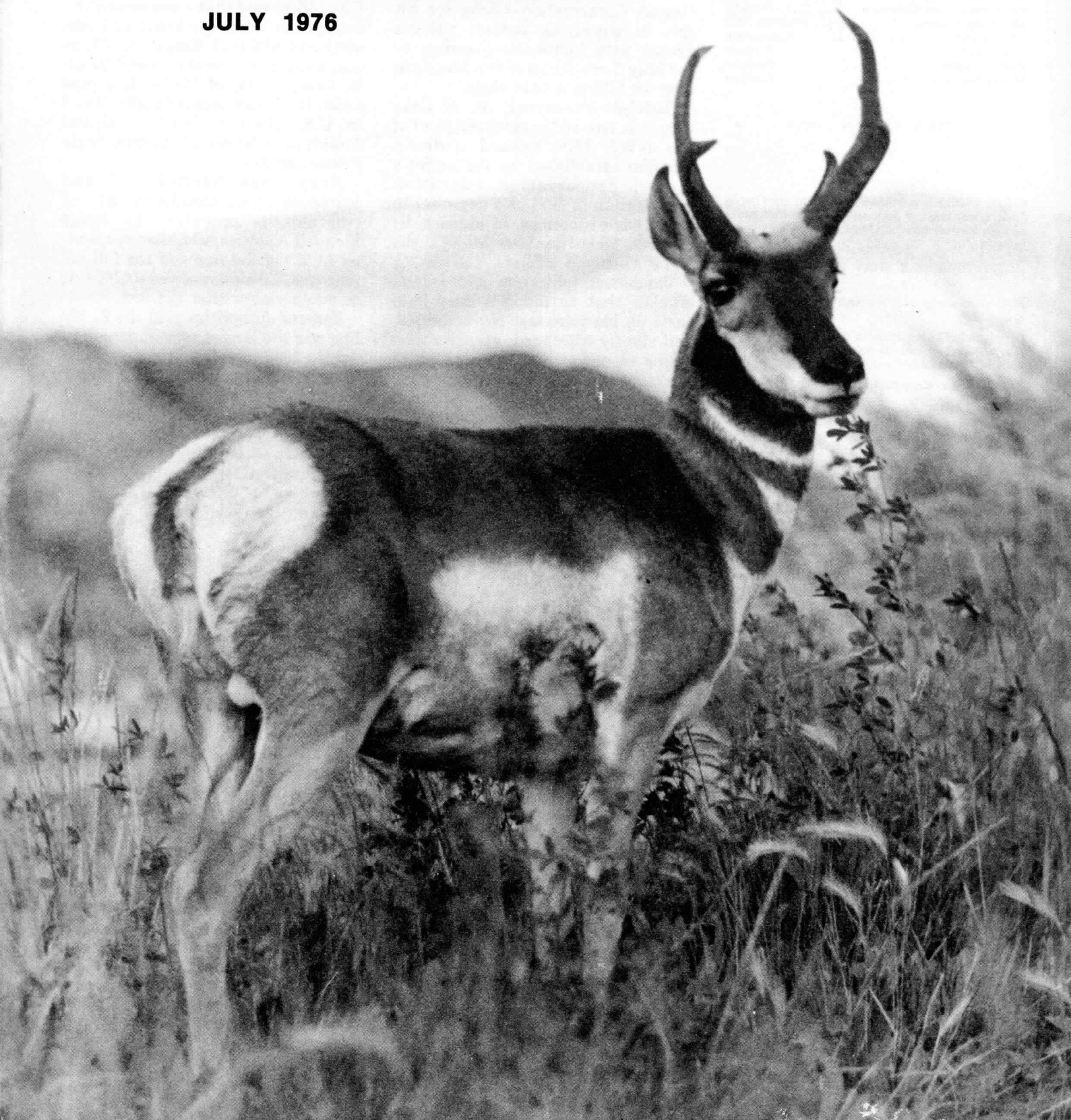


# OREGON WILDLIFE

JULY 1976



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Volume 31, No. 7

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## The Cover

Pronghorn. A rather special herd is described in the feature article.

*Photo by William Finley*

## HUNTER EDUCATION PROGRAM

### INSTRUCTORS APPROVED

Month of May ..... 13  
Total Active ..... 1,546

### STUDENTS TRAINED

Month of May ..... 446  
Total to Date ..... 231,401

### HUNTING CASUALTIES REPORTED

IN 1976  
Fatal ..... 0  
Nonfatal ..... 5

## Michigan Farmer Earns \$1,000 in Rewards For Role in Convicting Eagle Killers

A Michigan farmer became \$1,000 richer on June 26, when he received reward money from the National Wildlife Federation and Michigan United Conservation Clubs for his role in supplying federal wildlife agents with information leading to the May 3 conviction of two Michigan men for killing a bald eagle.

Rudolph Vanderwal, 58, of Lake City, was named the sixth recipient of the NWF \$500 reward under a program established by the nation's largest conservation education organization in 1971 as a deterrent to illegal eagle shootings. In addition, he received \$500 from the MUCC, the NWF Michigan affiliate.

Vanderwal told state and federal officials that he found a dead bald eagle on his farm last November 19, and shortly afterward, saw two men acting suspiciously in the area where the bird had been found.

Vanderwal confronted the men, who told him they were hunting deer, but he noted "neither one of them was carrying a rifle." The Lake City farmer wrote down the license number of their pickup truck and described the men to state and

federal officials who came to claim the dead bird.

Special agent John Peterson, of the U.S. Fish and Wildlife Service's Bay City office, said that a subsequent investigation led to the arrest and conviction of Albert D. Krage, 35, of Burton, a machine operator, and William R. Goodall, 34, of Midland, a pipe fitter. Both men pleaded guilty May 3 in U.S. District Court at Grand Rapids to violations of the Bald Eagle Protection Act.

Krage was fined \$5,000 and sentenced to six months in jail and two months probation by Judge Wendell A. Miles, who then suspended \$3,500 of the fine and the full jail sentence. Goodall received a \$100 fine as an accessory after the fact.

Federal authorities said the \$1,500 fine was the largest ever imposed under the 1940 eagle law, which provides for a maximum penalty of a \$5,000 fine and a one-year prison term. U.S. Attorney Donald A. Davis prosecuted the case.

Vanderwal is also eligible for a federal reward for his aid in the case, amounting to \$800 or half the fine imposed on the defendants. □

## Commission to Meet

*The Fish and Wildlife Commission will meet on July 16 at 9:30 a.m. to hear public testimony and adopt rules concerning private salmon hatcheries. The meeting will be held at the Portland headquarters of the Commission at SW 17th and Alder. □*

## Compact to Meet

*The Columbia River Compact agencies will meet and hold a public hearing at the Western Forestry Center Auditorium on August 3 starting at 1 p.m. to discuss lower Columbia River gillnet seasons and the Indian commercial fishing season. The Forestry Center is located just off Canyon Road in the Zoo-OMSI area west of downtown Portland. Starting at 9 a.m. the same day, the Oregon Fish and Wildlife Commission will hold a routine business meeting at its headquarters office at SW 17th and Alder in Portland. □*

# A Mountain Valley Antelope Herd

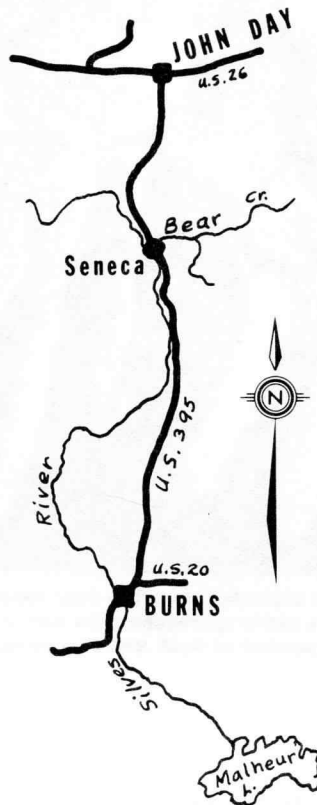
Allan Polenz, Game Biologist  
Habitat Projects, Southeast Region

A group of antelope racing through open ponderosa pine timber is not the picture a person normally has in mind when he thinks of the pronghorn. However, even though the high desert country of central and southeastern Oregon is the home of almost all of Oregon's antelope, there are a few valley areas surrounded by forested land that support antelope herds. Bear Valley in Grant County is one of these areas.

Bear Valley is bisected by U.S. Highway 395 and is 25 miles south of John Day and 45 miles north of Burns. The small town of Seneca is found in the southern part of the valley at an elevation of 4,666 feet. Bear Valley is surrounded by ponderosa pine forest. Average annual precipitation is approximately 15 inches with most coming as winter snow and spring and fall rains. The valley, almost entirely in private ownership, contains about 40,000 acres of antelope range and is drained by Bear Creek and the Silvies River. Topography consists of small rolling sagebrush covered hills interspersed with much native meadow land. Approximately 15 to 20 percent of the total valley area has been subjected to some form of sagebrush removal, either through spraying or plowing.

The first confirmed sighting of antelope in Bear Valley was during the summer of 1957, when ten head were observed by a Wildlife Commission biologist. Prior to this time there had been approximately 70 antelope summering 10 miles to the south in Silvies Valley.

The Silvies Valley herd continues to maintain itself at approximately that number. We do not know where the first Bear Valley antelope originated, but it is suspected that they drifted up from Silvies Valley. The original migrants evidently found the valley to their liking and returned for the following summers.



The Bear Valley herd migrates through approximately 10 miles of forested country twice a year when going to and leaving the summer area. Its winter range is about 45 miles southeast of Bear Valley on the east side of the Stinkingwater Mountains. The first animals usually arrive in Bear Valley by early or middle May and leave again around November 1 to 15. In later years, however, about one-half of the animals have been wintering in Bear Valley, an area where winter temperatures can reach a minus 50 degrees F.

The antelope population began an almost constant growth from 1957 until the period of 1963-67. During this five year span, the animal numbers fluctuated some but averaged about 90 head. Another growth spurt took place during the next two years. Average herd numbers during 1969, '70 and '71 were approximately 150 antelope. Another increase in

Biologists Al Polenz and Ralph Denney examine one of the recent recruits to the Bear Valley antelope herd.





numbers occurred in 1972 when the total Bear Valley herd was estimated at 225 head. This is also the current estimated total population.

The kid:doe ratio is the measurement of yearly production for an antelope herd. The pronghorn often produces twins but a late summer ratio of 80-100 kids:100 does is considered excellent production and survival. Most of our high desert ranges are currently producing a late summer kid:doe ratio of 30-40:100. The Bear Valley kid:doe ratios are averaging near 70:100. Birth rates of the Bear Valley herd and our high desert herds are comparable. However, as seen from late summer herd classification, kid survival in Bear Valley is much greater than on the desert ranges.

Why should there be such a large difference in the kid survival between ranges only 50-60 miles apart? We don't yet know the answer but there are a few readily observed differences between the Bear Valley area and the more "normal" antelope ranges of central and southeastern Oregon. Factors that would appear to favor the Bear Valley antelope include higher annual precipitation, cooler summer temperatures and a greater quantity of green forage, some of which is available almost summer-long. Additionally, there is a greater variety of plant communities in Bear Valley and consequently a more varied number of available forage species and more "edge effect". There is also good distribution of good quality water. Thus it appears that Bear Valley offers habitat superior to that found on most of the high desert ranges of Oregon.

As stated earlier, approximately 15 to 20 percent of Bear Valley has undergone some degree of sagebrush removal, either through spraying or removal by mechanical means such as plowing. Most of this removal has been followed by seedings which usually contain one or more species of wheatgrasses plus one or more legumes such as alfalfa and sainfoin. The antelope make heavy use of many of the seedings during spring and early summer. The heaviest use has been observed on the more recent seedings and the ones that contain a stand of legumes. The older seedings and the ones with no legumes do not receive the concentrated early season



**A pair of antelope kids. The Bear Valley antelope herd has been very successful in adding to its numbers and is approaching the carrying capacity of the area. Hunters will be allowed to take a limited number of buck and doe antelope from the herd this year to keep it in check.**

use. In addition, it has been observed that antelope avoid the spray areas containing standing dead brush for several years following treatment. As has been noticed in other areas, the seedings most used by the Bear Valley antelope are those that have been closely cropped by cattle. The more lush, tender regrowth or new vegetative growth is what the antelope are seeking. Later in the season as the seedings begin to dry up, the pronghorn makes more extensive use of the native meadows and adjoining brush lands.

A very important factor governing the use of the seedings is their size. Experience with rangeland seedings in southeastern Oregon indicates that most such treated areas do not contribute to any readily discernible increase in antelope use or any measurable population increase.

The greatest use of a seeding nor-

mally occurs during the first few years and then drops to a lower level. However, the Bear Valley seedings appear to show a different use pattern. Use of several of these treated units has continued for five to ten years and at certain times, especially late spring and early summer, the antelope use may be quite heavy. We believe there are several reasons for this. First, all of the Bear Valley seedings are quite small, ranging from 20 or 30 acres up to 200-300 acres, compared to the high desert seedings of thousands of acres in one block. Secondly, Bear Valley receives more moisture than most of the high desert ranges. This normally allows for better forage growth and regrowth. A third factor relates directly back to the small size of the seedings. The small scattered seedings create a greater proportion of edge than do large seedings. This in-

creased edge effect combined with the great diversity of native plant communities in Bear Valley appears to have created excellent antelope habitat.

Antelope hunting in Bear Valley was authorized in 1964 when the Murderer's Creek Unit was included with the Ochoco, Maury and Silvies Units in Area I. From 1964 through 1970, an average of 13 people per year hunted in Bear Valley. Yearly success ranged from 14 to 83 percent. The issuance of antelope tags was changed in 1971, when the area concept was dropped and management unit permits were issued. Since that time, antelope have been managed on a unit basis identical to that used for other big game species. Fifteen permits have been issued annually since 1971, for the taking of buck antelope in the Murderer's Creek Unit. Hunter success has been excellent, being at or near 100 percent every year.

The question may be asked, "Why issue only 15 permits when you have a total population of 200 antelope?" As stated earlier, all of Bear Valley is in private ownership and the ranchers have been tolerant of this antelope herd. Most of the ranches have allowed hunting by permission in past years. Past experience indicates that problems with hunter access could develop if hunter numbers were increased. Because of the relatively small hunting area available, there could easily be a problem of hunters getting in each other's way if more than 15 annual permits were issued. Finally, there is the problem of spectators. During some years, spectators have outnumbered hunters two or three to one. This creates a congestion problem as well as harassing the antelope and disturbing hunters attempting to stalk antelope.

The Bear Valley antelope herd has shown the great potential that big game animals have for increasing their numbers when favorable conditions exist. We believe that the growth of this herd is a result of natural range extension into favorable habitat composed of numerous plant communities containing a variety of forage species. Without this diversity and without the cooperation of the Bear Valley landowners, it is doubtful we would be able to maintain the antelope herd at its current level. □

# Accidents of the Wild

by John Ely  
District Wildlife Biologist, Coquille

If one considers the tremendous reproductive potential of many of the various forms of wildlife, it might be cause to stop and wonder where they all go. Each year the robins try to fill the earth's atmosphere with fledglings and all of the other birds bring forth great quantities of youngsters. Yet, the following year there are only about the same number of birds and other animals as there were previously. The immediate conclusion reached by some folks is that the obvious causes of predation and hunting of game species take the toll. Most species are not hunted, so that cause is invalid. Predation occurs on all species and the winter pinch period takes a huge number of the birds and animals that are over the amount that can be carried by the habitat. One decimating factor not as evident as some of the others is accidents.

Many hunters have found old wounds on carcasses of deer and elk.

These vary from broken ribs, shoulder blades, and other bones, missing dewclaws, split ears, and sticks embedded in the chest. Wire fences have taken their toll of big game from the beginning of fencing and will probably continue to do so as more grazing lands are enclosed by the barriers. Fence accidents usually occur when an animal misjudges the height of the fence. As he jumps the fence, the hind legs don't clear the top strand and, as his motion continues, the legs slide down engaging the second wire. As he falls to the ground, the legs are twisted between the two wires and the animal usually cannot escape.

A rather unusual instance involving fences occurred when two bull elk were arguing over the favors of the herd and ended up in a terrible tangle of wire, antlers, and elk. Another elk met his doom when he ran into a telephone wire that had been pulled down by a broken tree and became a



One of man's devices causing an accident in nature. A downed telephone wire became a noose for an unfortunate elk.





Deer-fence accidents are fairly common. Animals misjudging the height of the fence end up suspended by their hind legs.



Two elk arguing over the favors of the herd tangled with a fence during their sparring and met their demise.

noose for the animal. A rather puzzling, but not fatal, occurrence was revealed when a hunter walked up to the elk he had downed and found a toilet seat around the animal's neck!

Hazards and death traps sometimes exist only when a combination of factors occur, such as the buzzing of a hot, broken power line buried in the snow. Two coyotes and a cougar and her kitten were attracted by this death trap. Another power line pole snapped during a sleet storm and proved to be a fatal attractant to three bald eagles, a coyote, and a magpie.

Eagles run into problems with power lines in a couple of ways. The big birds often defecate as they take off from the high voltage lines and can sometimes make contact with two lines in the process. Also, they have a habit of sitting on one wire and wiping their beaks on the adjacent wire. In other areas they have caused a deadly short when they came in for a landing and their outspread wings touched two wires. Many of these problems have been remedied by installing the wires farther apart or in a different arrangement.

As was shown in the recent issue of this magazine, monofilament presents a continual hazard to wildlife. Birds become entangled in it and may be hung. Recently an osprey was observed soaring along with about 30 feet of the stuff trailing from its beak, undoubtedly the result of eating a fish that had broken off.

The plastic ringed devices used for holding six-pack cans of beverages together have been seen on geese and seagull necks, a ready device to strangle the birds. Some cases of bird deaths have been noted.

Discarded salmon and tuna fish cans frequently become unwanted headgear for small mammals as they try to obtain the last tidbit from the bottom of the can. Added to these man-made hazards are the high speed highways that now interlace the state. Each year the toll of big and small animals on the highways is considerable.

Nature is a harsh master and culls great numbers of creatures from her flock each year but the accidental deaths caused by man's devices are perhaps more bizarre than anything in the natural world. □

# This and that

compiled by Ken Durbin

## Should We Hunt?

Hunting has become an issue. In classrooms, living rooms, and conference rooms, people who have become aware of wildlife have also begun to question the propriety of the hunting ethic. Depending on one's perspective, hunting is either brutal or humane, callous or perceptive. Ironically, proponents of both sides have a common goal — conservation of wildlife — but that real issue is often lost in overgeneralizations and unsupportable arguments.

Young people are not alone in their curiosity about wildlife, nor in their zeal to protect it. They are easily involved in discussing the value of hunting as a sport. They often have strong feelings about the issues that correspond closely to the attitudes of their parents and home life. That's good. What is not so good is their frequent lack of sound reasoning and real understanding of the hunting issue.

There are many aspects to the debate but two basic observations should be emphasized. First, the decision to participate or not in sport hunting is a personal choice. Just as hunters should not be made to feel guilty, nonhunters should not be made to feel they somehow fail to measure up. Second, sport hunting is no threat to the continued survival of any animal species. Like a nervous boxer guarding against a left jab while an unseen right hook puts him on the canvas, hunter and nonhunter waste valuable time and money arguing about the hunting issue while the real threat, the loss of wildlife habitat, continues faster than ever.

The National Wildlife Federation has published a pamphlet entitled "Should We Hunt?" that amounts to a position paper for the organization. It is an excellent summary of the issue from the vantage point of a noncommitted observer. Sportsmen's organizations should be sure their schools have plenty of copies. For your copy, request it by title from National Wildlife Federation, 1412-16th Street NW, Washington, D.C. 20036.

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## Mt. Hood Lakes Bulletin Available

**Lakes of the Mount Hood National Forest**, the first in an informational series of leaflets on the lakes of the national forests, has been completed and is now available to the public.

The four-page publication lists more than 100 alpine lakes ranging in size from less than one to more than 1,400 acres. All are lakes that the Department of Fish and Wildlife stocks with trout. The location, maximum depth, elevation, and species of fish present are listed for each lake.

The leaflet is designed to be used in conjunction with any of the many excellent maps that are now available and a source list for maps is also included. As they are completed, leaflets covering the lakes of Oregon's other national forests will be made available.

Single copies are available free by writing to the address on the back of this magazine.

\*

## Sportsmen Buy Nongame Stamps

State fish and game departments have devised various ways to raise funds for nongame wildlife programs. In Colorado, for example, the Division of Wildlife issued conservation stamps so that those who wished to support nongame wildlife but not purchase hunting and fishing licenses could do so.

Colorado inaugurated the \$5 stamp program in 1974 assuming that the state's birdwatchers, backpackers, campers, nature photographers, etc., would be its most ardent supporters. But that hasn't been the case.

"They're hardly supporting it at all," said John Torres, the Division's nongame supervisor. Over the last two years, almost 63 percent of the stamp buyers have been hunters or fishermen. "So what it amounts to is that the people who complain the most about the status of nongame animals in Colorado are being hypocritical in the sense that they're doing the least to help those animals," Torres said. Only 2,069 of the stamps have been sold since 1974.

## Spring Turkey Take

Report cards returned by spring turkey hunters indicate a harvest of 17 gobblers during the nine-day season held in late April and May this year. Some 300 tags were issued to hunters successful in a drawing; 250 for the popular Wasco area and 50 in the northeast area.

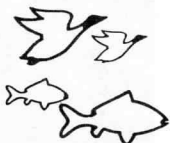
One hundred sixty hunters in the Wasco area reported taking 15 turkeys while 29 hunters in the northeast area took two gobblers.

Cool, windy weather on opening weekend sharply reduced gobbler activity and limited hunting success. Only four of the 17 turkeys were reported taken during this period. Forty-three percent of the unsuccessful hunters reported hearing or seeing turkeys.

\*

## NATIONAL HUNTING & FISHING DAY

September 25, 1976



National Hunting and Fishing Day provides America's sportsmen with an unprecedented opportunity to reach the general public with word on the sportsmen's role in conservation.

One of the simplest ways for all sportsmen to spread the word is to use the colorful NHF Day stickers. They are inexpensive, easy to use and they'll help tell everyone in your town that the great day is coming.

TO: NHF DAY, 1075 Post Road,  
Riverside, Conn. 06878

Please send \_\_\_\_\_ copies of the  
NHF Day Action Manual @ \$2.00 per  
copy (same as '75 edition).

\_\_\_\_\_ NHF Day bumper stickers  
@ 5 for \$1.00

\_\_\_\_\_ NHF Day Aids Kits @ \$3.00  
per kit

I enclose \$\_\_\_\_\_ to cover the  
cost of my order.

Name \_\_\_\_\_

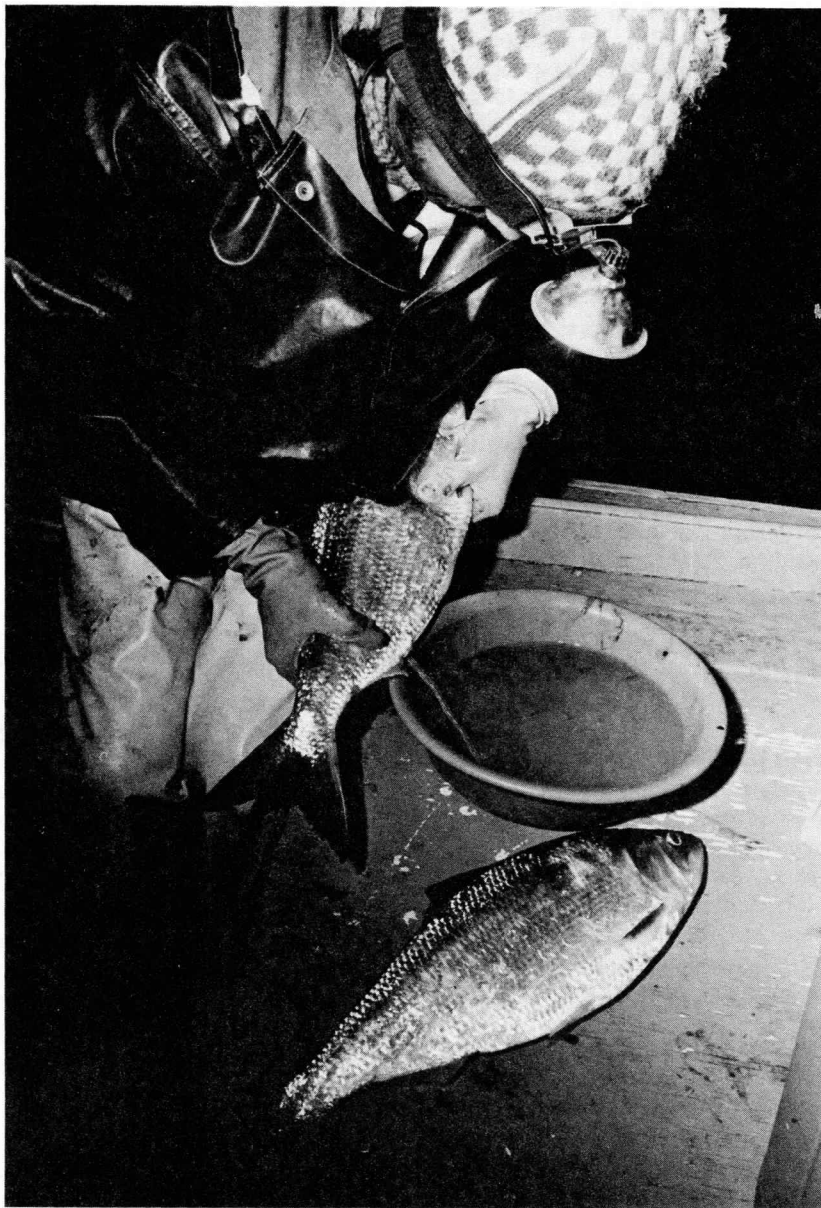
Organization \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

# Columbia Shad Return to Homeland

by Ken Durbin



A single shad can contain up to half a litre of eggs. In one night on the Columbia, the biologists have taken up to 135 litres of the valuable roe. This one night total exceeds the total number of eggs taken on several east coast streams over a two month period. Although this volume of eggs being removed from the Columbia seems large, it is really only a small fraction of the total egg production in the river.

Many a unique fishery has come about through fish "swaps" between various states and nations.

Oregon has a catch and release Atlantic salmon fishery, for example, in Hosmer Lake. The salmon originally came from Gaspé Bay, Quebec. And later this summer the Department of Fish and Wildlife will introduce arctic grayling from Montana into Fall River near Bend.

Recently, Oregon has been doing the providing. A team of four biologists from Ichthyological Associates, a private firm under contract to an east coast power company, is now in Oregon collecting fertilized shad eggs for use in bolstering runs of American shad in Maryland's Susquehanna River.

The team has been spending six nights a week on board commercial shad fishing boats taking fish directly from the nets and spawning them on the spot.

The biologists are using Columbia River eggs because none of the shad runs in east coast rivers have been able to provide enough eggs for the Susquehanna restoration.

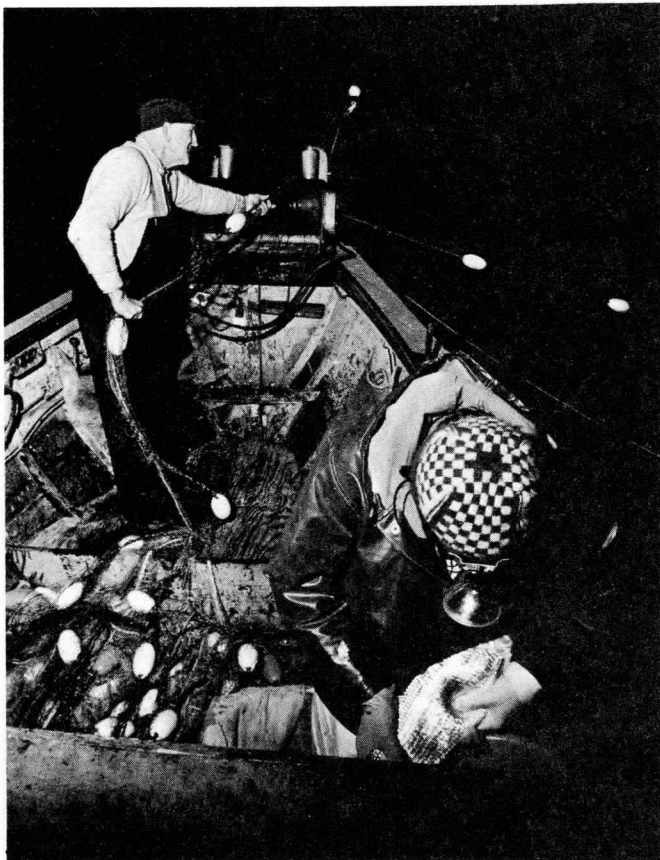
Ironically, the American shad is an introduced fish on the west coast. It is native to the east coast and the west coast fishery had its beginnings in eight cans shipped by rail across the country in 1871. The fish were introduced in the Sacramento River and have since spread to the rivers of southern California and north to the Gulf of Alaska.

Pollution problems plus the Conowingo Dam, a lower river structure which originally had no fish passage facilities, have combined to reduce shad numbers in the Susquehanna to critically low levels.

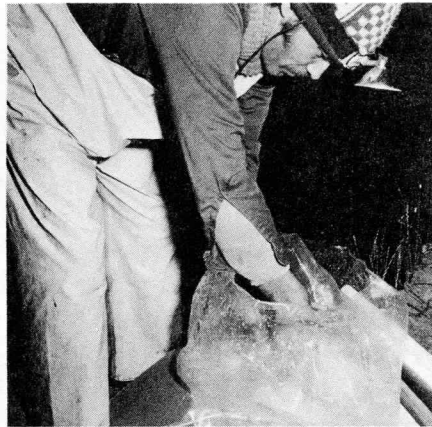
This is the third year the team from Ichthyological Associates has come to Oregon for shad eggs. The four-man team buys ripe fish from the Washougal reef area on the Washington side of the Columbia River, strips and fertilizes the eggs, and ships them daily by air to the Susquehanna where they are hatched in the river and released.

The team goal is about 50 million eggs a year until runs are reestablished in the Susquehanna. □



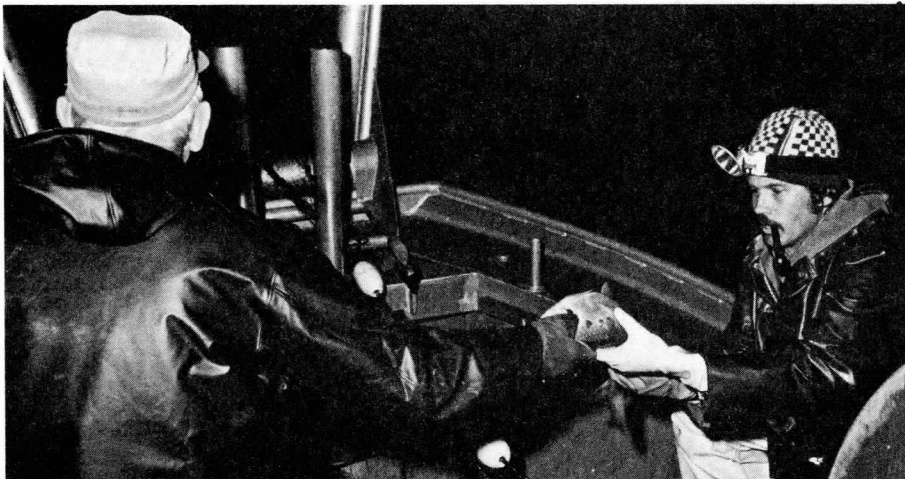


Kenny Kincaid, Corbett, hauls his net as Enn Kotkas spawns the catch. Kotkas and three other members of the egg taking team move from boat to boat in midriver taking fish directly from the nets. Most of the work is done at night.



The fertilized eggs are sealed in plastic and shipped in styrofoam lined containers. The egg taking crew ships the eggs to Maryland each night upon returning to shore. Within 24 hours after leaving the Columbia River, the eggs are put into the Susquehanna.

*Photos by  
Jim Gladson*



Senior project biologist of Ichthyological Associates takes a shad from Harris Quade. The eggs must be taken and fertilized immediately to assure good egg survival.



Harris Quade, Troutdale, lays out his net for an early evening drift along the Weshougal reef area of the Columbia. Most of the shad gillnetting begins around dusk and runs well into the early morning hours. Quade is one of nine fishermen cooperating with the four east coast biologists.

# Evaluation of Lost Creek Dam

by Al Smith  
Aquatic Biologist  
Research Division



A team of fishery biologists is at work on the upper Rogue River studying aspects of chinook salmon life history that may be affected when Lost Creek Dam is completed in 1976. This team is part of the Research Division of the Department of Fish and Wildlife, contracted to carry out the study by the builder of Lost Creek Dam, the U.S. Army Corps of Engineers. The entire research program funded by the Corps began September 1, 1974 and covers many facets of Rogue chinook, including physiology, genetics and historical information.

Researchers on the program, numbering about 20, are located at Cole Rivers Hatchery and in Corvallis, Grants Pass and Gold Beach. The project on the upper Rogue is responsible for field studies from Illahe (River Mile 33) to Cole Rivers Hatchery (River Mile 158) and for collecting specimens and data for other parts of the overall program.

Lost Creek Dam, now under construction, is located 9 miles above the town of Trail and immediately above Cole Rivers Hatchery. The 332 foot high dam is expected to increase summer flows in the Rogue and reduce high summer temperatures by storing winter and spring runoff and releasing it in the summer. These changes from existing flow and temperature patterns may affect certain phases of chinook life history such as migration, spawning and freshwater growth of juvenile fish. The study will compare pre and

postimpoundment river conditions and their effects on the chinook salmon life cycle. A detailed Fish and Wildlife Department study of Rogue River summer steelhead completed in 1973 will provide information on that species.

The upper river project headquarters is at Grants Pass, with additional project personnel assigned to Cole Rivers Hatchery. An important part of the study is an evaluation of young chinook released from Cole Rivers Hatchery. The hatchery, built by the Corps of Engineers to mitigate for upstream spawning losses, produces hundreds of thousands of young chinook every year. If substantial numbers of these fish remain for very long in the river, they could, because of their abundance, compete with wild chinook already present. The ideal goal would be for these hatchery fish to migrate directly to the ocean after release. To help achieve this goal, experiments are being conducted on time of release as well as what physical and physiological criteria determine whether the fish are ready to migrate.

The most interesting field activity is working with adult chinook on their upstream spawning migration. Two capture methods are used to obtain fish for measuring and tagging. The first is electrofishing by driftboat. An 18 foot driftboat carries the electrofishing equipment, consisting of alternator, transformer and electrodes hanging in the water. The fish are momentarily stunned by the

current and are pulled toward the positive electrode on the bow of the boat. The fish are then dipnetted and held for a few minutes in a livebox in the boat. Then the fish are measured, tagged and released. They quickly recover from the effects of the shock.

The second fish capture method for tagging is a trap at Gold Ray Dam, about 25 miles upriver from Grants Pass. The Department maintains a counting station at the dam where fish can be guided into an underwater cage. Up to 50 fish can be held for measuring and tagging.

Much of the information gained from tagging fish results when the fish are recaptured. Tagged Rogue chinook have been caught by anglers, recaptured by biologists using the same gear by which the fish were originally tagged or found as carcasses after they have spawned and died. Anglers are asked to return tags from fish they catch along with information on where and when the fish were caught. About 20 boxes for deposit of tags are located along the upper Rogue at popular bank angling sites and boat ramps. Many tags are recovered by biologists from the carcasses of dead spawned-out chinook. Weekly driftboat or foot surveys are conducted during the spawning season to determine spawning abundance, location and timing; and to look for tagged fish. Last year over 8,500 carcasses were examined with about 150 tags recovered.

Tag recoveries provide information on fish movement in different parts of





A juvenile chinook trap at Gold Ray Dam on the upper Rogue. Used as part of the Lost Creek Dam evaluation study.



Mike Evenson and John Adkins of the Research Section seining for juvenile chinook at Tou Velle Park.

the river, on population size and on time and place of spawning related to time of river entry. A tagging program in the lower Rogue provides for fish to be recaptured in all parts of the river. Some spring chinook were tagged near tidewater in 1974 and recaptured months later at Cole Rivers Hatchery, a journey of over 150 miles. Changing water conditions after the filling of Lost Creek Dam may affect chinook migration and spawning patterns. Tagging these chinook and recapturing them is one way of measuring the effects of the dam.

Even though working with adult chinook is more spectacular, knowledge of juvenile chinook is of equal importance. A number of juvenile sampling stations has been established on the upper Rogue River. Sampling gear consists of fine-meshed beach seines and stationary traps. Geographical distribution of these sites allows comparisons of different parts of the river with regard to juvenile chinook growth, abundance and migration patterns. Captured fish are measured, marked by cold branding and released. Scale samples are also taken for later examination under magnification to determine growth patterns. As with adult chinook, aspects of juvenile life history patterns that could be affected by the completion of Lost Creek Dam are being studied.

A water quality laboratory has been established at Cole Rivers Hatchery to relate physical and chemical changes in Rogue River water to any biological changes that take place in fish populations. Changes in flow and temperature may also affect the food organisms that juvenile fish feed on. Standard chemical analyses are done on water samples collected monthly at four upper river stations. Established U.S. Geological Survey temperature and flow stations record information that will be used. In addition, several thermographs have been set up by biologists that will continually monitor temperatures in areas where no temperature data are available.

This has been but a brief overview of one part of the Rogue research study. The upper river project fits in with and complements the other projects — lower river, physiology, genetics and historical — that make up the overall program. □





## THE BALD EAGLE IN OREGON

In this July issue of the Bicentennial year a look at our national bird in Oregon seems to be appropriate. A total count of the birds in the state is not available and actually wouldn't be too meaningful since we have both nesting and wintering populations. During the winter months northeastern and parts of central Oregon are host to birds that have come down from more northern climes. Others winter just upstream from the mouth of the Columbia.

According to the U.S. Fish and Wildlife Service, the summer nesting population is about stable in the state.

The coastal areas and the Cascades are homes for nesting birds. Perhaps one of the greatest threats to the future of the birds in Oregon is the removal of the tall trees near large bodies of water which are needed for nesting. Some are removed during logging operations and others, even though they may be left after logging, fall victim to windstorms.

Whether the bald eagle will remain as part of the Oregon wildlife scene remains to be seen. However, at the present Oregonians do have a better chance than most to get a glimpse of our national bird. □

