

OREGON WILDLIFE

July - August 1984



OREGON WILDLIFE

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Ron E. Shay, Editor

The Cover

Biologist Mark Henjum measures one of the brook trout taken in an overnight net set in one of Oregon's high lakes. For more on the high lakes survey, see page 6. *Photo by Ken Durbin.*

Hunter Education Program

INSTRUCTORS APPROVED

Months of April/May 26

Total Active 1,812

STUDENTS TRAINED

Months of April/May 640

Total to Date 311,489

HUNTING CASUALTIES

(Reported in 1984)

Fatal 0

Non-Fatal 3

Why Not Charge?

Since we announced bi-monthly publication of OREGON WILDLIFE we have been asked by a number of folks why we didn't charge for the magazine. This idea has been discussed a number of times. But before putting forth our rationale for not charging, a few facts are in order. We are not the last of the free state fish and wildlife magazines. We know of at least two others — there may be more. There are only a couple of the state magazines that accept advertising, and they are published by agencies which incorporate fish, game, and parks, giving a broader readership.

Many, if not most of the magazines that charge, are still subsidized by the agencies publishing them. A past survey indicated that very few of them can survive on subscriber fees alone. We would suspect that in many cases those subsidies probably equal our printing budget. The magazines are considered prime communication pieces for the departments. In some cases they are also used as promotional devices.

Here in Oregon, we have stayed away from promoting the consumptive use of the resources. Occasionally we offer a piece on some underutilized species to remove the pressure off some of the heavier used ones. But as you will have noted, we leave the where to and how to catch or kill to the commercial publications. We feel our job is to promote sound management and an understanding of the needs of the fish and wildlife resource.

We have kept our publication simple to keep costs down, but hope it is attractive enough to stimulate reading.

But why not charge? Handling paid subscriptions is costly. It requires hiring clerks for the purpose or hiring a subscription agency. We currently use a mailing firm, but there is no handling of funds involved. We do not have to send out renewal notices and constantly try to get subscribers. (Commercial magazines calculate it takes an average of five renewal notices to maintain their subscribers.) And, we are really not fancy enough to effectively compete for the average reader's magazine dollar.

The bottom line, though, is perhaps philosophical. We feel the magazine is a sound investment in the future of fish and wildlife. We are trying to encourage Oregonians to appreciate and take an interest in this precious resource. Youngsters have an opportunity to read OREGON WILDLIFE since school libraries are on the mailing list.

Public information and education is an essential part of every successful fish and wildlife management program. This means communication not only with the various user groups, such as hunters, anglers and commercial fishermen, but also with the ever increasing numbers of nonusers, who in recent years have become interested in the resource. Without public understanding of resource problems and agency programs, it is difficult to properly manage the resource for today and the future. We feel a free OREGON WILDLIFE is a wise use of funds because of this. □

R.E.S.

July-August Commission Meetings

July 13 8:00 a.m. *Furbearer, Band-tailed Pigeon and Mourning Dove regulations.*

1:00 p.m. *Review of proposed procedures for selection of artwork and prints for 1985 waterfowl stamp.*

August 16 1:00 p.m. *Columbia River Compact — Fall management hearing and Young's Bay.*

August 24 8:00 a.m. *1984 Waterfowl and Upland Bird regulations. Review of Crab regulations.*

Review of Nongame Management Plan.

Adoption of Rules for selection of waterfowl stamp.

All meetings will be held at Fish and Wildlife Department headquarters, 506 S.W. Mill in Portland. □



Hunting chukars in the high country.

1983 Upland Bird Harvest Up Slightly

By
Ken Durbin
Staff Game Bird Biologist

Recently completed harvest surveys revealed that upland bird hunters saw some ups and some downs in 1983. All totaled, though, the upland harvest in Oregon rose three percent over the previous year.

Harvest levels were up for pheasants, valley quail, ruffed grouse and band-tailed pigeons, but fell for mountain quail, partridge, blue grouse and mourning doves.

Some 96,004 upland game bird hunters took nearly 1,012,000 birds in 1983. This compares with 981,305 birds taken by 96,406 hunters the previous year. For the past two years hunters have averaged between seven and eight days in

the field during the seasons. In 1983, a total of 725,786 hunter days was reported.

A mild winter in 1982-83 allowed a good carryover of adult ring-necked pheasants, and despite a cool, wet and generally unfavorable nesting season, good numbers of pheasants were available in the state's most popular hunting areas. This Chinese exotic remains Oregon's most popular game bird. More than 64,000 pheasant hunters reported a harvest of 251,284 birds, up 18 percent over 1982. Malheur and Umatilla counties provided more than half the state's pheasant harvest.

Some recovery from low popula-

tions was seen in the widely distributed valley quail, and those better populations were reflected in a harvest of 150,373 birds, up 20 percent over 1982. Mountain quail numbers remained relatively low, however, and harvest of this species was only 52,511 birds, 29 percent fewer than in 1982.

Partridge hunting fell far below the expectations of hunters who fondly recall the bumper seasons of 1980 and 1981. Slightly more than 20,000 chukar hunters reported taking about 134,300 of these Asian imports, six percent fewer than in 1982 and 64 percent fewer than in 1981. About 27,300
(continued page 5)

1983 Upland Harvest

County & Region	Hunters	Days Use	Pheasants	Valley Quail	Mountain Quail	Chukar Partridge	Hungarian Partridge	Blue Grouse	Ruffed Grouse	Mourning Dove	Band-Tailed Pigeon
Clackamas	3,620	17,552	366	1,140	500	—	—	988	2,242	2,910	3,701
Clatsop	1,820	9,824	62	104	289	—	—	620	2,625	110	3,254
Columbia	2,750	16,197	1,152	539	269	—	—	1,027	5,345	728	2,063
Multnomah	1,112	4,388	905	788	0	—	—	213	441	4,035	893
Tillamook	3,094	17,148	62	1,120	1,001	—	—	1,046	4,483	66	8,659
Washington	4,307	22,363	2,115	2,779	1,156	—	—	601	3,832	6,857	2,148
COLUMBIA REGION TOTAL	14,013*	87,472	4,662	6,470	3,215	—	—	4,495	18,968	14,706	20,718
Benton	3,074	14,256	4,691	2,592	231	—	—	19	536	13,449	1,808
Lane	8,735	59,225	5,905	5,246	6,448	—	—	6,742	11,093	11,090	9,700
Lincoln	1,699	10,637	21	809	1,136	—	—	775	2,491	331	11,762
Linn	4,348	22,243	4,033	3,069	770	—	—	1,298	1,533	17,396	2,425
Marion	4,712	24,245	6,173	2,343	481	—	—	872	1,284	12,678	2,340
Polk	2,487	13,366	2,880	1,576	2,002	—	—	349	2,318	4,079	3,893
Yamhill	3,337	15,186	3,395	1,928	616	—	—	523	2,702	5,159	2,467
NORTHWEST REGION TOTAL	24,325*	159,158	27,098	17,563	11,684	—	—	10,578	21,957	64,182	34,395
Coos	2,204	18,139	82	2,488	3,734	—	—	1,124	1,548	22	19,974
Curry	890	5,157	0	788	1,405	—	—	988	345	176	7,296
Douglas	4,934	32,051	1,502	6,677	14,745	—	—	3,623	4,599	2,425	8,721
Jackson	5,338	35,343	6,461	6,138	11,703	—	—	2,054	2,050	16,008	1,276
Josephine	1,517	10,050	494	2,903	5,948	—	—	542	479	1,411	3,850
SOUTHWEST REGION TOTAL	13,467*	100,740	8,539	18,994	37,535	—	—	8,331	9,021	20,042	41,117
Crook	1,578	7,077	790	2,924	—	312	83	271	249	2,866	—
Deschutes	2,184	8,837	144	5,060	—	1,061	61	174	364	13,471	—
Hood River	850	3,397	62	124	77	0	0	155	1,399	375	21
Jefferson	2,953	14,984	2,609	7,112	—	3,496	893	155	19	19,756	—
Klamath	4,408	26,268	9,212	6,553	—	87	0	682	544	6,747	—
Sherman	1,578	6,167	2,469	2,115	—	6,808	646	0	0	1,499	—
Wasco	5,985	23,800	10,329	9,580	—	17,587	2,181	349	345	10,826	277
CENTRAL REGION TOTAL	17,450*	90,530	25,615	33,468	77	29,351	3,864	1,786	2,920	55,540	298
Baker	5,359	28,249	9,650	9,601	—	28,420	4,735	2,150	1,245	2,844	—
Gilliam	2,184	7,381	1,728	1,970	—	9,072	888	0	0	948	—
Grant	1,679	6,572	94	4,956	—	1,873	101	1,705	1,744	1,610	—
Morrow	4,368	20,767	14,752	2,302	—	7,782	2,968	949	1,015	375	—
Umatilla	13,369	85,009	70,509	12,996	—	5,847	4,927	2,286	2,682	12,237	—
Union	4,954	32,313	14,444	2,820	—	959	3,725	3,262	4,714	2,866	—
Wallowa	2,730	13,750	4,053	892	—	6,284	3,129	3,855	3,966	176	—
Wheeler	910	3,781	823	1,534	—	5,246	525	136	30	1,764	—
NORTHEAST REGION TOTAL	29,906*	197,822	116,053	37,071	—	65,483	20,998	14,343	15,396	22,820	—
Harney	2,245	8,392	3,333	4,603	—	6,409	263	55	57	1,389	—
Lake	2,407	10,919	3,107	6,553	—	1,914	0	84	92	3,285	—
Malheur	11,384	70,753	62,877	25,651	—	31,148	2,180	47	0	9,547	—
SOUTHEAST REGION TOTAL	15,428*	90,064	69,317	36,807	—	39,471	2,443	186	149	14,221	—
STATE TOTAL	96,004	725,786	251,284	150,373	52,511	134,305	27,305	39,719	68,411	191,511	96,528

*Total eliminates duplication by county, region or zone.

Bird Harvest (con't from page 3)

Hungarian partridge were reported taken in 1983, a two percent drop from the previous season, and a 72 percent decline from 1981 when Oregon's all time record Hungarian partridge harvest was recorded.

Several years of average to below average winter survival and poor spring nesting conditions account for reduced populations of both partridge species, but biolo-

gists expect numbers to climb rapidly again when more favorable weather patterns return.

Ruffed grouse hunters enjoyed a 19 percent increase in harvest last year although blue grouse hunters took nine percent fewer birds than in 1982. An estimated 28,635 shot-gunners took to the field in pursuit of ruffed grouse and reported taking 68,411 birds. Nearly a third of these hunters took advantage of late season opportunities in western Oregon, Hood River and

Wasco counties. The blue grouse harvest last year was an estimated 39,719 birds taken by nearly 22,300 hunters.

Although the mourning dove harvest dropped 11 percent from the previous season, to 191,511 birds, nearly 11,500 bandtail hunters reported taking 96,528 pigeons in 1983, an increase of 17 percent over the previous season.

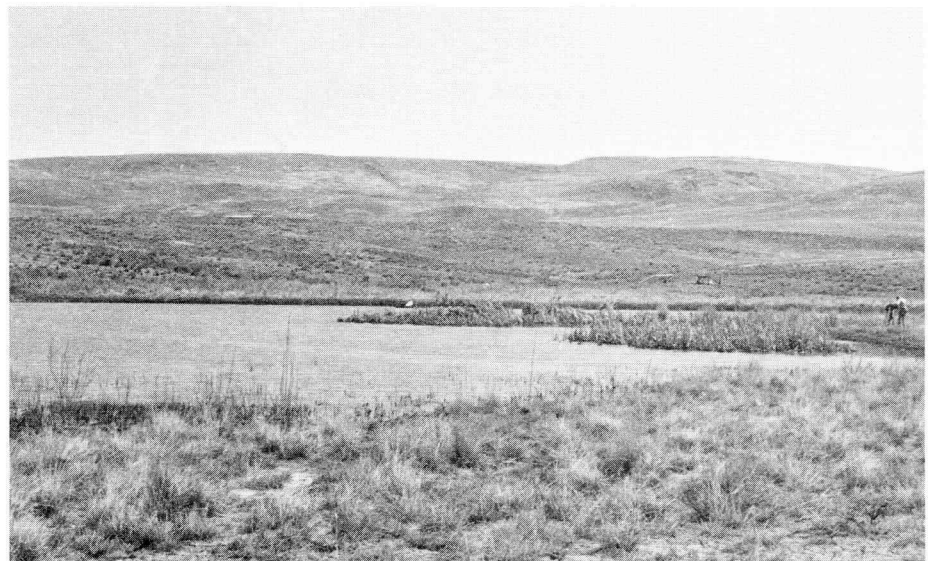
The accompanying table shows a more detailed harvest by region and species.□

Durbin departs . . . but stays

Ken Durbin, managing editor of OREGON WILDLIFE for six years, and with the Information and Education Section since 1973, departed the section as of June 1. Since joining our staff, Ken was in charge of press relations and authored department news releases, a weekly news column and produced a great deal of other material to inform the public. Ken was with the State Forestry Department for five years prior to joining Fish and Wildlife.

We'll miss Ken's talents and knowledge, but fortunately we will still be able to call on him since he is only moving down the hall and around the corner to become chief upland bird and waterfowl biologist in the Wildlife Division. Ken's cross-training in journalism and fish and wildlife made the change of hat a beneficial and easy one for the department. Good luck with the new duties and challenges Ken.□

R.E.S.



Earlier this year, the High Desert Furtakers Club turned out to improve the riparian habitat around some desert water bodies in southeastern Oregon. In cooperation with the U.S. Bureau of Land Management and ODFW, the group according to President Sam Shaver, planted hundreds of various plants to provide habitat for small game and non-

game around the fenced water areas. At the left, two of the members are setting in one of the plants that will provide food and shelter. On the right, one of the reservoirs where the work was done. The group plans to continue the project this fall. The plantings will also eventually benefit fish life by providing shade over the water.

High Lakes Survey

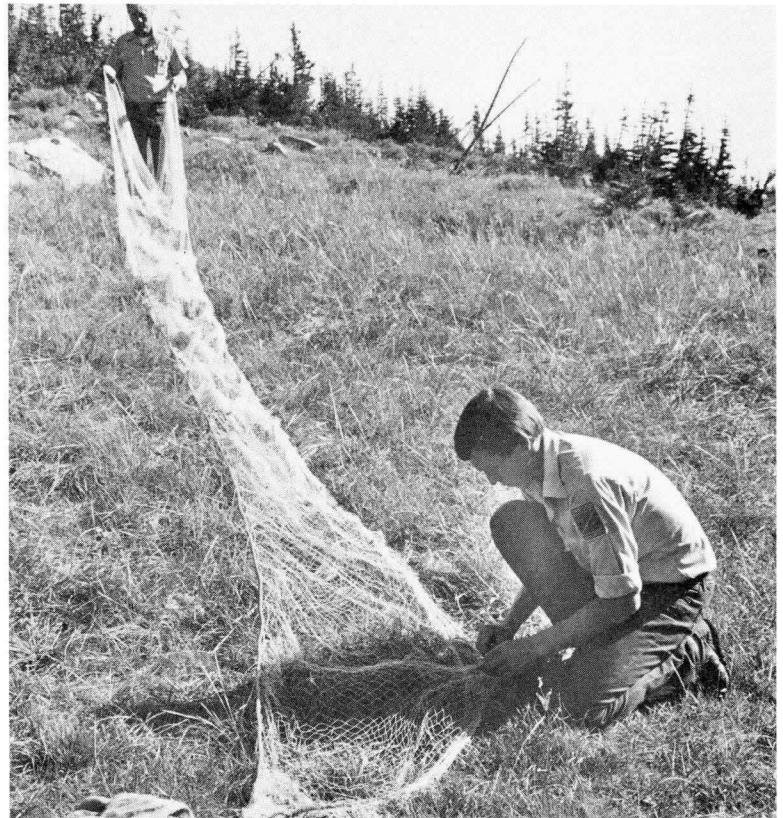
Story by Jim Griggs Photos by Ken Durbin

Most of Oregon's high country lakes are stocked by air. In 1983, 422 were stocked with 40,865 cutthroat, 77,652 rainbow and 285,873 brook trout.

To determine the success of this program it is necessary to check survival and growth of the fish. Catch information from anglers is difficult to obtain so inventory nets become a prime measurement tool.

Such surveys began early in the century on many of the lakes and barring some natural catastrophe, there is good background information on the lakes. Not all of the lakes are surveyed each year and actually the frequency they are checked depends on a variety of things, such as budget, previous results and location.

Rainbow trout grow most rapidly and are typically the easiest species to catch. However, they are more susceptible to parasites in warmer waters and do not do well in marginal waters. Some of the small lakes get quite warm during the summer months. In many of the waters, brook trout are stocked because of their ability to survive in cold waters at high elevations. Though some cutthroat are stocked, a good, high lake cutthroat stock has not been found yet.



Upper Photo: Depending on the location of the lakes to be surveyed and their location, horses may be an important mode of transport for the biologists, their camping needs and the survey equipment.

On the right, lower photo: Mark Henjum with the help of Dick Humphreys removes trout from the 125 foot experimental gill net. The mesh size varies from 1½ inches to 4 inches in five panels. Set perpendicular to the shore overnight, the net takes a cross section sample of the fish in the lake.



To the left.

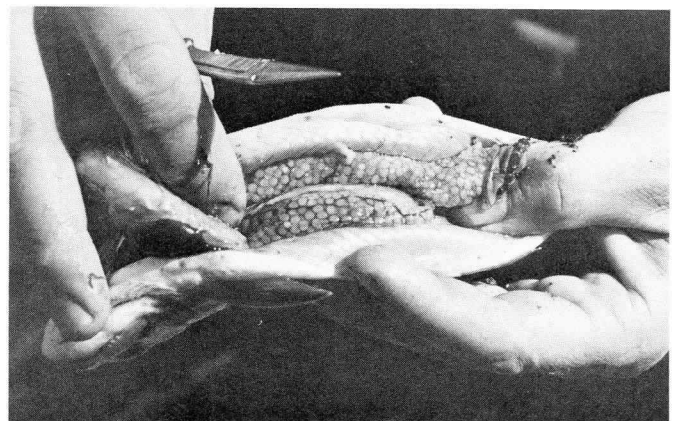
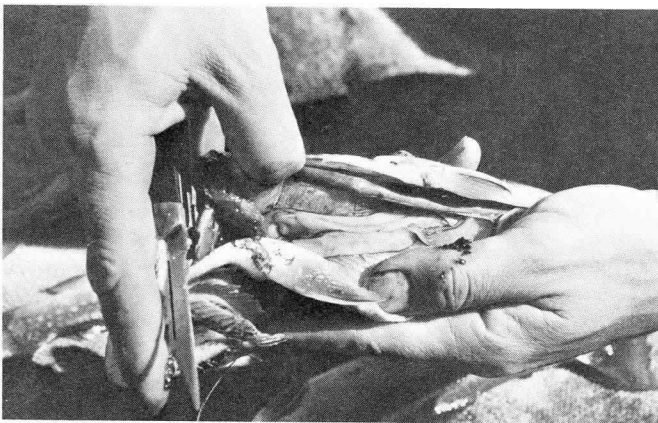
Brook trout taken from a lake during an overnight net set. This shows at least four different age classes of fish. Fish will be examined for length, sex, stage of maturity and parasites.

Angling success on these fish can vary radically with no action at all, followed shortly by fast and furious feeding during a fly hatch.

Below, left: A male brook trout. It is not possible to tell if the fish has spawned previously or is maturing for the first time. Internal parasites are not a significant problem, but all trout are checked.

Below, right: A maturing female brook trout that will spawn for the first time in the fall. The two egg skeins are precisely formed. A fish that has spawned before will retain a few old egg cases.

Knowing the length that the fish matures is important because most of the growth has taken place by that time. This can happen at 4 or 14 inches of length. Small maturing size may mean lack of food in the lake or too many fish.



Winter Feeding

As you regular readers know, parts of eastern Oregon had one of the most severe, prolonged sessions of snow and cold on record. The plight of the big game in the area was well documented and a great many people came to the aid of stressed birds and animals with donations of time and money. As we have stated before, the concern and donations were greatly appreciated.

There were two kinds of feeding that went on. A portion of the elk feeding was part of a regular program to keep wintering herds of these animals off private property. The other feeding was designed to try to pull at least a portion of stressed animals through an abnormal winter.

Department funds for this type of activity were completely used and the donated funds took over to

carry on the project until the weather broke. There has been some suggestion that more funds should be included in the budget specifically for winter feeding of this kind. Such locking up of additional amounts of funds, when in most winters they wouldn't be necessary, does hamper other management programs and also tends to overlook the total problem involved.

In a recent issue, WYOMING WILDLIFE magazine addressed the subject since they went through problems similar to Oregon this past winter but on a broader scale. We are passing along a slightly edited version of the article by Planning Coordinator, Doug Crowe, because we feel it is well presented and the points brought forth are equally applicable in Oregon.□

Editor

Feeding is no substitute for winter range

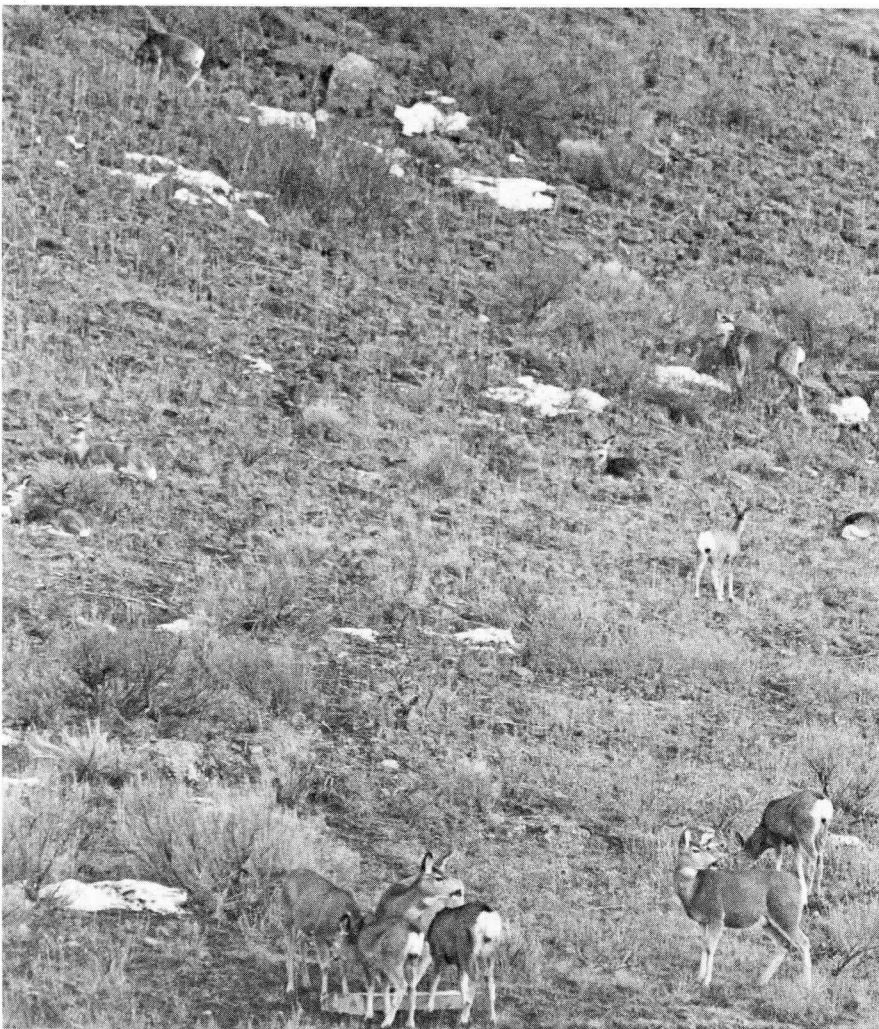
From: Wyoming Wildlife magazine

A lot of folks think wildlife managers are in the business of managing animals. While this is true, it is more accurate to say that wildlife management is the science of managing animal populations. It might seem like nit-picking, but the difference is really quite significant. It's been said, "Nature pays small heed to the individual but loves a population." Wildlife professionals address their responsibilities in much that manner. They know that if suitable areas are maintained in which populations can roam and feed and breed, the individuals that make up these populations are perfectly capable of taking care of themselves.

Wyoming is one of a rapidly dwindling number of places where extensive free-ranging and self-maintaining populations of wild animals exist. Here, there is still room for them to move with the seasons as they go about the business of living. However, modern society continues to press in, and competition for land and water seems to become more intense every day. When wildlife habitats are lost or degraded, some persons feel the impacted animals should be artificially fed, especially during periods of winter stress. Like most issues, this one has both proponents and detractors. One thing is sure, however; the feeding of wild animals is not the panacea it might at first appear to be.

Perhaps the worst aspect of feeding wild animals is that it blurs the relationship between wildlife and habitat. The illusion created is that habitat losses are acceptable because they can be remedied by simply feeding the impacted animals. Yet, when natural habitats are destroyed or inaccessible, available feedground locations may be unsuitable from the perspective of the animals being fed. Often, feeding sites are

(continued next page)



located along roads in the bottom of drainages where snow is deep and temperatures are coldest. Also, the farther a feedground is from cover and native forage, the more stress there is on animals coming in to feed. In emergency situations, feeding sites are subject to disturbances from human activity and mortality from automobiles and pets. Another consideration is that, under natural conditions, big game animals will respond to winter storms by moving to sheltered areas. This allows them to escape heavy snows, cold temperatures and high winds and has the effect of spreading forage use over the entire wintering area. Artificial feeding discourages these movements, often resulting in extensive natural forage use in those parts of the winter range where the animals are being fed and little or no use in others. This can have long-term effects on the natural vegetation.

One factor to consider with respect to feeding is that in any population there will be animals that die during winter. The condition of animals when they reach their winter ranges depends on such things as age, reproductive status and the forage available to them during the summer and fall. For example, females in the process of raising young need a great

deal of energy throughout the summer to maintain themselves and their offspring. Males run off a lot of their fat during the rut, and much of the food taken in by the young is used in growth. On good summer and fall ranges, the animals are able to support these energy demands and still lay on a reserve of fat to be called upon during the winter. Obviously, then, the quality of summer and fall range has a great influence on survival. Those animals entering the winter in good shape are likely to survive and those in poor shape probably will not. It is the third group, those between the two extremes, that might be helped by artificial feeding. But even with this group there is a problem. Artificial feeding alone will not save them in the absence of fat reserves. They simply cannot eat enough to compensate for the energy lost during severe weather. This being the case, feeding, to be effective, should begin before the animals actually need it in order to build up their fat reserves. Unfortunately, the wildlife manager never knows in November what conditions will be like in January.

Another aspect to consider when contemplating artificial feeding is that species behave differently. Elk, for example, can be concentrated and are attracted to artificial feed relatively easily. On the

other hand, antelope are often reluctant to come to feed until they are in a malnourished state. What's more, deer are much more widely scattered than elk.

Even though elk have been fed during the winter with a degree of success, there are some problems too. Artificially fed populations have a lower rate of reproduction than that observed in free-ranging populations. There are probably several contributing factors, but the transmission of disease throughout the herds while they are concentrated on feedgrounds seems to be one of the major causes. It is not known if this same problem would result in artificially fed populations of deer or antelope. It is reasonable to assume, however, that concentrating animals at feed stations will increase the probability of disease transmission, regardless of species.

It is unfortunate the perceived benefits of artificial feeding do not often reflect the reality of the situation. Certainly there are those instances where this activity may help maintain a population but, in most cases, it is an action of the last resort. For the long-term welfare of our wild herds, the ultimate answer is the preservation and/or improvement of natural habitats. If we can provide that for them, they will take care of themselves quite nicely.□

Wetlands Report Available

The Office of Technology Assessment, an analytical arm of the U.S. Congress, has issued a new report titled "Wetlands: Their Use and Regulation." Copies of the publication are available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, for \$8 each.

The report describes the ecological values of wetlands, trends in wetland use, and the effects of federal and state wetland programs. Although the report deals broadly with wetlands and their use, many of its findings relate directly to the Corps of Engineers' 404 permit program, which is the major avenue for federal involvement in regulating wetland uses.□

Tip of the Hat

This month's tip comes from the far southeastern part of the state. Early this year Senior Trooper Stephen and Trooper Hebner of the Oregon State Police contacted a very remote camp at Three Forks in the Owyhee River Drainage. They discovered 25 sage grouse wings which appeared to have been taken over quite a period of time prior to the discovery.

The trapper at the camp denied any knowledge of the wings and was cited into the Justice Court of Judge Harold Jackson in Jordan Valley. After about 25 minutes deliberation, a jury returned a verdict of guilty of illegal possession of sage grouse — closed season.

Judge Jackson sentenced the subject to pay fines and court costs of \$300, a civil penalty to the Department of Fish and Wildlife of \$110 and suspended his hunting and trapping privileges for two years.

A tip of the sportman's hat to Judge Jackson.□

Why Are All The Crabs Dying?

By
C. Dale Snow
Assistant Supervisor Marine Region
Illustrated by
Sharon Torvik

As certain as death and taxes, sometime during the months of May, June, July or August, the question will be raised by people using Oregon's beaches "Why are all of the crabs dying?" This is a perfectly legitimate question if you are not familiar with the biology of the Dungeness crab or for that matter any of our crabs. However, in my 29 years of work along the Oregon coast and a hundred or more reports of mass crab die-offs, only once has a significant mortality been found.

The Dungeness crab must shed its shell in order to grow larger and it is these shed shells that give people the impression that all the crabs are "dying". On several occasions our own field biologists have mistakenly reported crab mortalities the first time they saw these old shed shells.

Two major molt cycles occur along the coast. Starting in April, and peaking in May and June, the female crabs will molt. It is at this time that mating between a hard-shelled male and a newly-molted female takes place. The males shed their shells later in July or August.

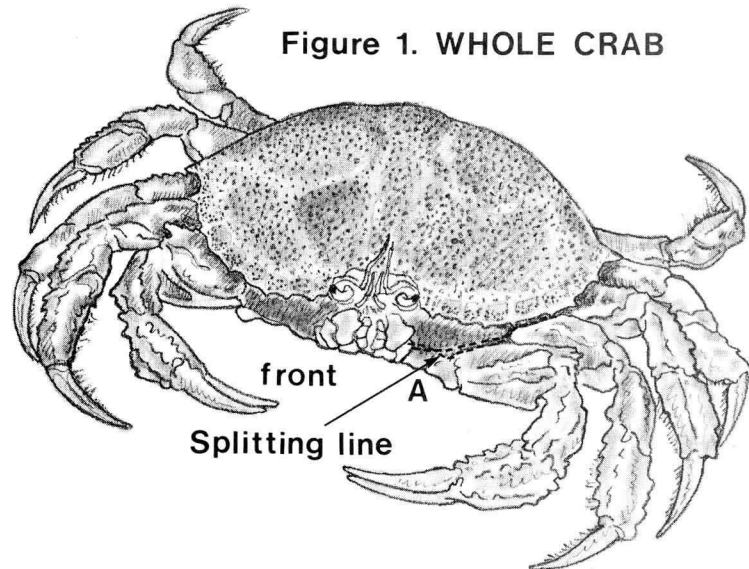
The shell shedding of the Dungeness crab is best described by saying that it appears to be physically impossible, but they still do it. When these animals shed their shells they leave behind remnants of all the hard parts. This includes the external covering of the legs,

gills, eyestalks, body and body lamella. In other words, they leave everything behind but come out completely intact with no ruptures in the newly formed shell. Growth occurs during and shortly after shedding. Once a crab has reached 4-1/2-inches in width they will shed the old shell once or twice each year and increase in size from one to 1-1/3-inches in width.

It is fairly easy to determine the difference between a shed shell and a dead crab. Figure 1, shows what a new shed shell looks like just after shedding. Line "A" shows where the splitting-line opened to allow exit from the old shell. Figure 2, represents the same shell with the "lid" or carapace lifted up and shows the internal hard parts that have been left behind.

The crab, sometime prior to shedding, reabsorbs much of the calcium from the old shell. As a result the old shell is quite delicate and soon breaks up into numerous parts. Figure 3 shows what the back or carapace would look like if the animal had died. Line A-B shows the "shelf" that would have been left behind if this animal had truly been a mortality. This "shelf" on the average would range from 1/2 to 1-1/4 inches wide; however, this width would depend on the size of the animal when alive. Line "C", shown here as a dashed line, is the splitting-

Figure 1. WHOLE CRAB



line and is still intact. If this had been a shed shell, that portion from A to B would be missing.

Figure 4 is the "lid" or carapace from a shed shell or exoskeleton. The "shelf" around the edge ranges from 1/4-3/8 inches at point A-B to 3/4-inch at line "C". Again, this width would depend on animal size; however, none of the shell, in Fig. 3, Line A-B would be present.

Why are all the crabs dying? The answer in most cases is they are not dying. They are only getting rid of their old shell and putting on a new spring/summer wardrobe in what has to be one of nature's most interesting phenomenon. □

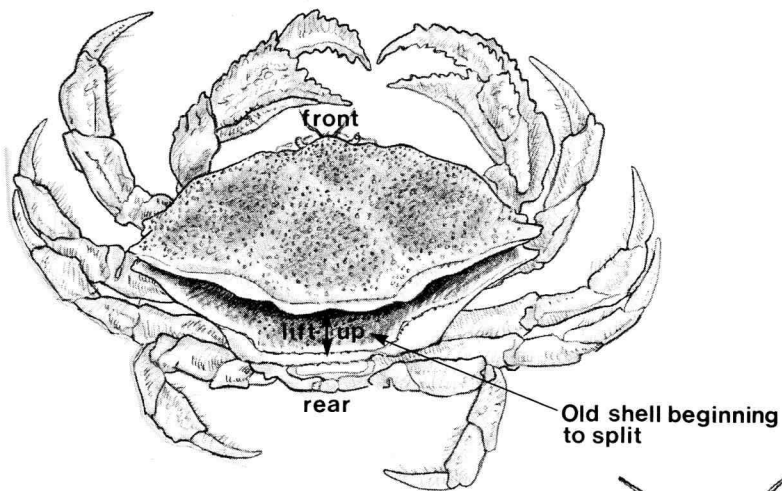


Figure 2. SHELL WITH BACK UP

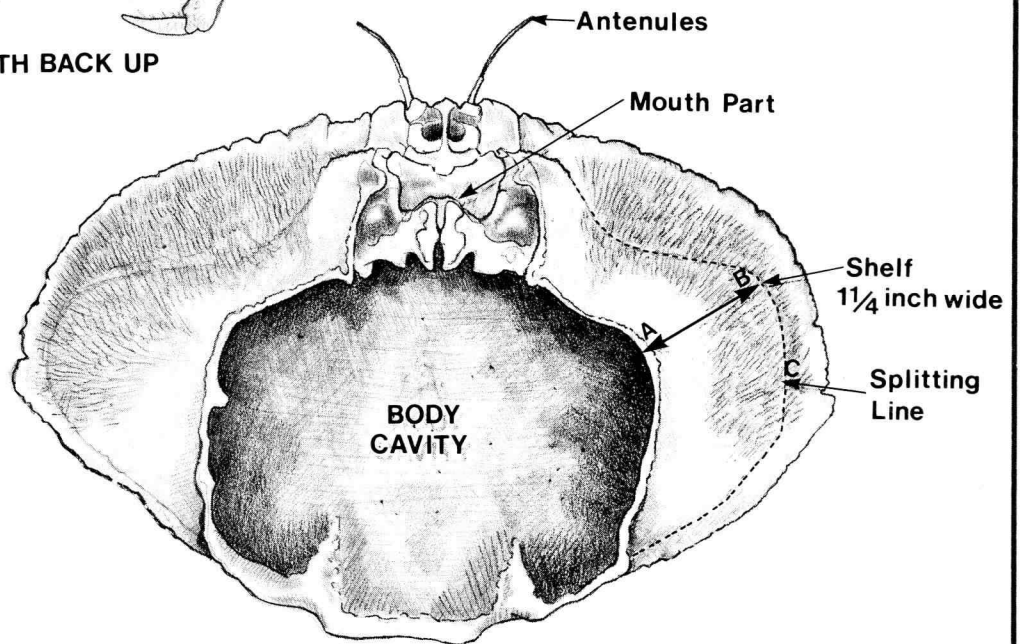


Figure 3. MORTALITY

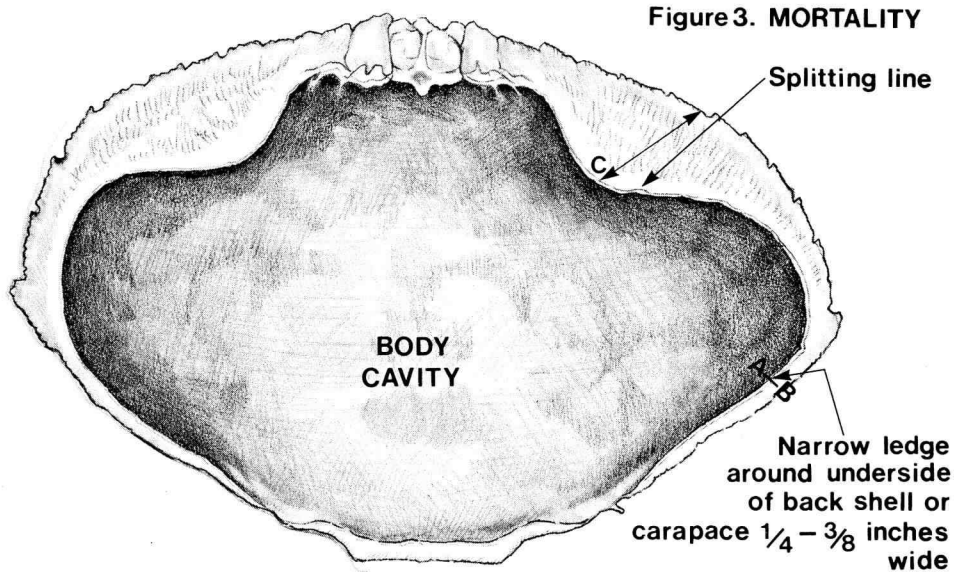


Figure 4. SHED SHELL

The Octopus

One of the fears we all had as children was the picture in our mind's-eye of being seized by the "arm" of a giant octopus as we waded knee-deep in the ocean. This, of course, is a bum rap for the shy and timid octopus, *Octopus dofleini*, a resident of rocky intertidal areas along our coast.

Like its close relative the squid, the octopus is an active predator and scavenger. But it is definitely not interested in consuming wading or swimming humans. Octopuses are much more interested in waiting in rock crevices or caves for passing crustaceans (crab seems to be a favorite food), fish, or other molluscs to happen by. Well-camouflaged by its sophisticated system of color-changing skin cells, the octopus darts out to engulf the prey with its eight arms (tentacles) and kill it with its strong, beak-like jaws at the base of the tentacles.

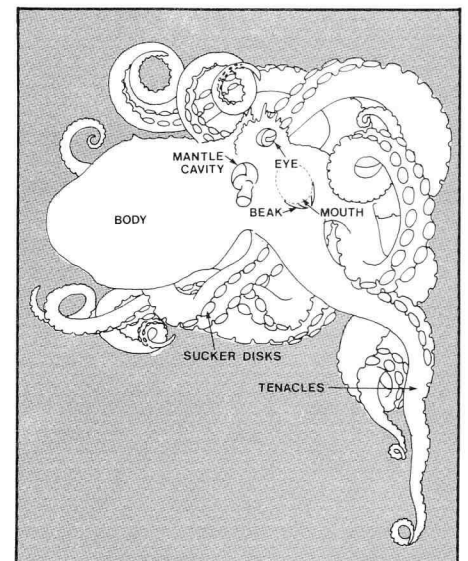
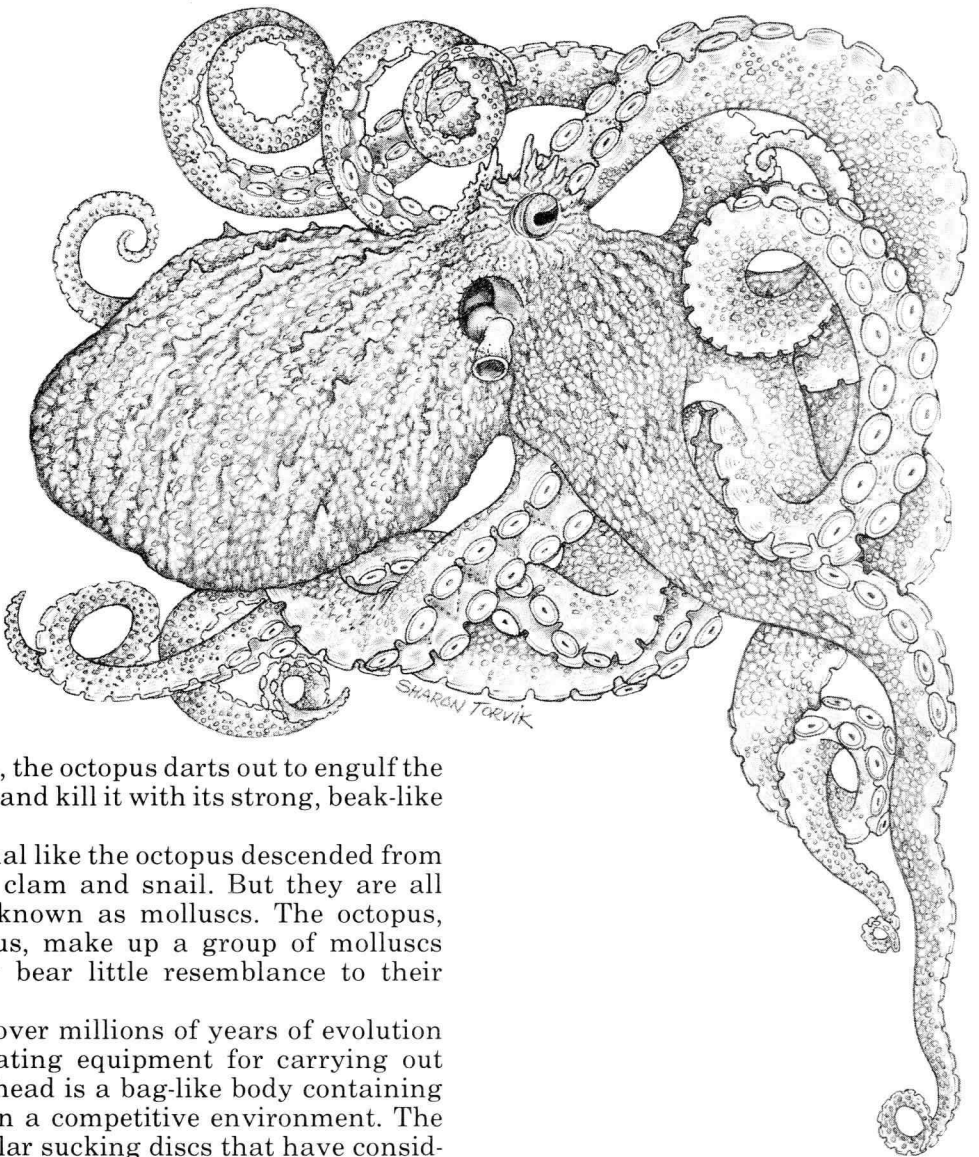
It is hard to believe that an animal like the octopus descended from the same ancestor as the oyster, clam and snail. But they are all members of an enormous group known as molluscs. The octopus, along with the squid and nautilus, make up a group of molluscs known as cephalopods, but they bear little resemblance to their shelled cousins.

Octopuses have lost their shell over millions of years of evolution and have developed some fascinating equipment for carrying out their life. What appears to be the head is a bag-like body containing all the organs needed to survive in a competitive environment. The tentacles are equipped with muscular sucking discs that have considerable strength for capturing and holding prey. The octopus also uses the arms for grasping the sea bed as it glides along the bottom, its normal mode of travel. When alarmed or in pursuit the octopus can swim rapidly by forcing water from its body cavity through an exit funnel, a sort of jet propulsion system similar to that of the squid. This system is also capable of squirting out a "smoke screen" of black or brown ink into the water to confuse an attacker.

By far the most interesting octopus organ to biologists is the remarkable eye, analogous to our vertebrate eye in most every respect. That such an eye could evolve in completely separate organisms is indeed a natural wonder.

Octopus females are good mothers. They lay eggs, attach them to underwater objects and may guard them for as long as three months.

Victor Hugo once described the octopus as "a disease embodied in monstrosity"; it is clear Victor did not know the creature well. You can get to know one of our most interesting residents by visiting one of Oregon's many rocky intertidal areas. Look for octopuses in surge channels at low tide most any time of the year. Or if the weather prevents a tidepool visit, the Hatfield Marine Science Center at Newport usually holds one in captivity in its indoor aquarium. □



Winchester

By Jim Gladson

The Department of Fish and Wildlife is dedicated to fish protection on the North Umpqua River, not power production, says ODFW assistant director Rollie Rousseau.

Controversy surrounding the start-up of a hydroelectric power plant at Winchester Dam near Roseburg has included criticism of the department for appearing to support the project at the expense of the North Umpqua salmon and steelhead runs.

"Nothing could be farther from the truth. The loss of fish at hydro projects is of great concern to the department," Rousseau said, Department biologists and the Fish and Wildlife Commission have used their full authority to protect fish at all projects, including Winchester, he said.

"Some people feel the department should immediately use its authority to shut the plant down permanently on the grounds that the loss of any fish, no matter how few, is unacceptable. While we may agree with that philosophy in principle, that is not what the laws allow," Rousseau said.

The nationwide drive for energy independence during the late 1970's put several new laws on the books to encourage development of alternative energy sources, including small hydro. Congress also adopted an exemption process that streamlines the approval process for small hydro permit requests.

The Winchester project was the first major effort by a developer in Oregon to obtain such an exemption from the Federal Energy Regulatory Commission (FERC). The State Water Resources Board also granted an Oregon license for the facility in May of 1983.

The FERC exemption process allowed the Department of Fish and Wildlife and federal fisheries agencies to jointly impose strict design criteria for fish passage facilities. The agencies also de-

veloped a list of operating restrictions to minimize the impact of the project on fish and wildlife resources.

The key word in the controversy is "minimize," according to Rousseau. "The Winchester project has the most stringent requirements for fish protection ever imposed upon a hydroelectric operation in Oregon. The department has authority to evaluate project performance and to require modifications in design and operation. But neither state or federal law requires a project to have absolutely no impacts on the fisheries resource to get operating approval," he said.

So far, plant impacts on salmon and steelhead have been minor. Juvenile fish losses have amounted to much less than one percent, according to a recent ODFW report evaluating the first several months of plant operation at Winchester.

That report itself has also created some controversy. Although the review of fish passage performance pinpointed some problems and required modifications, there have been charges that it was inadequate and incomplete.

Rousseau feels much of the criticism comes from misunderstanding the intent of the start-up evaluation. "In no way was that study intended to be a complete or final evaluation. It was a preliminary look at initial project performance. That's all. Evaluation of fish protection facilities and plant performance will continue for at least two years. We will have people there every day," he said.

If trouble is spotted, the department and commission are prepared to act, according to Rousseau. "We are monitoring and testing to establish a biologically sound and legally defensible data base on overall impact of the plant. If the final evaluation shows the project

is causing significant problems for North Umpqua fish runs, the department has the authority to — and will — act to protect the resource," he said.

According to Rousseau, the Winchester hydro project is symbolic of a much larger concern for both the department and the public. The liberalized hydro development laws have brought in several hundred other permit applications in the last two years. Many of the projects could have fish and wildlife impacts.

"If the Winchester controversy is a fair test of public opinion, the existing state and federal small hydro laws and policies of a few years ago appear to be far out of tune with current public attitudes.

"It's not realistic to believe a project can be built on a fish stream without causing losses similar to, or even greater than those at Winchester," he said.

The laws currently do not prohibit some fisheries impacts at hydro projects. If these tradeoffs of fish for additional power production are no longer acceptable, then the laws and administrative policies should be changed — soon, according to Rousseau.

"If no fish loss is to be the new standard, then hydro plants must be prohibited altogether on fish-bearing streams. Time is of the essence. This issue must be a high priority of the 1985 state Legislature and the Congress," Rousseau said.

Rousseau says the department has certainly gotten the message regarding hydro on salmon and steelhead streams, but that message must also reach lawmakers.

"Now is the time for all the people who are worried about this to work with the department to present our mutual concerns about future hydro development on Oregon's fish streams," he said. □

This and That

Compiled by Ken Durbin

Tastier But Illegal

On this page in our last issue, we reported findings that bleeding fish by cutting off their tails could improve flavor and frozen storage life. While this remains true, we should also have pointed out that Oregon's angling regulations prohibit dressing or mutilating game or marine fish in the field so the size cannot be determined. We apologize for any confusion this may have caused.

Bleeding fish may be accomplished in a number of ways, including cutting deeply enough forward of the tail to sever the spine, *without removing it so size cannot be determined*; by removal of the gills; or by eviscerating promptly after catching.

*

School Supports Nongame

Several schools around the state had bake sales and donated the proceeds to the Wildlife Heritage Foundation for the winter feeding fund. Now we have word of a new project for wildlife. The Seaside High School students held a can and bottle drive and donated the proceeds of \$175 to the department's nongame wildlife program. Thanks to the group from nongame biologist Bill Haight and the whole department.

*

Nature's Designs

The dragonfly, an insect 250 million years old, is being studied as a model for airplanes of the future. Researchers at the University of Colorado have found that it can hover, fly sideways and spurt backwards at astounding speeds — all while generating three times the lift of conventional aircraft.

National Wildlife magazine

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On Wings of Undertakers

Humans aren't the only ones with undertakers — bees have them too, reports *International Wildlife* magazine. Less than an hour after a honeybee dies, another bee carries the body as far as 400 feet from the hive before dropping it. Scientists believe this undertaking is due to a chemical emission from the dead bees.

*

A Little Goes a Long Way

A single drop of Australian tiger snake venom contains enough poison to kill 25 people, according to *National Wildlife* magazine. Fortunately for Australia's human residents, this medium-sized snake normally uses its toxin only to kill small frogs.

*

Cranial Compass

According to an Associated Press story, tiny bits of iron oxide in the heads of bobolinks may act like compasses during the bird's migration between the northern and southern hemispheres.

Robert C. Beason, assistant biology professor at the State University of New York, suggests that bobolinks use stars to guide them on their migration, but that they also periodically check direction with their internal compasses.

Along with co-worker Joan Nichols, Beason placed 27 bobolinks in cages in a planetarium to test their reactions to projected star patterns. Judging by the direction the birds went to try to escape, he found that when the stars indicated north in one direction and the Earth's magnetic field pointed the other way, the birds navigated by the stars for two to five nights before switching to the magnetic field. Results of the study are published in the current issue of *Nature*.

Bobolinks are said to have the longest migratory path of any New World land bird, ranging from Canada to northern Argentina and Chile.

*

Night Vision

The great horned owl, though it weighs only three pounds, has eyes as large as a human's, and can sight objects with about five percent of the intensity of light a human requires.

National Wildlife magazine

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Quick as a Flash

Lightning you see between a cloud and earth may be eight miles long. But lightning flashes *within* a cloud may be as short as a few yards in length.

Ranger Rick magazine

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Hungry as a Horse

The Bureau of Land Management may be forced to reprogram funds from its already sparse wildlife and range management programs to feed feral horses, according to the Wildlife Management Institute.

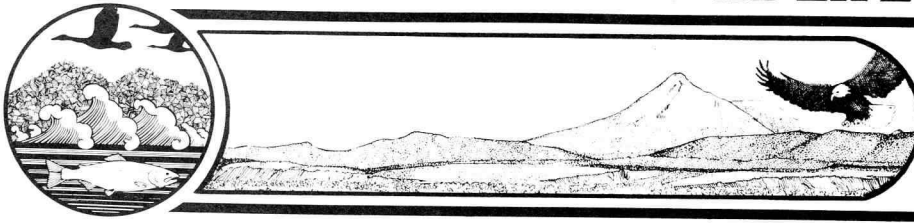
Because of the feral horse and burro law, BLM may have to steal from deprived native wildlife to sustain excess feral animals that it cannot dispose of legally.

Federal law prohibits BLM from selling excess feral horses for slaughter. The only alternatives the agency has is to sell the horses or give them away for nonslaughter uses. The market won't absorb the number of horses that BLM must remove from the range each year. The agency currently has about 2,800 horses in pens and can't get rid of them. It costs more than \$8,000 per day to feed these animals and BLM is running out of hay money. Congress has not demanded that wildlife be fed, but it requires a proper diet for the feral horses.

BLM's wildlife program, running a \$500,000 deficit in the field, may be asked to wither further and feed horses. The range program and other renewable resource efforts likely will also be tapped so the BLM can raise more than \$1 million to buy horse feed.

*

THE WAYS OF WILDLIFE

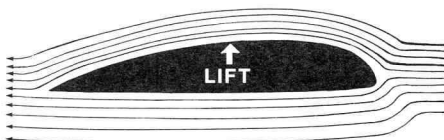


Learning By Experiencing

To Fly

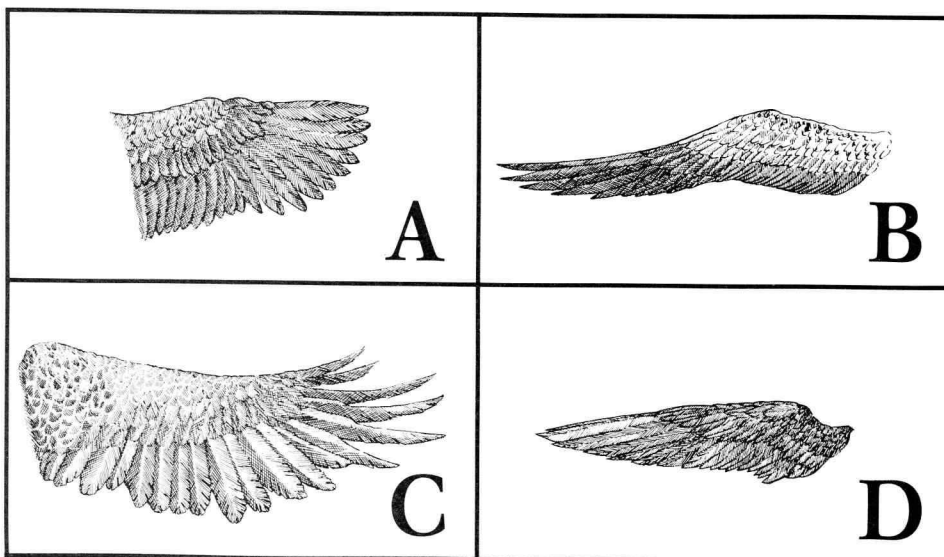
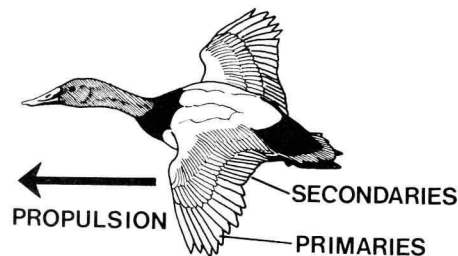
Wings. A marvelous invention. Birds use them as easily as we use our arms and legs. What makes them work? How can they help birds . . . TO FLY?

Two things are required before any object can fly: "lift" and "propulsion". A bird's wing meets both requirements. As shown, every wing is curved on the upper surface and flat on the lower surface. This shape reduces the air pressure across the top of the wing and increases air pressure on the bottom. The result: *lift*.



On the end of the wing are feathers called "primaries". The bird simply twists these feathers as it flaps its wings, driving the bird forward. The result: *propulsion*.

There are about 8700 bird species worldwide, and almost all of them fly. But, since they have different habitats and live in different places, they have different ways of flying. Some birds soar high above the earth, while others twist and dart through brush. You would expect to find many different kinds of wings among the birds, but surprisingly, most bird wings fall into one of four basic types.



The four types of bird wings are pictured below. See if you can match the wings to the descriptions provided.

- ☐ 1. Wings that enable birds to live in woodlands and brush. They use an explosive lift off and can glide, twisting and turning through brushy habitat. These birds cannot fly far before they must rest. Grouse, quail, pheasant, chukars, doves and songbirds, such as sparrows, chickadees and warblers, have these wings.
- ☐ 2. Wings that enable birds to fly long distances over water, usually riding air currents that blow horizontally over the surface. With this wing design, gulls, albatrosses and other sea birds can take advantage of swift winds by soaring to great heights, then swooping downwind at high speeds.
- ☐ 3. Wings that enable hawks, eagles and vultures to ride warm-air thermals which rise vertically from the surface. These birds need a wide surface on which to "float", as well as a wing that is short enough to provide maneuverability. Soaring birds can travel from hundreds of miles using this method.
- ☐ 4. Wings that enable birds to travel fast by flapping their wings. While these wings are useless for soaring, and allow only fair maneuverability, they are well-designed for speed. Birds with this wing design have large chest muscles, and include the swallows, falcons, shorebirds, hummingbirds and waterfowl.

Thanks to *Wildlife in North Carolina* for this idea.

1984 General Big Game Seasons

Consult the regulations for details, bag limits and exceptions

Seasons	August	September	October	November	Tag Required	License Required
Western Oregon Deer Rifle Buck Season		29		7	Western Oregon Deer	Resident Hunter's, Nonresident Hunter's, or Resident Combination Anglers and Hunters License Required.
N.W. Hunter Choice ¹				3		
Willamette Unit		29		30		
Eastern Oregon Deer Rifle ¹		29	3	10	Eastern Oregon Deer	Juveniles from ages 12 through 17 must have a Hunter Education Certificate while hunting in addition to the license.
Roosevelt Elk 1st Season				10	Roosevelt Elk 1st Period	
2nd Season				17	Roosevelt Elk 2nd Period	
Rocky Mt. Elk 1st Season			31	4	Rocky Mt. Elk 1st Period	
2nd Season				10	2nd Period	
Bowhunting	25				Deer Bow Elk Bow	
Bear	25			30	Bear	

¹Open area has changed from 1983. See page 2, regulations.

Controlled Hunt Deadline

All Controlled Hunts

All Permit Entry Hunts

Deadline (Postmark)	Drawing
July 12	August 14

1984 Tag Sale Deadlines

Tag Name	Deadline Date
Deer Bow and Elk Bow	August 24
Bear Season	
Western Oregon Deer	September 28
Eastern Oregon Deer	
Rocky Mt. Elk, 1st Season	October 30
Rocky Mt. Elk, 2nd Season	November 9
Roosevelt Elk, 1st Season, Saddle Mt. and Tioga Units	November 9
Roosevelt Elk, 2nd Season, Saddle Mt. and Tioga Units	November 16
All Controlled and Permit Entry Tags	December 31

"Handgun Hunting Only" Tag validation deadline see page 14 of regulations.

New Commissioner Named

Gov. Vic Atiyeh has appointed Leonard B. Netzorg of Milwaukie to the Oregon Fish and Wildlife Commission.

Netzorg replaces Herbert F. Lundy of Lake Oswego whose term expired June 30. Netzorg's term began July 1, 1984, and ends June 30, 1988. The term is subject to Senate confirmation.

Netzorg has been an attorney for 47 years. He currently practices with the firm of Preston, Ellis and Holman in Portland.

From 1955 to 1983, Netzorg was in private practice in Portland.

From 1942-1955, he held various posts in the U.S. Department of the Interior including service on the staff of the National Power Policy Committee in pre-World War II years; in the Public Lands Division of the Solicitor's Office; in the Bureau of Land Management's then Oregon-Washington-Idaho Region; and as Associate Chief Counsel for Natural Resources in the Bureau of Indian Affairs.

Netzorg is a graduate of Yale College (bachelor of arts, 1934) and Yale Law School (bachelor of laws, 1937).□



Commissioner Netzorg



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