

Clarence L. Anderson,  
Commissioner.  
Clarence Pautzke,  
Deputy Commissioner.  
Dr. William Smoker,  
Director, Division of Biological  
Research.  
Walter Kirkness,  
Director, Division of Commercial  
Fisheries.

# Alaska Department of Fish & Game News Letter

James Brooks,  
Director, Division of Game.  
Ed Marvich,  
Director, Division of Sport Fishing.  
Alvin A. Bloomquist,  
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News Letter Editor,  
Alan Courtright,  
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*For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subpost, Juneau, Alaska*

## Red Salmon Prospect Good

The Division of Commercial Fisheries Dillingham office reported in midsummer that the Wood River lake system in the Bristol Bay area produced a fantastic number of red salmon fry this year. Assistant District Biologist Wilbur Church, who had previous experience in the area while working for the University of Washington's Fisheries Research Institute, said that the young salmon practically obscured the creek bottom in some places.

Though the 1959 escapement in the Wood River system was the largest in recent years, this was no assurance that the eggs would produce a large number of fry, as various factors could have affected the actual hatching success. The investigation which disclosed the large fry numbers is part of a continuing survival study being conducted jointly by the department and the Fisheries Research Institute, and Division of Commercial Fisheries biologists will be anticipating the return of the fry as adults. The largest returns from this year's hatch are expected in about 1965; the results could well determine whether such a large escapement will be called for in the future, according to Division Chief Walter Kirkness.

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## Happy Hunting Grounds

Division of Game Research Biologist Frank Jones, stationed at College, found a high initial calf survival in the Steese-Fortymile caribou herd, in contrast to poor-to-midling survival in the last couple of years. Prospects for hunting in the Interior area appear good if the animals cooperate by coming within reasonable distance of a road. Deer hunting prospects in Southeastern also appear to be excellent, as a succession of mild winters has allowed the herds to grow to peak numbers. Biologists are hoping that hunters will take advantage of the situation, as one really bad winter could take a large toll if too many deer are left on the range after the hunting season is over.



## Moose Transplant Big Project

Berner's Bay, thirty-odd miles north of Juneau, should have a huntable moose population within a few years. Division of Game biologists captured eleven moose calves in the Anchorage area in early June and had them flown to Juneau, where they were raised until old enough to fend for themselves.

Joining a nucleus herd of fourteen animals turned loose at Berner's Bay in 1958 by the U. S. Fish and Wildlife Service, the calves were to find at least three young cousins already present when they landed: Doug Blanchard of the Division of Protection reported seeing three calves there while on a routine patrol in late June.

Jim Brooks, Chief of the Division of Game, said that ordinarily such transplants are prohibitively expensive, and the department was able to make this effort to speed up the growth of the Berner's Bay herd only because of the cooperation of other organizations. The U. S. Army contributed helicopters for catching the calves, they were flown to Juneau by the Air National Guard, kept in a pen built by Territorial Sportsmen, Inc., and cared for by the counselors and children of Minfield Home, a children's home near Juneau operated by the Gospel Missionary Union. The Territorial Sportsmen also picked up the tab for part of the food, and paid the children of Minfield Home for their labors.

Sam Nickel, Minfield Home counselor who supervised the care and feeding for the first month, had a real job on his hands for the first half of that period. He and Jerry Huebert, another counselor who supervised a similar project in 1958, had to feed most of the animals themselves for the first couple of weeks, as well as administer pills and antibiotic shots, take measurements and weights, provide water and bedding, and handle the myriad other chores connected with raising moose calves. After the initial period of high susceptibility to sickness, during which several calves succumbed to pneumonia and assorted other illnesses, and after even the recalcitrant feeders had overcome their scruples about feeding from a bottle, the job became much easier. It wasn't long before the children were hard put to stay on their feet while determined young moose tried to get the last drops out of the bottle. After most of the main difficulties had been overcome, Sam and Jerry managed, with the assistance of Hugh Huguley and other Minfield Home counselors who pitched in when the occasion demanded, to get an occasional day off. Jerry Huebert had to leave Alaska in July, and Sam Nickel moved about the same time, so William Busnitz took over the task of chief moose-minder. Six of the twenty-nine children at the home participated in the project.

Plagued by extremely wet weather, biologists thought for a while that the cost of pills and antibiotics would exceed the cost of milk, pabulum, and calf food. With the assistance of State Veterinarian Fred Honsinger, however, the animals finally started picking up in proper fashion about the first of July, and the last time they were checked before this was written they were gamboling about in a downpour just as if they were lambs in the springtime blessed by the nonliquid type of sunshine.

Sam Nickel, left in photo, and Jerry Huebert weigh a young moose. Each animal was fed one pound of milk and pabulum daily for each ten pounds of body weight.

Some at times gained fifteen pounds a week.

## Grayling Studies

Near Fairbanks, Sport Fish Research Biologist Dr. Roger Reed and his crew have marked more than 2,100 grayling in the Chatanika River and over 725 in the Delta Clearwater River. Marked with plastic subcutaneous tags, the fish are being used to determine the migratory trends of the grayling in the Tanana River drainage, to establish population extents of grayling for these two tributaries of the Tanana, and to determine possible racial differences in the grayling of the two stream systems. Fishermen finding tags in their catch should send them to Dr. Reed at Box 105, College.

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## Catch Data Wanted

Sportsmen in the Southeastern area have a good opportunity to help the department with a major program; Research Biologist Robert Baade of Ketchikan has placed voluntary creel census boxes on 35 lakes throughout the area and is requesting that anglers fill in a creel census report form on completion of the days' fishing. The forms will provide the state with valuable information on the sport fish production in a representative group of Southeast Alaska lakes.

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## Biologists Join Department

With the placement of a management biologist in Ketchikan in late June, the Division of Game filled in the third of its three Regional Management Biologist positions: the other two are in Anchorage and Fairbanks. Loren Croxton, who completed the requirements for a Master of Science degree at the University of Alaska in early June, was hired to fill the new position. Croxton worked on mink in Southeastern Alaska for his M.S. degree, and is thus familiar with the area. He obtained his B.S. degree at Oregon State.

The Division of Sport Fish also added a management biologist to its staff during the summer. Richard Haley, a 1953 graduate of Humboldt State College in California, joined the staff in mid-July and is stationed at Seward. He was formerly employed by the California Department of Fish and Game as an aquatic biologist and fisheries manager.

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## Get-Acquainted Tour

Deputy Commissioner Clarence Pautzke, who joined the department in May upon his retirement from the Washington Department of Fisheries, spent most of June and July traveling to the various field offices and getting acquainted with advisory committees throughout the state. This takes considerable traveling: the department now has field offices in Ketchikan, Craig, Sitka, Petersburg, Yakutat, Cordova, Anchorage, Palmer, Glennallen, Tok, Seward, Fairbanks, Kodiak, Nome, Kitoi Bay, Dillingham, Sand Point, and Homer. Little wonder Commissioner Clarence Anderson needed an assistant!

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## New Quarters Consolidate Office

The Juneau office moved to new quarters this year upon completion of the Subport Building. Interdivisional communications have eased considerably: before the move, the Juneau "office" was spread out among no less than six different locations.

Jerry Stump feeds Droopy as A.N. "Gil" Eide of Territorial Sportsmen checks her ear tag. Droopy was the runt of the group, but she managed to survive diseases that killed some of the larger calves

## Polar Bear Take Down

Sam Harbo, Division of Game Research Biologist at Nome, reports that the known kill of polar bears this year was 128. The total kill is estimated at 163, of which 101 were taken by trophy hunters. This total is considerably lower than last year's, estimated at 250. Probable causes for the reduced take: poor ice conditions, and some well-publicized accidents which resulted in cancellations by timid hunters.

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## Correction

On page 14 of the July 1960 issue, under "Nonresident Licensing," it was stated that "The 'under sixteen' exemption no longer applies. All who fish or hunt must now obtain proper licenses." Nonresidents under sixteen may fish without licenses, but do need licenses to hunt.

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## Game-Tag Use Amended

An amendment to the 1960 Alaska Game Regulations, passed by the last session of the State Legislature, relaxes the game-tag law as follows: "... nonresident big game tags issued and not used for a particular species of animal may be utilized to satisfy the tagging requirement for any other species of animal for which the tag fee is of equal or lesser value, but only for the year in which the tag is purchased."

Thus a walrus tag (\$100) purchased in 1960 but not used on a walrus, could be used in 1960 on a grizzly or brown bear (\$75); bison, moose or sheep (\$50); elk, goat or caribou (\$25), or black bear or deer (\$10), but not on a polar bear (\$150), and not on more than one animal instead of walrus.





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## Bristol Bay Bonanza

Judging from the stories Deputy Commissioner Clarence Pautzke has been telling since his return from the Bristol Bay area, that part of Alaska was quite an exciting place during the commercial fishing season. The fish runs there were characterized as fantastic by Pautzke and Walt Kirkness, Chief of the Division of Commercial Fisheries.

By the end of July the salmon pack for Alaska was more than 700,000 cases ahead of last year at the same date in spite of generally poor runs in the southeastern district: the increase was mostly attributable to western Alaska's pack of more than double last year's production, although the central district also produced more fish this year.

"I've never seen anything like it," said Pautzke, who stopped in Bristol Bay while on a familiarization swing through the state. "There were a thousand nets in the water when the first wave of fish hit, and the whole works was just sunk by the weight as if the nets had suddenly turned to lead."

By the end of July, the Bristol Bay area had produced 985,859 cases of salmon, most of them reds, as compared to 449,858 cases at the same time last year. Central Alaska, comprising the Copper River, Prince William Sound, Cook Inlet, Kodiak, Chignik and South Peninsula areas, produced a pack of 750,089 cases by the end of July compared to 389,024 cases last year—mostly chum salmon, with reds running a close second.

After District Management Biologist Dean Paddock had determined that escapement (the number of fish going upstream to spawn) was sufficient to assure good production for the future, Bristol Bay was put on a seven-day fishing week. Escapement is always the first consideration, according to Commissioner C. L. Anderson, who found it necessary during the summer to close the season temporarily, or cut back the fishing week to one or two days, in some southeast areas.

"This is the only way we can build the runs back up to their former size," said Anderson. "Regulating to assure a good catch this year might make us temporarily popular with the fishermen, but wouldn't be in the best interests of Alaska."

## New Guide List

By the time the initial rush to qualify was over, some 130 guides had passed their examinations and had their names entered on the new Guide Register. New names were still being added, and Jim Brooks, Chief of the Division of Game, anticipated revision of the register every month or two. The Office of Education and Information had sent out over 96 copies of the register by early August, in response to requests from all over the U. S. and from several foreign countries.

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## "No Antlers" Moose

This year, for the first time, there will be an open season on antlerless moose in Alaska. Biologists have tried for years to obtain such "either-sex" seasons in some areas, but it wasn't until the state took over control of Alaska's game that these regulations were promulgated.

The moose herds in the Matanuska Valley area, particularly, have gone far out of balance with their food supply, and with the sex ratio also out of kilter, a "bulls only" season is obviously unrealistic. Under the "bulls only" type of regulation, each year there is less food to feed more animals, most of them females which will produce an even greater number of females next year. It doesn't take complicated mathematics to discover that the eventual result would be no food and no moose either. Things would be slowed down a bit, of course, if one could induce moose to adopt monogamy but harvesting some of the females is a much easier solution.

The antlerless moose hunts will take place in three areas, two of them in the Matanuska and one on the Kenai Peninsula. The hunts will all be closely watched and controlled; hunters will have to draw for permits (150 on the Kenai, a total of 450 on the two Matanuska areas) and will be required to tag all animals taken, check in with the department whether they were successful or not, and turn in all lower jaws to the biologists. Reproductive tracts, stomach samples and blood samples will be taken. The small areas involved in the hunts, and the special nature of the hunts themselves,

Some seventy-five prospective guides in the Anchorage area took the written part of the new guide examination at one time. Each applicant also had to answer twenty-five oral questions on each of the Guide Districts in which he wanted to practice.



will provide an ideal opportunity for the gathering of all sorts of biological information.

The situation on the Kenai is somewhat different from that in the Matanuska area, although the basic "worry" in both places is overpopulation. The Kenai herds have become artificially large, as a result of fires which led to extensive growths of browse plants which would not have been there under normal circumstances. Now, however, much of the brush has become trees with the foliage out of reach. The spruce is coming back, further cutting the food supply by suppressing the growth of browse species, many of which do not grow well except in the open. With the food supply decreasing, the moose population is bound to decrease also.

Some attempts have been made to reduce the overstory (trees) to allow more brush to grow, but for the present no economically feasible methods exist. If the moose populations are cut gradually by harvesting some of the females, increased human populations may result in enough additional revenue in the future to allow such manipulation of the environment; in this case it might be possible to hold the moose numbers at a higher level than would be possible under natural conditions. If the numbers are not cut gradually, however, there is an excellent chance that Mother Nature would cut them abruptly and drastically. This would probably take place only after the range had been severely damaged, and it would be much more difficult to bring the population up from a nature-induced low than from a man-induced midpoint.

And on the other hand—the Kenai used to have some good caribou herds. If the moose population is allowed to "crash," the natural vegetational succession could very well bring on a return of good caribou habitat. The only trouble with that premise is that caribou range appears to be more sensitive to human encroachment than moose range and the Kenai is developing so fast the caribou wouldn't be around long.

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### Ptarmigan

Dr. Bob Weeden, the Division of Game's bird biologist, has sent in a prediction on ptarmigan hunting: "much improved, but not top-notch." This is for the Interior area, where the most intensive studies are going on. Weeden has been banding young birds and adults in the vicinity of Eagle Creek, about one hundred miles north of Fairbanks: to check movements, he has also colored the wings of adults with purple, green, orange, yellow and other marking pen inks. He didn't say how long the ink would last, but hunters taking purple ptarmigan should not run for an oculist.

Big game hunting in Alaska receives so much publicity that the excellent sport afforded by smaller animals is often shoved into the background. Ptarmigan and grouse seasons, which opened August 20, will be open in most areas until next spring, long after the big game seasons have closed. In all of Alaska except Southeastern, the hare and rabbit season is open all year. With Dr. Weeden conducting full scale research on the upland game birds (a continuation of the studies which gained him his Ph.D. at the University of British Columbia) the department hopes to be able to maintain good small game hunting in spite of rising human populations. To be really successful, such hunting has to be reasonably accessible from the larger population centers. Hunters may often undertake major expeditions for sheep, elk or moose, but prefer easier going when hunting small game.

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### Reischl Search Unsuccessful

The Division of Protection, to handle the extra work load during the commercial fishing season, hires a number of Protection Assistants each summer. Mostly resident Alaskans, these men are chosen for their integrity and their ability to handle themselves away from civilization. They have to be good woodsmen as well as boatmen.

One of the best of these men was Ralph Reischl, who was assigned the area in the vicinity of Seymour Canal last summer. While on a stream survey in the Swan Cove area, Ralph disappeared. Immediately word was received in Juneau,

twenty-five air miles away, and the entire department mobilized for a search. Other work went by the board as all able-bodied men in the Juneau office headed for Admiralty Island. The Juneau Rescue Council also mobilized on short notice, and the entire area was combed by foot and helicopter. The U. S. Fish and Wildlife Service contributed Grumman aircraft to ferry men and supplies between Juneau and the search area, and their vessel *Grizzly Bear* joined the department motor vessel *Teal* to provide hot meals for the men on the beach. Many fishermen also joined in the search.

In spite of many days of intense searching, no trace of Ralph Reischl was found. He was a top woodsman, and one can only speculate as to what might have happened to him. Some tracks, believed to be Ralph's, were found near a tidal area, and it is possible he could have had an accident or a stroke and fallen into the bay.

Ralph Reischl will be sorely missed by the department and by a multitude of friends. He came to Alaska in 1929, and was very well known in southeastern Alaska especially. It will be difficult indeed to replace him as an employee, and as a friend he can never be replaced.

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### Big Walrus Take

Sam Harbo, Division of Game Research Biologist stationed in Nome, reported that the people of Little Diomed took more than a thousand walrus this year. This was far above average but the increased take there was somewhat offset by lower-than-usual takes at King and St. Lawrence Islands.

These three islands constitute the main walrus hunting areas of the state. There have been some reports that King Island Village may be abandoned. Many of the young people stayed in Nome or moved to other parts of Alaska this year, and there were barely enough people left on the island to provide manpower for pulling boats out of the water and carrying out the other jobs that require community effort.

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### Violators

The Division of Protection, by midsummer, had filed case reports on almost 250 violations of the fish and game regulations. Most of these were concerned with commercial fishing, as they occurred before the opening of most hunting seasons. Even so, there were 58 violations of the game regulations.

The 250 figure included an unofficial report of about 100 cases of fishing in a closed area in the Bristol Bay district. Next-most-common violation of commercial fishing regulations was, rather surprisingly according to Division Chief Jack Rhien, the taking of undersize razor clams.

In the hunting category, taking game during the closed season closely follows lack of a license as a cause for arrest; of the 58 game cases, 14 were for hunting without a license while 12 were for out-of-season hunting. There were also eight cases of trapping without a license.

Twenty-one people were arrested for sport fishing without licenses. The second highest category in sport fishing violations was "use of false statement in obtaining license." Other cases in all three classifications—game, sport fishing, and commercial fishing—ranged from purchase of halibut from an unlicensed vessel to shooting wolves from aircraft without a permit.

The violations on which case reports are filed represent only a small portion of the total cases investigated. Hundreds of reports have to be looked into, and the Division of Protection also has to check into such things as collisions between moose and automobiles and shooting of bears for self-protection. Division Chief Jack Rhien, following a "see it with my own eyes" policy, chased over to Douglas with Protection Officer Doug Blanchard one day last summer to investigate a report that a bear was following a baby buggy-pushing housewife down the street right in town (the bear was gone by the time Rhien and Blanchard arrived).

And then there was the case of the man who turned in a report, as required, concerning shooting a bear in self-defense. The bear, it seems, was chasing the man's airplane as it taxied on a lake.



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## One-Roof Headquarters

The new Juneau quarters in the Subport Building have been expanded to include an office for Statistician Phil Chitwood and his IBM machines. This brings the last of the "unconsolidated" Juneau offices under one roof. The new space also provides more room for Division of Services' licensing branch, and provides a conference room for meetings of the Board of Fish and Game and other gatherings.

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## Board Member Resigns

Board Member Arthur Hayr of Fairbanks recently announced his resignation for business reasons. Hayr has been a member of the Board of Fish and Game and its predecessor, the Fish and Game Commission, since 1957 and served as chairman in 1958. His term was to expire July 1, 1963.

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## Transplanted Moose Prosper

The moose transplant in the Cordova area, begun several years ago by the U. S. Fish and Wildlife Service, started to pay off this year. Under the supervision of Regional Management Biologist Al Erickson of Anchorage and Research Biologist Art Sheets of Cordova, a limited permit hunt began on August 20. Fifty permits were issued, for bulls only, in a drawing held in Cordova on August 6. The planned twenty-five animals were harvested in two week-ends of hunting, and the season was then closed.

The harvest included one bull with a rack of more than seventy inches, taken by State Representative Harold Hansen. This trophy may well go into the Boone and Crockett Club record book.

Chief Jim Brooks of the Division of Game is hoping the Berner's Bay transplant, thirty miles north of Juneau, will

do as well. The four female and two male moose calves to survive one of the wettest summers on Juneau records [See September Newsletter] were turned out on their own in late August after ten weeks of care at the Minfield Children's Home. The Division of Protection's motor vessel *Teal* towed a small scow to Berner's Bay with the six moose aboard. At the head of the bay are extensive mud flats, so proper timing was essential. After repulsing one calf that didn't like being left behind, Skipper Henry Museth pulled the scow off the beach just three minutes before high tide!

Three calves took a plunge unintentionally when, instead of watching the ramp, they kept their eyes on the bottle which Minfield Counselor William Busenitz was using to entice them ashore. The ducking apparently didn't do them any harm, as they were seen in the same general area during later checks, enjoying their freedom in sunshine provided at last by a relenting weather man. This winter will be a critical period for the young moose. If they pull through, they'll provide a substantial boost to the Berner's Bay herd.

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## Silvers for Sportsmen

Chief Ed Marvich, Division of Sport Fishing, reports that more than one-half million silver salmon eggs will be hatched at the Fire Lake hatchery this winter for stocking next year in certain lakes which do not lend themselves well to rainbow trout stocking. Experimental stocking of silver in the past indicates that this species will provide excellent sport in such lakes.

Traps were constructed in Cottonwood Creek and the lower Matanuska River this fall by Research Biologist Rupert Andrews of Palmer. Andrews expected to get about 500,000 silver salmon eggs from fish taken in these traps, and an additional 100,000 eggs from Research Biologist Bill Sharidan of the Kitoi Bay Research Station of Afognak Island.

Marvich says winter doesn't mean the end of the sport-fish

Alaska Dept. of Fish & Game photos



Captain Hank Museth of the *Teal* waiting on the beach while William Busenitz, Minfield Home counselor and now an experienced moose-wrangler, entices calves from the scow. Three of them, intent on the bottle, walked off the side of the ramp and got wet.

They "sure grew" in the ten weeks Jerry Stump and other Minfield boys fed them. Here, Jerry stands by while the calves sample forage and freedom in their new home. Up in the valley they will find some of their predecessors in the Berner's Bay transplant.



ing year. Feeding king salmon should be available all winter in the harbors near Wrangell, Petersburg, Cordova, Valdez, Sitka and Hoonah, and often the winter fishing is the best in these areas. Ice fishing also provides excellent sport during the winter. Marvich particularly named Mirror, Big, Wasilla and Finger Lakes in the Cook Inlet area and Jan and Lost Lakes in the Interior for rainbows, and the Salmon Creek reservoir near Juneau for Eastern brook trout from eight to fourteen inches long.

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### Lady Lambastes Bear with Broom

Research biologists in the Division of Game send in a tidy volume of paper work every month in the form of a "monthly summary of activities." These men all work under the Federal Aid to Wildlife Restoration program, under which the state is reimbursed by the federal government for seventy-five per cent of funds expended on approved game projects. Under the Pittman-Robertson Act, the federal government gets its reimbursing funds from a tax on the sale of firearms and ammunition.

The reports from the field are required by P-R Coordinator Sig Olson, who submits a monthly report of activities to the U.S. Fish and Wildlife Service. Every month Sig takes the fifteen or sixteen separate summaries from the field and consolidates them into a single report.

The summaries from the field are necessarily factual, but occasionally a bit of entertainment lightens the work load. Like the recent report from Research Biologist Frank Jones of Fairbanks:

One day while Management Biologist Bob Rausch, who usually handles such items, was out of the office, Jones got a telephone call about a black bear. Such calls are common in the Fairbanks area during the summer, as the blackies move in on garbage cans and gardens. In this case the caller was a lady who had heard a noise behind her in the kitchen and discovered "a little bitty black bear" on the inside of the screen door, scratching to be let out!

Jones, understandably curious, went out to investigate. Asked what her procedure was, the lady replied that she "lambasted hell out of it with the broom." (Jones didn't say whether she opened the screen door first.) Asked for more specific information about the size of the "little bitty bear," the lady said, "About this high at the shoulder," and held her hand some three feet above the floor.

Yet the Division of Protection investigates many cases of "shooting bear in defense of life or property," only to learn that the bear was many yards away from the shooter. Tok

District Conservation Officer Buck Stewart didn't believe one such story. The shooter, found guilty of using the "defense" clause as an excuse, was fined \$25. Too bad Jones wasn't present at the trial. He could have recommended confiscation of the weapon and offered the defendant a broom.

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### Of Whales and Smolts and Dynamite

Dr. William A. Smoker, Chief of the Division of Biological Research, reports a new use for dynamite.

Out in Bristol Bay last summer, beluga whales were going up the Kvichak River twenty miles above Levelock for their annual feast of salmon smolts. (Several years ago Jim Brooks, now Chief of the Division of Game, found that belugas were taking two or three million smolts each year, which doesn't help the salmon population any.) Research Biologist Calvin Lensink, aided by Parasitologist Ken Neiland, used small dynamite blasts to drive the belugas to the bay, where they are less effective in taking the young salmon.

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### Wanted: Dead or Alive

Dr. Ken Neiland is the first parasitologist to conduct serious studies in the Bristol Bay area, according to Dr. Smoker, and for him beluga-chasing was only a diversion. After leaving Bristol Bay he visited the Lewis Island sea-lion rookery near Montague Island, became the first parasitologist to examine Prince William Sound sea otter, then headed south to examine deer on Coronation Island south of Sitka. After that he will study parasite infestation in caribou in the Interior and the Arctic.

Although he tries hard, he can't be everywhere at once, so department biologists collect parasites for Dr. Neiland when the opportunity arises. When setting up procedures for these collections, Neiland sent the following posters out to all offices:

**WANTED! ! !**

**Dead or Alive! ! !**

**HARRY HELMINTH** (Note for non-biologists: the Helminths include the well-known tapeworm): Alias Willy the Worm, Creepy Carl, Duodenal Danny, Benny the Hook, Four-Sucker Sam and various other pseudonyms.

Description: usually white; male, female or frequently both; may be up to 50 feet long; generally possesses distinguishing features.

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## Bison in the Barley

Game biologists in the lower states are accustomed to complaints from the public that deer are eating ornamental shrubbery, rabbits are ruining gardens, geese overrunning wheat fields, and such. Even in Alaska, black-bear-and-garbage-can incidents keep biologists' telephones ringing in certain seasons, and moose make nuisances of themselves in the Matanuska.

Now that the Big Delta area is being developed agriculturally, Regional Management Biologist Bob Rausch is confronted with a new problem—bison in the barley—and the oats and peas. Bison aren't particular.

These transplanted animals, often erroneously called buffalo, have not been consistently peaceful citizens. They have demolished several automobiles, laid siege to housewives and school children, became addicted to old tin cans and other tidbits at the Fort Greely garbage dump, and otherwise provided off-beat news items. They were, however, isolated incidents involving individual animals or small groups, whereas the latest complaints involve bison *en masse*. One farmer told Rausch that part of a large herd invaded a twenty-three-acre pea and oat field, and in only three days transformed it into a twenty-three-acre golf course.

The first step toward alleviation of the bison-farmer problem was taken in early October, when all Division of Game personnel held their regular fall conference in Anchorage. Rausch, backed by Conservation Officer Buck Stewart of Tok, also familiar with the problem, sold his fellow biologists on the idea of reducing the bison herd by holding limited permit hunts. With most of the other staff-recommended changes, this proposal will be formally made public and filed with the Secretary of State at least thirty days before the board meeting at which the proposals will be considered. All interested parties will thus have an opportunity to comment upon the proposed regulation, and the board will be able to take all comments into consideration before making a final decision.

The board's deliberations aren't confined to proposals submitted by department biologists. There are advisory committees all over the state, which hold regular meetings for consideration of proposals by the public. Each advisory committee submits its recommendations to the board, other proposals come in by mail, and the board itself holds a public hearing in Juneau immediately before its formal session. Sportsmen's clubs, conservation societies and such organizations as the Forest Service and Fish and Wildlife Service submit recommendations. All in all, a formidable amount of material is available for the board's consideration.

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## Grayling Tags Paying Off

Dr. Roger Reed, Division of Sport Fisheries biologist in Fairbanks, reports that 8,855 Arctic grayling were tagged in five Tanana River tributaries during the summer. He started obtaining dividends from the program in September, when he found that grayling began dropping out of the Chatanika and Delta Clearwater Rivers into the main stem of the Tanana between September 10 and September 15. One of the objectives of the tagging program is to determine migratory patterns.

## Kuskokwim Fishery Surveyed

The Arctic Area staff of the Division of Commercial Fisheries has completed the first of what is planned to be a yearly survey of the Kuskokwim River subsistence fishery. Starting at McGrath on August 10, the crew traveled 485 miles downriver by skiff, ending at Napakiak on September 3, according to District Management Biologist Steve Pennoyer of Anchorage. The object of the trip was to obtain an estimate of the total number of salmon taken by the people along the river for dog feed and home consumption.

The crew found that approximately 2,100 people fished on the river last summer for subsistence purposes. They caught approximately 19,457 king salmon, 70,580 reds and 266,487 chum, and lesser numbers of pinks and silvers, as well as sheefish, whitefish and smelt. The area between Napakiak and Kwethluk had the largest number of fishermen.

The survey provided valuable information on timing of fish runs and on location and relative value of spawning areas. When made annually, the survey will yield indices of Kuskokwim salmon-run fluctuations.

\* \*

## Biologists Making Bed for Fish

An artificial spawning facility is being constructed at the Kitoi Bay Research Station on Afognak Island as a result of a recent discovery that pink salmon, which normally spawn in flowing streams, can be made to spawn in quiet water.

W. L. Sheridan of the Division of Biological Research showed in a pilot study last fall that female pink salmon will make their nests and deposit eggs in upwelling water introduced by way of perforated plastic pipes below a gravel bed.

The new spawning facility is designed to provide optimum conditions for upwelling-water spawning, to determine whether high production of pink salmon can be obtained from a small area. Under normal stream conditions pink salmon would require at least ten times as much water as will be required by the new facility, and according to Dr. W. A. Smoker, division head, the results may point the way toward establishing highly productive spawning ponds in sites where flooding or low water flows may cause extensive damage to salmon spawn.

\* \*

## Stiff Fines for Law Violators

Violating the game regulations can be highly unprofitable in Alaska. In a Kodiak court case last fall, three men were fined \$250 each for wanton waste of elk meat. The men were apprehended by Herbert L. Downing of the Division of Protection following their abandonment of elk meat at Tonki Cape on Afognak Island.

An even stiffer penalty was imposed in Copper Center about the same time, a fine of \$750 for killing a cow moose and her two female calves. The defendant in this case said he had mistaken the moose for caribou. The judge suspended \$300 of the fine. Protection Officer Bill Sholes of Glennallen signed the complaint after an investigation made with the help of Protection Assistant Jerry Crow and Biologist Ron Skoog of Anchorage. The moose carcasses were donated to the Valdez Children's Home.



## King Crab Growth Recorded

A female king crab tagged six years ago was captured last fall by Wakefield Fisheries, according to a report from Kodiak by Research Biologist Guy Powell of the Division of Biological Research. The crab had grown one inch in carapace length, Powell said, or an average of four millimeters per moult. If the legs grew at the same rate, it would take fifty years or more for a king crab to reach its average adult size.

\* \*

## Fiscal Year Adopted for Game Regulations

The Division of Game will publish Supplement No. 3 to the 1960 edition of the Alaska Game Regulations for distribution by January 1. What would have been the 1961 edition will become the 1961-'62 edition and will cover the period from July 1, 1961, to June 30, 1962. Supplement No. 3 will cover the period from January 1 to June 30, 1961.

Most of the game regulations will henceforth be promulgated by the board during the spring meetings, the fishing regulations receiving more attention at the fall deliberations. The change to a July 1-June 30 regulatory year will allow game biologists to present more recent biological information—particularly the effects of winter—to the Board of Fish and Game for consideration in promulgating seasons and bag limits. Under the present calendar-year system, the board had to set regulations at its fall meeting, before winter

affected the game populations. A regulatory announcement distributed in July will also be of benefit to trappers who leave town in the fall and don't return until spring.

\* \*

## Good Start on Silver Stocking

The Division of Sport Fisheries' Cook Inlet area silver salmon stocking program got off to a good start when Biologist Rupert Andrews of Palmer took 500,000 eggs from 214 silver salmon. The salmon were taken from Cottonwood Creek in the Matanuska Valley, and the eggs will be incubated this winter at the division's Fire Lake Hatchery.

\* \*

## Few and Far Off Are Not Neglected

The small places are by no means forgotten in the Sport Fisheries program. Assistant Biologist Lou Bandirola of Anchorage made a trip to Sitkinak Island, some hundred miles south of Kodiak Island, for a preliminary survey of Mark Lake last September. Sitkinak is relatively isolated. The population consists mostly of Coast Guard Loran Station personnel, some construction workers, and the operators of two cattle ranches. In places like that, sport fishing looms large in the recreation picture and the Division of Sport Fisheries hopes to insure maximum production of sport species for the benefit of the islanders.

## Restored Species

Bison bones in the permafrost, uncovered during gold-dredging operations, indicate that Alaska had a wide-ranging bison population in prehistoric times. Presumably some change of climate during one of the ice ages resulted in extermination of the species here. Today's relatively small but thriving herd is descended from twenty-three animals obtained from the National Bison Range in Montana. The transplant was instigated in 1926 by a Fairbanks group which constituted the original Tanana Valley Sportsmen's Association, and was financed by the Alaska Territorial Legislature.

At that time the Big Delta area, a hundred miles down the Richardson Highway from Fairbanks, seemed like an ideal bison range. There was no Fort Greely, no airport, no

Alaska Highway joining the Richardson—and the Richardson itself, as an automobile road, was less than a decade old. Big Delta was an important trading post but scarcely a community settlement, and the agricultural possibilities of the area didn't seem to interest anyone.

So far as the bison were concerned, it was an ideal range. They grew, as individuals noticeably larger than the parent stock in Montana, and as a herd, managed by the U.S. Fish and Wildlife Service while Alaska remained a Territory, to about five-hundred strong in 1958 in spite of limited-permit hunting during the previous decade.

The bison are not generally belligerent: they don't attack, but neither do they retreat, nor pay much heed to property lines and rights-of-way. Settlers have found it disconcerting to step outside and find a few ton-size bison idling

—please turn to page 50

Dollie Noble





# ADFG NEWSLETTER

(Continued from page 31)

in their dooryards. Motorists have found it even more disconcerting to come upon bison idling on the highway. One driver, back in 1950, plowed into a group of twenty or so, killed a cow and a calf, and injured another adult so badly it was shot for mercy's sake. The calf, incidentally, was the albino which may be seen as a mounted specimen in the University of Alaska Museum.

As in most bison-automobile encounters, the meat of the animals was salvaged for a charity institution, but the driver's pick-up truck was a total loss.

One bison did take a belligerent attitude toward automobiles. He was Old Joe, long-time patriarch of the herd, whose weight was estimated at eighteen hundred pounds or more—some said a thousand pounds more. Old Joe attacked automobiles, accomplished the near-ruin of five in as many years, and only once sustained apparent damage himself. But the autos came thicker and faster in spite of Old Joe's efforts. Discouraged and frustrated, or maybe just too old to live any longer, he died peacefully in the spring of 1957, at his favorite feeding ground, the Fort Greely garbage dump.

Indifferent as bison are to bipeds, it is said that even the first permit hunt was far from a sheep-in-a-pasture proposition. Some hunters came home exhausted and empty-handed; some brought home a bountiful supply of good-quality meat. So the bison are fulfilling the purpose of the far-sighted sportsmen who are responsible for their presence in Alaska—propagating a valuable species that was once almost exterminated, and providing a recreation resource. As long as both bison and people like it around Big Delta, it is fortunate that there's ample room for some of both. ▲

Clarence L. Anderson,  
Commissioner.  
Clarence Pautzke,  
Deputy Commissioner.  
Dr. William Smoker,  
Chief, Division of Biological  
Research.  
Walter Kirkness,  
Chief, Division of Commercial  
Fisheries.

# Alaska Department of Fish & Game News Letter

James Brooks,  
Chief, Division of Game.  
Ed Marvich,  
Chief, Division of Sport Fishing.  
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Alan Courtright,  
Management Biologist.

For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subpost, Juneau, Alaska

## Afognak Elk Afford More Hunting

When the elk season on Afognak Island closed October 15, a total of 121 animals had been taken, of which 63 were bulls, 37 were cows, 2 were calves, 19 unidentified. Ron Batchelor, research biologist of Kodiak, hastens to explain that the nineteen animals went unidentified, not because he couldn't tell the difference, but because he didn't get to see them. He simply wasn't able to track down all the successful hunters, although he got reports that they had scored.

Biologist Batchelor had hoped, in consideration of range conditions and last spring's increment, that the elk harvest would be at least 150 animals, but found too little hunting pressure even with a liberal twenty-day, either-sex season.

\* \*

## Fire Lake Hatchery Operating All Winter

Two plastic wading pools seen last summer in front of the Fire Lake hatchery buildings were not for use by visiting children. They served to expand the hatchery operation. Utilized as rearing ponds, the pools enabled the Division of Sport Fisheries to stock larger fish in the South Central area, where biologists find that many of the marginal lakes need larger trout.

With the installation of a furnace and insulation, the hatchery is being operated all winter for the first time. Two new sixteen-tray fiberglass and aluminum egg incubators currently hold half a million silver salmon eggs collected by Rupe Andrews, research biologist of Palmer.

Elk, transplanted to Afognak, have thrived so well the herd yielded 121 animals to fall hunters and had more to spare.



Earl Fleming

## Hunting Good in Highway Areas

Division of Game personnel in Anchorage, Fairbanks and Tok got comprehensive tallies of the game taken near the highways in those areas last fall. Checking stations were operated on the Taylor, Steese, Sterling and Glenn Highways, and a total of more than 7,100 hunters checked through. More were expected at the Taylor Highway station, where the Steese-Fortymile caribou had started to move within reach of the road just before deadline time.

With small game included, there was more than one "critter" for each hunter who checked through the stations, as the tally showed 9,178 birds and beasts. This is the way it looked by areas and species:

### Steese-Livengood station, near Fox: Hunters checked, 682

Moose	24	Ruffed Grouse	29
Caribou	41	Spruce Grouse	129
Black Bear	15	Sharptail Grouse	6
Wolf	1	Hares	26
Ptarmigan	83	Porcupine	1

### Kenai Station, on Sterling Highway one mile west of Seward Highway: Hunters checked, 1,268

Moose	269	Spruce Grouse	382
Sheep	13	Ducks	81
Goat	8	Emperor Geese	8
Black Bear	22	Ptarmigan	6
Coyote	2		

### Glenn Highway station, at King Mountain: Hunters checked, 1,479

Moose	257	Black Bear	6
Caribou	560	Grizzly Bear	4
Sheep	67	Spruce Grouse	85
Goat	5	Ducks	177

### Denali Highway station, on Denali Highway one mile west of Richardson Highway: Hunters checked, 3,714

Moose	278	Grizzly Bear	11
Caribou	1,974	Spruce Grouse	3
Sheep	12	Ptarmigan	116
Black Bear	2	Ducks	61

### Taylor Highway station, six miles north of Alaska Highway: Hunters checked, 1,060

Moose	80	Grouse	354
Caribou	1,135	Ptarmigan	25
Black Bear	4	Hares	94
Wolves	5	Ducks	3

Data from the checking stations is keeping several biologists busy this winter. First, there's the big problem of relating the number of animals checked to the

total bag wherever possible. Only a fraction of the game taken in Alaska is taken by hunters who go through checking stations on their way home. The fraction varies among the various species depending upon distribution, accessibility and other factors. Large numbers of hunters use boats and airplanes to get to hunting areas; thousands more live in roadless areas, or between their hunting areas and checking stations. Calls on cold storage plants, mailed questionnaires, visits to isolated villages, interviews with charter pilots and other means will supplement the checking station data, and eventually some reliable estimates of the total take will result.

As any of the game biologists will be quick to point out, the bag totals, while interesting, are of value mainly in connection with other data such as hunter success ratios in past years, range conditions, age structure of the game populations, physical conditions of the animals taken, productivity, herd movements, predation, weather conditions, hunting methods and hunting pressure, and other factors which occupy the biologists during other times of the year.

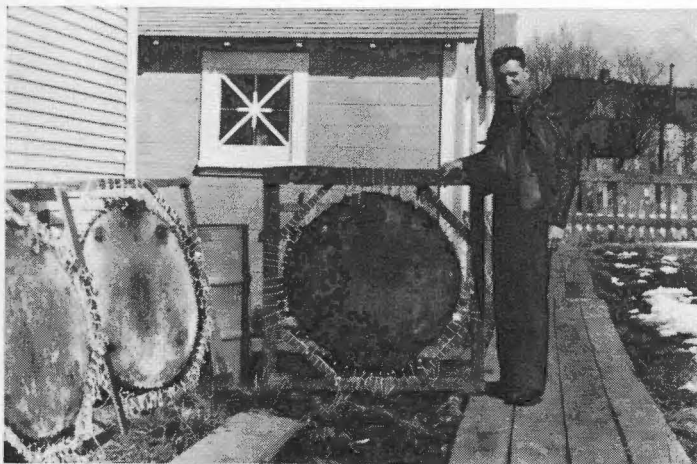
As an example, say a hundred moose are taken in the Tanana Valley. This is interesting, but doesn't mean much in itself. If research shows this is one moose per 15.2 days of hunter effort, and last year the take was one moose per 20.5 days of effort, the biologists can draw inferences—if statistical analysis shows the difference to be significant and the data unbiased.

If examination of jaws gathered at checking stations shows that a high proportion of the moose taken were young animals, perhaps a hypothesis can be proposed—if interviews indicate no selection by hunters of "mulligan bulls" over trophy animals.

If aerial surveys made the previous spring showed a high proportion of cows with calves, and further indicated a good percentage of twin births, a biologist may admit that signs point to a growing moose population in the Tanana Valley.

A growing population could be good or bad, depending upon the condition of the food supply, long-term changes in the vegetation, presence of disease and parasites, competition from other game or from domestic stock, trends in predation and hunting pressure, and other factors. Research on these factors would show whether seasons and bag limits should

The late Roscoe Spears, Dillingham trapper, knew how to stretch a beaver pelt—round as a dollar and just as flat.



be liberalized or restricted, whether predator control should be intensified or reduced, whether access roads and airstrips should be built, an open season on cow moose is needed, or steps should be taken to increase or reduce the take of competing species, and what direction further research should take.

All of which is an oversimplified explanation of where checking stations fit into the game management picture, but it may help to dispel the idea that they are merely places where game wardens check hunting licenses.

\* \*

### Shrimp and Crab Processors Have Problems

As a result of visits to seafood processors from Ketchikan to Nome last summer, Fisheries Technologist Chuck Jensen of the Division of Services is concentrating on two problems this winter. He's trying to develop methods to prevent "bluing" of canned king crab, and to determine the freshness of shrimp.

Jensen explained that bluing of crab meat is caused by coagulation of the blood, and is a problem only because of the appearance of the product. The bluing is not harmful. He's concentrating on the washing and cooking processes in his investigations, as these seem to be the critical points.

Because of weather conditions, shrimp is sometimes delivered to dockside in the initial stages of spoilage. Cannery operators need a rapid, simple way of determining whether a cargo will spoil before it completes the processing cycle.

Jensen has virtually completed experiments which may lead to canning of smoked sablefish on a commercial scale. Using a dry salt preparation and alder smoke, Jensen has developed a tasty product which he hopes will lead to an expanded market for sablefish. This fish, also known as black cod, can usually be taken when the season on other species is closed.

\* \*

### Abundance of Beavers

Beaver sealing records, processed by the Division of Services statistics branch, showed more than 25,000 beavers were taken in the state last year. Metal seals, which must be put on all beaver pelts, give department protection officers and biologists a chance to obtain pelt measurements and determine where the pelts were taken. Biologists keep a close eye on the trends in pelt sizes, as smaller average size will be one of the first indications of overtrapping.

In one area, Kodiak-Shelikof, beavers are becoming such a nuisance that the Division of Game recommended no bag limit this winter.

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### Duck Stamps in Demand

Alaska, in spite of its relatively small population, does well in duck stamp sales, with 9,223 Migratory Bird Hunting Stamps sold between July 1, 1959, and June 30, 1960. This puts Alaska ahead of ten other states, the District of Columbia, and Puerto Rico, all of which are ahead of Alaska in population.



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## Board Meets, Regulations Amended

Due primarily to a large volume of amendments to the commercial fishing regulations, the Board of Fish and Game was in session for almost two weeks—including one weekend—last fall. The meeting lasted several days longer than was anticipated, but the end result, of course, is better regulations.

On the first day, November 28, the board members heard reports from each departmental division concerning the programs being conducted and the results of previous investigations, as well as a resumé of regulation proposals. This provided a background for the public hearings, which occupied most of the next two days.

Following the public hearings the board went into session to decide which of the hundreds of proposals and recommendations were to be adopted. Some of the results:

### Game

The Division of Game was authorized to provide, on a permit hunt basis after July 1, for the taking of sufficient bison in the Delta-Clearwater area to alleviate problems the animals are creating in that area. Don't write in for a permit yet, however; applications won't be accepted until rules and regulations governing the hunts have been issued by Commissioner's announcement sometime next spring.

A midwinter deer season was authorized for some parts of Southeastern Alaska. These seasons also were

to be set by Commissioner's announcement.

Polar bear season was extended to May 7 in 1961, as compared to May 1 last year.

Spring brown and grizzly seasons were provided in several areas which were closed last year.

The definitions of hunting and trapping were amended to allow the taking of wolves, coyotes, and wolverines without a trapping license (a hunting license is required) when these species are taken by means other than steel traps or snares.

All brown, grizzly, and polar bear hides taken after January 1, 1961, will have to be sealed by the department. This will provide the Division of Game with an opportunity to gather information on the magnitude, distribution and composition of the harvest, providing a much sounder foundation for the setting of seasons and bag limits.

Game regulations which would not be applicable until next fall were tabled until the spring meeting of the board; after July 1, these regulations will be promulgated on a July 1-June 30 basis in place of the present January 1-December 31 arrangement.

### Commercial Fishing

The "quota" system has been abandoned in the Arctic District commercial fishery in favor of a system of regulating by means of weekly fishing periods and a flexible system of openings and closures. Under the quota system, which simply placed a limit on the number of fish which could be taken, it was found that the fishing effort was being concentrated on one or a

Amendments to Alaska's fish and game regulations are preceded by long hours of testimony by the public, ADFG biologists and division directors, and representatives of commercial operators and sportsmen's groups. Here Lowell Wakefield of Wakefield Fisheries testifies on proposed amendments to commercial fishery regulations in the Kodiak area. Hearings completed, Board of Fish and Game members, from all parts of the state, discuss the testimony and make decisions.

At the conference table here are ADFG Director Clarence Anderson (back to camera), Division of Game Director Jim Brooks (Anderson's left), board members Roy Selfridge of Ketchikan, Robert Martin of Naknek, Oscar Dyson of Kodiak, commissioner's secretary Bess Eldred, Chairman Richard Jansen of Cordova, Arnold Brower of Barrow, Howard Romig of Anchorage, Earling Strand of Petersburg, Eugene Miller of Fairbanks, and Deputy Commissioner Clarence Pautzke.

*Alaska Department of Fish and Game photos*



few races of salmon. The new regulation will provide a more even distribution among the various races.

In Bristol Bay the gear time table relating to the units of gear and the time they can fish was revised upward on all river systems except the Nushagak, where the run is expected to be small. Substantial runs approaching twenty million salmon are expected in the bay this year, and all fishing districts except the Nushagak should provide an excellent harvest.

In Kodiak the general purse seine fishing season will extend from June 1 to September 30 with weekly fishing periods of three days during July and parts of June and August. The remainder of the season a five-day fishing week will be in effect. The early runs are expected to be weak, and the shorter fishing periods at that time will provide better escapement. In addition, trolling will be permitted in the Kodiak area in 1961.

In the Alaska Peninsula and Chignik areas king crab fishing in state waters will be restricted to crab pots only. Formerly otter trawls were also legal.

The king salmon season in Cook Inlet has been drastically curtailed due to the low abundance of this species in recent years. The season will begin on June 8. There will be no gear timetable in effect in the Cook Inlet area this year.

No purse seine fishery for salmon is scheduled for Prince William Sound in 1961 unless there is an unexpected abundance of pink salmon, in which case openings will be made by field announcement. Prince William Sound has been made a king crab registration area and fishing will be permitted by pot with a maximum of 35 per boat.

All salmon net fishing in the Yakutat area during the 1961 season will close by field announcement instead of by specified dates.

The opening date for purse seine fishing in Southeastern Alaska will be June 26 in the northern area; the southern part of the area will be opened by field announcement.

### Sport Fishing

Provisions have been made for the taking of fish by underwater spear, provided the person is completely submerged and the take is in accordance with applicable seasons and bag limits.

Commissioner Anderson, left below, and Game Director Jim Brooks, beside him, have primary responsibility for wise management of Alaska's game resources. In background is Loren Croxten, game management biologist for Southeastern Alaska.



Except for salmon closures now in effect, the Copper River and Tanana River drainages are open to year-round angling, with the exception of a couple of lakes in the Paxson area.

The Susitna River drainage is open to steelhead angling from April 1 to May 27, with a bag and possession limit of two steelhead over 20 inches. This area has previously been closed to steelhead fishing in the spring.

In accordance with the restrictions imposed on the commercial fishermen in the area, king salmon sport fishing in the Cook Inlet area has been considerably curtailed. On the Kenai Peninsula, for example, the king salmon limit has been reduced to one fish over 20 inches in length. Both the commercial fishery and sport fishery biologists have found that the king salmon in the area will require added protection if the stocks are to be built up to anything resembling their former abundance. Some added restrictions have also been imposed in the Prince William Sound area on silver (coho) salmon sport fishing.

Providing some consolation for sport fishermen in the above areas, the bag limits for sport fishing have been increased to a total aggregate bag limit of 20 fish daily when that limit, in excess of special area bag and possession limits, is composed of Dolly Varden, Arctic char and eastern brook trout. This increased limit applies throughout the state. In the Prince William Sound area the bag limit has been increased to provide that 30 Dolly Varden trout may be taken daily in addition to the current bag limit for that area.

With the last three meetings having taken place in Juneau, the board decided to institute a policy of going to a different town for each meeting, thereby providing an opportunity for more people to testify at the public hearings. Accordingly, the next meeting is scheduled for Kodiak in April of 1961.

Decisions made, board meeting adjourned, there's still work to do. Here, Game Director Brooks explains a regulation change to Louise McKinnon, division secretary. Amendments had to be ready for the printer two days after the meeting ended, to be available to the public by January 1.



Clarence L. Anderson,  
Commissioner.  
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Deputy Commissioner.  
Dr. Howard Tait  
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## Cow Moose Yield Meat and Data

The antlerless moose hunts late last fall on the Kenai Peninsula and in the Matanuska Valley called for a degree of organization and planning that would have done credit to an army getting ready for a major battle. The results—an over-all hunter success ratio of 66 per cent, for hunts lasting only five days! and a “biological success ratio” of 64 per cent (that is, 64 per cent of all kill sites were tracked down by department crews, and biological specimens taken).

In the Kenai hunt, in which 150 permit holders took part, an astronomical 91 per cent of the hunters were successful and biologists succeeded in finding 85 per cent of the kill sites. In the Matanuska hunts extremely poor weather—torrential rains, no snow for ski-equipped planes to land on, and icy roads between population centers and hunting areas—kept the success ratios down. Even so, 147 of 200 permit holders (74 per cent) were successful in the lower valley area. Even in the upper valley area, most of which is inaccessible by road, 113 of 250 permit holders (a very creditable 45 per cent) got moose.

All in all, from both a biological and a hunter's viewpoint, Alaska's first antlerless moose hunts must be noted an unqualified success.

Planning of these hunts started almost a year earlier, when hunt regulations were formulated and passed by the Board of Fish and Game. From that point on the Anchorage staff was kept busy drawing up a multitude of forms, instruction sheets, maps, schedules, tags and lists.

Hopeful hunters started applying for permits long before applications could be accepted. They were told to try again later, after a standard form was ready.

Too many moose-sized appetites result in overbrowsed areas, indicating time to reduce herds or risk serious debilitation. Utilizing surplus cows accomplishes this purpose and others.

Mac's Foto Service



With 3,866 applications, any other procedure would have resulted in hopeless confusion.

After permit application forms were printed (on a double postcard, half of which was later used as the permit) and made available to the public, completed forms started pouring into the Anchorage office from Kodiak, Seward, Homer, Coho, Anchor Point, Kasilof, Ninilchik, Kenai, Soldotna, Seldovia, Mountain View, Anchorage, Spenard, Chugiak, Palmer, Wasilla, Eklutna, Sutton, Willow, Sunshine, Talkeetna, Cordova, even Juneau and Skagway more than six hundred miles to the southeast.

Applicants were given a choice of three areas, one on the Kenai, two in the Matanuska-lower railbelt region. On the Kenai, 846 people applied for 150 permits; in the Palmer-Willow area, 2,705 applied for 200 permits; in the relatively inaccessible Willow-Talkeetna area, 315 for 250 permits.

In all three areas the number of applicants was large enough to allow the drawing of alternate names. The original permittees were given until noon on the first day of the hunts to check in at one of the several permit validation points. If they didn't show, the names of the alternates were broadcast and these people had twenty-four hours in which to get their permits validated. The idea, of course, was to let a certain number of people hunt, not just to dispense a certain number of permits. With each of the hunts lasting five days, alternates had plenty of time to get moose even though they missed the first day. Bulls, and especially trophy bulls, may be relatively hard to find, but the whole idea of the special hunt was to utilize surplus cows, and cows made comparatively easy hunting.

A couple of days before the hunts started, department biologists and protection officers arrived in Anchorage from Fairbanks, Tok, Cordova, Kodiak and

No favoritism here. Bert Moss (left) and Chuck Hendrix of the Fish and Game Advisory Committee watch Magistrate Bertha Myers of Homer, eyes closed, pull names for permits from “squirrel cage” while Biologist Gerry Atwell and Secretary Dee Kolar record names of winning applicants.

ADFG Photo





Juneau to assist the Anchorage staff. The U.S. Fish and Wildlife Service and military conservation offices at Fort Richardson and Elmendorf AFB provided further assistance. Personnel were assigned to mobile ground crews, air crews, checking stations and hunt headquarters. Using a system of communications, maps, tags and trail marking, the crews were not only able to track down most locations of kills to obtain reproductive tracts and biological information, but were also able to match every one of the specimens with the lower jaws which successful hunters were required to turn in at the checking stations.

This matching of jaws with other biological specimens and data was vital, as information on body size, body condition, productivity, incidence of parasitization and other factors is of maximum value only when correlated with the age of the animal. The jaw is the means by which biologists determine age.

As an example of how important the correlation is, consider the incidence of pregnancy. Everyone knows old ladies don't produce so many babies as young ladies do. As cow moose have never before been legal game in Alaska, the biologists expected a fairly high incidence of old lady moose and a low incidence of pregnancy. But if they found that young moose as well as old were producing few calves, it could well mean that the range was even more overstocked than had been thought, and the resulting poor body condition of the breeding stock could be depressing the rate of reproduction.

That's just an example, of course, not necessarily valid in any specific case. Cause and effect are rarely that apparent in the game management business. It does illustrate, however, why the biologists went to considerable lengths to assure that jaw bones turned in at checking stations were properly matched with biological specimens collected at kill sites, some of them miles away and accessible only by air.

Analysis of the thousands of specimens and records collected—jaws, reproductive tracts, parasites, tissue samples, stomach samples, blood samples, weights, measurements including body length, total length, girth, height at shoulder, length of ear, length of hind foot—will take months of laboratory work. Much of the material can be fed into the department's Statistics Section for processing by IBM machines, saving further months of mathematical work.

When it's all done, the biologists will have an in-

sight into the dynamics of Alaska's moose populations that has never been possible before, and the end result will benefit far more people than were lucky enough to get one of 1960's six hundred permits.

Norway, Sweden and Finland, with less than one-tenth of North America's area of moose range, have an annual moose harvest far in excess of ours. With the increased knowledge obtained from Alaska's first antlerless moose hunts and from current research projects, it should be possible to bring the state's moose harvest up somewhere near its potential.

\* \*

## Please Send Grayling Tags

Dr. Roger Reed of Fairbanks is again asking cooperation from fishermen in the Interior who take tagged grayling. Dr. Reed emphasized that every report counts in this project, so migration patterns of grayling can be established. The approximately nine thousand tags which Reed inserted in grayling last year will obviously be of little use unless fishermen who catch tagged grayling report their catch.

In Michigan, where grayling once flourished, a combination of poor logging methods and heavy fishing pressure has resulted in complete extinction of the species. The same factors have left Montana with only a limited grayling fishery. Alaska is now the world's greatest grayling hatchery. There are thousands of clear, icy streams in which these fish are found over much of the state.

With such a wide distribution, Reed believes the variations in water temperatures, water chemistry, light intensity and duration, and other such factors may give rise to important racial differences. Such differences could conceivably lead to behavioral differences which would require varying management techniques. Reed, therefore, selected four distinct ecological patterns in his study areas—a spring-fed stream, a bog-fed stream, a lake tributary and a rapid run-off stream—and in addition has collected fish from the Arctic slope, Bristol Bay and the Copper River drainage for racial studies.

The project is obviously a long-term one, but Division Director Ed Marvich expects long-term benefits. "Civilization" has been hard on grayling elsewhere, and Reed and Marvich are determined that it won't happen in Alaska.

ADFG Photo



←  
"Just give me parts you can't eat!" Biologist Atwell (right in photo) takes specimens and measurements as hunters Leroy Dyson (standing) and Ray Nichols skin their kill.

→  
Last stop: Rodney Head (left in photo) of Spenard, permit winner and successful hunter, hands moose jaw to Larry Keough, biological aide, at checking station. Jaw will be matched to samples and measurements collected at kill site.



Clarence L. Anderson,  
Commissioner.  
Clarence Pautzke,  
Deputy Commissioner.  
Dr. Howard Tait  
Director, Division of Biological  
Research.  
Walter Kirkness,  
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# Alaska Department of Fish & Game News Letter

James Brooks,  
Director, Division of Game.  
Ed Marvich,  
Director, Division of Sport Fishing.  
News Letter Editor,  
Alan Courtright,  
Management Biologist.

*For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subport, Juneau, Alaska*

## Sea Otter Coats Again?

Hunted to the verge of extinction at the turn of the century, sea otters have staged a remarkable comeback, according to Cal Lensink of the Division of Biological Research. Lensink, who has been studying these valuable fur animals since 1954 (he did research on them for his Ph.D. thesis and continued the work when he joined the department) reports that there may be as many as 40,000 in Alaska now, and the numbers appear to be still on the increase. The actual count during boat and aerial surveys the past couple of years has exceeded 16,000.

Most sea otters are found in the outer Aleutians; in the Rat and Western Andreanof Islands the populations may be as large as they were before they were hunted by the early Russians. Smaller colonies are found in several localities along the Alaska Peninsula, around Kodiak Island, and in Prince William Sound.

It has been illegal to take sea otters since an international treaty was signed in 1911 between the governments of the United States, Great Britain, Japan and Russia. Through one means or another, however, a few skins have been put on the market since that time, and records reveal that in 1912, 23 furs sold for \$10,600 in London, or an average of \$460.87 each; a report written in 1906 indicated that a single skin has brought as much as \$1,400.

That, of course, was an exceptional (and perhaps an exaggerated) price, but there is no doubt that sea otter skins are valuable. Way back in the middle 1800's, a Russian report indicated that a prime sea otter skin was worth 7 woolen blankets, 5 pounds of

gunpowder, 10 pounds of lead cartridges or plate lead, 4 papers of vermillion, 1 ball of red wool, and a quarter pound of tobacco. By way of contrast, a land otter skin was worth a mere single blanket or 5 pounds of gunpowder and 10 pounds of lead, and a large black bear hide went for a single axe.

Probably the average price for prime adult skins around the turn of the century was about \$100, or perhaps even two or three times that amount in some years: at that time this was a good year's wage for many people. This doesn't mean, of course, that the same skins would bring a year's wage today if it were legal to sell them. The way fur prices fluctuate, it wouldn't be too surprising if they were actually worth the same \$100 cash now as they were 50 years ago.

In any event, it appears that future investigations may be directed toward determining the feasibility of a harvest of sea otters.

\* \*

## Sea Lion Harvest a Potential Industry

Promising somewhat more immediate possibilities in the way of a boost to the state economy is commercial use of sea lion meat. Two ships, representing two different companies, came to Alaska last summer to conduct an experimental harvest of these animals, and both companies plan to return in 1961, having obtained approximately 140,000 pounds of meat and liver during last year's operations. The meat was frozen and sold to mink ranchers for about ten cents per pound.

There are approximately 175,000 sea lions in Alaska, mostly found between Forester Island in the southeastern panhandle and Attu at the tip of the Aleutian chain. Greatest numbers are found in the Gulf of

"Mink meat? ME?" This young sea lion may grow up to become part of a new Alaskan industry.



"Sea urchin? Sure, I'll have it for lunch, spines, shell and all." Much about the sea otter's habits, including food preferences, has been learned in recent years.





First step toward improving a lake's sport-fishing potential is to find out what's in it. At left, Biologist Rupe Brooks and Aide Bruce Graham lay a sampling net in Finger Lake. Fish taken are weighed (center), and ages and growth rates determined from scale samples. Field studies also include bottom profile and composition, temperatures at various depths and seasons, oxygen and plankton content, and more. Then Biologist Brooks plots it all (right) for thorough evaluation.

Alaska west of the Barren Islands. During last year's exploratory operations it was found that large bulls would yield about 500 pounds of meat, females 250 to 300 pounds. A large adult sea lion will run about 1,500 to 2,000 pounds live weight.

One of the major economic benefits a commercial harvest of sea lions would bring would be the control of the depredations of these animals on halibut, black cod, and salmon gear. A single irate bull can play hob with a valuable salmon net—and the animals frequently travel in herds.

Cal Lensink is planning to tag some 2,000 or more sea lion pups in the Barren Islands this summer. Recoveries of tagged animals will provide information on growth and movements, needed for future regulation of harvest operations and in planning for the most efficient control of sea lion depredations on the fisheries. There are also many harvesting, processing, and marketing problems to be worked out before large-scale annual harvests (small operations would obviously be unprofitable) become a reality.

\* \*

### Walrus Strays to B.C. Coast

The "Walrus—Observation and Management" file in the Division of Game office has an interesting record on walrus distribution, thanks to Ronald John of Juneau. While he was in the vicinity of British Columbia's Queen Charlotte Islands in his boat SAINT PETER last fall, John saw a walrus off Point Island. The animal came within forty feet of the boat, and John said that at that range it was impossible to mistake it. So far as is known, walrus have never been sighted this far south along the coast before.

\* \*

### Lakes to Trade Old Stocks for New

Biologists in the Division of Sport Fisheries are planning to rehabilitate some twenty lakes throughout the state during the coming summer. The largest is 380-acre Finger Lake in the Matanuska Valley. Most of the others are also in the Cook Inlet drainage, but there are also several lakes and ponds in the Interior scheduled for treatment.

Lake rehabilitation involves using toxicants to rid a lake of undesirable species of fish, then planting sport fish like trout or salmon after the poison has dissipated. Approximately two thousand surface acres of water will be involved in this year's work, which

will include some experimental planting of grayling to determine the feasibility of using this species under special conditions.

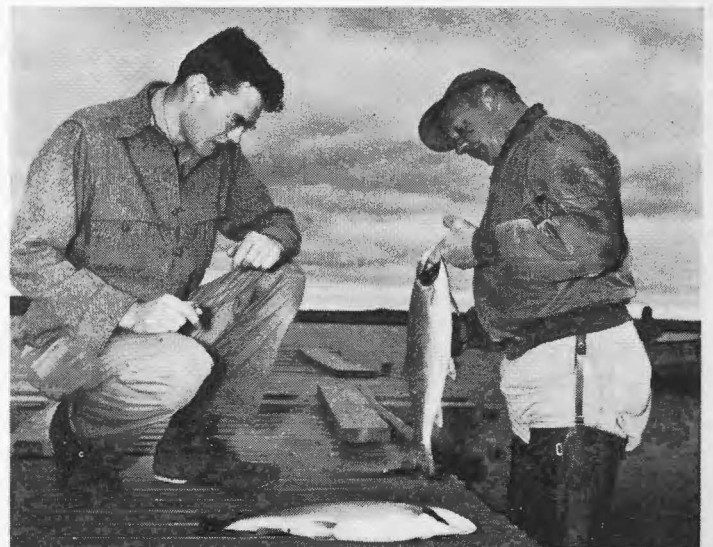
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### Regulations Compensate for Net Shrinkage

Overlooked in the report of major regulation changes passed last fall by the Board of Fish and Game was a batch of regulations pertaining to mesh sizes for purse seine leads throughout the state, and for gillnets in Bristol Bay. Finding that shrinkage had made many nets illegal, the board reduced the minimum mesh size requirements so fishermen wouldn't be faced with having to throw good nets away.

The revisions, however, are only temporary. The board served notice that after a reasonable time has elapsed, larger minimums will be in effect. The minimum for purse seine lead mesh this year is 6 inches, but beginning January 1, 1963, it will be 7 inches. The 1961 Bristol Bay gillnet minimum of 5½ inches (4¾ inches after July 16, during the pink salmon run) will become 5½ inches in 1962.

Decisions made and carried out, the pay-off too must be studied. Here Aide John Hagglund, following a rehabilitation job with a creel check, gets scale samples from a happy angler.





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## Fences Mystify in Nelchina Range

People going into the Nelchina caribou range, that area within the ninety-degree angle formed by the Richardson and Glenn Highways, have wondered at finding little fenced-in plots so far from civilization. They are vegetation quadrats, twenty feet long, five feet wide, there through the efforts of Game Biologist Ron Skoog of Anchorage and his assistants. Each plot is matched by an unfenced plot close by, upon which vegetation has been measured. In future years, a comparison between fenced and unfenced plots will give an indication of what is happening to the vegetation in this important caribou-producing area.

The Nelchina herd now numbers approximately 55,000 animals, the annual increment is about 25 per cent, or some 14,000 animals, before natural mortality, and the maximum hunter harvest is 5,000 to 6,000 animals a year. Biologists have feared for some time that this herd is growing too large for its range, and obviously it will keep on growing unless natural factors whittle it down—one of the reasons Game Management Unit 13 has been closed to the taking of wolves.

\* \*

## Dollies Opened to Commercial Harvest

State regulations provide for commercial fishing of trout and char when such harvest is compatible with proper sport and commercial fishery management. As Dolly Varden trout are presently at a high level of abundance in Southeastern Alaska, and the harvest by sportsmen is small, commercial fishing for Dollies is believed justified in certain areas.

Those little fenced-in plots in the Nelchina Range are to keep caribou out, so comparative studies of grazed and ungrazed quadrats can show what happens to vegetation. Here, Biological Aide Jim Whisenant stakes a fence so caribou can't slip underneath.



Commercial trout fishing did at one time contribute to the economy of Southeastern Alaska, most of the harvest being produced by weirs operated on streams in the spring. Subsequent regulations, which prevented commercial fishing within 500 yards from the mouth of any salmon stream, largely eliminated weir operations, and decreased market demands further reduced the commercial trout catch to its present low level. In 1960, only one fisherman, operating under state permit in the Petersburg area, beach-seined for Dollies.

Trout weirs will be permitted again in freshwater streams, under close supervision of biologists in the Commercial and Sport Fish Divisions. Two such permits were issued in early March to Petersburg fishermen, covering streams in Little Basket Bay on the east side of Chichagof Island, Pillar and Tebenkof Bays on the west side of Kuiu, and Gut Bay on the east side of Baranof, all in Chatham Strait. Special use permits covering construction of the weirs are being secured from the U.S. Forest Service, which has jurisdiction over lands adjacent to the streams.

The Department will assign a man to observe these operations and gather biological data. Trout stomachs preserved for laboratory analysis, scale samples for age determination, and length-weight data will provide information useful in the management and harvest of the species. Commercial take will be limited to Dolly Vardens, other species being released unharmed, and operations will be confined to the spring trout migration, roughly from April 1 to May 15. Weirs will be removed before any salmon enter the streams.

According to Walt Kirkness, director of the Division of Commercial Fisheries, market demands are still limited and Alaskan producers must compete with foreign and domestic hatcheries.

\* \*

## Abalone Take Planned for Southeastern

Commercial harvest of abalones, by permit, was made legal under a regulation signed last February by Commissioner C. L. Anderson in response to mounting interest among prospective abalone fishermen. The Alaska Board of Fish and Game will review the abalone situation during its regular spring meeting in Kodiak, and consider permanent regulations.

The Alaska or pinto abalone is found from California to Cross Sound, rare in California, more abundant in Alaska. It is known to attain a maximum size of only six inches in greatest shell diameter, but the extent and size of the population in Alaska has not yet been determined and virtually nothing is known about its life history. The much larger red abalone, most important commercial species in California, is known to require as long as thirteen years to attain legal taking size.

The legal minimum size in Alaska has been set for the present at three inches in shell diameter, but may be changed as knowledge of the animal increases.

## Wildlife Gives Jet Pilots Jitters

Early in January the College station got a call for help from Security Police at the Fairbanks International Airport. A flock of about sixty willow ptarmigan, faring on newly sprouted willows and birch on the airport approaches, had adopted the area for a winter home. They paid little attention to the loud-mouthed steel birds roosting on the runways, and occasionally they would fly across the path of a huge jet. Pilots and airport police took a dim view of such trespassing, as jets run better when the air they inhale isn't full of feathers and bones.

There were several possible solutions, according to Bird Biologist Bob Weeden: (1) wait until spring, when the ptarmigan would head for the hills to hatch more ptarmigan; (2) shoot the birds; (3) bulldoze the food supply, or (4) quit using jets on the Fairbanks run. Solution No. 2 was chosen and two biologists were called in to shoot the birds, but the ptarmigan always managed to be where the biologists weren't.

At last report, no ptarmigan had been shot, no planes damaged, and spring was coming.

Down at Anchorage, moose have been giving jet pilots the jitters. Game Biologist Tom O'Farrell and Aide Sterling Eide finally went out to the airport and collected a couple of moose that had been wandering about on the runways. As usual in such cases, the meat was given to charitable institutions.

In the Big Delta area, bison have long been a problem on airport runways. There, however, air traffic is not so heavy and pilots usually find it possible to "go around" while the animals are being shoed off the runways.

\* \*

## Baby Seal Is Household Pet

When Mrs. Sammye Taplin of the Diamond H Ranch near Anchorage asked last fall for a permit to keep a live baby seal found on the beach near Homer, Division of Game biologists were dubious. Experience has shown that baby seals don't take well to captivity, and regulations allow keeping of live wild animals only for scientific or educational purposes.

Game Division Director Jim Brooks finally issued the permit after being assured that Mrs. Taplin would keep extensive records of the seal's weight, measurements, food intake, behavior and other characteristics.

Mrs. Taplin holds Oley to check his weight gain. →

His spine is so flexible he would simply drape over both edges of the bathroom scale.

↓ After a romp with the dogs, Oley climbs the Taplins' steps as he would climb rocks or ice on the beach.



Brooks, who has had considerable experience with marine mammals, didn't expect the seal to survive, particularly as Mrs. Taplin said it was emaciated.

By early February, however, the seal (Mrs. Taplin named it Oley) weighed thirty-seven pounds and was obviously thriving. Her regular reports are of great interest to Department biologists, as surprisingly little is known about the habits and rearing of these animals, even though they are common in Alaskan waters.

Oley is kept in the house, on the kitchen floor or in the bathtub, and allowed outside for an occasional romp with the dogs. The horses are afraid of him.

Although Oley is happily providing the Department with valuable information, Brooks is not encouraging others to capture baby seals for pets. Most young seals found on the beach, he cautioned, are simply waiting while their mothers forage at sea.

\* \*

## Rules Aim at Accurate Bear and Fur Counts

This year for the first time hunters taking brown, grizzly and polar bears must have the hides sealed by a representative of the Department. The purpose is to allow Department biologists to obtain information on the size of bears taken, the condition of the hides, areas where taken, and the time of year when most hunting is done. The blue metal seals are distinct from the nonresident big game tags, also required.

Another regulation which went into effect January 1 should make it possible this year for the first time to obtain a fairly accurate record of the value of fur animals taken in the state. Past estimates, based on fur export cards, have been recognized as unreliable. This year the Department requires all fur dealers to report the acquisition of furs or hides on a form provided to them by the Department. Division of Game Director Jim Brooks anticipates that these reports, after processing by IBM machine, will show that the fur animal harvest in Alaska is considerably higher than past estimates have shown. The new forms have met with general approval by fur buyers, as they can be used as receipts for trappers.





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## Sport Fisheries Biologists Busy

The Sport Fish Division investigational program is off to a good start this season. A Dolly Varden study was begun in April that will enable division biologists to assess the feeding habits of these trout in four separate watersheds in Southeastern Alaska. Information on age and growth composition of the fish stocks under study will also be gathered. The major phase of this project will be an evaluation of the relationship between Dolly Varden and the native red salmon populations in the study areas. This data will be collected in conjunction with the commercial fishery venture on the Dolly Varden in these areas.

The increasing need of suitable salmonid brood stocks, predominantly steelhead, for both replacement stocking and the development of new recreational fisheries in non-producing waters, is also receiving attention. Research Biologist Bob Baade of Ketchikan is presently looking for suitable runs of native stock to be used in this program. Suitable stocks in this case will mean steelhead with a lake-rearing background in their life cycle, as it is anticipated that a majority of the stocking will be conducted in land-locked lakes. This initial investigation will be completed with a pilot egg take of several hundred thousand eggs that will be hatchery incubated and reared. The resulting fry will be stocked in selected waters throughout the state. These fish will be evaluated for rapid growth, good condition factor (a ratio of conversion of available food to desirable fish), and good sporting qualities, before extensive utilization of native Southeastern stocks will be used in the rehabilitation programs.

An intensive investigation of the angling pressure on grayling will be conducted by biologist George Van Wyhe in the Glennallen, Copper Center and Paxson areas this spring. The Alaska Board of Fish and Game, in the 1961 Sport Fishing Regulations, opened these areas to year-round angling in contrast to last year's June 9 opening date. In the past the grayling would begin their spring migration movements in late May and be past the accessible areas by early June, and as a result angler harvest was slight. The present regulation will allow anglers to pursue the grayling as soon as the streams and lakes in these areas open up.

Sport fishing season began May 28 in most areas of Cook Inlet. Be sure to check the Sport Fishing Regulations for further information on seasons and bag limits.

\* \*

## Aerial Survey Yields Dividend

The present bison population of the Big Delta area, estimated on the basis of aerial surveys last fall which turned up an actual count of 318, is believed to be 350, of which 12 per cent are calves. This figure indicates an average increase of six and one-half per cent a year since the last thorough census, in 1955, when 255 bison were counted but at least 32 died the following winter as a result of accidents or malnutrition.

During the recent counting operation, air crews also counted 500 moose, 220 caribou, 12 wolves and 4 horses. The horses belong to residents of Black Rapids and had been lost since last summer. Most game division aerial surveys are multipurpose to a certain extent, but the horses counted during the bison survey were an unexpected dividend.

\* \*

## Fire Lake, Birch Lake Hatcheries Producing

Alaskans are again seeing the Sport Fish Division's fish-planting trucks along the state's highways and byways as the 1961 summer program goes into full swing. Early in June the division's specially equipped planting trucks will make several shuttle trips from the Anchorage Fire Lake fisheries station to the Fairbanks Birch Lake station, each truck carrying 30,000 to 35,000 rainbow trout fry to Birch Lake for additional rearing and eventual distribution throughout the Interior's road-system lakes. Approximately 175,000 rainbow trout fry will be hauled to the Fairbanks station from Anchorage. The special outdoor rearing pools will be in operation again this summer at the Anchorage station.

Both the Anchorage and Fairbanks fisheries stations will be open to the public again this summer. Normal visiting hours will be from noon to five p.m. on week days, noon to eight p.m. on week-ends, though hatchery attendants are on duty twenty-four hours a day, seven days a week. Special tours of the stations may be arranged through the district sport fisheries biologist at the Anchorage or Fairbanks office.

\* \*

## King Crab Catch Sets Record

Approximately 15 million pounds of king crab were taken by the Kodiak fishery during the last October-February season, the largest catch on record for the Kodiak crab fishery, which is now America's largest. This fishery had its beginning only a little more than ten years ago, with a catch of 200,000 pounds reported for the 1951 season.

Although 15 million pounds sounds like a lot of king crab, the demand still exceeds the supply. Most of these crabs, averaging about 10 pounds in weight, are caught in crab pots. Only males more than 6½ inches in shell width may be taken. (Shell width is the width of the back, or carapace. The spread from claw tip to claw tip may reach six feet or more.) A crab with a 6½-inch carapace is about six years old. Larger crabs may exceed 15 years of age.

King crabs are found in varying abundance throughout coastal Alaska. Although the Kodiak fishery is the largest, the Bering Sea probably has the greater potential. The next largest king crab fisheries are in Cook Inlet and on the south side of the Alaska Peninsula. Fisheries have also developed recently in Prince William Sound and Southeastern Alaska.





ADFG Photos by Dave Tozier

Almost every year since only God knows when, bands of the Steese-Fortymile caribou herd have congregated at Eagle Summit, calved, then moved on in response to some mysterious call. Good game management requires that the cow-calf ratio be determined.

### Caribou Calve, Game Men Count

Late May and early June are caribou counting time for Division of Game Biologists. Efforts this year are concentrated on the Mulchatna-Rainy Pass, Nelchina, and Steese-Fortymile herds; the object, to assess productivity.

The accompanying photos (by Dave Tozier) were taken near Eagle Summit, where the Steese-Fortymile herd usually crosses the Steese Highway just after calving and thus makes the count relatively easy. Biologists and aides live in a handily located trailer camp, keep round-the-clock watch, and to avoid duplication count only as animals cross the road from left to right.

Even so, the caribou sometimes bunch up for hours before crossing, then bolt in the middle of the night. How tally the productive cows, calves, barren cows, yearling cows and yearling bulls—adult bulls do not accompany the calving portion of the herd—in a fast-moving band of a thousand or more caribou before they pass out of sight over the next ridge? Sometimes

counters have to settle for cow-calf ratios.

If the Steese-Fortymile herd follows its custom, about 10,000 caribou will be counted crossing the Steese at Eagle Summit in a two-week period this year. But there's nothing to keep the caribou to custom. Last year, without giving the game division any notice of intentions, they went somewhere else to calve.

\* \*

### Wolves Attract Trophy Hunters

Alaska's wolves are becoming increasingly important as a trophy animal. Many big game guides who book hunters for polar bear hunts out of Kotzebue or Barrow offer aerial wolf hunts as an extra feature. It's not the safest sport in the world. As short-range shotguns loaded with buckshot must be used, the pilots have to put their planes close to the ground, and every spring there are reports of airplanes washed out or damaged during these activities.

Occasionally, in the mass of milling caribou, cow and calf become separated. Aide Ken Durley, right, carries a lost calf into camp for ear-tagging.

Tag in place, the calf relaxes. It hasn't been hurt and mama will eventually find it. The tag, if ever recovered, will yield information about individual and herd.



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E. S. Marvich,  
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# Alaska Department of Fish & Game News Letter

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**T**HERE will be some significant earlier openings of hunting seasons in Alaska this year, following the spring meeting of the Alaska Board of Fish and Game at Kodiak.

## Deer

The season on Sitka Blacktail deer will open in southeast Alaska and in Prince William Sound districts August 1 this year, instead of the usual August 20. The season in both areas will run through November 30 instead of to December 15.

Limit on deer will remain at four in Southeast Alaska and three in the Prince William Sound area.

Does will be legal game after September 15.

As for deer on Kodiak Island, a little later opening date has been scheduled (Sept. 1 this year instead of Aug. 20.) and the bag limit in those areas accessible by car has been cut from two animals to one.

## Moose

Moose will open ten days earlier in the Yakutat District (August 10 through Nov. 30). This ruling also makes closing date a month later. In addition, antlerless moose will be legal game in the Yakutat area from Nov. 1 to Nov. 30.

In Game Management Area No. 9, including most of the Alaska Peninsula, the Aug. 20 to Dec. 31 open season remains the same, but this year moose of either sex will be legal game.

The Sitka Blacktail deer will be hunted in Alaska this year with an August 1 opening date. Does will be legal game after Sept. 15.



There will also be either-sex moose hunting allowed in most of the Koyukuk River drainage.

Moose bulls only will be allowed north of the Arctic Circle, but the season here will open August 1 instead of Aug. 20, as before.

In six other moose areas, permit-only antlerless hunts will be allowed—three areas on the Kenai Peninsula, two north and west of Palmer and across Cook Inlet from Anchorage, and one in a portion of Unit 20 near Fairbanks.

## Caribou

In the area open to year-around no-limit hunting of caribou, the southerly border of this area has been extended down to the Yukon River instead of just to the Arctic Circle in Unit 25, while all of Units 23 and 24, and all of Unit 26 will be open all year without limit.

## Elk

There was a low harvest of elk on Afognak Island last year, so the Board this year has liberalized the sea-

**Alaska game regulations have been printed in two parts this year, with improvements in the Game Management Units map. This year's rules come in booklet form, instead of folded.**

**Copies are free from the Alaska Dept. of Fish and Game, Subpost Building, Juneau, or from sporting goods stores and Department field offices.**

son to permit the Tonki Cape area to remain open from August 20 to November 5, while the remainder of Afognak will have a split season, running from Sept. 1 to Sept. 20, and from Oct. 14 to Nov. 5.

## Goat

An earlier season for mountain goats will open hunting to coincide with the August 1 opening on deer in Southeast Alaska and in Prince William Sound—which means an opening 20 days earlier and closure 15 days sooner.

In other areas, mountain goat seasons will open August 10 through Nov. 30 with limit increased in all areas to two animals.

## Sheep

Mountain sheep hunting will also open earlier this year in most areas.

In Units 23, 24, and 26, and that portion of 25 north of the Yukon River, sheep will be legal game from Aug. 1 to Sept. 20, while on the Kenai Peninsula, the season will extend from Aug. 10 to Aug. 31. In other sheep areas, the season will be Aug. 10 to Sept. 20.

## Bear

There have been liberalizings of brown and grizzly bear seasons for this year on Kodiak Island, except for the Kodiak National Wildlife Refuge, and on Rasp-

berry, Afognak and Shuyak Islands. Previously, season in this area was from Sept. 16 to June 15. Now it will be Sept. 1 to June 30.

In other areas, except in Southeastern, where there is no change from last year, brown and grizzly seasons will be from Sept. 1 to Dec. 31, and from May 15 to June 15.

A portion of Game Management Unit 9 will remain open, however, from Sept. 10, through May 31.

On the Kenai Peninsula, there will be a closed season on black bear between June 30 and Aug. 10. Black bear limit remains three in all areas.

### Bison

A special permit hunt for bison in the Big Delta area will be conducted, with fifty permits to be drawn.

**C**OMMISSIONER of the Alaska Department of Fish and Game, Clarence Anderson, will retire "about September 1."

Governor Egan, in announcing receipt of Anderson's letter of resignation, gave "Andy" high praise for his



Photo by Ott

In some areas of Alaska this fall, mountain sheep will also be legal trophies beginning with a first of August opening.

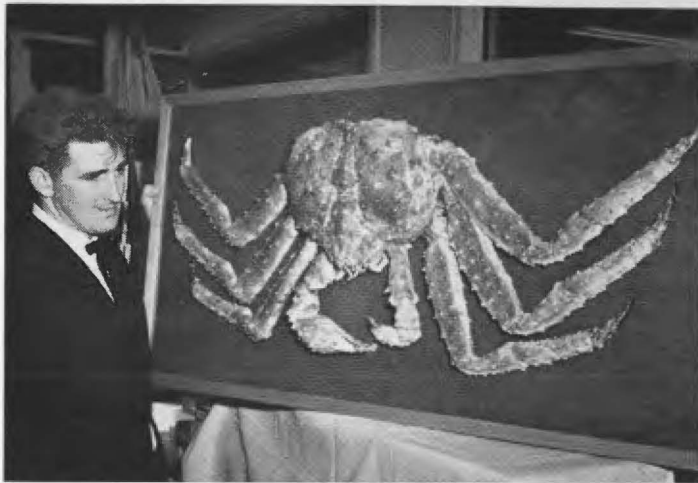
long years of work in organizing the present department, and termed him "Father of the Alaska Department of Fish and Game."

When "Andy" began building the present department in Alaska's Territorial days, in 1949, he had a single employee. The Department staff now numbers over 175.

**I**N other Alaska Department of Fish and Game personnel changes, E. S. Marvich has moved up from Director of the Sport Fish Division to the post of Acting Deputy Commissioner.

Marvich replaces Clarence Pautzke, who resigned to accept the top Federal post of Commissioner of the United States Fish and Wildlife Service.

To replace Marvich, Alex McRea has moved up from his post as Coordinator for Federal Aid in Sport Fish Restoration.



Speaking of king crab, this one breaks the record for weight. Biologist Guy Powell poses with the big crustacean brought in to Kodiak recently by crab processor Emil Norton.

The big crab, taken in Jap Bay, weighed out at 24 pounds 8 ounces and had a "wing span" of 53¾ inches. There have been crabs with wider spread between extremities, but this is the heaviest recorded to date.

Another Coordinator, David R. Klein, has been appointed by Director of the Division of Game, James Brooks, to the post of Coordinator of Federal Aid in Wildlife Restoration. This appointment was made to fill a vacancy created by the resignation of Sigurd Olson, who has gone over to the United States Forest Service in game work.

**W**E let Guy Powell, Division of Biological Research, king crab biologist, in for some unnecessary razzing from his fellow workers following our December issue comment on king crabs which should have said these crabs "reach five feet between extremities" at times, instead of "they may reach fifty years of age."

Seems crabs of the king variety are known to reach maybe fifteen years in age, but nobody yet really knows just how old they do get.

Another early opener trophy in Alaska this season will be mountain goat. Like the deer and the sheep they'll be right on top of the high ranges when the season begins August 1.

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# Alaska Department of Fish & Game News Letter

**For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subport, Juneau, Alaska**

James Brooks,  
Director, Division of Game.  
A. H. McRea,  
Director, Sport Fish Division.

W. R. McKinley,  
Director, Division of Engineering  
and Services.

News Letter Editor,  
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E. S. Marvich,  
Acting Deputy Commissioner.

Dr. Howard Tait,  
Director, Division of Biological  
Research.

Walter Kirkness,  
Director, Division of Commercial  
Fisheries.

## Tanner Crab are Studied

The Division of Service's technology branch is initiating studies on the processing of tanner crab at industry's request. The primary problem, according to Technologist Chuck Jensen, is to develop a method of meat extraction that will allow for a fairly high rate of recovery: this should be in the vicinity of 18% of the raw weight. Industry people throughout Alaska are interested in this crab, sometimes known as the spider crab, available in vast quantities in most state waters. Its meat is much like king crab meat in appearance, although the flavor is quite different.

Tanner crabs are one-fourth to one-third the size of Alaska king crabs. Averaging some two and a half to three pounds, they are about twenty to thirty

per cent heavier than dungeness crabs. According to Jensen, the membranes covering the leg meat stick to the shell, making extraction of the meat by blowing or shaking extremely difficult; and cartilage within the body cavity makes it difficult to extract the body meat. If these difficulties could be overcome, a commercial tanner crab industry could add considerably to the state's economy.

## New Division Director

James J. Goodfellow, former staff sergeant with the Alaska State Police, is the new Director of the Division of Protection. He succeeds John O. Rein, Jr., who resigned late last year to re-enter the service of the California State Fish and Game Department.

Goodfellow, born in Maryland, Ne-

braska, in 1926, served four years in the U.S. Navy, then enrolled for studies in the biological sciences at the University of Nebraska and later at Doane College. He came to Alaska in 1951 and was employed by the Corps of Engineers on Ladd Field near Fairbanks. On August 1, 1952, he joined the Alaska Highway Patrol which was later absorbed by the Territorial Police when that service was created by the 1953 legislature. Goodfellow has been active in conservation work in Alaska and served on the board of trustees of the Tanana Valley Sportsmen's Association in Fairbanks, and also as vice-president of that organization.

As director of the Division of Protection, Goodfellow will have under his supervision thirteen Protection Officers, fifteen Protection Boat Officers, one pilot, 225 seasonal protection aides, and five seasonal predator control hunters.

Biologists Gerry Atwell (left) and Bob Rausch cuddle a newly tagged moose calf while the 'copter pilot keeps a wary eye on mama.

Alaska Dept. Fish & Game



Alaska Dept. Fish & Game

Adorned with ear tags, the calf is free to go but hasn't decided which way.

## Moose Calves Tagged

Division of Game Anchorage personnel, repeating last year's operation, tagged more than 200 moose calves in that area last spring, with the military again providing a helicopter and crew. The tags will provide information on distribution and movements. A new, large plastic disk-type tag was being used experimentally this year with the hope that it might be visible from the air.

Research Biologist Al Erickson wound up with a broken foot during this operation. Two different versions of the story were received in Juneau: in the first version, Erickson expected to land on soft muskeg when he jumped from the helicopter but wound up on frozen ground instead. The second version is more entertaining: attempting to jump from the helicopter onto a moose calf rodeo style, Erickson landed on the cow moose instead. According to this version, the cow didn't survive.



Alaska Dept. Fish & Game

Ed Feight and Fred Mahle of Skagway show George Cunningham, ADFG engineer, where logs and debris have blocked the Taiya River channel, threatening to divert it into an important spawning stream.

### Spawning Stream Saved

Quick action by an observant individual, cooperation of two State agencies and the donation of local labor saved the spawning beds of a small but productive salmon and steelhead stream in the Skagway area last spring. Ed Feight of Skagway informed Ed Huizer, District Biologist for the Division of Commercial Fisheries, that the glacial Taiya River was cutting a new channel and threatening to flow into a parallel clear salmon stream. The resulting siltation would largely have destroyed the five or six miles of available spawning beds in the stream.

Following an inspection by Department Engineer George Cunningham and Assistant District Biologist Jim Parker, it was decided that it would be feasible to divert the wandering Taiya back to its original channel by using state equipment in Skagway and volunteer local labor. Under Parker's supervision a bulldozer and operator from the Department of Public Works dug a new channel 30 yards wide and 150 yards long where the old channel had filled with logs and debris. This channel was reinforced with a dike built of gravel and logs, trees and other material found in the area to assure that the Taiya would stay put.

### Technologist Goes to Industry

Technologist Charles Jensen of the Division of Engineering and Services has resigned to accept a position with Wakefield Fisheries. Jensen and his family will move to Port Wakefield on Raspberry Island early in August. His new position will involve work similar to that he performed for the Depart-

ment: developing techniques and processing methods to increase the value of Alaskan sea-food products.

### Gillnet Potentials Studied

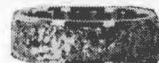
Utilizing the chartered gillnetter *Lilly B* skippered by Bill Nigh of Juneau and Haines, the Division of Commercial Fisheries conducted studies late last spring to determine whether the upper Lynn Canal area was capable of supporting a commercial drift gillnet king salmon fishery. The area has been closed to such fishing and opened for the beginning of the red salmon run in June. The results of this study were not encouraging by press time, with only 41 king salmon being caught in five weeks of fishing. Studies were to continue for another two weeks, however, and while it did not appear that king salmon were present in sufficient numbers to warrant fisheries similar to the

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one that opened in May at Taku Inlet, it was still possible that Department biologists could recommend an opening two or three weeks earlier than usual.

The experimental fishing was being conducted in the area from Sullivan Island north into Chilkat and Chilkoot Inlets. To obtain comparable data the weekly fishing period of the chartered vessel was the same as that in Taku Inlet: Monday noon to Thursday noon. Due to the murky glacier waters of the Chilkat River and tributaries, escape-ment data is difficult to obtain in this area by observation counts. The spawning ground surveys are being continued this summer, however, and the results of these surveys and the experimental fishing will be available for the fall meeting of the Board of Fish and Game.

### Polar Bear Take Normal

Bear Biologist Al Erickson of Anchorage reported a known take of 134 polar bears in the northwest coastal area last spring. He estimated that the total take for the year would be 150 animals, with the additional number representing bears taken by residents of the area which had not been reported at press time. This harvest is approxi-

mately the same as that reported for the previous two years. Erickson, with the assistance of a temporary employee stationed in Barrow and another one in Kotzebue, has gathered more biological information on the polar bear than had been obtained during all previous efforts. The data when analyzed will give preliminary indications as to whether hunting is having any serious effect on polar bear populations. At present there is no indication that such effects are taking place.

### Biologists Join Staff

Two biologists joined the Sport Fish Division staff in June. Roger D. Wadman is stationed in Juneau where he is responsible for prosecution of investigation and management of sport fish stocks in upper southeast Alaska. Before coming to Alaska he was the only sport fish field biologist employed by the Rhode Island Fish and Game Division and was concerned primarily with cold water and anadromous fish. He received both his B.S. and M.S. degrees from the University of Connecticut and was employed part time by both the Connecticut and the Massachusetts Fish and Game Departments while attend-

ing school.

Two weeks later Dan W. McGinnis joined the staff, to assist Fishery Biologist Frank Stefanich in investigation and management duties in the Cook Inlet area. McGinnis is a graduate of Oregon State College and was employed by that State's Fish Commission as an aquatic biologist before coming to Alaska. He is stationed in Anchorage.

### FROM KETCHIKAN TO BARROW

(Continued from page 23)

fleet in readiness by the summer of 1963, according to Philip F. Spaulding, Seattle naval architect who is designing the vessels. The three vessels for the route from Prince Rupert, B.C., to Haines and Skagway will each be 350 feet long with a beam of 73 feet 6 inches. They will have a speed of 18 knots and each will carry 108 standard automobiles and 500 passengers. A smaller vessel, 256 feet long with a speed of 15 knots, will serve Kodiak Island from Kenai Peninsula ports and will carry about 60 vehicles and 260 passengers.

**A** HITHERTO unknown ice island about three miles long and two miles wide has been discovered in the Arctic Ocean by staff members of the Arctic Research Laboratory of the University of Alaska and a research camp has been established on it. The island stands five or six feet above the surrounding sea ice and has some peaks fifty feet high. There are also several mounds of rocks on the ice island. Some of these rocks are up to six feet in diameter and are believed to be part of a glacial moraine. It is speculated that the island originally broke off from a glacier on Ellesmere Island in northern Canada. This is the first ice island to be occupied since 1957 when Fletcher Island was discovered and a camp built on it. Fletcher Island, still occupied by observers and scientists, has now run aground about 80 miles northwest of Barrow. The station on the newly discovered island, to be known as Arlis II, will consist of 14 buildings to house personnel and scientific instruments and equipment.

**B**AY CITY is the latest addition to the list of incorporated towns in Alaska. Located on the northwest shore of Knik Arm, north of Anchorage, Bay City was incorporated as a third class municipality on June 2.

**C**LAM SHELLS were encountered at a depth of 318 feet below the surface by drillers who were putting down a well to supply water for the village of Yakutat. The well was abandoned at a depth of 335 feet when conditions were found unfavorable and another was started about 200 yards away.

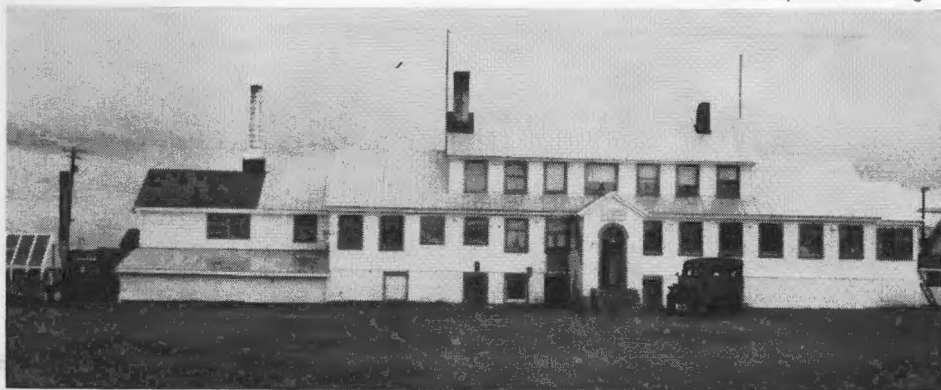


**U**NDER construction for more than a year, the fifty-bed Alaska Native Health Service hospital in Kotzebue is expected to be ready for occupancy early this fall. The new, completely modern structure (above) and a two-story apartment building to house medical and nursing personnel, built at

a cost of almost three million dollars, replace a now inadequate building (below) built fifty years ago or more.

The Kotzebue Hospital serves an area from Stebbins and St. Michael on the south to Pt. Hope and Noatak on the north, and patients will come from more than twenty-five native villages.

Photos by Jonathon Morgen





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## Elk Calves Tagged

In mid-June Game Biologist Ron Batchelor of Kodiak carried out the first elk calf tagging project in Alaska on Raspberry and Afognak Islands. The Kodiak Air Detachment of the U. S. Coast Guard provided a helicopter for the operation, during which twenty-three elk calves were tagged: Batchelor expects to at least double that number next year with the experience gained on this pilot operation.

Almost all calves captured this year were at least two weeks old with an average weight of ninety pounds: one animal weighed 108 pounds. Batchelor found that calves of this size are pretty agile and figures he'll have to start a little earlier next year. Also he believes that the use of drugs will facilitate the operation in the future.

## The Lips Tell

With king salmon and silver (coho) salmon both being caught by sports fishermen, anglers will be interested in knowing how to tell them apart. Sport fish biologist Lou Bandirola of Juneau says that king salmon can be recognized by the black gum line ("black mouth"

is a common name for king salmon in some areas) and the presence of spots on the entire caudal (tail) fin. Silver salmon do not have the black gum line and have spots only on the upper half of the tail.

Individual anglers may have additional methods for distinguishing between kings and cohos, but the above features are considered most reliable in Southeastern Alaska. King salmon average much larger than silvers, of course, but anglers do catch small kings and large cohos.

## A Big Business

Gross receipts from the sale of hunting, fishing, trapping, guiding, and fur dealing licenses in fiscal 1961 (which ended last June 30) came to over \$800,000 according to Katy Conn of the license section. This doesn't include commercial fishing licenses, which brought in almost \$650,000. The state's Sport Fish Fund received \$348,261.96, the Game fund (including receipts from big game tags sold to nonresidents) \$406,401.72. The remainder (after licensing agent fees) went into the General Fund: this included receipts from trapping, guide,

Odd mink pelts. Hydaburg trappers Lorin Sanderson, Gideon Duncan, and Ted Nix took these unusually-colored mink on Dall Island in Southeastern Alaska last winter.

assistant guide, fur dealer, and fur farm licenses. A portion of these receipts was credited to the 1959-60 fiscal year.

The money which goes into the Sport Fish and Game funds is so earmarked to fulfill the requirements of the Federal Aid in Wildlife and Sport Fish Restoration Acts, by which the State is reimbursed for a portion of the cost of sport fish and game research and development projects.

What the properly dressed elk calf is wearing: conventional metal tag in left ear, experimental colored plastic tag in right ear. Biologists hope new plastic tag will be visible enough to provide continuous data on movements in contrast to metal type which provided data only when animal was taken by a hunter.



## Bears Mean Money

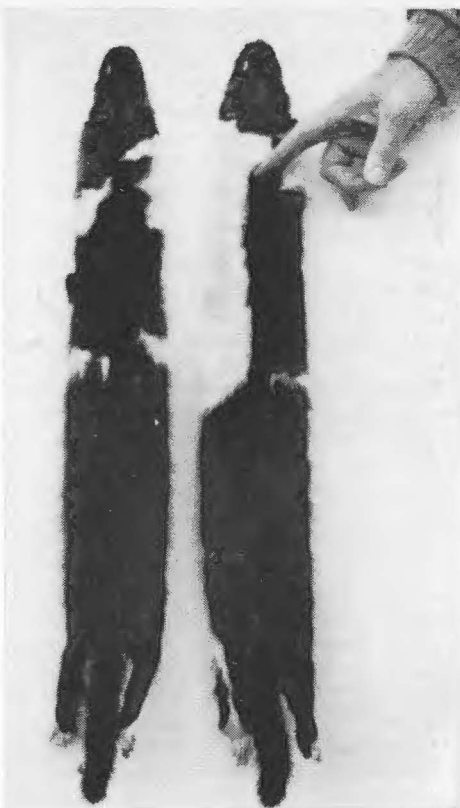
Nonresidents hunting brown, grizzly and polar bear in Alaska last spring contributed an estimated one-third of a million dollars or more to the State's economy while taking approximately 155 polar bears and 200 or more brown and grizzly bears. The income is from guide fees primarily, although the nonresidents also spent a considerable amount on such things as travel, food, drink and lodging and purchase of Alaskan made articles such as parkas, mukluks, carved ivory, and basket work.

## Brant Nests Increase

Waterfowl biologist Pete Shepherd of Fairbanks found 261 black brant nests on a Yukon-Kuskokwim delta study plot where the U. S. Fish and Wildlife Service found only 74 nests in 1951. This could mean either a large increase in the brant population or a shift in nesting areas. Shepherd will require additional studies to find out what's going on.



Game Biologist Ron Batchelor (left) and Coast Guard helicopter pilot Lt. Paul Breed try to convince newly tagged elk calf he's supposed to return to mama, not take a free helicopter ride.



### Fur Catch Tallies

According to fur dealer reports received by the end of June and tabulated by Phil Chitwood's IBM machines, 71,657 individual furs were purchased by licensed Alaska fur dealers during the 1960-61 trapping season. The largest number—41,836—were muskrats: dealers purchased 15,656 beaver, 9,159 mink, 1,399 marten, 1,174 land otter, 882 squirrel, 433 weasel and ermine, 439 white fox, 293 lynx, 255 red, silver, and cross fox, 76 wolverine, 30 wolf, 13 coyote, 10 hair seal, and 2 black bear hides.

This does not represent the total fur harvest in the state, as many trappers send their pelts directly to purchasers outside Alaska. For example, it is estimated that some 25,000 beaver were taken last spring. Complete figures will be available after tallying up the fur export cards which both trappers and fur dealers must fill out when shipping furs out of the state. One thing is already certain, however: Alaska's fur crop was worth well over a million dollars this year.

### Juneau Lake Area Rehabilitated

One of the first projects carried out by incoming Sport Fish biologist Roger Wadman was rehabilitation of Peterson Lake near Juneau in an attempt to increase production of silver salmon and steelhead in this popular fishing area.

Only the first phase of the experiment had been carried out by presstime; elimination of stunted fish inhabiting the lake and the outlet streams. Rotenone was used, which kills fish by constricting the capillaries in the gills, but is completely harmless to birds and mammals. This first step was apparently successful.

Wadman plans to stock the lake with 20,000 steelhead fry held at the Territorial Sportsmen Association's Auke Lake Hatchery. Silver salmon will be stocked in the lower part of the system next spring if the natural recruitment appears inadequate to take advantage of the increased food and living space. If the experiment is successful the usable area for anadromous fish would be increased from about eight surface acres to over seventy.

It will take three to four years to assess the results—the length of time for the planted fish to reach maturity and complete a cycle. One of the unknowns in the experiment is the extent to which steelhead will migrate to the ocean after living in the lake. However, Wadman explained that if appreciable numbers do not migrate they will produce a lake fishery as landlocked trout.

### SET NET

(Continued from page 27)

bobbing kegs and the bobbing cork lines of the set netters will continue to dot the fringe areas of the Kodiak Island beaches for many years to come. Here is one of Alaska's oldest methods of fishing, and if declining salmon runs are saved and built anew, generations will experience the thrill of expectancy that every gillnetter enjoys as he watches his web line for the telltale ripples and splashes that can mean the difference between a "bust" year where the winter pot on the stove too often holds yesterday's beans, and a "big" year where the stores in town and the ever-present catalogue in the cabin can provide the material answers to cherished dreams. ▲

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## Just Part of the Job

A Protection Aide working under the supervision of District Protection Officer Ron Walter in the Prince William Sound area last summer had a good story to tell by the time the commercial fishing season was over.

Joseph Gurske, who comes from Chitina, was issued the usual equipment, including a tent, skiff and camping utensils, and assigned to Sheep Bay. Shortly thereafter it became necessary to move him to Long Bay, an isolated spot across Prince William Sound. The move took place in the middle of the night, during a break in the weather. The vessel dispatched to move him found him on patrol within the confines of Sheep Bay. As the skipper advised him to make haste because of the weather factor, Gurske hurriedly took his equipment aboard the larger vessel and then proceeded to Long Bay.

Two weeks later when the supply vessel *Shad* reached Long Bay they found Gurske, wet and bedraggled, living in his small skiff without any comforts of stove, lantern or tent, but sticking diligently to his post.

It seems that the skipper of the vessel that moved Gurske to Long Bay presumed that a cabin was located there and advised him to leave his tent at Sheep Bay for his replacement to use. Gurske, says Walter, took his extreme discomfort without one word of complaint, and later casually admitted that when he was hired he expected to encounter some discomfort.

## Movie in Making

Amos Burg, of the Information and Education Section, is currently working on a film which will portray economic and recreational aspects of the Bristol Bay area. Burg spent almost a month in the area during the great 1961 red salmon run, when more than 2,000 oilskin-clad fishermen gillnetted enough red salmon to send 50 million one-pound cans rolling off the canning lines of nearly a dozen canneries. During subsequent trips to Bristol Bay Burg will be filming other aspects of life in the area including the fantastic sport fishing and the wealth of large animals such as walrus, moose, brown bear, and caribou.

Burg hopes to show the complex pattern of management by which Department Biologists are attempting to perpetuate the valuable red salmon run in this area. The film will include scenes of seaward smolt migration, escapement enumeration, catch sampling, tagging and fry survival studies.

During the last two years the red salmon runs in the Bristol Bay area have been large enough to cause Walt Kirkness, Director of the Division of Commercial Fisheries, to spend a good portion of his summer in King Salmon and Dillingham personally directing



Alaska Dept. Fish and Game Photos

These red (sockeye) salmon helped fill fifty million one-pound cans during the 1961 season in Bristol Bay. Above: gillnetter spews fish into net bucket, or brailer, while tallyman on buying scow counts. Below: new tunnel-type brailer, developed in Bristol Bay, simplifies transfer of fish from boat to scow.





operations. He was assisted by Western Area Supervisor Charles Meacham, Area Biologist Dean Paddock, and Wilbur Church, Assistant Area Biologist. These men analyzed a constant stream of catch and escapement figures pouring in from canneries, departmental test fishermen and escapement counting towers, using these figures to effect almost instantaneous openings and closures of fishing periods to insure both maximum harvest and adequate escapement to each of the important spawning streams in the area.

Burg said he hopes to have the film, which is in color with sound, ready some time next year.



From counting towers like this on each of ten major Bristol Bay spawning streams, escapement is tabulated so fishing can be adjusted to insure stocks for the future.

### Cook Inlet Kings Decline

The king salmon stocks in Cook Inlet have come under close scrutiny this year by Department biologists. A declining trend in the runs has resulted in increasing restriction on both the sport and commercial fisheries. The sport fishery, for example, in 1961 was restricted to one king salmon per day on the lower Cook Inlet streams. Closures were placed in effect on spawning areas and in some instances entire streams were closed.

By early July the big kings are approaching spawning condition. They become increasingly vulnerable to anglers and are not nearly so desirable for sporting qualities or human consumption. An experimental closure was instigated on the Lower Kenai streams to protect these fish after early July. Sport Fish Biologist Richard Haley reports the closure was effective, permitting anglers to enjoy the fishing while the kings were prime, while

protecting them during their most vulnerable period.

This approach looked favorable and a similar closure, by emergency regulation, was placed on the Susitna River drainage later in July. This drainage, although comparatively inaccessible, has been a favorite fishing spot for years with upper Cook Inlet sportsmen. It may be reached in places via the Alaska Railroad and the rest of the system can be visited by plane or river boat. Very little factual information was available on the Susitna king salmon stocks and an intensive survey and evaluation was started last spring. Sport Fish Management Biologist Frank Stefanich worked in cooperation with Commercial Fisheries counting tower and survey personnel to obtain maximum information on the runs. Small boats, including a water-jet powered craft, were used on the larger streams to transport the crews. Small airplanes spotted the survey crews in the upper regions and also made aerial counts.

An isolated cabin on the Deska River provided the headquarters site near the counting tower. John Haggland, a Biological Aid from Fairbanks who has worked with the Sport Fish Division during the summer for several years, reports the jet boat operates in shallow water without difficulty, but once it is on a sandbar, a ditch over a foot deep must be dug to float it again. Haggland says they found this out the hard way, gathering a few callouses in the process.

The survey progressed very satisfactorily and provided immediate benefits by assessing the value of the late season closure.

### 1960 Fish Statistics

Phil Chitwood, Director of the Statistical Unit, recently submitted figures for the 1960 International North Pacific Fisheries Commission Statistical Year Book. These figures showed a total salmon catch in 1960 of 42,489,589 fish. Red and pink salmon comprised the bulk of these with 17,800,959 and 16,079,307 respectively. The catch included 6,624,911 chum salmon, 1,404,257 cohos or silver salmon and 540,155 king salmon.

There were 11,919 fishermen licensed to fish in 1960. 7,940 shoremen and 711 transporters were employed in the fishing industry. The statistics compiled by Chitwood also said that the 1960 herring catch totaled 17,912,765 pounds.

### Birds Go West

Waterfowl biologist Peter Shepherd of Fairbanks reported excellent waterfowl production in the Minto Lakes area, west of Fairbanks, last summer.

Shepherd, who conducted banding operations and other studies in the Minto area, also reported seeing a red-head duck nesting on the Minto flats. This is the farthest west record of

redhead breeding activity on the North American continent so far, and was the first time a redhead had ever been sighted in the Minto area.

Reports from other sources indicated that the drought in the Prairie Provinces of Canada resulted in many ducks moving to Alaska. What this will mean in terms of waterfowl distribution in the continent's four waterfowl flyways remains to be determined from studies of band returns.

itself was quite an operation. Both of the small planes used on the survey were equipped with wheel-ski combination gear. The men found that most of the streams in the area were flowing, but all of the lakes and potholes were still frozen.

In a preliminary report of the operation, Skoog wrote:

"One of the most consistent behavioral characteristics of a caribou herd (as pertains to Alaska) is that sometime



At a Bristol Bay cannery, gillnets are spread on racks for drying and repairs. These nets, many fathoms long, cost \$1,000 or so each, so get loving care.

## A Lot of Caribou

Four game biologists—two from the Department and two from the U. S. Fish and Wildlife Service—tallied some 30,000 adult caribou on calving grounds north of the Brooks Range this last spring.

This survey was for the eastern portion of the Arctic caribou range only: Game Biologist Ron Skoog of Anchorage estimated there were 60,000 adults in this one calving area, plus, of course, numerous other scattered segments which would indicate that this herd alone may number 100,000 or more animals. The total population of caribou in the Arctic area is estimated to be approximately a quarter million animals.

Four men—Ron Skoog and Frank Jones of the Division of Game and Bob Burkholder and Gerald Watt of the U. S. Fish and Wildlife Service—surveyed some 75,000 square miles during the operation. They found the calving area alone covered some 2,500 square miles.

This is rough country to work in. The crew had to base at Barter Island in the Beaufort Sea during most of the operation. The area is subject to sudden fogs and snowstorms during the spring and the placing of gas and supply caches in

during the period mid-April to May the calving segment of that herd will move to a calving area where most of the herd's pregnant cows will drop their calves. This area may be rather extensive at times or perhaps quite restricted, but usually the same general locality is used year after year—unless, of course, the herd as a whole has changed its 'normal' range. The herds occasionally, and in some places commonly, will intermingle to a certain extent during some seasons of the year, usually the winter. Generally, however, they will separate in the spring as the calving groups return to their respective calving grounds, although occasionally one herd may sustain a substantial loss or gain in individuals. Perhaps the best means then of determining the number of individual herds utilizing any region is first to locate the calving areas being used, assuming that each constitutes a separate herd. One must realize, however, that a herd can and commonly will have three or four major calving concentrations that superficially may appear separate and in reality are not insofar as constituting distinct herds. Caution is always appropriate when trying to interpret caribou behavior.

"The calving period brings together a

definite segment of the herd and thus provides an appropriate place for estimating total numbers. Most of the pregnant and breeding cows are present in the calving grounds, plus a highly variable proportion of yearlings, bulls, and non-breeding cows: a ground or aerial composition count of several thousand adults (older than calves) taken in the last few days of May can establish the proportion of 'pregnant' cows present. Such cows being identified by the presence of a calf or by the presence of the previous year's antlers. By the end of May all caribou other than pregnant cows and a very few yearlings or possibly diseased animals will have shed their hard antlers. The proportion figure obtained will be low because some cows will have lost their antlers and their calves both and thus be tallied in the 'other' category of adults; heavy infant mortality could distort this figure, but such a mortality should be fairly obvious. At any rate, if one then can obtain a reasonable estimate of the total number of caribou (excluding calves) on the calving grounds, then he also will have an approximation of the total number of pregnant cows in the herd. The remaining portion of the herd then can be estimated using sex-ratio and fertility data from more intensive studies of other herds, with of course certain necessary assumptions.

### **Purpose of Survey**

"This survey was initiated to complement the caribou work being done to the west of 152 degrees W. Longitude in connection with the 'Cape Thompson Project' [Editor's note: the proposed experiment to blast a harbor in Alaska's coastline by the means of nuclear explosions], in order that a more complete set of data might be obtained concerning the herds ranging throughout Arctic Alaska. The work was planned for the period May 18 through June 6. Ten days were considered adequate for the survey but additional time was necessary to allow for delays due to weather or other unforeseen difficulties."

Although there are more caribou in the arctic than in all other areas of Alaska combined and the animals there are the major source of meat for many people, very little work has been done in this area, partly because of its huge size and the unpredictable weather. Skoog and Jones, however, are determined to continue their studies.



# Alaska Department of Fish & Game News Letter

News Letter Editor,  
Alan Courtright,  
Management Biologist.

Walter Kirkness,  
Commissioner.

E. S. Marvich,  
Acting Deputy  
Commissioner.

Dr. Howard Tait,  
Director, Division of  
Biological Research.

**For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subpost, Juneau, Alaska**

James Brooks,  
Director, Division of Game.  
A. H. McRea,  
Director, Sport Fish Division.

W. R. McKinley,  
Director, Division of  
Engineering and Services.

## Kirkness is New Commissioner

The appointment of Walter Kirkness as Commissioner of the Alaska Department of Fish and Game was announced September 22 by Governor William A. Egan. Formerly director of the Division of Commercial Fisheries, Kirkness succeeds Clarence L. Anderson, commissioner since inception of the department in 1949, who retired earlier in September.

Kirkness, 41 years old, Seattle-born, graduate of the University of Washington School of Fisheries, veteran of three years' service in the Marine Corps during World War II, joined the ADFG in April, 1950.

## Bison Hunt

The 1961 bison hunt is now history, all fifty persons holding permits having filled out their bags in just a little more than three weeks. Regional Game Management Biologist Bob Rausch of Fairbanks rated the hunt successful on all counts.

The primary purpose of the hunt, of course, was management of the herd. The condition of the range required that the herd be stabilized at about its present size to lessen the possibility of high losses from natural causes if a hard win-

ter comes along. The 50 animals taken just about equal last spring's calf crop, with perhaps a few left over to help replace losses from natural causes.

The scheduling, location, and operation of the hunt were planned in such a way as to assist in a secondary objective, keeping the bison away from the homesteads. Ten new hunters were allowed to go out each day for five successive days beginning on August 26, when the bison had begun to move toward the homesteads. Hunting was permitted only in the area where it would do the most good, and the activities of the hunters—many of whom had one or two cars full of friends—evidently had considerable effect on the animals. Few of the hunters had any difficulty finding bison in relatively accessible areas for the first three days, but after that it was more like moose hunting, requiring plenty of searching and lots of hard work.

Col. L. C. Downs of Fort Greely authorized the Department to allow hunting on a part of the military reservation, which fitted in very nicely with plans to harass the bison as they moved toward the homestead area. The hunters, too, appreciated the Colonel's action, as a number of animals were taken on a portion of the reservation known as the drop zone (a cleared area used for parachute dropping of supplies for maneuvers and testing) where the hunters, after a rather rough ride, could load the meat directly into their cars or trucks.

Transportation of the meat was no small matter: one man came out with 1,100 pounds of it. Taking out the head and hide alone provided loads equal to or exceeding what many hunters have to carry when they shoot a deer.

Proper management of the Delta bison will probably require annual hunts.

ADFG men were busy collecting data and specimens. Here Biologist Joe Nava weighs bison taken by Keith Clemmons (left).

Taking out the meat was no small chore (the hunt yielded a total of thirty to thirty-five thousand pounds), but some were able to do it the easy way. Most brought friends to help. The seven women who drew permits brought their husbands.



Major Carl Anderson, like other applicants, had one chance in sixty-five of drawing a permit. His kill was one of several that should make the Boone and Crockett book.

It has already been demonstrated that if man doesn't harvest the surplus, nature will do so in a much harsher way. From a high of more than 400 animals in 1947 the herd declined to about 250 or so in the early 1950's. Periodic overpopulations simply mean that during hard times many more animals will suffer and die than would die if the herd is maintained at a reasonable level through hunting.

## Derby Yields Data

Personnel of the Division of Biological Research collected data on salmon entered in the 1961 Golden North Salmon Derby for the third successive year. In-



formation obtained from fish caught in the Derby, which is sponsored by Territorial Sportsmen, Inc., of Juneau, included sex, weight, age and length of all fish taken and determinations of the catch per unit of effort. The accuracy with which the effort can be determined during the derby provides valuable information on the fluctuations of salmon populations.

First place winner Rudy Pusich's 43 lb. 2 oz. king salmon turned out to be a five year old female. The second place fish, caught by Sterling Sears, was a 4 year old male weighing 35 lbs. 3 oz. The largest coho (silver) salmon was a 16 pound 6 ounce male taken by Robert Pasquan.



Rudy Pusich of Juneau won first in the 1961 Golden North derby with this 43-pound 2-ounce king, a five-year-old female.

The total salmon take during the derby was down considerably from the two previous years, with 791 fish entered, of which only 218 were kings. In 1960 the totals were 1,030 fish and 361 kings, while 1,491 fish, of which 499 were kings, were entered in the 1959 derby.

\* \*

#### Commercial Take High

In contrast to the low take during the Salmon Derby, the Southeastern commercial salmon pack was running far ahead of 1960 at press time. By mid-September 1,150,925 cases of salmon had passed through the canneries of the Panhandle, compared to only 298,684 at the same time last year. The 1961 Panhandle pack at that date was some three times as much as the pack for all of last year.

Most of the difference was due to a much larger run of pink salmon this year, a mid-September pack of 811,650 compared to 136,051 cases in 1960. There were varying increases in the other species also, however, with the exception of king salmon which were down to 420 cases compared to 914 last year.

Put in terms of weight, the 48-pound cases represented almost 50 million pounds of fish. This is not a "high" pack for Southeastern Alaska, being about equal to the average for the last ten years and well under the 2 to 4 million-case packs of 20 years ago, but at least the area's fishermen won't end up low on the totem pole as they did last year.

\* \*

#### Sheep Stray

Regional Game Management Biologist Bob Rausch of Fairbanks, checking on a report by a sportsman, found a ewe sheep on a hilltop near the confluence of the Little Delta and Tanana Rivers on August 28. This is many miles from the nearest real sheep country in the Alaska Range. The sportsman, whose name was not available, saw the sheep swimming across the river, reported it to Rausch. There have been several other reports of "odd" sheep movements in the last couple of years. The Division of Game has mounted a full-scale sheep research project, which may provide a clue to the reasons.



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## Big-Mesh Nets Take Big Male Reds

The divisions of Biological Research and Commercial Fisheries, in cooperation with the Columbia River Packers Association and the Red Salmon Company, carried out a mesh selectivity experiment on red salmon in the Bristol Bay area last June and July, to determine the effects of different mesh sizes on sex and size composition of the catch. Biometrician Don Siniff of Biological Research collaborated with Biologist Dean Paddock in the study. The packers provided two gill-net boats and a scow which was set up as a field laboratory at the mouth of the Naknek River.

The drift gill-net sets were fished outside the commercial fishing area, so the selective action of the commercial fleet would not bias the sample. Each net consisted of five sections, each of a different mesh size. Six sizes, from 4¾ to 6 inches, were fished. The fork length,

A drift gill-net, in five sections with mesh size graduated, is paid out in Bristol Bay in one of several Alaska salmon studies on which field work was done last summer. Most biologists prefer the field work to the volume of desk work which must follow.

girth and sex of each fish were recorded, and both weight and fork length of a representative group to establish weight-length conversion factors. In all, 4,680 red salmon were measured.

According to a preliminary analysis, the number of salmon, but not the number of pounds, caught per hour of fishing decreases as the mesh size increases, and the proportion of males caught increases in direct ratio to the increase in mesh size. Final analysis will also yield the age composition of the catch.

## Yukon Chums under Study

A chum salmon tagging program on the Yukon River, begun last summer by the Division of Commercial Fisheries and scheduled to continue through 1962, is expected to yield information of use at the International North Pacific Fisheries Conference in 1963, when North Pacific fishery problems involving mat-

The Tanis Lake airstrip, at right, completed last fall, is the first of three hunter-access airstrips scheduled for the Yakutat area under a joint program of the ADFG and the U.S. Forest Service. These strips will permit increased utilization of moose herds in the Yakutat area, and the Tanis Lake strip gives access to good mountain goat and ptarmigan hunting. The two other strips, in the Setuk and Dangerous River areas, are to be completed next spring.

ters of treaty will be discussed by representatives of Japan, Canada and the United States. The tagging program is under the general supervision of District Biologist Steven Pennoyer, and the direct supervision of Assistant District Biologist Ronald Regnart.

Equipment, including three boats, outboard motors, and two fish wheels prefabricated in Anchorage, and personnel were transported to the field station, at Mountain Village near the mouth of the Yukon, aboard Air Force C-123's and helicopters.

Last summer the field crew was concerned mainly with trying out various types of fishing gear, locating suitable fishing sites, and building additional fish wheels. About 1,100 chum salmon were caught in the wheels and tagged. So far, these tagged fish have been recovered as far upstream as Rampart, 670 miles from the tagging site, indicating a travel rate of fourteen to twenty-four miles a day.

Six fish wheels are ready to begin operating in the Mountain Village area next June, and an additional crew stationed upriver at Pilot Station will attempt to recover tagged salmon in gill-nets. Anyone taking salmon for personal or commercial use will be paid a dollar for each tag represented and returned to an ADFG representative.

## Science in Scuba Gear

If the Yukon weren't so muddy, biologists could use a tag recovery technique found successful on Kodiak Island, where Research Biologists Guy Powell and Dave Warner tried skin-diving for tagged salmon. They used conventional scuba gear and underwater spears. This method is especially effective, Powell reports, in larger streams or in deep holes where tagged salmon cannot be reached with a spear from shore. Powell and Warner had recovered seventy tags by early fall.

By spotting and taking the tags when the salmon enter fresh water, their travel time from their tagging site on the high seas to their home streams can be determined.

These diving operations, on Kodiak, require two men—one to dive, and one to stand on the bank with a rifle to ward off brown bears, and also alert any bounty hunters who might mistake







the diver for a hair-seal.

Powell was the first Alaskan biologist to use scuba gear in biological studies of king crab. His results have been so successful that Dr. Howard Tait, director of the Division of Biological Research, hopes to promote the training of more biologists in the techniques of direct underwater observation.

### Who's Got the Fish Tag?

Spotting Alaskan fish tags for a dollar apiece is a game not entirely confined to Alaskan fishermen. One consumer, in faraway Texas, played it last fall. The Texan bought a can of pink salmon and found in it a white plastic tag bearing the number C-1202. He sent it to the company whose label was on the can, requesting the promised dollar, and the company sent it on to the ADFG office in Juneau.

Biologist John Vania of the Commercial Fisheries division traced the number of the tag and found it had been attached to a pink salmon aboard the seiner *Sunwing II*, under charter to the state of Alaska, in the Inian Islands of Icy Strait at six a.m. July 12, 1961. During the next two months, therefore, the salmon was caught, canned, labeled, wholesaled, retailed and probably eaten. (One purpose of tagging is to determine fishing intensity. Anyone for a survey of eating intensity? Obviously, tags could do it!)

Salmon tags, five-eighths of an inch in diameter, are usually red or yellow—easier to spot than white—and about ninety-eight per cent of them are spotted before the fish even gets to the cannery.

Did the Texan get his dollar? Yes. The ADFG pays, promptly and automatically, request or no.

### Serious Purpose

All efforts toward tagging and tag recovery will be well worth while if they help to perpetuate the commercial fisheries runs in Alaska and elsewhere.

A preliminary review by the U.S. Fish and Wildlife Service shows that, in fisheries, Alaska ranked fourth among the states in 1960 with landing figures of 362,800,000 pounds, and second in landing values with \$40,200,000. Information obtained through tagging should help to raise both figures—and also eliminate the ironic if unintended implications on an envelope, received recently, addressed to the "Wish and Game Department."

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Division of Protection.

## Mule Deer Come to Alaska

For a number of years game biologists have been hearing that mule deer have been seen or taken in the Stikine River area. Last fall, finally, a hunter called in a Department biologist to verify the fact that his deer was a mule deer. Bob Sawyer Jr. of Wrangell took the forked-horn a couple of miles below the Canadian border on the Stikine and called in Biologist Harry Merriam of Petersburg, who verified the identification and location of the kill and collected the antlers, hide and lower legs of the animal. There are mule deer in adjacent British Columbia, and it is possible that these animals have interbred with the Sitka black-tailed deer of the Southeastern mainland, which would account for the somewhat larger size of these animals as compared to the black-tails of the Southeastern islands. This is the first time, however, that their presence in Alaska has been fully verified.

## Young Elk Carry Embryos

Another "first" was reported by game biologist Ron Batchelor of Kodiak. Batchelor, examining the reproductive tracts from hunter-killed elk from Afognak Island, found two yearling pregnancies among them. This is the first time that pregnancies have been verified in Olympic elk of this age class.

## Fish Statistics Available

A statistical report containing the 1960 commercial fisheries catch and reproductive data has been completed and is ready for distribution. The report's eleven tables provide data on the number of operating units, the catch and value to fishermen, some comparisons with previous years, the number of salmon caught by district, average weights of salmon, the number of firms and persons employed in processing fishery products, the poundage and value of each fishery product by species, and the number of cases and value of each species that was canned. The reports include data on shellfish and crabs as well as salmon, shrimp, sablefish and other species. The main purpose of the report, which was compiled by supervisor Phil Chitwood of the Statistics Section, is to satisfy the numerous re-

quests the Department receives for information on the state's commercial fisheries. It will also serve as a reference and management tool for department personnel.

## Crab Wore Tag Six Years

Crab biologist Guy Powell of Kodiak reported that a male king crab was caught which had been tagged and released into Sheraton Bay, Kodiak Island, six years ago. At the time it was tagged it was about 3½" across the shell and weighed almost 1½ pounds. When recaptured it had grown almost 4" and gained over 6 pounds, molting four times in the process. This was the first male crab caught this long after being tagged, so Powell got some interesting information from it. A \$2 reward is paid for each tagged crab turned in by fishermen.

## Sheep Go on Map

Game biologist Les Viereck of College is preparing a map of sheep distribution and numbers for Alaska. While this map is designed primarily to assist in sheep research in the state, it is possible that it will be reproduced in sufficient numbers to make this information available to hunters in Alaska and elsewhere.

## B.C. Moose Moving West

Moose are continuing to increase their range and abundance in Southeastern Alaska if harvest records can be regarded as indicative. The dozen or so moose taken from the Thomas Bay-Muddy River area near Petersburg last fall represented some three times the number ever taken from there in any past hunting season. This illustrates one reason why game biologists are frequently reluctant to spend money on transplants and introductions, which are popular with sportsmen. If the habitat is suitable and there are no insurmountable natural barriers, the animals will transplant themselves at no cost to the taxpayer.

## Few Cranes Fall to Hunters

Alaska's first open season on little brown cranes closed last September 30 with no visible damage to these big birds. The fact that they were protected for many years apparently affected

→ **TAKING** pictures is part of a research biologist's field work, as pictures help to transmit the information he is gathering—and also to show the taxpayer how, where and why his money is being spent. But a desk man—Morris Grant, property officer in the ADFG office in Juneau—out for recreation, got the department's best deer picture of the year.



Morris Grant

their wariness not at all. Waterfowl biologist Pete Shepherd of College made a bag check at Minto Lakes, one of the state's most popular waterfowl hunting areas, where thousands of cranes pass through. The bag? Eight cranes.

## Violators Pay

Records of the Division of Protection show that there were 334 apprehended violations of the Fish and Game Regulations during the first six months of 1961. As would be expected at that time of year, the majority of the violations—208—concern the commercial and subsistence fishing regulations plus general licensing violations. Of the remaining, 54 were game regulation violations, and 72 were violations of the sport fish regulations. Of the latter the great majority concerned fishing without a valid license.

In the commercial fishing category fines ranged up to \$4,000, for commercial fishing during the closed season. There were several fines of \$1,800 to \$2,000 for such violations as failing to register before and after fishing in a registration area, fishing in a closed area, commercial fishing without a proper area license, using a net in an area open to trolling only, and diverting a salmon stream without the consent of the Commissioner of the Department of Fish and Game. Other violations included employing unlicensed fishermen, having gill-nets in excessive lengths

aboard the fishing vessel, improper gear registration, a lack of stationary fishing gear identification signs, failure to display a vessel license, and taking salmon with a gill-net having undersized mesh.

Fines for violation of the Game Regulations ranged up to \$750 (for taking moose out of season). There were several cases made on failure to surrender seals and make a report within three days of the close of a special moose permit hunt as required by the special hunt regulations. Other violations, in addition to the common one of hunting without a license, included shipping unsealed beaver hides from the state, killing cow moose in an area open to the taking of bulls only, taking wolverine out of season, taking big game without appropriate nonresident tags, hunting without a guide, guiding without a license, selling furs without a fur dealer license, possessing and transporting unsealed raw bear skins, and failure to affix a nonresident tag to polar bear.

The most common sport fishing viola-

tion, aside from having no license, was fishing with a multiple weighted hook (commonly known as snagging). Several persons were apprehended for taking undersized razor clams, with other violations ranging from sport fishing near a barrier, sport fishing for salmon during a closed period, possession of illegally taken grayling, having a multiple hook attached to a lure with a gap larger than  $\frac{1}{2}$ ", and fishing in closed waters, to holding live game fish without a permit. There were also a number of violations concerning making false statements in application for resident licenses of all kinds, and several fines were also assessed for violation of subsistence fishing regulations, including over-limits of eulachon and failure to have a proper permit.

## Sedentary Species

Tag recoveries prove—though it was generally known all along—that the life of a sablefish (sometimes called a black cod but not a cod at all) is long, slow and dull compared to the life of a salmon. A tagged sablefish was taken last fall by William E. Odell of Pelican, skipper of the *Emma*. A trace showed that the fish had been tagged one month short of ten years earlier, only six miles from the spot where it was caught, and in the interim it had grown one inch.

ADFG Photo



← **UP** YAKUTAT way, where many widely separated salmon streams are accessible only by trail or from the storm-lashed beach, Commercial Fisheries personnel have—or had—a transportation problem. They hope their new Tote-Goat, a rugged, low-g geared, high-clearance motor scooter designed to negotiate rough terrain, will solve the problem and eliminate a lot of back-packing. Here, Alex Brogle from the Yakutat station checks out the new vehicle on the nearby beach.



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## Light Red Run Expected

After coordination of research results of the Department, the Bureau of Commercial Fisheries of the U.S. Fish and Wildlife Service, and the Fisheries Research Institute of the University of Washington, it has been predicted that the 1962 Bristol Bay red salmon run will fall short of the run experienced in the past two years. This can be attributed to a combination of factors, including low escapement in some systems in 1957 and 1958, low out-migration of young salmon from these escapements, and an unusually high mortality in the sea. The high seas mortality among young salmon which descended in 1959 and will return as adults in 1962 evidently took place sometime between the first and second summers of ocean life.

The total Bristol Bay red salmon run next summer is expected to be between six and twelve million fish, with approximately nine million the probable total. It appears likely that the important Nushagak and Egegik districts will have such poor runs that there is serious question whether the Board of Fish and Game will consider the usual type of operations advisable in these areas.

The high seas red salmon catch will have to be deducted from the expected run of nine million fish: research shows that Bristol Bay reds have consistently dominated high seas red salmon catches during May and June at least as far west as 175° east longitude, which is some 400 miles west of the abstention line called for in the treaty between Japan, Canada, and the United States. As a comparison to the above figures, the 1960-61 red runs after the Japanese high seas catch were 37 million and 18 million respectively.

## Ptarmigan Counting Refined

Division of Game Biologist Bob Weeden of College has found a method of determining the sex and age of ptarmigan in the field during the fall. The method requires clear weather and an approach of within fifty yards of the birds. The technique, says Weeden, will be valuable for determining the relative success of the breeding season in those areas where no summer research was conducted. Combined with spring breeding-pair counts, it could provide a

basis for reasonably intensive management, should the need arise.

Weeden tried to test the technique last fall but obtained counts on few birds because of persistent snow and fog. "Try looking for bars on the breast feathers of ptarmigan in a snowstorm at one hundred yards," said Weeden in his report.

## Grayling Wander

Sport Fish Biologist Hank McKirdy of Fairbanks looked through his grayling tagging record book and found that one fish tagged on August 13, 1960, sixteen miles above the mouth of the Goodpaster River, was caught June 24, 1961, in the Richardson Clearwater some fifty river miles from where it was tagged. Another grayling was caught approximately one hundred river miles away from where it was tagged a year earlier. The best growth record disclosed by McKirdy's records was a grayling which added two inches in length in one year.

## Togetherness for Moose Twins

Twin male yearling moose tagged together on the Big Susitna River in 1960 were taken within thirty yards of each other a year and four months later. The animals had moved approximately twelve miles between the time they were tagged and the time they were taken.

## Elk Herd Growing

During the twenty-day early season on Afognak Island, Game Biologist Ron Batchelor reported, 81 hunters bagged 53 elk for a success ratio of 66 per cent. This is probably the highest success ratio on this species anywhere in the United States. With more than 1,000 animals in the Afognak Island elk herd, the total harvest is far below the desirable total. Some areas on the island are beginning to show the effects of excessive utilization of the food supply. A joint Department-Forest Service project will provide a hunter access trail on Tonki Cape before the next elk season, which should help in providing a larger harvest.

## Alaskan Birds on Four Flyways

Waterfowl Biologist Pete Shepherd of College recently reviewed the 1960 band returns from birds banded in Alaska and

found that sixteen states, two Canadian provinces and Mexico had served as temporary homes for Alaska-produced birds. Band returns were reported from California, Oregon, Washington, Nevada, Texas, Utah, Montana, Louisiana, New York, Virginia, North Carolina, Kansas, Illinois, Minnesota, Ohio, British Columbia, Alberta and Mexico, showing that Alaska produces birds for all four of the continent's waterfowl flyways.

## Game Crop Good

Caribou hunters in the Taylor Highway area last fall again managed to bag more than one caribou per man as 1,543 hunters took 1,645 caribou. This excellent success may drop somewhat in the future if hunters do not show a little more sportsmanship. A number of persons were arrested for shooting from the highway in this area last fall.

The 6,753 hunters passing through the south-central Alaska checking station last fall took 892 moose, 2,622 caribou, 27 goats, 123 sheep, 53 black bear, 24 grizzly bears, and almost 1,000 ducks, ptarmigan and grouse. This is an excellent harvest in both numbers and variety for areas accessible by road.

## And Where Was Sergeant Preston?

A recent case in the Fairbanks area required the use of aircraft, automobiles, bombardiers (snow vehicles) and dog sleds to apprehend three violators who were subsequently convicted of several counts of exceeding the legal limit on moose and sheep and of taking these species out of season. Stiff fines and jail terms were imposed against the violators, who led a bevy of protection officers, game biologists and an assistant district attorney a merry chase before they were caught. Personnel of the R.C.A. Protection Service Unit at Clear (near Nanana) also assisted in the case, making snow vehicles available to the Department.

## Shrimp Take High

The Division of Commercial Fisheries reports that over nine million pounds of shrimp had been taken in the Kodiak area by late November. This is three times the amount taken in the same period in 1960.

## Woman in a Wanigan

(Continued from page 15)

shelves or even chairs. Midge, who has always loved plants and flowers, has everything from dwarf cactus to curious, long green things with tongue-twisting names. Under her care they grow leafy and full—sometimes to Stan's distress when he can't find a place to sit down.

A wanigan, Midge says, is an ideal place for sleep. Gentle undulations caused by the workings of the tide and the metronomic splashing of waves against the underpinnings work won-

ders for insomniacs. Only once have the Fosters had trouble sleeping—when a howling gale blew up suddenly in the night and wrenched the wanigan from its moorings. They became aware of the trouble when they suddenly found themselves sprawled on the floor.

### Hectic Night

“That was the most hectic night we ever put in,” Midge recalled. “We both grabbed pike poles and tried to shove the wanigan back to shore. My pole slipped, and I went head first into the bay.”

It took three full days to get the wanigan moored back in its original position, and about two weeks for Midge to get the household in order again.

Incidents like that are what you have to expect, living in a wanigan, and Midge has learned to take them in stride. It's a lot different from living in Los Angeles.

“Gosh,” she declared, “I'd be scared spitless to live there now, with all that traffic and everything!” ▲

## Heraldic Screens of the Tlingit

*(Continued from page 19)*

another that was in Wrangell. There is a replica of the Rainwall in the State Museum, and a replica of the Bear Screen in Wrangell. A couple from British Columbia are known in museums, one of them in Victoria.

There may be others, as such heraldic devices in Tlingit possession have a habit of “going underground” for long periods, then coming to light on some auspicious occasion, to the amazement of even the local inhabitants, who didn't know they existed.

Because they have always been kept indoors, there are screens in existence today that are no doubt older than the oldest totem poles extant. By reason of age alone, heraldic screens deserve a great deal more attention than they have heretofore enjoyed. ▲

# Alaska Department of Fish & Game News Letter

For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subpost, Juneau, Alaska

James Brooks, Director,  
Division of Game.

Walter Kirkness,  
Commissioner.

A. H. McRea, Director,  
Sport Fish Division.

W. R. McKinley, Director, Division of  
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Director, Division of  
Biological Research.

Stanley Swanson, Director,  
Division of  
Commercial Fisheries.

C. A. Weberg, Director,  
Division of Protection.

## Regulations Overhauled

The Board of Fish and Game's December meeting in Anchorage, confined mostly to considering changes in the Commercial Fishing and Sport Fishing Regulations, resulted in a number of clarifications and adjustments, with few major changes. Additions and amendments included:

### Commercial Fishing

Provision for an octopus fishery. Although octopus is a popular halibut bait, the regulations previously made no mention of these creatures so few fishermen knew whether it was legal to take them. The new regulation opens the season the year round and specifies the gear which may be used.

Clarification of the seine vessel length limitation. The new regulation reads "No salmon seine vessel shall be longer than 50 feet, official register length, and 58 feet overall length except vessels that have fished salmon with seines in waters of Alaska prior to January 1, 1962, as foot official register length vessels."

A number of minor gear, registration date and area, and other miscellaneous changes. The new regulations are expected to be available shortly.

### Sport Fish

Areas adjacent to a total obstruction to fish passage, previously open to fishing for Dolly Varden only, are now open to all fishing. Formerly, no fishing except for dillies was allowed within 300 feet of any kind of barrier, whether total or only partial. The 300 foot limit still applies to partial barriers, such as weirs, culverts, etc.

In Southeastern, treble hooks were outlawed for salt water salmon fishing. A bag limit on king and silver salmon was also established in this area: the limit is 5 silvers and 2 kings over 20 inches. There is no limit on adults under 20 inches. A number of streams were closed to all salmon fishing in the Panhandle, including Auke Nu, Duck, Jordan, Salmon, Schweitzer, Steep, and Wadleigh creeks in the Juneau area and Indian River in the Sitka area. Excessive pressure on the spawning areas of these small, accessible streams dictated the closures, which simply extend emergency closures made last year. Farther north, Fritz Creek near

Homer, Hidden Lake and Jean Lake creeks on the Kenai, and Bodenbuck Creek near Butte on the Palmer Highway were also closed to salmon sport fishing. Fritz Creek is the site of a Division of Commercial Fisheries adult pink salmon stocking experiment.

Several changes in open season dates and stream closures were made, particularly for salmon fishing. All of the changes are included in the new Sport Fish Regulation pamphlet which is now available at Department offices and from license agents.

## Ivory is for Carving

Sale of raw walrus ivory without a permit resulted in a fine of \$500 and a 60-day jail sentence for a Fairbanks man on his conviction in court there. The jail sentence and part of the fine were suspended on condition of good behavior for one year. The court also ordered confiscation of the ivory involved.

The regulation prohibiting purchase or sale of raw ivory without a permit was written to remove the incentive for excessive harvest of walrus for their tusks alone. Before this regulation was adopted by the Board of Fish and Game at its first rule-making session, large numbers of walrus tusks were sold to tourists at a fraction of the value the ivory attains when fashioned by skilled Alaskan ivory carvers. The permit requirement not only reduced the incentive for taking far more walrus than are needed for food and carving purposes, but also assured that the ivory would fall only into the hands of carvers so maximum value would be realized from all tusks taken. This is expected to have a significant effect on the economies of such villages as Wales, Savoonga, Gambell, Shishmaref, Little Diomed, Barrow, Point Hope, and Wainwright.

## Moose Herds Thinned

Gerry Atwell, Regional Game Management Biologist in charge of the antlerless moose season, disclosed that despite unfavorable weather during portions of both the Kenai Peninsula and Matanuska Valley antlerless moose hunts last December, success was high. The reported harvest was as follows:

Area A (Homer-Kasilof), 150 permits—120 moose; Area B (Kasilof-Round Mt.), 150 permits—120 moose; Area C (Cooper Landing-Hope), 50 permits—30 moose; Area D (Palmer-Kashwitna), 500 permits—385 moose; Area E (Unit 14 north of the Kashwitna River and Unit 16), 1,710 permits—238 moose.

The number of moose taken differs from the number of permits issued for various reasons: some people did not validate their permits and of those that did validate, not all hunted, and, of course, not all hunters were successful.

In Area A, 127 permittees hunted; 122 in Area B, 37 in Area C, 404 in Area D, and 314 in Area E. Hunter success, based on the number of permit holders who actively sought moose, was: Area A—94%, Area B—98%, Area C—80%, Area D—95%, and Area E—76%.

Moose arrived on their winter range almost a month early this year and by late November the scrubby and overutilized browse had commenced to take its toll: some calves and a few adults were already suffering from malnutrition, which is unusual so early in the winter. During this season an adult moose requires about 50 pounds of browse (small twigs) daily; a calf or yearling 35 pounds, according to Atwell. Estimating that two-thirds of the moose taken were adults and one-third calves and yearlings, then 4,140,085 pounds or 2,070 tons of additional browse will be available to the remaining animals from December 18, 1961 through March 31, 1962.

Atwell said hunters again cooperated closely with the Department by marking kill sites, collecting blood samples, and supplying general information necessary to assess the hunts.

The Department was assisted in administering the antlerless moose season by biologists and rangers of the United States Forest Service, biologists and enforcement personnel from the Fish and Wildlife Service, and military Conservation officers from both Elmendorf Air Force Base and Fort Richardson.

## Too Few Deer Taken

For the third consecutive year a low deer harvest during the regular open season led to the opening of a special season in an attempt to obtain a more adequate kill and protect the ranges from overuse. The 1961 harvest was estimated at less than seven per cent of the herd: in most states a twenty-five per cent harvest is considered desirable, being well within the expected annual increment.

As in the past, the special season was opened only in the less accessible areas, where signs of range damage due to overabundance of deer have been evident for some time. There simply isn't enough hunting pressure in these areas to provide a harvest of surplus animals. Special seasons or no special seasons, a



hard winter will undoubtedly result in death of many animals from malnutrition. The extra harvest will, however, assist in mitigating the losses. The special season this year lasted from January 10 to January 31, and was confined to Chichagof, Prince of Wales, Kuiu, Etolin, and Zarembo Islands and portions of Admiralty and Kupreanof Islands. An extra season was also provided in Prince William Sound when it was found that foul weather during the regular season had kept the harvest low, and an extension of the elk season on Afognak Island was also made when it was found that the harvest was the lowest in recent years in spite of the fact that the elk are more numerous than ever before.

Rarities in Wildlife

Regional Game Management Biologist Loren Croxton of Ketchikan seems to run across genuine news items with surprising regularity. The latest ones are confirmation of a report of sea otters occurring near Ketchikan and examination of a white wolf pelt taken on Heceta Island off the west coast of Prince of Wales.

The sea otter incident started with a phone call from Mrs. Richard Olmstead, who reported seeing the animal—possibly two separate animals—near her home along South Point Higgins Road. The first call came while Croxton was out of town, but as soon as he got back he and Biological Aide Duane Johnson made a beeline for the area, and after one or two attempts managed not only to get within fifteen feet of the animal but to take a couple dozen photographs. There is absolutely no doubt about the identification, according to Croxton, though the occurrence of this species in enclosed waters is highly unusual. The photographs were unfortunately not available for this issue.

The white wolf, also a highly unusual occurrence, was reported to Croxton by Protection Officer Earl Mossburg of Craig. Mossburg said the animal was taken by 71-year-old Claude Hansen last November.

Few Kings in Panhandle Streams

King salmon were found in only limited numbers in the spawning streams of Southeastern Alaska when biologists of the Division of Biological Research conducted stream surveys during the 1961 field season. This observation, plus a study of past catch and escapement records and stream surveys, indicates that, contrary to popular opinion, these Panhandle area streams probably do not support large numbers of kings.


The studies were prompted in part by the declining catch of this important species during recent years, and were made to determine the distribution and abundance of king salmon in the rivers of Southeastern Alaska.

The principal river systems surveyed were the Unuk, Chickamin, Klahini, Wilson, Martin, Keta, Blossom and Boca de Quadra, all of which empty into Behm Canal within fifty air miles of Ketchikan, and the Chilkat River near Haines in the northern Panhandle.

Over one hundred miles of the lower reaches of the streams in these areas were surveyed on foot or with the aid of a 24-foot riverboat equipped with a 40-horse motor and a Yukon-type motor lift. An airboat was used on the Chilkat; the upper reaches of the streams, inaccessible by riverboat, were surveyed by helicopter and airplane. On the upper Unuk River and on the Chilkat, the U.S. Fish and Wildlife Service, Branch of River Basin Studies, cooperated with the Alaska De-

partment of Fish and Game staff in a joint survey effort.

A report of the river systems has been prepared, giving geographical and physical descriptions and observations on water quality and stream bottom composition as well as measurements of spawning areas. Detailed maps were drawn of the rivers and their tributaries, showing the spawning areas and any stream obstructions encountered. On many streams, it was found that high waterfalls or other obstructions barred the salmon from further migration upstream, where excellent spawning gravels sometimes existed. The report may in some cases pave the way for attempts at removing obstructions, thus making more spawning area available.



## YOU, TOO, CAN MAKE GOOD IN A CAREER OF ADVENTURE

From State Ranger  
**WILLIAM J. L. TRYTHALL**

Mr. William Chamberlain, President  
North American School of Conservation  
810 Dodsworth Avenue  
Covina, California

Dear Mr. Chamberlain:

I recently received my appointment as State Ranger. Work consists of supervision of employees; Patrol forest to order to prevent and discover forest fires and to prevent theft of timber and other losses; making the land in building fire lines; cutting of timber, planting and transplantation trees, seedling, including trees, shrubs, and spruce growth; and much time assisting the public with permits for our recreational facilities.

Among them, fish and game, sliver, water, and many other related items.

I also honestly state that your course of instruction has helped me both in passing my course as a State Ranger, and in successfully carrying out my duties as a State Ranger. I constantly refer to my course in the various problems that arise and feel that I would be lost without it. I strongly recommend it to all persons, both interested in a conservation career and already engaged in the conservation field. Anyone who wishes a good job in conservation should take this course. It most certainly increases the chances 100% for such a job and is successfully carrying it out.

Please send free to use this letter...if it is instrumental in obtaining any one student for this valuable course, then both the student and the conservation field will be greatly advanced beyond words.

*W. J. L. Trythall*  
State Ranger  
High Point State Park

### PROTECT FORESTS and WILDLIFE — ARREST VIOLATORS!

To guard and protect our forest, fish and wild game. Wardens and Rangers are empowered to enforce the Conservation Laws and arrest violators. Supervise fire patrols and reforestation projects, banding wild fowl, inoculating wild game against disease, etc.—fun, excitement, a prestige career of authority!

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### Many start at \$3,000 a year

Starting salaries vary with education, but many begin at \$3,000 or more. Hunters get bounties on "kills" up to \$60 each for female mountain lions. Some jobs pay to \$10,000 after sufficient experience and education. Most Government jobs are Civil Service with regular raises and advantages.

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I want to find out how I can prepare for an exciting career of adventure in the great outdoors. Please send me the free facts! I understand that I will be under no obligation. No Salesman will call.

Name \_\_\_\_\_ Age \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

# Alaska Department of Fish & Game News Letter

**For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subport, Juneau, Alaska**

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Division of Protection.

## Year of the Record-Breakers

Though official judging had not taken place at this writing, it appears that the 1961 hunting season in Alaska may have been the most successful trophy hunting year on record. At least three, and very likely four, new world record big game animals were taken in the state during the year. Division of Game Director Jim Brooks pointed out that it's an uncommon year when even one new world record is taken of any big game animal anywhere: four new records in a single year in one state is unprecedented. Alaska is one of the few places in the world where this could happen.

The apparent new records are a polar bear taken in March by Arthur Dubbs of Medford, Oregon; a brown bear taken by Erling Hanson of Seattle; a Dall sheep taken by Harry Swank of Anchorage; and a moose taken by Burt Klineburger of Seattle. The four probable new records point up the fact that, contrary to commonly held opinion, trophy-class animals aren't necessarily a product of excessive protection of the species. More often, a properly harvested population will result in better range and this, rather than a prohibition on hunting of females or of males below a certain arbitrary size, is conducive to the production of trophy-class animals.

## "Red" Snow Geese

Migratory birds bearing Russian bands on their legs are—though not common—not too unusual among the bags of hunters in the United States. One such recovery made this year, however, revealed a noteworthy, not to say startling, coincidence: two birds taken by the same man bore consecutive Russian band numbers! Even more improbably coincidental was the fact that the two snow geese were banded on Wrangel Island, USSR, and were taken by a hunter who lives in Wrangell, Alaska! Wrangel Island is in Chukotka, Magadan Region, thousands of miles from Wrangell, U.S.A.

Mike Hay of Wrangell took the birds on the Stikine River delta on October 22nd, 1961 and turned the bands over to Protection Officer Doug Blanchard of Petersburg who in turn sent them to Federal Aid Coordinator Dave Klein in Juneau. Shortly thereafter, Klein re-

ceived the report from the USSR Academy of Sciences, Commission for Nature Protection, Bird-Ringing Bureau, in Moscow stating that the two snow geese, one an adult and one a juvenile, had been banded on Wrangel Island on July 31, 1961.

## Many Hunters, Much Game

A breakdown of the 1961 Sport Fish and Game license sales revealed that estimates made last year for budgetary purposes were noticeably conservative. Here is a breakdown of the licenses sold:

Type of Licenses	No. Sold
<b>Resident</b>	
Sport Fish .....	22,674
Hunting .....	17,667
Hunting & Trapping.....	1,504
Hunting & Fishing.....	13,280
Hunting, Fishing & Trapping..	2,068
Trapping .....	883
<b>Nonresident</b>	
10 Day Fishing.....	5,250
Sport Fishing .....	8,286
Hunting .....	3,028
Hunting & Fishing.....	908
Hunting & Trapping.....	4
<b>Miscellaneous</b>	
Registered Guides .....	259
Assistant Guides .....	117
Resident Fur Dealer.....	139
Nonresident Fur Dealer.....	2
Fur Farm .....	4

Analysis of the nonresident big game tag sales showed caribou well ahead with 792 tags sold, followed by moose 652, black bear 616, deer 575, brown and grizzly bear 437, and polar bear 78.

If the big game harvest had been spread evenly among all those people whose licenses entitled them to hunt, they would have come out with almost two animals each, as the total estimated take was over 60,000 head of big game, excluding marine mammals. This figure includes a legal kill of 15,000 deer, 12,000 moose, 30,000 caribou, 1,000 sheep, 250 goats, 125 elk, 50 bison, 455 brown and grizzly bear, 156 polar bear, and 1,100 black bear.

Some hunters, of course, may not have got anything, while others ended up with multiple bags of some species on which the limit is more than one (deer, goat, caribou, and black bear). Still, that average take per hunter—it

works out to about 1.6-plus animals each—is mighty impressive. And still, there are many areas of the state where the main problem of the biologist is overpopulation (of game, not people)!

### Revilla was for Deer Hunters

Southeastern Regional Game Management Biologist Loren Croxton made a preliminary analysis of the deer harvest in the Ketchikan area and found that the average Ketchikan hunter bagged 2.32 deer in 3.14 days of hunting last fall. Not many states have that kind of hunting! Most of the hunters did not go very far afield, for Croxton found that over 40% of the deer were taken from Revillagigedo Island, on which Ketchikan is located.

### Gullible Gooneys

Another bit of interesting bird banding information came across the desk in early January. Two reports placed on top of a pile of more ordinary bird-band recovery forms showed that Lloyd Pederson of Petersburg had picked up two blackfooted albatrosses near Yakutat which had been banded in the Midway Atoll area. One of the birds was banded in 1958 and the other in early 1961.

Typed on the report under the heading of "How Taken" was a brief (and rather puzzling), statement, "Coaxed into boat." Perhaps it's understandable, though: a common name for the albatross is "gooney bird."

### CHIRIKOF

(Continued from page 17)

"The schooner Kodiak, A. C. Co. [Alaska Commercial Company] owner, Capt. Hansen, a Dane, in command, was used in transporting all the live-stock to the island. I sold out to the A. C. Co. in 1895 for \$12,000. M. L. Washburn, general agent for the company. Later, stock and improvements were sold to Semidi Propagating Co., terms unknown.

"Chirikof Island was surveyed in the spring of 1891 by 'Old Man' Lazy and his two sons, Frank and Fred Lazy. The elder Lazy was a Prussian German. The original four claimants: Redpath, Washburn, White and Jacobsen (myself) had their claims rejected by the U.S. General Land Office, Washington, D.C. The government requested the claimants to brand stock and, incidentally, refunded the \$500 filing fees. Surveys followed the beach to practically include all shoreline; in reality, these surveys were intended to monopolize and exclude all other sea-otter and fur-seal hunters from the beach. Average price for sea otters was \$250. Natives received \$150 in trade. The A. C. Co., Kodiak, sold 50 lb. sacks of flour for 80 cents. California salted beef, eight cents per pound. Yes, sree, they got the do-re-mi!

"From 1895 until approximately 1935, Chirikof Island, due to its extreme isolation, was practically abandoned,

sea otter hunting having been discontinued in 1895. More recently, about 1935, Jack McCord, another free enterpriser, and Mr. Frye of Frye, Bruhn Co., Seattle, Wash., legally, it is presumed, appropriated the wild cattle herd, killed off all the scrub bulls, adding two thoroughbred bulls and two saddle horses to the animal population. Likewise, Jack Blinn and W. J. Erskine, two Kodiak businessmen, with official consent claimed the blue foxes. Many of the sheep and all the arctic hares were destroyed by eagles and wild dogs—dogs left behind by the freed convicts.

"Nature is grand if we do not get too close to the cow's tail, my friend. Why, every mother's son that had ever rustled a calf or a sheep, stole a beef or a mutton from Chirikof Island is indebted to yours truly, Niels John Jacobsen, sea-otter hunter, pioneer stockman, Alaskan coast pilot, unlimited tonnage!"

### To the Archives

Thank you, Mr. Jacobsen. Men from the North not only have the experience, but the knowledge. Who knows, perhaps the immortal spruce may yet grace thy noble brow. Your record, lineage and good deeds, by the Beard of Allah, shall be transmitted, read, and buried deep in the Territorial Archives, at Juneau, Alaska.

Prior to the American purchase, the Russian brig *Constantine* called at the island annually, bringing more additions to the "Isle of Doom" and yearly supplies; in return collecting sea otter and fur seal pelts, *yukola* (dried salmon), dried codfish, whale oil and sundries.

During the Russian regime, for the crime of theft prisoners were buried alive, standing up, in leg irons. Hence, as generations come and go, those leg irons may yet astonish the natives, if not the tourists. So it is not at all strange that even from the tomb the voices of nature cry to heaven for redress. Only God and Nature could finally adjust the many grievances of mankind.

\* \* \*

Thus ended Dr. Cannon's dissertation on the history of Chirikof Island, the whole transmitted, read, buried and now exhumed from the Territorial Archives.

Dr. Cannon died on June 27, 1948, at Morningside Hospital in Portland, Oregon, where he had been a patient for about a year. So I was denied the privilege of meeting the philosophizing dentist whose mission in life was to occasionally "instruct, divert and perhaps amuse." The State Museum will continue, however, to display the historical relics and ethnological treasures he generously presented to it over a period of many years. Perhaps, through the interest and diligence of men like Dr. Cannon, the whole truth may someday be known. ▲



# Alaska Department of Fish & Game News Letter

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## First Sea Otter Harvest

A second attempt to take an experimental harvest of sea otters from the Aleutians was successful, and 150 sea otter pelts are now in cold storage in Juneau awaiting completion of final plans for treatment and sale. Readers of the Newsletter will recall that the first attempt was halted when tragedy, in the form of an airplane crash which took the lives of a department employee and four navy men, overtook the expedition.

Members of the second expedition, consisting of department and U. S. Fish and Wildlife Service and temporary employees of both organizations, took the 150 animals on Amchitka Island near the end of the Aleutian Chain. Heading the expedition for the Department of Fish and Game was Regional Game Management Biologist Loren Croxton of Ketchikan who, as a former fur breeder, had had considerable experience with furs and the fur trade. Karl Kenyon of the Fish and Wildlife Service was in charge of obtaining biological specimens and data. Croxton took a number of photographs of the operation, which will appear in a future issue, along with reports of further developments.

## Four Thousand Questions

The Division of Administration's Section of Education and Information has completed an analysis of inquiry-answering services conducted during 1961, disclosing that 4,101 requests for information were handled during the year, in addition to those referred to other divisions due to the technical or specialized nature of the questions. "E & I" sent out 12,401 pamphlets to answer this flood of questions: the pamphlets covered 96 different subjects, ranging from regulations to brochures on specific areas and towns supplied by chambers of commerce and other groups.

The questions came from every state in the Union and from 22 foreign countries. Of those originating in the U. S., the largest number came from California. New York, Texas, Washington, Pennsylvania, Illinois, and Michigan were closely grouped in second place.

Canada led the list of foreign countries whose residents wanted information about Alaska, followed by Germany, Mexico, Belgium, and England.

Inquiries also came from Australia, Austria, Brazil, India, Italy, Indonesia, Japan, Lebanon, the mid-Pacific, New Zealand, Pakistan, the Philippine Republic, Puerto Rico, Sweden, and Thailand.

The Information and Education Section also sent out 125 news releases and made 1,726 photographic prints, including passport photos for department personnel who attended the International North Pacific Fisheries Conference in Japan.

## Biologist to New Post

Richard Haley, formerly sport fish management biologist for the Kenai Peninsula and Prince William Sound area, has been promoted to the position of Federal Aid Coordinator for the Sport Fish Division. He took over his new duties, in which he is responsible for most of the research activities of the division, in February. The position had been vacant since E. S. Marvich was promoted to deputy commissioner and former Coordinator Alex McRea took over as director of the Sport Fish Division. Sport Fish Biologist Louis Bandirola has been carrying out the duties of the position on an acting basis for several months.

Haley was born in Eureka, California, in 1927. After obtaining a B. S. degree in Fisheries Management from Humboldt State College in 1953, he worked for seven years as a biologist with the Inland Fisheries Branch of the California Department of Fish and Game, with responsibilities as area management biologist for Northern California, and also worked on fish disease identification and control in Southern California. He came to Alaska in July of 1960, and was stationed at Seward before moving to Juneau to assume his new duties. He is married and has three children.

## Research Report Ready

A report of the Division of Game's research activities during the 1960 fiscal year has been completed and distributed to libraries and fish and game departments throughout the United States. Because of its size—504 pages—and the cost of printing, this report will not be available for general public distribution, but a summarized version is in the works which will give the general pub-

lic and others an idea of the State's Federal Aid in Wildlife Restoration activities. The briefer report, like the complete version on which it will be based, will give a resume of the research conducted under 70 different job outlines.

### Wolves Didn't Deplete Nelchina Caribou

The largest, most intensive game census ever conducted in Alaska was completed in February by Department and U. S. Fish and Wildlife Service personnel. From February 23 through 27 the combined efforts of both organizations were concentrated in censusing the wolf and caribou populations in Game Management Unit 13 and adjacent areas, between Anchorage and Fairbanks and almost over to the Canadian border. This region encompasses approximately 22,000 square miles of the high plateau and mountain terrain lying between the Alaska Range and the Chugach Mountains—one of the most important big game hunting areas in Alaska.

Personnel were pulled in from stations throughout the Interior and South-Central districts to take part in the census. Ten airplanes and twenty-eight people were involved, all operating from Paxson Lodge at Mile 186 on the Richardson Highway.

The census was initiated by biologists of the Department of Fish and Game. A knowledge of the current wolf and caribou populations in that area was needed to assess their status and to evaluate the present management policies and regulations. The last census was conducted in 1955, at which time the Nelchina caribou herd, as it is known, was found to contain approximately 40,000 animals.

### Wolf-Study Area

Unit 13 was designated as a wolf-study area in 1957 and has been closed to the taking of wolves since that time. The main objectives of this study are to determine the effect of wolves upon big-game populations and to determine the population fluctuations of the wolves themselves. During the recently completed census preliminary computations showed that in spite of the area's having been closed to wolf hunting and in spite of ever-increasing hunting pressure the Nelchina caribou herd has increased to about 70,000 animals. The wolf population was found to be about 125 animals. Caribou biologist Ron Skoog of Anchorage has observed some rather erratic movements of the caribou herd during the last couple of years and has been speculating that this might be due to population pressure and excessive range utilization. The results of the census indicate that this may well be the case. Carrying capacity estimates for the Nelchina caribou range have generally been between 45,000 and 55,000.

The census this year was complicated by the fact that major segments of the herd were wintering in three widely scattered areas, while smaller segments

were dispersed to various localities throughout the range. The largest segment of the herd—30,000 animals—was concentrated in the Cantwell area just south of Mt. McKinley National Park. Another 25,000 were found just west of the Richardson Highway near Paxson and Summit lakes, while in the Men-tasta Pass area there were over 10,000 more. Skoog and his fellow biologists are anxiously keeping an eye on all these scattered groups to see whether all the animals will return to their "normal" range next spring or whether they will remain scattered in areas less accessible to hunters than they have been in the past.

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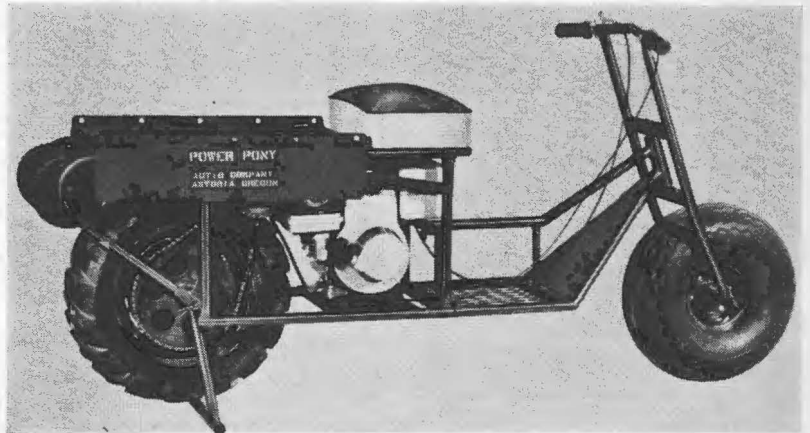
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# Alaska Department of Fish & Game News Letter

**For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subpost, Juneau, Alaska**

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Division of Protection.

*See opposite page for photos, promised last month, of the first legal sea-otter harvest in recent times, in which 150 animals were taken on Amchitka Island of the Aleutians. All photos are by Loren Croxton, ADFG game management biologist.*

## Sport Fish Directory for Drivers

The Sport Fish Division is working on a booklet entitled "Alaska Roadside Fishing Sites," which should be ready for distribution by late spring, according to Sport Fish Biologist Lou Bandirola of the Juneau office. This booklet will apprise the highway traveler of the accessible fishing areas adjacent to the State's road systems, all primary and secondary roads included, and should be extremely useful to both visitors and residents.

## Late- or Early-Spawners

Checking up on reports that there were salmon spawning in Long Lake near McCarthy, in the Copper River drainage, staff members found that sure enough, there were 300 sockeye (red) salmon engaging in the business of procreation in the middle of the winter. According to the Division of Commercial Fisheries the lake was checked the first week of February, and the sockeyes were spawning in a spring area that was free of ice. This is probably a record for late spawning red salmon in this area.

## Machines Come into Management

Biometrician Don Siniff of the Division of Biological Research and Phil Chitwood, head of the Statistics (IBM) section spent a couple of weeks at the University of Washington last spring learning to talk to computers. The University of Washington's College of Fisheries, the Pacific Northwest Research Computer Laboratory, and the International Business Machine Corporation sponsored a short course designed to give fisheries personnel an introduction to computer problems and techniques.

One of the biggest problems with the large computer systems is finding a mode of communication between the computer and the people who wish to use it. According to Siniff, this problem

has been nearly solved with the development of FORTRAN (formula translation) programming. In FORTRAN programming instructions are given to the computer by written statements which are punched on IBM cards. Although a certain basic format must be followed, it is a vast improvement over previous types of programming which required reducing the whole thing to mathematical formulas constructed by specially trained programmers. Nearly all of the people attending the course, said Siniff, had no previous training in computer programming but were able to write and run at least two FORTRAN programs.

The College of Fisheries at the University of Washington is studying computer techniques in relation to management problems. As the computer is extremely fast in solving complex problems, biological data which would take months to interpret via a desk calculator can be analyzed in a matter of minutes—a distinct advantage in establishing bases for management regulations.

## Bare Pilot Captures Bear Cubs in Cold Bay Puddle

Annual reports of station activities are ordinarily rather dull, being full of statistics and other mundane matters, but occasionally someone slips in a good story. Honors for the 1961 reports go to Conservation Officer Ken Gilpin of Sand Point, who told this story:

We were notified by Bob Jones [Manager of the U.S. Fish and Wildlife Service's Aleutian Islands Refuge] at Cold Bay that a construction company was holding two live brown bear cubs. While we were at Cold Bay for a court case, drove to the contractor's to investigate and found that the bears had gotten loose that night and were roaming the area. They had seemed dependent on human feeding, and it was only a matter of time before they got into trouble with the Cold Bay population, so we decided to capture them.

While using a borrowed jeep to cruise the area, we soon spotted them walking across the newly constructed portion of the runway and gave chase. Between Dave Henley, department pilot, myself and two temporary employees,



we felt we could run them down, but not for long. In a three-quarter-hour exhausting chase around the tundra, we never got closer than 40 yards. Besides, at 40 yards they looked pretty big. The only reason we were able to get close at all was that they seemed to be reluctant to leave the vicinity of the airfield.

Luckily Henley had brought along the 30-foot tie-down rope, and as luck would have it, the cubs started to swim a small tundra lake. We soon surrounded the lake, then kept them in the water until they appeared to be tiring. They would not come ashore, however, and soon found a gravel bar in shallow water where they could stand without having to swim.

### Cowboy Caper

After some unsuccessful coaxing, Henley decided to go in after them with the rope. Stripping down to his tee shirt and the nylon line, he waded out and with classic cowpuncher style, neatly lassoed one in the 20-knot wind. He then lassoed the other bear on the other end of the line. Now, if you please, conjure up a picture of a man standing in two feet of water, holding a 30-foot piece of rope with a fighting, squawling, scratching brown bear on each end and him in the middle, with no pants on.

When everyone on shore was able to walk again, we dragged them out, trussed up the bears and hauled them to the Grumman Goose. We dumped one in a garbage can and the other, still trussed, in the tail section of the aircraft and locked the door. He promptly got loose and gleefully ripped apart all of the radio wires he could find. We asked permission from FAA ATC to take off without the radio, and made it to Sand Point with no further incidents. Henley, of course, had his pants on by then.

The bear cubs promptly became a major tourist attraction. Cages soon arrived, the cubs were drugged, kenneled, and sent on their way to a zoo.

### Legal Eagle of ADFG Soars to Supreme Court

Assistant Attorney General Avrum Gross has been keeping a legal eye on the fish and game laws and regulations for over a year now. Occasionally, as in the recently-concluded fish trap case—for which Av wrote the brief and presented the arguments to the Supreme Court with Attorney General Ralph Moody—the legal end of fish and

game is brought to public attention; more often this aspect, influential though it may be, stays in the background.

Gross was born in West Orange, New Jersey, in 1936, and after obtaining a B.A. degree at Amherst in 1957 and a J.D. at the University of Michigan in 1960, came to Alaska in June of that year as an employee of the Legislative Council. In April of 1961 he joined the Department of Law as Assistant Attorney General, and was assigned to fish and game matters as a primary responsibility.

Ever since, Av has attended all board meetings to advise on the legality of regulations being considered for adoption and to keep himself thoroughly informed on the intent of these regulations. Various members of the Fish and Game staff call him on legal aspects of their work many times every day. He advises on the wording of regulations, and is often consulted by members of the legislature concerning the best way to obtain desired results from proposed legislation.

### Pro Hac Vice

In the fish trap case, recently concluded to the partial satisfaction of the State, Gross appeared before the U.S. Supreme Court in an unusual circumstance. Ordinarily, before being allowed to argue a case before the highest court of all, a lawyer must have been, for three years previously, admitted to the bar of the highest court of his state. Because of his special knowledge of fish and game matters, however, Av was admitted *pro hac vice* (for this occasion only), quite an honor for a man just out of law school.

Gross wasn't too overwhelmed to argue the case well, however, perhaps as a result of previous honors. He was assistant editor of the Michigan Law Review while at the University of Michigan, and his J.D. degree is a sort of Doctor of Law with honors.

Av and his wife Sharon and daughter live in Juneau, and were expecting another child as this was written.

### Camera Failure

Regional Game Management Biologist Loren Croxton has no photo-confirmation of last winter's sea otter sightings near Ketchikan, he found to his sorrow when photographs were returned from the printer. Croxton unfortunately didn't have his own camera during his observations (it was lost in the crash of a Navy plane in the Aleutians on the first attempt to take an experimental harvest of sea otters there) and all his pictures came back so blurred the animals in them couldn't be positively identified. Croxton hopes for another chance to obtain positive evidence that the animals he (and others) saw were sea otters, as Director of Game Jim Brooks remains unconvinced.



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# Alaska Department of Fish & Game News Letter

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## Longest Seasons, Largest Limits in Game Regulations History

The 1962-63 Game Regulations, containing amendments passed by the Board of Fish and Game at its Fairbanks meeting last spring, are just about ready for distribution. Big game hunters examining the new edition will find that:

### Deer

Deer seasons are at least 15 days longer than last year in all areas, and as much as 45 days longer in areas where investigations show fairly conclusively that hunting pressure is too light to keep the deer herds within the carrying capacity of the range. The season in Southeastern and the Prince William Sound area will be from August 1 through December 15, with the limit unchanged from last year's four deer (does may be taken only between September 15 and December 15). In the Kodiak area the season will also run from August 1 to December 15, with a limit of two deer in all areas. In that portion of the island accessible by road, does will be legal game only after September 1.

### Bears

Brown and grizzly bear seasons remain unchanged except for a slightly earlier spring opening, May 1, in the Kotzebue Sound area and the Arctic Slope. Fall opening dates will be Sept. 1 in most areas, Sept. 10 on a portion of the Alaska Peninsula, and Oct. 1 on the remainder of the Peninsula, the Aleutians, and a portion of the Kodiak Island group. The season will run straight through to May or June in most of Alaska, with a closure between January and May in a few areas. The limit remains at one bear, with the taking of cubs and females accompanied by cubs prohibited.

Black bear seasons and bag limits are unchanged from 1961-62: no closed season in most areas, Aug. 10 to June 30 on the Kenai Peninsula, and Sept. 1-June 30 in Southeastern Alaska. The bag limit is still three a year, only one of which may be a glacier bear.

The polar bear season has been shortened by one week in the spring: the season will be from October 15 through April 30.

### Moose

Moose seasons and bag limits cover as many pages as regulations on all the other big game animals combined. The earliest opening date will be August 10 in the Yakutat area, where moose of either sex may be taken until November 30. In other areas openings vary from August 20 to September 15: several areas will be open to the taking of cow moose, with most of the cow seasons being short and in early November though there will be some places open considerably longer. Many of the antlerless seasons will be open only to persons who register first at one of the Department offices, which will give the biologists an idea of the hunting pressures which will develop. The latest closing date for moose hunting will be December 31 on the Alaska Peninsula, Lower Yukon-Kuskokwim, and Bristol Bay areas. Most other areas will close no later than November 30.

### Caribou

Caribou seasons and bag limits will be much the same as last year, with no closed season and no limit on Kodiak and the Aleutians and in the Arctic. Elsewhere, the limit will be three a year with the season closing on December 31 except on the Alaska Peninsula, where the closing date will be next March 31.

### Elk

The elk season will be somewhat liberalized as a result of last year's low harvest of only 125 animals, well below the number which should be taken to keep the herd in balance with its food supply. The season will run from August 1 through November 15, with a limit of one of either sex.

ADFG photos by John Crawford



**T**HE incompatibility of wildlife and civilization is demonstrated twelve times or more each winter month in the Anchorage area, when as many moose are killed in traffic accidents, the protection of life or property, or illegal hunting. Some moose, too, simply die of malnutrition or other "natural" causes.

One duty of the Alaska Department of Fish and Game is to salvage the meat of dead moose, when it is edible, and give it to charitable institutions. Each carcass is also made to yield as much biological information as possible, and much valuable data has been accumulated in this way.

To facilitate handling of non-hunter mortalities in the Anchorage area, ADFG had a special "moose wagon" constructed. In the accompanying photos, Biologist Don Tetzlaff takes body measurements and weight of one of last February's highway victims, a moose calf which weighed about three hundred and fifty pounds. Later Tetzlaff assisted Dr. Jack King of the Department of Agriculture in an autopsy, to determine the cause of death and glean more biological data.

## Sheep and Goats

Mountain goat, also almost unaffected by hunting pressures so far, will be legal from Aug. 1 to Dec. 31 in Southeastern and the Prince William Sound area, and from Aug. 10 to Nov. 30 elsewhere. The limit remains two a year.

Mountain sheep seasons are unchanged, with an August 1 opening in the Brooks Range and August 10 elsewhere; the Kenai Peninsula will close Aug. 31, the other areas Sept. 20. The limit is also unchanged: one ram with  $\frac{3}{4}$  curl horn or larger.

## Bison

There is only a slim possibility of a bison hunt this year, as the fifty animals declared to be surplus by the Board will first be subject to transplanting or be made available to interested persons for domestication. The remaining animals, if any, may possibly be made available to hunters by permit.

## Sheep Hunters Need Tickets

Anyone who plans to go sheep hunting this fall will first have to obtain a Sheep Harvest Ticket. These will be available without cost from license vendors and Department offices. They are designed to provide precise information on the number of sheep taken and where they are taken: both successful and unsuccessful hunters will be required to mail in a tear-off postcard attached to the harvest ticket. Successful hunters will have to mail the postcard in within 30 days after bagging a sheep, while unsuccessful hunters will have until January 31 following the close of the season.

## New Fur Export Rule

Thousands of furs have been exported from Alaska in the past without the senders filling out a fur export report as required by the regulations. One big difficulty in enforcing this regulation in the past has been that there was often no way to tell, by examining the package, whether the postcard form had been mailed or not. The Board, there-





fore, approved a change in the regulations which makes it necessary to attach a shipping-tag permit to each package of furs as well as fill in and mail the report of exportation. The permit and report forms will be available at post offices and carrier agents as well as at Department offices, and will also be sent to fur dealers.

Based on the old forms, Alaska's fur harvest was estimated to be worth about one and a half million dollars (exclusive of fur seal) last year: with more complete reports, it is expected that a more accurate estimate will show the true value to be over two million.

### Biologist Uses Longbow

Game Biologist Harry Merriam of Petersburg tagged 28 deer during March this year, using his own variation of a drugging technique which has become a standard one in game management. The usual way of doing it is to use a special gun which fires a dart resembling a highly modified hypodermic syringe. The dart holds a measured charge of succinylcholine chloride or other drug, the dose varying with the weight of the animal to be immobilized.

Merriam was not satisfied with the range of the special gun, so he experimented with a longbow and a crossbow. The range of the longbow, with the dart mounted on the end of an arrow, was

found to be much greater than that of the gun, with the crossbow falling in between.

Merriam occasionally found it necessary to give artificial respiration to the deer he'd tagged when they stopped breathing as the result of a slight overdose or because poor condition lowered their resistance.

### Borrowed Artist's Art Borrowed

The drawings on the cover of this year's regulations are, like the last two, the work of Sigurd T. Olson of Juneau. Sig drew the sketches for the first Game Regulations printed by the state, and everyone liked them so well that he was prevailed upon to provide new ones even after he left the Department to work for the Forest Service. Department personnel aren't the only ones who like the sketches. Several guides have "lifted" them for use on their advertising brochures.

### No License, No Bounty

Commissioner Walt Kirkness wishes to remind Alaskans that a valid hunting or trapping license is required for the taking of wolves, coyotes, wolverines and hair seals. Bounty payments will not be made to any person who does not have a valid license, and any such person who attempts to claim bounties will leave himself open to prosecution. Bounties are not paid to nonresidents.



Jim Brooks

**I**F ANYONE ever went to the Pribilof Islands and came back without his own picture of a pugnacious bull seal defending his harem, either the visitor didn't have a camera or the seals weren't on the rookeries at the time.

Nonetheless, it's a picture that loses none of its drama for having been taken

countless times. Game Director Jim Brooks shot this one while on an inspection trip last summer. Later in the season, when the bull is emaciated and weary from months of unremitting vigilance, he will still muster a threatening pose but he won't care very much who approaches his wives.

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## Land Selection Geared for Public Access to Sport Fish Waters

With a plethora of good fishing waters in Alaska, it would hardly seem possible that access to these waters would be any problem. But it is, and it could get worse. One way or another, a surprising amount of water could be closed off to the public if the Division of Sport Fisheries were not busily selecting land which will assure continued access. Right now, of course, the main problem lies close to population centers, where private acquisition of land can result in the appearance of a frustrating number of "no trespassing" signs on trails and small roads by which fishermen have been reaching good fishing waters. The Division of Sport Fisheries, however, is not neglecting the more remote areas which could be settled in the future. The number of lakes and streams on which shore or bank areas have been or are being acquired, and the number of access routes protected from private closure, now total well over a hundred.

## New Fishway in Test Stage

Gil Ziemer, Director of the Division of Engineering and Services, recently completed Informational Leaflet No. 12, detailing development of a steeppass fishway presently undergoing field tests in several areas.

A steeppass fishway is a "fish ladder" designed to allow fish to cover a vertical rise with as short a facility as possible. A number of streams and lakes in Alaska appear to have all the requirements for salmon spawning, but are inaccessible to adult fish because of natural barriers. If Ziemer and his staff succeed in designing a facility which can be preassembled in sections, taken to remote areas, and erected by bolting the sections together, salmon production in Alaska could be greatly increased at a cost far below that of conventional fish ladders.

That designing such a fishway is no simple task is evident from the report, which is chock full of engineering data as well as phrases like, "the current rate of energy conversion from the fish's stores." The end product, which is now being tested with evident success over the last couple of years in two streams,

is a marvel of design; sectional aluminum chutes full of baffles which only an engineer well versed in hydraulics could appreciate. Water velocities have to be controlled in such a way that the fish will be able to get above the barrier, but must attract fish to the entrance. Too slow and the fish won't use it—too fast and they won't make it. Ziemer is determined to make it just right.

## Fresh Fish With Foreign Labels

Nine vessels are engaged in salmon tagging in North Pacific waters this year, in one of the most extensive efforts to date to determine the ocean distribution of various salmon stocks along the American and Asiatic coastlines. Four of the vessels are large purse seiners operated by the United States; the others are Canadian and Japanese, employing surface long-line gear. About two-thirds of the fishing effort is in Gulf of Alaska waters.

Fishermen recovering tagged fish are requested to turn the tags over to Department offices, regardless of the country of origin of the tags. The U.S. tags are half red and half white on each side, while the Canadians are using red on one side, yellow on the other. No information is currently available on Japanese colors, but all high seas tags will be plainly marked "United States," "Canada," or "Japan." Lengths, weights, exact catch locations and catch dates are needed from all tagged fish, as are scale samples.

## 103 Ways to Better Fishing and Hunting

If number of projects is any criterion, Alaska will never suffer from a scarcity of sport fish or game. The fiscal 1963 Plans, Specifications, and Estimates documents—prerequisites to obtaining Federal Aid funds for sport fish and game restoration projects—list 26 separate sport fish projects and 77 game projects currently underway. These range from providing fishing and hunting access, airstrip construction, lake and stream rehabilitation and improvement, and building of hunter cabins to analyzing reproductive rates, determining catches and harvests, and investigating winter mortality. Investigation projects are

providing a sound basis for proper management (many of the findings are already being put to use), while developmental projects are helping to disperse the hunting and fishing effort and making more hunting and fishing available.

## King Crab Catch Increases

Preliminary reports of the 1961-62 king crab fishery in the Kodiak area for the period July 1, 1961, through February indicate an increase of about 60% in numbers of crab taken over the same period the previous year. In Southeastern Alaska a small but active king crab fishery is developing, primarily in the Stephens Passage area. Approximately sixteen fishing vessels were taking part in this fishery in March.

## WANT TO LIVE IN ALASKA

*(Continued from page 29)*

do start businesses, only to see their hopes dashed as they approach bankruptcy before the end of the first year. Some wish to homestead, but find they can't live off the land while in the process of developing it, and for lack of cash are forced to fold up their tents and head southward.

Although I have painted a depressing picture of failures, there are still many fine opportunities to grow with Alaska. My main purpose is to make people think before pulling up stakes and heading north. There are better ways to start out in this country.

I suppose the best way is to arrive with the guarantee of a job in hand and the ability and determination to do that job well. The next best way is to have proficiency in a trade or profession. Capable and qualified persons with

good references will eventually find places for themselves, with better starting salaries and more chances for promotion than they would receive back home.

Naturally, if a person does not have a job when he arrives, he will need money to tide himself over until he finds one. As living expenses are about forty per cent higher in most of Alaska than in Seattle (which is a high-cost area by standards of the "lower 48"), a person should make allowances in figuring how much money he should bring. Teachers, civil service workers, business and professional people and qualified union tradesmen can often make arrangements for work before coming. In fact, most of them do.

It makes us most unhappy here in Alaska to see so many eager and willing souls arrive totally unprepared for life in our new state. This really is a great place to live and work. When many are forced to leave with bitter memories of their Alaskan adventures, we are saddened to realize that they never really knew how good life can be in the 49th state.

So if you want to come to Alaska, good! If you lay your foundations well you will be able to build well, and as Alaska develops, so will you.

Oh, you've been wondering about the Jones family? They managed to scrape up enough money to go home. ▲

## FROM KETCHIKAN TO BARROW

*(Continued from page 23)*

wooden swimming pool. This was removed about 1920. The building was used for civic affairs and sports events for many years and served the Douglas school as a gymnasium until 1940.



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## Salmon Conference Summary Available

The highlights and recommendations of the 1961 Governor's Conference on Salmon, held in Juneau last year, are summarized in a publication entitled *Pacific Salmon Rehabilitation*, edited by Dr. Howard D. Tait of the Division of Biological Research.

The Pacific salmon conference was called by Governor William A. Egan of Alaska early in January, 1961, by inviting the governors of California, Oregon and Washington, the Minister of Fisheries of Canada, the heads of the Department of the Interior, various universities and the U. S. State Department and also representatives of the fishing industry to designate key fisheries research and management personnel to attend a meeting in Juneau.

The reason for assembling this conference of fisheries people vitally concerned with salmon was to discuss problems, review present research and management techniques, and enunciate broad research and management needs toward developing an integrated coast-wide program. As Governor Egan stated

in his invitation; "The State of Alaska, as other Pacific Coast states and British Columbia, is greatly concerned about the condition of its salmon stocks and the urgent need to restore the runs to former levels of abundance. Although there were a few bright spots in 1960 such as Bristol Bay and other western areas of Alaska, the general trend has been downward. I believe this trend can be reversed through careful management of the stocks still available, by rehabilitation of depleted runs, by the opening of new spawning and rearing areas, and by introduction of new methods of fish culture and fish farming. While much biological information on several species is readily available, there are numerous basic research problems in need of solution, most of which may require long range effort."

His invitation also stated, "I am disturbed at the multiplicity of proposals and programs, all of which seek the appropriation of funds, state and federal, and each of which requires the active support of all segments of the salmon industry. I am disturbed not at the unanimity of position, but because so many independent efforts may dis-

ADFG photo by Jack Didrickson



Biologist Jack Didrickson needs four hands for this kind of double-dealing. 'Copter pilot Burt Johnson watches the irate cow while Didrickson decorates her twins.

sipate our strength and minimize results."

The report, which is available on request, consists of a resumé of the discussions and a report of the evaluating committee.

## Goat Herd on Kodiak

Game Biologist Ron Batchelor of Kodiak reported that a local pilot has sighted sixteen mountain goats in the area where seven male and eleven female goats were released in 1952 and 1953. This is the largest number of animals observed at one time since this transplant and indicates that it may not be long before mountain goat hunting will become a reality on Kodiak Island.

## Grayling to the Panhandle

A shipment of 1,000 eyed grayling eggs was flown to Ketchikan from the Department's Fire Lake hatchery early in June and used by fishery biologist Bob Baade to stock several lakes on Revillagigedo and Prince of Wales Islands. These grayling introductions constitute the state's first effort in stocking grayling in Southeast Alaska. At press time, the Sport Fish Division was making efforts to secure additional grayling eggs for stocking in the Juneau and Petersburg areas. Seventy thousand grayling eggs were also shipped to Kodiak for stocking.

To date, approximately 350,000 grayling eggs have been taken for distribution throughout the state. A portion of these eggs will remain at the Fire Lake hatchery for experimental use. Techniques are being developed for improving the handling, hatching, feeding and stocking procedures for this species.

## More Fishermen Per Mile

According to a publication entitled *Alaska Outdoor Recreation Potential*, published by the Outdoor Recreation Resources Review Committee (Report No. 9), Alaska sold more fishing licenses per mile of road than all but one other state in the Union last year. Fortu-

Who wouldn't be scared? At less than one week old, a moose calf doesn't know about two-legged animals who come out of big, noisy birds. This calf leads Biologist Ron Somerville a lively chase.

"Mama, see what the man gave us!" Twins return to cow while biologist returns to helicopter. There'll be another round when another newborn calf is spotted.



ADFG photo by Ron Somerville

nately, the Sport Fish Division's publication on roadside fishing sites is now available on request and should help to disperse the fishing effort by directing people to lesser-known but accessible fishing sites.

### Caribou Don't Oblige

Tourists and residents in the Fairbanks area were disappointed throughout the spring when the Steese-Forty-mile caribou herd did not follow its "usual" pattern of crossing the Steese Highway to calving grounds in the White Mountains. For the last several years this migration has been a favorite objective of photographers and sightseers, being one of the few places where large concentrations of caribou could be seen from a public highway.

### Moose Calves Get Adornments

About a hundred and twenty moose calves in the Anchorage area are sporting ear tags as a result of ADFG tagging operations during the last week in May. Each calf got two tags, one of plastic, large and brightly colored, which it is hoped will be visible from the air through the summer for purposes of post-calving mortality surveys and movement studies; the other a numbered metal tag expected to remain throughout the animal's life and perhaps eventually, through hunter cooperation, yield data for long-range studies.

The accompanying photos, taken May 30 on the Palmer hay flats north of Anchorage, demonstrate capture and tagging methods.

ADFG photo by Jack Didrickson



# Alaska Department of Fish & Game News Letter

For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subport, Juneau, Alaska

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Walter Kirkness,  
Commissioner.

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Director, Division of  
Biological Research.

Stanley Swanson, Director,  
Division of  
Commercial Fisheries.

C. A. Weberg, Director,  
Division of Protection.

## Preliminary Board Meeting Scheduled

The Alaska Board of Fish and Game will hold a preliminary meeting in Juneau beginning October 6 for consideration of amendments and additions to commercial fishing, sport fishing and beaver trapping regulations. Written proposals addressed to ADFG, Subport Building, Juneau, and received there not later than noon of October 1 will be considered. Proposals approved by the

board will be published at least thirty days before the regular fall meeting, to be held in early December in Cordova. Only proposals approved at the preliminary meeting will be considered at the regular meeting.

## Game Meat Yearly Worth Alaska's Purchase Price

Game biologist Jack Didrickson of Anchorage made some calculations last spring and came up with an interesting figure: Alaskans are now taking and utilizing some 11,000,000 pounds of game

meat each year. Taking a rough average of 75 cents a pound, the annual value of wild game meat consumed in Alaska is more than that ever-popular reference figure, the purchase price of Alaska from the Russians.

## Coho Ties Winning King

Within a week after this year's Golden North Salmon Derby was won by the smallest winning fish on record, a commercial fisherman landed a silver salmon at the Juneau Cold Storage Dock that weighed as much as the derby-winning king salmon at 29-plus pounds. The monster coho was brought in by Hal Sheridan, skipper of the fishing vessel *Gannet*, who caught it in the Juneau area on trolling gear on the first of August. The fish weighed 20 pounds dressed and was 34¾ inches from nose to fork of tail. Scales were found to be difficult to read, with the result that biologists couldn't agree on whether it was a four- or five-year-old fish. They all agreed that it had spent the normal two years in fresh water, but whether it had spent one or two extra years in salt water remained in doubt.

According to a record listing kept by Director McRea of the Sport Fish Division, the largest silver salmon on record



← If you should want to move an elk calf, you can carry it, as Fish and Game aides Ben Ballenger (left) and Dave Perry are doing—

→ Or point its head in the right direction and hang on. Elk calves from Kodiak Island were kept at Perry's place on Gravina Island, across Tongass Narrows from Ketchikan, until they were old enough to fend for themselves, then released to grow up and propagate.

← "Open up! It's good for you!" Ballenger, who "herded" the calves from Kodiak by Coast Guard plane, truck and ADFG boat, demonstrates the five-finger pry while Perry administers cod-liver oil.

→ "But I like it here!" Newly released calves were reluctant to leave Perry's hospitality. For protection of the young elk, Gravina Island is closed to the taking of game except antlered deer. [Four elk obtained by Ketchikan sportsmen some thirty years ago were released at nearby Ward Cove and expected to head for the bush, but they didn't. After dogs or poachers had killed two, the other two were taken farther from habitations and released. For some years occasional hunters would report having seen one of the elk, or its tracks.]



ADFG photos by Alan Courtright





is a 31 pounder caught in 1947 by Mrs. L. Hallberg at Cowichan Bay, British Columbia. McRea emphasized that his records include only rod and reel catches and there is of course a possibility that someone has landed a larger coho with commercial gear. There is no doubt that Sheridan's fish is a very large one for its kind, however.

## Quarter-Century of Federal Aid to Wildlife Restoration

This year marks the 25th anniversary of the signing of the Pittman-Robertson Act, through which the federal government reimburses state fish and game departments for up to 75% of the cost of approved game investigation and development projects. These funds come from a federal tax on the sale of firearms and ammunition. The first funds under this program became available to the states on July 1, 1938. From that time until June 30, 1961, a total of nearly \$219,000,000 was apportioned to the states and territories for wildlife restoration purposes. Of this amount, Alaska has received \$3,607,200, more than half of it since statehood.

## Gulf Salmon Swell Season's Pack

By the end of July, the Alaska salmon pack was only slightly below last year's total at the same date, thanks largely to good runs in the central area. Last year, the best fishing area was Bristol Bay. With activities centered in the Gulf of Alaska area this year, Southeastern fishermen are hoping the big runs next year will be even farther eastward and give them some prosperity for a change. At the end of July, the Southeastern pack was some 180,000 cases below last year's low total of 476,328 cases.

## Wanted—Anglers at Tebay Lakes

The Department's information leaflet No. 16, by parasitologist Kenneth Neiland of the Division of Biological Re-

search, has a rather forbidding title: *Philonemiasis and Crepidostomiasis in Alaskan Fresh Water Fish*. The report concerns primarily the rainbow trout population of Tebay Lakes in the Wrangell Mountains, where the fish are relatively highly infected with two species of parasites. Neiland concluded that the main contributing factor to the heavy infestation may be the high population density of fish, resulting in less than optimum nutrition and increased transmission of parasites. Neiland states in the report that in spite of the relatively intense parasitism, the "culinary and sports value of the trout is unimpaired," as no parasites were found in the edible portions of the fish. "Perhaps the best way to reduce the parasite infestation in the Tebay rainbow trout population," concluded Neiland, "would be by extensive harvest, particularly of the heavily infected spawning fish."

\* \* \*

## PROSPECTING IS OUR LIFE

(Continued from page 11)

see anything but white—white at a forty-five degree angle headed for the deep valley below.

Then, suddenly, we were out of the fog. The rest of the trip went on schedule, and in a few days we were back in the Salt Chuck telling our friends about our adventures. After we had told them about the Shamrock, Warren Pellet said, "Oh, well, I guess you caught a lot of trout."

"Nary a one," Juan answered.

"Well, I guess seeing all the game helped to make up for it. Lots of goats and big grizzlies in that country."

"Didn't even see a bush wiggle."

Warren's face was all sympathy as he said, "Pretty lousy trip, eh?"

"Lousy?" Juan cried. "Why, we wouldn't have traded it for all the tea in China!"

And that's the way I felt about it too.

More next month

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## Fisheries Data Released

The Division of Engineering and Services' Statistics Section has released figures on the 1961 commercial fisheries catch indicating a respectable gain over the previous year. The 1961 catch of all species was 412,872,978 pounds with a value to the fishermen of \$46,633,216. In 1960 comparable figures were 358,509,847 pounds valued at \$40,933,863. The fishery products derived from all those fish in 1961 came to over 2.25 million pounds with a wholesale value of \$128,725,706, up over 25 million pounds and over 3 million dollars from 1960.

## Wish Those Hunters Well

Almost 7,000 people registered for the early antlerless moose hunts in the upper Matanuska area this fall. Although a great many of these were not expected to show up for actual hunting (many people register "just in case" they want to hunt when the season opens), Division of Game biologists had high hopes that the hunting pressure would be sufficient to bring some of the South-central area's moose herds within proper management levels. If all goes well these areas should in the future produce on a sustained yield basis far more moose than would be possible under a bulls-only harvest.

## Late Moose Don't Lose in Eating Test

Because of the popular belief that moose taken during the rut are unpalatable, the Division of Game conducted a survey in 1960 to determine to what extent the rut actually does affect the palatability of moose meat. Biologists contacted 297 hunters some two months after they had taken their freshly killed moose through South-central area checking stations. Of these hunters, 132 had taken their moose before the onset of the rut, while 165 took their animals while breeding season was in progress. Palatability ratings by the two groups of hunters were almost identical with 77% of the early moose being rated excellent compared to 74% of the late moose. The "good" percentages were 20 and 21 and the "fair" percentages were 6 and 9 respectively. None of the early-killed moose were rated as "poor" and only two animals, or an insignificant one percent of the late moose, were declared poor eating.

## Sport Fish Surveys Made

Sport Fish Division biologists inventoried 71 lakes and 12 streams during the month of July. These surveys, which disclose such things as fish present, potentials for improvement of desirable

fish stocks, existence of undesirable fish, and access needs, permit management planning in advance of road construction and the resulting increased angling pressure. Lakes with good conditions but no fish may be scheduled for stocking; other lakes, with low sport fish populations because of competition from trash fish or other factors, may go on the "to be rehabilitated" list.

Selected bison were crated for the trip. Here, a Fort Greely truck delivers a crated animal for transfer to an Alaska Air Guard 123J cargo plane. The transplant would have been next to impossible without military assistance. (At Fort Greely, bison have at times made operations next to impossible.)

"Go on, make yourself at home!" Bison released at the McCarthy air strip seems a little befuddled. Actually, he's one of the lucky ones. Folks back at Big Delta didn't love him. Here on the south slope of the Wrangell Range there's lots of space with few folks using it—just as it was around Big Delta when this animal's immediate ancestors were released there.

## Dollies Do Get Around

Dolly Varden "trout"—actually char rather than trout—are usually anadromous fish like salmon. That is, they are born in fresh water, go to sea to grow up, then return to fresh water to spawn.

Unlike salmon, Dolly Vardens do not die after spawning but return to sea and grow some more. In the Department's Informational Leaflet 17 entitled, *A Preliminary Study of the Migration and Growth of the Dolly Varden Char in Kitoi Bay, Alaska*, biologist Leonard Revet of the Division of Biological Research indicates that dollies may also differ from salmon in having a poor "homing" tendency. School children are taught to marvel at the ability of adult salmon to return to the streams in which they were born. Though scientists have shown that even salmon are not infallible in this respect, they certainly do well in comparison with the Dolly.

The Sport Fish Division obtained some additional data on wandering dollies last summer when marked fish from Lake Eva near Juneau were found in streams as far away as 100 miles from the tagging area.

THE Big Delta area, where the Alaska Highway meets the Richardson about a hundred miles south of Fairbanks, is

Bison were baited into a stout corral, where vigorous young animals were selected. With those sharp horns and the brawn to back them up, bison could be formidable, but generally they have the disposition of a barnyard cow—stubborn yet placid. Big Delta bison, too, are accustomed to people.



ADFG Photos



no longer in the unique position of having Alaska's only bison herd. In a continuing effort to solve the dilemma of animals versus people, the ADFG chose thirty-five young and robust bison from the Big Delta herd and bundled them off to the upper Chitina River valley.

Bison (often but erroneously called buffalo) were brought to the Big Delta area almost thirty-five years ago, when there wasn't much doing in those parts. But the Alaska Highway was built, and Fort Greely, and settlers began coming to build homes, clear land, plant crops and raise cattle. As the herd grew larger the available range grew smaller, the bison were getting in the people's way, and some were having a rough time finding enough to eat. Hunting—the eventual purpose for which the bison had been brought—was conducted by permit, but eliminating the problem by hunting would risk eliminating the herd

itself. Transplanting, it is hoped, will relieve the situation around Big Delta, yet allow Alaska's bison population to increase.

The upper Chitina valley, which received the "surplus" bison, was bustling with copper-mining activity when the first animals were brought north. But with the closing of the Kennecott Copper Company and Copper River and Northwestern Railway operations, most of the human population went elsewhere. Perhaps for a while, at least, bison can live there undisturbed. ▲

## MOUNTAIN OF JADE

*(Continued from page 17)*

one can perform an engineering miracle that will lift it from two feet of water between high canyon walls in the Shungnak River.

Much of the Kobuk country jade is fractured and not all is gem quality, but



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## Not So Many Moose to Munch on Matanuska Crops

This year's early (Aug. 20—Sept. 30) antlerless moose seasons in the Matanuska Valley area resulted in a take of more than 900 animals, which gives some idea of the reason moose were reaching plague status in relation to homesteader's crops. While pleased that crop depredations would be lessened as a result of the excellent take, Regional Game Supervisor Loren Croxton of Anchorage didn't want to overdo it, so closed the more accessible portions of the valley during the later (Nov. 1—7) season.

## Grizzly Cub De-canned in Ten Words

Weekly reports of field biologists, used to keep supervisors informed of activities, contain much routine material ("worked at checking station all day"), a few items of genuine interest ("hunters have checked 2,657 caribou through the Denali station so far"), and

an occasional infuriatingly understated item like the one which crossed our desk the other day: "Removed can from head of grizzly bear cub in morning."

## Alitak King Crab Report Available

Informational Leaflet No. 19, mimeographed by the Division of Biological Research last September, is entitled "King Crab Recoveries in 1962 from Alitak Bay Tagging," and written by Guy C. Powell. The report presents information and figures of a preliminary nature only, as the data from the program had not yet been run through the Department's IBM machine.

The preliminary figures indicate that 42 per cent of 5,976 male king crabs tagged in August of 1961 had been captured by the following July. The report also mentioned that, as in other areas, the Alitak Bay crabs move shoreward in fall and winter, seaward in spring and summer. Alitak Bay is the largest king crab producing area in Alaska.

ADFG photo by Ron Batchelor



They may be noting different properties, but Jim Brooks, ADFG Game Division director, and Carol Hill, from the Statistics Section, were both "highly pleased" with what they saw in newly tanned sea-otter pelts.

## Sea Otter Pelts to Get Market Test

One hundred of the sea otter pelts taken in an experimental harvest late last winter have now been tanned. The remainder are being processed as raw pelts, so relative market value of tanned and untanned skins can be determined when they are sold. Tanning was done by the New Method Fur Dressing Co. of San Francisco.

Some of the better pelts will be displayed at the Fur Rendezvous in Anchorage in February, so Alaskans and visitors will be able to see first hand what this most durable and valuable of all furs looks like.

## Pink Salmon Use Shrode Passage

A large number of pink salmon used the new fish passage facilities at Shrode Creek last fall, according to Area Commercial Fisheries Biologist Ralph Pirtle of Cordova. As the spawning area above the falls which formerly blocked the stream is one of the largest and best in Prince William Sound, Pirtle expects real gains in fish production as a result of the installation. The fish passage construction was a joint effort of the Department and the U. S. Forest Service.

With completion of the Shrode Creek project, Pirtle and three Forest Service men began surveying other Prince William Sound streams. Utilizing the chartered vessel *Citation*, skippered by Harry Richards, the four men were examining streams to determine whether their salmon-producing potentials can be increased by such stream improvement projects as log or brush jam clearing, gravel cleaning, water storage or control dams, rechannelization, creation of artificial spawning grounds, or, as at Shrode Creek, erection of fish passage facilities.

## Fur Harvests Down

The harvests of most species of fur animals took a sharp drop in 1962 as compared to the previous year, according to figures based on Fur Export permits, Fur Dealer Reports, and the Department's beaver sealing program. The muskrat harvest, for example, may

"Eat well, little calf, you've got a big job to do!" One of eight elk calves brought from Kodiak Island last summer for release on Gravina Island, near Ketchikan, gets a lesson in dinner-bucket feeding from Biological Aides Ben Ballenger (left) and Gene Schulz. It is hoped that the elk will multiply and in due time populate the island.



have dropped about 50 per cent, the beaver harvest 35 per cent. The most probable cause is not a drop in fur animal populations (though this could be a contributing factor), but a reduction in trapping effort. Early indications are that the number of trappers may have been 25 per cent fewer in 1962 than in 1961. If this is, as suspected, a result of economic conditions, weather, and other factors not related to the supply of fur animals, those same factors would also tend to reduce the amount of trapping effort expended by the remaining trappers.

### Just Follow the Signs

The Sport Fish Division's efforts to help anglers find good reachable-by-road fishing, given major impetus last summer with the publication of a pamphlet on Alaska's roadside fishing sites, is now being boosted by the erection of rustic road signs pointing the way to those spots off the main road. Twenty such signs were placed in September in Slana, Mentasta, Chitina, Valdez, Sourdough, Richardson Highway, Tazlina, and Eureka areas.

### So, Salmon too Go South in Fall?

The Department's Cordova office reports that fisherman Mel Soder caught a pink salmon last summer which had been tagged off Westport, Washington last May. Several salmon tagged near Vancouver Island and many pinks and chums tagged by the Department in Icy Strait in Southeastern also ended up in the Prince William Sound area, giving evidence of the southern migration of Gulf of Alaska stocks during the winter. Fishery Biologist Ralph Pirtle of Cordova, who furnished this information, said this corresponds to the wintertime migration of Asian pink salmon to Japanese waters.

### A Nice, Round Sum

The approximate value of the 1962 salmon pack as of the end of September was 93 million dollars, according to the Division of Commercial Fisheries.

### Deer-Tagging Described

Game Biologist Harry Merriam's efforts to find a technique for immobilizing deer for tagging purposes are the subject of Informational Leaflet No. 18. Merriam did his investigating and experimenting near his home station, Petersburg, and managed to average 2.5 deer tagged daily in spite of the experimental nature of his work. He used darts—variously shot by a CO<sub>2</sub> gun, a longbow and a crossbow—filled with a temporary paralyzing agent with the mean-sounding tag, succinylcholine chloride.

### Book Tells Where That Tax Money Goes

The publication *Federal Aid in Fish and Wildlife Restoration*, subtitled *Annual Report on Dingell-Johnson and Pittman-Robertson Programs for the Fiscal Year Ending June 30, 1961*, gives some interesting glimpses of game work around the country. For example, according to the report, game men in Utah were trying to control cattails by mowing and found that the tractor treads were doing a better job than the mower the tractor was pulling. Now they are crushing cattails rather than cutting them. Florida has developed a bear-proof beehive. Game bird restocking is being done in some states by throwing birds out of airplanes. Deer in the Kerr Wildlife Management Area in Texas produced an estimated \$40.96 per animal unit compared with an average \$28.82 net return from livestock.

Prominent in the report are some results of work conducted by our Division of Game and Sport Fish Division



ADFG photo by Bill Meehan

A bald eagle going to sea? Yes, but not on purpose. The eagle got into an active argument with a gull, miscalculated, and landed in the drink. While the gull taunted it with derisive squawks, Research Biologist Bill Meehan recorded its expression of angry humiliation. Eventually the eagle managed to get back into the air, Meehan said.

### Correction

*We erred in the November issue. In a brief article following the ADFG Newsletter we implied that the Big Delta bison herd was, until the recent transplant of thirty-five animals to the Chitina River valley, the only bison herd in Alaska. Newsletter Editor Alan Courtright reminds us, and presumably we once knew but had forgotten, that some bison were moved from the Delta area to the Dadina River valley in 1950. (The Dadina enters the Copper River a few miles north of the mouth of the Chitina River.) The number of animals moved in 1950 was not mentioned, but the herd there now numbers seventy-five to a hundred, Courtright said.*

*Regional Game Supervisor Bob Rausch of Fairbanks estimates, Courtright said, that Alaska's total bison population is now 375 to 450 animals, of which 300 to 350 are in the Delta herd, including the segment known as the Healy herd, and the remainder, 110 to 135, are in the lower Copper River area (Dadina and Chitina valleys).*

biologists, including statistics on the polar bear and walrus harvests. The booklet, prepared in the Bureau of Sport Fisheries and Wildlife and published by the Wildlife Management Institute and the Sport Fishing Institute, is primarily a reference work incorporating financial statements, lists of publications, and lists of active projects. It also includes some interesting capsules of information for those interested in sport fish and game and their management, and a photographic section.

The Dingell-Johnson and Pittman-Robertson Acts, named after authoring congressmen and commonly lumped under the term "Federal Aid," furnish much of the money for game and sport fish investigation and development work around the country, including Alaska. Funds come from federal excise taxes on firearms, ammunition, and fishing tackle and are apportioned to the states on the basis of land area and license sales. This year is the 25th anniversary of the Pittman-Robertson act.



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## Game Harvest Data Sought

The Division of Game is making its second attempt to determine Alaska's game harvest by means of a mailed hunter questionnaire. In a way, this is actually the state's "first run" for this proven technique, as last year's trial was a test to iron out procedures and find out what problems would be encountered. About 5,000 hunters will receive the questionnaires this year.

As expected, the most important potential source of error in this technique pointed up by last year's trial run is the large variation in human population—and hunting habits—in different areas of the state. These factors are further complicated by differences in the hunting regulations: for example, a three-caribou, four-month season in Central Alaska compared to a no-limit, no closed season caribou regulation in the Arctic and some other areas.

This year's questionnaires will be sent out on what is known among statisticians as a stratified basis. Instead of sending a card to one out of every so many license holders, cards will be mailed to a certain number of hunters in each area according to the number of license holders in that area. The basis of stratification will be Alaska's 26 Game Management Units.

The results of last year's tabulations present some good examples of what can happen without stratification. For

instance, only 13 successful caribou hunters returned their questionnaires from Game Management Unit 23 (the Kotzebue Sound area), where there is no closed season and no bag limit on caribou. Those 13 hunters took 142 caribou, or an average of 10.9 per hunter. However, 70 of those caribou were taken by just two hunters. If only one more hunter taking, say, 40 caribou had reported, the average number of caribou per hunter would have increased to 13. As there are some 550 hunters in Game Management Unit 23, the addition would result in a difference of over 1,000 animals in the calculated harvest for that one Unit.

The obvious solution—being carried out this year—is to send questionnaires to a larger proportion of hunters in those areas where the total number of hunters is small.

## Calling the Shots

Although harvests computed from last year's hunter questionnaire were in many cases unreliable for reasons previously mentioned, the returned questionnaires did provide some surprises. For example, it was believed that for those species in which the harvest is small, the computations would be off considerably. When all the figuring was done and the sheep harvest was calculated as about 600 animals, this was taken as a good example: estimates

made before the questionnaire was used ranged around double that figure. In 1962, however, a sheep harvest ticket was used for the first time, and when the returns were all in it was found that the sheep harvest was some 640 animals!

The questionnaires also provided some entertainment as well as a few frustrations. There was one man, for instance, who couldn't remember how many caribou he had shot. Several people checked off "no" to the question "Did you hunt big game in 1961?" and then indicated they had taken one or more deer (compared to our other big game animals Alaska's deer *are* small).

Some license holders simply scrawled "none" across the face of the card without checking either the "yes" or "no" boxes on the "did you hunt" questions. It could be assumed that what these people meant was "I hunted, but didn't get anything." Assumptions, however, play hob with statistical analyses, so all these people had to be put in the "no answer" column.

In spite of these and other drawbacks, last year's trial run did show that the questionnaire is, as it has proved elsewhere, a feasible and relatively inexpensive way to determine harvests of game animals. The Division of Game expects to continue to use this method for some time to come, adding refinements as the method's limitations in Alaska become apparent.

## Goats Seen on Chichagof

A U.S. Forest Service employee spotted five mountain goats on Chichagof Island last October. The sighting, made on the ridge directly behind Tenakee, was the first since August of 1958, when an Alaska Coastal Airlines pilot sighted two animals near the head of Sitkok Bay.

Eleven female and six male goats were planted in the vicinity of Basket Bay on Chichagof Island between 1953 and 1956. For the last three years unsuccessful attempts have been made to locate goats on the island. The recent report unfortunately did not mention whether any of the five animals seen were kids, so although we now know that the transplanted animals at least survived (some of them, anyway), we don't know whether they are reproducing.

## Salmon Pack Up

The final 1962 canned salmon pack report compiled by the Statistics section showed 3,420,400 cases, compared to 3,211,962 in 1961 and almost 850,000 cases more than the 1960 pack.

An Eskimo such as the one reported to have taken seventy animals in 1961 must have seen many herds such as this.

Charles J. Ott



## MILEPOSTS in northland travel ...

An editorial supplement to our annual guide to The Alaska Highway and its byways. ("The Milepost", \$1.50 regular mail, \$1.95 airmail, Box 1271, Juneau, Alaska.)—No paid advertising accepted in these monthly columns. If you have questions on travel through British Columbia, the Yukon, and adjoining Canadian provinces, and Alaska, we will be happy to try to answer them personally but will certainly see that your letter is forwarded, if necessary, to the proper answering party. Write "Travel Editor", Alaska-Northwest Publishing Co., Box 1271, Juneau, Alaska.

**S**OMETHING extra has been added to Alaska tourist packages for 1963 with opening of a new 21 mile wilderness bus trail into the smoking heart of the famed "Valley of 10,000 Smokes" in Katmai National Monument.

Two-day air and bus scenic tours (\$138, all-expenses) are being offered beginning June 1 out of Anchorage by Northern Consolidated Airlines. NCA, flying its F-27 turbo-jets with the big picture windows, will fly guests down the backbone of the Alaska Peninsula to King Salmon airport in Bristol Bay, then hop them in smaller aircraft over to Brooks River Lodge in the edge of Katmai National Monument where NCA operates Brooks and a number of other lodges under concession from the National Park Service.

The bus ride from Brooks River Lodge will follow lovely Margot Creek to Outlook Cabin in the Valley of 10,000 Smokes itself where in the great eruption of 1912 a fifteen mile river of incandescent sand seared glaciers and forests and every living thing before it. Advertising points up that you can still see smokes, in the valley and issuing from the snow capped volcano peaks.

This is the same area where NCA has been developing Alaska's most complete package trout fishing tours, declaring it "Angler's Paradise" and "the world's best" for rainbows, Dolly Varden, Pike, Arctic Grayling, Arctic Char, Lake Trout and salmon. We've been there and enjoyed the fishing until our arms were tired, and we've seen the volcanic beauty of the Katmai country. We recommend it and we think Northern Consolidated Airlines (Box 6247, International Airport, Anchorage) will find plenty of customers welcoming this new reason the Alaska travel package beats anything anywhere.

**A**NOTHER new venture in Alaska tourism is a new kind of all-inclusive scenic and fishing yacht cruise in the land of islands and fjords in Southeast Alaska.

Lloyd Tilson (Alaska Yacht Cruises, 609 Austin Towers, Ketchikan) is currently building a new William Garden design yacht-cruiser to handle six at a trip for special 5-day cruises out of Ketchikan. Tilson will be including jet fares to Annette, salmon and trout fishing, gear, guides and all the trimmings. Description of the yacht, to be launched in the spring, sounds like "just what the doctor ordered" in passenger com-

forts. The one-price package sounds like good merchandising.

**F**AIRBANKS school teacher Wes Blair and associates have still another new Alaska tourism venture which we think deserves a boost—a new outdoor-living summer camp for boys, ages 10 to 17, in the lovely Tangle Lakes country on the Denali Highway in Interior Alaska.

Writes teacher Wes, "—no sissy camp—ours will be rugged, just like the country—we'll give the kids twenty-four hour care and attention, but they'll learn to camp out in healthy tent living—they'll learn to fish rainbows, grayling, and lake trout—woodcraft—canoe handling—survival techniques—gold panning—etc."

There will be three camp periods of three to nine weeks available, beginning June 16 at the seems-to-us fair price of \$100 a week. There ought to be a lot of youngsters who will enjoy and profit from this one. We hope teacher Blair and his associates have the success they deserve. His address for advance reservations is "Camp Cheechako", 1717 College Road, Fairbanks.

**A** NEW Alaska Division of Tourism (Box 2391 Juneau) folder lists "Alaska Calendar of Events for 1963"—a "Travelers List of Carriers and Transportation Companies"—and others. They're free from the above address.



Eureka Lodge has little help problem. This is owner Jim Wahrer's family.

Jim Wahrer has a wife and seven children and now owns Eureka Lodge on the Glenn Highway, 128 miles out of Anchorage. A trip to Alaska in 1959 convinced contractor Wahrer this was the place for him. In the year following he piled his family into a Volkswagen bus and spent four weeks camping along the Alaska Highways and byways and the family agreed with father Wahrer that

Alaska was for them—so Wahrer sold out his Illinois business and moved North.

Eureka Lodge has eleven modern units, cafe, bar, gas and oil and service garage, airstrip and a beautiful view of the Chugach Range and Nelchina Glacier.

With a family Wahrer's size, help should be no problem.

**A**LASKA Cruises, Ltd. (Vance Bldg., Seattle, Wash.) are booking some newly offered spring steamer cruises on the S.S. Yukon Star—first out of Seattle for many years. The cruises will take travelers through the islands and fjords of British Columbia waters for four roundtrips before the Yukon Star and its sister ship the S.S. Glacier Queen go on the summer B.C. and Alaska run. Yukon Star trips will sail April 6, 13, 20, & 27. There's often wonderful weather in April, although hot sun is certainly never guaranteed—and for picture taking, this is the time of year when the mountain tops still have their winter snow mantles.

**T**HE Yukon Department of Travel & Publicity counted 54,000 tourists in the three summer months last year in the Yukon, spending an average of \$6.12 a day, not including hotel and motel costs which added \$4.57 a day to the figures. That adds up to \$1,908,987.17 for a summer tourist business—pretty good advertising for conservation of the wilderness these folks came to see and enjoy.

Of interest to planning travelers is the fact that 40 percent of the Yukon tour parties included children.

**T**HE 88 room Mt. McKinley Park Hotel will open May 26 this year and remain open until Sept. 10 to make it possible to handle the growing numbers of tourists coming to "The" mountain and Mt. McKinley National Park. The operating company has winter offices at "Mt. McKinley National Park Co., 2522 N. Campbell Ave., Tucson, Arizona." Write them for folders.

**S**PEAKING of McKinley, McKinley View Lodge on the Nenana Road, 40 miles out of Fairbanks, gets a splendid view of Minto Flats, the Alaska Range and "The" mountain on the nice clear days. There's also Mary Donham's home cooking, which makes this roadside inn with cabins and camping area a good place to stop.

**A**DD item to Dec. ferry special information:—White Pass & Yukon Route which operates the scenic narrow gauge train from Skagway to Whitehorse, Y.T. has offered a new family rate of \$65 for auto or camper and two persons, either way and the rate will be good year around. Their address is White Pass & Yukon Route, Joseph Vance Bldg., Seattle, Wash. ▲



# Alaska Department of Fish & Game News Letter

For Information on Licenses, Regulations, etc. write Alaska Department of Fish & Game, Subport, Juneau, Alaska

James Brooks, Director,  
Division of Game.

A. H. McRea, Director,  
Sport Fish Division.

Walter Kirkness,  
Commissioner.

Gil Ziener, Director, Division of  
Engineering and Services.

News Letter Editor,  
Alan Courtright,  
Management Biologist.

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Deputy Commissioner.

Dr. Howard Tait,  
Director, Division of  
Biological Research.

Stanley Swanson, Director,  
Division of  
Commercial Fisheries.

C. A. Weberg, Director,  
Division of Protection.

## Hunter Takes Spiked Doe

A two-and-a-half-year-old antlered female deer was killed on Douglas Island by Win Germain of Douglas last November. The doe had a three-inch spike on one side, a two-inch spike on the other. All normal female reproductive organs were present, the antlers being the only male characteristic.

Female deer with antlers are not unknown, but neither are they common. The condition is usually caused by a hormone imbalance.

## Caribou Census, Salmon Forecasts Topics of New Leaflets

The Department's Informational Leaflet series had grown to 21 by early January. No. 20 is entitled *Method for Estimating Caribou Herds* and describes a census method based on relative size and survival of the previous year's calf crop. Game Biologist Ron Skoog of Anchorage is the author.

Informational Leaflet No. 21, by Fisheries Biologist Wallace Noerenberg, is titled *Salmon Forecast Studies on 1963 Runs in Prince William Sound*, and

gives predictions based on three different study methods. According to the paper there are differences between predictions based on the various methods, but "the 1963 run will be at least of intermediate size with many indications that it will be of large size, approaching maximums in past years of eight million pinks." Moderate to poor runs can be expected in some parts of the sound, however.

One of the methods used to obtain the predictions for Prince William Sound is the sampling of pink salmon fry populations in stream gravels before the fry migrate to sea. Fisheries Research Biologist Asa Wright of the Division of Biological Research points out that this is becoming an important step in the prediction of future adult salmon runs. Spawning in Prince William Sound streams is mostly in the intertidal zone, and therefore the spawning gravel (only this gravel is sampled) is available for sampling all year.

In Southeastern Alaska, on the other hand, much of the spawning takes place far upstream, making pre-emergent fry sampling often impossible because at

sampling time these areas are often ice-covered.

Asa Wright is working on a plan to sample Southeastern streams using only the available non-iced spawning areas. For the next several years this work will consist of sampling pre-emergent fry in a number of selected Southeastern streams and observing adult returns from these fry.

"Pre-emergent fry" are newly hatched fish still in the gravel. They are counted with a "hydraulic pre-emergent fry sampler"—a water pump connected to a venturi nozzle which adds air to the water discharge. When the discharge from the nozzle is directed into the gravel, the fry are bubbled out, captured in a collecting net, and counted. Before the counts mean anything the spawning area of the stream is "grid mapped"; randomly selected plots are then sampled and the counts are expanded to determine the number of young fish in the whole area.

In conjunction with the pre-emergent fry sampling, the Division of Biological Research is planning marine studies to estimate the extent of predation on seaward-migrating salmon fry in several selected areas. Many other factors also influence survival of migrating fry: estimates of these losses will be made in the tidal areas of selected streams. Knowing the number of pre-emergent fry, their survival rate on their seaward migration, and the adult returns from several years' migrations, the biologists feel they will have a good sampling method by which to predict the magnitude of future pink salmon runs throughout Southeastern Alaska.

## Four Decades of Beaver Regulations Reflect Good Results of Management

The beaver regulations now in effect include some liberalizations compared to last year: for example, a limit of 50 beaver in the Prince William Sound area, ten more than in 1962; and a season of February 1—April 15 in the upper Yukon area, fifteen days longer than in 1962. There were also a couple of restrictions in areas where data indicated a possible overharvest last year. In the main, however, the 1963 regulations are more liberal, and those of 1962 were more liberal than those of 1961.

Noting this trend, it is interesting to review the regulations of past years.

←  
A beaver lodge, with its underwater approach, is a haven of security under normal conditions but may become a prison.

→  
The beaver, now one of the most intensely managed of Alaska's fur-bearers, suffered a dangerous population decline in the years preceding fur-harvest restrictions.



J. Malcolm Greany



The earliest regulation, passed by the U. S. Secretary of Commerce and Labor in 1910, prohibited the taking of beaver until November 1, 1915. In 1913 the closed season on this animal was extended to November 1, 1918. In 1918 the Secretary of Agriculture, who inherited authority over the fur resources of Alaska, continued the closure until November 1, 1923, but an open season on beaver was finally provided in the fall of 1921.

The Division of Game's files do not include any regulations for the years 1922, '23 or '24. In 1925 there was a return to a complete prohibition on the taking of beaver, followed in 1926 by an open season in the western half of central Alaska only, from May 1 to May 31: quite a switch from the late fall seasons of earlier years. The 1926 regulations also include the first mention of

two-year closure in 1935 the seasons have remained opened in at least one part of Alaska or another ever since. Beginning in 1938, however, there were some 15 years of 10-limit seasons.

Becoming curious about the low bag limits and periodic closures which prevailed for four decades, we dug up a copy of a University of Alaska thesis written by John Hakala in 1952. According to that source the beaver was on the road to extinction in Alaska between the years 1900 and 1910. Hakala and the early writers whom he quotes attributed this primarily to overharvest, although some writers put a share of the blame on weather conditions. For example, in the book *Narratives of Exploration in Alaska in 1900*, Ivan Tetrof said that throughout the whole of the Interior north of Cook Inlet and south of the Yukon River, beaver had suffered from excessive and prolonged winter cold. The ice in the rivers and ponds formed so rapidly and to such thickness that the animals found it impossible to keep open the approaches to their dwellings under water, and died from starvation before the thaws of spring opened their prisons.



Al Lysher



Every beaver pelt taken in Alaska must be sealed, and its size and place of taking recorded for management purposes.

a bag limit on beaver: 20 a year per trapper.

A similar open season was provided in 1927, although the area to which it applied was cut down considerably, and there followed five full years of "no open seasons" for beaver throughout Alaska.

Seasons in some areas were reopened in 1933 but bag limits were kept low: no more than 15 beaver. After another

Another author reported that one year the snow melted suddenly in mid-winter, flooded the low ground, and, raising the level of the streams, drowned large numbers of beaver in their lodges and under the ice. Then with the following cold weather the water froze in the beaver lodges, making the animals almost prisoners or shutting them off from their shelters and food supply. Fur traders of that time reported that the year immediately following such a winter showed a very marked falling off in the yield of beaver skins.

J. Malcolm Greany



There is little doubt, however, that overharvesting was the main villain, for it was not until 1921 that the use of dynamite or other explosives in the destruction of beaver houses or runways was prohibited. The use of firearms continued to be legal for taking beaver until 1946, and as a result some trappers may have retrieved only one in four or five beaver shot.

Nowadays the beaver is one of the most intensely managed of all Alaska's fur animals on which there is a general open season. Every beaver hide taken in the state must be sealed and at the time of sealing the size of every pelt and the location where it was taken is recorded. This data is processed by IBM in the Department's Juneau office and as a result Division of Game biologists are able to determine whether a particular area is being overharvested or underharvested. Without this data it is probable that the 1963 beaver seasons and bag limits would have been curtailed considerably, for the 1962 harvest was only some 15,000 beaver compared to almost 24,000 the year before. The data on hand plus aerial beaver surveys indicated that the decreased take was not the result of overharvesting in 1961, but of decreased trapping effort reflecting economic and weather conditions.

Hakala's thesis describes a novel way of harvesting beaver. Quoting E. W. Nelson's report of 1887, he says, "as winter advanced, all of the lakes and ponds were covered with a layer of ice. Some of the small ponds drained away leaving the flat sheet of ice over the empty pond like a flat roof. The hunters cut a hole through the ice, and if beaver tracks were observed on the mud-covered bottom, they took clubs and descended under the ice in search of the animals. The beaver were routed from their houses and burrows, pursued over the floor of the ice-covered pond, and clubbed. The peculiar conditions required for the work and the danger of the icy covering falling in upon the hunter made this form of hunting uncommon."

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**E**VEN before final returns were in, the king crab catch for the Kodiak area in 1962 was 2.5 million pounds more than in the previous year: the importance of this "off-season" fishery continues to increase. A report from Fisheries Biologist Dexter Lall of Kodiak gave a 1962 catch of some 16.7 million pounds for that area, with a few late December catches still to be reported. Another six million pounds or so were taken in the Alaska Peninsula-Aleutians area according to biologist Daniel Hennick, and Cook Inlet's 6.7 million pounds for 1962 was the largest catch on record for that area.

In Southeastern, a new dungeness crab operation started up this last winter, with one floating processing vessel and a catcher boat working in the Petersburg-Wrangell area. A shore-based operation was also processing crabs at Metlakatla.

\* \*

**W**INTER studies on razor clam survival in Prince William Sound (the State's largest clam producing

Razor clams around Cordova, "capital" of Alaska's canned clam industry, spawn in July and August, take six years to become four and a half inches long, may reach six inches and may live for eighteen years. In beds "down south" this clam spawns earlier and grows faster but has a smaller maximum size and shorter life span.

**T**HE razor clam, *Siliqua patula*, unlike the common butter clam, can literally dig a hole, crawl in, and pull the hole in after itself—as many a novice clam-digger has been shocked to learn. Furthermore, the razor clam can accomplish this remarkable feat in seven seconds! Far less time than the unwary digger needs to straighten the kinks in his back.

The pointed end of the razor clam, its foot, or "digger," can be projected half the length of the shell. This foot, pushed into the sand, expands to form an anchor, and the muscle contracts, pulling the clam downward and at the same time forcing the displaced sand and water upward through the organism, to be ejected from its neck or "siphon" end.

area) indicated that survival from last year's spawning was poor, apparently due to hard winter freezes. Survival estimates are made by screening the sand: last year's young clams are now about ¼ inch long and are found in the upper two inches of sand.

\* \*

**A**LASKA'S moose hunters will be helping the Division of Game determine the size and distribution of the moose harvest in the future, if the Board of Fish and Game approves plans for a Moose Harvest Ticket. The new ticket would be similar to that used successfully for sheep last year, and would be issued without charge.

The ticket would have two parts: one to be attached to the moose if the hunter is successful, the other to be filled out and mailed whether he is successful or not. On the postcard, the hunter would indicate: 1. Whether he took a moose, and if he did, where and when it was taken, or 2. If he didn't take a moose, whether this was because he couldn't find one or because, after getting the Harvest Ticket, he simply didn't get a chance to go moose hunting.

Information on hunter success is often useful as an indicator of the availability of animals, and is a vital complement to data gathered through aerial surveys and other means. The moose has become the most important big game animal in many parts of Alaska, and is managed more intensively than any other species: accurate harvest, hunter-effort, and hunter success information is therefore of considerable importance to management.

Photos by Jim Stock



The accompanying sequence of photos, by Jim Stock of Cordova, was taken in less than one minute: razor clam flat on the sand, beginning to tip and dig in; digging deeper and standing almost straight up, and finally, spouting sand and water, well on its way "back to where it came from." A fifth photo would have shown only a hole in the sand, smaller around than a lead pencil, where the clam had been. At this point the novice, sadder and wiser, may as well look for another "clam spout," for a razor clam in retreat can dig faster and deeper with its built-in suction-dredge system than a man can dig with a shovel.



**M**OST everyone these days knows the age of a fish can be determined by "reading" the scales. Quite a few people, in high school or college biology classes, have even gone through the process of taking scales out of an envelope, soaking them, picking one up with tweezers, mounting it on a microscope slide and, finally, counting the rings to determine the fishes' age.

Fisheries biologists can determine other things than age from scales: rate of growth and how long a fish lived in salt water, how long in fresh water, for example. Even the "race" of fish can sometimes be determined: some species of Asiatic salmon can be distinguished from North American fish by examining the scales. Biologists often have to compare scales from one year with those of another year, or compare between areas, which means that the scales from one fish might have to be examined several times at widely separated intervals. If the soak-and-mount process had to be used each time, fisheries biologists would be even busier than they are.

Thanks to a process developed by two Wisconsin Conservation Department biologists in 1950, scales now need to be handled only once. They are placed on cellulose acetate plastic sheets, and permanent impressions are made at 5,000 pounds per square inch in a heated hydraulic press. Scales

from 30 or 40 fish can be pressed on one sheet of plastic: the sheets are easy to store and make a permanent reference file possible.

Fisheries Biologist Asa Wright of the Division of Biological Research, who provided this information, says that scales from 40 fish can be processed in an hour, including collecting, measuring the fish, and pressing. The plastic impressions, he says, are easier to read than the originals: they're placed in a scale projector for reading.

\* \*

**I**NFORMATION leaflet No. 22—"Loss of Isthmus Tags from King Crabs" by George W. Gray—is now available. It summarizes the results of experiments carried out to determine how frequently crabs lose the tags which have been attached to aid in determining growth rates, migration patterns, mortality, distribution, and the rate of commercial harvest.

\* \*

**F**ISHERIES Biologist Roy Rickey is trying to get an octopus fishery developed in Alaska. Halibut fishermen pay up to 32 cents a pound for this "best fishing bait" and Rickey feels a commercial octopus venture in Alaska has possibilities. An attempt is being made to get Japanese octopus fishing gear and a report on their fishing methods.