

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION

**MOUNTAIN
GOAT MANAGEMENT
WORKSHOP
REPORT**

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SESSION I Goat Status Report

(Area management biologists were asked to present short discussions of status, trend, hunting regulations, and conservation issues affecting goats in their Areas.)

Unit 1A - Bob Wood

Current Status: relatively high but declining slightly.

Historic Trend: (Based on trend surveys) During late 60's populations were high (200 goats/hour) hard winters of '68-'72 brought populations down 35-40 goats/hour, by mid 1970's populations began to recover to high levels in the mid 1980's 110-115 goats/hour. Populations are slightly declining now.

Hunting Regulations: prior to population lows in early 70's, season went from 1 August - January 31 with a bag limit of 2 goats. After the decline, the season was cut back to a December 31 closure and a 1 goat bag. 5-6 years ago the bag limit increased to 2 goats by separate registration permits.

Harvest: in recent years the harvest has averaged 50-60 goats. Last year, poor weather caused a low harvest of 28. So far this year the harvest is 40.

Conservation Issues: the U.S. Forest Service has plans to road the Cleveland peninsula in 5-6 years. The goat population density there is low. Borax has a world class molybdenum deposit which could attract mining effort and up to 3,000 people. All this will have a major impact on the goats in Unit 1A. Most of unit goat habitat is safe in a wilderness area.

Revillagigedo Island goat transplant: ADF&G tried to encourage U.S. Borax to support an introduction of goats to Rev. Island as a mitigation measure. They dropped the ball and local sportsman's group got involved so state moved 17 goats (15 collared) to Revillagigedo Island in 1983. Fall 1988 survey found 43 goats (50 kids:100 adults, 5 original collared goats). The population is currently estimated at over 75 goats.

Summary: Unit goats at moderately high level - no population estimate. Surveys are estimated to detect 1/2 - 1/3 of goats in subpopulation. Harvest levels high in 5% or less of goat habitat due to poor hunter access in remainder.

Unit 1B - David James/Charlie Land

Current Status: generally stable, no population estimate.

Historic Trend: similar to 1A, notable reductions in late 60's to early 70's due to severe winters. Recent winters (mid 70's to present) were mild, presumably promoting population recovery and continued growth.

Hunting Regulations: regulatory history similar to Unit 1A. In 1984, bag limit increased back to 2 goats, but by separate permits. In 1987 the Horn Cliff Hunt area was selected by the Board to be an experimental one billy only bag limit area. Current season length is 1 August - 31 December.

Harvest: over the last 15 years harvest has increased; average annual harvest by 5-year periods were: 25, 28, and 36. In last 5 years the range in harvest was 28-42. So far, 1988 harvest is 36 goats (6 males being taken from Horn Cliffs). Percentage of females in the harvest (excluding Horn Cliffs) is 31% this year. Since 1981, % females in the 1B harvest ranged from 54 - 75 females. This year's low proportion of females does not seem to be anything more than chance, not related to educational efforts.

Chronology of 1B harvest is weighted to August and October but generally equally distributed from August thru November.

Management Issues: 1) there are problems associated with using extensive surveys rather than intensive. The survey methodology should be formally documented, reviewed and evaluated. 2) The Horn Cliff bag limit was criticized by the hunting public. A different regulation may be more acceptable, and 3) localized harvest concentration may need to be monitored more intensely.

Conservation Issues: few subpopulations are due to be affected by additional logging. Road building near Wrangell is proposed, allowing access to more goats.

Unit 1C - Tom McCarthy

Current Status: stable, goats/hour survey results between 1982 and 1986 were 40-45. Kids: 100 adults ranged from 20-25. Good densities are estimated with the exceptions of the closed areas which were closed due to dramatic goat population declines.

Historic Trend: Believed to be generally the same here as throughout southeast Alaska.

Hunting Regulations: 2 hunts, 802 and 803, one closed area due to reduced numbers of goats.

Harvest: hunter success rate in last few years has averaged 41%. Dropped to 32% in 1987. Average harvest near 45 goats in early 80's. 30 goats were taken 1st year. Days hunted per goat has increased from 3.1 to 3.8 days/goat in the last 5 years. Sex ratio of harvest has gone from 77% males (85&86) to 52% females last year. Surveys of closed areas provided reopening.

Management Issues: (J.Schoen) Herbert Glacier area over hunted and not re-populated. Reintroduction of goats to Juneau area being pursued, funding by the local Audubon society. Hunting probably reducing populations at access points.

Conservation Issues: helicopter (sightseeing) excursions possibly affecting goats. Roads for mining.

Unit ID - T. McCarthy

Current Status: steadily declining, hunter success has declined from low 80's to 1982 to just a few goats taken last year. Goats per hour have dropped in the closed area and unit-wide.

Historic Trend: same thru 1970's (except that local populations apparently declined further)

Regulations: Two permit hunts, 1 closed area.

Harvest: 1985 - 15, 1986 - 25 and 1987 - 18, 3-year average of 50:50 sex ratio.

Management Issue: when to close an area to hunting. What is preventing population recovery in the closed areas.

Conservation Issues: road access and logging or winter habitat.

Unit 4 Butch Young

Current Status: continuing to increase - 70 goats/hour currently.

Historic Trend: introduced to Baranof 1923. The population is currently comprised of 30% kids. Goats transplanted on Chichagof in 50's but no recent sightings. In fall 1988, over 500 goats were observed on the northern 1/2 of Baranof Island.

Hunting Regulations: 1st season in 1952; 1 goat by registration hunt was started in 1976

Harvest: 85 - 221 permits issued since 1976.

Sex ratio of harvest: 2:1 to 1:1 males: females, harvest ranged from a high of 75 (1981) to a low of 26 (so for this year) - the previous low was 27 (1976).

Management Issue: survey frequency and lack of survey aircraft. Surveys by U.S.C.G. helicopter. Small area management for high harvest areas.

Conservation Issue: access, logging roads if tied together. Logging of winter habitat.

Unit 5 - Bruce Dinneford

Current Status: apparent local declines no net reduction in goats; overall, stable.

Historic Trend: unknown

Hunting Regulations: Aug 1 - Dec 31 registration permit. Most of goats are on Tongass Forest land and accessible to all. Some goats are in Glacier Bay National Park, which is closed to hunting; and some are in Wrangell-St. Elias National Park and are available only to qualified rural residents.

Harvest: declining effort, variable success rate (16-56%) 24 goats killed in 1980 to 3 killed in 1987. 46% nannies in harvest 1981 - 1988, prior to 1980: 15 goat annual harvest, 36% nannies.

Management Issue: survey conditions and aircraft availability, absence of a local biologist to take advantage of good survey conditions, and excessive local harvest at Harlequin lake.

Conservation Issue: logging road placement and logging of winter habitat

Unit 6 Herman Griesse

Current Status: An estimated 3100 - 3500 goats exist unit-wide; the population is declining overall. This estimate is below historical levels by 20-30%.

Historic Trend: Based on trend area survey data, high population levels occurred in 1969 and were as high or higher in previous years as implied by previous areas biologists and in historical species status reports. The unit population was at low levels in the early to mid 1970's, and recovered slowly. They increased into the early 1980's, stabilized and declined since. These were local reductions through the 70's and 80's, causing much variation in levels between subunits.

Hunting Regulations: There was a recent reduction in season length for non-rural hunters. Now rural residents have an open s\registration permits season from 1 August to 31 January. All other goat hunters have a 1 September to 30 November drawing permit hunt. Two drawing hunts were recently created for areas which had been closed for 7 years due to low goat numbers. The bag limit in Unit 6 is one goat. From statehood to 1975, the bag limit had been 2 goats.

Harvest: For the last five years, mean harvest was 100 with a range of 71 in 1987 to 130 in 1984. In 1975, harvest had reached 168 under the 2 goat bag limit. In the last five years, nannies had comprised 36% of the reported harvest.

Management Issues: Excess harvest at access points, exceeding harvest quotas, numerous E.O.s, increasing wolf populations - predation. Goat introductions to islands as mitigation for logging/development and loss of public land.

Conservation Issues: logging of winter range on U.S.F.S., native land and state land. State land is of greatest immediate concern because of lack of responsiveness to wildlife issues by state land managers.

Unit 7 & 15 Dave Holderman

Current Status: stable at high levels. Based on intensive trend area counts in areas representing coastal, continental and transition climates. Minimum densities of observed goats range from 5 goats/mi² in coastal climates to 0.2 goats/mi² in continental climates.

Historic Trend: like other coastal goat populations they displayed similar fluctuations - moderately high numbers in the late 60's, low numbers in the mid 70's. A recovery period since then to current high levels. Severe winter and localized overharvest were separately responsible for low numbers in some populations, too low to allow recovery, even during current high levels. Reintroduction was completed on Cecil Rhodes Mountain and it appears to be successful.

Hunting Regulations: the recovery of the goat populations since late 70's due on part to new regulations which redistributed hunting pressure and reduced harvest levels. Harvest and hunter participation was limited through drawing hunts for 31 separate hunt areas. In 1982 additional demand for hunting opportunity caused registration hunts to be available after drawing hunts. Aug. 10 - Sept. 30 - drawing permit (some hunt areas are registration hunts throughout) Oct. 15 - Nov. 30 registration hunt, permits valid for 7 days only, areas closed when harvest quota reached, quotas = 5-10% of observed goat numbers.

Harvest: under new hunt area system harvest has increased from 28 to 135 goats taken annually. Nannies in registration hunt (October) = 41% but overall females = 35% since 1980.

Management Issues: improve on intensive trend count program; validate survey data for climatic zones.

Conservation Issues: most habitat is safe due to federal agency land management, potential for clearcut logging on native land on southern tip of peninsula may impact goat winter range.

Units 13D & 14 Mike McDonald

GMU 13D

Current Status: only recently increased to huntable numbers due to marginal habitat, recent (1986) count was record count 134 goats counted in portion of 13D with 19% kids.

Historic Trend: surveys begun in 1959. Population slowly recovering from extensive period of low densities beginning in early 70's.

Hunting Regulations: closed for 10 years, opened to drawing hunt for male goats only in 1987. Aug. 10 - Sept. 20. One male goat by drawing permit, up to 30 permits.

Harvest: in last 2 years = 3 goats, 2 male & female.

Management Issues: billy only season, difficulty finding acceptable survey conditions.

Conservation Issues: none

GMU 14A

Current Status: low levels suspected, status unknown due to lack of goat only surveys, marginal habitat.

Historic Trend: unknown (goats observed incidental to sheep surveys).

Hunting Regulations: since 1984 - 1 goat by registration permit for 14A south of Matanuska River. 14A north (in Talkeetna Mountains) has been closed except for 1984. Drawing permits prior to 1984. season length = Sept. 1 - Oct. 31 (Oct. 16 - Oct. 31 bow and arrow only)

Harvest: low - generally fewer than 3 annually since 1984.

Management Issue: surveys incidental to sheep survey.

Conservation Issue: none stated.

GMU 14B

Current Status: stable at low level.

Historic Trend: unknown, survey data variable and inconsistent.

Hunting Regulations: same as 14A-C

Harvest: low - generally below 2 goats annually.

Management Issues: ORV access increasing.

GMU 14C

Current Status: in excess of 500, stable at high level but they have not really re-occupied historic range/possibly conflicting with record high sheep densities.

Historic Trend: low in late 60's and early 70's recovery during 70's and 80's due to good weather and drawing permit system.

Hunting Regulations: see 14A. Chugach State park closed.

Harvest: as high as 45 in 1986, prior to registration hunt system harvest seldom reached 6 goats.

Management Issues: none

Conservation Issues: helicopter tours disturbing goats.

(Session notes by Herman Griese)

SESSION II Survey Technique

(Current techniques for goat surveys were reviewed in this session. A set of best survey practices were recommended.)

While there is little consistency in the way goats are surveyed by the different biologists in various parts of the State, most workshop participants did agree on optimum procedures. It was clear that no single set of recommendations could be followed in every case, and each Area management staff would have to modify these practices based on weather, aircraft availability, etc. The following were identified as best survey practices for Alaskan goat populations:

Optimum Survey Criteria

Aircraft - super cub on wheels.

Time of Year - late August to early September, and all completed within a short time span.

Time of Day - as late in the evening as possible, or early morning.

Weather - cool, calm, high overcast; no bright sun.

Survey Mode - intensive to a point, replicate surveys each year, comparable survey intensity each time out.

Route - mapped, repeatable from year to year.

Pilot - same from year to year.

The ideal is seldom possible, and even though area managers generally agree on the above, there is a great deal of difference between observers and areas in how the actual surveying is done. Detailed discussion of the above follows:

Aircraft

A super cub on wheels is probably as good as there is. Adding floats reduces vision and necessitates flying at a higher speed. Maneuverability is lessened. A Heliocourier is adequate, perhaps equal or slightly better than the cub on floats. Side-by-side seating is not the best, but the observer can sit in the back and watch both sides, or multiple observers can be employed. Helicopters are acceptable, but are expensive and goats tend to run and hide more than they do from a fixed wing. They are the only way to accomplish surveys that require classification beyond the normal adult/kid data.

Aircraft availability is a problem, particularly in southeast. Often a choice is impossible. Everyone agreed that Cessna 180/185's should NOT be used for goat surveys.

Season

The goat survey season is more or less dictated by several factors, primarily snow cover. Maximum bare ground is the key. This generally eliminates all but July through October. July often has too much old snow remaining, while October usually has too much new snow on the ground. In addition to snow problems, some goat populations begin to exhibit seasonal movements by late September. Also, September is the start of the rainy and foggy season, at least in Southeast, and in some years, early snow fall is a problem. October weather is generally just a worse rendition of September's weather.

Hunting seasons generally start in August, and in some areas, particularly those with both sheep and goats, aerial surveys conflict with hunting.

In general, we agreed that the late August and early September period was the best all around survey time, and that surveys should be completed over as short a time span as possible.

The following are comments made about each month:

July

Generally quite a bit more snow than in August and September. However, weather is better and you can pick better survey conditions. Also, hunting seasons are closed. Kids may be closer to nannies, potentially reducing their visibility.

August

Probably the hottest weather, but less snow cover and survey weather is generally better than September and October. Most goat seasons open sometime in August.

September

Probably the best month for snow cover since most melting has occurred and generally not much new snow has fallen in the survey zone. Weather, at least in Southeast, has started to deteriorate. Also, some areas experience a fair amount of movement of goats by late September. In Ketchikan, September is the main month for hunting. September also seems to be the time goats are in the largest groups.

October

Surveys are not usually done in October unless absolutely necessary. In most years, new snowfall, and winds in some areas, would be a real problem.

Time of Day

Most participants agreed that late evening was the preferred time. The later the better as long as you could finish the route. Herman Griesse frequently flew in the early morning and had a cut-off time beyond which he would not count.

Everyone agreed that mid-day counts are of little value. Aircraft availability often dictated when you could survey, however. Evening seemed to be preferred because goats were apparently more active and winds were usually least.

Weather Conditions

The ideal conditions of calm, cool and overcast are hard to come by, at least in one day. We agreed that hot days were poor and bright sun hampered visibility. Surveys are often best on days with no bright sun, following several other days without bright sun.

I, for one, must use survey data from less than ideal days, and it is a real problem deciding when to use a count and when not to.

Standardization

Everyone agreed that standardization is the key to comparable data between years within the same area. It is not a good idea to compare survey results between various biologists and areas. Significant differences in terrain, survey techniques, timing of surveys and aircraft types make comparisons ambiguous. Within the same survey areas, however, everything that can be done to enable comparisons between years should be done. Detailed description of survey procedures should be made so changes in survey results will be minimized when changes in survey personnel occur.

Intensive/Extensive Surveys

Replicate counts would be an excellent idea when possible. Single surveys can suffer big variations from year to year from changes in survey conditions. I think most people felt it was best to survey a few representative areas well rather than to survey extensive areas one time like Wood does in Ketchikan. Most area managers have enough area, and survey days are so few, that one rarely gets all the area covered every year.

Spring Surveys

Spring surveys have been done in Ketchikan and Yakutat. In Ketchikan it amounts to a little over an hour of survey time.

It is done as soon as the lower slides are snow free and green vegetation is fairly abundant in the slides and other open areas in the winter range, all generally below 1,500 feet. Techniques are similar to fall surveys. Stage of growth of vegetation is very important and can vary considerably from year to year. Some of the area has been counted from shorelines via a boat and using a spotting scope and results appear good.

Ground Surveys

A few ground surveys have been done, mostly in conjunction with research studies where more accurate classification of sex and age was desired. Some ground counts have also been done to check accuracy of the aerial surveys. In general, ground counts cannot cover enough area to be practical for management purposes.

Identified Research needs Relating to Surveys

- Replicate counts through July, August, September, and October should be flown to assess changes in observability and movements during this time so we could choose the best survey period. This would probably need to be done in several areas.
- Possibly test observers to determine the variability that exists.
- A method for developing population estimates based on number of goats observed is needed. This would probably involve radio telemetry work or ground counts, or both.

(Session notes by Bob Wood)

SESSION III Predation

(This discussion was opened more widely to limiting factors. It quickly became clear that relatively little is understood about the role of predation in goat populations in Alaska.)

PREDATION

Bear predation is probably not a significant mortality factor on goat populations. Observations of bears feeding on goats are probably attributable in most cases to scavenging on winter-killed goats.

A more perplexing and largely unanswered question is what effect does wolf predation exert on goat populations. Limited data in file records and anecdotal information suggest that wolf predation could be an important factor in understanding goat population dynamics.

1. ADFG files contain records of wolf scat analysis from Units 1C and 1D, which show that most scats contained goat hair.
2. In Unit 6, there are several observations by pilots of "packs of wolves working goats"; i.e., wolves were seen in the vicinity of and appeared to be hunting/stalking goats, and wolves were also observed feeding on several freshly killed goats.
3. In Unit 1A, 3 out of 5 stomachs from mainland wolves contained goat remains.
4. Joe Fox (a graduate student who worked in northern Southeast) concluded, on the basis of his research, that wolf predation is an important factor in the distribution of and the habitat selection by goats.
5. After hunting was closed down in Unit 6B 1 and western 6A, the goat population continued to decline in an area where winter range contains poor quality escape terrain; yet in adjacent wintering areas of high quality escape terrain, the populations increased back to huntable levels. Wolf predation is the most logical explanation for the continued decrease.
6. Interestingly, circumstantial evidence from Unit 6 suggests that goats alone are not enough of a prey base to support significant numbers of wolves. Wolves occurred in Unit 6 in negligible numbers until moose and deer were introduced to the area. Wolf numbers then increased and have subsequently begun to impact some of the goat populations.

The use of Chris Smith's goat habitat model may provide a way to characterize the quality of goat habitat in specific areas, especially as it relates to predator escape terrain, and hence gain some insight into the relative importance of wolf predation as a limiting factor on goat populations in specific problem areas. Perhaps the modeling process would help identify other limiting factors as well.

In the future, if wolf predation is identified as a limiting factor in an area, the use of an alternate food source (e.g., hatchery fish carcasses) for wolves may be a management tool worth exploring.

Wolf predation may be an important influence on goat populations, but it remains an unanswered question.

OTHER LIMITING FACTORS

The influence of weather conditions, especially snow, may be of greater magnitude than generally recognized. For instance, what in recent years appears to have been a series of mild winters at sea level, may have been severe at higher elevations.

In those cases where clearcuts have intersected goat winter range or travel routes, snow accumulation could have serious consequences. Falls associated with ice and steep cliffs (i.e. waterfall chutes) were found to be a significant mortality factor in the Haines study.

Regular monitoring of snow conditions may be required to adequately monitor goat populations and, possibly, it could develop into the ability to predict impacts on populations.

The influence of parasites and diseases may be exerting control over some goat populations; tapeworm cysts in carcasses are regularly seen and contagious ecthyma is known to occur.

Blood analysis of captured or killed goats should be done at every opportunity to evaluate the disease question, especially in the case of some of the northern Southeast populations that are severely depressed.

(Session notes by David James)

SESSION IV Capture Technique

(Current methods for capturing, restraining and transporting goats)

In 1978 John Schoen was the first Fish & Game biologist to capture goats in Alaska. John shared a few anecdotal goat capturing experiences.

John tried a variety of techniques including baiting and nets dropped from a helicopter, but found darting goats with M99 from a helicopter to be most effective.

Since 1978 John has had much experience capturing deer with a net gun and he is convinced that a net gun would be most effective in capturing goats in the winter or in snow fields other times of the year.

Bob Wood pointed out that Chris Smith tried the net gun on his goat research project in the Ketchikan area with unsatisfactory success. It was also pointed out during the Ketchikan study the net gun was tried in the summer when the goats were staying in the brushy krumholtz vegetation. After a little discussion it was concluded, for one to successfully use the net gun the capture terrain and snow conditions would need to be taken into account.

John thought the use of the capture gun combined with the immobilizing drug etorphine hydrochloride (M99) and its antagonist diprenorphine hydrochloride (M50-50) worked well any time of the year in any habitat. This was supported by Bob Wood, Dave Holderman and LaVern Beier who had goat capturing\transporting experience using these drugs.

The use of the immobilizing drug carfentanil and antagonist naloxone hydrochloride was mentioned with little discussion. Mike McDonald informed the group that Bill Taylor was recommending against the use of these drugs in moose and likely goats too. McDonald and Holderman cited several cases of capture myopathy occurring in moose and goats lasting from 2 to 5 days after their original capture.

For those attending who had experience capturing goats, it was generally agreed the usual technique used to capture goats was; pursue the goat with a helicopter until it stopped and planted itself then; dart it in the hind quarters. After the dart strikes the goat, it may hold its ground until the drug takes over and drops. Other goats may run after they are hit and it may be necessary to attempt to contain or drive them to suitable terrain with the helicopter.

Bob Wood said he would have no problems holding goats in a crate for a limited time after observing the goats captured in Misty Fiords, held in plywood crates and transported to Oregon.

(Session notes by LaVern Beier)

SESSION V Harvest Regulation

(Existing management strategies were examined, and opportunities for change considered)

Unit 1A: Bob Wood, Area Game Biologist. Traditionally, there was a 2 goat bag limit in the Ketchikan area. A series of bad winters in the late 60's and early 70's reduced populations and the bag limit was dropped to 1 goat in the 70's. As goat numbers increased, the bag limit was changed to 2 goats, but a goat must be taken and the permit returned before the second will be issued. This provides a lot of additional opportunity, but very few hunters take a second goat. He feels that Unit 1A goat management is very conservative, but he wants to look closely at individual access points with the idea of possible regulation restrictions in areas that are easily accessed. He estimates (memory) that about 95% of the harvest occurs in about 15 locations, but that in the past, no more than 7 goats have been taken annually from a single access point.

Unit 1B: David James, Area Game Biologist. The average annual harvest has been in the mid-30's and has been 36 so far for 1988. There are no major regulation problems. Nonresident kills have increased with increased outfitter activity. He still does not know what the effect of the new outfitter-guide regulations will be on Unit 1B harvest.

Comment from Dave Johnson: We should consider the impact of nonresident hunters on the goat population. Comment from Bob Wood: Unit 1A goat kill has stayed pretty much the same, but the proportion of nonresidents increased.

David James continues: On Horn Cliffs where the billies-only regulation is in effect, last year there were no goats taken and this year there are 6 billies killed so far. David James and Charlie Land tried to contact the 32 Horn Cliffs permit holders and asked 13 of them, "Are you confident in your ability to identify goats as to sex?" They had 9 "yes" answers, 3 "unsure" answers, and 1 "no". They were also asked "Is the billies-only law reasonable?" and 7 said "yes" while 6 said "no". In spite of the results of the interview, David James feels that most hunters feel that the regulation is unreasonable.

Comment from Young: People who plan to hunt in a billies only area would be foolish to admit that they can't tell the difference in sexes. Comment from David Holderman: Maybe we should change the regulation to "lone goats only". Comment from Young: Recommend protecting nannies accompanied by kids. Yukon Territory implemented a regulation protecting nannies with kids and goats with horns less than 8 inches in length. There was initial opposition by hunters, but the regulation was accepted after a short time. The regulation resulted in a big improvement in the sex ratio. Comment from Dave Johnson: Let's summarize our alternatives: 1.) education toward male kill 2.) lone goats only 3.) nannies with kids protected 4.) 8 inch minimum horn length 5.) billies only 6.) limit the number of different permits a hunter can hold at a time 7.) season length and/or timing 8.) quota on nannies

Units 1C and 1D: Tom McCarthy, Assistant Area Biologist. For these units, we have more than 1 permit area on one permit. There are some problem areas in 1C and 1D where goat numbers are dropping. They appear to be associated with access.

Comment from LaVern Beier: In Port Houghton in Unit 1C goat numbers have declined drastically. The area needs special regulations. Comment from Young: There is a new road accessing Port Houghton from Windham and Hobart Bays. Comment from Dave Johnson: Is it necessary for Units 1C and 1D to have different closing dates as they do now? How about a single season for all of Southeast? How about a single permit for all of Southeast? Comment from Young: Support a single permit concept with maps showing different dates and closures. Comment from Lavern Beier and others: We are talking about the need for finer-grained management in specific areas and what we need is different for the areas with greater access and problems.

Unit 4. E. L. Young, Area Game Biologist. Unit 4 has the only introduced population of goats in southeast Alaska that is being hunted. Goats were introduced to Baranof Island in 1923 with a transplant of 18 animals. The season was opened in 1952 and bag limit has always been 1 goat. Registration hunt began in 1976 and there have been about 150 hunters annually with a 25% to 40% success rate. So far in 1988, 26 goats have been taken. The population is increasing on the island except in the accessible areas and sex ratio in the kill is as high as 1:1. Young is considering establishing closed areas near Sitka to provide viewing opportunity, but wants to use the permit system rather than Game Board action. Considering asking for protection of nannies with kids because of increased kid mortality when nanny is removed. Also wants discussion of the nanny with kid protection idea.

Comment from Herman Griese: When we establish viewing areas, we should do so without actually setting boundaries by regulation. Otherwise, the public gets the impression that hunting and viewing wildlife are mutually exclusive activities. We should be able to manage for both on the same piece of ground. Comment from Bob Wood: There is nothing to prove that orphan kids can't make it, especially if the kids are older when nannies killed. Comment from Young: Literature shows that orphaned kids are driven away from the herd by subadults and are not likely to survive the winter. Comment from Bob Wood: Opposed to protecting nannies with kids through regulation, should be done through education of hunters. Comment from Dave Anderson: Agrees that education of hunters to recognize value of nannies and poor orphan kid survival is preferable to statute. Schoen suggests adopting a regulation similar to bears, i.e. nannies accompanied by kids are illegal.

Unit 6: Herman Griese, Area Game Biologist. Goat populations in 2 areas that were closed for 7 years have responded to the closures and have been re-opened. In drawing permit areas, he uses a figure of 25% success and issues 4 permits for each goat to be taken. A map and educational brochure is issued with each permit. Registration permits are issued by Fish and Wildlife Protection and a Valdez sporting goods store as well as ADFG. In areas where he instigates a quota, he uses 3-7% of the observed population (number seen on surveys) as the desired harvest level. When the quota is obtained, the season is closed by Emergency Order. Problem: He established a percentage of the quota for subsistence hunting and set the subsistence season at August 1 through January 31. The general season was September 1 through December 31, and the quota was exceeded by the general season hunters. Another difficulty was that eliminating the August hunt for general season hunters was claimed to be a financial hardship on air taxi operators who were accustomed to ferrying general season hunters in August. The current system of drawing permits, registration permits, and quotas is an administrative burden. He uses the permit system to adjust the kill in specific areas. No permits are issued for areas that need closing. The details of population management

are based on the surveys and hunters are provided with maps of the closed areas. Horns are checked at any office and are measured, sexed and aged.

Units 7 and 15: David Holderman, Assistant Area Game Biologist. Hunting in these units is by drawing permit. He issues 340 permits for the hunt area. Board of Game set the maximum number of permits at 400. If the quota is not reached during the drawing permit hunt, then he will open a 7-day registration hunt. The drawing permits could handle the harvest quota if given time, but there is a big demand for goat hunting and tacking on a registration hunt for "underharvested" areas helps to meet it. He opens 10-12 hunt areas each year to registration permit. There is a reporting requirement of 5 days for successful hunters.

Units 11, 13B, 14A, 14B, and 14C. Mike McDonald, Assistant Area Game Biologist. He does not have a lot of confidence in the survey data, since it is sometimes erratic. Harvest quotas are set at 5% of the number of goats observed on surveys. In 13B (Bob Tobey's area), there is a billies-only season, which the Area Biologist does not think is effective. In 14C, there are very few nonresidents except in the Lake George area where 41% of the hunters were nonresidents this year. All of Unit 14 is on the registration permit system. Unit 11 is on the drawing permit system. He reiterated that Tobey does not care for the billies-only system, which precipitated discussion on sex ratios.

Comment from Holderman: His sex ratios are 38 females/100 males in the August kill and 76 females/100 males in October. Comment from Griese: His harvest in August is 37% females and in October is 36% females. Comment from Land: In interviewing goat hunters by phone, he found that of 14 hunters contacted, 11 killed the first goat they saw, while 3 killed billies while passing up other goats first. There is a preponderance of males in the 1988 kill which he attributes to chance. Comment from Dave Anderson: Statistically, there is a good chance that in some years the kill will consist largely of males. Comment from Dave Johnson: Is the Region II questionnaire on sex identification necessary for Region I? Will it provide usable information? Are Region I hunters dissatisfied with the billies-only season at Horn Cliffs?

Johnson enumerated the following issues which should be resolved before the Game Board meets in March: 1) Does the hunting public want billies-only seasons? 2) Region II questionnaire to be used in Region I? 3) Contact states or provinces or review literature on billies-only seasons. 4) How many hunters failed to hunt goats because of the billies-only regulation? 5) Should we do an opinion poll? 6) Does the educational process work as an alternative to billies-only? 7) What is the range of workable alternatives in the problem areas? We need to develop a range of alternatives for the Board.

Comment from Land: He proposes the following regulation for Horn Cliffs: Permits will be good for 7 days, with a 3 day report period for successful hunters. There would be 10 permits issued or there would be a quota set as a certain percentage of the observed population (percentage to be determined). Comment from Holderman: Look at the percentage of females chronologically and consider season dates. Comment from Griese: He uses a weighted quota where one nanny in the harvest is equivalent to 2 or 3 billies in the quota. Comment from Johnson: He doesn't like the idea of a quota system. Comment from McDonald: An Emergency Order makes sense as a backup to the registration permit system and allows closures without restricting the number of permits. Comment from Holderman: He has no problems with the Emergency Order closure, but

has a telephone network which works well. Comment from Wood: He doesn't think we should separate the problem area in the hunt, but just close it when our quota is realized (ed. note: presumably the Area Biologist will have a quota in mind, but not advertise it). Comment from Land: Let's use the education method for 2 years to evaluate its effectiveness. Comment from Johnson: Recapping the issues: Can we simplify goat regulations for southeast? Negative response from Area Biologists to lumping regulations. Problem areas were again mentioned. Comment from McCarthy: McCarthy discussed Port Houghton and said that he will check the data to see if problem exists. In discussion, it was suggested that there are 2 options for Houghton; 1) close the area by statute, or 2) do not include in the permit area for 1989. McCarthy discussed Unit 1D declining populations but thinks the 1987 data may be suspect. Comment from Holderman: There is a need for better surveys. Comment from McCarthy: Wants to consider expanding the 1D closed area on the permit issuance to manage conservatively until he can obtain more reliable survey data.

(Session notes by E.L. Young)

SESSION VI Research Needs

(We addressed what kinds of research the Division should be pursuing in order to best position itself to respond to the needs of goats and users in the 1990's)

Workshop participants identified the following research needs that the division should consider:

I. Survey Practices

- A. What is the observability of goats? How can we determine this?
 - 1. Test variability between observers **
 - 2. Test variability among cover types **
 - 3. Review existing knowledge and work done **
 - 4. Truthing survey results - determine the relationship between the observed and the actual.
- B. What is the validity and feasibility of replicate counts: can they be used to determine when best to survey? **
- C. How far, fast, and frequently do goats disperse, and how should a "population" be identified? **

II. How does weather affect goats?

- A. What is the relationship between sea-level weather and that at goat elevation. Is there a correlation that can be determined and reliably used? Are SCS reports available and useful? **
- B. How are mortality rates affected by weather?

III. What sex ratio in goats yields optimum production?

IV. What are the relationships between goats and predators?

V. Can we help out ("jumpstart") depressed populations with translocations? **

VI. What are/will be the effects of habitat alteration such as logging, mining and road building?

VII. Do hunters prefer to take male goats? **

VIII. What are the effects of disease, accidents, and parasites, and how important are these to goat management? **

IX. Validation of the developing habitat capability model

Some possible solutions to the above were articulated. They were:

1. Assign a Wildlife Biologist to full time goat research.
2. Assign a Wildlife Biologist to full time goat management coordination, especially in Region I, but assisting in Region II as well.
3. Management investigations by existing staff. The questions in the above outline followed by a double asterisk (**) were identified as possible candidates for management staff investigations that could be handled short of a full-scale research project.

Recommendations: The group concurred that a new research position was probably unlikely in the near future. Our long term recommendation is for a research/management biologist to be stationed in southeast Alaska that would work in both Regions I and II.

Recommended Priorities:

1. Limiting factors - predators, weather, etc.
2. Survey practices
3. Goat biology - productivity, optimum sex ratios

(Session notes by Tom McCarthy)

SESSION VII Reporting

(Survey and Inventory reports and what kinds of information should be included in them were the topics for this session.)

Most of the discussion concerned the Tables section of the S&I reports. We agreed that Table 1 was useless and should be deleted. Table 2 should show Adults, Kids, Unknown, Total Goats. Summary fields should be: Kid/Adult (do not include field Unknown in this), Goats/hour, Total Count Time. Surveys should be designated by Trend Count Areas. Do not display historic data unless it is EXACTLY comparable. The final agreement was that Table 2. would be for the reporting year only. The primary concern seemed to be that data from previous years would be erroneously compared to the reporting year if different count areas were tabulated.

Table 3. Harvest: Would follow existing form except that kill other than reported legal kill would be listed under " Estimated Other".

Table 4.: Each Area Biologist is to define "Local Resident" in a footnote as it applies to his area

Table 5.: Add Unk

Table 6.: Use as is.

Table 7.: Change to new Uniform Code

(Session notes by Charlie Land)