



OREGON WILDLIFE

MARCH 1982

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OREGON FISH AND WILDLIFE COMMISSION

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Cover — A sage grouse cock on the strutting ground. One of Oregon's native birds, the sage grouse has had a history of ups and downs with the trend gradually but steadily downward. See John Crawford's history on the facing page.

Photo by Jim Gladson

HUNTER EDUCATION PROGRAM INSTRUCTORS APPROVED

Month of January 14

Total Active 1,397

STUDENTS TRAINED

Month of January 101

Total to Date 290,053

HUNTING CASUALTIES REPORTED IN 1982

Fatal 0

Nonfatal 0

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WATCHABLE OR NONGAME?

With the advent of the nongame checkoff on the income tax form, a number of folks have asked what the difference is between the Nongame Program and the Watchable Wildlife Program. The confusion is not surprising since both programs may deal with the same critters on occasion and could possibly do the same kind of thing.

Prior to the time the legislature passed the nongame checkoff law, the Fish and Wildlife Department had begun the Watchable Wildlife (WW) Program. This program was an attempt to make it possible for interested people to donate funds for the benefit of the nongame species, but also to donate funds for the creation of people-wildlife encounter situations. The Department had been using some funds for nongame management, however little had been budgeted for creating situations where people could observe wildlife and perhaps be able to read some interpretive materials about what they were seeing.

So, the WW funds are designed not only to directly benefit various species of wildlife, but also to create opportunities for people to see various species, both game and nongame, without impacting the wild ones. Some of the funds may also be used to create a better understanding of wildlife, its problems and characteristics. Interpretive signs at a fish viewing chamber, or at an elk winter range might be a use for WW funds. They might also be used to purchase materials for building birdhouses for songbirds or for creating squirrel nest boxes. The possibilities are virtually endless. However, a major thrust of the program is to create a better understanding of the problems of wildlife and to afford people a chance to observe and hopefully better understand all kinds of wildlife.

Since the enactment of the nongame checkoff law, you Oregonians have generously donated over \$700,000 of your income tax refunds to this program. There was a built-in lag time in the use of the monies. Though the money was donated largely during 1980 and early 1981, spending of it could not begin until August of 1981. It had to be included in the Department budget which went before the Legislature for approval and expenditure during the current biennium. This was also true of the WW funds.

The law setting up the nongame fund specifies it must be spent for the protection and preservation of nongame wildlife and its habitat. This obviously puts more constriction on how the funds may be used. One apparent limitation is that none of the funds may be used for any type of interpretive work. Signing of newly acquired areas, material describing the species found in an area and instructions on how to see the creatures without disturbing them cannot be created from the nongame fund.

Initial work with this fund has largely been concentrated on establishing a data base on these species which have not been carefully observed in the past. Several specific research projects are underway and some trapping, marking and transplanting of rare species has been undertaken. Additionally, some small, but critical pieces of habitat have been acquired. Signing and informational materials about the areas will be created with funds from the general wildlife fund or possibly from the Watchable Wildlife fund.

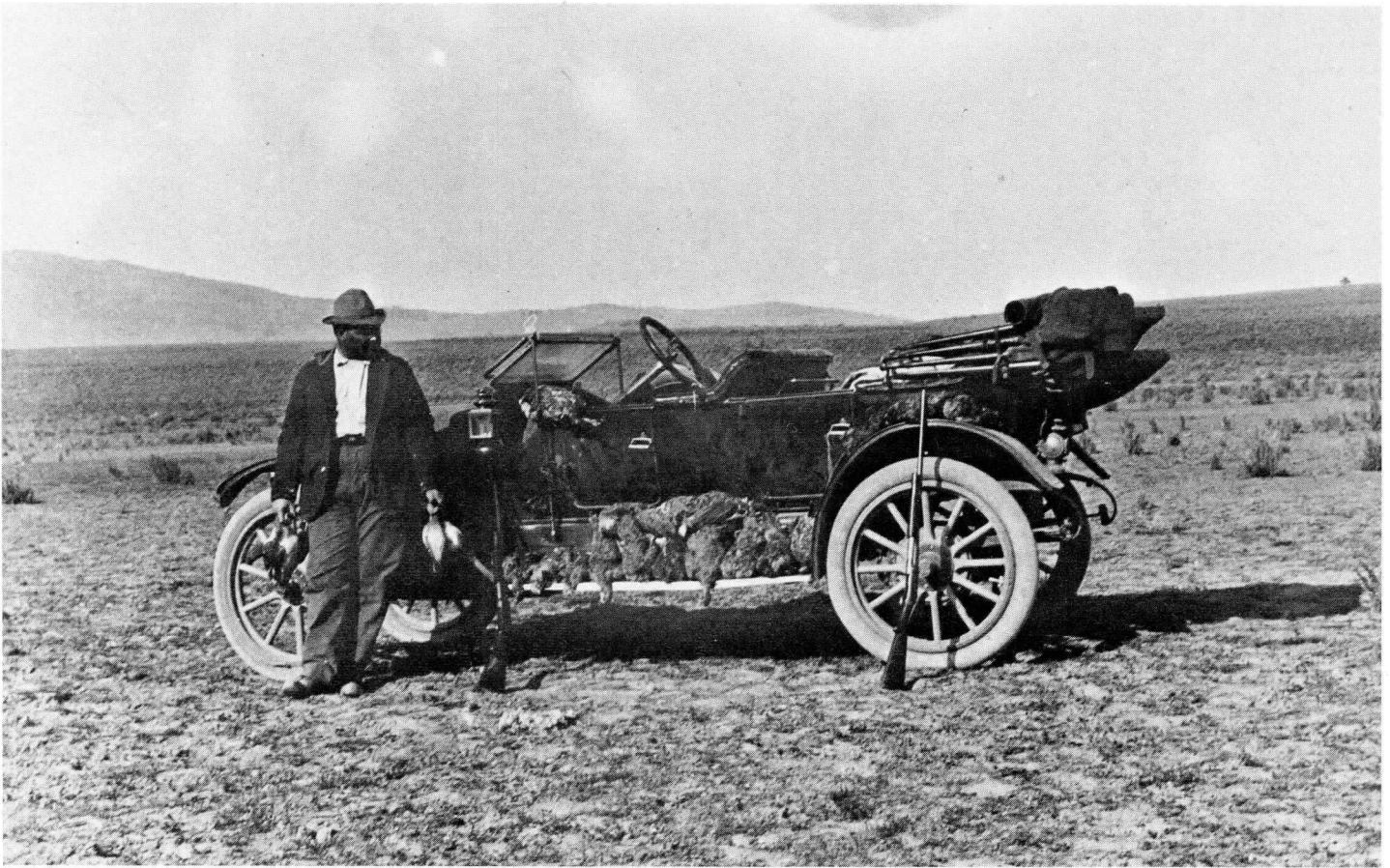
We hope this answers some of the questions you may have. We also hope you will see fit to support the nongame program with a bit of your income tax refund . . . or if you prefer to send in a few bucks for the Watchable Wildlife Program. The donations are greatly appreciated, will be used as best we can for the benefit of people and wildlife and both types of donations are tax deductible.□

RES

COMMISSION MEETING

The Fish and Wildlife Commission will meet Saturday, March 20 to adopt 1982 seasons for antelope, cougar and bighorn sheep. The meeting will begin at 8 a.m. at Fish and Wildlife Department headquarters, 506 SW Mill Street in Portland.□

MARCH 1982



Sage grouse have been here since before man. Their early history was one of excessive exploitation. Photo courtesy Oregon Historical Society.

HISTORY OF SAGE GROUSE IN OREGON

by
Dr. John A. Crawford
Department of Fisheries & Wildlife
Oregon State University

The sage grouse, *Centrocercus urophasianus*, a native inhabitant of the Great Basin, has meant many things to the people of Oregon. This species was part of the subsistence base for the earliest inhabitants and it served a cultural function as well. When Oregon was occupied by settlers of European heritage, sage grouse were common fare in frontier kitchens. More recently, however, the importance of these birds stems from their use by birdwatchers and hunters. The purpose of this article is to review some of the recent history about sage grouse in Oregon, especially in regard to population status and harvest.

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The first person to report the occurrence of sage grouse in Oregon was J.K. Townsend in 1839. Many subsequent reports were published during the nineteenth century, which indicated that sage grouse were common to abundant in the nonforested areas east of the Cascade Range. Some reports are confusing, however, because early settlers often failed to distinguish sage grouse from sharp-tailed grouse and collectively called them prairie chickens.

By the late 1890's, the first indications appear that sage grouse populations were declining, and in 1902, the game and forestry warden recommended the prohibition

of sage grouse hunting for a number of years. He attributed the population decline to increased human encroachment on their habitat, predation (especially by coyotes), and overshooting. It is unknown whether or not the season was closed in 1903, but a trend developed during the first two decades of this century in which hunting regulations became increasingly restrictive. In 1909 and 1910, for example, the daily bag limit was five sage grouse, with 10 in possession during any seven consecutive days; the season was three months long. By 1917, the season was reduced to one month.

The 'teens apparently were a

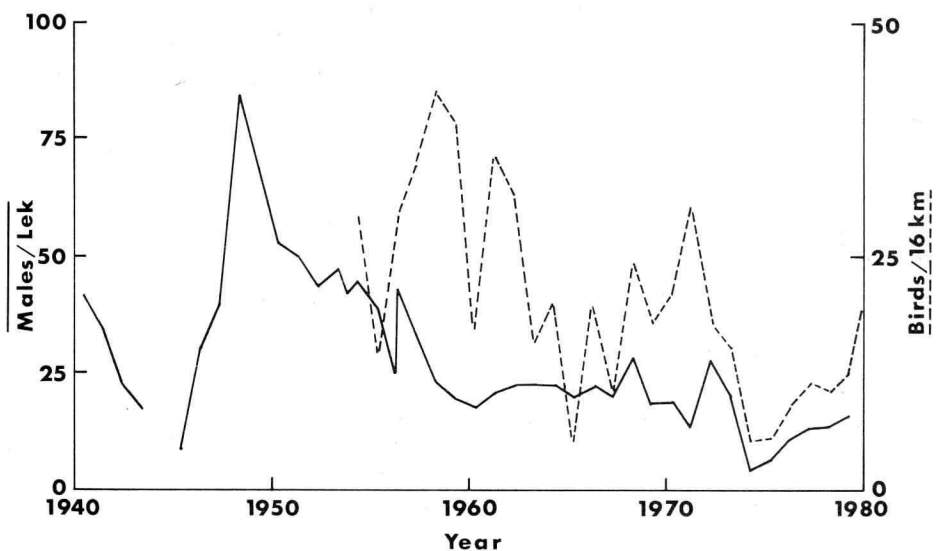
time of population recovery. In fact, a number of references attest to the great abundance of these birds in 1918 and early 1919. The recovery was short-lived, however. A major die-off occurred in mid-1919. Indeed, there are reports of people finding dead or dying birds in a number of areas. The decline continued into the 1920's, and A.E. Burghduff, the state game warden, predicted the imminent extinction of the species in Oregon in 1922 and recommended indefinite protection from hunting in 1924. Nevertheless, hunting seasons were held.

In 1925, about the time some recovery was noted in populations, the state legislature closed the season for five years. Although the abrupt decline of 1919 is commonly attributed to a widespread disease, the continued decrease in populations was believed related to the extensive conversion of rangeland to agricultural crops and overharvest of the birds. A slight recovery in populations was noted by a game warden, H. Clifford, during the late 1920's, but he suggested extension of the season closure.

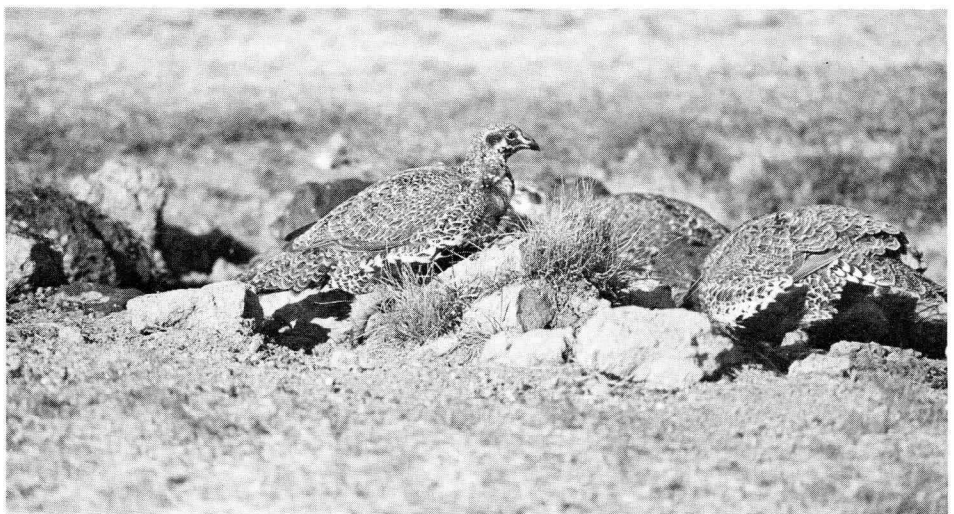
In the early 1930's, however, the season was reopened, but with many restrictions. For example, in 1932, an open season was held only in Baker and Union counties, for 10 days, with a daily bag limit of three birds. Although the legislature authorized seasons during the remainder of the 1930's in Baker, Malheur, and Union counties, no hunts actually were held. Despite protection from hunting, populations declined seriously during the mid-1930's.

Management efforts, such as the development of permanent water supplies, plantings of Russian olives (which sage grouse avoided), and the transplanting of birds from Harney and Malheur to Crook, Sherman, Wasco, and other counties were initiated by the Oregon Game Commission in 1939. Between 1941 and 1952, hundreds of birds were transplanted.

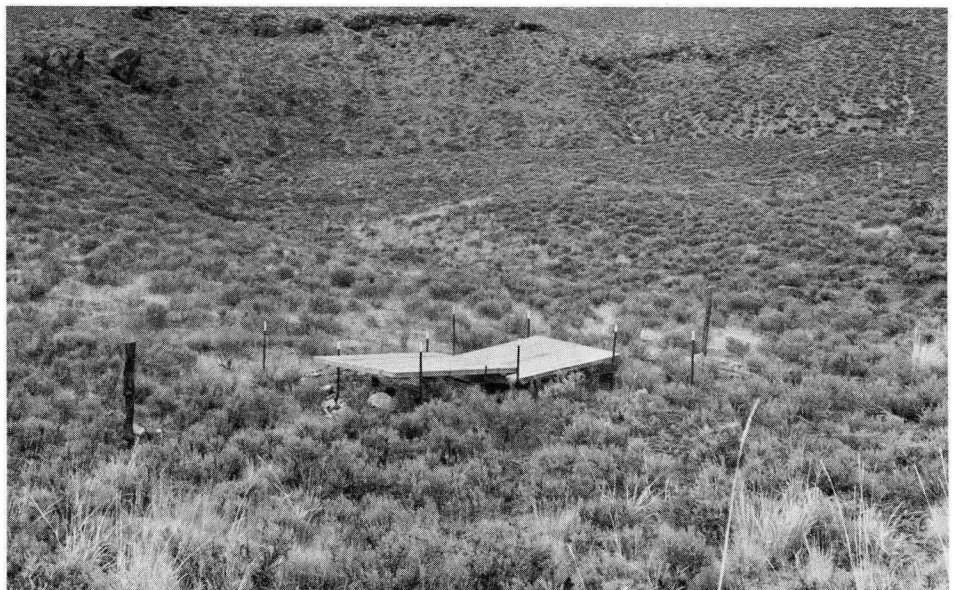
Experimental work during the 1940's dealt with artificial propagation (which eventually was deemed unfeasible) and the impact of predator control on nesting suc-



Trend counts of sage grouse in Oregon, 1941 to 1980.



Sage grouse are very dependent on water and a spring seep like this one will draw birds from miles around.



Installation of guzzlers and other water developments have helped sage grouse as well as other desert wildlife.

Sage grouse population and production trends, 1940-1979.

Decade	Males/ Lek	Birds/ 16 km	Chicks/ Adult	Chicks/ Brood	Juveniles/ Adult
1940's	36 ^a	—	—	—	—
1950's	44	32 ^b	1.8	4.6 ^b	2.4 ^c
1960's	20	20	1.3	4.1	1.2 ^d
1970's	14	14	1.0	3.9	

^aNo data for 1940 and 1945.

^bCounts were initiated in 1954.

^cData from 5 years.

^dData from 4 years.



Males gather on the strutting ground or "lek" to vie for the attentions of the hens. Counts are made on known leks each year.

cess of sage grouse. In the latter study, Wesley Batterson and W.B. Morse noted nearly a nine-fold increase in nesting success by sage grouse where ravens and magpies were controlled. Organized censusing of sage grouse display grounds (leks) was begun in 1941. Gradually, other indices to the health of the population, such as summer trend counts, brood counts, and age ratios, were added.

Since 1941, sage grouse populations have fluctuated considerably (see table). Highest numbers occurred during the late 1940's. Some authors considered the sage grouse a cyclic species, much the same as the ruffed grouse for which cycles are well documented. The data from Oregon do not indicate precise periodicity in population changes, but there certainly is a tendency for lows in the population to occur during the middle of each decade.

The sometimes considerable annual fluctuations may well be related simply to responses by the population to specific environmental conditions during a particular year.

Regardless of short-term fluctuations or long-term periodic changes, the trend of sage grouse population has been downward for the past 30 years. From the 1950's to the 1970's, spring lek counts were down by 56 percent. The index to recruitment into the population (chicks/adult) declined by 44 percent during the same period, and brood size declined by 15 percent. The fall recruitment estimate declined by 50 percent from the 1950's to the 1960's. Because the population decline was far greater than the decline in recruitment, it must be presumed that either survival of birds also declined during this time or that birds emigrated from the Oregon population. There is no evidence to support or refute either possibility.

During the past 40 years, 20 hunting seasons were held for sage grouse. The size of the annual harvest varied from 1,947 in 1974 to 21,284 in 1958 with a total harvest of approximately 150,000 birds. The numbers of hunters par-

ticipating in sage grouse hunts ranged from as few as 1,231 in 1975 to a high of 8,147 in 1953. Although the harvest was sizable during some years, the results of the analysis of these data indicated that hunting did not limit sage grouse populations during this

time. In fact, the size of the harvest merely reflected the size of the sage grouse population. Furthermore, it was found that the size of harvest could be controlled rather precisely simply by manipulating the number of hunters. Thus, if an

allowable level of harvest were determined, the number of hunters needed to achieve this harvest could be estimated with a good deal of accuracy. Of course, this approach might necessitate use of a tag or quota system for sage grouse hunters.

The attitudes towards sage grouse as a harvestable resource have progressed through three relatively distinct phases in Oregon. From the 1800's through the 1920's, rather heavy exploitation, and possibly overshooting, of populations occurred. The decades of the 1930's and the 1940's were a time of protectionism. And from the 1950's to the present, cautious exploitation, with overtones of protectionism, has prevailed. Of all the states supporting substantial sage grouse populations, Oregon has been the most restrictive in terms of hunting, no doubt a response to a continually declining population. Ironically though, hunting apparently is unrelated to this decline.

During the past 80 years, a variety of factors have been implicated in the decrease of populations (predation, disease, habitat destruction, and human interference). But, the overall causes remain unknown, and research into the factors affecting populations, especially in regard to habitat changes, is urgently needed. If we better understood factors, such as the impacts of agricultural practices, grazing, and brush control on sage grouse populations, management procedures could be developed to mitigate the negative influences of these actions. Methods to afford maximum compatibility between sage grouse production and these important land uses should be sought.

Although sage grouse have composed only one to five percent of the total upland game bird harvest, they provide a unique type of diversity for Oregon hunters. They are a resource that could be used more consistently and more efficiently if we better understood the factors controlling their populations and used that knowledge for proper management.□



Although hunting seasons have been closed on several occasions, population analysis indicates controlled hunting has never been linked to a decline.

Sage grouse harvest and numbers of hunters for seasons held since 1933.

Year	Harvest	Number of Hunters
1949	*	*
1950	*	*
1951	5,000	2,273
1952	18,788	7,226
1953	11,406	8,147
1958	21,284	7,374
1959	17,304	7,127
1961	6,659	2,725
1962	10,571	3,541
1963	4,117	1,913
1964	8,669	3,718
1966	3,731	2,234
1968	2,010	1,231
1969	4,758	2,774
1970	10,250	5,430
1971	3,102	2,068
1972	6,794	4,226
1973	7,483	4,046
1974	1,947	1,774
1975	2,121	1,310

*Seasons held, but no data available.

COLUMBIA RIVER = FISH AND WILDLIFE?

If you are concerned about the future of fishery and wildlife resources on the Columbia River, here is a public hearing date you should mark on your calendar.

The Northwest Power Planning Council will hold hearings March 15 and 16 at the Hilton Hotel, 921 S.W. Sixth in Portland. Hearings run from 8:30 a.m. to 5:00 p.m. and from 7:00 p.m. to 10:00 p.m. each day. The newly formed Council is holding these hearings to accept public comments on fish and wildlife recommendations for the Columbia River submitted by fishery agencies and treaty Indian tribes.

The Council is required as part of a 20-year power plan, to develop means to protect, mitigate and enhance fish and wildlife resources

impacted by development of the Columbia Basin for power. Recommendations already submitted call for a balance between power generation and the needs of fish and wildlife to correct the imbalance caused by past development of the power system.

The main emphasis is on restoring depleted runs of upriver salmon and steelhead. The recommendations concentrate on improving the survival of migrating juvenile fish through increased flows when migrants are present, and improved bypass facilities at dams. A phased program of hatchery compensation for irreducible loss is recommended to help restore depressed fisheries. Resource agency representation in power planning

and operation is recommended to assure that the needs of fish and wildlife are included in the planning process.

Resource managers believe the future of salmon and steelhead runs above Bonneville Dam will be determined by the effectiveness of the Fish and Wildlife Program to be adopted by the Council. Public support of fishery recommendations at the hearings is vital if a strong program is to be adopted.

Copies of recommendations can be obtained from the Northwest Power Planning Council, Suite 200, 700 SW Taylor, Portland, Oregon 97205, (503) 222-5161. For information on fishery agency recommendations call Frank Young, (503) 229-5689. □



*We Care
About
Eagles*

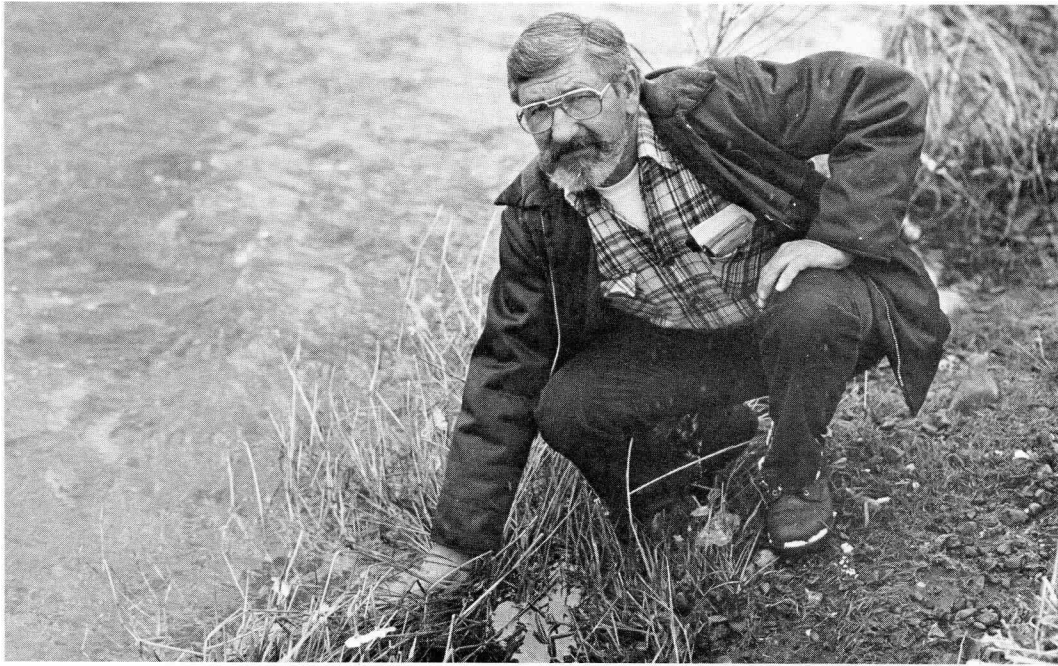
The Year of the Eagle

NATIONAL WILDLIFE WEEK MARCH 14-20, 1982

JOIN AND SUPPORT THE NATIONAL WILDLIFE FEDERATION AND STATE AFFILIATES

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Harold Winegar, retired Department Habitat Biologist.

HABITAT STILL MAIN INTEREST OF RETIRED BIOLOGIST

*Story and photo by Steve Boyer
Reprinted courtesy of The Bend Bulletin*

Harold Winegar is a man who brings his job home with him — even when he retires.

December 31 marked the end of the 58-year-old Winegar's career with the Department of Fish and Wildlife, but not the end of his career as a habitat biologist. The main difference is that now he can pick his habitat.

The choice is easy. For almost three decades, Winegar has championed the preservation of riparian habitats — streams and the nearby vegetation influenced by their water.

The cause has had few champions. Winegar pioneered research in this area on the role of streamside vegetation in boosting streamflows.

If treated properly, he says, streams could contribute countless additional gallons to the water supply in the arid parts of the West. Water could flow all year in drainages that now dry up after

the snow melts in the spring, he says.

The secret lies in allowing natural vegetation to return to the relatively lush state in which it existed before cattle began grazing across the West, said Winegar. The vegetation, which holds much more water than minerals and dirt, would store water that would be released into the stream throughout the year.

The result would be more high-quality water for wildlife, fish and cattle, especially in late summer when flows have dropped to their lowest point.

"You take 10 little drainages, each one only contributing 100 to 500 acre-feet in a year, but it's coming in the late season, it's high quality and it's more valuable than 100,000 acre-feet starting out stored in the spring," Winegar said.

Winegar began to realize the benefits of restoring streamside vege-

tation in the 1950's when he worked for the Oregon Department of Fish and Wildlife around Grass Valley in Sherman County. There he tried to improve habitat for upland game.

One of his techniques was to plant vegetation to provide food and cover, especially for quail, in small drainages that were sometimes no more than gullies. If protected, the plantings thrived, enabling more wildlife to live there than had been possible when the areas were more barren.

Winegar began to work directly with riparian vegetation and streamflows after he moved to Prineville in 1961 to improve wildlife habitat on upper Prineville Reservoir after the reservoir was built.

But he also worked with the U.S. Bureau of Land Management to study the effect of restoring vegetation along Camp Creek. The stream, located 27 miles east of

Prineville Reservoir, has about 40 miles of flow in its three forks.

Fencing was built on both sides of the stream for one mile of its length. The section was an eroded gully. Tall wheatgrass and sweet clover were planted in the fenced area, and later willow cuttings and Russian olive seedlings were added.

Between 1969 and 1974 an additional three miles of the stream were fenced. Within several years, the fenced section of Camp Creek began to resemble a marshy meadow more than a desert gully.

Tall grasses rose along it, according to Winegar. Beaver, not seen in the area before the project, built eight dams within the fenced section by 1973. Waterfowl, rarely even seen in the area before, began nesting there.

But the stream's water flows were perhaps most important. In the drought year of 1977, there was no water from early summer to December in Camp Creek's unfenced West Fork, usually the stream's main source of flow.

But just 225 yards inside the fenced area, water began flowing, said Winegar. About one-half a second-foot (a second-foot is a flow of one cubic foot per second) flowed cool and clear through the fenced section's four miles. Just 30 yards beyond the downstream end of the fence, the flow disappeared again.

Another project, part of the Willow Creek drainage on the Crooked River National Grasslands, showed the same kind of results when its vegetation was allowed to recover, Winegar said.

Cattle were kept out of the area in a cooperative project involving the Department of Fish and Wildlife, the U.S. Forest Service and the Grey Butte Grazing Association.

The seven-mile stretch of Willow Creek that comprises the project has had a year-round minimum flow of 1.2 second-feet for the past four years, he said. Above and below the protected stretch, the creek is dry in summer and fall.

Despite the dramatic results at Camp and Willow creeks, there has been no rush to fence drainages and restore vegetation. The

number of research projects on vegetation and streamflows is still small, although it's growing, said Winegar.

The initial cost of fencing also can be prohibitive, running at least \$5,000 per mile. In the arid West, the price is worth it to both environmentalists and cattlemen, he said.

"It's so close to a panacea for water resources that it's almost scary, and there are no adverse impacts anywhere," said Winegar. "Everyone's going to benefit eventually."

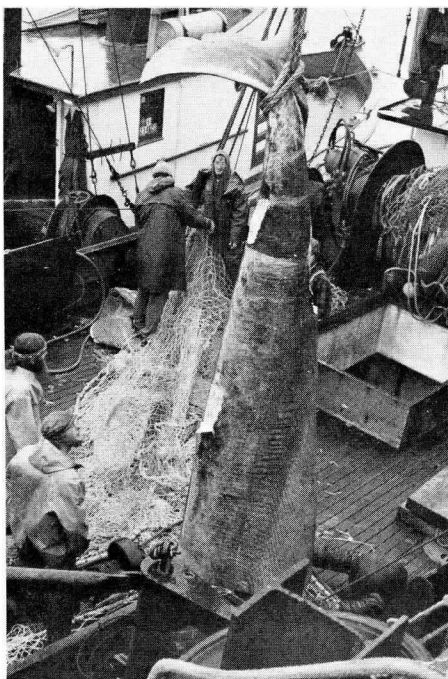
Winegar testified before the last state Legislature in support of a bill that may help ease the financial burden. The bill, which passed, provides tax incentives to landowners for streamside protection projects approved by the Department of Fish and Wildlife.

The guidelines to administer the law still have to be worked out. Winegar, though retired, plans to help develop those as much as possible. He also is working on a slide and talk show on streamside habitats that he will give to private groups. □

A (BIG) FISH STORY

by Dale Snow
Assistant Supervisor,
Marine Region

Imagine the surprise of Wes Oliphant, skipper of the *Star Polaris*, when he retrieved his trawl net January 13 and found he had captured a 14-foot fish! Wes was fishing for black cod and dover sole in 300-310 fathoms of water (1,800-1,860 feet) off Cascade Head when he made the unusual catch.



A 14-foot sleeper shark comes as some surprise in a trawl intended to catch black cod and dover sole. Photo by Dale Snow.

The fish was a Pacific sleeper shark measuring a little more than 14 feet in length. The dressed weight was 1,352 pounds with the head accounting for 532 pounds and the cleaned body making up the other 820 pounds. It took some looking around, but Wes eventually found a buyer for his catch in California.

The Pacific sleeper shark, while not listed as dangerous to man, is large enough to be dangerous and for this reason demands respect. The sleeper occurs from the Bering Sea to southern California, being most common in the northern portion of its range. The stomach of this animal contained mostly rex sole and black cod. However, others examined have contained dover sole, salmon, halibut, crabs, octopus, squid, rockfish, carrion and seals. Three of the latter were found in one stomach!

The sleeper lives and feeds in deep water offshore and little opportunity for interaction with man exists except in a trawl net. Maximum size for the species is listed as 20-25 feet. Size alone suggests that caution should be exercised in the unlikely event you are ever confronted by one.

Where does a sleeper shark sleep? Any doggone place he wants to! The fish was positively identified by Dale Snow, Bill Barss and Gary Mettman of the Department's Marine Region. □

CAWT Proves Catching

Thanks to many Oregonians, the Catch A Wildlife Thief (CAWT) Program has been doing just that. Since the program began in late fall as a cooperative effort of the Kiwanis Clubs of Oregon, the Oregon State Police and Oregon Department of Fish and Wildlife, calls on the toll-free line have increased substantially. More than 100 calls have been received with approximately 40 referred to the field for investigation. Some of these have already resulted in arrest for serious game violations and a number of investigations are still underway.

Recently, two troopers from the Portland area followed up a call of an illegal deer kill and arrested a suspect for Illegal Possession of Deer. Officers in Eugene responded to a report of a deer being cut up in a home. The officers found the individuals as described and cited both. The meat was also seized. In southern Oregon, troopers investigated a "CAWT" report of illegal elk hunting. Three men were apprehended for Illegal Possession of Elk. One was also cited for Illegal Possession of Deer.

The magic number is 1-800-452-7888. More than 20 Kiwanis clubs in Oregon are distributing self-adhesive stickers bearing this toll-free number through local businesses along with posters advertising the program. State Police offices and those of the Department of Fish and Wildlife are additional sources of these handy items. A short slide-tape program suitable for schools, group meetings and other gatherings is also available. Approximately 90,000 stickers and 600 posters have been distributed in the past four months.

Calls on the "hotline" go directly to State Police headquarters in Salem. A local officer can be dispatched in minutes through the police communications network. The individual reporting the violation does not have to become involved and may remain anonymous.

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Wildlife thievery or poaching is more widespread than many realize. Game officers issue some 15,000 citations a year with nearly 1,000 of these involving serious big game violations. Even so, these arrests amount to only a portion of the illegal activities taking place. The 120 game officers who patrol the state cannot be everywhere at once. That is where CAWT and the willingness of citizens to help protect their own resources can help.

The value of an illegally killed deer or elk equals that of a new 10-

speed bicycle. The salmon stolen by one illegal net in one night can equal the value of your automobile. Wildlife taken illegally in some areas may equal the legal harvest and significantly reduce opportunities of law abiding sportsmen.

Oregonians lose plenty to wildlife thieves each year. It is not tax deductible and not covered by insurance. Reporting violations is the surest form of protection. Put a sticker by your phone and stick it to the game thief. It works!□

Cliff Hamilton

STEP Advisory Committee Named

Gov. Vic Atiyeh has named 15 Oregonians to the state Salmon and Trout Enhancement Program Advisory Committee.

Named were Melvin E. Erdman, Bandon, and James F. Fleck, Coquille, to represent the Bandon-Reedsport area; Steven C. Smith, Gold Beach, and Keith E. Wilkinson, Brookings, to represent the Brookings-Gold Beach area; Ron E. Phillips, Newport, and Marcus D. Weigand, Lincoln City, to represent the Florence-Newport area; Glenn C. Weldon, Grants Pass, represents the Grants Pass area; Nicholas C. Gelbard, Cloverdale, and Ron Quick, Tillamook, to represent the Pacific City-Garbaldi area; James W. Van Loan, Idleyld Park, to represent the Roseburg area; Bill M. Bakke, Gerald I. Branch, and Joyce E. Findley, all from Portland, with G. Neal Maine, Seaside, to represent the Seaside-Astoria-Portland area; and Vicky J. Heintzman, Albany, to represent the Willamette Valley area.

The committee was created by the 1981 Oregon Legislature to advise the state Fish and Wildlife Commission on the implementation of salmon and trout enhancement projects (HB 2992) to benefit all users of the salmon and trout resources in the state.

Each appointee will serve a two-year term beginning officially Nov. 1, 1981 and ending Oct. 31, 1983.

Erdman has been a commercial fisherman for 35 years and has been involved in commercial trolling, gillnetting, and the Clatsop County School salmon hatcheries.

Fleck has been active in salmon enhancement programs on the south coast. He is an executive vice president of Security Bank of Coos Bay, Myrtle Point. The 1957 Astoria High School graduate attended Linfield College (1957-1959), and graduated from both Eugene Business College (1960) and the Pacific Coast Banking School, Seattle (1981).

Smith has been employed with Champion International Corp., Gold Beach, since 1976 and is a district forest land manager for the firm. He received his bachelor of science degree in forestry from Humboldt State University, Arcata, Calif. (1976). He has participated in the Gold Beach chapter of the Northwest Steelheaders' fish habitat enhancement projects.

Wilkinson is a commercial fisherman and a port commissioner for the Port of Brookings. He was a salmon and steelhead river guide from 1971 to 1979 and, until his retirement in 1979, worked for Pacific Telephone Co., Yreka, Calif.

Phillips has been employed by Newport Pacific Corp., since 1976 and is an administrator for the firm. He attended Mesa College, Grand Junction, Colo. (1951-1953).□

MARCH 1982

TIP OF THE HAT

An elk hunter from Lane County was checked at a game check held by State Police troopers from the Prineville office. When first contacted he advised he had not "done any good at elk hunting." But a shotgun and bird feathers were observed by the officers and the hunter was asked to display his game.

When the back of the pickup was opened elk hair was found on the tailgate which led to discovery of three-fourths of an elk. The meat was tagged and the hunter maintained he had taken a small spike bull but forgot to bring the head with him.

After pelvic measurements established the carcass was not a bull he admitted to killing a cow elk. He was cited and appeared before District Court Judge George Neilson in Prineville. He was fined \$525, sentenced to three days in jail, his hunting license was suspended for two years and his rifle was confiscated.

A tip of the sportsman's hat to Judge Neilson for helping make things rough on wildlife violators.□

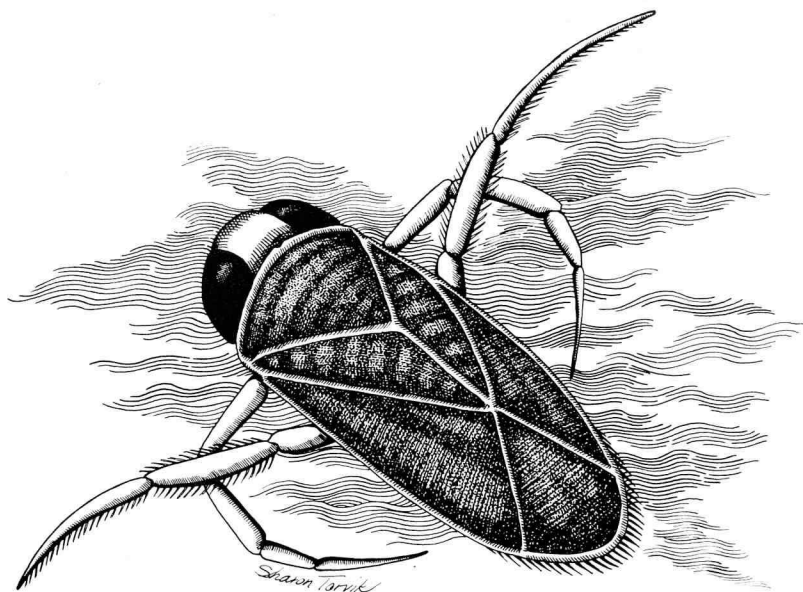
FURBEARER PROCEEDINGS PUBLISHED

Proceedings from the Worldwide Furbearer Conference held last year in Frostburg, Maryland have been published.

Included in the proceedings are 2,056 pages of up-to-date information on the world's furbearers, ranging from the large fur seals to weasels. The three-volume set is regarded as a major reference for future decisions in furbearer management, as well as a valuable reference for biologists, naturalists and the public.

The proceedings include information on furbearer systematics, evolution, habitat, diseases, behavior and other subjects. Titled "The World Furbearer Conference Proceedings," the publication is available from Worldwide Furbearer Conference, Inc., 1111 E. Cold Spring Lane, Baltimore, MD 21239 for \$60.00 per set.

Wildlife Management Institute
OREGON WILDLIFE



THE WATER BOATMAN

In man's view of things, walking on water is an omnipotent act. However, to aquatic members of a group of insects known scientifically as *Hemiptera* the feat is no big deal. The water strider, the backswimmer and the water boatman all spend most of their time treading the fragile surface tension created by water molecules.

The water boatman is the most common of the water bugs. It has a black and grey shell which measures up to one-half inch in length. The front legs are short with a flattened or scooped shape. The back legs, which are actually located at mid-body, are long and fringed with combs of bristles. These hind legs give the bug its name for they are used literally as oars to move the boatman in jerky movements through or across the water.

While the boatman is most often seen stroking its way across slow moving or quiet waters, it actually feeds at the bottom. The same oar-like legs also propel the bug into a dive where it sticks its mouth into the mud and sucks out small organisms.

The water boatman is an air breather so it takes its own air supply along when it dives by forming an air bubble on its belly. This natural scuba device provides air that can even be replenished by circulating water.

Light body weight and the buoyancy of the air bubble forces the boatman to cling to the bottom as it feeds. Otherwise it would pop back to the surface. In addition to surface rowing and bottom feeding, the boatman can also fly. Adults take to the air when the time comes to disperse populations. Swarms may be seen milling above the water surface.

Boatman eggs are attached to solid supports such as stones, sticks and shells in the water. One subspecies favors the shell of a particular species of living crawfish that is often found covered with insect eggs.

Some Indian populations in Mexico are even said to farm these eggs by tying bundles of grass together and floating them on the surface until they are covered with boatman eggs. The eggs are then shaken off, cleaned and made into flour.□

Jim Gladson
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Baldock Slough, a wild oasis in agricultural country.

Great Horned Owl



BALDOCK SLOUGH

Saved By Your Dollars

by S. Bruce Craven

Just north of Baker, and a stones throw east of Interstate 84 is Baldock Slough, a small parcel of land unique in Oregon. Within the confines of its 12 acres are an assortment of ponds lined with the trees, shrubs and grasses usual in such moisture laden areas. Nor are the various wildlife species found there unusual. The same assortment of hawks, owls, rabbits, sparrows and the like are present that would probably be found in similar areas throughout northeastern Oregon.

Instead, what makes Baldock Slough unique is the funding source for its purchase last January by the Oregon Department of Fish and Wildlife. It is the first piece of property purchased using money donated by Oregonians from their state income tax refunds; money raised through the Nongame Checkoff Program.

So what did we buy for nongame wildlife from the state Department

of Transportation? That most valuable and increasingly threatened of all wildlife necessities . . . habitat, excellent wildlife habitat.

Baldock Slough appears much like a small island in a sea of snow if one looks down on it from an airplane during the winter months. The analogy of an island is fitting. Surrounded by agricultural land, life within the slough is largely self contained. Yet a number of species also rely on the surrounding areas as well for their needs.

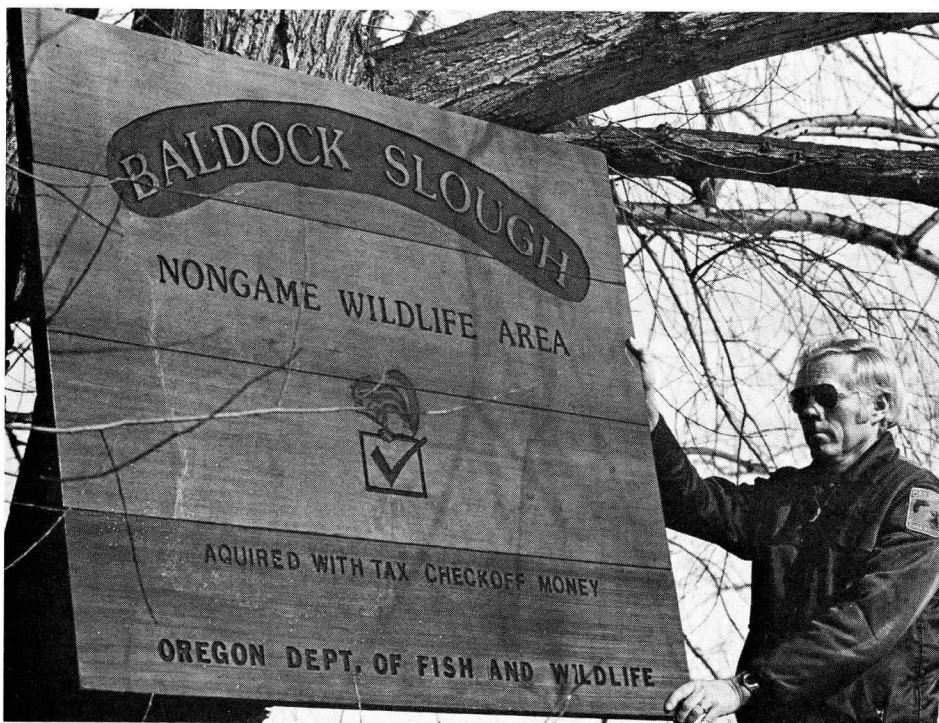
terdependence, one species relying on another, for survival. The relationships between wildlife and habitat range from the straightforward to the subtle, from the obvious to the obscure. As the intertwining branches of the slough's wild rose thickets are easier to see in the leafless winter, so are some interactions of the species living there.

It is the vegetation, the tangle of rose thickets, the willows, dog-

MARCH 1982



Baldock Slough is home to a variety of wildlife. It is one of the few remaining examples of what the entire area looked like at one time.



This attractive sign has been erected on the area. It was carved by Department Nongame Biologist Ron Rohweder.

OREGON WILDLIFE

woods, cottonwoods, and the grasses upon which winter survival largely depends. The insect egg cases and pupae left there in summer and fall now feed the downy woodpecker and magpie in winter. The deep red rose hips help the tree sparrow and song sparrow through the season, as do the seeds beneath a carpet of leaves help the meadow mice. Thickets provide shelter from the harsh cold and driving snows of a bitter winter. Leaves and grasses make snug burrows and muskrats feed on the submerged roots of cattails frozen in the ponds.

It is the survival of these species that determine the fate of the slough's predators. To the marsh hawk cruising low over a field, mice populations are the key to survival. For the great horned owl dozing in a cottonwood tree, there is an assortment of prey species in the slough. It is the fate of the predators that determine the condition of the vegetation by keeping the prey species from becoming too numerous for the habitat. And so it goes.

This and more is Baldock Slough, a small remnant of what much of that entire portion of the Baker Valley was before being drained. In light of changing land use, often resulting in diminished wildlife habitat, the value of an area like Baldock Slough is obvious.

Though the future of Baldock Slough is now assured, the subtleties of such assurance will never be grasped by the slough's inhabitants. Concepts such as change, size and land use will never be considered by them. For the plants and animals of Baldock Slough past and future don't exist, only the present, taken as it has always been taken; one day at a time.

Only we can remember the past and think of the future. The Nongame Checkoff Program is a good place to put those thoughts into action so the wildlife inhabitants of other areas throughout the state will be assured a place in that future as well. □

THIS AND THAT

Compiled by Ken Durbin

BIG BUST

What's been described as "the largest and most successful fish and wildlife investigation that's ever been conducted" involved 200 agents and resulted in the arrest of 27 persons. Over the previous 18 months, undercover agents maintained a "front" wildlife dealership and bought and sold over 10,000 illegal animals. The large demand for exotic and poisonous snakes was especially surprising to the agents — with some species being sold for \$1,500 on the black market — and they estimate that 100,000 snakes are unknowingly shipped by the postal service each year.

Pennsylvania Game News

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NO EYE IN THE SKY

"A peculiar virtue in wildlife ethics is that the hunter ordinarily has no gallery to applaud or disapprove of his conduct. Whatever his acts, they are dictated by his own conscience, rather than by a mob of onlookers. It is difficult to exaggerate the importance of this fact."

Aldo Leopold,
A Sand County Almanac

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HOW WRONG CAN YOU BE?

Two "hunters" contacted by a State Police Game Trooper out of Salem were about as wrong as they could be.

Reported by a landowner for shooting a swan with a .22 rifle, they also were hunting on private land without permission, did not have life preservers in their boat and were hunting with unplugged shotguns. One did not have a duck stamp and the other did not have a hunting license. They were also in possession of marijuana and alcoholic beverages which, the report added, may have had something to do with their state of mind.

A MONEY TREE

The saying, "A tree is just a tree," is not so when you figure a tree can be worth \$196,250. Trees, individually and collectively, have many functional and aesthetic values.

Steve Schwab, Sioux Falls district forester for the Game, Fish and Parks Department in South Dakota says, the observation of what a tree is worth in dollars was made by Professor T.M. Das of the Agricultural University of Calcutta, India. He estimates that a tree which normally lives 50 years would produce about \$31,250 (U.S. dollars) worth of oxygen, \$62,500 in air pollution control, \$31,250 in soil erosion control and additions to soil fertility, \$37,500 in recycling water and controlling humidity, \$31,250 in shelter for animals and birds, and \$2,500 worth of protein for a total of nearly \$196,250. Add to that tree values of flowers, fruits and wood. A tree sold for commercial purposes brings less than 0.3 percent of its real value, according to Professor Das.

Nature Society News

HUNTER ETHICS

The following six rules compiled by the National Rifle Association should be a part of every hunter's code of ethics.

1. I will consider myself an invited guest of the landowner, seeking his permission and so conducting myself that I may be welcome in the future.
2. I will obey the rules of safe gun handling and will courteously but firmly insist that others who hunt with me do the same.
3. I will obey all game laws and regulations and will insist that my companions do likewise.
4. I will do my best to acquire those marksmanship and hunting skills which assure clean, sportsmanlike kills.
5. I will support conservation efforts which can assure good hunting for future generations of America.
6. I will pass along to younger hunters the attitudes and skills essential to a true outdoor sportsman.

GAME AND DOMESTIC MEAT COMPOSITION, 100 GRAM EDIBLE PORTION

Food and Description	Food			
	Water Percent	Energy calories	Protein grams	Fat grams
Beef: choice grade, trimmed, raw	56.7	301	17.4	25.1
Pork: composite of trimmed lean meat, medium fat class, raw	56.3	308	15.7	26.7
Lamb: choice grade, trimmed raw	61.0	263	16.5	21.3
Beaver: cooked, roasted	56.2	248	29.2	13.7
Rabbit: raw	73.0	135	21.0	5.0
Raccoon: cooked, roasted	54.8	255	29.2	14.5
Muskrat: cooked, roasted	67.3	153	27.2	4.1
Opossum: cooked, roasted	57.3	221	30.2	10.2
Venison: lean meat, raw	74.0	126	21.0	4.0
Chicken: fryers total edible, raw	75.7	124	18.6	4.9
Duck, domestic: total edible, raw	54.3	326	16.0	28.6
Duck, wild: total edible, raw	61.1	233	21.1	15.8
Pheasant: total edible, raw	69.2	151	24.3	5.2
Quail: total edible, raw	56.9	168	25.0	6.8
Catfish: raw	78.0	103	17.6	3.1
Largemouth bass: raw	77.3	104	18.9	2.6
Frog legs	81.9	73	16.4	.3
Crayfish	82.5	72	14.6	.5

— From Tennessee Wildlife



Oregon's

WILDLIFE WINDOW

Wildlife reproduction and spring go hand in hand. For many species, spring is the one time when animal numbers rise despite the continuous downward pressures caused by disease, starvation, predators, accidents and weather. The whole business of populations going up or down plus the rate or timing of change is called population dynamics. Each animal species has its own.

All living populations reproduce at rates dependent on 1) the number of animals of breeding age, 2) number of young each mature animal can produce, 3) how quickly the offspring reach breeding age, and 4) how many generations of young each mature animal can produce. Species with a high reproductive rate, good survival and plenty of adults to breed often "explode." We heard about the population bomb all through the 70's. It mostly involved projections of human populations, but the principles being applied came from observing wildlife.

Biologists label sudden increases in populations as "irruptions." Most often such phenomenon are seen in small, fast-breeding creatures like field mice, rabbits, or grasshoppers. Species capable of irrupting are usually low on the food chain with plants as their basic food supply.

The initial population growth curve is an exponential one. It begins slowly and rises gradually for a time. The curve becomes

steeper as surviving breeders increase. Additional breeders lead to further additions. The curve steepens sharply as the population begins doubling, then tripling and quadrupling with each new generation. At this point the population is "exploding."

The pressure curve in an exploding bomb shows very much the same shape. Pressure on resources that support an exploding population are similar. Like a bomb, population pressures on supporting resources can be tremendous and very destructive. Animal irruptions have laid habitats bare much like a bomb exploding.

No explosion lasts forever. Food, space, disease or other factors will force a population to level off or drop back to what the habitat can sustain over a long period. In a bomb explosion, pressure would fall back to zero when all the explosive had been consumed. In an animal "explosion" the population does not usually fall to extinction even though much of the environment may have been damaged or "used up."

Next month we will continue examination of population dynamics with a look at various stabilizing patterns that may follow a populations' exponential rise. □

THIS MONTH'S WINDOW

POPULATIONS

Start a yeast colony on a suitable medium. Monitor the growth rate. Graph the results.

Alter the nutrient level in your experiment. What can you observe about the rate of growth and peak population size?

Find data on human populations from the present to as far back as possible. Graph them. Compare the graph with that of your colony. What does the present rate of growth tell you about the future pressure on resources?

THE NONGAME CHECKOFF . . . An Update

What follows is a history of sorts. Like any history it is a look at the past that helps explain the present. Picture this.

Two adult prairie falcons wheel and cry in the air above a rimrock in eastern Oregon's Baker County. Like any couple whose home is being disturbed, they protest loudly as three Department of Fish and Wildlife biologists walk down the slope to the rim.

The biologists secure a rope and one lets himself down over the rocky face. About six feet down from the edge he stops and peers into a hole in the rocks. Staring back are three scruffy falcon chicks squawking their alarm and outrage. Gently, the biologist takes one in hand and passes it up to his co-workers above.

They examine the bird, put a metal band on its leg, and pass it back. The process is repeated for the remaining chicks. Then the biologist climbs back up, hauls in the rope and leaves with the other Department workers.

The activity lasted less than 30 minutes. In another 15 minutes the parents were back at the nest checking on their young. Everything is as it was before, with one important exception. The biologists now knew more about these birds of the desert, and the banded chicks would provide future information on where they travel in this big country.

In wildlife management terminology, this work is called "inventory." This information gathering process is nothing new. Biologists have been doing inventory or census for decades on such species as deer, elk, pheasant, waterfowl, salmon and trout.

What is relatively new is that this same work now includes non-hunted species such as the falcons and bald eagles.

These birds and hundreds of other nonhunted species of mammals,

birds and reptiles fall into a category called, for lack of a better word, nongame wildlife.

The distinction between "nongame" and game or hunted species is an important one, or at least it once was considered so.

Traditionally, state fish and game departments throughout the U.S. received most of their operating money from the sale of hunting and fishing licenses and federal taxes on hunting and fishing equipment. Because the sportsmen were paying the bills, game departments concentrated their management and research on those species hunters hunted and anglers caught. Nongame species benefited from habitat improvement work.

In 1971, the Oregon Legislature gave the Department the formal responsibility for management of all wildlife, hunted or otherwise. No additional money was provided, however, so the fledgling nongame program operated on a small budget taken from license revenues.

The Wildlife Commission merged with the Fish Commission of Oregon in 1975. The combined agency was renamed the Department of Fish and Wildlife.

For 10 years, under both names, the nongame program moved along with some inventory work, swallow and bluebird nest box construction and planning coordination with other land management agencies.

The file containing things biologists would like to do far outweighed what could actually be done.

In 1979, the Legislature stepped in again and passed a law creating the Nongame Wildlife Fund. This fund was established to finance a comprehensive program for preservation and protection of nongame wildlife and their habitats.

Money would come from Oregon

taxpayers who could donate part of their state income tax refund to the program by checking boxes for \$1, \$3 or \$5 on their state tax forms.

As usual, Oregon was on the leading edge with this idea. Colorado had pioneered this fund raising method two years before. Since 1979 several states have recognized a good thing and adopted similar programs.

It was, and still is, a good idea. In 1979 and 1980 tax years combined, Oregon taxpayers donated over \$700,000 to the Nongame Wildlife Fund through the checkoff system. These funds amounted to more than double the existing nongame wildlife budget during those years.

Because of the two-year state budgeting process, this money could not be used until a new budget was approved. On July 1, 1981, the new, well funded, nongame program began.

Now, research and inventory projects have expanded. Habitat improvement projects are underway and critical nongame wildlife habitat is being identified. Some land has already been purchased. More parcels such as marshes or tide-flats will be bought. As with all wildlife, loss of habitat is a killer. To protect these species, some critical living places must be preserved.

Since the program is only as secure as the taxpayer donation level, the 1981 Legislature expanded the checkoff options to allow contributions of \$1, \$5, \$10 or more to the program.

After years on the back burner, the nongame management program has a lot of catching up to do. How much can be done rests directly on the decision of individual Oregonians when they fill out their tax forms this year. □

by Jim Gladson



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