VANCOUVER ISLAND MARMOT INVENTORY

1982

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Purpose

The purpose of the 1982 Fish & Wildlife Survey was to continue a field inventory of marmot colony areas. Areas of past marmot activity as well as areas indicating potential use were examined for active marmot sign. These areas were recorded and marked upon maps for future investigation and management purposes. The emphasis of the survey was on determining the distribution of marmot colonies and relative abundance of marmot activity.

Method

The specific sites to be inventoried were chosen on the basis of past marmot survey information, reliable sighting reports or potentially suitable alpine meadow areas. Each site visited was thoroughly searched for the presence or absence of active burrows. Active burrows were those burrows showing definate signs of use i.e. trampled vegetation, fresh digging, scats. The total number of active burrows was assumed to reflect the degree of use of that area by marmots. The higher the concentration of used burrows, the more indication of a colony area. A colony was defined as a separate geographical area which contained a minimum of five or more active burrows or a grouping of two or more marmots. Sightings and whistles were used as supplementary information, providing a minimum population (size) estimate. The number of active burrows observed and the total number of marmots observed served to provide insight into the current marmot status of that particular area.

For each inhabited area, altitude (ft above sea level), aspect (azimuths) and slope (%) were recorded. General notes on topography and plant species were also made. Rough notes on access to the various areas were taken for later transfer to maps (maps 3 - 17). Every marmot colony and area of marmot activity was marked on aerial photos (Appendix 3) for future reference.

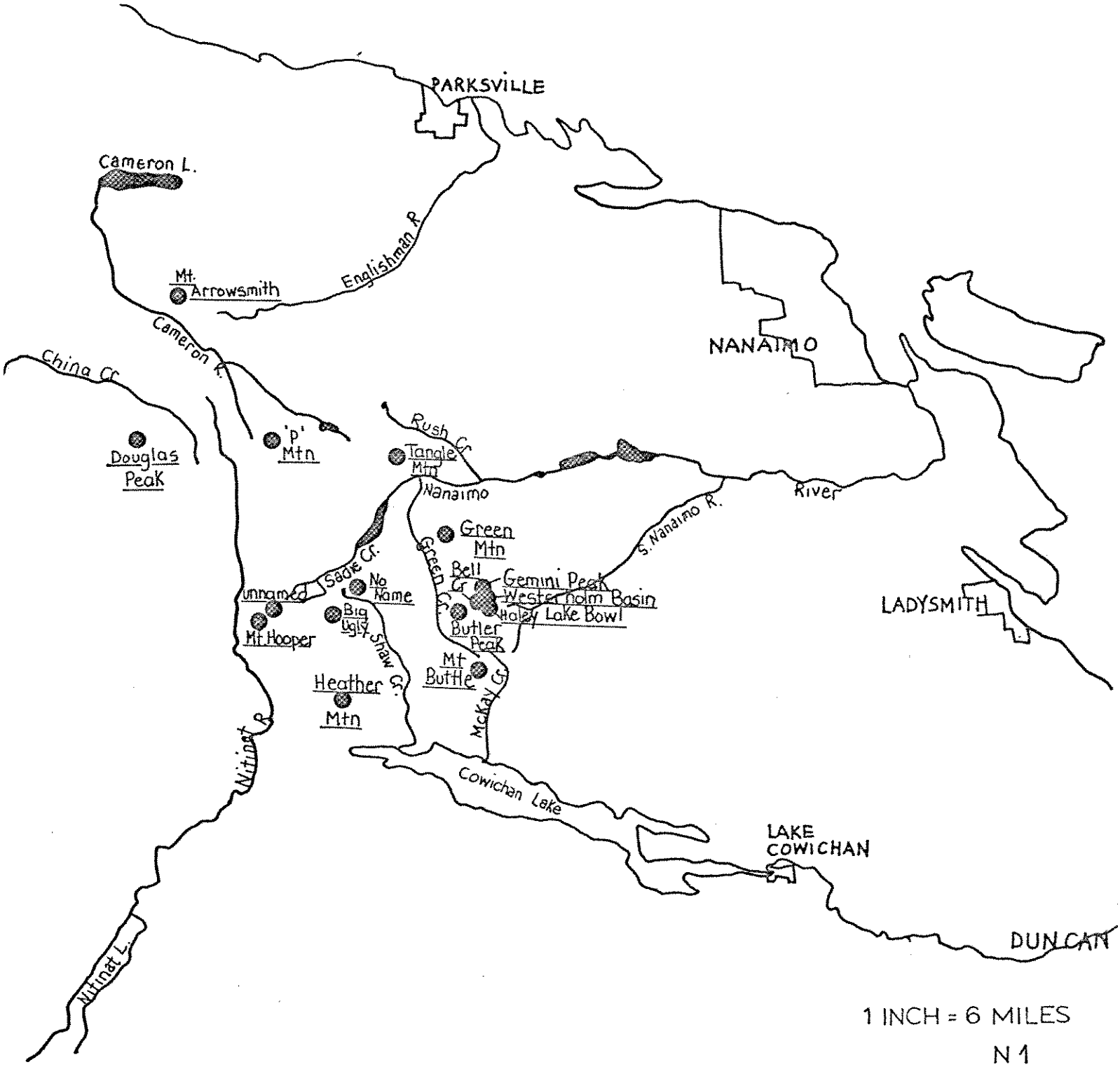
Results

The 1982 Vancouver Island marmot inventory was conducted from June 1, 1982 to September 16, 1982. The inventory concentrated primarily on areas within the Nanaimo River drainage area with Douglas Peak, Mt. Cokely, Mt. Washington and areas in Strathcona Park being included (Maps 1 - 2). In total, 22 areas were thoroughly searched for active marmot use.

The areas found to support marmots generally occurred between 1760 meters (3200 feet) and 2593 meters (4700 feet) above sea level. The slope varied from 35 - 95% and the aspect was usually southern, with a few exceptions to the north and west. Active marmot areas contained Indian Hellebore, Lupine, Tiger Lily, Indian Paintbrush, and Cow Parsnip among an assortment of grasses and forbs. The soil was of sufficient depth and structure to permit digging and tunneling. Natural objects, such as stumps and rocks provided sunning and look-out spots.

MAP 1

Areas searched for marmot activity - 1982

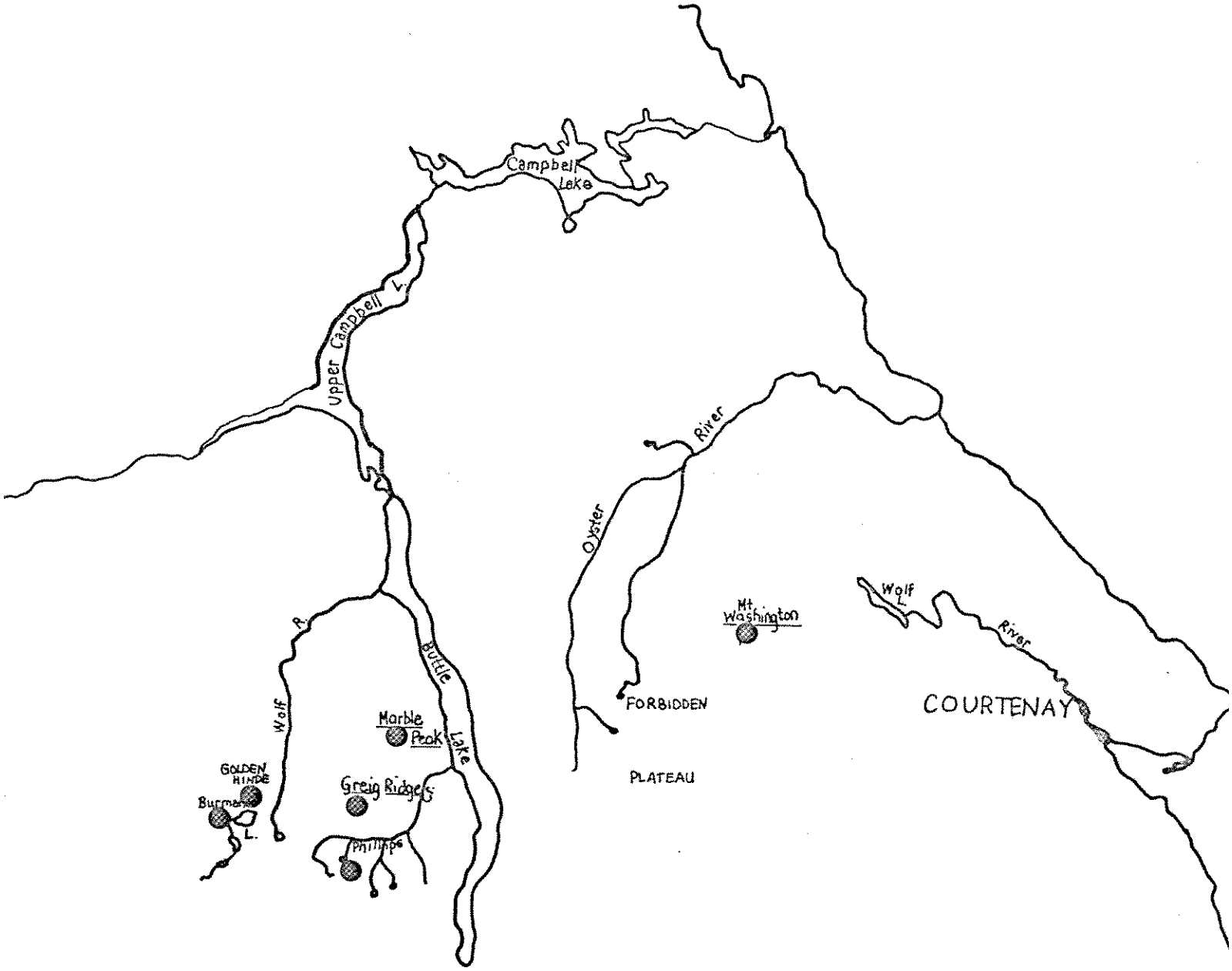


1 INCH = 6 MILES

N 1

MAP 2

Areas searched for marmot activity - 1982



1 INCH = 6 MILES

N

Results

Habitat types found to support marmots included sub-alpine meadows, rock cliff bases, logging slashes, standing timber and a felled & bucked area.

In a survey of Mt. Washington, it was found that the shrub growth (Vaccinium spp. & Heather spp.) is invading areas composed of grasses and forbs. Plant succession may be an important factor limiting the amount of marmot use of the mountain. It appears that the efforts of the ski operation to maintain clear ski runs and establish new ones is actually creating new habitat. Trail cutters have witnessed marmots utilizing newly cut areas the following year. The Mt. Washington ski staff is currently planting newly cut areas with a clover/lupine mixture in order to promote slope stability. This planting should provide a good source of food plants for marmots.

The results of the 1982 survey shows a favourable distribution of marmot activity, despite a harsh and prolonged winter (Table 1). Comparisons of 1982 data with previous years data (Vancouver Island Marmot Survey - 1979, 1980, Vancouver Island Marmot Survey - 1980, 1981, Vancouver Island Marmot Survey - 1981, 1982) illustrates an increase in both burrows and sightings (Table 2). Marmot activity in established colonies remained stable or increased. Activity

.../22

expansion has occurred in Westerholm Basin, Butler Peak, Mt. Hooper and Gemini Peak, where marmots and marmot sign have been found in areas adjacent to the main colony area.

The Westerholm and Green Mountain logging slashes both contained burrows and observed marmots. At least two marmots were found to be inhabiting a one year old felled and bucked area on Butler Peak, despite logging machines and crews removing felled timber 75 yards away. The Heather Mountain colony was rediscovered after two years of no marmots or marmot sign being found. A small colony was found on Mt. Buttle where in previous surveys only one marmot and no burrows had been reported. A well established and productive marmot area was discovered on the unnamed mountain north of Mt. Hooper. This un-named mountain supports at least two colonies, with much scattered sign throughout the area.

Five areas were surveyed with no marmot activity noted. Searches of Douglas Peak and Mt. Cokely did not locate any sign of marmot activity. Tangle Mountain and Big Ugly exhibited potential habitat, but did not contain any recent sign of marmots. A Ministry of Lands, Parks and Housing and Fish and Wildlife survey of some of the more suitable marmot areas in Strathcona was undertaken with no favourable results. A report by W. Merilees of Lands, Parks and Housing, providing details of the two day survey, is appended.

TABLE 2

Marmot Survey Results 1979 - 1982

AREA	1979 seen	1979 burrows	1980 seen	1980 burrows	1981 seen	1981 burrows	1982 seen	1982 burrows
Haley Lake Bowl (Green Mtn #1)	11	32	15	35	14	32	24	30 +
Bell Creek Area (Green Mtn #2)	3	14	3	16	9	18	10	33
Green Mtn Ski Area	5	14	20	16	9	15	10	N-C
Green NW arm (Green Mtn #5)	2	7	7	7	8	8	7	N-C
Westerholm Basin (Green Mtn #6)	6	16	2	8	4	6	19	82
West Green (Green Mtn #7)		--	5	20	8	18	7	2 +
Green Mtn South slope (Green Mtn #8)		--	5	18	3	13	5	8
Gemini Peak		--	17	42	14	40	16	36 +
Butler Peak - snowslide (East)	0	3	1	3	0	4	5	9
Butler Peak - (West)	3	20	6	20	6	23	7	N-C*
'P' Mtn - NNW		--	1	8	3	7	7	36
'P' Mtn - SSE	8	35	5	9	0	14	4	13
Mt Hooper	3	6	4	11	3	11	7	26
Mt Washington	1	3		--	2	4	0	19
Heather Mountain	1	3	0	0	0	0	1	22
Mt Buttle		--	1	0	1	0	3	20
SUB-TOTALS	43	153	92	213	84	213	132	336
New Areas 1982								
Mtn north of Hooper Mtn							8	47
Butler Peak NW F & B							2	6
Bell Creek north							6	20
TOTALS							148	409

Conclusions

Time restrictions and the difficulties in overcoming the rugged topography of Vancouver Island did not permit all potential marmot areas to be searched for this survey. However the 1982 Vancouver Island Marmot Inventory has provided a data base upon which to build and compare with future surveys. Future inventory information can be added, to demonstrate population trends, habitat preference, habitat selection and sensitivity to environmental impacts. Information derived from these inventories will contribute to the formulation of an intensive management plan for the Vancouver Island marmot.

LITERATURE CITED

ROUTLEDGE, D. J. and W. J. MERILEES, 1980. The Vancouver Island Marmot Survey - 1979. Vancouver Island Marmot Preservation Committee. 10 pp.

ROUTLEDGE, D. J., 1980. The Vancouver Island Marmot Survey - 1980. The Vancouver Island Marmot Preservation Committee. 9 pp.

ROUTLEDGE, D. J., 1982. The Vancouver Island Marmot Survey - 1981. Vancouver Island Marmot Preservation Committee. 11 pp.

App 2 = summer '75 survey
3 =
4 = TAC report
5 = 3 publ by Nat
6 prelim plan

APPENDIX 1

FILE: 3-10-60
DATE: 82/09/14

Marmot Surveys - Strathcona Provincial Park, July 27-28, 1982

Abstract

Six areas of Strathcona Provincial Park, located just west of the south end of Buttle Lake, were searched on foot July 27 and 28, 1982, for Vancouver Island marmots. Two very old burrows and one old trial burrow were located by Gordon Smith and Vivian Heinsalu, but no animals or recent evidence was found.

Participants

Gordon Smith, Vivian Heinsalu, Bill Merilees, Debby Lister (July 27th only), Steve Gorby (July 28th only).

Area 1

Headwaters of Philips Creek - Map co-ordinates 98.25 N - 08.25 E north-east to 99.0 N - 09.2 E. Gordon Smith, Vivian Henisalu 10:00 a.m. to 1:00 p.m. July 27th. Elevation 4,800 feet slope 50 to 80%. Aspect south to south-east. Two very old burrows found. Suitability of site judged moderate.

NOTE Areas identified on the earlier flight in the Philips Creek Headwaters (map co-ordinates 99 N - 10 E, 00 N 07 E and 05 N - 09 E) were observed closely from the helicopter. These sites were judged not particularly suitable and were not searched on foot.

.../28

Area 2

West end of Greig Ridge - Map co-ordinates 02.2 N - 07.8 E westward to 01.8 N - 05.8 E. Bill Merilees, Debby Lister, 10:00 a.m. to 1:00 p.m. July 27th. Elevation 5,200 to 5,400 feet, slope 45 to 65%. Aspect south. No evidence of marmot activity found. The site is an open succulent meadow with adequate soils and some boulder areas (photos taken and flora list made). One Black Bear seen. Area judged moderate to good.

Area 3

Slope north of Burman Lake - Map co-ordinates 02.7 N - 00.9 E north-west along ridge to 03.5 N - 00.3 E. Bill Merilees, Debby Lister, 1:00 - 3:00 p.m. July 27th. Elevation 4,000 to 4,500 feet. Slope 30 to 40%. Aspect south. No evidence of marmots found nor did the area appear suitable. The area was covered in heather species with few succulents present, soils shallow to bed rock.

NOTE The area east of this ridge appeared through binoculars to have a more suitable habitat but this area is only judged to be poor to moderate in its suitability.

Area 4

South east slopes of the Golden Hinde - Map co-ordinates 03.1 N - 02.5 E. Gordon Smith, Vivian Heinsalu 1:00 - 3:00

.../29

p.m., July 27th. Elevation 4,100 feet. No evidence of marmots found. One very small patch of suitable habitat located.

NOTE The east side of the Golden Hinde (eg. the west side of the Wolf River Valley) was observed closely from the helicopter. Nothing was seen to indicate the presence of marmots or really suitable habitat.

Area 5

East end of Greig - Map co-ordinates 02.1 N and 08.2 E eastward to 02.5 N - 10.6 E. Gordon Smith, Vivian Heinsalu 8:00 a.m. to 3:00 p.m. July 28th. Elevation 5,200 feet. Slope 70 to 90%. Aspect southerly. One old trial burrow was found. The east end of Greig Ridge appears to have suitable habitat with lush vegetation. This area possibly offers a suitable site for a marmot transplant (Gordon Smith).

Area 6

South east slopes of Marble Peak - Map co-ordinates 07.2 N - 11.8 E north-east to 07.2 N - 12.6 E. Bill Merilees, Steve Gorby 8:00 a.m. to 3:00 p.m. July 28th. Elevation 5,100 feet. Slope 45 - 60%. Aspect south-easterly. No evidence of marmots found. Area considered to be somewhat less than moderate suitability due to dryness and absence of lush vegeation except to west where vegetation is better. Photos taken and plant list made.

.../30