

OREGON WILDLIFE

JUNE 1977

OREGON WILDLIFE

JUNE 1977

Volume 32 No. 6

OREGON FISH AND WILDLIFE COMMISSION
Jack Steiwer, Chairman Fossil
Frank Pozzi, Vice Chairman Portland
Mrs. Allen Bateman Klamath Falls
John Boyer Bellfountain
Allan Kelly Portland
Walter Lofgren Portland
Herbert Lundy Lake Oswego

JOHN R. DONALDSON, Director

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:
Oregon Department of Fish & Wildlife
P.O. Box 3503
1634 S.W. Alder
Portland, Or. 97208

The Cover

Warm-water game fish. They can be a nuisance or fine angling sport. See feature article for how to stock small ponds.

HUNTER EDUCATION PROGRAM

INSTRUCTORS APPROVED

Month of April 25

Total Active 1,480

STUDENTS TRAINED

Month of April 439

Total to Date 241,069

HUNTING CASUALTIES REPORTED

IN 1977

Fatal 0

Nonfatal 2

Page 2

A TIME FOR CARE

With the coming of June and the end of the school year in most areas, the vacation time truly begins for the year. Usually about halfway through the summer, the fire season is declared and various restrictions are put into effect. Not so this year. In some areas the fire season virtually continued right through the winter from last fall. Though northwestern Oregon has been having some spring rains, much of the rest of the state remains dry and continues to get drier.

A few weeks ago we met with a group of fire control officers from the various land management agencies. They were mapping strategies to cope with the extreme situation we are going into this year. All of them are extremely concerned that the situation will greatly worsen when the vacation season gets into full swing.

One officer mentioned something we had never thought of as a cause of fires. He commented that they could usually tell when the angling season got under way in the drier areas because of the number of streamside fires that take place. He emphasizes these were not major fires, but smoking, smoldering ones that could turn bad if the conditions were correct. They are started when anglers fishing along the streams grind out cigarettes on dry, downed logs along the stream. Taking time to put out a cigarette rather than just tossing it away is indeed good practice but mineral soil or a wet rock are better snuffing sites than combustible logs. Such minor things as this could develop into major fires this year because of the condition of the outdoors in many areas.

Forestry officials have long feared the recreationists in the woods and yet most of them will admit that a great many of the major fires of the past have been started by other than recreationists. However, when closures are considered, it is felt that this group has the least to lose if kept out of the forests.

In some instances, recreationists have been important in helping to catch fires before they spread or in notifying the authorities so fire crews can get to the blaze while it is still small.

This year, more so than most, is a time for care. Valuable forest and range lands can be lost for many years through fires. The reputation of outdoor users could be greatly enhanced this year or could suffer considerable harm, depending largely on how much care is exercised with the use of fire. The senses of these thousands of individuals can be a valuable addition to those of the professional fire lookouts but the assistance will be largely negated if a bunch of extra fires are started because of carelessness.

Preventing fires takes a little common sense and may take a little time but in the long run it pays dividends. This year the penalties of carelessness are potentially much greater than almost any year within memory. It is indeed a time for *great* care! □

RES

COMPACT TO MEET

The Columbia River Compact will meet at 9 a.m. on June 24 to consider the status of the runs of summer chinook, sockeye, and shad in the Columbia River. The meeting will be held at the Western Forestry Center west of Portland in the Zoo-OMSI area.

JUNE 1977

FARM PONDS:

QUESTIONS, PROBLEMS AND SOLUTIONS

by Larry Bisbee
Warm-water Fish Biologist,
O.D.F.W.

The Oregon countryside is dotted with many farm ponds ranging from $\frac{1}{2}$ acre (.2 ha) to several acres in size. Many of these ponds provide excellent fishing; many more do not. Farm ponds require proper management to maintain healthy fish populations.

The following comments and questions are frequently received by fisheries biologists from Oregon pond owners.

1) My pond is full of small bluegill. That is all we can catch. We used to take a lot of nice bass out of the pond but we never see them anymore.

Don't blame the bluegill for your problem. The numbers of bass taken from your pond by you and your friends in past years were the initial cause of your present problem. The numbers of bass in your pond have been reduced to the point where they can no longer control bluegill reproduction.

Your best solution is to either kill all fish in the pond and restock or remove as many bluegill as possible by angling, seining, and/or shoreline chemical treatment.

2) What are the regulations pertaining to the transporting of fish from one place to another in Oregon?

Fish cannot be legally transported from one water to another without a permit. Application forms for the permit may be secured from the Department of Fish and Wildlife headquarters or regional offices.

3) I have a new pond. What kinds of vegetation should I plant for fish cover?

I would hesitate to introduce too much aquatic vegetation since it will come in naturally soon enough and may even cause problems later on. It would be better to develop some artificial cover to start with, such as brush shelters which may be removed

later on if necessary. Some types of vegetation which can create considerable problems around the shoreline of shallow ponds are cattails, bullrush, and reed canary grass. It is best to keep these types under strict control.

When managing small ponds, it may become necessary to remove all fish life because of improper fish populations or overpopulations. Proper planning can help preclude this.



4) Do my friends need a fishing license to fish in my pond?

If your pond is entirely on private land and wild fish do not have access to the pond and the original stock was purchased from a private hatchery or taken legally by angling and transplanted into the pond, a license would not be required. On the other hand, if wild fish have access to your pond, a license would be required by anyone over 14 years of age.

5) We had some excellent fishing for several years after our pond was initially stocked with largemouth bass. Now the bass are all small. You can't cast into the pond without catching a bass. Most are too small to keep. Why?

The bass are crowded, hungry, and stunted. Bass stocked alone can overpopulate and become stunted if conditions are right. In this case you need a forage fish like bluegill to provide food for the bass. Stock enough adult bluegill in your pond to get them established. Continue removing bass until the fish population becomes balanced and good annual growth occurs for both species.

6) We never catch anything but small crappie from our pond. We had some really good crappie fishing several years ago but now they are all small. Also we seldom catch any bass anymore.

Unless your pond is several acres or larger in size, those crappie don't belong in it. The crappie spawn earlier in the spring than the bass, causing large numbers of young crappie to compete with the small bass for food. The eventual result is a large number of small, stunted crappie and a weak bass population. Kill out all of the fish in the pond and stock with recommended species.

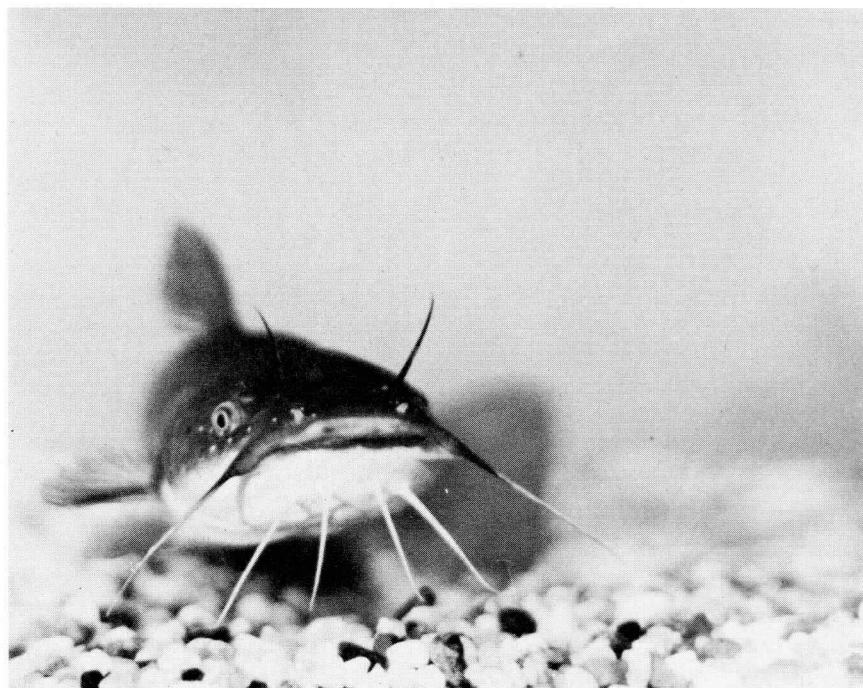
7) Where can I get channel catfish for my pond?

Oregon does not have a commercial source of channel catfish for stocking private ponds. Neither is there a known source of disease-free stock available from private hatcheries in neighboring states that can be certified as such prior to shipment into Oregon. The only source of stock would be wild stock from eastern Oregon waters.



Generally warm-water fish are best in farm ponds and other small bodies of water. With proper stocking ratios and the proper amount of angling, nice bass as well as other species can be produced in many bodies of water.

Bullheads make good eating but can overpopulate a pond easily. Also, their rooting in the bottom tends to keep the water muddy. Author Bisbee makes suggestions about what to stock in a pond and what not to.



8) In the summer we have quite a problem with scum all over the surface of our pond. What can be done about it?

The scum on your pond is a type of algae growth. It can be controlled by applying any of the algaecides which are available on the market.

Contact the Extension Service wildlife specialist at Oregon State University in Corvallis or any of the chemical companies that deal in agricultural chemicals.

9) I have a pond I would like to stock with fish. Will the Department of Fish and Wildlife stock it for me?

Under Oregon law the Department of Fish and Wildlife cannot stock private ponds with public-owned fish unless public access is granted by the owner. In some instances private ponds may be stocked by the Department when a cooperative agreement is signed for special use of a pond by the Department.

10) I have a new pond I would like to stock with warm-water game fish. What would you recommend?

Most warm-water game fish are stocked in a combination of species that includes a predator species and at least one forage species. The most satisfactory combination for small ponds is a combination of largemouth bass (predator) and bluegill (forage) stocked as fingerling at a ratio of one bass per three bluegill. Individual species stocked alone tend to overpopulate and stunt.

11) Is it possible to bring in fish from another state to stock my pond?

All requests for exotic species not now present in Oregon waters must first be approved by the Department of Fish and Wildlife. Certain species such as grass carp, walking catfish, and piranha are prohibited in Oregon by law or Department rules. Prior to the shipment of any warm-water game fish into Oregon, a pond owner must secure certification from the hatchery supplying the stock signifying that the stock has been examined by a recognized pathologist and is free of certain parasites, diseases, and virus. The certificate in turn must be mailed to the Department of Fish and Wildlife along with the request for a permit to transport live fish.

OREGON WILDLIFE

12) I like bullhead catfish to eat. Would they do well in my pond?

Yes, chances are they would do exceptionally well and would soon become overpopulated and stunted if stocked alone. Another disadvantage is that catfish are a bottom feeder and tend to muddy up a pond.

One solution for keeping the bullhead from becoming overpopulated too rapidly is to remove the small schools of catfish soon after they hatch in the spring.

13) I have a new pond stocked with bass, bluegill, and catfish. Will it be necessary to feed them?

It is not practical to feed most warm-water game fish commercial feed. It is expensive. Under normal conditions a pond stocked correctly with the right species should be able to do well on natural food organisms. The bluegill and catfish feed on aquatic insects while the bass will feed on the bluegill and catfish.

14) My pond gets terribly weedy in summer. What can I do about it?

There are a number of aquatic herbicides available, some of which will not kill fish when applied correctly. Contact the Extension Service wildlife specialist at Oregon State University in Corvallis or one of the chemical companies that handle agricultural herbicides. It is important to keep a pond relatively weed free not only to make fishing and boating easier but also to keep the fish populations in healthy condition. Excessive aquatic vegetation in a pond provides excessive escape cover for small forage fish. This may result in overpopulation and eventual stunting.

15) Where can I get fish to stock my pond?

A list of private hatcheries selling trout is available from the Department of Fish and Wildlife offices. Only three sources produce largemouth bass to pond owners. The only source of other species of warm-water game fish is wild stock taken by angling and transplanted to a pond.

16) If I catch bullheads or other warm-water fish in Oregon waters, do I need a permit to transfer them to my pond?

The answer to your question is found in Oregon Statute 498.222: Transportation or release of fish without a permit prohibited. When-

ever live fish are transported from one body of water to another in Oregon, a permit to do so is required. Application forms for these permits are available from any of the Department of Fish and Wildlife offices.

17) Is it possible or practical to transport warm-water fish very far? If so, how should they be handled?

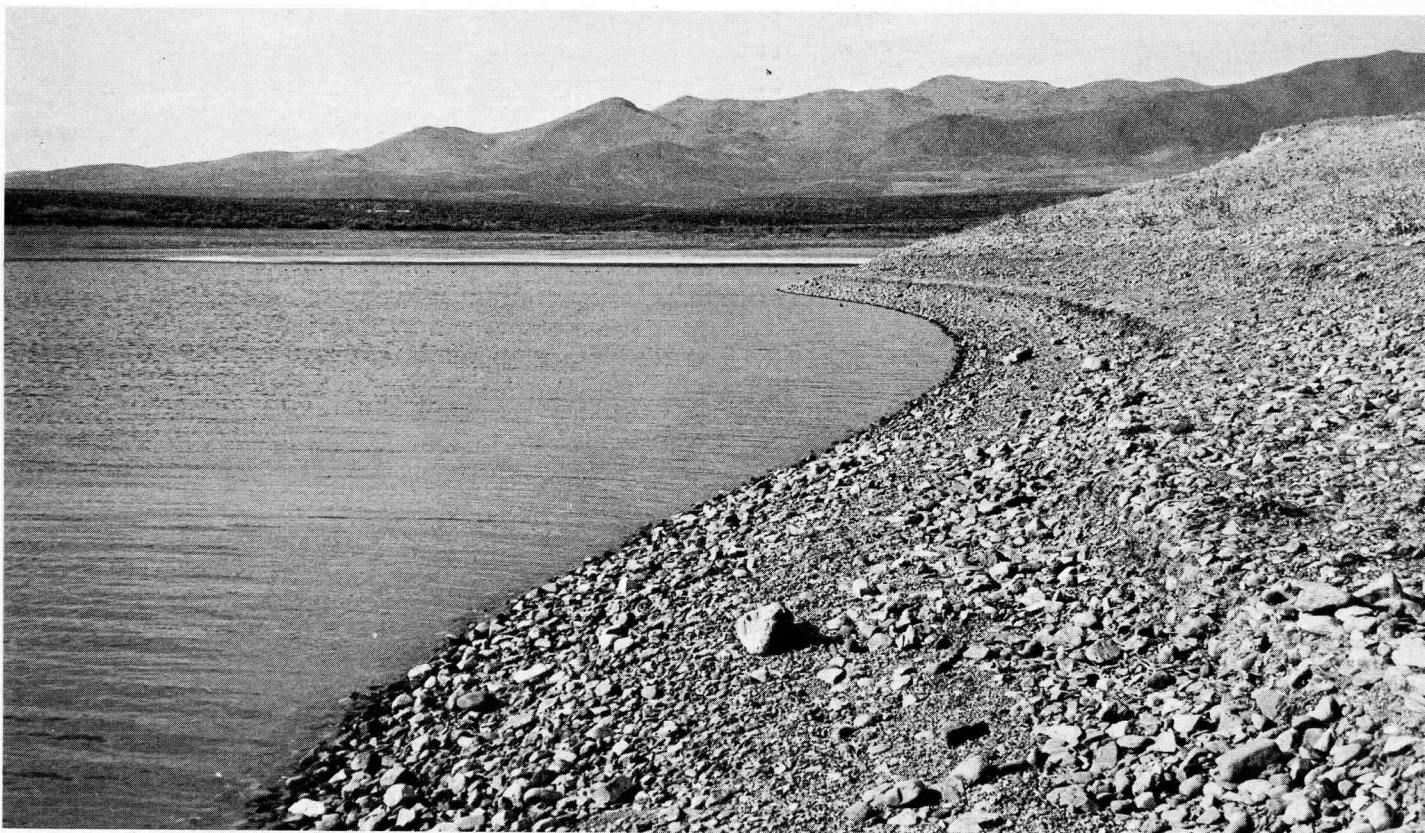
Warm-water fish handle and move very nicely. They should be moved during late fall, winter, or early spring months, if possible, when water and air temperatures are cool. In many instances this is the simplest and easiest method to get small numbers of fish to stock a pond. A 20-gallon (75.7 liter) plastic garbage container filled with 45-55° F (7.2-12.7° C) water should carry a dozen or so adult 6-8 inch (15-20 cm) fish for an hour. Just remember — the larger the fish and the warmer the water, the shorter the time they will survive under these conditions. When releasing the fish in your pond, the water temperature in the container should be within five degrees of the temperature in the pond. Fish of any species handle and survive very poorly during the warmer summer months.

18) How can I tell if my pond will support fish?

The simplest way to determine this is to stock a few fish and watch what happens to them. If equipment is available, midsummer temperatures and dissolved oxygen tests can be run which would give a good indication. As a rule, most ponds with a minimum depth of three feet should hold fish provided aquatic vegetation isn't too abundant. In colder climates the winter months would be the critical period.

19) Should I plant trout or warm-water game fish in my pond?

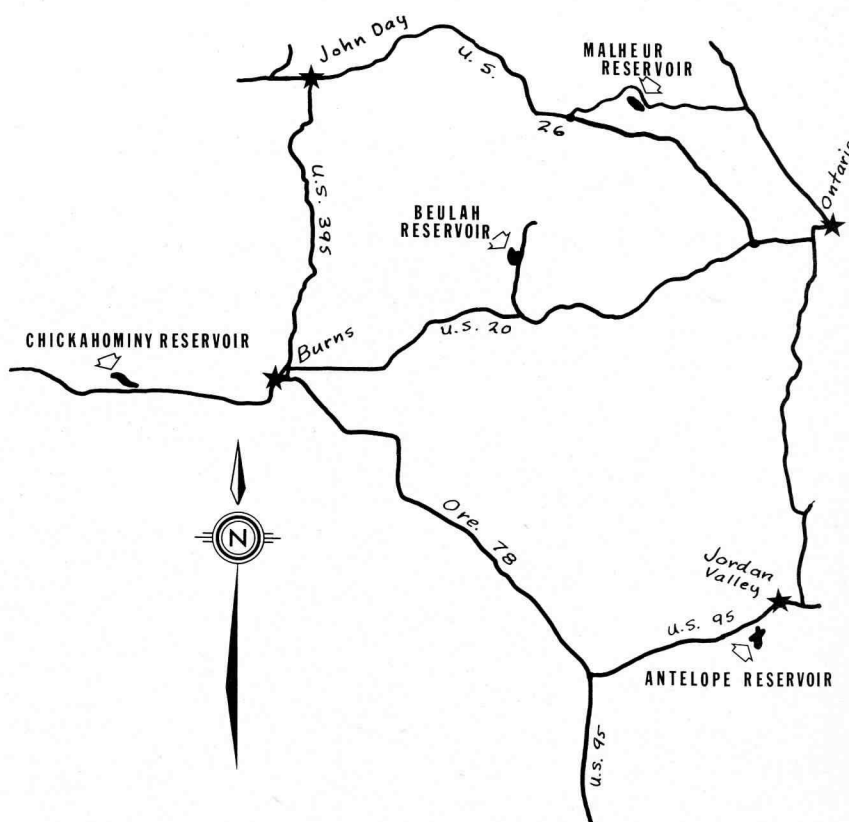
The first thing to consider is personal preference. If trout are preferred, then additional information on the pond should be obtained, such as a midsummer water temperature and dissolved oxygen profile. Ponds suitable for trout are generally spring fed and maintain water temperatures under 70° F (21° C). Warm-water game fish will adapt to most any type of pond except those having cold water under 60° F (15° C). □



Malheur Reservoir

Anglers Wanted

Bill Hosford, district fishery biologist at Burns, wants some more fishermen to visit his area to catch rainbow trout going up to 22 inches. Four of his reservoirs are probably going to go dry within the next month and he'd like anglers to take the fish before the water disappears. The map on this page shows the location of the reservoirs. They are Malheur (shown above in late April), Antelope, Chickahominy, and Beulah. All contain good populations of rainbow trout. Camping facilities are limited, drinking water is even more limited, but there is plenty of wide open space around these reservoirs! □



LOW WATERS TO BE TREATED

By Ken Durbin, O.D.F.W.

With all the worry and speculation about the effects the drought will have on Oregon, it is nice to be able to point out one bright spot.

It looks like the summer of 1977 is going to be an excellent one for the chemical treatment of a number of lakes and streams that no longer provide good fishing because they have become overrun with rough fish.

Ralph Swan, who heads the chemical lake and stream rehabilitation program for the Department of Fish and Wildlife, says the low water will permit many lakes and stream sections to be treated at a far lower cost and far more effectively than they could in a normal water year.

Seven reservoirs, two ponds, and one 5-mile section of the Malheur River are scheduled for chemical treatment this summer. There is a possibility that federal funds may become available through the Fish and Wildlife Service or that adjustments may be possible in the Department of Fish and Wildlife budget which would permit an additional six lakes and reservoirs to be treated.

The key to all these projects is a chemical called rotenone. It is a natural substance derived from the roots of the South American derris or cubé (pronounced Q-BAY) plant.

No one knows who discovered it and its use dates back thousands of years as a method employed by native South Americans for gathering fish for food. They simply crushed the roots between rocks in a stream or lake, permitting the juices to dissipate into the water. The chemical affects fish by paralyzing their gills and death comes rapidly through suffocation. But the chemical is nontoxic to people, other mammals, or birds and does not alter the edibility of the fish.

Even now, cubé is not cultivated and the roots are harvested for sale from the wild by native people, much as forest products like cascara bark are harvested in Oregon. The roots

are shipped to the United States for processing in plants here.

In the U. S. the use of rotenone goes back to the 1920s and in Oregon it has been used successfully since the late 1930s. The rotenone now used here is mixed with a liquid carrier and an emulsifier which helps speed its distribution through the water.

It is applied in concentrations of from 1-1/2 to 3 parts per million, depending on the species of rough fish that are present. Bullhead catfish and carp are the most resistant and require the heaviest concentrations. A 2 ppm concentration is achieved by using about 2/3 gallon of rotenone for each acre of water one foot deep.

Rotenone breaks down and becomes nontoxic in from 10 to 14 days after it is applied, the time varying with the amount of silt in the water, vegetation present, and the chemical makeup of the water itself, and other factors.

In a stream, rotenone can be effectively "shut off" by introducing potassium permanganate into the water at a selected point where the treatment is to be stopped. It is used in the same concentration as the rotenone and it is an oxidizer which literally burns up the rotenone.

Swan says potassium permanganate, in concentrations normally used, has little effect on aquatic life. It is heavy and settles out rapidly, then gradually breaks down and washes away. Detoxification stations have been set up as close as 1/4 mile upstream from spawning salmon with no apparent effect on the fish or their spawning success, he added.

Potassium permanganate will be used to limit chemical treatment in the Malheur River to a section of stream 5 miles long immediately below Warm Springs Reservoir. Because the reservoir will be almost totally drained this year, a large number of rough fish present in it will be

flushed into the river. That portion of the river was chemically treated in 1973 and now provides an excellent trout fishery.

Reservoirs in eastern Oregon scheduled for treatment include Beulah and Malheur Reservoirs in Malheur County and Murray, Thief Valley, and Higgins Reservoirs in Baker County. West of the Cascades, Hyatt Reservoir near Ashland and Plat I Reservoir east of Sutherlin will be treated. So will two ponds at the Trojan nuclear plant which will be developed as warm-water fisheries after water control structures are installed.

Other waters which will be treated if funds become available include Big Lava and Davis Lakes on the Century Drive loop west of Bend, Lake of the Woods in Klamath County, and Phillips Reservoir near Baker. In western Oregon, Howard Prairie Reservoir southeast of Medford and Cottage Grove Reservoir in the upper Willamette Valley are potential projects.

All of these waters contain large numbers of rough fish such as roach, suckers, shiners, squawfish, and carp, and a few have populations of warm-water game fish like pumpkinseed sunfish and bluegills that are so badly overpopulated they never grow to catchable size.

After these waters are treated they will be restocked with trout, or in some cases a balanced population of warm-water game fish, and should again be providing excellent fishing within two or three years.

The earliest projects will begin about mid-July and all of them must be completed by about mid-October, or even earlier at higher elevations. Rotenone is temperature-sensitive and works best in water above 50 degrees Fahrenheit. All plans will be adjusted if the state should happen to get heavy rain that would substantially alter expected water volumes.

□

THIS AND THAT

compiled by Ken Durbin

Progressive Missouri

Missouri's Highway Department has joined those of a few other farsighted states in adapting its roadside mowing policies to wildlife's cycles. It plans a single annual mowing after most species have raised their young. Some strips next to undeveloped land will be allowed to grow up to "natural grasses, plants and trees". The half-million acres of roadside provide much of Missouri's remaining nesting cover.

Pennsylvania Game News

*

Earliest Aviators

Birds weren't man's only model for flying machines — insects served as well. But some were more efficient than others. For instance, a mosquito beats its wings three times as fast as a housefly but can only fly one-quarter as fast. The table below lists some common insects, how fast they flap their wings and how far their effort takes them per second.

	Wingbeats Per Second	Meters Per Second
Medium Butterflies	8-12	2-4
Damselflies	16	1-2
Scorpion flies	30	½
Large dragonflies	25-40	7-15
Hawk moths	50-90	5-?
Hoverflies	120	3-4
Bumblebees	130	3
Houseflies	200	2
Honeybees	225	2-3
Mosquitoes	600	under ½
Midges	1,000	under ½

Michigan Natural Resources magazine

*

Guide To Coastal Management Available

WHO'S MINDING THE SHORE?, a citizens' guide to coastal management, is available free from the Natural Resources Defense Council, 15 West 44th Street, New York, New York 10036. The Wildlife Management Institute says it is a very informative booklet.

*

Andrus Supports Fence Changes For Wildlife

Interior Secretary Cecil D. Andrus has issued a statement supporting fence modifications on public land to benefit antelope populations.

In a recent letter to the Wildlife Management Institute, Andrus said, "This is to confirm that I support balanced multiple-use management of lands administered by the Bureau of Land Management and associated wildlife habitat improvement programs. Antelope are very much a part of the national resource lands near Roswell, and we intend to do whatever is necessary to maintain productive habitat for them."

BLM is removing spans of 50 to 200 yards of net wire fence in certain areas to allow pronghorn access. The net wire is being replaced with barbed wire that allows the antelope relatively easy passage.

*

Corps Aids Fish And Wildlife

The Army Corps of Engineers, prompted by a resolution adopted by the International Association of Fish and Wildlife Agencies, has rewritten its regulation pertaining to sharecrop and agricultural agreements, the Wildlife Management Institute reports.

The revised regulation will permit greater latitude to state wildlife agencies for improving habitat on Corps land. It authorizes proceeds derived from the sale of crops and timber to be used for planning and developing wildlife habitat and improving fisheries programs.

*

Klamath Basin May Be Top U.S. Eagle Winter Area

This past winter a coordinated federal and state bald eagle count in northern California and southern Oregon found an estimated 498 bald eagles in the Klamath Basin. This could well be the largest winter population of bald eagles in the continental United States.

The midwinter count was conducted by the U.S. Fish and Wildlife Service, U.S. Forest Service, National Park Service, Oregon Department of Fish and Wildlife, California Department of Fish and Game, Weyerhaeuser Corporation, and the Mt. Shasta Audubon Society. Ground and air surveys were made throughout the basin and the final data analysis revealed the exceptionally high number of eagles.

This information will have an important bearing on all future federal and state land management decisions in the basin. The involved agencies and private groups will continue to coordinate their efforts to protect the birds from human disturbance.

Federal law lists the bald eagle as an endangered species in California south of the 40th parallel (approximately south of Red Bluff). However, under California law the bald eagle is listed as endangered on a statewide basis.

*

AWARDS WON



Roy Rogers and Carol Moon



Les Zumwalt

Two Department employees were presented awards recently in recognition for their service. Carol Moon, license clerk and receptionist for some 23 years, was recognized as conservation officer of the year in Oregon by the Shikar-Safari Club International. Carol is known by many Oregonians because of her pleasant demeanor while issuing licenses and answering questions at Department head-

quarters at the front desk.

In a ceremony in Seattle Carol was presented an attractive tray with the Club emblem on it and a framed certificate documenting the award. Presentation of the award was made by ever popular cowboy star Roy Rogers.

At the annual meeting of the Oregon Division of the Izaak Walton League, Les Zumwalt, assistant

director for operations, was presented the League's Golden Beaver Award for Government Service. Les has held a variety of positions with the Department since his graduation from Oregon State College in 1939. He was assistant director of the Wildlife Commission prior to merger and now directs the operations of a major portion of the Department. □



Berk Moss, a reader from Beaverton, sent this picture in response to a This and That item. This is a frog crossing near Zurich, Switzerland. Crossing hours are 1900 to 0700 hours.

OREGON WILDLIFE



The move has happened! Headquarters of the Department is now located at 506 SW Mill Street in Portland. Though not all unpacking has been accomplished, most operations are nearing normal again. This location is just below the Portland State University campus in downtown Portland.

1976 GAME BIRD SEASONS

by Chester E. Kebbe
Staff Biologist,
Small Game Management

Upland game bird hunters enjoyed the most successful hunting seasons since 1970 while waterfowl hunters also experienced another good year. The take of ducks and geese was only slightly below the high harvest of 1975. These findings were confirmed by the annual hunter questionnaire which randomly sampled Oregon's 377,900 licensed hunters. Results of the survey indicate that 89,400 upland bird hunters spent 706,400 days afield and bagged 900,100 game birds of 10 species, a substantial increase over the success of the previous year.

Even though waterfowl hunting success was slightly below that of 1975, hunters still enjoyed the second best season since 1955. Sixty thousand waterfowl hunters spent 558,600 days afield and bagged 797,300 ducks, geese, coots, and snipe.

An accompanying table presents the harvest and hunting pressure by county on the major species of game birds.

Upland Game

Pheasant hunting success and hunter interest show a direct correlation with the success of the spring nesting season and the availability of cocks in the fall population. In 1976 the number of pheasants harvested was up substantially over the previous year and was the highest since 1972. This may be an indication that the sharp and steady decline in populations which occurred between 1958 and 1972 has been reversed. The number of pheasant hunters was the lowest on record but the harvest increased from 175,000 in 1975 to 189,000 last season. Malheur and Umatilla Counties held the largest populations and provided 46 percent of the harvest.

Valley quail experienced a good nesting season and as a result coveys were larger and more numerous than in 1975. Because of this increase, a longer season and larger bag limits were authorized. Hunter participation was slightly greater than in 1975 while the harvest rose from 148,300 to 209,000.

Chukar partridge production was low in southeastern Oregon but was greater than in 1975 on most other eastern Oregon ranges. Hunters had good success in the most productive areas and bagged 139,600 birds compared with 119,500 during the shortened season in 1975.

A lower population of blue and ruffed grouse throughout the state resulted in hunting pressure comparable to last season but a decrease in the grouse harvest from 91,300 to 80,900. The best success occurred in the Blue and Wallowa Mountains and the mountains of western Oregon.

Cool weather in late August triggered an early migration of doves but band-tailed pigeons remained in western Oregon in small numbers through most of September. The harvest of doves declined from 202,000 in 1975 to 180,000 and the pigeon harvest decreased from 63,700 to 60,300.

Waterfowl

The forecast of a small decrease in the fall flight of ducks from Canada was very apparent in Oregon. State populations during the fall and winter months were approximately 10 percent below the 1975 flights.

An extremely dry fall and winter resulted in a sharp decrease in waterfowl habitat and forced the birds to concentrate wherever water was to be found. Hunters near these areas experienced exceptional hunting while those near drier sites found very few birds. Sixty thousand hunters bagged 634,200 ducks, down significantly from the 766,500 taken in 1975.

Goose production was high, especially on Arctic nesting species, and resulted in good flights of snow and Canada geese into the state. Hunters enjoyed fair hunting in spite of balmy weather and poor hunting conditions and bagged 70,900 geese compared with 86,500 in 1975. □

Canada Geese



1976 GAME AND WILDLIFE HARVEST

Counties By Region	Pheasants		Mt. & Valley Quail		Chukar Partridge		Blue & Ruffed Grouse		Mourning Dove		Band-tailed Pigeon		Waterfowl		Goose Harvest
	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	
Benton	1,956	2,168	592	1,506	42	45	490	816	744	8,287	237	1,184	2,802	9,751	2,098
Clackamas	2,101	3,724	1,409	5,267			1,583	3,558	703	8,078	517	2,439	1,400	6,452	171
Clatsop	164	204	114	123			874	2,631	0	0	655	2,689	2,582	34,417	529
Columbia	531	685	327	604			1,321	4,581	74	1,142	396	682	3,818	53,204	2,595
Lane	2,938	5,026	3,216	13,811	271	327	4,694	15,695	1,262	7,657	1,625	7,971	5,327	34,037	887
Lincoln	0	0	164	613			1,022	2,004	0	0	928	5,144	1,095	10,188	106
Linn	1,740	3,064	1,238	7,291			1,700	3,792	1,042	9,702	453	1,012	2,990	13,011	650
Marion	4,386	8,208	2,052	8,825			854	1,877	1,440	12,629	466	875	3,317	21,774	3,952
Multnomah	1,140	2,771	204	1,227			114	196	368	1,626	155	425	4,608	49,780	3,692
Polk	1,431	1,743	736	1,775			392	759	458	1,905	335	735	3,284	13,083	9,067
Tillamook	41	41	82				1,046	3,946	82	695	620	3,004	1,920	17,313	578
Washington	3,133	5,758	1,332	4,168			645	2,057	891	4,811	417	1,112	2,050	17,836	553
Yamhill	1,669	3,421	614	2,186			397	1,396	457	7,779	139	874	1,643	9,997	996
NORTHWEST		36,813		47,478		372		43,308		64,311		28,146		290,843	25,874
Coos	123	286	784	4,757			800	1,919	33	196		10,754	1,614	18,910	65
Curry	41	1,840	253	2,263			278	384	0	0		3,013	179	854	0
Douglas	673	2,191	2,001	14,205			2,607	6,028	523	4,858		3,584	1,773	14,726	130
Jackson	3,193	16,716	2,107	15,043	99	165	1,319	2,984	1,565	19,915		2,173	1,926	10,874	0
Josephine	359	922	592	2,059			491	882	212	302		1,849	415	2,922	0
SOUTHWEST		21,955		38,327		165		12,197		25,271		21,373		48,286	195
Crook	433	2,192	515	5,542			143	505	139	1,976			895	7,185	708
Deschutes	384	1,012	1,128	6,817			139	441	850	7,176			3,322	20,204	1,172
Hood River	82	245	139	645		0	110	245	106	326	74	65	171	813	464
Jefferson	1,913	4,473	1,059	6,089			74	114	932	10,040			785	2,292	163
Klamath	3,417	10,390	1,217	6,513			678	1,120	1,013	8,969	41	82	11,751	121,991	14,906
Sherman	1,242	4,610	654	4,194			0	0	188	2,740			1,224	2,627	2,424
Wasco	2,131	4,027	1,455	5,859			371	2,421	1,021	11,660	180	384	821	3,284	65
CENTRAL		26,949		35,659		16,451		4,846		42,887		531		158,396	19,902
Baker	1,952	6,789	907	5,293			890	2,148	147	532			976	6,961	676
Gilliam	737	1,074	352	2,478			0	0	65	783			464	1,237	1,228
Grant	412	714	564	4,136			792	3,267	114	1,497			659	2,066	98
Morrow	2,304	9,554	1,013	5,832			180	278	262	3,394			1,118	7,743	5,030
Umatilla	7,499	32,428	2,518	15,117			1,295	3,556	989	19,959			3,705	38,258	2,953
Union	1,543	3,747	466	2,115			33	3,142	114	1,194			947	7,618	98
Walla Walla	478	2,487	212	1,029			1,551	6,539	41	286			301	3,310	33
Wheeler	425	947	459	2,114			74	41	155	2,805			342	488	505
NORTHEAST		57,740		38,114		71,883		18,971		30,450				67,681	10,621
Harney	711	1,937	711	6,155			82	82	114	1,332			1,488	8,027	2,667
Lake	1,072	1,675	694	8,309			319	857	449	6,190			6,470	30,924	9,673
Malheur	8,932	55,280	3,426	34,821			41	613	749	9,376			3,045	30,035	1,937
SOUTHEAST		58,892		49,285		50,783		1,552		16,898				68,986	14,277
STATE TOTAL	*56,848	189,184	*33,047	208,863	*23,246	139,654	*26,470	80,874	*16,565	179,817	*10,440	50,050	*60,262	634,192	70,869

*State total omits duplication of hunters hunting in more than one county.

1977 General Big Game Seasons

Consult regulations for details and exceptions and for information on
Antelope, Sheep, and Antlerless Deer and Elk Seasons
requiring separate tags and permits

SEASONS	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Archery	27	25			
Western Oregon Deer					
N.W. Region		1	6		
S.W. Region		1	30		
Eastern Oregon Deer		1	12		
Rocky Mountain Elk			29	13	
Roosevelt Elk				12	20
Bear	1				31

Numbers Indicate First and Last Day of Seasons

For details on **COUGAR** and **BIGHORN SHEEP** see 1977 Regulations.
THERE IS NO OPEN SEASON ON MOUNTAIN GOATS.

FOR GENERAL BIG GAME SEASONS USING RIFLE OR BOWHUNTING EQUIPMENT SEE
"GENERAL GAME MAMMAL REGULATIONS" PUBLISHED SEPARATELY.

1977 DRAWING CALENDAR			
BIG GAME SPECIES	Application Period Opening Date *	Application Deadline Dates	Drawing Date
ANTELOPE	JUNE 10	JULY 9	JULY 20
COUGAR, BIGHORN SHEEP, ANTLERLESS ELK, ANTLERLESS DEER	JUNE 10	JULY 19	AUGUST 19
* PRINTED REGULATIONS FOR ALL CONTROLLED HUNT DRAWINGS WILL BE AVAILABLE AT LICENSE AGENTS BY JUNE 10			

Applications will be accepted at the Headquarters Office of the Department of Fish & Wildlife,
506 S.W. Mill St., P.O. Box 3503 Portland, Oregon until 5:00 p.m. of the deadline date or
postmarked no later than the deadline date.



1634 S. W. ALDER STREET
P. O. BOX 3503
PORTLAND, OREGON 97208