human lives. It is also apparently saving a lot of wildlife. A study on I-80 in Nebraska shows a drop of 56 percent in the number of wild animals killed by autos. In 1973, when cars were going 70 m.p.h. on I-80, almost 4,500 pheasants, rabbits, raccoons, skunks, opossums, deer, coyotes, badgers and muskrats were found dead on the road. In 1975, with the speed limit down to 55 m.p.h., total road kills dropped to 1,983. The decrease in road kills could not be attributed to any drop in traffic volume or wildlife numbers . . . slower moving autos are apparently responsible.

Missouri Conservationist

*

Bill to Bolster Recreational Fisheries

A bill has been introduced in the U.S. Senate to bolster sagging recreational fishery programs. S. 1631 would add a 3 percent manufacturers' excise tax to recreational boats, motors, and boat trailers and extend the current 10 percent tax on some fishing tackle to all items not now covered. The receipts would be used by states to improve fishing.

The Federal Aid in Sport Fish Restoration Program, also known as the Dingell-Johnson or D-J Program, now imposes a 10 percent manufacturers' excise tax on fishing rods, reels, creels, and artificial lures. These receipts, paid by fishermen, are apportioned to the states on a three to one matching basis. In 1978, $28.5 million in D-J taxes were collected.

S. 1631 would expand the D-J tax by adding fishing lines, tackle boxes, and other accessories at 10 percent, plus boats (25 feet or less), motors, and trailers at 3 percent, with exemptions for kayaks, hydroplanes, sailboats, and commercial craft. This reportedly would add $100 million annually to D-J.

Wildlife Management Institute

Wildlife Booklet Widely Used by Youngsters

A 32-page booklet aimed at improving youngsters' understanding of wildlife is being circulated nationwide.

The booklet has been adopted as part of curricula in schools, nature centers, youth conservation programs, hunter education courses, and many other educational programs. Entitled "HELPING WILDLIFE: WORKING WITH NATURE," the booklet was written by Delwin Benson and illustrated by Ozz Warbach and Carol Wassell. It explains the key concepts of wildlife ecology in a logical, factual manner.

Copies of the booklet may be obtained for $1.00 each, postpaid, from the Wildlife Management Institute, 709 Wire Building, 1000 Vermont Avenue, N.W., Washington, D.C. 20005. Bulk order and special imprinting rates are available.

Wildlife Management Institute

*

Salmon Returned to the Thames

The first run of salmon into the Thames River for 140 years is the aim of a project currently under way in Britain. Late last month some 50,000 year-old salmon were released into the Thames, and fisheries authorities hope that after a sojourn at sea these fish will return to the river as adults to spawn. The Thames was once famous for its salmon fishing. But the industrial revolution put an end to that. Now tests on the quality of the river's water indicates that the clean-up campaign of recent years has reduced pollution levels to a point where salmon may once again be able to live, and breed, in the Thames.

Australian Fisheries

*

A Bird in the Hand

Of birds now in cages in U.S. homes, reports the *IUCN Bulletin*, 80 percent started life in the wild in foreign lands. A more disturbing statistic: the survival rate between catcher and customer is around 20 percent. And the rarer the species, the more it's prized. The *Bulletin* also points out that, while some countries have introduced import controls, most have not.

Wildlife Review

How Old is Seawater?

Determining the age of seawater is the subject of a fascinating paper by R. Johnston of the Department of Agriculture and Fisheries for Scotland, in which he discussed measurement of the age of ocean water by analyzing oxygen data but concludes that: 'What set out as a detailed and intricate outline of age and descent in the oceans has ended as a broad brush caricature. Perhaps no finer picture of the oceans is valid'.

The paper – 'Some thoughts on the age and descent of the waters of the northeast Atlantic Ocean' – has been reprinted from *A Voyage of Discovery* (edited by M. Angel) and is available from the AFS Marine Laboratory, PO Box 101, Aberdeen AB8 8DB, Scotland.

Australian Fisheries

*

Throw Another Log on the Fire

Wood now provides Americans with half as much energy as nuclear power does, according to the Department of Energy. Since the 1973-74 oil embargo, the use of wood as fuel has expanded nearly 15 percent a year. Between 1972 and 1977, the number of woodburning stoves in use has increased from 250,000 to 2,000,000. One-fifth of the homes in northern New England rely on wood as their primary heat source, and 30 percent more use it as a supplemental source.

Conservation News

*

Confidence Decoys

One trick the old market waterfowl hunters often used was to include one or more confidence decoys of another type of bird near their stool of duck decoys. Usually these decoys represented herons, gulls, or other wary birds that ducks would supposedly feel at ease with. While variations of these are not currently available commercially, hunters could have fun creating one or more themselves. And, while it may not make any difference to the ducks, it could give other hunters in the blind something to talk about between flights.

Nebraskaland

WHY FISH HATCHERIES?

by Tom Nickelson
Research Biologist

Have you ever wondered why the state operates salmon and trout hatcheries when Oregon has 28,000 miles of stream capable of producing these fish? The answer is simple. The demand for salmon and trout is generally greater than our streams can produce. Fish hatcheries generally operate on the premise that survival from egg to final product, whether it's a catchable trout or a salmon or steelhead smolt (seaward migrant) will be greater than that possible in the natural stream.

Traditionally, there have been two kinds of hatchery programs, enhancement and mitigation. Enhancement programs are those that add more fish to river and ocean fisheries than would be possible from natural reproduction alone. Mitigation hatcheries attempt to replace fish that have been eliminated by the loss of habitat.

There is a substantial loss of young fish (salmon and steelhead smolts and catchable trout) during the first few weeks or months after release from the hatchery. This is perhaps nature's way of eliminating fish that are unfit for survival in the wild. Despite this loss of fish shortly after release, there usually will be more adults produced per 1,000 eggs incubated in a hatchery than if those same eggs had been deposited in the gravel.

As an example of what a hatchery can produce compared to a stream let's look at coho salmon. The table and graph show the difference between survival of coho in a hatchery and in a stream. The values are based on several studies completed earlier by the Department and hatchery records from 1960 to 1967. The result is 75 smolts from 2,500 eggs (the approximate number produced by a female coho salmon) for those reared in a stream compared to 1,993 smolts for those reared in a hatchery.

The difference in survival of fish in hatcheries and streams is considerable due to the harsher conditions which the stream fish must endure. Eggs in gravel are killed in siltation and the scouring of gravel during floods. Once they emerge, the young fish must survive floods, droughts, predation from birds, mammals and larger fish, and variation in the abundance of food throughout the year. Survival in streams is highly variable from stream to stream and from year to year due to the changeable environment.

Survival of coho salmon in a stream versus a hatchery.

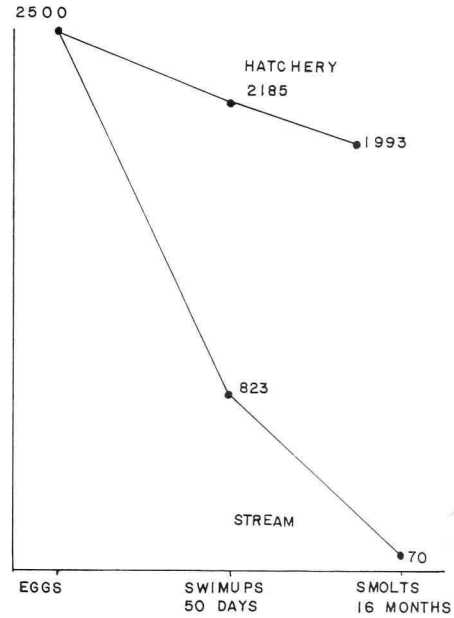
	Stream Average	Hatchery Average
% of eggs which hatch	32.9	87.4
% of fry which survive to smolt	9.1	91.2
% of eggs which survive to smolt	3.0	79.7
Number of eggs/smolt	33.33	1.25

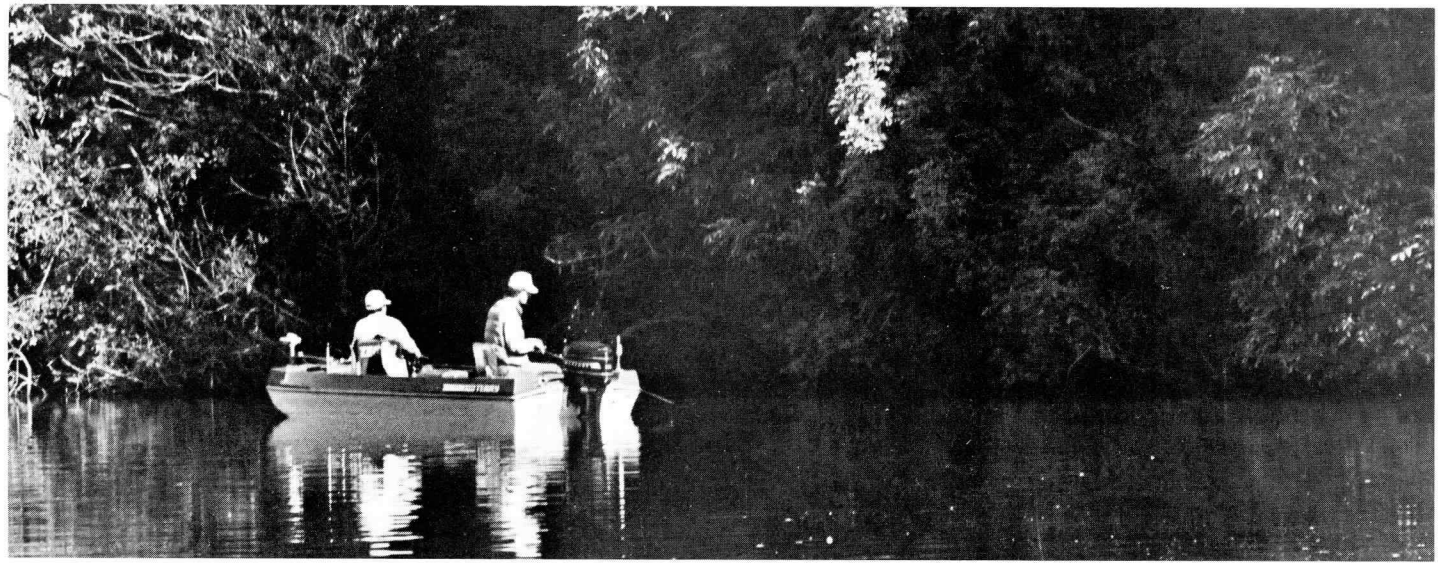
In the hatchery, conditions are relatively constant. The fish reside in ponds therefore eliminating the constant fluctuation in living space common to almost all streams, and food is abundant throughout the year. While occasionally a mink or heron will get into a hatchery pond, predation in the hatchery is minimal when compared to a stream.

At present we rely heavily on hatcheries for salmon production and to a lesser degree for production of steelhead and resident trout. Department hatcheries are annually releasing about 14 million coho salmon smolts for example at a cost of about 10¢ apiece, for a total cost of roughly $1,400,000. This converts to a cost of about $2.80 for each adult produced, assuming an average survival of about 3.5% from smolt to adult. If the fish are reared in the hatchery for shorter periods of time they suffer increasingly greater mortality after release. Thus, the cost of an adult produced from a fed-fingerling release is about $3.30 and from an unfed fry release it is $4.60. The decreased survival after release outweighs the decreased cost of rearing.

To summarize, fish reared in a hatchery gain a tremendous advantage in survival over fish reared in a stream. This is due to the relatively constant hatchery environment compared to the highly variable stream environment. The longer the fish are reared in the hatchery, the greater will be the number which survive to adult and the lower will be the cost per adult produced.

Future articles will explore (1) the problems and potentials of using surpluses of hatchery salmon (adults, eggs and/or juvenile fish) to maintain or restore natural production in streams where insufficient wild spawners are present, and (2) why we need wild salmon and steelhead. □





FISH AND WILDLIFE COMMISSION TO SET 1980 ANGLING RULES

Staff proposals for changes in the 1980 angling regulations were reviewed with the Fish and Wildlife Commission Saturday, September 22 and a public hearing was conducted to take recommendations from the public. This was the last opportunity for the public to make new recommendations for consideration when the 1980 angling rules are set on October 20. At that time no new proposals will be considered but the Commission will accept public comment on staff proposals and on public recommendations presented to the Commission on or before September 22.

A listing of major staff recommendations follows:

GENERAL REGULATIONS

* Permit nonresident children under 14 years of age to fish without a license if they are accompanied by a licensed angler and provided their fish are included in the bag limit of the licensed angler.
* Prohibit the use of treble hooks larger than 9/16-inch (3/0) for salmon or steelhead except in the Ocean.
* Extend the single point hook regulation to include the Chetco River above Jack Creek through December 31.
* Prohibit cutting or angling through a man-made hole in the ice larger than 12 inches in diameter (for safety reasons).
* Prohibit removal of crabs from shell before leaving the crabbing area.

SALMON AND STEELHEAD REGULATIONS

* Retain 40 fish annual bag limit but prohibit taking more than 20 steelhead or 20 salmon in one year.
* Delay setting ocean salmon regulations until next spring.

Zone 1

* Reduce salmon bag limit from 3 to 2 per day.
* Close Kilchis River to salmon angling April 1 through September 15, to protect spring chinook needed for spawning.
* Close to salmon angling from August 1 through September 15: the Nestucca River above Cloverdale bridge, the Trask River above Hwy. 101 bridge, and Wilson River above the railroad bridge near head of tide.
* On Wilson River move summer angling closure deadline one mile downstream from Lee's Camp bridge to Jones Creek Camp bridge.

Zone 2

* Close hole at powerhouse on Bull Run River (extreme safety hazard).
* Establish 400 foot closure at new salmon hatchery on Clackamas River.

Zone 3

* Reduce salmon bag limit from 3 to 2 per day.

Zone 4

* Establish Rogue River salmon bag limit of 3 per day above tide, 2 per day below head of tide.
* Increase areas and times when jack salmon may be taken on Rogue and Illinois rivers.
* Add rule to close adult salmon season above Gold Ray Dam on July 15 (instead of a scheduled August 1) if spring chinook dam counts are less than 15,000 on June 15.

Zone 5

* Increase steelhead bag limit on the Deschutes River to 2 per day provided at least 1 is a fin-clipped hatchery fish; 6 in possession or in 7 consecutive days provided at least 4 are fin-clipped.
* Prohibit multiple point hooks on flies and lures in lower 100 miles of the Deschutes except at Sherar's Falls.

Zones 6-8 — No major changes.

Zone 9

* See "other fish regulations" on page 16.

Zone 10

* Close Columbia to angling for jack salmon downstream from Astoria-Megler Bridge June 1 through September 15. (Many small salmon are immature ocean salmon rather than mature jack salmon).
* Drop fall closure on Eagle Creek (Columbia River system) below railroad bridge. Extend closure in spawning streams between Bridal Veil and Bonneville Dam through November.

TROUT REGULATIONS

Statewide

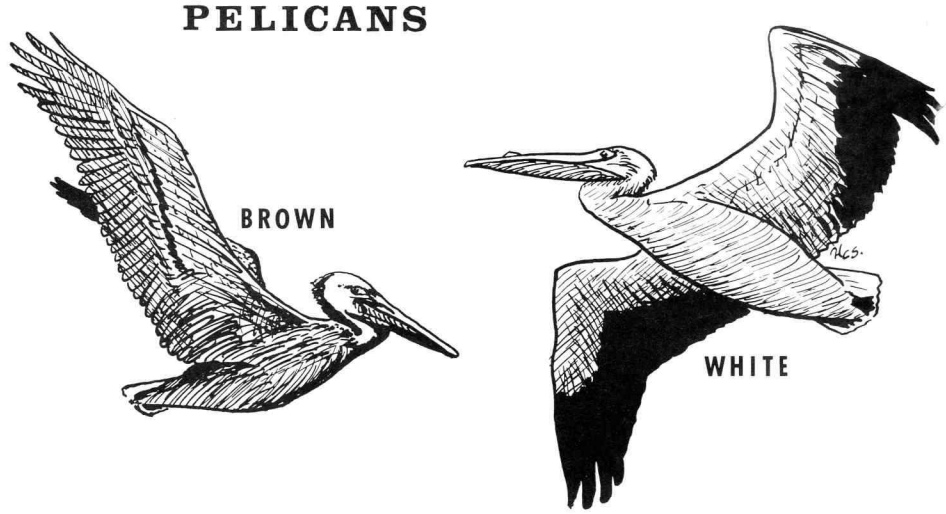
* Reduce daily trout bag limit to 5 fish per day on streams and bays (with some exceptions) but maintain 10-fish daily bag limit on lakes, ponds and reservoirs (except where individually specified differently).
* Establish general trout season opening dates of April 26 and May 24.

Zone 1 — No major changes.

Zone 2

* Drop winter trout season November 1 through April 20 (for 2 fish 12 inches and over) in salmon and steelhead streams.
* Open the Clackamas River below River Mill Dam with late (May 24) trout opening to protect outmigrating young steelhead and salmon.
* Open Hood River below the forks with late trout opening.

Continued on page 16



PELICANS

Its head and bill are large and out of balance. Its feet are set much too far back to allow walking with any style or grace. It's so heavy that only a lengthy run, with webbed feet slapping the water, can get it airborne. But once in the air, with wings stretched to a spread of over nine feet, the pelican is one of the most graceful birds in the world.

A group of pelicans in flight might be compared to a squadron of dive bombers. With heads arched back and wings extended, they fly in near perfect diagonal formations. The huge wings make the pelicans such efficient gliders that the occasional wing stroke seems almost an afterthought.

Two different species of pelicans inhabit Oregon. The white pelican nests in the state. It inhabits some of the inland marshes of eastern Oregon. As the name implies this bird is almost all white but with black primary feathers on its wings.

The brown pelican is a seasonal visitor. It migrates from its breeding grounds in southern California and Mexico. This migrant can be seen in most of Oregon's coastal estuaries during the late summer and fall. Young browns are, naturally enough, brown in color. Adults develop a contrasting white head and neck.

While both species are beautiful in flight, they do have different styles. White pelicans will break formation and circle out of sight riding thermal air currents. They feed sitting on the water using their paunched bills as fishing nets. Often the birds will line up and appear to herd fish before them while dipping their bills in near unison.

The brown pelican sticks to low-level formation flight and feeds by plummeting on its prey from above. The dive, usually made from 30 feet or more, begins with a steep bank of the wings then collapses into a hopeless tangle of wings, head and feet. No bird could survive it. But they do. The dive looks sloppy, but it works. The successful catch rate is high.

Both pelican species are colony nesters. The whites gather on protected islands and shorelines in the marshes. The browns use coastal islands. In the U.S., the best known brown pelican nesting sites are the chain of islands off Santa Barbara in southern California.

It was on these islands in the 1960's that scientists noticed drastic declines in the pelican nesting success. Pelican eggs were breaking under their own weight or that of the adults attempting to incubate. The pesticide DDT was pegged as the cause for the thin-shelled eggs nesting failures. With the banning of that chemical in the early 1970's, the decline reversed. Now, young birds are in the air again. After a close call, it looks like the brown pelican will continue to visit Oregon for years to come.

Jim Gladson

Oregon's

WILDLIFE WINDOW

As fall approaches the landscape begins its annual change from green to the golds and browns that precede the bareness of winter. Some wildlife forms will feel the effects of the color change. Camouflage is a vital survival tool for many creatures. When the background changes its coat – or loses it entirely – the ability to hide may diminish just as the leaves do. This may be especially true if color is the primary camouflage.

As surroundings change color certain creatures may change color too. The varying hare or snowshoe rabbit and short tailed weasel are notable for changing from brown to white in winter. A sudden change of background caused by melting snow leaves them highly conspicuous too. The change in fur takes several months and may not be complete in areas where snow is irregular in occurrence. Some creatures are equipped with special pigment cells in their skin which allow them to change color to reasonably match the surroundings in a matter of minutes or less.

Although color is the most often cited aspect of camouflage, it is by no means the only one. Body shape is often important to blending in with the surroundings. Like color, sharp lines of body contour may also give away the presence of nature's creatures.

No form of camouflage would be of value if the wearer did not also have the ability to remain motionless. Movement is another factor that regularly discloses what might otherwise go unnoticed. How often do you see an animal before it moves?

Since a sharp sense of smell is a prime means of finding food for many predatory creatures, an animal with little scent has some advantage even if its color camouflage is not the best. Much depends upon which sense the predator relies on most.

Camouflage must be considered as more than just color or shape. It is a combination of behavioral and physical features that protect many forms of wildlife from their enemies. The Department of Fish and Wildlife has a short movie showing how camouflage works for certain creatures. It is called CAMOUFLAGE. A copy can be borrowed free for showing to organizations, classrooms or other groups from the Department's Portland headquarters or any regional office. □

THIS MONTH'S WINDOW

CAMOUFLAGE

Using known numbers of colored toothpicks, scatter them about in a small area or carefully stand them on end in the grass.

Search for them for a set period of time like one minute.

Discuss which ones are easiest or hardest to find. Try it again with different background areas. What would help the group find more?

Relate this activity to how animals live and find food.□

Continued from page 14

Zone 5

* Prohibit multiple point hooks in lower 100 miles of Deschutes.

Zone 6

* Establish a five fish bag limit on Ana, Cottonwood Meadows and Lofton reservoirs, and on Heart Lake.
* Establish a common trout bag limit for the Williamson River below Silver Lake Road of 2 fish 12 inches or over per day.

Zone 7

* Establish a trout bag limit of 2 fish daily for Aldrich Ponds and Jump-off Joe Lake.
* Add McKay Creek and Butter Creek to those streams which open with the early (April 26) trout season. (Streams drop sharply when irrigation withdrawals begin in late spring).
* Extend the trout season on the lower Umatilla River (up to Mission Bridge) through December 31.
* Add Wallowa Lake to waters open entire year.

OTHER FISH REGULATIONS

* Prohibit angling for sturgeon with artificial lures in waters closed to salmon and steelhead angling.
* Prohibit sturgeon angling in the Snake River downstream from Hells Canyon Dam and fishing for other species with line exceeding 20 pound test. The regulation is intended to protect a dwindling population of large sturgeon in Hells Canyon.
* Open St. Louis warm-water fishing complex to angling in 1980.
* Drop the requirement for a permit to take abalone.

Final regulations for 1980 will be set following public testimony in a meeting to begin at 9 a.m. on October 20 in Fish and Wildlife Department headquarters, 506 SW Mill Street in Portland.□

FISH AND WILDLIFE COMMISSIONER NAMED

Fred A. Phillips of Baker has been appointed to the Oregon Fish and Wildlife Commission by Governor Vic Atiyeh.

The appointment is to fill the vacancy left by the resignation of Louisa Bateman of Klamath Falls. Mrs. Bateman's resignation, due to ill health, was accepted by Governor Atiyeh on September 5. This Commission position represents the second congressional district and the term runs through June of 1981.

Phillips is a rancher. He is Past President of the Oregon Cattlemen's Association and a member of the Oregon Agricultural Research Foundation. A graduate of Baker High School, he studied at New Mexico Military Institute and at the University of Oregon. His appointment to the Commission remains to be confirmed by the Senate.

The Fish and Wildlife Commission formulates state policy regarding the management of fish and wildlife resources including the establishment of seasons and bag limits for both recreational and commercial interests.

Other members of the Commission are John Boyer, Bellfountain; Allan Kelly, Portland; Jack Steiwer, Fossil; Herbert Lundy, Lake Oswego; Donald Barth, Newport; and Ken Klarquist, Portland. The latter two were appointed last month and are also awaiting Senate confirmation.□

SCOUTS AND SPORTMANS CLUB TEAM UP

The Multnomah Anglers and Hunters Club is helping young people get an early appreciation for the needs of fish and wildlife. The club's big game committee recently took Boy Scout troop 544 of Gresham and Girl Scout troop 109 of Portland to Happy Ridge in the Tygh Valley area to plant bitterbrush, a prime winter food for deer. The planting was done under the supervision of White River Wildlife Area biologist Darrel Walker.

A good many seeds were planted and the work was combined with a camping trip in the area. Later in the summer the club's big game committee also engaged in fencing a wildlife watering hole.

Involved in the bitterbrush project were girl scouts Kim Harold, Kori Fox, Diane Johnson, Nancy Braden, Victoria Hirsley, Sherrie Chin, their leader Mary Lou Harold and her son Fred. From the Boy Scout troop were Brian Fletcher, Mike Fletcher, Glen White, Joby Easton, Bruce Smith, Jeff Barnette, Vernon Kinonen, Don Bailey, Greg Bartley, Yuon Bilodeau Jim Johnson, Jeff Humphreys, Tim Guzzetto, Charlie Rindt, and their leaders Ed Kinonen and Elmo Johnson.□

Multnomah Hunters and Anglers Club members fence wildlife waterhole.

OREGON Fish & Wildlife

506 S.W. MILL STREET
P.O. BOX 3503
PORTLAND, OREGON 97208