ALASKA DEPARTMENT OF FISH AND GAME
JUNEAU, ALASKA

MOUNTAIN GOAT SURVEY TECHNIQUE EVALUATION

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Final Report
Federal Aid in Wildlife Restoration
Project W-17-7, Job 12.2R

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FINAL REPORT (RESEARCH)

State: Alaska

Cooperator: Warren Ballard

Project No.: W-17-7 Project Title: Big Game Investigations

Job No.: 12.2R Job Title: Mountain Goat Survey Technique Evaluation

Period Covered: July 1, 1974 to June 30, 1975

SUMMARY

Results of aerial mountain goat surveys can only be interpreted as minimum population values. Study data indicate that by conducting repeated surveys from fixed-wing aircraft a total count similar to those obtained from helicopter surveys can eventually be attained, but the number of fixed-wing surveys needed is not known. Variables which influence survey results are numerous and for the most part probably unquantifiable. Further research into the refinement of aerial censusing of mountain goat populations is needed.

CONTENTS

BACKGROUND

Effective managment of any wildlife species depends to a large extent on the availability, reliability and validity of population indices. Since 1959 the Alaska Department of Fish and Game has conducted aerial mountain goat (*Oreamnos americanus*) censuses in both Southcentral and Southeastern Alaska. Data from these surveys have exhibited a great deal of variation in total numbers of goats observed and in kid/adult ratios during the same survey year and between years.

Life history studies of mountain goats in other states have relied upon aircraft for the collection of gross population statistics (Brandborg 1955; Hibbs et al. 1969 and Lentfer 1955). These investigations resulted in speculation that ground counts were preferable to aerial counts because they gave high numbers and a more precise breakdown of population composition (kids, adult females and males and yearlings vs. kids and adults). None of the methods used, however, were checked for reliability and/or validity.

Alaska undoubtedly has the largest populations of mountain goats in the United States. Their widespread distribution throughout Southeastern and Southcentral Alaska precludes use of ground counts as a method of annual censusing over large areas. Therefore, aircraft surveys of some type must be relied upon for obtaining population indices. Since hunter pressure on mountain goats is increasing and some goat populations are apparently declining, knowledge of population numbers must be acquired so management decisions can be based on the best possible data.

OBJECTIVES

To determine the daily variability of late summer and early fall aerial mountain goat surveys.

PROCEDURES

During July and August 1974 flights with fixed-wing aircraft and helicopters were conducted over two study areas located in the lower Chilkat Range in Southeastern Alaska: Area 1 - Endicott River to Sullivan River and Area 2 -William Henry Mountain (Fig. 1). Vegetation and topography of the areas

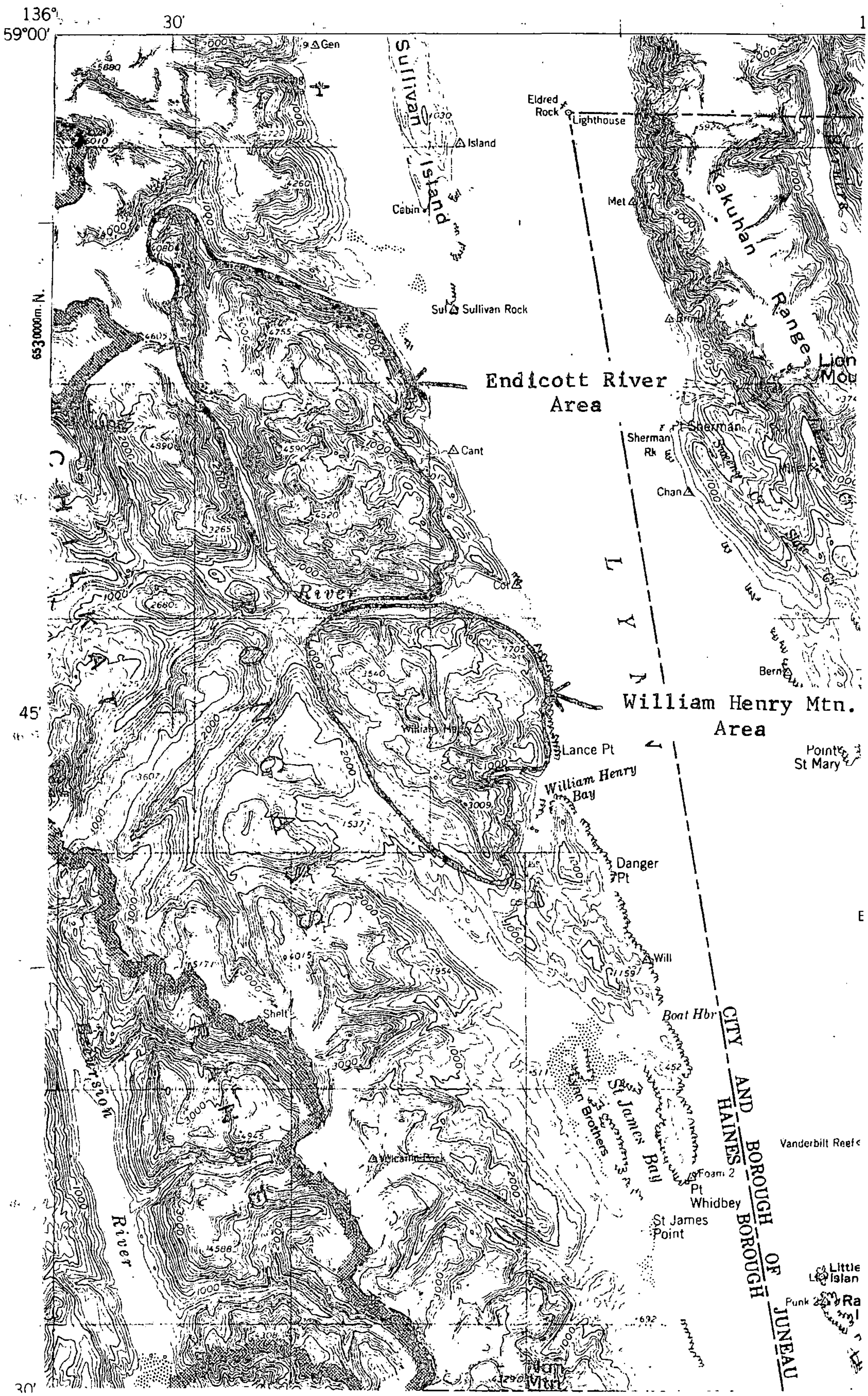

Fig. 1. Map of two study areas located on the Chilkat Mountains of Southeastern, Alaska.

were typical of those described for Southeastern Alaska by Palmer (1942). These areas were selected because they had been surveyed in previous years and, due to topographical barriers, it was believed they contained discrete populations.

Preliminary surveys were conducted in June with a Piper Subercub (PA-18) on floats to insure that both areas contained a suitable number of goats. In late July a helicopter (Heller 12E) survey was conducted in an attempt to acquire the best estimate of the goat populations. All other surveys, with the exception of one ground count on Area 2 which was performed in early August, were conducted from a Cessna 180 aircraft on floats.

All aerial surveys were initiated at the highest point on each study area. From that point the area was circled until completely surveyed, then the area of search was lowered 300 to 400 feet in altitude and another circle was begun. If the age composition of goats observed was not readily discernable the aircraft was circled over the animals until the goats were classified to the satisfaction of the observer.

Surveys were conducted in the shortest possible span of days, depending primarily on suitable flying weather. Efforts were made to duplicate most normal surveying procedures, and this meant that the initiation and conclusion of each survey were dependent on the availability of pilot, aircraft and flying weather.

Percent cloud cover and temperature recordings were made prior to each survey. During the course of each survey both the pilot (5 different pilots) and study leader participated in locating and classifying goats as either adults or kids. Data on goat numbers, age composition and estimated elevation and temperature at each location were recorded on standard forms and topographic maps. Elevations where goats were observed were estimated according to the relative position of the aircraft to the goats, while temperatures were those of the air immediately outside the aircraft.

Early in the study a subjective index of goat reactions to the survey vehicle was devised. Each goat observation was given a score according to the following criteria: 1) no observable reaction, 2) animal ran short distance (less than 25 yds.) and 3) animal ran more than 25 yards (usually until no longer observable). In conjunction with recording reaction scores the general cover type, or lack of it, at each observation site was also recorded.

FINDINGS

Of 11 goat surveys conducted (Table 1) seven were replicate counts made with a Cessna 180, two were preliminary surveys made with a Piper Supercub, one was a helicopter survey and one was conducted on foot. The highest goat count for both study areas was obtained using the helicopter. Replicate counts from a Cessna 180 varied from 29.5 percent to 96.7 percent of the total number observed from a helicopter. Number of goats observed from a Cessna 180 averaged about 66 percent of those observed from the helicopter (66.1% for Endicott River and 65.3% for William Henry Mountain).

Table 1 - Replicate goat counts on two study areas in Southeastern Alaska.

				Survey Area - William Henry Mountain				Endicott River to Sullivan River			
Survey No.	Date of Survey	Pilot No.	Survey Vehicle	No. of Adults Observed	No. of Kids Observed	Total No. of Goats	Kid/100 Adult Ratio	No. of Adults Observed	No. of Kids Observed	Total No. of Goats	Kid/100 Adults Ratio
1.	6/19/74	1	Supercub	28	12	40	42.9				
2.	6/26/74	1	Supercub					32	12	44	37.5
3.	7/28/74	2	Cessna 180	29	7	36	24.1	26	9	35	34.6
4.	7/29/74	3	Helicopter	38	17	55	44.7	42	19	61	45.2
5.	7/31/74	4	Cessna 180	14	6	20	42.9	17	1	18	5.9
6.	8/2-6/74	-	Ground Count	33	15	48	45.5	--	--	--	--
7.	8/10/74	5	Cessna 180	28	10	38	35.7	31	13	44	41.9
8.	8/11/74	5	Cessna 180	25	10	35	40.0	44	15	59	34.1
9.	8/19/74	5	Cessna 180	31	10	41	32.3	43	14	57	32.6
10.	8/29/74	5	Cessna 180	35	9	44	25.7	21	6	27	28.6
11.	8/30/74	2	Cessna 180	33	9	42	27.3	28	9	37	32.1
Averages of Cessna Counts =				27.86	8.71	36.57		30.0	9.57	39.57	
Variance σ^2				48.14	2.57	63.95		106.00	24.62	225.29	
Standard deviation σ				6.94	1.65	7.99		10.29	4.96	15.01	

Variance test $\sigma^2 = \sigma_2^2$ Adults $\frac{106.0}{48.14}$ = 2.20 kids = $\frac{24.62}{2.57}$ = 9.58 total = $\frac{225.29}{63.95}$ = 3.52

F σ,σ .05 = 3.87

From August 2 through August 6 a ground count was conducted on William Henry Mountain (Table 1) and 79 individual goat observations were recorded; at least 48 of these were different goats (33 adults and 15 kids or a 45.5 kid:100 adult ratio). Weather during the ground count consisted primarily of fog and rain which prevented a higher number of observations.

The variances of the means for the Cessna 180 counts on both study areas were compared with a F-Test to determine if they were equal (Table 1). No significant differences ($p>.05$) between study areas were detected for numbers of adults and total numbers, however, there was a significant difference for numbers of kids ($p<.05$).

The ratios of total numbers of goats observed from aerial surveys (Cessna and helicopter) for each area were compared with a heterogeneity Chi-square analysis to determine if total numbers between each area fluctuated in the same manner. No significant difference was detected ($x^2 = 12.97$, $p>.05$), however, these data did approach significance so a more in-depth analysis was performed. An individual breakdown of the seven degrees of freedom revealed that 83 percent of the Chi-square value was due to the differences ($p<.001$) in total numbers for observation days 8 and 10. Therefore, on at least 5 of 7 Cessna surveys the ratios varied in the same manner ($p>.807$). This indicated that factors which influenced variation in total counts were operating at the same magnitude on both study areas.

The ratios of adults to kids for each area were also subjected to a heterogeneity Chi-square analysis to determine if the ratios obtained from aerial surveys (Cessna and helicopter) were consistent regardless of fluctuations in total numbers. No significant difference was detected for either study area ($x^2 = 4.94$, $p>.75$ for Endicott River area and $x^2 = 2.93$, $p>.75$ for William Henry Mountain area). However, examination of Table 1 reveals that the kid/adult ratio for Survey No. 5 on the Endicott area was totally unacceptable for management purposes even though not statistically significant. Further analysis of these data, excluding Survey No. 5 for the Endicott area, still revealed no significant difference in ratios ($p>.995$).

An attempt was made to correlate mean air temperature and percent cloud cover with the number of goats observed each day and the elevation at which they were seen (Table 2). Both sets of data exhibited such large variations that no trends were detected. Detailed weather data from Juneau, Alaska, located approximately 38 miles southeast of the study area, are contained in Appendix I. No correlations were discovered for numbers of goats observed each day per area.

Fig. 2 shows the relationship between the time of day each Cessna survey was initiated and the resultant total number of goats observed for each area. Although the relationship was not statistically significant these data indicate that the time a survey was initiated had little relationship to the total number of goats observed.

Table 2. Miscellaneous data collected during replicate goat counts on two study areas in S.E. Alaska.

	William Henry Area					Endicott Area					
Survey No.	Initiation time	Survey time (min)	Percent cloud cover	Mean weighted air temp. of goat sightings	Mean weighted elevations of goat sightings	Initiation time	Survey time	Percent cloud cover	Weighted air temp. of goat sight.	Weighted elev. of goat sight.	Total cost per survey
1	9:41am	48	40	--	--	--	--	--	--	--	$71
2	--	--	--	--	--	10:20am	100	0	--	--	$148
3	1:10pm	45	20	51.5	3102	2:05pm	40	20	50.3	3571	$180
4	12:15pm	40	40	49.5	3149	10:55am	75	60	50.0	3403	$465
5	3:35pm	40	0	52.3	3300	4:15pm	55	5	52.7	3511	$172
6	5 day ground count										
7	3:35pm	40	10	52.2	3213	4:20pm	50	0	54.5	3857	$172
8	3:38pm	52	0	58.8	3353	4:33pm	80	0	59.2	3233	$216
9	2:40pm	43	100	50.0	3015	3:25pm	55	100	47.3	2768	$180
10	2:20pm	45	0	65.6	3329	3:15pm	70	0	68.6	3329	$223
11	6:38pm	34	0	69.6	3267	7:17pm	52	0	69.1	3156	$173

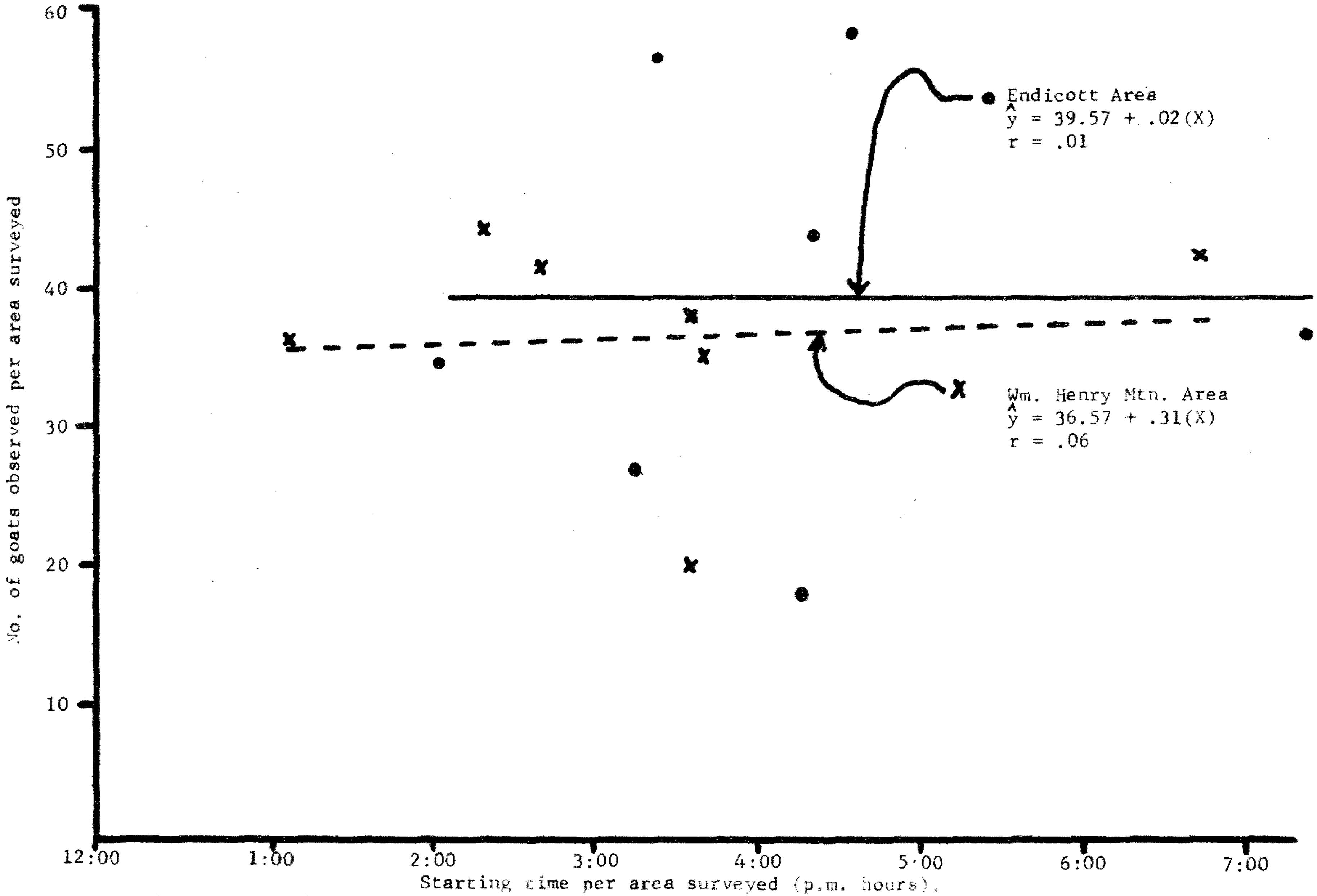

Fig. 2. Relationship between no. of goats observed per Cessna 180 survey and the initiation time of such surveys for two study areas in Southeast Alaska, August, 1974.

The relationship between numbers of goats observed and the amount of time spent per Cessna 180 survey was also assessed (Fig. 3). For the Endicott area the data indicated that more goats were observed as the surveying time increased. Whether or not this increase in goats observed was due to double counting of animals is unknown, however, it is believed that errors of that type were kept to a minimum by recording goat locations on topographic maps. Data for the William Henry Mountain area indicated no relationship between goats observed and surveying time.

It was hypothesized that the probability of observing groups of goats was greater than that of observing single goats. Some of the survey data support this hypothesis. Fig. 4 indicates that higher counts coincided with increased sightings of groups ($p<.05$). No relationship was detected between total numbers of goats observed and the number of single goats observed (Fig. 5). However, as the mean group size increased (Fig. 6), the number of observed singles decreased.

Figs. 7 and 8 show the frequency of goats observed from aerial surveys at various elevations for each study area. Adults with kids were observed at significantly lower elevations ($t=3.45$, $p<.001$) than were adults without kids. Based upon these data it was hypothesized that as the mean elevation of observed adults with kids decreased the resulting kid:100 adult ratio would decline as a result of a disproportionate count of adults. Data graphically presented in Fig. 9 support this hypothesis although they were not statistically significant. Even if this were the case, the indicated decline in ratio would still be acceptable for most management purposes.

Goat reactions to survey aircraft were also investigated during this study. Adults with kids showed more pronounced reactions to survey aircraft than did adults without kids ($t=3.72$, $p<.001$). It was hypothesized that an animal's reaction would partially depend upon the availability of cover. Goat (both adults with and without kids) reactions to the survey aircraft were not significantly different ($p>.05$) between those observed in rock and vegetative cover vs. those observed in the open or on snowbanks, however. Significant differences ($p<.05$) between mean reaction scores per aerial observation day were detected for both study areas (Table 3). Goats in the William Henry area had significantly higher reaction scores ($f=7.0$, $p<.001$) than did those in the Endicott River area. Generally higher reaction scores were tallied early in the study for both study areas. Goat reactions to helicopter surveys were thought to be more severe than those observed during fixed-wing surveys. The high reaction scores for the helicopter surveys (Survey No. 4) support these observations.

DISCUSSION

The purpose of conducting any survey of a game animal population is to attempt to determine trends in sex and age composition and total numbers. Results from this study indicate that for mountain goats, total counts conducted from a Cessna 180 during July and August may vary from 30 to 97 percent (mean=66%) of the total number observed from a helicopter. If these data are representative, it can be inferred that single goat surveys performed annually may not reflect trends in total numbers. Therefore, any management decision based upon aerial surveys alone must be viewed with skepticism.

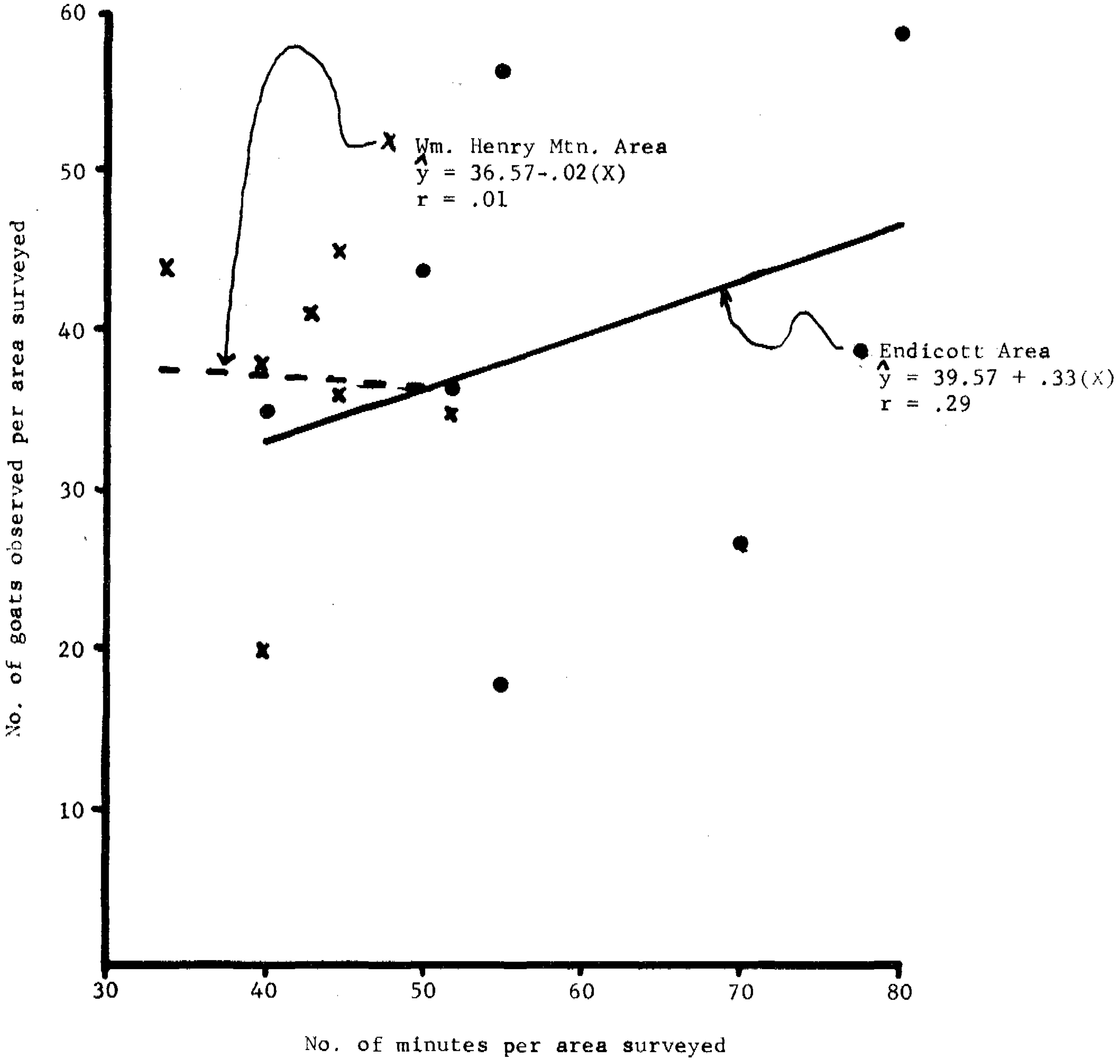

Fig. 3. Relationship between numbers of goat observed per Cessna 180 survey and the amount of time spent surveying for two study areas in Southeast Alaska, August, 1974.

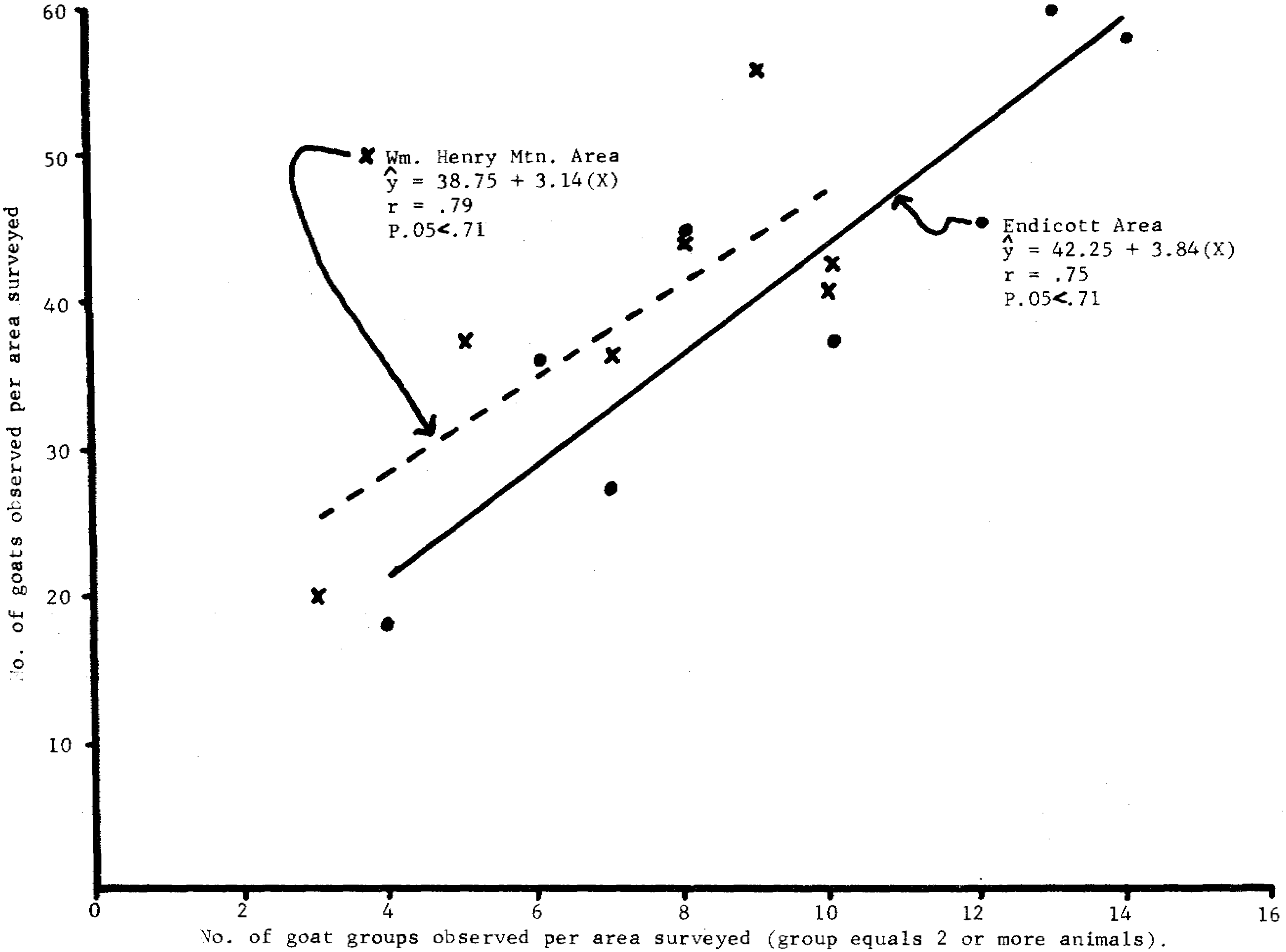

Fig. 4. Relationship between total numbers of goats observed per survey and the number of goat groups observed on two study areas in Southeast Alaska, uly and August, 1974.

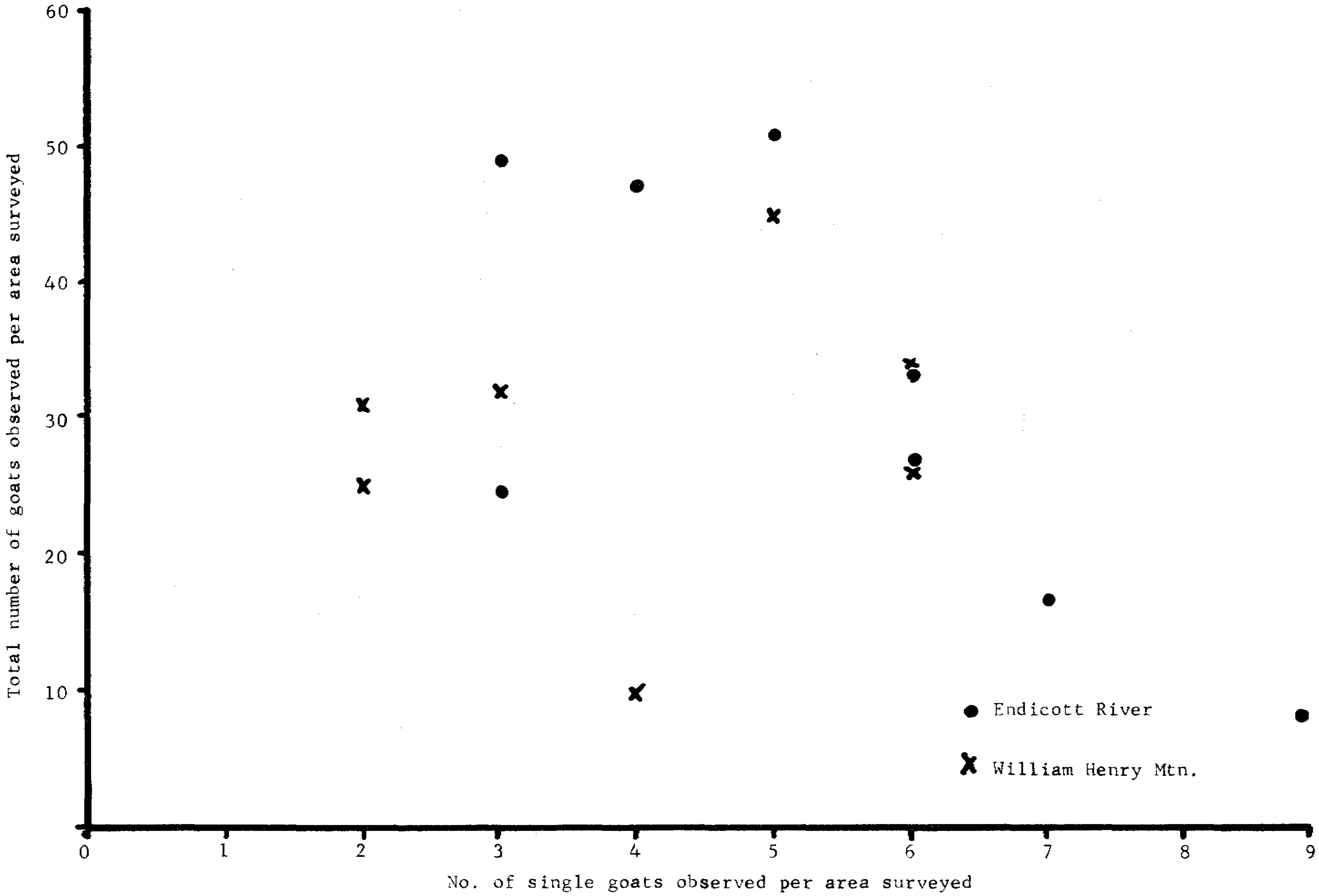

Fig. 5. Relationship between total numbers of goats observed per survey and the no. of single goats observed per survey on two study areas in Southeast Alaska, July and August, 1974.

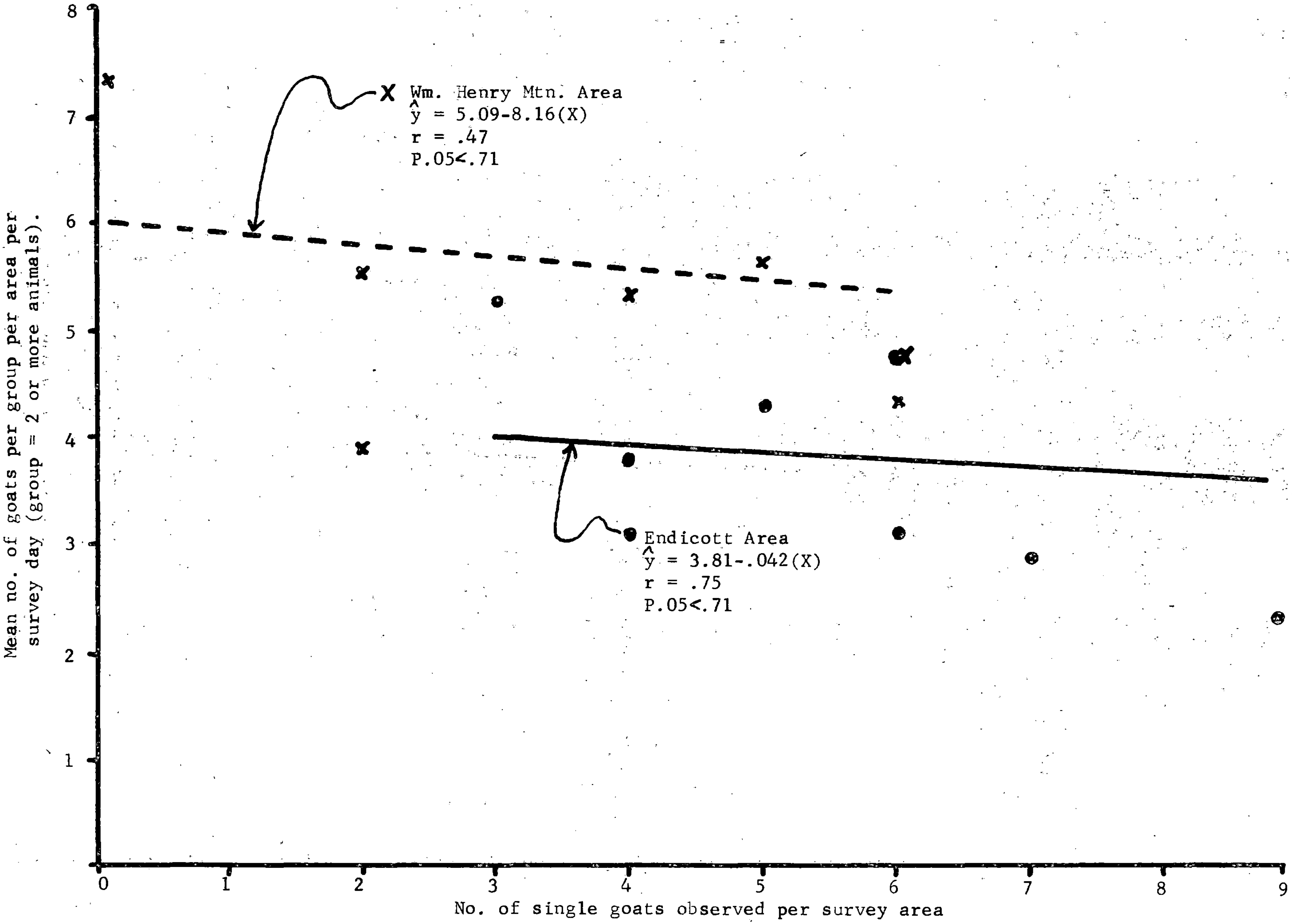

Fig. 6. Relationship between average group size of goats per survey verse the number of single goats observed per survey on two study areas in Southeast Alaska, July and August, 1974.

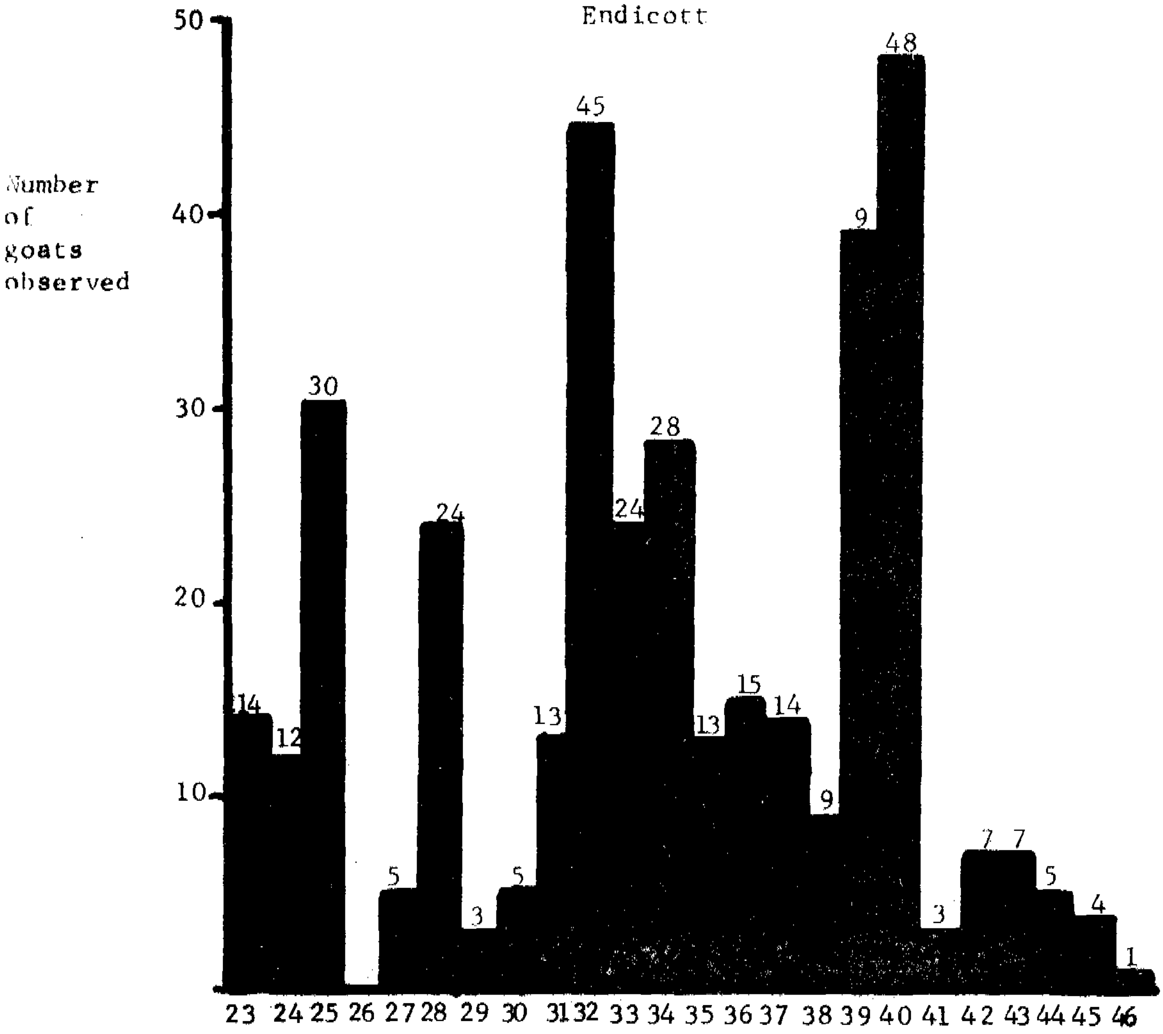

Fig. 7. Frequency of goat observations at various elevations as observed from aerial surveys over the Endicott River study area in Southeast Alaska, July and August, 1974.

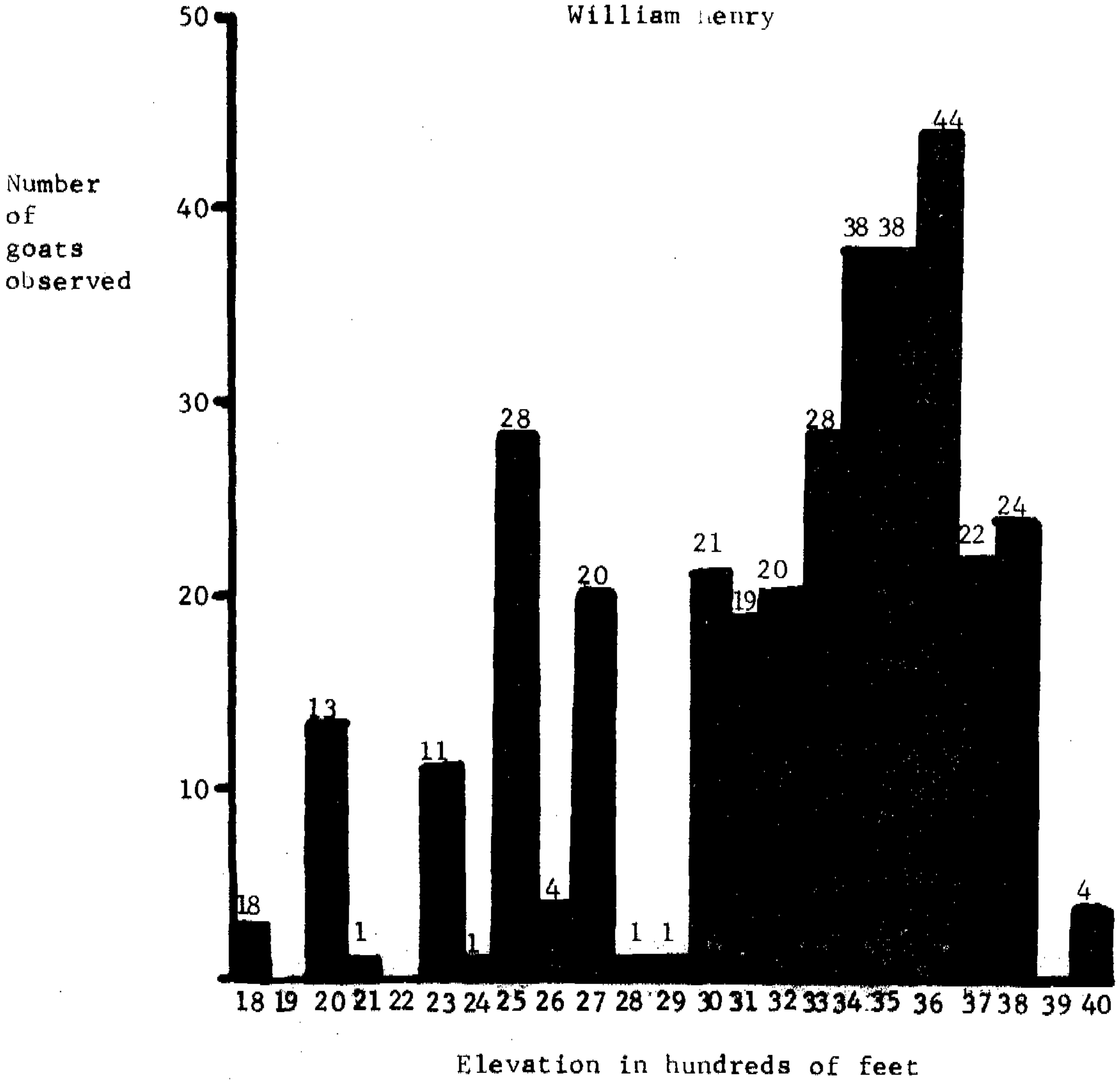

Fig. 8. Frequency of goat observations at various elevations as observed from aerial surveys over the Wm. Henry Mtn. study area in Southeast Alaska, July and August, 1974.

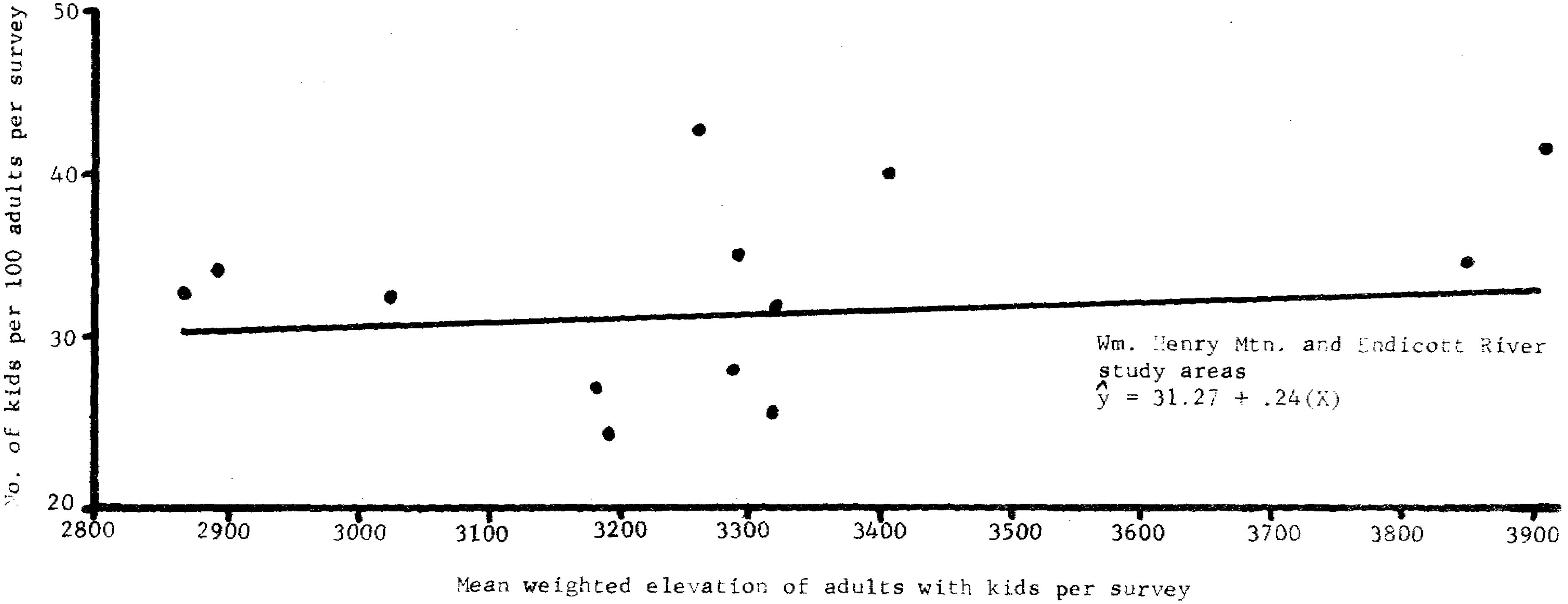

Fig. 9. Relationship between the calculated kid/100 adult ratio per survey verse the mean weighted elevatio of observed adults with kids for two study areas in Southeast Alaska, July and August, 1974.

Table 3. Duncan's NMRT showing individual differences for goat mean reaction scores 1/between aerial surveys conducted on two study areas in Southeast Alaska, July and August 1974. 2/

William Henry Mtn. Study Area

Survey Number	5	9	10	3	11	4	8	7
Mean Reaction Score	1.6	1.61	1.91	1.97	2.0	2.33	2.89	2.95
	———	———	———	———	———			
					———	———		
							———	———

Endicott Area Study Area

Survey Number	11	10	5	8	9	7	3	4
Mean Reaction Score	1.14	1.37	1.44	1.49	1.65	1.80	2.0	2.18
	———	———	———	———				
		———	———	———	———			
					———	———	———	
						———	———	———

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1. Score definition 1= No major reaction, 2= Ran short distance (25 yds.), 3= Ran more than 25 yds, usually until no longer observable.

2. Mean Reaction Scores that are underlined indicates that the means were not significantly different.

Although there were large variations in total numbers observed these data indicate that single aerial surveys may provide useful indices to productivity. Kid:100 adult ratios obtained in this study varied from 25.7 to 45.5 (excluding Survey No. 5 - Endicott area). Currently, at the low levels of population exploitation over most of Southeastern Alaska, the observed variation in kid/adult ratios is acceptable for most management purposes. However, as exploitation increases this type of variation in kid/adult ratios would not allow an accurate estimation of productivity and thus would provide little basis for intensive management decisions.

The helicopter survey produced both the highest total counts and the highest kid counts, indicating that helicopter surveys may provide more reliable population statistics than do surveys by fixed-wing aircraft. During the helicopter surveys several goats were observed that were under a canopy of deciduous vegetation. They were seen only because they shook the vegetation as they fled from the helicopter. It was also noted that many goats attempted to evade the helicopter and kids were more visible since they were unable to hide under the nanny as was the case on several occasions during fixed-wing surveys. The ability to thoroughly search vegetated areas and get a closer look at all goats observed undoubtedly produces more complete counts. However, the amount of daily variation associated with such surveys and their effects on goat behavior have not been determined, therefore, the resulting data should be viewed with caution. In addition, comparative cost figures reveal that helicopter surveys were about 2.5 times more expensive than Cessna 180 surveys which would probably prohibit their use except for localized problem areas.

The lowest number of goats counted during this study occurred during Survey No. 5. This survey was conducted two days after the helicopter survey. Although there are no firm data to support the contention that the helicopter survey caused a low count during the fixed-wing survey two days later, it does appear to be a possibility. Goat reaction scores (Table 2) and general observations indicated that the goats responded strongly to helicopters. If the goats remained upset after the helicopter survey, perhaps this caused them to move to areas with better cover making them unobservable. Chadwick (1973) reported that goats in Idaho appeared to move out of areas which received frequent helicopter use. He also stated that helicopters seemed to present a terrifying stimulus to mountain goats. Conceivably this stimulus could alter goat behavior for a period of time after a single encounter with a helicopter.

Causes of variations in total numbers between Cessna 180 counts were not determined in this study. Erickson and Siniff (1963) and LeResche and Rausch (1974) enumerated a variety of factors which influenced the accuracy and precision of their surveys on brown bears (*Ursus arctos*) and moose (*Alces alces*), respectively. Probably all the factors they listed, particularly observer experience, animal density, physiography, weather and equipment, apply to surveying mountain goat populations. For goats, however, emphasis could possibly be placed on their altitudinal migrations and problems associated with replicate surveys.

During this study an effort was made to correlate weather factors with daily counts. Although no correlations were detected, it is believed that perhaps the manner in which the variables were measured and the small number of surveys performed may account for this. Based on this study and other management surveys it is believed that a broad correlation exists between low goat counts and clear, sunny survey days; the probability of low counts being greater on days which are clear and sunny, resulting in higher air temperatures. It is believed that under these environmental conditions most goats either occupy lower elevations which are densely vegetated, or higher elevations which have large amounts of snow cover hindering observation from fixed-wing aircraft.

In Idaho Brandborg (1955) observed that goats with kids occupied lower elevations than did lone adults. Data from this study support his observations. If these observations are correct, it appears logical that a daily, varying percentage of the population occupies elevations where vegetation would not permit observation and could account for some of the variations in total numbers and numbers of kids. Determining the type of conditions and time of year when goats are found at relatively high elevations, if such a case exists, and then conducting aerial surveys may eliminate some of the daily variations.

Data from both study areas indicated that there were larger variations in kid counts for the Endicott area than for the William Henry area. This is possibly due to differences in topography and/or goat reactions to the survey aircraft. On many occasions the goats appeared uneasy at the sight of the survey aircraft and although goat groups may not have fled, kids frequently sought cover under the nanny and would not be observable unless the nanny started to run. Goats on William Henry Mountain reacted more strongly to survey aircraft than those on the Endicott area. It is believed that the Endicott area has more cover than does the William Henry area and Endicott goats are not forced to run resulting in less opportunity to observe kids.

Another factor which could explain some of the variations in survey data is that mountain goats may not lend themselves to being replicately surveyed with fixed-wing aircraft. During Survey No. 8 a competent observer was located on the William Henry Mountain area. He observed that before the survey aircraft was even in sight the goats became upset and started to scatter, apparently in reaction to hearing the change in prop pitch of the survey vehicle (Rausch, ADF&G, pers. comm.). Goat reaction data collected on that date (Table 3) supported his observation that the goats were nervous. Goat reaction data collected during the entire study indicated that goats on the Endicott area became partially accustomed to being surveyed as their mean reaction scores generally decreased as the study progressed. However, this was not true for the William Henry Mountain area. Causes for the apparent differences in goat behavior on the two areas are unknown, but are possibly related to the quantity of cover available. Visual comparisons of the two study areas indicate that they differ in their topography; William Henry Mountain having more open areas (fewer rock outcroppings) with fewer places of potential concealment. Possibly a more open environment may explain the more severe reactions of the William Henry goats to survey aircraft.

Both study areas were open to sport hunting during the month of August. Minimum harvest figures for that month, based on an overall 60.8 percent response of mandatory hunter reports, indicated that 4 and 0 goats were harvested from the William Henry and Endicott areas, respectively, during this study. No doubt a reduction in goat numbers while the study was being conducted accounted for some of the variation in total numbers, however, to what extent is unknown. The influence of disturbance by hunting upon goat behavior is unknown.

Most studies of the accuracy and reliability of aerial surveys have utilized the same pilot and survey vehicle. During this study an attempt was made to simulate some of the normal surveying procedures (conducting surveys with the first available pilot and aircraft). It has been generally accepted by Game Division personnel that a Piper Supercub is superior to a Cessna 180 for goat surveys. Data from this study show that on 4 of 7 surveys for the Endicott area and 5 of 7 surveys for the William Henry area the Cessna counts were higher, or within 10 percent of the Supercub counts. This indicates, although by no means conclusively, that Cessna counts may be no less accurate than counts performed from a Supercub. If this were true Cessna 180's should be used because surveys can be conducted in shorter periods of flying time resulting in lower observer fatigue and/or the ability to survey more areas in the same period of time.

During this study five different pilots were utilized. It is interesting to note that the lowest Cessna counts (Table 1, Survey No. 5) occured with Pilot No. 4. Since this was the only survey flown with Pilot No. 4, it might be concluded that he may have been at least partially responsible for the low count. In my opinion, however, the low count would have occurred with any of the pilots utilized during the study. In fact, if the pilot utilized during any one survey contributed to daily survey variability it could have been predicted that higher counts should have occurred with Pilot No. 4 since he had the most goat surveying experience. It is believed that some variation in total counts may result from changing pilots, but most probably occur as a result of variations in observability of the goats themselves.

Merriam (1965) indicated that the starting time of a survey influenced the number of goats counted. He believed that goats were more active and more observable in the early morning and late evening hours. Data from this study showed little relationship to starting time during the afternoon hours, however, most surveys were conducted in the middle of the afternoon and may not have been late enough to observe goats during their peak activity period.

RECOMMENDATIONS

For management and future research of mountain goat populations it is imperative that reliable baseline population data be gathered. The success of any management or research project would ultimately rest with our ability to at least assess trends in population levels and composition. At present this methodology does not exist. Therefore, it is recommended that the present project be continued to include the following:

Prior to any replicate surveys as many goats as physically possible should be marked by dyeing. Marking goats could be accomplished by using a spray gun mounted on a helicopter. Marking of goats would then allow calculation of a total population estimate by formulating a ratio of marked to unmarked goats as observed from replicate surveys.

Since there is some indication that helicopter surveys may provide better population statistics a very limited number of replicate surveys should be initiated. Further refinement of helicopter surveys may provide a method for accurately measuring management problem areas.

In an effort to predict the best possible surveying conditions a minimum of two ground weather stations should be established on the study areas.

Additional fixed-wing aircraft replicate surveys should also include the use of Piper Supercubs whenever available.

Survey times should be varied in an attempt to determine the optimum time period for initiating surveys.

Surveys should be conducted year-round in an attempt to determine the best season for surveying and to acquire data on goat habitat preferences.

It is recommended that a basic life history study, in conjunction with measuring the effects of various levels of population exploitation, be initiated as soon as possible in Southeastern Alaska.

ACKNOWLEDGEMENTS

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Appendix I. Weather data for Juneau, Alaska during the months of July & August 1974.

LOCAL CLIMATOLOGICAL DATA

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
ENVIRONMENTAL DATA SERVICE

JUNEAU, ALASKA
NAT WEATHER SERVICE FCST OFC
MUNICIPAL AIRPORT
JULY 1974

LATITUDE 58° 22′ N LONGITUDE 134° 35′ W ELEVATION (GROUND) 12 FT. STANDARD TIME USED: PACIFIC WBAN #25309

DATE	TEMPERATURE °F							WEATHER TYPES ON DATES OF OCCURRENCE	SNOW, ICE PELLETS OR ICE ON GROUND AT 10AM IN.	PRECIPITATION		AVG. STATION PRESSURE IN.	WIND					SUNSHINE		SKY COVER TENTHS		DATE
	MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65° HEATING	DEGREE DAYS BASE 65° COOLING	1 FOG 2 HEAVY FOG X 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE, HAZE 9 BLOWING SNOW		WATER EQUIVALENT IN	SNOW, ICE PELLETS IN.	ELEV. 24 FEET M.S.L.	RESULTANT DIRECTION	RESULTANT SPEED M.P.H.	AVERAGE SPEED M.P.H.	FASTEST MILE SPEED M.P.H.	FASTEST MILE DIRECTION	HOURS AND TENTHS	PERCENT OF POSSIBLE	SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT	
1	2	3	4	5	6	7A	7B	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	62	46	54	-1	47	11	0	1	0	.35	0	29.89	09	5.5	8.3	13	09	9.3	52	7	7	1
2	65	42	54	-1	45	11	0		0	.04	0	29.94	11	2.8	6.6	13	08	12.4	62	7	7	2
3	67	39	53	-2	44	12	0		0	0	0	29.94	28	2.4	7.2	14	07	16.8	93	0	0	3
4	64	40	52	-3	45	13	0		0	0	0	29.99	30	4.6	7.2	15	24	9.1	50	7	6	4
5	59	48	54	-1	45	11	0		0	0	0	30.06	34	2.2	5.9	8	34	0.0	0	10	10	5
6	59	47	53	-2	45	12	0		0	T	0	29.98	33	3.9	5.6	9	35	0.0	0	10	10	6
7	62	43	53	-2	44	12	0		0	0	0	29.90	30	4.0	5.9	9	24	6.8	38	7	7	7
8	69	38*	54	-1	45	11	0		0	0	0	29.77	32	5.0	6.8	12	25	17.7	99	0	0	8
9	71	41	56	1	45	9	0		0	0	0	29.63	32	4.5	5.5	10	36	17.4	97	8	6	9
10	58	45	52	-4	47	13	0	1	0	.37	0	29.72	11	7.1	9.5	20	12	1.5	8	10	9	10
11	66	44	55	-1	47	10	0		0	.01	0	29.90	36	2.0	6.6	9	08	8.2	46	9	9	11
12	58	41	50	-6	47	15	0		0	.17	0	30.05	08	3.6	5.5	12	11	0.7	4	10	9	12
13	69	43	56	0	46	9	0		0	T	0	30.20	31	2.7	6.2	10	26	9.4	53	8	8	13
14	75*	39	57	1	46	8	0		0	T	0	29.94	11	1.6	7.2	15	11	11.9	67	6	6	14
15	56	47	52	-4	50	13	0	1	0	.59	0	29.83	09	6.6	7.9	13	10	0.0	0	10	10	15
16	58	47	53	-3	49	12	0		0	.07	0	29.81	32	3.7	4.8	7	22	2.1	12	10	10	16
17	56	47	52	-4	48	13	0		0	.30	0	29.78	06	4.5	6.3	12	08	0.4	2	10	10	17
18	63	46	55	-1	49	10	0		0	T	0	29.99	05	1.5	4.5	10	10	3.8	22	10	10	18
19	57	47	52	-4	48	13	0	1	0	.25	0	30.08	05	2.7	3.7	7	07	0.0	0	10	10	19
20	61	47	54	-2	49	11	0		0	.02	0	30.21	08	5.0	5.8	10	09	0.0	0	10	10	20
21	63	46	55	-1	49	10	0		0	T	0	30.05	25	.6	4.3	9	10	1.9	11	10	10	21
22	55	49	52	-4	49	13	0		0	.15	0	29.84	10	10.6	10.9	18	12	0.0	0	10	10	22
23	52	48	50*	-6	48	15	0		0	.30	0	29.83	11	10.9	11.1	22	12	0.0	0	10	10	23
24	54	48	51	-5	48	14	0		0	.20	0	30.04	10	9.0	9.2	14	10	0.0	0	10	10	24
25	55	48	52	-4	48	13	0		0	.03	0	30.25	09	7.7	8.1	12	10	0.0	0	10	10	25
26	63	46	55	-1	47	10	0		0	T	0	30.25	36	5.3	5.3	9	33	2.1	12	10	10	26
27	67	45	56	0	48	9	0		0	0	0	30.23	31	2.5	5.8	12	27	12.0	71	7	7	27
28	73	44	59*	3	48	6	0		0	0	0	30.24	32	2.8	5.8	13	36	16.8	100	4	4	28
29	68	43	56	0	48	9	0		0	0	0	30.21	30	4.2	7.3	14	27	16.7	100	2	3	29
30	54	47	51	-5	49	14	0	1	0	.27	0	30.15	02	4.9	6.2	10	36	0.0	0	10	10	30
31	71	45	58	2	50	7	0	1	0	0	0	30.16	25	1.6	4.3	9	22	13.0	78	4	5	31
	SUM	SUM				TOTAL	TOTAL			TOTAL	TOTAL	FOR THE MONTH:						TOTAL	%	SUM	SUM	
	1930	1386				349	0	NUMBER OF DAYS		3.12	0	29.99	05	1.8	6.6	22	12	190.0	FOR	246	243	
	AVG.	AVG.	AVG.	DEP.	AVG.	DEP.	DEP.	PRECIPITATION		DEP.						DATE: 23		POSSIBLE	MONTH	AVG.	AVG.	
	62.3	44.7	53.5	-2.2	47	61	0	≥ .01 INCH	15	-1.57								542.1	35	7.9	7.8	

				SEASON TO DATE	
NUMBER OF DAYS				TOTAL	TOTAL
MAXIMUM TEMP.		MINIMUM TEMP.		349	0
≥ 90° ‡	≤ 32°	≤ 32°	≤ 0°	DEP.	DEP.
4	0	0	0	61	0

SNOW, ICE PELLETS ≥ 1.0 INCH 0
THUNDERSTORMS 0
HEAVY FOG X 0
CLEAR 3 PARTLY CLOUDY 8 CLOUDY 20

GREATEST IN 24 HOURS AND DATES			GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE
PRECIPITATION		SNOW, ICE PELLETS	
.59	14-15	0	0

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

DATE	A. M. HOUR ENDING AT												P. M. HOUR ENDING AT												DATE
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
1	T	T	.01	T	.02	.02	.08	.04	.06	.09	.03	T													1
2																.04									2
3																									3
4																									4
5																									5
6					T	T	T																		6
7																									7
8																									8
9																									9
10										T	T	.04	.09	.08	.06	.09	T	.01					T	T	10
11	T	T			.01	T							T	T	T	T									11
12													.02	.03	.09	.03	T	T	T						12
13			T	T	T																				13
14																						T	T	T	14
15	T	.03	.05	.07	.05	.04	T	.01	T	T	T	.06	.04	.02	.02	.06	.03	.04	.04	.03	T	T	T		15
16				.02	T	.02	.01	T					T	T	T	T	T	T	T	T	T	.01	T	.01	16
17	T		T	T	T	T						T	T	.02	.04	.05	.07	.03	T	T	.03	.04	.02	T	17
18															T	T	T								18
19	.04	.10	T			T	.04	.05	.02	T									T	T					19
20	T	.01	T	T	.01	T	T	T		T	T					T	T				T	T	T	T	20
21	T			T	T	T																	T	T	21
22	T	T	.01	.01	T	T	.01	T	T	.02	T	T	T	T	T	.02	.04	.02	.01	.01	T	T	T	T	22
23	T	T	T			T	.01	.02	T	.01	.02	T	T	.02	T	T	T	.06	.03	.03	.01	.02	.04	.03	23
24	T	T	.01	T	T	.01	.01	.01	T	T	.02	T	T	T	T	T	T	.02	.02	.07	.01	.02	T	T	24
25	T	T	T	T	T	T	T	T	T	T	T	T		T	T	.03	T	T	T	T					25
26			T	T	T	T	T																		26
27																									27
28																									28
29																									29
30							T	T	.05	.06	.04	.08	.04	T	T	T	T								30
31																									31

JUNEAU, ALASKA

* EXTREME TEMPERATURES FOR THE MONTH, MAY BE THE LAST OF MORE THAN ONE OCCURRENCE.
\- BELOW ZERO TEMPERATURE OR NEGATIVE DEPARTURE FROM NORMAL.
‡ ≥ 70° AT ALASKAN STATIONS.
\+ ALSO ON AN EARLIER DATE, OR DATES.
X HEAVY FOG RESTRICTS VISIBILITY TO 1/4 MILE OR LESS.
T IN THE HOURLY PRECIPITATION TABLE AND IN COLUMNS 9, 10, AND 11 INDICATES AN AMOUNT TOO SMALL TO MEASURE

THE SEASON FOR DEGREE DAYS BEGINS WITH JULY FOR HEATING AND JANUARY FOR COOLING.
DATA IN COLUMNS 6, 12, 13, 14, AND 15 ARE BASED ON 8 OBSERVATIONS PER DAY AT 3-HOUR INTERVALS.
WIND DIRECTIONS ARE THOSE FROM WHICH THE WIND BLOWS. RESULTANT WIND IS THE VECTOR SUM OF WIND DIRECTIONS AND SPEEDS DIVIDED BY THE NUMBER OF OBSERVATIONS. FIGURES FOR DIRECTIONS ARE TENS OF DEGREES FROM TRUE NORTH; I.E., 09-EAST, 18-SOUTH, 27-WEST, 36-NORTH, AND 00-CALM. WHEN DIRECTIONS ARE IN TENS OF DEGREES IN COL. 17, ENTRIES IN COL. 16 ARE FASTEST OBSERVED 1-MINUTE SPEEDS. IF THE / APPEARS IN COL. 17, SPEEDS ARE GUSTS.
ANY ERRORS DETECTED WILL BE CORRECTED AND CHANGES IN SUMMARY DATA WILL BE ANNOTATED IN THE ANNUAL SUMMARY.

SUBSCRIPTION PRICE: LOCAL CLIMATOLOGICAL DATA $2.00 PER YEAR INCLUDING ANNUAL ISSUE IF PUBLISHED. FOREIGN MAILING 75¢ EXTRA. SINGLE COPY: 20¢ FOR MONTHLY ISSUE; 15¢ FOR ANNUAL SUMMARY. MAKE CHECKS PAYABLE TO DEPARTMENT OF COMMERCE, NOAA. SEND PAYMENTS AND ORDERS TO NATIONAL CLIMATIC CENTER, FEDERAL BUILDING, ASHEVILLE, NORTH CAROLINA 28801.

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC CENTER, ASHEVILLE, NORTH CAROLINA, 28801

William H. Haggard

DIRECTOR, NATIONAL CLIMATIC CENTER

SUMMARY BY HOURS

HOUR LOCAL TIME	AVERAGES								RESULTANT WIND	
	SKY COVER TENTHS	STATION PRESSURE IN.	TEMPERATURE			RELATIVE HUMIDITY %	WIND SPEED M.P.H.			
			AIR °F	WET BULB °F	DEW PT. °F				DIRECTION	SPEED M.P.H.
01	7	30.00	48	47	46	89	6.1		08	4.1
04	8	30.00	47	46	45	93	5.3		08	3.2
07	8	30.00	49	47	46	90	4.9		08	3.0
10	8	30.00	54	51	49	82	6.2		30	1.2
13	8	30.00	58	54	50	75	7.5		17	2.1
16	8	29.99	59	54	50	73	8.2		20	1.2
19	7	29.98	58	53	48	73	7.5		05	2.3
22	7	29.99	50	48	45	83	7.3		04	4.6

USCOMM - NOAA - ASHEVILLE 250
8/16/74

OBSERVATIONS AT 3-HOUR INTERVALS

	SKY COVER	CEILING	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	WET BULB °F	DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS	SKY COVER	CEILING	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	WET BULB °F	DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS	SKY COVER	CEILING	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	WET BULB °F	DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
					DAY 01											DAY 02											DAY 03						
01	10	25	10		RW	49	48	47	93	06	8	3	UNL	15			47	45	44	89	10	8	4	UNL	15			51	47	42	71	07	12
04	10	24	6		RWF	48	47	47	96	11	7	8	35	15			46	45	44	93	13	9	0	UNL	15			41	40	39	93	00	0
07	10	35	5		RF	48	47	47	96	09	8	9	65	15			49	47	46	89	10	6	0	UNL	15			47	45	42	83	00	0
10	10	32	6		RF	47	46	46	96	35	6	10	65	15			53	49	46	77	24	3	0	UNL	15			57	52	47	69	25	8
13	10	35	15			53	50	47	80	09	5	8	65	15			58	52	47	67	27	5	0	UNL	15			64	55	48	56	27	6
16	5	UNL	15			58	53	48	70	22	7	5	UNL	15			54	51	48	83	09	3	0	UNL	15			67	56	46	47	27	9
19	3	UNL	15			58	53	48	70	10	10	4	UNL	15			62	53	45	54	29	5	0	UNL	15			66	55	46	49	23	8
22	2	UNL	15			49	46	44	83	09	11	5	UNL	15			54	48	42	54	08	7	0	UNL	15			50	46	42	74	01	7
					DAY 04											DAY 05											DAY 06						
01	0	UNL	15			46	45	43	89	00	0	10	32	15			50	48	46	86	10	6	10	40	15			49	46	42	77	34	7
04	0	UNL	15			41	41	40	96	01	4	10	30	15			48	46	44	86	34	6	10	40	15			48	46	44	86	36	5
07	0	UNL	15			48	46	43	83	36	7	10	40	15			50	47	45	83	36	3	10	40	15			48	46	45	89	36	4
10	7	35	15			57	51	46	67	32	7	10	40	15			54	48	43	67	32	4	10	45	15			54	50	46	75	32	5
13	10	35	15			60	53	47	62	23	6	10	40	15			56	50	45	67	14	4	10	45	15			57	52	47	69	27	5
16	10	40	15			60	54	48	65	25	13	10	30	15			58	51	45	62	24	7	10	45	15			59	53	48	67	21	5
19	10	40	15			55	50	45	69	28	7	10	30	15			56	50	45	67	35	5	10	45	15			57	51	46	67	35	4
22	10	40	15			52	48	45	77	35	6	10	40	15			50	47	43	77	35	6	10	40	15			50	47	44	80	35	4
					DAY 07											DAY 08											DAY 09						
01	10	35	15			49	46	43	80	35	5	0	UNL	15			42	41	40	93	36	3	0	UNL	15			46	44	42	86	35	3
04	10	35	15			48	46	43	83	35	4	0	UNL	15			40	40	39	96	02	5	0	UNL	15			41	41	40	96	35	6
07	10	35	15			49	46	42	77	34	3	0	UNL	15			46	45	43	89	02	6	4	UNL	15			48	46	44	86	01	3
10	10	30	15			53	48	43	69	30	4	0	UNL	15			58	53	48	70	29	9	10	UNL	15			59	53	48	67	28	6
13	10	35	15			58	51	45	62	27	5	0	UNL	15			65	56	49	56	27	6	10	UNL	15			65	57	50	59	28	5
16	9	35	15			61	54	49	65	24	8	0	UNL	15			69	58	50	51	27	6	7	UNL	15			69	58	50	51	28	6
19	0	UNL	15			60	53	46	60	25	5	0	UNL	15			68	57	49	51	34	6	7	200	15			70	57	47	44	32	5
22	0	UNL	15			49	46	43	80	35	7	0	UNL	15			52	48	43	72	35	7	7	UNL	15			53	48	42	66	35	5
					DAY 10											DAY 11											DAY 12						
01	7	UNL	15			48	45	41	77	04	3	10	37	12		R	50	49	48	93	09	7	3	UNL	15			42	41	39	89	36	4
04	9	UNL	15			46	45	44	93	10	3	10	30	15			47	46	45	93	12	3	10	100	15			43	42	41	93	09	3
07	9	50	15			52	49	46	80	27	3	10	34	15			51	50	49	93	08	8	10	56	15			48	46	44	86	01	3
10	10	23	15		R	56	53	50	80	34	5	9	38	15			54	51	49	83	26	6	10	55	15			55	51	48	77	22	4
13	10	17	5		RF	52	51	51	96	12	14	10	45	15		RW	57	54	52	83	27	6	10	25	10		RW	56	54	52	87	09	6
16	10	27	7		R	51	50	49	93	12	16	9	45	15			63	55	49	60	33	6	10	25	10		RW	54	53	52	93	10	6
19	10	45	7			52	50	48	86	11	14	9	200	15			61	53	45	56	34	5	10	22	15			56	53	51	83	07	4
22	10	27	10			51	49	47	86	11	8	7	180	15			47	44	41	80	36	5	10	35	15			51	50	49	93	10	7
					DAY 13											DAY 14											DAY 15						
01	10	35	15			51	49	48	90	01	5	0	UNL	15			43	42	40	89	36	3	10	55	15		R	54	52	50	86	10	11
04	10	25	15		RW	48	46	44	86	01	6	3	UNL	15			41	40	38	89	01	3	10	25	10		R	52	51	50	93	08	6
07	10	50	15			51	50	49	93	35	3	2	UNL	15			47	45	43	86	01	3	10	35	10		R	50	49	49	96	01	4
10	10	50	15			56	53	50	80	08	3	1	UNL	15			59	54	50	72	22	6	10	30	7		R	54	53	52	93	07	6
13	9	UNL	15			62	54	46	56	25	8	7	UNL	15			69	60	53	57	20	5	10	35	6		R	54	52	51	90	09	9
16	8	50	15			66	56	46	49	26	9	9	230	15			71	59	49	46	27	7	10	40	6		RF	53	52	52	96	12	10
19	8	50	15			63	54	46	54	22	4	10	200	15			64	55	47	54	08	10	10	38	7		R	52	51	50	93	10	7
22	2	UNL	15			47	45	42	83	36	5	10	60	15		R	59	52	46	62	11	13	10	40	7		R	48	47	47	96	36	4
					DAY 16											DAY 17											DAY 18						
01	10	40	15			48	47	47	96	32	5	10	16	7			48	47	46	93	36	4	10	50	10			47	46	45	93	36	4
04	10	50	15		R	47	46	45	93	36	3	10	23	10		RW	50	48	48	93	10	5	10	30	10			47	46	45	93	36	3
07	10	60	15			49	48	47	93	33	3	10	25	10			51	50	49	93	10	8	10	45	15			50	49	48	93	36	3
10	10	50	15			54	52	50	86	26	6	10	50	15			56	53	51	83	10	7	10	46	15			55	53	51	86	20	6
13	10	50	15		RW	56	53	50	80	26	4	10	30	10		RW	55	52	50	83	10	7	10	35	15			58	55	52	81	13	4
16	10	45	10		RW	56	54	53	90	34	5	10	40	8		RW	53	52	51	93	09	5	10	40	15		RW	62	58	55	78	09	4
19	10	40	10		RW	53	51	50	90	35	4	10	30	12		RW	54	52	50	86	35	4	8	55	15			59	56	51	76	07	4
22	10	25	10		RW	49	48	47	93	35	3	10	35	12		RW	48	47	47	96	35	4	9	50	15			49	47	46	89	36	3
					DAY 19											DAY 20											DAY 21						
01	10	30	10		RW	50	49	48	93	00	0	10	30	12		RW	50	49	48	93	08	4	10	40	12			47	46	46	96	01	3
04	10	26	15			48	47	47	96	35	4	10	30	12		RW	51	50	49	93	08	4	10	38	12		R	46	46	46	100	01	4
07	10	25	5		RW	49	48	47	93	00	0	10	17	8		R	50	49	49	96	06	5	10	27	15			51	50	49	93	08	4
10	10	30	7			51	50	49	93	36	4	10	22	7		L	52	51	50	93	09	5	10	45	15			55	52	50	83	23	3
13	10	45	10			54	52	51	90	09	5	10	20	10			56	53	51	83	09	5	10	55	15			58	54	50	75	21	5
16	10	40	15			54	51	48	80	08	5	10	20	12		RW	53	51	49	86	06	6	10	65	15			59	54	50	72	23	4
19	10	30	12		RW	50	49	48	93	01	3	10	25	15			52	50	48	86	12	7	10	60	15			58	54	51	78	22	4
22	10	30	15			51	49	48	90	09	5	10	45	12		RW	49	48	48	96	01	4	10	60	15			52	50	48	86	02	3
					DAY 22											DAY 23											DAY 24						
01	10	40	15		RW	51	49	48	90	09	9	10	27	12		RW	50	49	49	96	11	8	10	30	8		RW	50	49	48	93	11	9
04	10	40	12		RW	50	49	49	96	08	7	10	45	15			50	49	48	93	12	13	10	30	8		RW	49	48	47	93	08	8
07	10	22	12		RW	50	49	48	93	10	8	10	35	12		RW	49	48	47	93	12	8	10	32	12		RW	48	47	47	96	10	7
10	10	45	10		RW	51	50	49	93	10	8	10	30	12		RW	50	49	48	93	10	8	10	35	12		RW	50	49	48	93	10	7
13	10	35	10			54	51	48	80	13	15	10	40	1		RW	51	49	48	90	11	6	10	25	12		RW	52	50	49	90	11	7
16	10	30	10		RW	52	50	49	90	10	8	10	35	15		RW	51	49	48	90	10	9	10	23	12		RW	53	51	50	90	10	12
19	10	30	10		RW	50	49	48	93	10	10	10	30	10		RW	49	48	48	96	10	11	10	25	10		RW	50	49	48	93	07	7
22	10	25	12		RW	50	49	48	93	11	11	10	25	10		RW	50	49	48	93	10	14	10	25	10		RW	49	48	47	93	09	7
					DAY 25											DAY 26											DAY 27						
01	10	28	12			49	48	48	96	07	7	10	28	15			47	46	45	93	01	4	10	45	15			48	46	45	89	36	5
04	10	30	12		RW	49	48	48	96	10	9	10	24	7		RW	46	45	44	93	35	4	10	35	15			47	45	44	89	36	3
07	10	30	15		RW	49	48	47	93	10	6	10	24	7			46	45	44	93	34	4	10	27	15			49	46	44	83	35	4
10	10	30	15		RW	51	49	48	90	06	8	10	24	15			51	49	48	90	35	3	10	27	15			55	52	49	80	24	4
13	10	30	15			54	52	50	86	08	6	10	40	15			58	54	51	78	35	5	8	100	15			63	57	52	68	22	8
16	10	35	15		RW	53	52	51	93	10	8	10	50	15			57	54	51	80	36	6	2	UNL	15			65	57	51	61	24	5
19	10	35	15		RW	52	50	48	86	10	8	10	55	15			55	52	49	80	36	6	3	UNL	15			62	56	51	67	01	8
22	10	45	15			50	48	46	86	10	6	10	50	15			49	47	46	86	36	5	4	UNL	15			49	47	45	86	36	5
					DAY 28											DAY 29											DAY 30						
01	5	UNL	15			46	45	43	89	03	3	0	UNL	15			47	46	45	93	03	6	10	28	15			53	50	48	83	35	8
04	6	80	15			45	44	44	96	00	0	0	UNL	15			45	44	43	93	10	3	10	27	15			51	49	47	86	36	4
07	5	UNL	15			50	48	46	86	00	0	0	UNL	15			48	46	44	86	33	3	10	22	10		RW	50	48	47	89	36	5
10	7	90	15			59	55	52	78	20	5	0	UNL	15			61	55	51	70	28	7	10	20	10		RW	51	50	49	93	36	4
13	5	UNL	15			57	58	52	59	25	8	1	UNL	15			65	58	52	63	24	10	10	25	10		RW	54	52	51	90	09	7
16	1	UNL	15			72	61	53	51	28	6	2	UNL	15			67	58	52	59	27	8	10	27	7		RW	54	53	52	93	06	4
19	1	UNL	15			65	57	51	61	36	11	6	UNL	15			64	56	50	61	29	7	10	30	10			54	52	51	90	05	6
22	0	UNL	15			52	48	45	77	36	7	10	35	15			54	50	47	77	36	8	10	45	12			50	49	48	93	36	5
					DAY 31																												
01	8	50	15			46	45	44	93	01	3																						
04	10	5	7			47	46	46	96	00	0																						
07	9	8	3		F	48	47	47	98	36	3																						
10	9	8	10			54	52	50	86	00	0																						
13	0	UNL	15			64	59	55	73	23	6																						
16	0	UNL	15			67	60	55	66	22	8																						
19	2	UNL	15			66	59	54	65	21	5																						
22	2	UNL	15			51	48	45	80	01	5																						

ADDITIONAL DATA

OTHER OBSERVATIONAL DATA CONTAINED IN RECORDS ON FILE CAN BE FURNISHED AT COST VIA MICROFILM, MICROFICHE, OR PAPER COPIES OF THE ORIGINAL RECORDS. INQUIRIES AS TO AVAILABILITY AND COSTS SHOULD BE ADDRESSED TO: DIRECTOR, NATIONAL CLIMATIC CENTER, FEDERAL BUILDING, ASHEVILLE, NORTH CAROLINA 28801.

STATION: JUNEAU ALASKA YEAR & MONTH: 74 07

NOTES

CEILING COLUMN-
UNL INDICATES AN UNLIMITED CEILING

WEATHER COLUMN-

•	TORNADO
T	THUNDERSTORM
Q	SQUALL
R	RAIN
RW	RAIN SHOWERS
ZR	FREEZING RAIN
L	DRIZZLE
ZL	FREEZING DRIZZLE
S	SNOW
SP	SNOW PELLETS
IC	ICE CRYSTALS
SW	SNOW SHOWERS
SG	SNOW GRAINS
IP	ICE PELLETS
A	HAIL
F	FOG
IF	ICE FOG
GF	GROUND FOG
BD	BLOWING DUST
BN	BLOWING SAND
BS	BLOWING SNOW
BY	BLOWING SPRAY
K	SMOKE
H	HAZE
D	DUST

WIND COLUMNS-

DIRECTIONS ARE THOSE FROM WHICH THE WIND BLOWS, INDICATED IN TENS OF DEGREES FROM TRUE NORTH: I.E., 09 FOR EAST, 18 FOR SOUTH, 27 FOR WEST. ENTRY OF 00 IN THE DIRECTION COLUMN INDICATES CALM.

SPEED IS EXPRESSED IN KNOTS; MULTIPLY BY 1.15 TO CONVERT TO MILES PER HOUR.

U.S. DEPARTMENT OF COMMERCE
NATIONAL CLIMATIC CENTER
FEDERAL BUILDING
ASHEVILLE, N.C. 28801

AN EQUAL OPPORTUNITY EMPLOYER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
210

FIRST CLASS

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

LOCAL CLIMATOLOGICAL DATA

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
ENVIRONMENTAL DATA SERVICE

JUNEAU, ALASKA
NAT WEATHER SERVICE FCST OFC
MUNICIPAL AIRPORT
AUGUST 1974

LATITUDE 58° 22′ N LONGITUDE 134° 35′ W ELEVATION (GROUND) 12 FT. STANDARD TIME USED: PACIFIC WBAN #25309

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	DEGREE DAYS BASE 65° HEATING	COOLING	WEATHER TYPES ON DATES OF OCCURRENCE 1 FOG 2 HEAVY FOG X 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE, HAZE 9 BLOWING SNOW	SNOW, ICE PELLETS OR ICE ON GROUND AT 10AM IN.	PRECIPITATION WATER EQUIVALENT IN.	SNOW, ICE PELLETS IN.	AVG. STATION PRESSURE IN. ELEV. 24 FEET M.S.L.	WIND RESULTANT DIRECTION	RESULTANT SPEED M.P.H.	AVERAGE SPEED M.P.H.	FASTEST MILE SPEED M.P.H.	FASTEST MILE DIRECTION	SUNSHINE HOURS AND TENTHS	PERCENT OF POSSIBLE	SKY COVER TENTHS SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT	DATE
1	2	3	4	5	6	7A	7B	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	78	44	61	5	48	4	0		0	0	0	30.13	27	1.4	4.3	8	20	16.1	98	5	5	1
2	70	50	60	4	49	5	0		0	T	0	30.10	34	3.6	6.2	10	36	3.4	21	10	9	2
3	59	47	53	-3	49	12	0		0	.09	0	30.06	33	4.5	5.0	10	35	0.2	1	10	10	3
4	55	45	50	-6	48	15	0		0	.28	0	29.98	03	2.9	5.3	9	10	0.0	0	10	10	4
5	51	47	49	-6	48	16	0	1	0	1.13	0	30.02	08	6.8	7.9	14	10	0.0	0	10	10	5
6	55	48	52	-3	50	13	0	1	0	.12	0	30.07	08	6.0	6.2	12	09	0.0	0	10	10	6
7	60	47	54	-1	48	11	0	1	0	.03	0	30.12	07	4.7	6.0	9	10	0.5	3	10	10	7
8	57	49	53	-2	51	12	0	1	0	.02	0	30.22	08	5.1	6.6	13	09	0.0	0	10	10	8
9	65	48	57	2	49	8	0		0	0	0	30.27	05	2.2	4.2	8	07	3.9	25	10	10	9
10	68	44	56	1	47	9	0		0	0	0	30.25	30	2.9	5.3	8	25	9.9	63	5	6	10
11	75	43	59	4	46	6	0		0	0	0	30.25	32	3.3	4.9	9	34	15.7	100	1	1	11
12	73	43	58	3	47	7	0		0	0	0	30.19	29	2.4	4.5	10	27	15.6	100	1	1	12
13	72	42	57	2	48	8	0		0	0	0	30.08	32	4.6	5.9	8	25	15.5	100	7	5	13
14	78	43	61	6	48	4	0		0	0	0	30.07	30	2.1	4.0	8	36	15.5	100	4	3	14
15	78*	44	61	6	48	4	0		0	0	0	30.04	30	2.3	5.2	7	34	15.4	100	1	1	15
16	76	46	61*	7	50	4	0		0	0	0	30.09	22	1.1	3.2	7	35	15.3	100	0	0	16
17	60	43	52	-2	48	13	0		0	0	0	30.10	36	2.0	4.2	8	09	4.1	27	8	7	17
18	71	49	60	6	50	5	0		0	0	0	30.01	32	2.0	6.5	9	11	14.0	92	6	7	18
19	65	51	58	4	50	7	0		0	.18	0	29.93	09	6.6	8.2	13	10	2.7	18	10	10	19
20	55	41	48	-6	50	17	0	1	0	.18	0	29.91	07	4.3	5.3	9	08	2.4	16	9	8	20
21	54	40	47	-7	45	18	0	1	0	.74	0	29.95	30	.8	4.3	7	21	0.0	0	10	9	21
22	57	47	52	-2	49	13	0	1	0	.06	0	29.90	10	12.0	12.1	18	12	0.0	0	10	10	22
23	52	42	47	-7	46	18	0	1 3	0	2.52	0	29.80	10	9.5	12.2	21	12	0.0	0	10	10	23
24	57	35*	46*	-7	40	19	0	1	0	.10	0	29.90	16	1.7	4.9	16	12	8.1	55	7	8	24
25	51	45	48	-5	46	17	0		0	.24	0	29.96	10	11.3	11.5	15	10	0.0	0	10	10	25
26	56	50	53	0	51	12	0	1	0	.04	0	30.14	09	8.2	8.9	13	10	0.0	0	10	10	26
27	64	50	57	4	51	8	0	1	0	.05	0	30.28	34	2.9	5.3	9	09	0.0	0	10	10	27
28	66	46	56	3	50	9	0	1	0	0	0	30.15	28	2.6	4.8	9	23	7.9	55	5	5	28
29	72	43	58	5	49	7	0	2	0	0	0	30.07	28	1.4	4.0	9	22	11.4	80	2	1	29
30	73	42	58	6	48	7	0		0	0	0	29.99	27	1.9	4.6	9	22	14.2	100	0	0	30
31	73	42	58	6	48	7	0		0	0	0	29.92	28	1.2	3.3	8	22	14.1	100	0	0	31

	MAXIMUM	MINIMUM	AVERAGE	DEPARTURE	DEW POINT	HEATING	COOLING
	SUM	SUM				TOTAL	TOTAL
	1996	1396				315	0
	AVG.	AVG.	AVG.	DEP.	AVG.	DEP.	DEP.
	64.4	45.0	54.7	0.4	48	-17	0
						SEASON TO DATE	
						TOTAL	TOTAL
						664	0
						DEP.	DEP.
						44	0

NUMBER OF DAYS

MAXIMUM TEMP. ≥ 90° ‡	MAXIMUM TEMP. ≤ 32°	MINIMUM TEMP. ≤ 32°	MINIMUM TEMP. ≤ 0
12	0	0	0

NUMBER OF DAYS
PRECIPITATION ≥ .01 INCH 15
SNOW, ICE PELLETS ≥ 1.0 INCH 0
THUNDERSTORMS 1
HEAVY FOG X 1
CLEAR 7 PARTLY CLOUDY 7 CLOUDY 17

	PRECIPITATION WATER EQUIVALENT	SNOW, ICE PELLETS	AVG. STATION PRESSURE	RESULTANT DIRECTION	RESULTANT SPEED	AVERAGE SPEED	FASTEST MILE SPEED	FASTEST MILE DIRECTION	SUNSHINE	%	SKY COVER SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT
	TOTAL	TOTAL	FOR THE MONTH:						TOTAL	%	SUM	SUM
	5.78	0	30.06	06	1.8	6.0	21	12	206.0	FOR	211	206
	DEP.						DATE:	23	POSSIBLE	MONTH	AVG.	AVG.
	0.78								475.2	43	6.8	6.6

GREATEST IN 24 HOURS AND DATES

PRECIPITATION		SNOW, ICE PELLETS	
2.62	23-24	0	

GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE: 0

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

DATE	A.M. HOUR ENDING AT 1	2	3	4	5	6	7	8	9	10	11	12	P.M. HOUR ENDING AT 1	2	3	4	5	6	7	8	9	10	11	12	DATE
1																									1
2																					T	T			2
3		T	T	T	T	T	.01	T					T	T	.02	.02	.03	.01	T	T					3
4							T	T	T	.01	.01	T	.04	.09	.04	.02	.03	T	T		T	T	.01	.03	4
5	.07	.10	.08	.02	.02	.03	.07	.04	.01	.04	.09	.09	.09	.08	.09	.06	.03	.01	T	.02	.03	.03	.02	.01	5
6	.01	.01	.02	.05	.02	T	.01	T	T						T										6
7		T	T	T	T	T	T	T									T	.02	.01	T			T	T	7
8	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T			.02	T	T	8
9																									9
10																									10
11																									11
12																									12
13																									13
14																									14
15																									15
16																									16
17																									17
18																									18
19																		T	T	T	T	.09	.09	19
20	T	T	T	T	T	.01	T	.01	T	.01	.03	.04	.02	T	.01	T	.03	.02	T						20
21				.02	T	.01	T	.04	.13	.11	.05	.03	.01	T	T	T			T	.06	.14	.14	T	T	21
22	T	T	T				T	.01	T	T	T	T	T	T	T	T	T	T	T	.03	.01	.01	T	T	22
23	T		T	T	.01	.02	.09	.01	T	T	.03	T	.20	.26	.29	.15	.16	.23	.17	.26	.31	.30	.03		23
24	.05	.04	.01	T																	T	T	T		24
25	T	T	T	T	T	T	.02	.01	.03	.03	.01	T	.03	T	.03	T	T	T	.01	.02	.04	T	.01	T	25
26	T	T								T	T	T	T	T	.01	.02	.01	T	T	T	T	T	T	T	26
27	T	.02	.01	.02	T				T	T															27
28																									28
29																									29
30																									30
31																									31

- * EXTREME TEMPERATURES FOR THE MONTH, MAY BE THE LAST OF MORE THAN ONE OCCURRENCE.
- BELOW ZERO TEMPERATURE OR NEGATIVE DEPARTURE FROM NORMAL.
- ‡ ≥ 70° AT ALASKAN STATIONS.
- \+ ALSO ON AN EARLIER DATE, OR DATES.
- X HEAVY FOG RESTRICTS VISIBILITY TO 1/4 MILE OR LESS.
- T IN THE HOURLY PRECIPITATION TABLE AND IN COLUMNS 9, 10, AND 11 INDICATES AN AMOUNT TOO SMALL TO MEASURE.

THE SEASON FOR DEGREE DAYS BEGINS WITH JULY FOR HEATING AND JANUARY FOR COOLING.
DATA IN COLUMNS 6, 12, 13, 14, AND 15 ARE BASED ON 8 OBSERVATIONS PER DAY AT 3-HOUR INTERVALS.
WIND DIRECTIONS ARE THOSE FROM WHICH THE WIND BLOWS. RESULTANT WIND IS THE VECTOR SUM OF WIND DIRECTIONS AND SPEEDS DIVIDED BY THE NUMBER OF OBSERVATIONS. FIGURES FOR DIRECTIONS ARE TENS OF DEGREES FROM TRUE NORTH; I.E., 09=EAST, 18=SOUTH, 27=WEST, 36=NORTH, AND 00=CALM. WHEN DIRECTIONS ARE IN TENS OF DEGREES IN COL. 17, ENTRIES IN COL. 16 ARE FASTEST OBSERVED 1-MINUTE SPEEDS. IF THE · APPEARS IN COL. 17, SPEEDS ARE GUSTS.
ANY ERRORS DETECTED WILL BE CORRECTED AND CHANGES IN SUMMARY DATA WILL BE ANNOTATED IN THE ANNUAL SUMMARY.

SUBSCRIPTION PRICE: LOCAL CLIMATOLOGICAL DATA $2.00 PER YEAR INCLUDING ANNUAL ISSUE IF PUBLISHED. FOREIGN MAILING 75¢ EXTRA. SINGLE COPY: 20¢ FOR MONTHLY ISSUE; 15¢ FOR ANNUAL SUMMARY. MAKE CHECKS PAYABLE TO DEPARTMENT OF COMMERCE, NOAA. SEND PAYMENTS AND ORDERS TO NATIONAL CLIMATIC CENTER, FEDERAL BUILDING, ASHEVILLE, NORTH CAROLINA 28801.

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC CENTER, ASHEVILLE, NORTH CAROLINA, 28801

William H. Haggard

DIRECTOR, NATIONAL CLIMATIC CENTER

SUMMARY BY HOURS

HOUR LOCAL TIME	AVERAGES SKY COVER TENTHS	STATION PRESSURE IN.	TEMPERATURE AIR °F	WET BULB °F	DEW PT. °F	RELATIVE HUMIDITY %	WIND SPEED M.P.H.	RESULTANT WIND DIRECTION	SPEED M.P.H.
01	6	30.07	49	47	46	90	5.4	05	2.9
04	6	30.07	48	46	45	92	4.5	04	2.5
07	7	30.07	48	47	46	91	4.4	06	2.7
10	7	30.07	55	52	50	82	5.9	13	2.1
13	7	30.07	60	55	51	74	7.2	21	2.1
16	6	30.06	62	56	51	71	7.0	12	.8
19	6	30.04	58	54	50	75	6.8	04	3.4
22	6	30.05	50	48	46	86	6.5	05	3.8

JUNEAU, ALASKA

OBSERVATIONS AT 3-HOUR INTERVALS

DAY 01

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	6	160	15			50	47	45	83	09	3
04	3	UNL	15			45	44	44	96	00	0
07	1	UNL	15			50	48	46	86	00	0
10	7	UNL	15			62	55	49	63	22	6
13	10	UNL	15			68	58	51	55	22	9
16	7	100	15			75	62	53	46	23	5
19	2	UNL	15			71	59	50	48	35	6
22	4	UNL	15			52	48	44	74	35	5

DAY 02

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	4	UNL	15			51	48	45	80	35	5
04	8	50	15			52	48	45	77	01	3
07	8	60	15			55	52	50	83	15	4
10	10	60	15			60	55	51	72	22	5
13	10	46	15			63	57	52	68	31	8
16	10	32	15			63	57	52	68	34	5
19	10	32	15			58	53	49	72	01	6
22	8	80	15			52	49	47	83	35	5

DAY 03

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	9	50	15			50	48	46	86	36	4
04	10	35	15			50	48	46	86	36	3
07	10	35	15			50	48	47	89	35	4
10	10	35	15			54	52	50	86	33	4
13	10	33	15			58	55	52	81	29	5
16	10	32	15			54	52	50	86	33	8
19	10	32	15		RW	52	51	50	93	30	3
22	10	40	15			49	48	48	96	01	4

DAY 04

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	50	15			47	46	45	93	34	6
04	10	60	12			45	44	44	96	35	3
07	10	45	15		RW	47	46	46	96	36	3
10	10	40	15		RW	51	49	48	90	35	4
13	10	23	10		RW	53	51	50	90	10	4
16	10	35	15		RW	54	52	51	90	10	8
19	10	40	15			52	51	50	93	10	4
22	10	32	10		RW	49	48	47	93	34	5

DAY 05

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	30	10		RW	48	47	47	96	03	3
04	10	18	10		RW	49	48	47	93	34	4
07	10	25	10		RW	49	48	48	96	11	5
10	10	35	10		RW	50	49	49	96	10	8
13	10	23	10		RW	51	50	49	93	07	10
16	10	24	8		RW	51	50	49	93	08	10
19	10	24	6		RW	51	50	49	93	10	8
22	10	17	3		RF	50	49	49	96	09	7

DAY 06

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	17	6		R	51	50	50	96	09	10
04	10	17	4		RF	51	50	49	93	08	6
07	10	20	12		RW	50	49	49	96	05	4
10	10	20	15			52	51	50	93	07	6
13	10	22	15			54	52	51	90	11	4
16	10	30	15			53	51	50	90	09	5
19	10	24	15			52	50	49	90	10	5
22	10	31	15			51	50	49	93	08	5

DAY 07

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	30	15			48	46	45	89	01	3
04	10	30	10		L	47	46	45	93	34	3
07	10	30	12		L	48	47	46	93	35	3
10	10	35	15			53	51	50	90	10	6
13	10	40	15			59	55	52	78	07	7
16	10	30	7			56	53	50	80	09	6
19	10	27	7		L	52	51	50	93	07	6
22	10	24	7			51	50	49	93	10	6

DAY 08

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	26	7		L	51	50	49	93	08	5
04	10	25	7		L	51	50	50	96	09	5
07	10	27	7		RW	52	51	50	93	10	5
10	10	26	9		RW	54	53	52	93	11	9
13	10	26	15		RW	58	54	53	83	07	9
16	10	40	10			56	54	53	90	10	4
19	10	23	10			52	51	50	93	35	5
22	10	8	4		RF	50	49	49	96	36	4

DAY 09

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	45	7			49	48	47	93	02	4
04	10	35	7			49	48	47	93	35	3
07	10	27	15			49	48	48	96	36	3
10	10	30	15			56	53	52	90	00	0
13	10	30	15			62	56	52	70	18	5
16	9	46	15			58	54	50	76	10	5
19	10	80	15			57	53	50	78	07	6
22	10	80	15			50	48	46	86	35	3

DAY 10

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	35	15			49	47	46	89	01	3
04	10	50	15			47	45	44	89	01	3
07	10	50	15			48	46	45	89	01	3
10	9	40	15			56	52	48	75	26	6
13	7	50	15			60	54	49	66	25	6
16	1	UNL	15			65	57	50	59	23	6
19	0	UNL	30			63	56	50	63	34	6
22	1	UNL	30			48	46	44	86	36	4

DAY 11

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			44	43	43	96	36	5
04	1	UNL	15			45	44	43	93	00	0
07	2	UNL	15			46	44	43	93	35	3
10	0	UNL	16			59	54	50	72	00	0
13	0	UNL	15			69	61	55	61	23	8
16	0	UNL	16			74	59	48	40	31	6
19	0	UNL	30			67	56	48	47	34	7
22	1	UNL	30			51	47	43	74	36	5

DAY 12

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			48	46	44	86	00	0
04	0	UNL	15			44	43	43	96	03	3
07	3	UNL	15			46	45	43	89	00	0
10	0	UNL	15			60	55	50	70	22	5
13	0	UNL	15			69	59	52	55	24	8
16	0	UNL	30			72	60	50	46	28	6
19	1	UNL	30			66	57	49	54	34	5
22	0	UNL	30			50	47	44	80	36	4

DAY 13

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			49	46	43	80	29	5
04	0	UNL	15			44	43	42	93	01	4
07	9	UNL	15			48	46	44	86	35	6
10	10	280	15			61	55	51	70	27	6
13	8	300	15			68	59	52	57	29	5
16	6	UNL	15			71	60	52	51	27	5
19	1	UNL	15			67	58	51	57	36	5
22	0	UNL	15			52	49	46	80	34	5

DAY 14

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			48	46	45	89	00	0
04	0	UNL	15			46	45	44	93	26	3
07	8	UNL	15			48	46	45	89	33	3
10	8	UNL	15			63	57	52	68	23	4
13	3	UNL	15			72	61	54	53	21	5
16	0	UNL	15			76	62	51	39	33	4
19	0	UNL	15			66	57	49	49	35	5
22	0	UNL	15			52	48	43	72	36	4

DAY 15

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			50	48	46	86	13	3
04	0	UNL	15			48	46	44	86	34	6
07	0	UNL	15			48	46	44	86	35	3
10	0	UNL	30			63	56	51	65	22	5
13	0	UNL	30			71	61	53	53	23	5
16	2	UNL	15			77	63	53	43	26	6
19	2	UNL	15			69	59	51	53	34	6
22	2	UNL	15			56	50	46	67	36	3

DAY 16

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			51	49	48	90	00	0
04	0	UNL	15			47	46	45	93	00	0
07	0	UNL	15			48	46	45	89	00	0
10	0	UNL	30			63	57	53	70	19	5
13	0	UNL	30			68	60	54	61	22	5
16	0	UNL	15			75	64	57	54	21	5
19	0	UNL	15			70	61	54	57	02	3
22	0	UNL	15			53	49	45	74	01	4

DAY 17

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			50	47	45	83	36	3
04	0	UNL	15			46	45	43	89	36	4
07	0	UNL	15			47	45	44	89	01	3
10	10	15	15			57	53	50	78	03	3
13	10	14	15			59	55	51	75	23	6
16	10	16	15			57	54	51	80	35	5
19	10	20	15			54	51	49	83	00	0
22	10	27	15			53	51	50	90	09	5

DAY 18

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	30	15			50	48	46	86	36	5
04	10	30	15			50	48	47	89	36	5
07	10	23	15			52	49	47	83	36	4
10	7	UNL	15			58	55	52	81	23	5
13	6	UNL	30			67	60	55	66	26	6
16	3	UNL	15			68	63	59	73	22	6
19	6	UNL	15			64	55	47	54	35	6
22	7	UNL	15			54	51	49	83	09	6

DAY 19

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	8	80	15			56	52	49	80	10	9
04	10	70	15			54	51	49	83	10	7
07	10	60	15			53	51	49	86	08	7
10	9	80	15			58	55	52	81	10	8
13	10	80	15			61	55	51	70	20	3
16	10	35	15			60	56	51	72	09	8
19	10	40	15		RW	57	53	49	75	10	7
22	10	30	15		RW	52	50	49	90	01	6

DAY 20

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	28	9		R	52	51	51	96	09	4
04	10	25	8		R	52	51	51	96	09	5
07	10	27	12		RW	52	51	50	93	09	6
10	10	20	7		RW	52	51	50	93	08	5
13	10	30	7		RW	52	51	50	93	36	4
16	10	35	15		RW	53	52	51	93	35	4
19	9	60	15			55	53	51	86	08	4
22	0	UNL	15			44	43	43	96	07	4

DAY 21

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			45	44	42	89	11	6
04	10	30	10		R	43	43	42	96	34	3
07	10	30	8		R	43	43	42	96	34	4
10	10	20	8		R	45	44	43	93	32	3
13	10	35	10		R	52	50	49	90	23	3
16	10	35	15			53	51	49	86	20	4
19	10	27	10		RW	50	49	48	93	23	3
22	10	15	3		RWF	47	46	46	96	36	4

DAY 22

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	16	4		RWF	49	48	48	96	10	8
04	10	27	8			49	48	48	96	10	9
07	10	25	10		RW	50	49	48	93	10	9
10	10	32	15		RW	52	50	49	90	10	11
13	10	36	15			54	51	49	83	11	12
16	10	45	15		RW	56	52	50	83	10	14
19	10	27	10		RW	51	49	48	90	12	11
22	10	27	10		RW	50	49	48	93	10	10

DAY 23

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	31	10			50	49	49	96	07	8
04	10	36	7			50	49	48	93	09	8
07	10	34	7		RW	50	49	48	93	09	10
10	10	40	12		RW	51	49	48	90	12	18
13	10	40	7		RW	48	46	45	89	33	6
16	10	25	5		RW	45	44	43	93	33	3
19	10	22	5		RWF	49	48	47	93	12	18
22	10	35	3		RWF	45	44	43	93	12	18

DAY 24

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	7	7		RW	43	42	40	89	23	5
04	8	UNL	10			38	37	36	93	01	3
07	8	34	0	8	F	37	37	36	96	00	0
10	1	UNL	15			48	44	40	74	00	0
13	9	UNL	15			53	48	42	66	22	5
16	10	40	15			54	48	42	64	22	4
19	10	40	15			49	47	45	86	36	3
22	10	35	15		R	48	44	40	74	12	14

DAY 25

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	45	15		R	46	45	43	89	11	10
04	10	30	10		R	46	45	44	93	12	11
07	10	37	7		RW	46	45	44	93	11	10
10	10	32	7		R	46	45	44	93	09	8
13	10	34	7		R	49	48	47	93	10	11
16	10	35	7		R	50	49	48	93	10	12
19	10	25	7		R	50	49	48	93	08	8
22	10	25	7		R	50	49	48	93	10	10

DAY 26

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	35	7		L	51	50	50	96	09	8
04	10	35	7			52	51	50	93	10	8
07	10	45	7			52	51	50	93	10	7
10	10	24	12		R	54	52	51	90	08	9
13	10	30	15		R	55	53	52	90	08	6
16	10	30	10		R	54	53	52	93	10	9
19	10	30	7			54	53	52	93	10	10
22	10	23	3		RF	51	50	49	93	01	5

DAY 27

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	23	5		LF	50	49	48	93	36	6
04	10	6	3		LF	50	49	49	96	34	7
07	10	23	7			53	52	51	93	09	7
10	10	25	8			55	54	53	93	00	0
13	10	45	10			60	57	55	84	22	4
16	10	42	12			61	58	56	84	34	6
19	10	40	15			55	52	50	83	31	4
22	10	32	15			52	50	48	86	30	3

DAY 28

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	10	31	15			51	49	47	86	32	3
04	10	5	7			51	49	48	90	01	3
07	10	2	5			50	48	47	89	00	0
10	10	20	10			55	53	51	86	23	4
13	8	16	15			62	57	54	75	23	8
16	7	UNL	15			65	59	56	70	23	6
19	0	UNL	15			62	57	54	75	35	4
22	0	UNL	15			50	48	47	89	34	5

DAY 29

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			46	45	44	93	36	5
04	0	UNL	3		GF	44	43	42	93	00	0
07	4	UNL	0	8	GF	44	44	44	100	00	0
10	5	UNL	2		F	53	52	51	93	23	3
13	0	UNL	15			64	59	56	73	22	7
16	0	UNL	15			70	62	57	64	22	4
19	0	UNL	15			64	58	54	70	35	6
22	0	UNL	15			51	49	47	86	03	3

DAY 30

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			47	46	44	89	32	3
04	0	UNL	15			44	43	42	93	00	0
07	0	UNL	15			43	42	41	93	00	0
10	0	UNL	15			56	54	50	78	20	4
13	0	UNL	15			64	58	53	68	22	8
16	0	UNL	15			70	61	54	57	23	6
19	0	UNL	15			65	58	53	65	35	7
22	0	UNL	15			50	47	45	83	02	4

DAY 31

HOUR	SKY COVER TENTHS	CEILING HNDS. OF FT.	VISIBILITY WHOLE MILES	VISIBILITY 16THS MILE	WEATHER	TEMPERATURE AIR °F	TEMPERATURE WET BULB °F	TEMPERATURE DEW PT. °F	REL. HUM. %	WIND DIR	WIND SPEED KNOTS
01	0	UNL	15			47	46	46	96	01	3
04	0	UNL	15			44	43	42	93	00	0
07	0	UNL	15			43	42	41	93	36	3
10	0	UNL	15			60	54	49	65	00	0
13	0	UNL	15			67	58	53	61	22	7
16	0	UNL	15			70	61	56	59	20	4
19	0	UNL	15			64	57	51	63	33	6
22	0	UNL	15			52	49	47	83	00	0

ADDITIONAL DATA

OTHER OBSERVATIONAL DATA CONTAINED IN RECORDS ON FILE CAN BE FURNISHED AT COST VIA MICROFILM, MICROFICHE, OR PAPER COPIES OF THE ORIGINAL RECORDS. INQUIRIES AS TO AVAILABILITY AND COSTS SHOULD BE ADDRESSED TO: DIRECTOR, NATIONAL CLIMATIC CENTER, FEDERAL BUILDING, ASHEVILLE, NORTH CAROLINA 28801.

STATION: JUNEAU ALASKA YEAR & MONTH: 74 08

NOTES

CEILING COLUMN:
UNL INDICATES AN UNLIMITED CEILING

WEATHER COLUMN-

*	TORNADO
T	THUNDERSTORM
Q	SQUALL
R	RAIN
RW	RAIN SHOWERS
ZR	FREEZING RAIN
L	DRIZZLE
ZL	FREEZING DRIZZLE
S	SNOW
SP	SNOW PELLETS
IC	ICE CRYSTALS
SW	SNOW SHOWERS
SG	SNOW GRAINS
IP	ICE PELLETS
A	HAIL
F	FOG
IF	ICE FOG
GF	GROUND FOG
BD	BLOWING DUST
BN	BLOWING SAND
BS	BLOWING SNOW
BY	BLOWING SPRAY
K	SMOKE
H	HAZE
D	DUST

WIND COLUMNS-

DIRECTIONS ARE THOSE FROM WHICH THE WIND BLOWS, INDICATED IN TENS OF DEGREES FROM TRUE NORTH: I.E., 09 FOR EAST, 18 FOR SOUTH, 27 FOR WEST. ENTRY OF 00 IN THE DIRECTION COLUMN INDICATES CALM.

SPEED IS EXPRESSED IN KNOTS; MULTIPLY BY 1.15 TO CONVERT TO MILES PER HOUR.

U.S. DEPARTMENT OF COMMERCE
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