



OREGON WILDLIFE

DECEMBER 1977

OREGON WILDLIFE

December 1977
Volume 32 No. 12

OREGON FISH AND WILDLIFE COMMISSION

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Oregon Wildlife is published monthly by the Oregon State Department of Fish and Wildlife. Volumes 1 through 28 were entitled Oregon Game Commission Bulletin.

RON E. SHAY, Editor

Permission to reprint is granted; credit would be appreciated.

Oregon Wildlife is circulated free of charge. Please report change of address promptly giving both new and old addresses and zip codes.

Second-class postage paid at Portland, Oregon.

All correspondence should be sent to:
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P.O. Box 3503
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Portland, Or. 97208

The Cover

Food and Water — a powerful attraction for ducks, geese and swans at Sauvie Island. See Pages 6 & 7 for more about the area.

Photo by Jim Gladson.

HUNTER EDUCATION PROGRAM

INSTRUCTORS APPROVED

Month of October 51
Total Active 1,632

STUDENTS TRAINED

Month of October 3,018
Total to Date 250,534

HUNTING CASUALTIES REPORTED IN 1977

Fatal 4
Nonfatal 24

1978 Meetings

For those of you who may want to mark your calendar, here is a list of the Fish and Wildlife Commission meetings scheduled for the next year. Those held at the Department office are set to start at 9 a.m. At this time we do not have starting time information for those being hosted by the Washington Department of Fisheries.

OREGON FISH AND WILDLIFE COMMISSION MEETINGS — 1978

January 20	Friday	Compact Meeting — General Regulations and Winter Season Washington Department of Fisheries, Host New Monticello Hotel, Longview
January 21	Saturday	Opening Dates for 1978 Hunting Seasons Commission Room, ODFW — Portland
February 17	Friday	Business Meeting (Proposed Legislation) Commission Room, ODFW — Portland
March 17	Friday	Ocean Salmon Season — Troll and Sport Commission Room, ODFW — Portland
April 24	Monday	Compact Meeting — Spring Chinook Status Report Commission Room, ODFW — Portland
May 5	Friday	1978 Big Game Regulation Proposals Commission Room, ODFW — Portland
May 26	Friday	1978 Big Game Regulation Hearing Commission Room, ODFW — Portland
May 27	Saturday	1978 Big Game Regulation Hearing Commission Room, ODFW — Portland
June 23	Friday	Compact Meeting — Summer Chinook, Sockeye and Shad Status Report Washington Department of Fisheries, Host
July 27	Thursday	Business Meeting (Budget) Commission Room, ODFW — Portland
July 28	Friday	Compact Meeting — August Gillnet Season and Indian Fall Season Commission Room, ODFW — Portland
August 18	Friday	1978 Waterfowl, Upland Bird and Furbearer Regulation Hearing Commission Room, ODFW — Portland
September 8	Friday	Compact Meeting — Late Fall Gillnet Season Washington Department of Fisheries, Host
September 12	Tuesday	Compact Meeting — Indian Fall Season Adjustments Commission Room, ODFW — Portland
September 23	Saturday	1979 Angling Regulation Proposals Commission Room, ODFW — Portland
October 21	Saturday	1979 Angling Regulation Hearing Commission Room, ODFW — Portland
November 17	Friday	Business Meeting Commission Room, ODFW — Portland
December 15	Friday	Business Meeting Commission Room, ODFW — Portland

December Commission Meeting

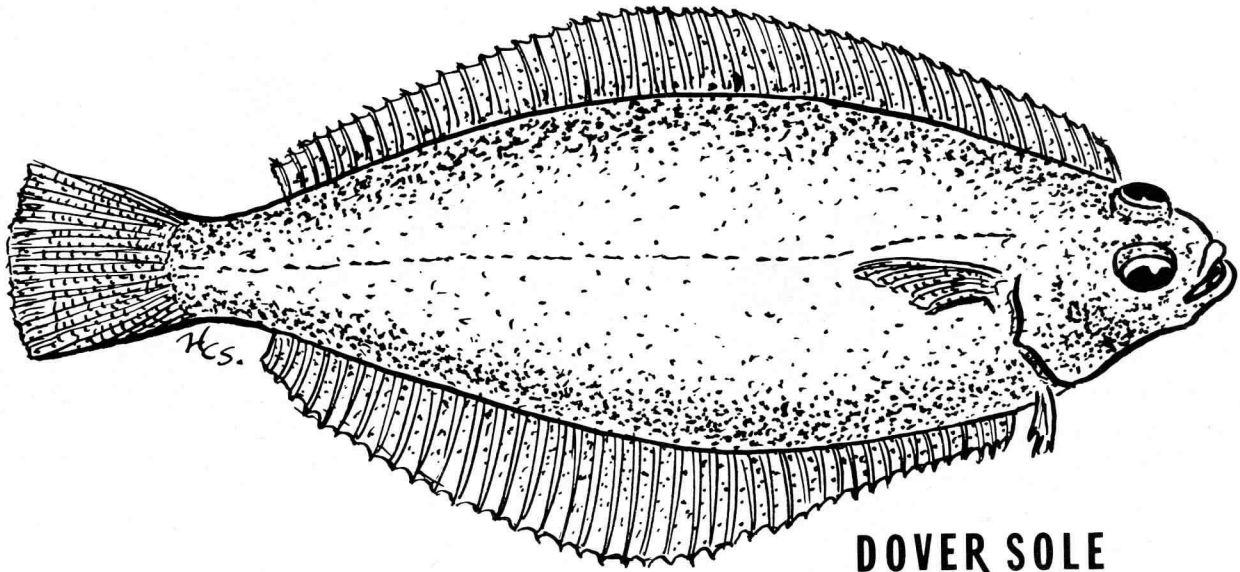
The Fish and Wildlife Commission will hold a regular business meeting on Friday, December 16. The meeting will start at 9:00 a.m. and will be held at Commission headquarters at S.W. 5th and Mill in Portland.

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Portrait of a commercial fish —

The DOVER SOLE

*By Bob Demory
Marine Survey
Project Leader, Newport*



DOVER SOLE

The Dover sole has been the most important flatfish in Oregon's trawl fishery since its beginning in 1938. At that time the fish was called slime sole, because the animal produces great quantities of the stuff. The term Dover sole apparently comes from the north Atlantic where a similar creature lives.

Oregon landings of Dover sole have fluctuated substantially over the years but it has always been the dominant flatfish in trawl landings. The major reason for this is the excellent keeping quality once the fillet is frozen. It is also quite abundant off Oregon, and an excellent eating fish. In 1974, landings of Dover sole in the northeastern Pacific totalled nearly 28 million pounds, of which Oregon's share was 5.6 million pounds. The

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largest share was landed in California, 19.1 million pounds. In recent years, 1964-73, the peak year of production was 1972, when 5.9 million pounds were landed in Oregon ports.

In the winter of 1948 biological information was first gathered from Dover sole landed in Oregon. The information obtained was length, weight, sex, age and maturity. Along with other studies, the information obtained from sampling has supplied a substantial body of knowledge about the biology of this flatfish.

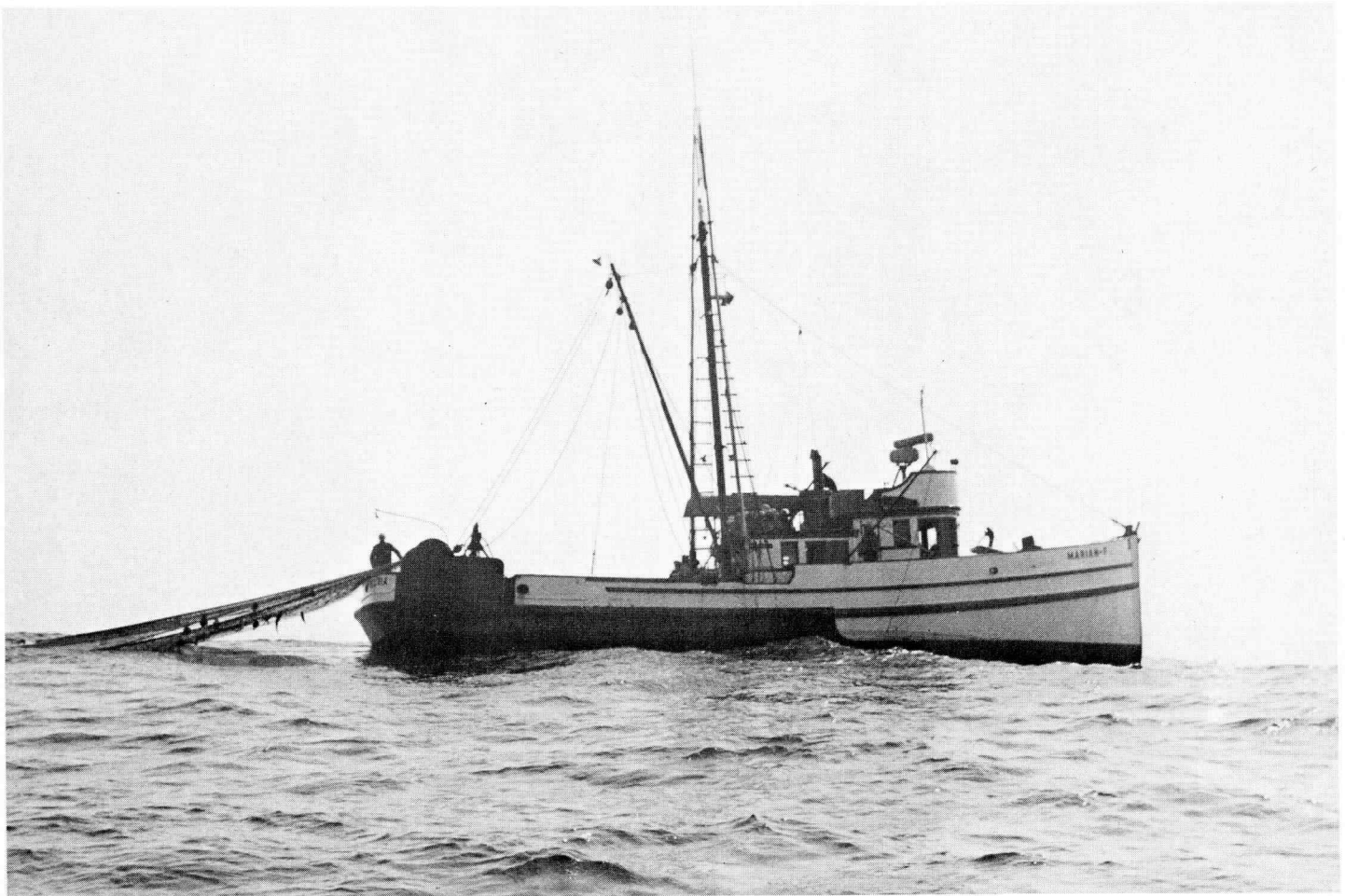
Dover sole females are 12 inches in length and about 6 years old before they first spawn. By the time they are 17 inches in length and 12 years old they are all mature. Males reach maturity at 12 inches in length at an age of 6 years.

Spawning apparently takes place at specific sites in the deeper offshore waters between 200-400 fathoms, perhaps deeper. The period of spawning ranges from November to March or April but the peak occurs in January.

The number of eggs produced annually by a single female will range from about 52,000 to 266,000 depending on the size of the fish. Larger fish produce more eggs than smaller fish.

Larvae

Eggs, about 3/32 inch (2.25 millimeters) in diameter hatch several weeks after spawning. Most larvae will spend nearly a year in the water column before settling to the bottom to assume life on the sea bed. During the time larvae are in the water column they are at the mercy of cur-



The Dover sole is almost exclusively a commercially utilized fish because it is not easily available to sport anglers. Virtually all of the Dover sole taken off the Oregon coast

are caught by U.S. commercial trawlers. Boats such as this one work out of several Oregon ports. Foreign vessels are not permitted to take this fish in U.S. waters.

rents and even though they may move actively up and down in the water column the movement inshore-offshore and north-south is mainly by currents. Larvae have been found to nearly 300 miles offshore.

Before the larvae settle to the bottom, they undergo drastic changes in form. When hatched they look much like any other fish larvae but then the left eye gradually "migrates" over to the right side of the head and the width of the body becomes much less. Most larvae are about 2½ inches in length when they assume the bottom life and are now called juveniles. Off the Columbia River, settling out occurs in January and February (about a year after they were

spawned) near the edge of the continental shelf.

Juveniles

By mid-summer of the first year on the bottom young Dover sole are found mostly inside of 60 fathoms with the bulk of young fish found between 30 and 50 fathoms. By fall, in their first year on the bottom they will have grown to about 4½ inches in length.

Distribution

Dover sole occur from Baja California to the eastern Bering Sea. Areas of major abundance are off

northern California, Coos Bay and the Columbia River. They are also fairly abundant off northern Washington and British Columbia.

Adults rarely are found inside 20 fathoms. They range to depths of at least 600 fathoms. They show a strong preference for mud and muddy-sand bottom.

During the spawning period most fish will be found between 200 and 400 fathoms. After spawning most females return to shallower water and summer feeding grounds while large numbers of males remain in the deeper water. Based on survey catches in 1974 off Coos Bay the percentage of males at depths less than 110 fathoms was 42% but at depths

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greater than 110 fathoms the percentage of males nearly doubled to 82%. Samples of the landings show a similar picture. These deep water males make up a substantial portion of the summer fishery off southern Oregon-northern California.

Age and Growth

Dover sole live to a ripe old age — at least to 30 years, but fish of this age are rare. Age is determined by counting annual rings that are laid down on scales. The otolith or ear bone is also used to determine age. The rings (called annuli) actually are narrowing “bands” of growth formed in winter when the fish (and scales) grow more slowly than in other months. At the end of the second year of life Dover sole are about 4½ inches in length. At age four when they begin to enter the fishery they are about 9½ inches in length and weigh 0.3 pounds. At age 8 when most fish are of a size to be retained by trawl nets they are 14 inches in length and weigh 1 pound. By now the females are considerably larger than the males and this difference in size increases throughout the life of the fish. At an age of 20 years females are 21 inches in length and weigh about 3.2 pounds but males are only 18 inches in length and weigh about 1.9 pounds.

The age of Dover sole differs by port, not so much because of market conditions or size limits, but more because of how long a fishery has been operating. For example, in 1967 the average age of fish landed in Coos Bay was 10.6 years while in Astoria it was 9.5 years. In 1974 the average age was 10 years in Coos Bay and 10.1 years in Astoria. What happens is that an unfished stock has many old fish, which are largely eliminated after a few years. The faster growth of younger fish then “compensates” for the fishery-caused reductions and a more or less stable population of medium age fish then supports the fishery. Incoming year classes of comparatively abundant young fish also balance the steady removals of older fish.

Another factor that changes the age composition and affects landings is brood strength or year class strength. For example, the fish hatched in the winter of 1961-62 were

more abundant than in any year since 1943. The 1961 year class was also dominant in several other species of fish. The exact cause of an exceptionally strong or weak year class is not well known, but we believe that the success or failure of a year class mostly takes place during the egg and larval stage. It probably is dependent on the ocean environment which may be much more favorable (or unfavorable) some years than in others.

Migrations

Tagging studies off the Columbia River and off Coos Bay indicate that Dover sole do not generally make long migrations. Fish tagged on spawning grounds show an inshore northerly movement, but this applies mostly to females. Males show little movement. In the Coos Bay area, fish tagged just north of Cape Blanco show some movement to the south of Cape Blanco but fish tagged farther to the north show little movement south of Cape Blanco. This supports our belief that water mass differences at about Cape Blanco act as somewhat of a “barrier” to fish mixing north and south of that area.

Incidentally, the longest a tagged Dover sole has been at liberty was 14 years and 59 days. This fish had been tagged in March 1955 in Willapa Deep. It was caught in June 1969, 18 miles inshore from where it was tagged.

Feeding Habits

Larval Dover sole feed on plankton but once on the bottom feed exclusively on small invertebrate animals like worms and especially a small clam-like animal. The teeth of Dover sole are incisors much like our own front teeth and best suited to snipping or grazing type feeding.

Aquarium observations on feeding behaviour show that they tend to pounce on their prey after slowly stalking it. The eyes move independently of each other but, just before they grasp food, both eyes rotate forward and the animal looks right over its nose.

The Fishery

The distribution of Dover sole is such that most fish are caught beyond depths of 40 or 50 fathoms.

The areas of major abundance are adjacent to the Columbia River and off the bight from the southern edge of Heceta Bank to the bank off Bandon. Considerable quantities are also found inshore of Heceta Bank off the Siuslaw River.

From a study conducted in 1974 aboard commercial drag boats, we documented that a certain portion of fish caught were discarded at sea. On the average 78% of the females and 62% of the males were utilized. In deeper water nearly all fish caught were utilized, but in shallower water where juveniles occur the utilization was less. This was related to market imposed limits on size (length) of fish desirable for filleting and sole.

Based on the groundfish surveys of 1971-74 between the Columbia River and Cape Blanco, stocks of Dover sole could support a fishery of 7-8 million pounds annually. These figures are conservative but we feel they are realistic.

In a study of the stocks off the Columbia River preliminary results indicated that if the age at first capture was age 5 (instead of 4) there would be a 6% increase in yield from a given population of fish. This study took into account the rate at which fish grow and the rate of death caused by fishing as well as natural causes. Mesh size is the key factor here. A larger mesh, say 5 inches between knots, would nearly eliminate small fish from the catch, but this saving has to be weighed against the loss in yield of other desirable species such as rex sole, sanddab, and English sole because these fish are smaller sized than Dover sole.

We want to thank the Oregon drag fishermen for their conscientious and generous help over the years in adding to the scientific knowledge of Dover sole and other fishes. Their logbook information especially has been an essential aid in our knowledge of distribution, life history, and catch as well as estimates of abundance of the resource and year classes.

Studies on the life history and ecology of the Dover sole are being continued by Oregon State University Sea Grant personnel. As more is revealed about this interesting fish, it may be possible to better utilize it in the commercial catch. □

Sauvie Island—A Place For All

Few places in this country can be all things to all people, but some can come very close. Sauvie Island is such a place.

Located just 20 minutes from downtown Portland, Sauvie Island

meets well the residential and agricultural needs of man while also providing an excellent place for migratory birds and other wild creatures to rest, feed and live.

Over 13,000 acres of the island are

owned by the Department of Fish and Wildlife and managed as a waterfowl refuge and hunting area. This management benefits not only the hunters and waterfowl that use the area for a few months each year, but also the creatures that live there year round and the people who come to see and enjoy this wild presence.

Plantings of food and cover crops; the maintenance of watered ponds, lakes and marshes; the placing of artificial nesting boxes for a variety of birds; and the control of human use and access makes the island a bird-watcher paradise and a good spot for a successful hunt.

Areas such as Oak Island and the entire northern tip of the main island are kept in as nearly a natural state as possible and still allow human passage.

This attention to keeping the island in an enhanced natural condition is not lost on the fish and wildlife that exist on it. The habitat enhancement acts as a magnet to a variety of bird and land species.

All of this is, for the most part, intermingled with the land uses of man. While the vast beauty of such places as Steens Mountain or the Eagle Cap Wilderness of the Wallows may appeal to many, there are those who prefer their wildness in smaller doses. For these folk Sauvie Island is the place.

For nine months of the year, the Department-owned area is open to the public for drives, bike rides or nature walks. During the hunting season, which usually begins in October and extends into January, travel off county roads in the area is prohibited to anyone without a permit to be there. The current waterfowl season will close January 15, 1978.

For those people who are serious about their birdwatching, the Department will have a general checklist of Sauvie Island birds available soon. A more detailed checklist on birds of the island is available from the Portland chapter of the Audubon Society for \$1. It may be ordered from the Portland chapter at 5151 NW Cornell Road, Portland 97210.

Photos and story by Jim Gladson



For those who like the wilds in small portions, Sauvie Island is an excellent spot. The island is close to Portland in miles, yet far away in its rural setting and variety of wildlife.



Open water and plenty of food and cover make Sauvie Island a magnet that attracts several hundred thousand migrating waterfowl each fall and winter.



Salmon Tag Returns

Have you still got last year's salmon-steelhead tag in your wallet? If you do, then you are not alone. Every year, fewer than 25 percent of the salmon-steelhead tags issued to Oregon anglers are returned to the Department.

While the number of tags being returned is sufficient for developing statistics on statewide recreational harvest of salmon and steelhead, not enough of the tags are returned to let biologists go one step farther and break down catches by stream.

That tag that was thrown away during spring cleaning of the wallet or purse is an important little slip of paper and the Department wants it back.

Good fisheries management demands good information and these tags are the only reliable source for catch information on salmon and steelhead by sport anglers.

Beginning in 1978, the salmon-steelhead tag will be redesigned to make entry of catch easier for the angler and to help biologists better identify catch by stream and species. No longer will the angler be forced to cram handwritten catch information in the narrow space provided on the old tags. The tag of the future will use numbers for all entries.

The new number codes will work like this. Each species of salmon and the steelhead will have a number as will locations where these species might be caught. When a fish is caught, the angler will enter the number for species, the number for location, and the date. The numbers for species and all locations will be listed in a table attached to the tag. An example of a properly filled tag is on this page.

That is the new system. It is more efficient and it is easier, but without an increase in expired tag returns to the Department, the new forms will tell little more than the old written style.

There are other ways to get these statistics on total catch by state and by stream but the alternative methods would be very costly. Additional costs mean shifting money from other rearing and fishery management budgets. The end result would be better statistic gathering at the cost of declining management quality.

More complete information on the

The new salmon-steelhead tag will resemble various other licenses, but on the first page only. On the back of the card and on the attached sheet you will note many changes. The next page shows the new design. Actual card will be slightly larger than reproduced here.

tags and increased returns by anglers could tell the Department all it needs to know. The only additional cost would be the price of a stamp to the angler, or a minute of time to take that expired tag from wallet or purse and give it to any fishing license dealer in the state.

There is an existing law which says an angler can be fined for returning a tag later than March 1 of the year following tag expiration. However, this law has not been enforced and in 1979 the law will be dropped from the books.

The tag may be returned at any

time without fear of fine. The sooner it is returned, the better, of course. The tag should be returned even if it has no entries. That information is important, too.

Without angler cooperation, the use of catch statistics to help improve the fishing will not be able to reach its full potential. If this is true, the angler has no one to blame but himself.

For those wishing to mail in expired tags, please send them to the Oregon Department of Fish and Wildlife, P. O. Box 3503, Portland, Oregon 97208. □

EXAMPLE OF CODE NUMBER ENTRY FOR EACH FISH CAUGHT:

[illegible]

_____ Fished for but did not catch salmon.
 _____ Fished for but did not catch steelhead.
 _____ Did not fish for salmon.
 _____ Did not fish for steelhead.

Oregon Department of Fish and Wildlife
PO Box 3503
Portland, OR 97208

OR:
Deposit at any Dept. of Fish & Wildlife license agency.

No.	Water	No.	Water	No.	Water
21	Alsea R & Bay	52	Fogarty Cr	83	S Fk Siletz
22	Alsea R & Bay	53	Fourmile Cr (Coos Co)	84	Silfrocks Cr & Lk
23	S Fk Alsea	54	Hunter Cr	85	Suslaw R & Bay
24	Applelegine R	55	Ilinoia Cr	86	N Fk Suslaw
25	Beaver Cr (Linc Co)	56	Kildan Cr (Suslaw R)	87	Sixes R
26	Beaver Cr (Till Co)	57	Kildan Cr (Suslaw R)	88	Silfrocks Cr
27	Big Cr (Lane Co)	58	Lake Cr (Suslaw R)	89	Silfrocks Rock Cr
28	Big Elk Cr (Yaquina R)	59	Lobster Cr (Alsea R)	90	Silfrocks Rn
29	Bush Cr	60	Miamir Cr	90	Silfrocks Rn
30	Capo Cr	61	Middle Cr (Coquille R)	91	N Fk Smith
31	Checto R & Bay	62	Millicoma Cr	92	Sutton Cr & Lk
32	Coos Cr (Nehalem R)	63	E Fk Millicoma	92	Sweet Cr (Sus R)
33	Coos R & Bay	64	W Fk Millicoma	93	Tahkenich Cr & Lk
34	S Fk Coos	65	Necanicum R	94	Tennille Cr & Lks
35	Coquille R & Bay	66	Necanicum R	95	Tennille Cr (Lane Co)
36	N Fk Coquille	67	N Fk Nehalem	96	Three R
37	Coquille R	68	Neskowin Cr	97	Tillamook Bay
38	S Fk Coquille	69	Nestucca R & Bay	98	Tillamook Bay
39	Mid Fk Coquille	70	Little Nestucca	99	Trask R
40	Cummings Cr	71	Pistol R	100	N Fk Trask
41	"Dr" & Devils Lk	72	Pistol Cr (Lane Co)	101	S Fk Trask
42	Deadwater Cr (Sus R)	73	Rock Cr (Nehalem R)	102	Umpqua R & Bay
43	Drift Cr (Alsea R)	74	Rock Cr (Siletz R)	103	N Fk Umpqua
44	Drift Cr (Siletz R)	75	Little Rock Cr	104	S Fk Umpqua
45	Elk Lake	76	Rogue R & Bay	105	Wilson R
46	Elk Cr (Clatsop Co)	77	Salmon R	106	Devils Lk Fk
47	Elk R	78	Salmonberry R	107	Little N Fk
48	Euchre Cr	79	Sand Lake	108	Winchuck R
49	Fall Cr (Alsea R)	80	Schooner Cr (Siletz R)	109	Woodhuck Lk
50	Five R (Alsea R)	81	Siletz R & Bay	110	Yachats R
51	Flores Cr, Lk, and New R	82	N Fk Siletz	111	Yaquina R & Bay

No. Water	No. Water	No. Water
110 Albany Cr. (Clack R)	140 Herman Cr. (Col R)	169 Santiam R
1112 Abernathy Cr. (Pudding R)	141 Hood R	170 N Fk Santiam
1113 Abiqua Cr. (Clack R)	142 E Fk Hood	171 Little N Fk
1114 Abiqua Cr. (Pudding R)	143 W Fk Hood	172 S Fk Santiam
1115 Bear Cr. (Clatsop Co)	144 Imnaha R	173 Scappoose Cr
1115 Beaver Cr. (Col Co)	145 John Day	174 N Fk Scappoose
1116 Big Cr. (Clatsop Co)	146 Mid Fk John Day	175 S Fk Scappoose
1117 Bull Run	147 N Fk John Day	176 Snake R
118 Butte Cr. (Pudding R)	148 Johnson Cr. (Will R)	177 Sucker Cr
119 Calapooia R	149 Joseph Cr	178 Tenner Cr
120 Catherine Cr	150 Kelling Lk (Will R)	179 Thomas Cr. (Sant R)
21 Chenoweth Cr	151 Klaskanine R	180 Tualatin R
22 Clackamas R	152 N Fk Klaskanine	181 Umatilla R
23 Clarksanie R	153 S Fk Klaskanine	182 Walla Walla R
24 Clear Cr. (Clack R)	154 Lewis & Clark R	183 Wawatha R
25 Hot Sp Fk Collowash	155 Lindsey Cr. (Col R)	184 Wenaha R
26 Hot Sp Fk Collowash	156 Luckiamute R	185 Willamette R & Slough, below Or City Falls
27 Columbia R (Astoria Br to Bonni Dam)	157 Marys R	186 Willamette R, above Or City Falls
28 Columbia R (above Bonnieville Dam)	158 McKenzie R	187 Coast Fk Will
29 Crabree Cr. (Santiam R)	159 Mill Cr. (Marion Co)	188 Mid Fk Will
30 Deep Cr. (Clack R)	160 Mill Cr. (Wasco Co)	189 Willametta Cr
31 Deschutes R	161 Mill Cr. (Yamhill R)	190 Yamhill R
32 Eagle Cr. (Clack R)	162 Milhon Cr. (Soap Cr)	191 N Fk Yamhill
33 Eagle Cr. (Col R)	163 Minam R	192 S Fk Yamhill
34 Fall Cr. (Willamette R)	164 Molalla R	193 Youngs R & Bay
35 Fifteenmile Cr	165 Mosier Cr	
36 Foster Reservoir	166 Pudding R	
37 Gales Cr. (Tualatin R)	167 Salmon R (Sandy R)	
38 Gnat Cr	168 Sandy R	
39 Grand Cr		
40 Grande Ronde R		

The Oregon Department of Fish and Wildlife needs your salmon-steelhead catch record on the attached license / tag returned for harvest analysis. This information is of great value even if you did not fish or caught no fish. Your help in providing accurate and complete information will make it possible for the department to do a better job of managing Oregon's salmon and steelhead runs to provide more fish for you in the future. Please read and follow the instructions on the catch record in the interest of improving salmon and steelhead fishing for tomorrow. Your cooperation is needed and appreciated.

John F. Sullivan

INSTRUCTIONS FOR SALMON-STEELHEAD ANGLERS

Upon creeling a salmon 24 inches or over in length or a steelhead 20 inches or over, IMMEDIATELY enter the species of fish, location of catch, and the date, using the following code numbers in the appropriate place on the Catch Record:

SPECIES CODES

Use these code numbers for species identification in the "Species" column of the Catch Record:

Code No.	Fish
1	Chinook (king or blackmouth)--has black lower gumline
2	Coho (silver)--has white lower gumline
3	Other Salmon--pink (humpy), chum (dog), or sockeye
4	Steelhead

LOCATION OF CATCH

For fish caught in the open ocean and in the Columbia River seaward of the Astoria-Megler Bridge, enter the code number from this list for the port from which you are fishing in the "Location" column of the Catch Record.

Code	Coastal Port	Code	Coastal Port	Code	Coastal Port
1	Columbia River (Oregon)	6	Salmon River	13	Coos Bay
2	Nehalem Bay	7	Siletz Bay	14	Bandon
3	Tillamook Bay	8	Depoe Bay	15	Port Orford
4	Nearlts Bay	9	Newport	16	Gold Beach
5	Cape Kiwanda & Pacific City	10	Waldport	17	Brookings
		11	Florence	18	Wash. Ports
		12	Winchester Bay		

INLAND WATERS

or fish caught in bays, streams, or lakes, enter the code number listed for that water in the "Location" column on the Catch Record:

SEE OTHER SIDE FOR CODE NUMBERS OF INLAND WATERS
(COASTAL AND COLUMBIA RIVER)

Oregon's Ringtails — Little Creatures That go “Bump” in the Night

by Dale E. Toweill
La Grande, Oregon



Remember when you used to lay awake at night as a child, wondering about all those unseen but vividly imagined night creatures — the ones that were never seen in the daylight? Undoubtedly, such animals were fearsome, ferocious things. Oregon has a real creature that travels almost solely at night — the shy, elusive ringtail, one of Oregon's least-known furbearing animals. The ringtail, however, hardly fits the description our childhood fears imagined.

Related to both the raccoon and the Central American coati, the ringtail is much smaller than either, averaging about 2 to 3 pounds in weight and standing about 6 inches high at the shoulder. What the ringtail lacks in height, however, he makes up in length, with a body about 15 inches long and a tail almost the length of his body. Because ringtails are active only at night, they have large, dark eyes which are almost completely circled by white, in contrast to the raccoon's dark “mask.” The head and nose are like those of a small fox — in fact, the ringtail's scientific name, *Bassariscus astutus*, means “clever

little fox.” The ringtail's crowning glory — and the source of his name — is the bodylength black-and-white banded tail, which he can fluff out to the diameter of his body whenever he is alarmed. Some scientists think that by doing so, he can distract potential predators into attacking the eye-catching tail, giving the ringtail himself a better chance to escape.

Ringtails apparently evolved in South America, and are now found in Mexico and throughout the American Southwest. Southern Oregon is the northernmost extent of their range. In Oregon, ringtails are found south and west of a line connecting Coos Bay, Roseburg, Crater Lake, and Klamath Falls, and a few may occur in southeastern Oregon's Pueblo and Steens Mountain ranges. At least, one was reportedly found near Follyfarm in 1915, and ringtails have been found in northern Nevada and southern Idaho.

Wherever ringtails are found, they prefer to inhabit areas with brushy canyons and rocky outcrops where they can find their preferred foods — woodrats, mice, lizards, insects, and wild fruits such as hackberries. Ring-

tails are such good “mousers” that early-day miners often enticed them to stay around their cabins, giving ringtails the nickname “miner's cats.”

Ringtails do not require elaborate dens, and have been found denning in and under houses, in wood duck nest boxes, and even in cast-off stoves! More commonly, however, ringtails den in caves in rocky outcrops, hollow trees, brushpiles, or dens dug by other animals. Sometimes they will even move in while another animal is still in residence. Ringtails have been found sharing dens with skunks and even rattlesnakes! Whatever kind of den they do select, they seldom stay in it very long at a time, commonly moving among a number of dens within their home range of 50 to 400 acres.

Young ringtails, normally 3 or 4 are born in May or June. They grow rapidly, and reach nearly adult size by the time they are 6 months old. However, they stay with their mother until about 1 year of age, when they disperse to set up housekeeping for themselves. Adult males are normally solitary.

Few wild animals prey on ringtails. Eagles and owls take a few, and coyotes and raccoons have been known to kill them on occasion. Ringtails could be legally trapped for their fur in Oregon until 1970, but due to their rarity are now protected at all times. Local populations of ringtails in southwestern Oregon are apparently in little danger of being exterminated, and Oregonians in that portion of the state may one night get to see, perhaps in the headlights of their car, Oregon's little creature that goes “bump” in the night!

Editor's Note: Author Toweill is continuing to study the ringtail and would like to receive reports from anyone seeing the elusive little critters. Such reports can be sent to him at Route 3, Box 3554, La Grande, Oregon 97850. □

THIS AND THAT

compiled by Ken Durbin

Hunting and Fishing License Sales Up

Americans are hunting and fishing in record numbers if license sales are any indication. According to Interior Department's U. S. Fish and Wildlife Service, 1976 was a record year for sales of fishing and hunting license sales in states. Sixty million people spent approximately \$318 million, an increase of \$23 million over 1975. The revenues from sale of the licenses help fund state fish and wildlife conservation and management programs. California was the top state in fishing license sales (5.8 million) and Pennsylvania led all states in sales of hunting licenses (1.9 million). Last year in Oregon, licenses, tags, and permits sold for hunting totaled 783,807, and for angling 1,078,047. Total cost was nearly \$9 million.

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Food For Thought

According to the Iowa Conservationist, the monthly publication of the Iowa Conservation Commission, "There are 40 million fishing licenses sold annually in the United States and only 2 million marriage licenses. Which proves one thing. People would rather fish than fight!"

Outdoor Oklahoma

Energy Conservers

When migratory geese fly in a "V" formation, they do it for a good reason, according to the November issue of Ranger Rick's Nature Magazine.

When a goose flies, its wings churn up the air, leaving behind an air current, the National Wildlife Federation publication for children says. In the flying wedge or V, each bird is in the right position to get a lift from the current left by the bird ahead of him.

This makes less work for all the geese but the leader, Ranger Rick points out, and that is why several geese may take turns leading the formation during a migration. Ducks, swans, gulls, and several other species of waterfowl also fly in energy-saving Vs.

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Energy IQ

A recent Gallup poll reveals that a high proportion of Americans are naive when it comes to matters of energy supply and demand. Apparently only 52 percent of all adults realize that the U.S. has had to import oil and only 17 percent have any idea of how much oil we import. According to the poll, residents in the country's energy-beleaguered north-east are more aware of America's energy problems than those of us living in the south and west.

Outdoor Oklahoma

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Pesticide Threatens Bee Colonies

"Busy as a bee" is more than cliché. The U.S. Department of Agriculture estimates that one-third of the nation's food directly or indirectly depends on the work of bees. Nearly every crop relies on insects for pollination, and bees are important pollinators. However, a new pesticide designed to be less toxic to humans has severely threatened to destroy the bee industry in some parts of the nation. Contained in tiny capsules the same size as pollen, the pesticide, Penncap M, was developed by the Penwalt Corporation of Fresno, California and appeared on the market in 1974. Subsequently, beekeepers in Lewiston, Idaho lost 2,500 hives worth approximately \$250,000 as a result of bees foraging among crops covered with Penncap M. One entomologist theorized that, when pollinating, the bees brought back the insecticide and sealed it into their honeycombs. When the bees reopened the combs to feed their offspring, the deadly poison was released. As a result, the Idaho State Department of Agriculture recently passed regulations making it illegal to apply Penncap M to blooming crops within four miles of marked bee areas, since bees normally forage only two or three miles from their hives. Nonblooming crops are not subject to the regulations because bees forage only among blossoms.

Conservation News

Trout Symposium Scheduled

A Wild Trout-Catchable Trout Symposium will be sponsored by the Research Section of the Department of Fish and Wildlife, February 15-17 at the Valley River Inn in Eugene.

Geared for both scientists and lay anglers, the program will feature approximately 20 speakers from several states. They will address four major categories including 1) uses of catchable trout, 2) management programs for wild trout, 3) research studies of wild trout populations, and 4) interactions between wild and stocked trout.

The symposium is open to anyone interested in attending. Registration and program materials may be obtained by writing Dr. John Moring, DFW Research Section, 303 Extension Hall, Oregon State University, Corvallis, Oregon 97331. A nominal registration fee will include a copy of the published proceedings of the conference.

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Help! Available

The New York Zoological Society has published a handbook, "Help! A Step-by-Step Manual for the Care and Treatment of Oil-Damaged Birds". Although aimed at helping organizations set up programs for the mass care of petroleum-soaked birds, the tips and instructions contained therein will also help the individual who has one damaged bird.

In every respect the handbook provides thorough details for setting up a complete emergency bird-care hospital, including instructions for advance planning of the entire rescue effort — how to capture the birds, administer first aid, transport the injured to the treatment center, diagnose the extent of the damage, remove the oil, treat the birds medically, and care for the birds during recuperation. It contains an identification section that explains the different techniques required for handling and caring for the wide variety of bird species likely to be affected.

Orders can be placed with the New York Zoological Society, Bronx, New York 10460. For fewer than ten copies, the cost is 50 cents apiece. Lower rates are available for quantity orders.

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With A Bit Of Help

By Ken Durbin, Staff Writer

With a little help from its friends ...

That's how the Fish and Wildlife Department accomplishes many projects that would be difficult or impossible otherwise.

Sportsmen's clubs, service groups, even interested individuals often become involved in a supportive role, providing money, muscle, equipment, time or sometimes simply verbal support for projects that benefit fish and wildlife or their habitat all over the state.

One good case in point involved several of the state's rapidly growing bass and panfish clubs and a private equipment company this summer. They joined forces providing equipment and money to help avert what might have been a near total loss of fish at the Department's St. Louis warm-water fishing center still under development.

The St. Louis complex will eventually provide an area close to the state's densest population center where families, children, elderly people, as well as warm-water fishing enthusiasts can go to fish for the spiny rays — bass, bluegills, crappies, catfish, and others.

It is located just west of Interstate 5 a few miles north of the Woodburn exit. It consists of seven completed earthen ponds which have been specially designed and constructed for the bank fisherman. The ponds all have many arms and bays, providing a tremendous amount of shoreline area. They were laid out so they could be fished completely from the shoreline. No boats will be necessary and probably none will be permitted.

The ponds were completed two years ago. They were built to the Department's specifications by the State Highway Division which needed earth fill for improvements along the I-5 freeway. Warm-water game fish in various combinations of species were stocked in the ponds after they filled with rain water and began to clear. It was hoped the fish would

spawn naturally and that the ponds could be opened to public fishing by next year.

Mother Nature threw a wrench in the plans, however, and the drought this summer caused most of the ponds to drop to dangerously low levels. The Fish and Wildlife Department had installed a well on the St. Louis area for just such a contingency but a pump had not yet been purchased.

As water levels continued to drop through the dry summer, Larry Bisbee, who heads the Department's warm-water fish program, began to be concerned for the welfare of the newly stocked fish. Water volumes shrank and water temperatures began to climb. Wind caused the lowered water levels to lap at raw soil shorelines and the water soon became thick with suspended mud.

Bisbee seined some of the fish, removing them to temporary quarters until conditions improved at St. Louis. But it was a difficult and impractical job to seine them all. There was simply no place to put them.

Enter the bass and panfish clubs and the Schneider Equipment Company of St. Paul. The Schneider Company loaned the Department free use of a large turbine pump and diesel motor. The fishing clubs donated more than \$500 to pay for the fuel to run the pump and cool, fresh water was pumped into five of the ponds for two weeks in late July and early August. In all, 53 acre-feet of water was put into the ponds and most of the fish were carried through the worst of the summer.

The clubs involved included the Emerald Bass Club in Eugene, Southern Oregon Bass Club from Grants Pass, Umpqua Valley Bassmasters of Roseburg, the Oregon Hawghunters at Oregon City, and the Oregon Bass and Panfish Club of Portland.

Bisbee says there was virtually no growth in the fish this summer, though, because of the poor environmental conditions, lack of food, and overcrowding in the reduced volumes of water. Conditions are improved

now, however, and it is hoped that the complex can be opened for use by the fishing public, perhaps as early as 1979.

The young fish need time to spawn and establish themselves in the ponds and there is still more work to be done on the St. Louis area. An asphalt parking area, also constructed as part of freeway construction, is completed but restroom facilities have not yet been built.

In projects accomplished largely by volunteers, a lot of fish and wildlife (not to mention hunters and fishermen) have benefited over the years. Planting and fencing stream-side cover, installing spawning areas, correcting or creating fish passage at barriers in streams, creation of "structure" for fish cover, marking and tagging fish, winter feeding to help starving deer and elk, countryside cleanup, working with landowners to achieve public access for fishing and hunting ... These are only a few of the projects that have been quietly accomplished over the years. □

Tillamook Violators Whacked

Lt. Ralph Loomis of the Game Division of the Oregon State Police sent along information on a recent ruling of Judge Marjorie Christensen of Tillamook County.

Two young men killed three elk with a .22 rifle during the Wilson archery hunt. Upon plea of guilty, she sentenced the one that did the shooting — \$1,005 fine which must be paid; 90 days in jail, suspended provided he is not involved in a game law violation during his *three year probation*; hunting and angling licenses suspended for 18 months; rifle confiscated.

The other young man entered a plea of guilty to aiding in a game law violation and was sentenced to pay a fine of \$405; 90 days in jail, suspended provided he is not involved in a game law violation during his *three year probation*; hunting and angling licenses suspended for 18 months.

A tip of the hat to Judge Christensen. □



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