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ALASKA DEPARTMENT OF FISH AND GAME
JUNEAU, ALASKA

STATE OF ALASKA
William A. Egan, Governor

DEPARTMENT OF FISH AND GAME
Wallace H. Noerenberg, Commissioner

DIVISION OF GAME
Frank Jones, Acting Director

REPORT OF SURVEY AND INVENTORY ACTIVITIES-WATERFOWL

Edited by Dan Timm, Waterfowl Biologist

Volume III
Annual Project Segment Report
Federal Aid in Wildlife Restoration
Project W-17-4, Job No. 10

(Printed June 1972)

MEMORANDUM OF TRANSMITTAL

June 1, 1972

TO: Wallace H. Noerenberg, Commissioner
Alaska Department of Fish and Game

FROM: Frank F. Jones, Acting Director
Division of Game
Alaska Department of Fish and Game
Juneau

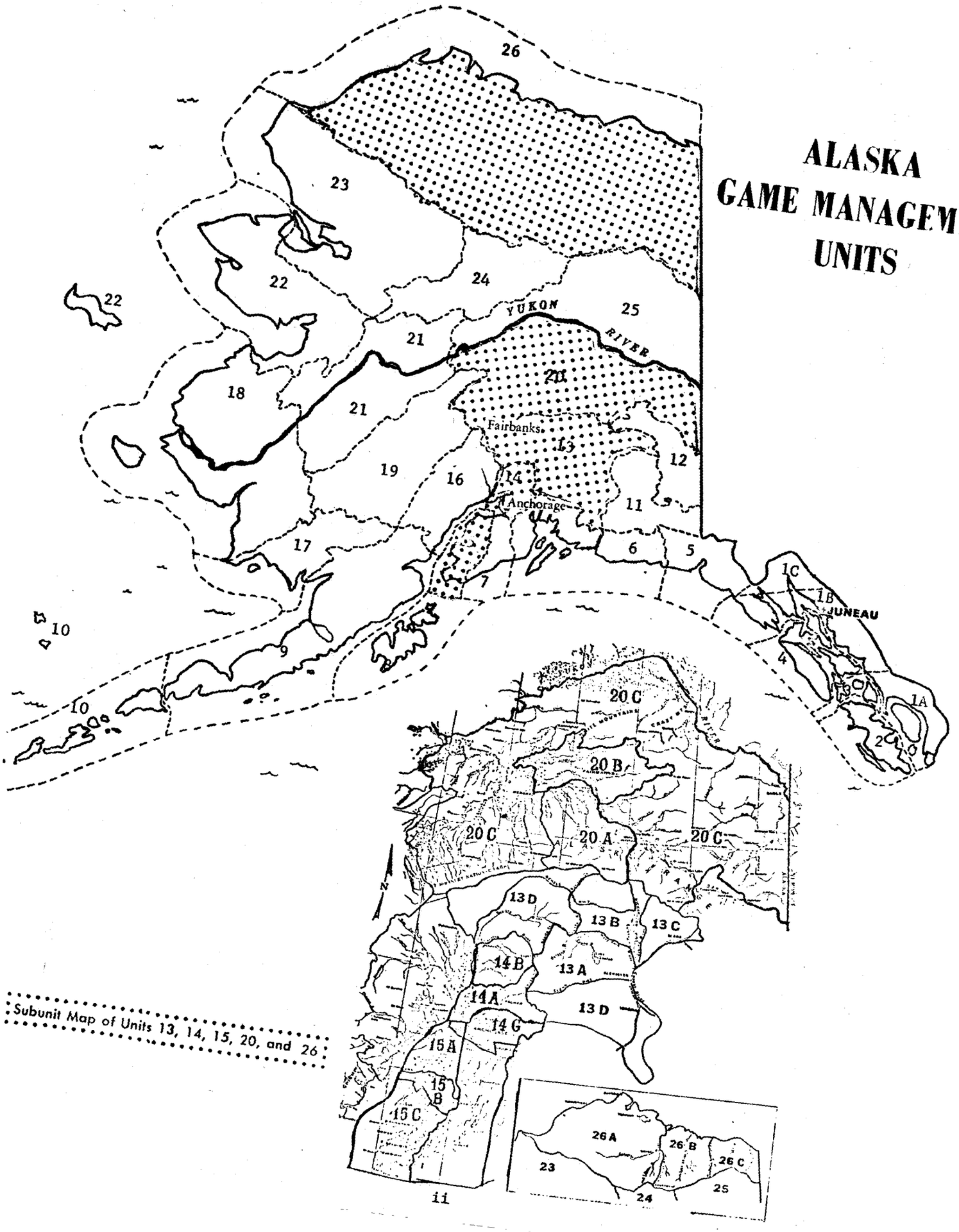
SUBJECT: Annual Report of Survey-Inventory Activities

Surveys and inventories include all routine data collections directed toward assessment of the status of game populations and toward the determination of annual game harvests. These reports include study results and conclusions and, where applicable, recommended hunting regulation changes.

With the appointment of a waterfowl coordinator in Juneau, waterfowl S & I work on a statewide basis will be conducted in the future. In succeeding years waterfowl data will probably be presented in a format different than the conventional game management unit system, a system more applicable to nonmigratory wildlife.

For those people unfamiliar with game management unit boundaries, a map of Alaska showing these boundaries is included in this report. Also, a table of contents is included to facilitate access to specific information.

ALASKA GAME MANAGEMENT UNITS



Subunit Map of Units 13, 14, 15, 20, and 26

CONTENTS

STATEWIDE WATERFOWL

SURVEY-INVENTORY PROGRESS REPORT - March 1971 - April 1972

Statewide Seasons and Bag Limits:

Season and Species	Daily Bag Limit	Possession Limit	Explanation
Pribilof, Kodiak (Unit 8) and Aleutian Islands (except Unimak) - Oct. 14 - Jan. 26			
Remainder of State and Unimak Island - Sept. 1 - Dec. 14			
Game Ducks	6	18	
Old squaw, Harlequin, Scoters, Eiders, and Mergansers	15	30	Singly or in aggregate
Geese (except Emperor)	6	12	No more than 4 daily or 8 in possession may be Canada's or White-fronts
Emperor Geese	6	12	
Brant	4	8	
Entire State - Sept. 1 - Nov. 4			
Snipe	8	16	
Entire State - Sept. 1 - Oct. 15			
Cranes	2	4	

Submitted by: Phillip D. Havens, Game Biologist II, Dan Timm, Game Biologist III

SOUTHEAST

With the appointment of a statewide waterfowl coordinator located in Juneau, waterfowl work in the Southeast, similar to what has been done in Southcentral, was initiated. Work accomplished and reported in this section includes: waterfowl hunter bag checks (Interior also); organized and random waterfowl observations; wintering mallard sex ratios; wintering mallard food habits study; winter duck banding; and waterfowl habitat improvement on the Stikine River Delta. A hunter success mail questionnaire survey was also conducted during the reporting period. Results of this survey will be published as a supplement to this S & I report.

Waterfowl Bag Check

Biologists and officers from the Alaska Department of Fish and Game collected harvest information on 303 waterfowl taken by 94 hunters in the Southeast during the 1971 waterfowl season. A summary of these data is presented in Tables 1 and 2. Analysis of same and comparison to previous years will not be made in this report, but rather in the mail survey S & I supplement.

Table 1. Summary of Southeast Bag Checks - Species Composition - 1971

	Areas									
	Juneau		Stikine Delta		Yakutat		Random*		All Areas	
Species	No.	Percent of Bag	No.	Percent of Bag	No.	Percent of Bag	No.	Percent of Bag	No.	Percent of Bag
Mallard	10	33.3	30	41.7	4	6.2	66	64.1	110	40.9
Baldpate	3	10.0	15	20.8	11	17.2	11	10.7	40	14.9
Pintail	4	13.3	10	13.9	9	14.1	9	8.7	32	11.9
GW Teal	8	26.7	12	16.7	37	57.8	13	12.6	70	26.0
Shoveller	3	10.0	2	2.8	-	-	4	3.9	9	3.4
Gadwall	-	-	-	-	3	4.7	-	-	3	1.1
Scaup (both)	-	-	2	2.8	-	-	-	-	2	0.7
Bufflehead	2	6.7	-	-	-	-	-	-	2	0.7
Goldeneye	-	-	1	1.3	-	-	-	-	1	0.4
Totals	30	100.0	72	100.0	64	100.0	103	100.0	269	100.0
Canada goose	-	-	-	-	17	-	13	-	30	-
Snow goose	-	-	1	-	3	-	-	-	4	-
Snipe	-	-	8	-	-	-	-	-	8	-

*Random areas include Gustavus, Wilson R. Flats, Traitors Cove, Union Bay, Whale Pass; most of these observations, except Gustavus, were made in November.

Table 2. Summary of Southeast Bag Checks - Hunter Success - 1971.

	Areas				
	Juneau	Stikine Delta	Yakutat	Random*	Total All Areas
No. hunters	28	27	28	11	94
No. hunter days	28	62	35	24	149
Ducks/hunter day	1.1	1.2	1.8	4.3	1.8
% hunters under 16 years	-	-	-	-	12.8
% hunter days under 16	-	-	-	-	10.7
% duck harvest by under 16	-	-	-	-	5.0
% goose harvest by under 16	-	-	-	-	0.0

*Includes Gustavus, Wilson R. Flats, Traitors Cove, Union Bay and Whale Pass.

Larry Jennings, Area Biologist - Tok, collected harvest information from 26 hunters, harvesting 117 waterfowl in the Interior. These data are presented in Table 3.

Table 3. Bag Check Results - Interior: Mineral Lake, Tetlin, Northway Area - 1971.

Species	Adult		Immature		Percent Imm.	Total* No.	Percent of Bag
	Male	Female	Male	Female			
Mallard	-	1	3	1	80.0	16	13.9
Baldpate	1	-	2	2	80.0	24	20.9
Pintail	-	-	4	3	-	19	16.5
GW Teal	-	2	2	3	71.4	14	12.2
Shoveller	-	-	-	2	-	7	6.1
Scaup (both)	-	-	-	1	-	5	4.4
Canvasback	-	-	1	1	-	6	5.2
Bufflehead	-	2	-	1	-	19	16.5
Goldeneye	-	-	-	-	-	3	2.6
Ruddy Duck	-	-	-	-	-	2	1.7
Total	-	-	-	-	-	115	100.0
Unknown spp.	-	-	-	-	-	1	-
Canada goose	-	-	-	-	-	1	-

*Includes birds of unknown age and sex.

Total Hunters 26 Total Hunter Days 49

Total Ducks 116 Ducks/Hunter Day 2.4

Table 4 is a summary of all bag check data - Interior, Southcentral and Southeast. The projected 1.4 ducks and 0.9 geese per hunter day will be interesting to compare with the results of the mail questionnaire survey. A combination of these data with mail survey results should provide our best estimate of 1971-72 harvest by species.

Table 4. Bag Check Summary - Statewide Totals - 1971-72.

Species	Adult Male	Adult Female	Immature Male	Immature Female	Percent Imm.	Total* No.	Percent of Bag
Mallard	9	26	66	81	80.8	359	26.4
Baldpate	20	7	56	86	84.0	305	22.4
Pintail	13	17	68	51	79.8	288	21.2
GW Teal	7	18	43	47	78.3	240	17.7
Shoveller	2	4	21	20	87.2	59	4.3
Gadwall	3	1	4	9	76.5	30	2.2
Scaup (both)	1	-	1	4	83.3	19	1.4
Goldeneye (both)	-	-	-	4	-	8	0.6
Canvasback	-	-	2	2	-	12	0.9
BW Teal	-	-	-	1	-	1	0.1
Bufflehead	3	7	1	7	44.4	36	2.7
Ruddy duck	-	-	-	-	-	2	0.1
Total game	-	-	-	-	-	1,359	100.0
White wing scoter	-	-	-	-	-	5	-
Common merganser	1	-	-	-	-	1	-
Total non-game	-	-	-	-	-	6	100.0
Unknown spp.	-	-	-	-	-	132	-
Dusky Canada goose	3	4	4	1	41.7	14	-
Cackling Canada goose	-	-	1	2	-	3	-
Canada goose - other	14	7	14	7	50.0	280	-
Whitefronted goose	3	-	1	3	-	34	-
Snow goose	-	-	-	-	-	3	-
Emperor goose	4	2	-	-	-	442	-
Black Brant	-	-	-	-	-	189	-
Unknown goose	-	-	-	-	-	1	-

*Includes those of unknown age, sex; Eagle River age-sex information not included.

Total waterfowl	2463
Total ducks	1497
Total geese	965
Total hunters	884
Total hunter days	1069
Ducks/hunter day	1.4
Geese/hunter day	0.9

Percent of hunter days by under 16 yr. olds	6.4
Percent duck harvest by under 16 yr. olds	4.9
Percent of goose harvest by under 16 yr. olds	5.5

Winter Banding

From March 24, 1972 through March 30, Alaska Department of Fish and Game biologists and representatives from the Bureau of Sport Fisheries and Wildlife banded 27 ducks at Big John Bay in Rocky Pass. Small bait traps were used with cracked corn as bait.

About one week before trapping operations began, 300 pounds of corn was put out in potential trapping sites. Wintering mallards in Alaska have possibly never seen corn, and it seems to take about one week to acquaint them with it.

The banding was conducted from the Fish and Wildlife Service boat, "Surfbird." Because of very rough seas and cold temperatures, the operation was conducted about one month later than planned. Thus, most bays and tidal flats were ice-free, exposing food which the ice had covered. Birds are reluctant to "bait in" when natural food is abundant and the weather is mild.

On March 28, it appeared that birds were moving, probably not from the south, but a definite movement out of Big John Bay did occur. This continued through the 30th. On the 30th, a flock of 17 black brant was observed in the Bay. By that time only about 75 mallards, 125 pintails and 75 Canada geese remained in the Bay. At the start of the operation, about 2800 mallards, 400 pintail and 475 Canada geese were present. On the 28th the wind switched from northwest to southeast, after nearly a week of clear, cool weather with northwest winds.

All birds banded were extremely thin and in a weakened condition; thus indicating only wintering birds were banded. After the birds were aged, sexed and banded, all flew away in good condition - apparently suffering no banding mortality.

Table 6 presents age, sex and banding information for birds banded. Age information was obtained from the wing feather technique used by the Bureau and other agencies. On the four immature birds, age criteria was obvious - thus indicating the wing feather technique to be valid through March in Alaska.

Table 5. Winter Banding Data - Big John Bay - 1971.

Species	Band Numbers	Adult Male	Adult Female	Imm. Male	Imm. Female	Total
Mallard	647-68715 thru 735	18	1	1	1	21
Pintail	756-14001 thru 06	1	3	-	2	6

Wintering Mallard Food Habits Study

Mallards were collected during the winter of 1971-72 in the Ketchikan, Petersburg and Juneau areas. Contents of the birds' esophagus and proventriculus have not been analyzed.

Collecting birds which are or have recently been actively feeding is difficult. It is anticipated that the study will continue for at least one and probably two more winters.

Wintering Mallard Sex Ratios

Results of mallard sex ratios taken in the Central Flyway (Funk, et. al. - 1971), indicate a decrease in number of males in the population, going from north to south in the flyway. Northern states experienced ratios of 60 to 65 percent males; southern states from 50 to 60 percent males. Saskatchewan also reports a very high ratio of drake to hen mallards in their small wintering population (A. Dzubin, pers. comm.). Their wintering population, although small, have consisted of 80 to 90 percent drakes.

It was expected, judging from these data, that Alaska would have a very high ratio of drakes in the wintering population. Table 6 indicates a sex ratio of 59.2 percent drakes in the Southeast. These data indicate Alaska's wintering mallard population contains proportionately more hens than do other northern wintering populations.

Two possible explanations of this may be: 1) inadequate sample size - both in number of birds counted and number of areas sampled; 2) Southeast Alaska could have a more discrete and terminal wintering mallard population than those elsewhere. Larger sample sizes in future years and additional wintering banding should substantiate or disprove either hypothesis.

Table 6. Summary of Southeast Wintering Mallard Sex Ratios - January thru March - 1972.

Area	No. Males	No. Females	Total Birds	Percent Males
Juneau*	213	148	361	55.9
Rocky Pass	283	182	465	60.9
Seymour Canal	33	18	51	64.7
Unuk River	5	3	8	62.5
Petersburg Area	347	264	611	56.8
Totals	881	615	1496	59.2 (weighted total)

*Only about 400 total birds wintering.

Waterfowl Surveys

Gustavus:

The Alaska Department of Fish and Game can acquire some land just east of Gustavus, adjoining the tideflats, for the cost of surveying the land. To get some idea of waterfowl use and general characteristics of the area, an aerial survey from Endicott River to Gustavus was made on August 31, 1971. Birds were counted from the tide line and out to about 100 yards. Two observers were utilized; the count should be nearly complete. Results of the survey are presented in Table 7.

Table 7. Aerial Survey: Endicott River to Gustavus - August 31, 1971.

Species	Endicott R. to St. James Bay	St. James Bay	St. James Bay to Gustavus	Gustavus	Total
Mallard	-	102	-	5	107
Pintail	-	123	15	2	140
Unknown Dabbler	45	43	132	280	500
Scoter (ww&surf)	-	121	1290	332	1743
Merganser	-	7	29	257	293
Canada Goose	-	50	130	98	278
				Total Waterfowl -	3061

Stikine Delta:

No formal survey of waterfowl had ever been conducted on the Stikine Delta. Because the Alaska Department of Fish and Game and the Forest Service have a management agreement on the area and public interest for the area is high, a survey of waterfowl numbers was taken near the peak of fall bird numbers. Reports are that one week later the actual peak occurred.

Aerial counts were made at high tide. High tide is a difficult time to census because some birds are in the intertidal zone vegetation, making them difficult to observe.

Ground estimates of actual species composition were made because aerial observation of some species is easier than for others. For example, about 90 percent of the birds observed from the air were mallards, but only 25 percent of the birds observed while on the ground were mallards.

Mallards were thus used as an "index duck." To arrive at total ducks in an area (Table 8) number of total birds seen from the air were multiplied by 0.9 and then by 4.0. Other species totals were derived by multiplying their respective percent observed ground composition by the total duck figure. Survey data in Table 8 should be viewed as reasonable estimates rather than precise figures.

Table 8. Aerial-Ground Estimates on Stikine River Delta, October 17, 18, 19, 1971.

Species	Location and Dates on Delta														
	Sergief Isl.			Farm Isl.			Dry and Little Dry Isl.			Mallard Slough & North Arm			Total Delta		
	17	18	19	17	18	19	17	18	19	17	18	19	17	18	19
Mallard	382	162	135	8	33	3	293	2	6	1222	1661	1250	1905	1858	1394
Pintail	382	162	135	8	33	3	293	2	6	1222	1661	1250	1905	1858	1394
Baldpate	535	227	189	11	46	4	410	2	9	1711	2325	1750	2667	2600	1952
GW Teal	153	65	54	3	13	1	117	1	2	489	664	500	762	743	557
Shoveller	76	32	27	2	7	1	59	1	1	244	333	250	381	373	279
TOTAL DUCKS	1528	648	540	32	132	12	1172	8	24	4888	6644	5000	7620	7432	5576
Snow Geese*	1325	1383	140	-	-	-	-	-	-	-	147	-	1325	1530	140
Canada Geese	40	-	-	-	-	-	-	-	-	125	-	-	165	-	-
Swans	-	-	17	-	-	-	-	-	4	-	-	-	-	-	21

*600 Snows estimated on Sergief Isl. 10/20/71 by Bob Wood.

Ground estimates - 35% baldpate, 25% mallard, 25% pintail, 10% GWT, 5% shoveller.
Aerial estimates - 90% mallards (i.e. 90% of birds seen from air were mallards).

Random Observations

Southeast area game biologists were requested to record random observations of waterfowl during the winter months. Although these are not recorded here, they are in Juneau files and will be utilized in a comprehensive waterfowl inventory in 1972.

Habitat Improvement - Stikine River Delta

During April, 1972 Alaska Department of Fish and Game biologists cooperated with Forest Service personnel in a pothole blasting project. Thirty-seven holes were blown in the Binkley Slough area, bringing the total number created to 62 since 1969. This project is being conducted in an effort to attract ducks off the intertidal zone to the ponds, thus improving bird hunting.

The Forest Service will also put in several check dam structures during the summer of 1972. These will be placed on small streams on Sergief Island, also in an attempt to attract birds.

Literature Cited

Funk, H., Grieb, J., Witt, D., Wrakestraw, G., Merrill, G., Kuck, T., Timm, D., Logan, T. and Stutzenbaker, C. 1971. Justification of the Central Flyway High Plains Mallard Management Unit. Central Flyway Technical Committee Report.

SOUTHCENTRAL

Game Management Unit 6 - Prince William Sound

Harvest and Hunting Pressure

Bag check data were collected randomly on the Copper River Delta during the open season. These are presented in Appendix I.

A count of automobiles along the Copper River Highway on opening morning resulted in a count of 28 cars, which for a midweek opening is surprisingly high.

Information from the U. S. Fish and Wildlife Service Migratory Bird Populations Station (C. J. Henny, pers. comm. 1971) indicates a very high kill of immature dusky Canada geese, (Branta canadensis occidentalis) which were banded on the Copper River Delta. In 1970 the direct recovery rate for immatures was 19.65 percent, the highest of any population of Canada geese in North America. Studies have shown that generally less than 50 percent of banded geese that are killed are reported (Henny, C. J. 1967); if so this particular population is being harvested at more than 40 percent of the annual increment. The 40 percent does not include crippling loss or natural mortality. This population probably cannot stand this degree of harvest and continued banding is needed to monitor the harvest.

Composition and Productivity

Dusky Canada Goose Study:

Spring was about three weeks late on the Copper River Delta in 1971. On May 26, ice was present on many of the larger ponds and snow was still drifted in some tide guts. Very little nest building activity had started and many pairs of geese were observed standing about without territories.

The late spring apparently discouraged some pairs from nesting as estimates placed nesting densities at 30-50 percent below previous years. In addition, the average clutch size was low as illustrated in Table 1. By June 23, only 15 percent of the nests in the study area had eggs hatched or had eggs which were pipping. By contrast, in 1970, 35 percent of the nests were hatched or had pipping eggs by June 10.

Although the 24 percent predation is the second highest observed loss of nests on record, this rate of loss probably did not occur over the entire Delta. There were one pair of coyotes working part of the study area which explain the relatively high, but localized nest loss to predators.

None of the 15 nest study plots established by Hilliker in 1967 were visited during 1971. An attempt will be made during 1972 to locate these plots.

On July 27 and 28, flights to determine age composition of dusky Canada geese on the Copper River Delta were conducted by biologists Reynolds, Timm and Havens. Early in the morning more geese are either on tideflats or open water where goslings are easily seen. Later in the day most geese are found in vegetation, making the young birds less visible and the counts less accurate. With one or two observers counting young and one counting adults, it appears a fairly accurate estimate of production can be made (Table 2).

The survey on the 27th was conducted between 1330 and 1430 hours; on the 29th between 0910 and 1025 hours. As explained above, the survey on the 28th is considered to be a better estimate than the 27th count. Although air-ground visibility rate studies were not made, we assumed a 50 percent visibility rate for immatures. Thus, our best estimate for dusky production was 16.2 percent.

To help assess the accuracy of this technique, requests were made for goose tail fan collections to Richard Rodgers, Finley NWR in Oregon and Chet Kebbe of the Oregon Game Commission. Rodgers responded by collecting 356 fans. Our bag checks resulted in age data on 12 dusky geese. The 368 total fans indicated an age ratio in the kill of 39.1 percent young. Differential vulnerability factors were then applied to the age ratios. This was done by taking the age ratios in the harvest, 39.1 percent, and dividing by the differential vulnerability factor. This factor was determine by dividing the first year recovery rate for 1970 banded immatures by the first year recovery rate for 1970 banded adults (19.70%÷9.50%=2.07). Banding data from 1970 was used because 1971 returns were incomplete as of this writing. The best estimate of dusky production is therefore calculated to be 18.9 percent immatures. This compares to our predicted production of 16.2 percent (Table 2).

Table 2. Age Composition of Dusky Canada Geese on the Copper River Delta, July, 1971.

Date	No. Adults*	No. Young	Observed Percent Young
7/27	4,346	318	6.8
7/28	4,791	463	8.8 (16.2 percent estimated)

*Flocks of nonbreeders included with productive adults.

Banding

With help from the U. S. Forest Service, a total of 423 dusky Canada geese were banded on August 3 and 4. Geese were driven from the land into

Alaganik Slough with a PA-18 Supercub, then skiffs moved them downstream to the trap area where they were allowed to reach land and run into a wing-trap. This method has been used previously and continues to be the most feasible method for banding large numbers of geese.

A total of 423 geese were banded. Thirty-four of the birds captured had been banded in previous years. Number of geese banded by sex and age is as follows:

Adult male	166	Local male	42
Adult female	160	Local female	55

Prince William Sound Island Geese

The coastal areas of Alaska from Cook Inlet south through Vancouver Island support two subspecies of Canada geese according to Delacour (1954). One of these, the Vancouver Canada goose (Branta canadensis fulva) inhabit the rain forests of Southeastern Alaska. It is quite sedentary and nests in or near the forest. The other, the dusky Canada goose, (B. c. occidentalis) nests primarily on the treeless Copper River Delta near Cordova, Alaska. Banding studies have shown that virtually the entire population winters in the Willamette Valley of Oregon. This population of duskys sustain very high mortality due to hunting pressure (Chapman et al, 1969).

Some of the islands of Prince William Sound contain breeding populations of an unknown subspecies of Canada geese. There is also a wintering population of Canada geese found in Prince William Sound. Whether the breeding and wintering populations are the same is unknown. If the nesting and wintering populations are the same, then these geese would fall into the nonmigratory behavioral pattern characteristic of (B. c. fulva). Their nesting habitat is more similar to that of fulva than to that of occidentalis.

With these factors in mind, in May of 1970, Cordova area biologist, J. Reynolds, collected four geese on Hawkins Island. Two were females killed while flushing from their nest; the other two, a male and female, were collected from a group of four geese that were flying over the area. The geese were collected on May 27, near Makaka Point.

The specimens were sent to Dr. John Aldrich of the U. S. Fish and Wildlife Service in Washington, D. C., for his opinion of their taxonomy. Based upon measurements of the specimens, it was Dr. Aldrich's opinion that the two nesting females and the nonbreeding female were dusky Canada geese while the male was representative of the Vancouver subspecies. It is unknown if Aldrich has an adequate number of measurements from known Vancouver and dusky geese to make good subspecies determinations.

Another method of subspecies determination is currently under study. Measurements were taken on a small sample of eggs (32), taken from the population of Canada geese that nest near Makaka Point on Hawkins Island. U. S. Fish and Wildlife Service waterfowl biologist, James King, measured 14 eggs of Vancouver Canada geese from the Juneau area. Comparisons are

made in Table 3. It is obvious that large sample sizes from the Vancouver geese and the Island nesting forms need to be obtained before differences, if any, can be used to identify the Island geese by this method.

Prince William Sound Water Bird Survey

A joint program with the U. S. Fish and Wildlife Service was conducted during this report period, in an attempt to census water bird life in Prince William Sound. Offshore transects and complete shoreline surveys were flown. Data are being analyzed by the U. S. Fish and Wildlife Service and will be presented jointly when completed.

Management Summary and Conclusions

Late spring weather probably influenced both nesting density and production of dusky Canada geese on the Copper River Delta. Our data were presented at the Pacific Flyway Conference, with the result that the State of Oregon, where 80 percent of this subspecies are harvested, voluntarily took a reduction of one Canada goose in the daily bag limit.

It is recommended that nesting studies be continued to further evaluate effects of the habitat change from the 1964 earthquake and also to provide data to manage this subspecies of Canada goose in a wise manner.

In spite of poor production, hunter success was better than 1970, as indicated in Appendix I.

Recommendations

No changes in seasons or bag limits are recommended.

Literature Cited

Chapman, J. A., C. J. Henny and H. M. Wight. 1969. The status, population dynamics and harvest of the dusky Canada goose. Wildlife Monograph 18. The Wildlife Society.

Delacour, J. 1954. The waterfowl of the world. Vol. 1. Country Life, Limited, London. 284 pp.

Henny, C. J. 1967. Estimating band-reporting rates from banding and crippling loss data. J. Wildl. Mgmt. 31(3):533-538.

Table 1. Dusky Canada Goose Nesting Study.

Year	No. Nests	Hatched No.	Hatched %	Abandoned No.	Abandoned %	Flooded No.	Flooded %	Destroyed No.	Destroyed %
1959	222	198	89.2	7	3.2	14	6.3	3	1.3
1964	102	84	82.4	8	7.8	0	0.0	10	9.8
1965	221	139	62.9	15	6.8	9	0.0	67	30.3
1966	100	97	97.0	3	3.0	0	0.0	0	0.0
1968	38	33	86.8	0	0.0	0	0.0	5	13.2
1970	186	164	88.2	6	3.2	0	0.0	16	8.6
1971	100	76	76.0	0	0.0	0	0.0	24	24.0

Year	Average Clutch	No. Nests
1959	5.6	194
1964	4.3	114
1965	5.8	140
1966	4.8	100
1968	5.1	75
1970	5.4	146*
1971	3.6	113*

* Total clutch size known

Table 3. Comparative Egg Sizes of Three Breeding Populations of Canada Geese in Alaska, 1970-1971.

	Average Length mm.	Width	Range Length	Range Width
Vancouver Canada Geese *Branta canadensis fulva* 14 eggs	82.7	59.5	78.3-87.6	58.3-61.6
Dusky Canada Goose *B. c. occidentalis* 296 eggs	81.7	55.8	75.5-90.0	51.1-60.8
Island Nesting Geese *B. c.* -- 23 eggs	77.7	55.1	77.9-83.8	53.7-56.5

Appendix I.

Cordova 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Percent Imm.	Total*	% of Bag
Pintail	1	3	9	12	84	31	22.8
Mallard	4	6	11	22	76	43	31.6
Widgeon	3	6	8	12	68	30	22.1
G-W Teal	1	1	2	6	80	14	10.3
Shoveler		2	1	5	75	8	5.9
Gadwall							
G. Scaup							
L. Scaup			1			1	0.7
B-W Teal				1		1	0.7
Goldeneye**						4	2.9
Canvasback	1		2	1		4	2.9
Subtotal	10	18	34	59			
Total	28		93			136	99.9
Unidentified Ducks						16	
Dusky Canada Geese	3	4	4	1	41	14	82.3
Lesser Canada Geese				2		2	11.8
Cackling Canada Geese							
W-F Geese						1	5.9
Snow Geese							
Subtotal	3	4	4	3			
Total	7		7			17	100.0
Unidentified Geese							

	1971	1970
Total Waterfowl	169	97
Total Hunters	51 = 66 man-days	40 = 42 man-days
Waterfowl/Hunter/Day	2.56	2.31
Number Crippled	30	13
% Crippling Loss***	15.1	11.8
No. Hunters under 16	1	1
% Hunters under 16	1.9	2.5

* Total may include birds of unknown sex and age.
** Not identified to species.
*** Obtained from hunter interviews, probably low.

WATERFOWL

SURVEY-INVENTORY PROGRESS REPORT - 1971

Game Management Unit 7 - Eastern Kenai Peninsula

Harvest and Hunting Pressure

Limited data were gathered this reporting period from the Twentymile River area. This data is attached as Appendix I.

Composition and Productivity

On June 25, 1971 a survey was flown of Placer River and Twentymile River. A total of 30 ducks were seen.

Management Summary and Conclusions

It is concluded that the marsh receives little use by waterfowl, except possibly during the peak of migration. Future land use practices could be conducted accordingly.

Recommendations

No changes in season or bag limits are recommended.

Submitted by: Phillip D. Havens, Game Biologist II

Appendix I.

Twentymile River 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Percent Imm.	Total*	% of Bag
Pintail		2	4		67	6	50.0
Mallard				1		1	8.3
Widgeon							
G-W Teal	2					5	41.7
Shoveller							
Gadwall							
G. Scaup							
L. Scaup							
Subtotal	2	2	4	1			
Total	4		5			12	100.0
Unidentified Ducks							
Dusky Canada Geese							
Lesser Canada Geese							
Cackling Canada Geese							
W-F Geese	1					1	100.0
Snow Geese							
Subtotal	1	0	0	0			
Total	1		0			1	100.0
Unidentified Geese							

Total Waterfowl	13
Total Hunters	10 = 10 man-days
Waterfowl/Hunter/Day	1.30
Number Crippled	1
% Crippling Loss**	7.7
No. Hunters under 16	1
% Hunters under 16	14.2

* Total may include birds of unknown sex and age.
** Obtained from hunter interviews - probably low.

WATERFOWL

SURVEY-INVENTORY PROGRESS REPORT - 1971

Game Management Unit 8 - Kodiak and Adjacent Islands

Harvest and Hunting Pressure

Limited bag check data were gathered and are presented in Appendix I.

Composition and Productivity

Survey and inventory flights are scheduled to begin January, 1972 and will be reported on during that report period.

Management Summary and Conclusions

Until such time as inventory work is completed, conclusions on land status and protective measures for waterfowl habitat cannot be made.

Recommendations

No changes in seasons or bag limits are recommended.

Submitted by: Phillip D. Havens, Game Biologist II

Appendix I.

Kodiak 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Percent Imm.	Total*	% of Bag
Pintail	1	3	0	0		4	4.2
Mallard	0	2	0	4	67	6	6.3
Widgeon	6	0	20	15	85	41	43.1
G-W Teal	2	9	3	4	39	18	18.9
Shoveller	1	0	1	1		3	3.1
Gadwall	3	1	1	3	50	8	8.4
G. Scaup	0	0	0	0		0	0.0
L. Scaup	0	0	0	0		0	0.0
Bufflehead	3	5	1	4	38	14	14.7
C. Merganser	1	0	0	0		1	1.2
Subtotal	17	20	26	31			
Total	37		57			95	99.9
Unidentified Ducks						10	
Dusky Canada Geese							
Lesser Canada Geese							
Cackling Canada Geese							
W-F Geese							
Snow Geese							
Emperor Geese	3	2	0	0		5	100.0
Subtotal	3	2	0	0			
Total	5		0			5	100.0
Unidentified Geese							

Total Waterfowl	110
Total Hunters	65 = 65 man-days
Waterfowl/Hunter/Day	1.69
Number Crippled	14
% Crippling Loss**	11.2
No. Hunters under 16	4
% Hunters under 16	6.1

* Total may include birds of unknown sex and age.
** Obtained from hunter interviews, probably low.

WATERFOWL

SURVEY-INVENTORY PROGRESS REPORT - 1971

Game Management Unit 9 - Alaska Peninsula

Harvest and Hunting Pressure

Limited data were collected by Department personnel this reporting period. The data collected were from random bag checks throughout Unit 9 and are presented as Appendix I.

In addition, U. S. Air Force personnel from Cold Bay provided the data in Appendix II. Accuracy or completeness of this information cannot be determined.

Contact with Kodiak-based charter operators revealed one trip to Pilot Point made by five hunters. Commercial carriers from King Salmon provided services which accounted for 43 man days of hunting at Pilot Point. At least one charter flight was made in October from Anchorage with about 75 hunters who hunted 2 1/2 days.

Composition and Productivity

One survey and inventory flight of known waterfowl concentration areas was conducted this reporting period. Data obtained are found as Appendices III - VIII.

Due to spring ice conditions on tundra ponds in the King Salmon area, whistling swans (Olor columbianus) were concentrated on the Naknek River. On April 25 game biologist James Faro estimated in excess of 5,000 swans and 4,000 white-fronted geese on the river between King Salmon and Naknek Lake. It is obvious that this open water plays an important part in the life cycle of these birds in those years when migration precedes break-up.

A cormorant rookery located on Cape Seniavin, which lies between Port Heiden and Port Moller, was surveyed on June 8, 1971. The survey was conducted at low tides by walking the beach below the cliffs. A total of 1120 pelagic (Phalacrocorax pelagicus) and red-faced (P. urile) cormorants were counted plus an estimated 15 times as many black-legged kittiwakes (Rissa tridactyla). In addition, one active bald eagle (Haliaeetus leucocephalus) nest was located. Additional observations are needed to determine the species' composition of the cormorants.

It is felt that these pelagic feeding birds will be a useful index to the quality of the offshore environment of Bristol Bay. It is anticipated that if oil development takes place, background information of this type will be useful as an index to offshore oil pollution and its effects on pelagic bird life.

Management Summary and Conclusions

Data gathered on coastal marshes of Bristol Bay have been submitted to the Habitat Section along with recommendations for placing certain marshes in a special land use category. It is doubtful that any action will be taken until native federal and state land problems have been resolved.

Recommendations

No changes in seasons or bag limits are recommended.

Submitted by: Phillip D. Havens, Game Biologist II

Appendix I.

Unit 9 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Percent Imm.	Total*	% of Bag
Pintail			2	10		12	29.3
Mallard	1	3	5	7	75	16	39.0
Widgeon			1	1		2	4.9
G-W Teal			2	4		6	14.6
Shoveller			2	2		4	9.8
Gadwall			1			1	2.4
G. Scaup							
L. Scaup							
Subtotal	1	3	13	24			
Total	4		37			41	100.0
Unidentified Ducks							
Dusky Canada Geese							
Lesser Canada Geese							
Cackling Canada Geese			1	2		3	60.0
W-F Geese							
Snow Geese							
Emperor Geese	1			1		2	40.0
Subtotal	1	0	1	3			
Total	1		4			5	100.0
Unidentified Geese							

Total Waterfowl	46
Total Hunters	16 = 16 man-days
Waterfowl/Hunter/Day	2.87
Number Crippled	10
% Crippling Loss*	17.8
No. Hunters under 16	Not Known
% Hunters under 16	Not Known

* Obtained from hunter interviews - probably low.

Appendix II.

Izembeck Bay 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Total*	% of Bag
Pintail					22	26.2
Mallard					21	25.0
Widgeon					1	1.2
G-W Teal					23	27.4
Shoveler						
Gadwall					7	8.3
G. Scaup					7	8.3
L. Scaup						
Steller Eider					3	3.6
Subtotal						
Total					84	100.0
Unidentified Ducks						
Dusky Canada Geese						
Lesser Canada Geese					202	24.4
Cackling Canada Geese						
W-F Geese						
Snow Geese						
Emperor Geese					435	52.7
Black Brant					189	22.9
Subtotal						
Total					826	100.0
Unidentified Geese						

	1971	1970
Total Waterfowl	910	345
Total Hunters	348 = 348 man-days	99
Waterfowl/Hunter/Day	2.61	3.44
Number Crippled	111	65
% Crippling Loss**	10.9	15.9
No. Hunters under 16	Unknown	Unknown
% Hunters under 16	Unknown	Unknown

* No age or sex data available.
** Obtained from hunter interviews - probably low.

Appendix III.

Waterfowl Survey Data, Unit 9, Pilot Point

Species	September 15, 1971*	October 4, 1971**
Dabblers	2,500	2,471
Canada Geese	650	9,095
Snow Geese	50	7,674
Emperor Geese	200	60
Whistling Swan	8	
Total Waterfowl	3,408	19,300

* Estimates by: J. Faro
** Estimates by: D. Timm

Appendix IV.

Waterfowl Survey Data, Unit 9, Cinder River

Species	September 14, 1971*	October 4, 1971**
Dabbler	1,200	11,503
Diver	100	915
Canada Geese	60	6,891
Snow Geese	6	14,020
Emperor Geese	2,050	4,984
Whistling Swan	82	
Total Waterfowl	3,498	38,313

* Estimates by: J. Faro
** Estimates by: D. Timm

Appendix V.

Waterfowl Survey Data, Unit 9, Port Heiden

Species	September 14, 1971*	October 4, 1971
Dabbler	2,600	22,175
Diver	400	1,550
Canada Geese	555	9,640
Emperor Geese	2,200	17,525
Snow Geese	0	875
Whistling Swan	7	
Total Waterfowl	5,762	51,765

* Does not include islands in center of bay.

Estimates by: J. Faro and D. Timm

Appendix VI.

Waterfowl Survey Data, Unit 8, Ilnik Lagoon

Species	September 14, 1971*	October 4, 1971**
Dabbler	2,625	9,205
Diver	275	10,055
Canada Geese	0	812
Emperor Geese	5,000	19,740
Whistling Swan	6	
Total Waterfowl	7,906	39,812

* Estimates by: J. Faro
** Estimates by: D. Timm

Appendix VII.

Waterfowl Survey Data, Unit 9, Port Moller

Species	September 14, 1971*	October 4, 1971**
Dabbler	2,250	13,750
Diver	1,750	400,000
Canada Geese	30	5,505
Emperor Geese	2,600	25,400
Total Waterfowl	6,630	444,655

* Estimates by: J. Faro, area covered includes only Nelson Lagoon
** Estimates by: D. Timm

October 4

The offshore bay area was surveyed as well as intertidal areas. Past surveys have not covered offshore areas, thus the reason for an estimated 400,000 sea ducks.

Appendix VIII.

Waterfowl Survey Data, Unit 9, Egegik

Species	October 4, 1971
Dabbler	2,114
Diver	325
Emperor Geese	2,031
White-fronted Geese	8
Total Waterfowl	4,478

Estimates by: D. Timm

WATERFOWL

SURVEY-INVENTORY PROGRESS REPORT - 1971

Game Management Unit 10 - Aleutian Islands

Harvest and Hunting Pressure

No information was gathered this report period.

Composition and Productivity

Biologists J. Faro and D. Timm surveyed a portion of the Unimak Island coastline. Their data is appended.

A brief trip to Amchitka Island was made during the middle of November. Observations included Aleutian teal, mallards, scaup, numerous harlequins in the surf and very few emperor geese. Emperors probably do not arrive that far out the Aleutian Chain until later in the winter.

Management Summary and Conclusions

As time and money permit, more detailed surveys will be conducted in Unit 10. However, as most of the area is within the Federal Refuge System, it does not have a high priority.

Recommendations

No changes in seasons or bag limits are recommended.

Submitted by: Phillip D. Havens, Game Biologist II

Appendix I.

Waterfowl Survey Data, Unit 10, October 5, 1971, Unimak Islands

Species	Area	
	Urilia Bay	Swanson Lagoon
Dabbler	7,700	1,800
Merganser	450	0
Canada Geese	8,600	6,500
Emperor Geese	250	1,065
Total Waterfowl	17,000	9,365

These two bays represent the only significant amount of waterfowl habitat on the island. The shoreline on the north side of the island is suitable for emperor goose loafing areas, though.

WATERFOWL

SURVEY-INVENTORY PROGRESS REPORT - 1971

Game Management Unit 14 - Upper Cook Inlet

Harvest and Hunting Pressure

Bag checks were conducted throughout the season by Alaska Department of Fish and Game and U. S. Fish and Wildlife Service personnel.

A summary of this information is appended (Appendix I - IV). Information in Appendix IV, Eagle River, was supplied by U. S. Army, Fort Richardson and accuracy and completeness of these data is very questionable. For example, it is interesting to compare the 3.9% reported crippling loss with much greater loss estimates from other areas. Also the incidence of adult male ducks in the harvest indicates these data are erroneous.

Composition and Productivity

Survey flights over the Susitna Flats were conducted several times. This information is contained in Appendix V.

Management Summary and Conclusions

The Department of Fish and Game, the State of Alaska Department of Natural Resources and the Matanuska-Susitna Borough have jointly agreed to treat the Susitna Flats as a resource management area with wildlife being considered the major resource.

Much time was spent this report period working toward the development of a master plan for the area. It is anticipated that a plan acceptable to the joint participants will be completed during the next report period.

The Potter Marsh near Anchorage was, by Legislative action, declared a game refuge and management was given to the Department of Fish and Game. Presently work is being done in cooperation with the Greater Anchorage Area Borough to decide upon management objectives and use guidelines.

Recommendations

No changes in seasons and bag limits are recommended.

Submitted by: Phillip D. Havens, Game Biologist II

Appendix I.

Susitna River 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Percent Imm.	Total*	% of Bag
Pintail	9	8	42	48	84	107	32.6
Mallard	2	6	34	28	89	70	21.3
Widgeon	10	2	44	33	87	89	27.1
G-W Teal	0	3	20	14	92	37	11.3
Shoveller	0	1	8	4	92	13	4.0
Gadwall	0	0	0	0		0	0.0
G. Scaup	1	0	1	1		3	0.9
L. Scaup	0	0	0	0		0	0.0
B. Goldeneye				2		2	0.6
C. Goldeneye				2		2	0.6
W. W. Scoter				4		4	1.2
Bufflehead				1		1	0.3
Subtotal	22	20	149	137			
Total	42		286			328	99.9
Unidentified Ducks						17	
Dusky Canada Geese							
Lesser Canada Geese	2		2	1	60	11	25.0
Cackling Canada Geese							
W-F Geese	2		1	3	67	33	75.0
Snow Geese							
Subtotal	4	0	3	4			
Total	4		7			44	
Unidentified Geese							

	1971	1970
Total Waterfowl	389	376
Total Hunters	98 = 166 man-days	138 = 207 man-days
Waterfowl/Hunter/Day	2.34	1.82
Number Crippled	47	43
% Crippling Loss**	10.8	10.3
No. Hunters under 16	10	2
% Hunters under 16	10.2	1.4

* Total may include birds of unknown sex and age.
** Obtained from hunter interviews - probably low.

Appendix II.

Palmer Hay Flats 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Percent Imm.	Total*	% of Bag
Pintail	3	1	2	6	67	12	21.8
Mallard		1	7	10	94	18	32.7
Widgeon	2		4	10	88	16	29.1
G-W Teal	1	3	1		20	5	9.1
Shoveller	1		2	1	67	4	7.3
Gadwall							
G. Scaup							
L. Scaup							
Subtotal	7	5	16	27			
Total	12		43			55	100.0
Unidentified Ducks						50	
Dusky Canada Geese							
Lesser Canada Geese							
Cackling Canada Geese							
W-F Geese							
Snow Geese							
Subtotal							
Total							
Unidentified Geese							

	1971	1970
Total Waterfowl	105	384
Total Hunters	60 = 60 man-days	146 = 146 man-days
Waterfowl/Hunter/Day	1.75	2.64
Number Crippled	34	66
% Crippling Loss*	24.5	14.7
No. Hunters under 16	5	1
% Hunters under 16	12.0	0.68

* Obtained from hunter interviews - probably low.

Appendix III.

Upper Cook Inlet 1971**

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Total*	% of Bag
Pintail					30	49.2
Mallard					7	11.5
Widgeon					8	13.1
G-W Teal					16	26.2
Shoveller						
Gadwall						
G. Scaup						
L. Scaup						
Subtotal						
Total					61	100.0
Unidentified Ducks					8	
Dusky Canada Geese						
Lesser Canada Geese						
Cackling Canada Geese						
W-F Geese						
Snow Geese						
Subtotal						
Total						
Unidentified Geese						

	1971	1970
Total Waterfowl	69	32
Total Hunters	61 = 61 man-days	45 = 45 man-days
Waterfowl/Hunter/Day	1.11	0.71
Number Crippled	6	4
% Crippling Loss***	8.0	11.1
No. Hunters under 16	1	1
% Hunters under 16	1.4	2.2

* Total includes birds of unknown sex and age.
** Includes Campbell, Potter, Airport and Rabbit Creek.
*** Obtained from hunter interviews - probably low.

Appendix IV.

Eagle River 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Total*	% of Bag
Pintail	3		8	2	16	13.2
Mallard	12	1	14	3	35	28.9
Widgeon	14		20	4	51	42.1
G-W Teal	5		2		9	7.4
Shoveller			2	2	7	5.8
Gadwall	1	1		1	3	2.5
G. Scaup						
L. Scaup						
Subtotal	35	2	46	12		
Total	37		58		121	99.9
Unidentified Ducks					23	
Dusky Canada Geese						
Lesser Canada Geese		2			2	100.0
Cackling Canada Geese						
W-F Geese						
Snow Geese						
Subtotal	0	2				
Total	2		0		2	100.0
Unidentified Geese					1	

Total Waterfowl	147
Total Hunters	48 = 48 man-days
Waterfowl/Hunter/Day	3.06
Number Crippled	6
% Crippling Loss	3.9
No. Hunters under 16	5
% Hunters under 16	10.4

* Total may include birds of unknown sex and age.

Appendix V.

Waterfowl Survey Data, Unit 14, Susitna River

Species	May 6, 1971	Aug. 27, 1971	Sept. 17, 1971	Oct. 5, 1971	Oct. 27, 1971
Dabbler	35,000	8,650	6,750	1,375	2,425
Canada Geese	17,500	1,200	140	270	695
Snow Geese	17,500				
Swan	*	*	26	1,288	1,032
Total Waterfowl	70,000	9,850	6,916	2,933	4,152

* Not surveyed

WATERFOWL

SURVEY-INVENTORY PROGRESS REPORT - 1971

Game Management Unit 15 - Kenai Peninsula

Harvest and Hunting Pressure

Bag check data were gathered from the Chickaloon Flats and are submitted as Appendix I. No other harvest information from Unit 15 was gathered.

Composition and Productivity

No studies were undertaken this reporting period.

Management Summary and Conclusions

The Chickaloon Flats continued to be a major staging area for Lesser Canada geese prior to fall migration. Its popularity as a hunting area continues to grow. An air taxi operator from Anchorage began promoting the Chickaloon as an ideal place to hunt and took many hunters to the Flats this year. Survey results of the Chickaloon are found in Appendix II.

Winter and spring surveys of Kachemak Bay and its subsidiary bays were flown to determine waterfowl distribution. The bays appeared to provide offshore habitat only, with the exception of China Poot and Fox River Flats. Much ice was encountered and the number of waterfowl seen was less than expected. It appears that sea duck use is the dominant use of this area with the above exceptions. Summaries of the survey are found as Appendices III - XI.

Recommendations

No changes in seasons and bag limits are recommended.

Submitted by: Phillip D. Havens, Game Biologist II

Appendix I.

Chickaloon 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Percent Imm.	Total*	% of Bag
Pintail	2	4	6	7	68	25	30.1
Mallard	2	5	11	10	75	28	33.7
Widgeon			4	3		7	8.4
G-W Teal	1		8	5	93	15	18.1
Shoveller				1		1	1.2
Gadwall				5		5	6.0
G. Scaup							
L. Scaup							
Canvasback			1	1		2	2.4
Subtotal	5	9	30	32			
Total	14		62			83	99.9
Unidentified Ducks							
Dusky Canada Geese							
Lesser Canada Geese	10	7	12	4	48	38	79.0
Cackling Canada Geese							
W-F Geese	5			2	29	10	21.0
Snow Geese							
Subtotal	15	7	12	6			
Total	22		18			48	100.0
Unidentified Geese							

	1971	1970
Total Waterfowl	131	188
Total Hunters	35 = 47 man-days	26 = 81 man-days
Waterfowl/Hunter/Day	2.79	2.30
Number Crippled	21	31
% Crippling Loss**	13.8	14.1
No. Hunters under 16	4	0
% Hunters under 16	11.4	0

* Total may include birds of unknown sex and age.
** Obtained from hunter interviews - probably low.

Appendix II.

Waterfowl Survey Data, Unit 15, Chickaloon Flats

Species	June 25, 1971	Aug. 27, 1971	Sept. 14, 1971	Oct. 5, 1971	Oct. 27, 1971
Dabbler	214	3,035	4,635	*	840
Canada Geese	0	80	315	21,000	525
Snow Geese	0	0	0	100	0
Swans	0	0	0	0	2
Cranes	6	0	0	0	0
Total Waterfowl	220	3,115	4,950	21,100	1,367

* Not surveyed.

Appendix III.

Waterfowl Survey Data, Unit 15, Fox River

Species	Feb. 9, 1971	May 12, 1971
Mallard	545	230
G-W Teal	0	15
Scaup*	120	50
Old Squaw	250	0
Scoter*	0	1,270
Bufflehead	0	50
Canada Geese	0	35
Total Waterfowl	915	1,650

* Not identified to species.

Appendix IV.

Waterfowl Survey Data, Unit 15, Aurora Lagoon

Species	Feb. 9, 1971	May 12, 1971
Old Squaw	50	0
Total Waterfowl	50	0

Appendix V.

Waterfowl Survey Data, Unit 15, Halibut Cove

Species	Feb. 9, 1971	May 12, 1971
Mallard	0	20
Old Squaw	115	0
Scoter*	70	230
Total Waterfowl	185	250

* Not identified to species.

Appendix VI.

Waterfowl Survey Data, Unit 15, Sadie Cove

Species	Feb. 9, 1971	May 12, 1971
Mallard	6	0
Old Squaw	50	0
Scoter*	0	5
Total Waterfowl	56	5

* Not identified to species.

Appendix VII.

Waterfowl Survey Data, Unit 15, Tutka Bay

Species	February 9, 1971
Old Squaw	125
Scoter*	40
Total Waterfowl	165

* Not identified to species.

Appendix VIII.

Waterfowl Survey Data, Unit 15, Jackalof Bay

Species	February 9, 1971
Mallard	75
Old Squaw	35
Scoter*	50
Total Waterfowl	160

* Not identified to species.

Appendix IX.

Waterfowl Survey Data, Unit 15, China Poot Bay

Species	Feb. 9, 1971	May 12, 1971
Mallard	10	0
Old Squaw	100	0
Total Waterfowl	110	0

Appendix X.

Waterfowl Survey Data, Unit 15, Seldovia Bay

Species	Feb. 9, 1971	May 12, 1971
Mallard	150	38
Old Squaw	30	0
Goldeneye*	10	0
Scoter*	5	90
Total Waterfowl	195	128

* Not identified to species.

Appendix XI.

Waterfowl Survey Data, Unit 15, Port Graham

Species	Feb. 9, 1971	May 12, 1971
Mallard	102	10
Old Squaw	6	0
Goldeneye*	30	0
Scoter*	70	1,000+
Black Brant	0	15
Total Waterfowl	208	1,025+

* Not identified to species.

WATERFOWL

SURVEY-INVENTORY PROGRESS REPORT - 1971

Game Management Unit 16 - West Side of Cook Inlet

Harvest and Hunting Pressure

Bag check data from Trading Bay was gathered and is appended (Appendix I).

Composition and Productivity

One survey was conducted of Trading and Redoubt Bay and the results are listed as Appendix II - III.

Management Summary and Conclusions

Redoubt Bay receives very little hunting pressure; charters from Kenai are about the only use. Trading Bay receives use from both Kenai and Anchorage hunters. An effort to evaluate hunting pressure on these two marshes should be attempted.

Recommendations

No changes in seasons or bag limits are recommended.

Submitted by: Phillip D. Havens, Game Biologist II

Appendix I.

Trading Bay 1971

BAG CHECK RESULTS

Species	Adult Male	Adult Female	Immature Male	Immature Female	Percent Imm.	Total	% of Bag
Pintail	1	1	10	9	90	21	31.8
Mallard			1	1		2	3.0
Widgeon	4		4	11	79	19	28.8
G-W Teal		1	5	6	92	12	18.2
Shoveller			1	3		4	6.1
Gadwall			2	2		4	6.1
G. Scaup							
L. Scaup			1	2		3	4.5
W. W. Scoter				1		1	1.5
Subtotal	5	2	24	35			
Total	7		59			66	100.0
Unidentified Ducks						2	
Dusky Canada Geese							
Lesser Canada Geese							
Cackling Canada Geese							
W-F Geese							
Snow Geese							
Subtotal							
Total							
Unidentified Geese							

	1971	1970
Total Waterfowl	68	160
Total Hunters	12 = 33 man-days	35 = 71 man-days
Waterfowl/Hunter/Day	2.06	2.25
Number Crippled	16	16
% Crippling Loss*	19.0	9.0
No. Hunters under 16	0	4
% Hunters under 16	0	11.4

* Obtained from hunter interviews - probably low.

Appendix II.

Waterfowl Survey Data, Unit 16, Trading Bay

Species	Oct. 5, 1971
Dabbler	1,585
Canada Geese	1,250
Total Waterfowl	2,835

Appendix III.

Waterfowl Survey Data, Unit 16, Redoubt Bay

Species	Oct. 5, 1971
Dabbler	1,375
Canada Geese	2,150
Swan	6
Total Waterfowl	3,531

WATERFOWL

SURVEY-INVENTORY PROGRESS REPORT - 1971

Game Management Unit 17 - Bristol Bay

Harvest and Hunting Pressure

No data were gathered this report period.

Composition and Productivity

No data were gathered this report period.

Management Summary and Conclusions

Two surveys were conducted in limited areas and the results are found as Appendix I - II. It appears that most of the coastal areas of Unit 17 are used primarily as migratory resting areas. However, a breeding or production survey next field season will give a better picture of waterfowl use.

Recommendations

No changes in season or bag limits are recommended.

Submitted by: Phillip D. Havens, Game Biologist II

Appendix I.

Waterfowl Survey Data, Unit 17, Nanvak Bay

Species	June 7, 1971	September 8, 1971*
Eider**	20	0
Canada Geese	0	1,000
W-F Geese	100	0
Emperor Geese	0	1,000
Black Brant	80	0
Total Waterfowl	200	2,000

* Estimates by J. Faro
** Not identified to species.

Appendix II.

Waterfowl Survey Data, Unit 17, Osviak Bay

Species	June 7, 1971	September 9, 1971*
Scoter**	20	0
Canada Geese	0	50
Emperor Geese	0	450
Sandhill Cranes	4	0
Total Waterfowl	24	500

* Estimates by J. Faro
** Not identified to species.