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1 July 1998 - 30 June 1999

DALL SHEEP

Mary V. Hicks, Editor



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STATE OF ALASKA
Tony Knowles, Governor

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Frank Rue, Commissioner

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Project Title: Southcentral Alaska Dall Sheep Management

Project Location: Units 7, 11, 13, 14, and 15
Kenai, Talkeetna, Chugach, and South Wrangell Mountains

Sheep populations in the region are managed by mountain range or special hunt area. Mountain ranges frequently divide Game Management Units; therefore, unit numbers may be repeated in sections of the text.

Kenai Mountains Units 7 and 15 (8390 mi²)

Project Objectives and Activities: Maintain a population of sheep that will sustain an annual harvest of 25 rams.

- Conduct midsummer aerial surveys to assess population size, sex and age composition.
- Monitor harvest with assistance from Fish and Wildlife Protection and U.S. Fish and Wildlife Service.

Work Accomplished During the Project Segment Period: Two count areas in Units 7 and 15 (832 and 856) were surveyed during summer of 1998, resulting in 459 classified sheep. Composition was 89 rams, 69 lambs, and 301 ewes and unidentified sheep. Lambs and rams comprised 15 and 19%, respectively, of the sheep observed.

Interim harvest statistics revealed 186 hunters harvested 28 rams in Units 7 and 15 during 1998. Hunter success rate was 15 percent. Mean horn length from reported harvest ($n = 24$) was 34.7 inches and ranged between 31 to 37. Average age was 8.5 years, with a range of 7 to 11. The mean base circumference measurement was 12.8 with a range between 11.9 and 14.0 inches. Twenty-seven (96%) rams were harvested by Alaska residents and 1(4%) by a non-resident.

Twenty permits for ewes only were issued again in 1998 for the Round Mountain area and 15 permit holders reported hunting. Eleven (73%) of these hunters were successful. All successful hunters were Alaska residents and used a highway vehicle to access the hunt area.

Progress Meeting Project Objectives: Harvests in 1998 met the management objective of maintaining a population of sheep in Kenai Mountains that could sustain an annual harvest of 25 rams. Over the past 10 years, Kenai Peninsula has had relatively normal winters until the winters of 1997/98 and 1998/99, allowing sheep numbers to remain stable to slightly increasing. Heavy snow and cold spring weather during these winters may have reduced survival in portions of the sheep range of Kenai Mountains. The current sheep population estimate is between 1500 and 1775.

Interim harvest data indicates a slight increase (5%) in hunting effort and 11 percent in harvest for 1998. Favorable weather during the first part of the fall season may account for most of the increase in effort. Hunter success, however, has remained low. In general, the Kenai Mountains

supports a moderately high number of hunters, resulting in the harvest of most legal rams each season.

Limited harvest of ewe sheep in the Round Mountain area resulted in the harvest of 11 ewes. This population declined from 151 sheep in 1991 to 106 counted in 1996. Harvesting ewes should continue until the population density is reduced to 3 sheep per square mile (80 to 90 countable sheep). Thereafter, harvesting of ewes should be implemented only to stabilize the population at this level to evaluate the response in lamb survival. In 1998, the Round Mountain portion of count area 850 was not counted. Reports from hunters suggest the area still supports about 90 to 110 sheep.

Surveys conducted in 1998 did not cover a large enough portion of the sheep range in Kenai Mountains to make meaningful conclusions relating to area wide population trends. The one trend area (856) counted did show a significant reduction, 37 percent, in number of lambs observed and an 18 percent reduction in ewes when compared to 1997. The number of legal rams observed increased from 12 to 16 and the total number of rams counted remained about the same at 88 in 1997 and 86 in 1998. Since counts in this trend area have steadily increased since 1981, numbers may now be falling due to limited range. This trend area will be counted in 1999 to verify these concerns. No changes are recommended at this time.

Talkeetna Mountains Units 13A, 13E, 14A, and 14B (16,380 mi²)

Project Objectives and Activities: Maintain a population of sheep that will sustain an annual harvest of 75 rams.

- Identify critical sheep habitat (e.g., mineral licks and lambing areas).
- Monitor the harvest through hunter contacts and harvest reports.
- Conduct composition surveys.

Work Accomplished During the Project Segment Period: No work was directed specifically at identifying and documenting critical sheep habitat in the Talkeetna Mountains.

For this area the sheep harvest was monitored from harvest reports. Hunters were required to return their harvest reports within 15 days after the close of the season, or within 15 days of taking an animal. Days hunted, method of take, date of kill, location of kill and transportation used were all noted in the harvest report. The reported harvest from the Talkeetna Mountains was 78 sheep, taken by 419 hunters. The number of hunters has declined in recent years to a level similar to 1993, after a sharp increase (to 516 hunters) in 1994. Harvest has also declined recently, from a high of 106 sheep taken in 1995. The decline in hunter numbers is likely due to changes in hunting regulations for Nelchina caribou, and the decline in harvest probably reflects both high wolf densities and winter weather conditions when legal rams were first recruited as lambs and yearlings.

No sex and age composition surveys were conducted.

Progress Meeting Project Objectives: Harvest objectives for the Talkeetna Mountains were met. The area is popular with sheep hunters, but because of funding levels population surveys are conducted only periodically. Funds should be allocated to conduct surveys every 2-3 years, and managers from Units 13 and 14 should strive to coordinate survey schedules.

Chugach Mountains Units 11, 13D, 14A, and 14C (22,990 mi²)

Project Objectives and Activities: Maintain a minimum population of sheep that will sustain an annual harvest of 120 rams.

Identify critical sheep habitat (e.g., mineral licks and lambing areas). Monitor the harvest through hunter contacts, harvest or permit reports, and aging/measuring sheep horns. Conduct composition surveys.

Work Accomplished During the Project Segment Period: Sheep were counted by aerial survey in Units 14A and 14C.

In Unit 14A, 907 sheep were counted by aerial survey in late July 1998. The population included 28 full-curl or larger rams, 190 1/2 to full-curl rams, 166 lambs, 519 ewes and unclassified young rams, and 4 unclassified sheep. Lambs comprised 18% of the total count.

In Unit 14C, 2,403 sheep were counted by aerial survey in late July 1998. The population included 165 full-curl or larger rams, 562 1/2 to full-curl rams, 335 lambs, 1,336 ewes and unclassified young rams, and 5 unclassified sheep. Lambs comprised 14% of the total count.

Harvest reports were analyzed for all units. All Unit 14C sheep hunters were required to bring their permit and horns to an ADF&G office within 10 days of taking a sheep. Horns were aged by horn annuli, and length and base measurements were recorded.

The total harvest for the Chugach Mountains was 156 sheep: 114 full-curl or larger rams, 5 young rams (less than full-curl), 36 ewes, and 1 unknown ram (25% hunter success). In Unit 13D, 226 hunters shot 60 full-curl rams (27% hunter success). In Unit 14A, 128 hunters shot 22 full-curl rams (17% hunter success).

All sheep hunting in Unit 14C is by drawing permit. In 1998 hunters applied for 3 types of drawing permits: full-curl ram or ewe, ewe-only, or any sheep (archery-only). Three hundred eighty-five drawing permits were issued (180 full-curl ram/ewe, 100 ewe-only, and 105 any-sheep [archery-only]), 277 hunters went afield, and 74 hunters shot a sheep (27% hunter success). Of these, 32 were full-curl or larger rams (including rams less than full curl, but with both horns broomed or at least 8 years old), 5 were young rams (less than full curl), 1 was a ram of unknown size (not recovered), and 36 were ewes. The success rate for the archery-only permits (including 80 issued during a late season [1-10 October] hunt) was 12%, while hunters in the remainder of the hunts achieved a 32% success rate.

Progress Meeting Project Objectives: The population and harvest objectives were met. The full curl and ewe-only permits in Unit 14C focused the harvest on large rams and ewes, while protecting young rams, a significant improvement over the previous "any sheep" regulation. As the number of full-curl rams increases, the number harvested should also increase.

South Wrangell Mountains Unit 11(12,780 mi²)

Project Objectives and Activities: To allow the population to fluctuate according to available habitat, climate conditions, and predation. To allow harvest of mature rams as they are available in the population; to allow very limited harvest of other sex and age classes on a sustained-yield basis.

- Identify critical sheep habitat (e.g., mineral licks and lambing areas).
- Monitor the harvest through hunter contacts and harvest reports.

Work Accomplished During the Project Segment Period: Surveys were flown in count areas 11, 12, and 22 during 1998. Count area 11, located between the Dadina River and Long Glacier, has been surveyed more frequently than all other count areas in Unit 11. Only 184 sheep were seen in this area during the 1998 survey compared to 297 in 1997 and 559 back in 1986. The trend in CA 11 is a long term decline in abundance of sheep. The number of ewes observed in the survey was 45% lower than the number of ewes seen in 1997. The adjacent CA 12 also exhibited a decline in overall sheep abundance from its last survey in 1996. Observed ewe numbers declined 40% from 346 to 242 and overall sheep numbers were down 25% from 602 sheep to 449 in CA 12 during the 1998 survey. Count area 22, the Hawkins Glacier area, had not been surveyed since 1994, but was counted in 1998. This population has not declined and may have increased slightly. A total of 305 sheep were observed in 1998 compared to 266 in 1994. Survey conditions were reported as good for all 3 areas surveyed in 1998.

Preliminary data show hunters killed 120 sheep in Unit 11 during the 1998 hunting season. This harvest includes 80 mature rams taken by sport and subsistence hunters as well as 24 sub-legal rams and 16 ewes taken by subsistence hunters. Total harvest has remained between 110 and 143 sheep since 1994 and ewe and small ram harvests have remained stable and relatively low as well.

Progress Meeting Project Objectives: Sheep populations were high in Unit 11 throughout the early and mid-1980s. Sheep surveys in recent years indicate sheep numbers have declined in some portions of Unit 11 from previous population highs. In the early 1990's the count of ewes and lambs showed the largest decline, however there was also an overall decline in all sex and age categories. Those years of low lamb production/recruitment in the early 1990's are likely now resulting in reduced ram harvests

During this reporting period, wolves were abundant in Unit 11 and wolf predation on sheep appears to be high. Wolf observations are often made at higher elevations where wolves could easily be hunting sheep. Observations of surplus killing of sheep by wolves were recorded during the winters of 1989 and 1992. Sheep hunters have also reported observing wolves in the high country as well as wolf scats containing sheep hair.

On average, hunting pressure has increased by almost 42% in the 1990s compared to the 1980's. From 1981-89 an average of 236 (range 204-259) people reported hunting sheep in Unit 11 compared to an average of 333 (range 291-388) for 1990-98. Success rates were 45% and 40%

for sheep hunters in 1996 and 1997 respectively. The subsistence take of small rams and ewes seems to vary from between 30 and 50 animals a year and reflects the subsistence demand at this time. The definition of a subsistence hunter in Unit 11 was broadened under state law during 1990 to include all state residents, whereas only local rural residents were considered subsistence sheep hunters in previous years. The current subsistence harvest of small rams is relatively low, dispersed throughout the unit and has little impact on ram numbers. The subsistence ewe harvest is also low but is of concern when the majority of the harvest occurs in concentrated areas as happened in 1995 when areas adjacent to the Chitina-McCarthy Road accounted for 47% (9) of the ewes taken. During the past 3 seasons the ewe harvest was more evenly distributed throughout the Unit. Ewe and small ram harvests at the present level are not considered a biological problem at this time and probably influence overall sheep abundance very little. Harvest objectives were met for Unit 11 and no changes in season dates or bag limits are recommended at this time for either the sport or subsistence hunt.

Segment Period Project Costs:

| | <u>Personnel</u> | <u>Operating</u> | <u>Total</u> |
|------------|------------------|------------------|--------------|
| Planned | 14.9 | 3.0 | 17.0 |
| Actual | 14.9 | 3.0 | 17.0 |
| Difference | 0.0 | 0.0 | 0.0 |

Submitted by:

Michael G. McDonald
Assistant Management Coordinator

Project Title: Interior Dall Sheep Population Management

Project Location: Portions of Unit 12 (10,000 mi²)
Mentasta, Nutzotin, and northern Wrangell Mountains

Objectives:

1. Provide the greatest level of sustainable annual opportunity to participate in hunting Dall sheep.
2. Provide the greatest sustainable annual harvest of Dall sheep.
3. Provide the opportunity to view and photograph Dall sheep under natural conditions.

Activities Planned:

1. Review and revise population management objectives.
2. Monitor the harvest through hunter contacts and harvest or permit reports (objectives 1 and 2).
3. Write the regulatory years 1995–1996 through 1998–1999 management report (all objectives).

Activities Accomplished:

1. Reviewed management objectives using input from advisory committees, guides, landowners, sportsman groups, and tourists; and found no changes were necessary to meet biological or public needs or to comply with the intensive management law (objectives 1-3).
2. Conducted aerial sex and age composition surveys within the Nabesna River and Jacksina Creek drainages during July 1998 (all objectives).
3. Monitored harvest and hunter distribution using aerial surveys, hunter contacts in the field, and harvest reports (objectives 1 and 2).
4. Completed regulatory years 1995–1996 through 1998–1999 sheep management report (all objectives).
5. Maintained an information source on where to go to view or photograph Dall sheep (objective 3).

Project Location: Portions of Units 12, 13, and 20 (1500 mi²)
Tok Management Area

Objectives:

1. Maintain a population capable of allowing hunters to be selective in harvesting 30–45 rams each year.
2. Maintain a mean horn length of 36–37 inches among harvested rams as well as a mean age of 8–9 years.
3. Maintain an average of 7–10% rams with 40-inch or greater horns in the harvest.
4. Prevent unacceptable increases in hunter concentration and maintain the existing aesthetically pleasing qualities associated with sheep hunting in the TMA.

Activities Planned:

1. Review and revise population management objectives.
2. Monitor the harvest through hunter contacts and harvest or permit reports (all objectives).
3. Write the regulatory years 1995–1996 through 1998–1999 management report (all objectives).

Activities Accomplished:

1. Administered the drawing permit hunt (all objectives).
2. Initiated public review of the project objectives using a written questionnaire, phone surveys and discussions with advisory committees, state and national sportsman groups. (Results of the survey will be available in September 1999.)
3. Monitored harvest and hunter distribution using aerial surveys, hunter contacts in the field, and harvest reports (all objectives).
4. Completed regulatory years 1995–1996 through 1998–1999 TMA sheep management report (all objectives).

Project Location: Units 9, 16, 17, 19 (4600 mi²)
Alaska Range west and south of Denali National Park and Preserve

Objectives:

1. Maintain a full-curl harvest strategy.
2. Determine the conditions hunters consider to be aesthetically pleasing.
3. Develop a questionnaire to determine what hunters find "aesthetically pleasing" and assess the level of hunter satisfaction and solicit ideas for future management strategies and regulatory changes.

Activities Planned:

1. Review and revise population management objectives.
2. Monitor the harvest through hunter contacts and harvest or permit reports (all objectives).
3. Write the regulatory years 1995–1996 through 1998–1999 management report (all objectives).

Activities Accomplished:

1. Revised population management objectives.
2. Conducted sheep surveys in a portion of the area during 31 July–1 August 1998 (objective 1).
3. Monitored harvest through hunter/guide contacts and harvest reports (all objectives).
4. Completed management reports for regulatory years 1995–1996 through 1998–1999 (all objectives).

Project Location: Portions of Units 13B, 20A, and 20D (1680 mi²)
Delta Controlled Use Area (DCUA)

Objectives:

1. Manage a population of approximately 1800 sheep to provide a mean annual harvest of 35 full-curl rams with a mean horn length of more than 36 inches and mean age exceeding 8 years.
2. Monitor Dall sheep harvest through hunter contacts and permit reports.
3. Conduct aerial and/or ground composition surveys of Dall sheep.
4. Mail a questionnaire to hunters and quantify their satisfaction with aesthetics of Dall sheep hunting in the DCUA.

Activities Planned:

1. Review and revise population management objectives.
2. Monitor the harvest through hunter contacts and harvest or permit reports (objective 2).
3. Write the regulatory years 1995–1996 through 1998–1999 management report (all objectives).
4. Conduct aerial surveys to estimate initial productivity and lamb survival (objectives 1 and 3).

Activities Accomplished:

1. Reviewed population objectives and contacted hunters via a mailed questionnaire to determine satisfaction with current management objectives (objective 2). (No revisions were recommended.)
2. Monitored harvest using permit hunt reports for hunts DS203 and DS204, and compiled harvest data (objective 2).
3. Wrote management report for regulatory years 1995–1996 through 1998–1999 (objectives 1, 2, 3, and 4).
4. Completed no aerial surveys because funding not available (objective 3).

Project Location: Unit 20A (6796 mi²)

North side of the Alaska Range east of the Nenana River, west of the Delta River, and south of the Tanana River

Objectives:

1. Provide the greatest sustainable annual opportunity to hunt Dall sheep.
2. Manage for a Dall sheep population of approximately 5000 sheep.
3. Maintain naturally regulated ewe and subadult ram segments of the population.

Activities Planned:

1. Review and revise population management objectives.
2. Monitor the harvest through hunter contacts and harvest or permit reports (all objectives).
3. Write the regulatory years 1995–1996 through 1998–1999 management report (all objectives).
4. Conduct aerial surveys to estimate initial productivity and lamb survival (all objectives).

Activities Accomplished:

1. Reviewed population management objectives.
2. Analyzed harvest and permit report information (all objectives).
3. Completed regulatory years 1995–1996 through 1998–1999 management report (all objectives).
4. Conducted aerial surveys to estimate initial productivity and lamb survival (all objectives).

Project Location: Portions of Units 20D and 20E (1000 mi²)
Tanana Hills

Objectives:

Monitor harvest through hunter contacts and harvest or permit reports.

Activities Planned:

1. Review and revise population management objectives.
2. Monitor the harvest through hunter contacts and harvest or permit reports.
3. Write the regulatory years 1995–1996 through 1998–1999 management report.
4. Conduct aerial surveys to estimate initial productivity and lamb survival.

Activities Accomplished:

1. Reviewed the management objective and found no biological or social justification for change.
2. Conducted no aerial surveys; next sex and age composition survey scheduled for summer 2001.
3. Monitored harvest and hunter distribution using aerial surveys, hunter contacts in the field, and harvest reports.
4. Completed regulatory years 1995–1996 through 1998–1999 sheep management report.

Project Location: Portions of Units 20B, 20F, and 25C (534 mi²)
White Mountains

Objective: Manage for the annual opportunity to harvest full-curl rams from a population of at least 250 Dall sheep.

Activities Planned:

1. Review and revise population management objectives.
2. Monitor the harvest through hunter contacts and harvest or permit reports.
3. Write the regulatory years 1995–1996 through 1998–1999 management report.
4. Conduct aerial surveys to estimate initial productivity and lamb survival.

Activities Accomplished:

1. Reviewed management objectives.
2. Monitored harvest through harvest reports.
3. Wrote the sheep management report for regulatory years 1995–1996 through 1998–1999.

Project Location: Unit 24, and portions of Units 23 and 26A (15,717 mi²)
Central Brooks Range west of Dalton Highway Corridor to Howard Pass,
including Gates of the Arctic National Park

Objectives:

1. Maintain an annual subsistence harvest of up to 50 sheep in the GAAR and a general harvest of full-curl rams in the Wild, Alatna, and John River drainages.
2. Maintain a naturally regulated sheep population in the Central Brooks Range.

Activities Planned:

1. Review and revise population management objectives.
2. Monitor the harvest through hunter contacts and harvest or permit reports (all objectives).
3. Write the regulatory years 1995–1996 through 1998–1999 management report (all objectives).

Activities Accomplished:

1. Monitored harvest through general harvest reporting (9 sheep) and subsistence hunter (9 sheep) contacts (all objectives). (Harvest did not exceed objective.)
2. Revised population management objectives.
3. Completed the management report for regulatory years 1995–1996 through 1998–1999 (all objectives).

Project Location: Units 24 (eastern portion), 25A, 26B, and 26C (49,600 mi²)
Eastern Brooks Range

Objectives:

1. In cooperation with USFWS, continue to monitor sheep population status using trend indicator areas.
2. Manage for a harvest of Dall sheep rams with full-curl or larger horns.
3. Monitor effects of the full-curl minimum size limit that took effect in fall 1993.

4. Work with ADF&G Subsistence Division and USFWS to manage subsistence sheep harvests.

Activities Planned:

1. Review and revise population management objectives.
2. Monitor the harvest through hunter contacts and harvest or permit reports (objectives 2, 3 and 4).
3. Write the regulatory years 1995–1996 through 1998–1999 management report (all objectives).

Activities Accomplished:

1. Evaluated management objectives, and outlined possible future regulation changes (objectives 2–4).
2. Monitored and analyzed harvest (objectives 2–4).
3. Completed management report for regulatory years 1995–1996 through 1998–1999 (all objectives).

Segment Period Project Costs:

| | <u>Personnel</u> | <u>Operating</u> | <u>Total</u> |
|------------|------------------|------------------|--------------|
| Planned | 54.8 | 15.1 | 69.9 |
| Actual | 27.4 | 54.8 | 82.2 |
| Difference | 27.4 | -39.7 | -12.3 |

Explanation: Operating: The McGrath office required additional funds to support logistics associated with using an R-22 helicopter to conduct comparative sheep surveys with a fixed-wing aircraft in Unit 19. The Fairbanks office conducted additional surveys and radiocollared sheep in 20A. **Personnel:** The triennial Dall Sheep Management Reports were completed. Detailed timesheet accounting for an entire fiscal year, will make it possible to make realistic personnel expenditure projections in future federal aid work plans.

Submitted by:

Roy Nowlin

Regional Management Assistant

David James

Management Coordinator

Project Title: Western Alaska Dall Sheep Management

Project Location: Unit 23 and Unit 26A (99,000 mi²)
Kotzebue Sound and Western Brooks Range

Project Objectives: Maintain a minimum post hunt population in the Baird Mountains of 450–600 adult sheep and a minimum ratio of 7–10 7/8+ curl rams: 100 "ewes" (includes adult female, yearling, and 1/4-curl ram).

Work Accomplished During the Project Segment Period: We conducted sex and age composition surveys in the Baird Mountains during July 1998.

| | Baird | Wulik |
|-------------------------|-------|-------|
| Rams 1/2+ curl | 116 | 21 |
| Rams 7/8+ curl | 70 | 13 |
| "Ewes" ^a | 289 | 57 |
| Adults | 405 | 78 |
| Lambs | 72 | 15 |
| Total | 477 | 93 |
| Lambs:100 "Ewes" | 25 | 26 |
| Total Rams:100 "Ewes" | 40 | 37 |
| Rams 7/8+:100 "Ewes" | 24 | 23 |
| Adults: mi ² | 0.57 | 0.35 |

^a "Ewes" defined as adult female, yearling, and 1/4-curl ram.

Although the number of sheep remained below population goals in the Baird Mountains the high number of large rams (full curl and over) resulted in a limited hunt. The state prepared to manage the hunt as a combined state and federal hunt with quotas of 20 full curl rams in the DeLong Mountains, and 20 full curl rams in Baird Mountains. A difference in interpreting subsistence need led to federal lands being closed to non-federally qualified hunters. The state issued an emergency order (E.O.# 05–02–98) closing all but the Wulik Peaks to hunting (11 drawing permit winners and an unlimited number of registration hunters were unable to hunt). The bag limit for all hunts (state and federal) was 1 full curl ram.

Of the 11 permit holders, 4 hunted and no one was successful. The uncertainty surrounding the hunt combined with poor weather during the hunt contributed to the low success rate. No sheep were taken during the state registration hunt. Hunters participating in the federal registration hunt ($n=69$) harvested 16 rams in the Bairds and 1 ram in the DeLong Mountains.

The remainder of Units 23 and 26A east of the Etivluk, Aniuk Rivers and Cutler, Redstone rivers remained open for hunting under the published seasons and bag limits. Six hunters indicated they

planned to hunt in this area. Two hunters reported harvesting sheep (2 rams and 1 ewe). All were harvested in the upper Noatak drainage with the use of snowmachines for transportation.

Progress Meeting Project Objectives: We made progress toward meeting project objectives through monitoring and management actions. Given the low density and discontinuous distribution of sheep in northwestern Alaska, the influence of wolf and caribou dynamics, and the frequency of severe winters, it is unlikely that managers can maintain stable sheep populations, even at modest densities.

Segment Period Project Costs:

| | <u>Personnel</u> | <u>Operating</u> | <u>Total</u> |
|------------|------------------|------------------|--------------|
| Planned | 11.9 | 5.0 | 16.9 |
| Actual | 11.9 | 4.2 | 16.1 |
| Difference | 0 | 0.8 | 0.8 |

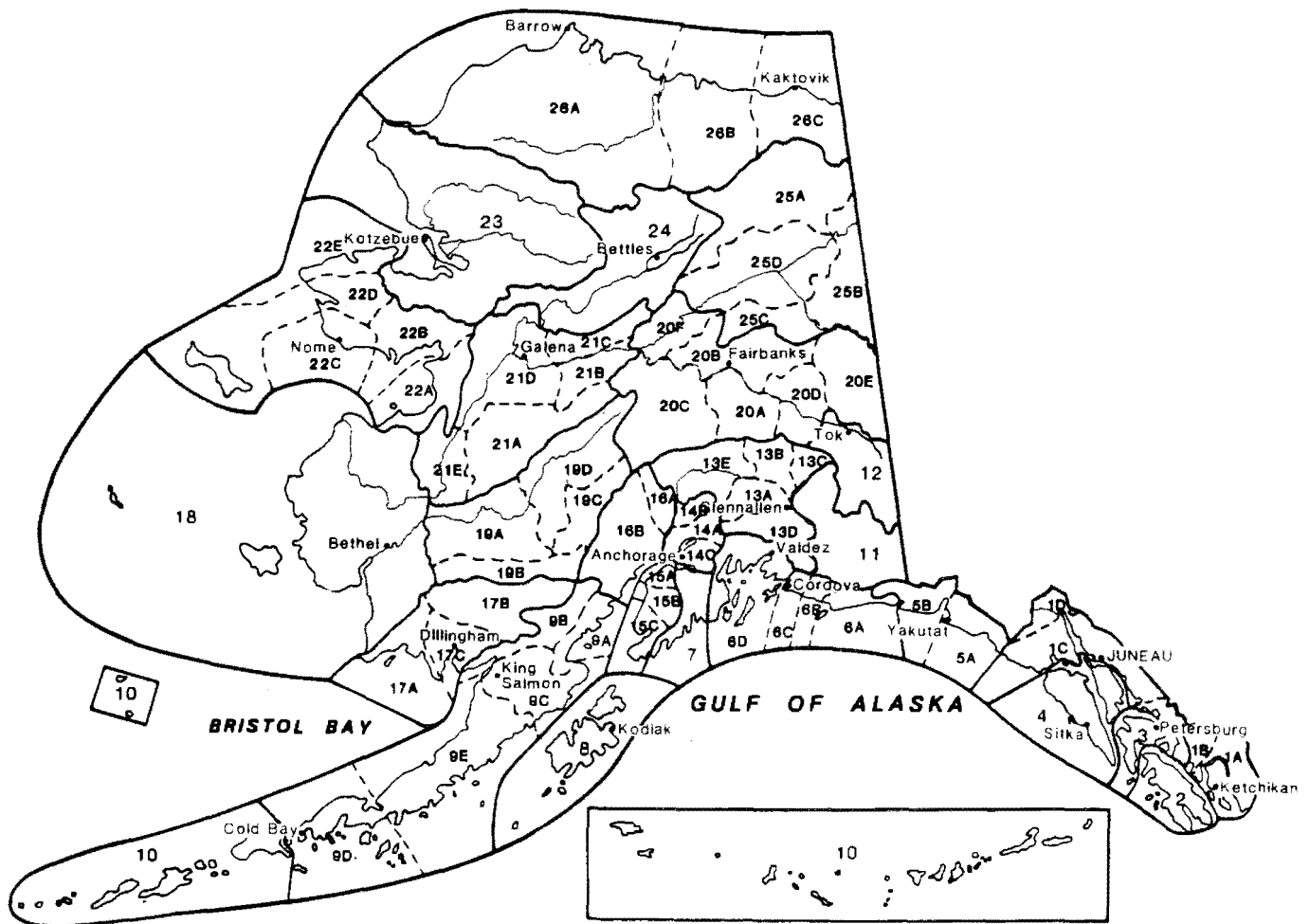
Submitted by:

Peter Bente
Survey-Inventory Coordinator

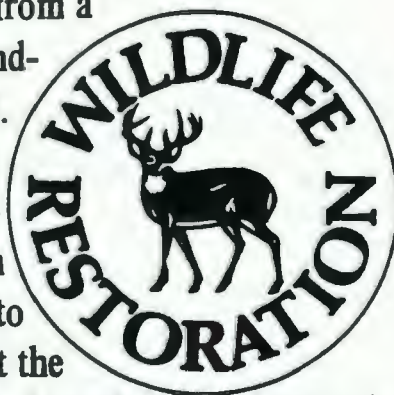
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Alaska's Game Management Units



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Ken Whitten