

Inventory of populations of large raptors in the Kusawa Park, Yukon

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The large cliff-nesting birds of prey are an important component of the ecology of the Yukon/Stikine Highlands (Coastal Mountain) Ecoregion, in Yukon. Gyrfalcon, and Golden eagle are by far the most common of these. Both are highly valued and attractive large bird of prey that occurs in relatively localized, restricted habitats. The birds are classic top-of-food chain indicator species. In the Kusawa Park, they both need relatively large cliff faces where protected 'aerie' nest sites occur.

The gyrfalcon's breeding ecology seems to be dependant on being able to occupy their nest cliff sites in winter which makes the aerie even more critical. They defend their nest sites when disturbed. Their populations are also intimately linked to the success of ptarmigan populations – in particular Willow Ptarmigan.

Golden eagles are true 'wilderness' species, apparently highly susceptible to disturbances during nesting. Their nesting strategy seems to be to simply quietly leave the nest site when disturbed.

These basic features potentially put both species "in harms way" from human developments, disturbance and other activities in the area. Potentially their protection will be a critical part of the management decisions for the area – both for their own values as well as by providing good 'umbrella' species for the general health of the system.

Objectives :

- 1) Complete an inventory of nesting sites of large raptors in the Kusawa Park planning area of the Coastal Mtn Ecoregion.
- 2) Produce a data base of nest site descriptions and analysis suitable to serve as a component to ecosystem monitoring protocols for the new park.

Project description:

This work built on initial inventory work done over the last decades (Hayes & Mossop 1983). Since that time annual monitoring of a sample of 18 of the 31 known gyrfalcon nesting sites across the whole ecoregion, has been carried out (Mossop 1994,1997). Golden eagle sites have been inventoried but less well monitored. By far the majority of inventory and monitoring has been carried out with helicopter.

In 2009-10 the monitoring surveys were expanded to cover un-surveyed portions of the planned Kusawa Park (Fig 1). Search involved close passes across the faces of all acceptable cliff habitat following a search pattern that sequentially covered all drainages around mountain blocks in the area.

Results:

Within the Kusawa park boundaries there are now known 60 nest sites of large birds of prey: 55 Golden eagle, 4 Gyrfalcon and one Bald Eagle. At least five additional golden eagle nest sites are known but have not been found to be occupied or productive in the last several years. This represents one of the densest populations of golden eagles in the Territory. The gyrfalcon in the park are part of a population of about medium density compared to others across the Yukon. The nest sites in the park are all on stable rock cliff faces (the only known bald eagle within the park occupies a tree site at the mouth of the Takhini river).

Conclusions:

It is clear this park's bird of prey community is mostly dominated by golden eagles. Fifty plus sites of this sensitive species protected gives the Kusawa Park unique value that will undoubtedly build in the future. Both gyrfalcon and golden eagle are classic top food chain species offering meaningful focus for tracking ecological sustainability.

- a) **Monitoring:** Golden eagles are difficult to monitor effectively. They are long-lived, don't necessarily breed every year and typically have several nests within their breeding sites. They also seem to be extremely susceptible to disturbance; their nest site strategy is not to defend. Their sites are also virtually all difficult to survey without helicopter access.

Nevertheless a sample of sites can undoubtedly be selected that can be monitored with the protections necessary. Monitoring this species fortunes may be best done in concert with gyrfalcon monitoring:

Gyrfalcon have been monitored faithfully throughout the Yukon-Stikine ecoregion for decades as part of a management agreement between the Yukon and British Columbia. This valuable data base is one of the best long-term tracking of ecological processes in tundra systems anywhere. The park birds are probably best monitored as part of the larger survey by partnering in the ongoing effort.

- b) **Future management considerations:** The nest sites of these species are really the only classically critical habitats. All seem physically secure for the immediate future. Disturbance during critical times by people simply accessing the land for recreation may have to be managed in the future. Notably during late winter

when both species are beginning their breeding cycles people on the land with snow machines probably will have to be controlled in the future.

- c) Both species are known to use ptarmigan (notably willow ptarmigan) in the critical early breeding period. Prey availability drives most raptor populations. Protecting ptarmigan at that time of year when concentration of winter habitat (riparian willow usually), may be essential in the future.

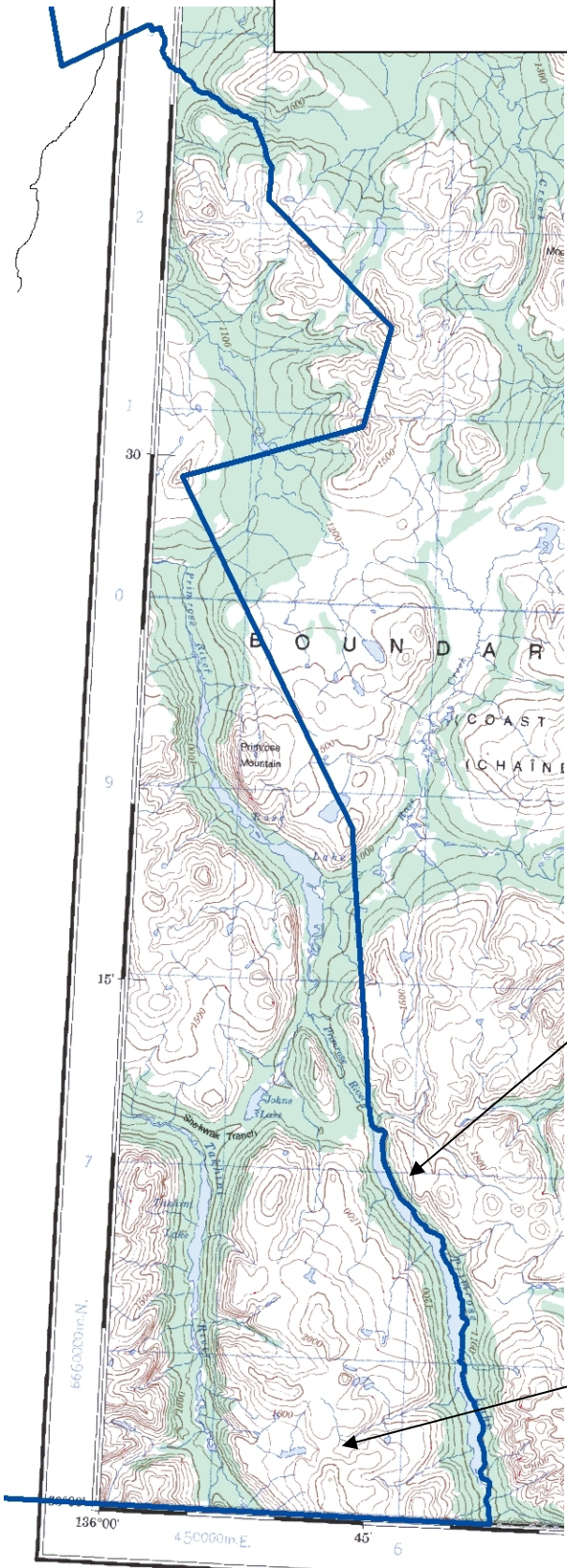
Cited:

Hayes, R. & D.Mossop 1983 Bird of prey inventory project: the mount Skukum area, coast mountains, with emphasis on the effects of mineral exploration. (R. Hayes sr auth)

Mossop, D. 1994. Long term trends in the breeding density and productivity of gyrfalcon (*Falco rusticolus*) in the Yukon Territory, Canada. World Working Group on Birds of Prey. Raptor Conservation Today, Myenburg and Chancellor eds pp 403-413.

Mossop, D. 1997. Gyrfalcon population monitoring and harvest in the BC/Yukon Coast Mountain Ecoregion, Northern Research Inst ms. Yukon College

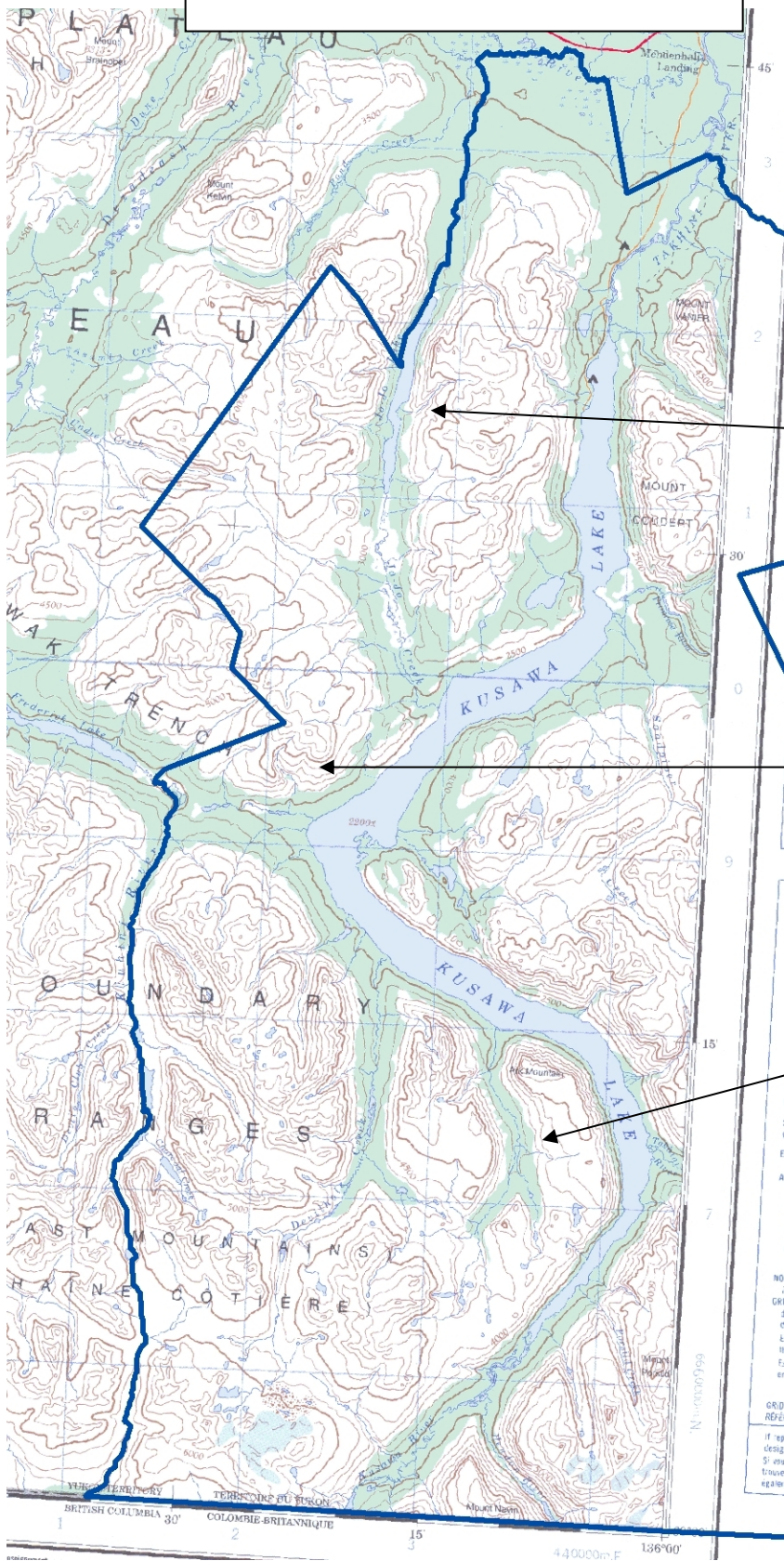
GYRFALCON NEST SITES, KUSAWA PARK



**MB6070 PRIMROSE LAKE
GYRFALCON**

**MB5766 ROTHWELL
GYRFALCON**

GYRFALCON (CONT'D)

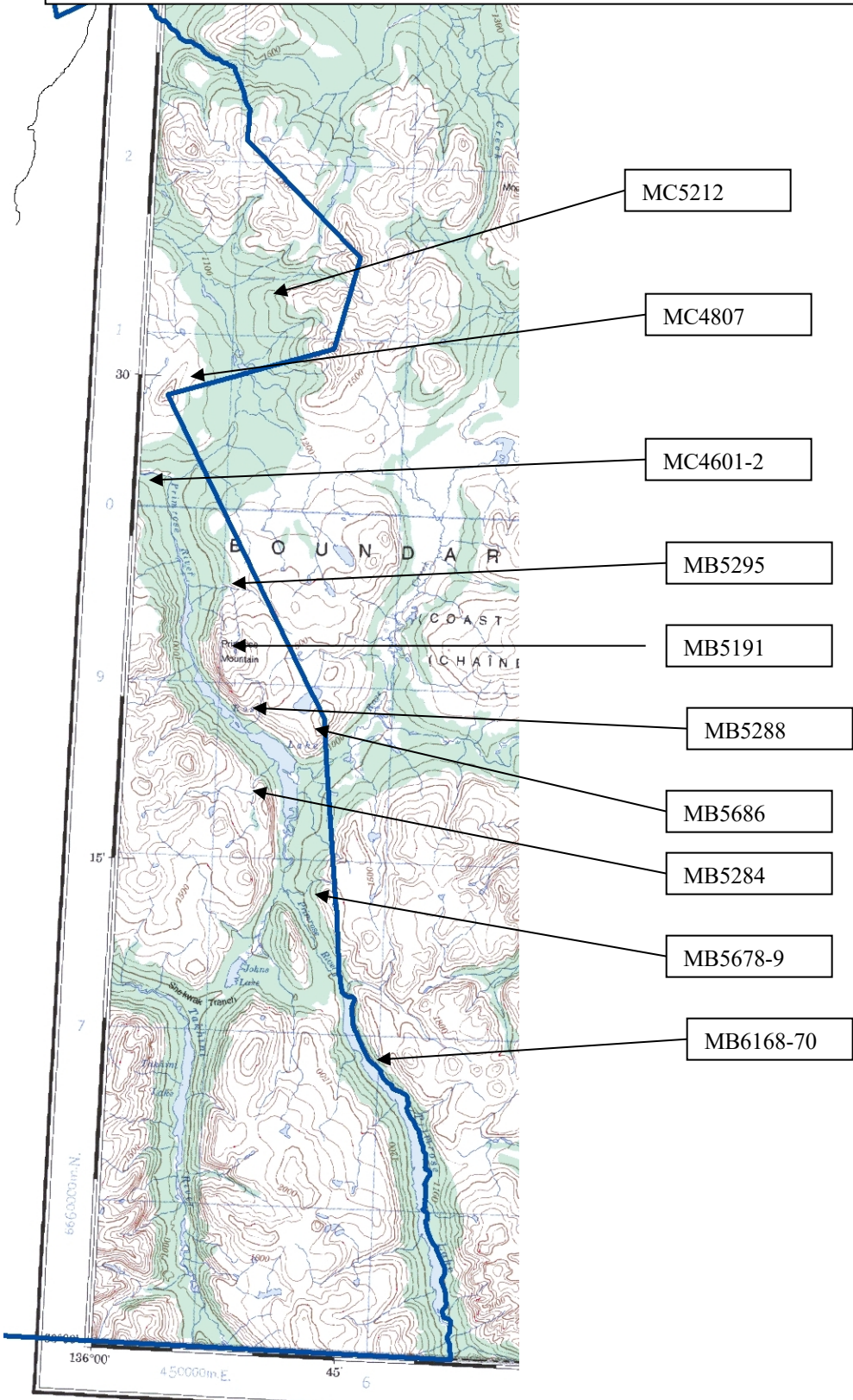


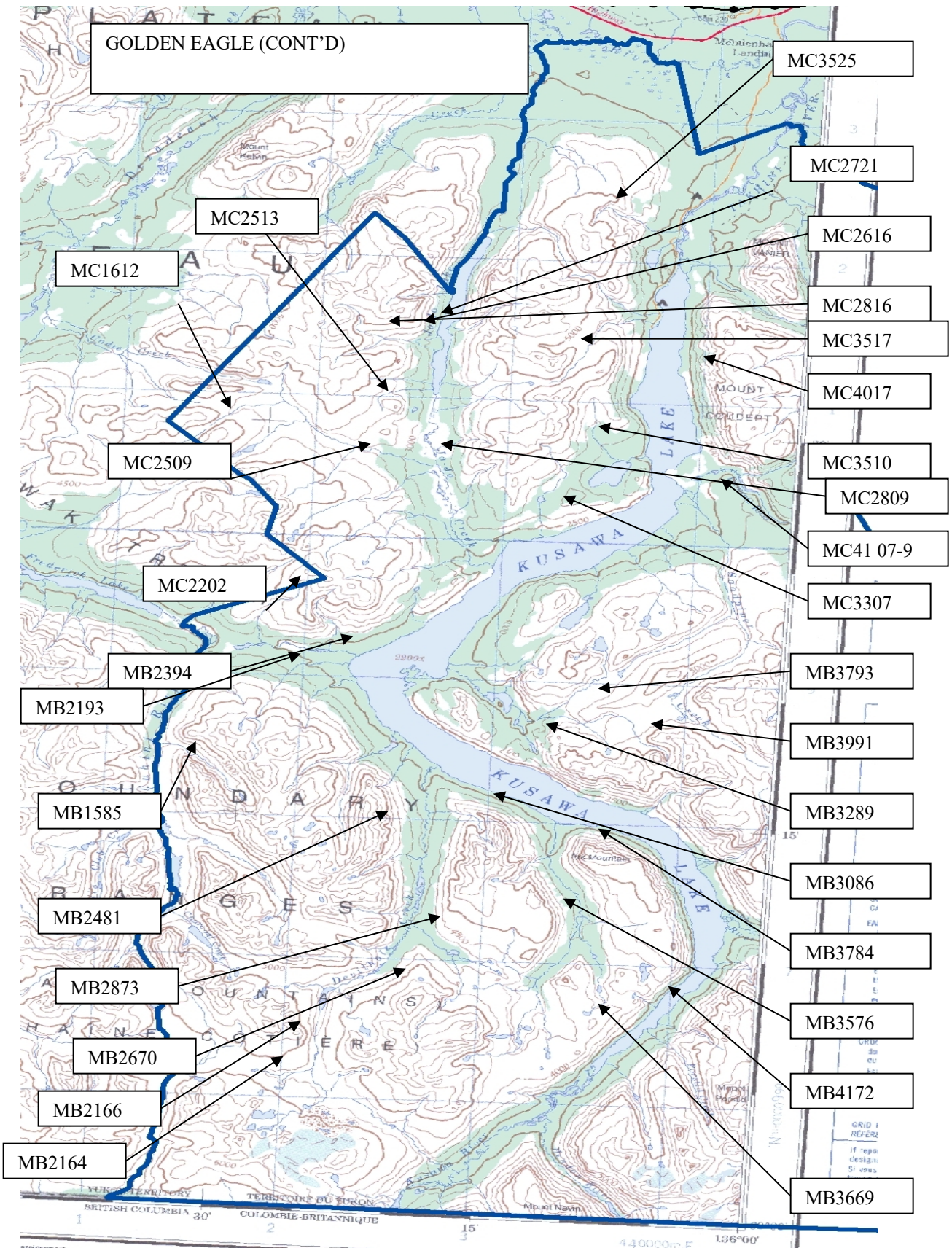
MC2816 JO JO
GYRFALCON

MB2397 KUSAWA
GYRFALCON

Mb3575 ARK MTN
GYRFALCON

GOLDEN EAGLE NEST SITES, KUSAWA PARK





Historic data: Large birds of prey known from the Kusawa Park planning area.

GOLDEN EAGLES	UTM	NAME	ADS	NW MAT.	WASH	OCCUP?	PROD?
1	MB1269	1987-06-11	1	1	1	1	1
	MB1355	1987-06-15				0	0
		1988-06-02	1	1	1	1	1
2	MB1585	1987-06-11				0	0
3	MB1694	1987-06-10	2	2	1	0	0
4	MB2164	1987-06-15	1	1	1	1	1
5	MB2166	1987-06-11	1	1	1	1	1
6	MB2193	1978-06-13	0			0	0
7	MB2394	1978-06-13				0	0
8	MB2481	1987-06-11	2			0	0
9	MB2670	1987-06-15	2		1	0	0
10	MB2873	1987-06-15	1	1	1	1	1
11	MB3086	1987-06-12	1	1	1	1	1
12	MB3289	1987-06-12	1	1	1	1	1
		1987-06-12	1	1	1	1	1
13	MB3370	1987-06-15	1	1	1	1	1
14	MB3576	1987-06-15	1	1	1	1	1
		1987-06-15	2			0	0
15	MB3669	1987-06-15	2		1	1	0
16	MB3784	1987-06-12	1	1	1	1	1
17	MB3793	1987-06-12	1	1	1	1	1
		1987-06-12	1	1	1	1	1
18	MB3991	1987-06-12	1	1	1	1	1

19	MB4172		1987-06-15	2			0	0
20	MB5191		1984-06-16	0			0	0
21	MB5253		1988-06-05	1	1	1	1	1
22	MB5284	ROSE LAKE	1987-06-12	1	1	1	1	0
23	MB5288	GE	1982-06-04	1	1	1	1	1
			1984-07-30	0			1	1
24	MB5295		1982-06-04	0	1	1	1	1
			1984-06-16	2			1	1
			1984-07-30	0			1	1
25	MB5678		1982-06-06	0			1	1
			1983-06-12	0			0	0
			1982-06-06	0			0	0
26	MB5686		1982-06-04	0			1	0
		ROSE						
		CANYON						
27	MB5785	GE	1982-06-04	0			0	0
			1984-06-16	0			0	0
28	MB5972		1982-06-07	0			0	0
29	MB5974		1982-06-06	0			0	0
30	MB6168		1982-06-07	0			0	0
			1983-06-12	0			0	0
			1987-06-12	2			0	0
31	MC1612		1987-06-10	1	1	1	1	1
	MC1623		2010-06-18	1	1	1	1	1
32	MC1822		1987-06-10	1	1	1	1	0
			2010-06-18	1	1	1	1	1
33	MC2202		1987-06-10	2	1	1	1	1
34	MC2509		1987-06-10	1	1		0	0
35	MC2513		1987-06-10	2		1	1	0

36	MC2616	1987-06-10	1	1	1	1	0
37	MC2809	1987-06-10	1	1		0	0
38	MC2816	1987-06-10	2		1	1	1
39	MC3307	1987-06-10	1	1	1	1	1
40	MC3510	1987-06-10	2	1	1	1	1
41	MC3517	1987-06-10	1	1		0	0
42	MC3521	1987-06-10	2		1	1	0
43	MC3524	1978-06-13	1	1		0	0
44	MC3525	1982-06-04	0			1	0
45	MC4017	1982-06-04	0			1	0
46	MC4108	1982-06-04	0	1		1	0
		1982-06-04	0			1	0
47	MC4307	1982-06-04	0			1	0
48	MC4403	1982-06-04	0			1	0
49	MC4602	1982-06-04	0			1	0
50	MC4701	1982-06-04	0			1	1
51	MC4807	1982-06-04	2	1		1	0
		1982-06-02	0			0	0
52	MC5125	1982-06-02	0			1	0
53	MC5132	1982-06-02	0	1		1	1
54	MC5212	1982-06-02	0			1	0
55	MC5505		1				

GYRFALCON

1	MB2393	KUSAWA LAKE GYR	1989-06-07	1		1	1	1
			1991-06-09	0		1	1	1
			1992-03-25	0				
			1992-06-02	0		1	1	
			1993-06-02	1		1	1	1

			1994-06-06			2		
			1995-06-09		1	1		
			1996-06-05		1	1		1
			1997-06-10	1		1		1
			1998-06-06	1	1	1		1
			1999-06-01	1		1		
			2000-06-03	1		1		1
		ARC						
2	MB3575	MOUNTAIN	1987-06-15	1	1	1		1
			1988-06-05	2	1	1		1
			1991-06-09	0	1	1		1
			1992-06-02	1	1	1		1
			1993-06-02	2	1	1		1
			1994-06-06			0		0
			1995-06-09	1	1	1		1
			1996-06-05	1	1	1		1
			1997-06-10	1		1		1
			1998-06-06	1	1	1		1
			1999-06-01	1		1		1
			2000-06-03	2		1		
		ROSE LAKE						
2	MB5484	GYR	1982-06-06	1		1		1
			1983-06-11	0				
			1984-06-16	0				
			1987-06-11	1	1	1		1
			1987-06-11	1	1	1		1
			1988-06-05	1	1	1		1
			1989-06-07	1	1	1		1
			1990-06-07	0	1	1		1
			1991-06-09	0	1	1		1

			1992-03-25	0			2	
			1992-06-01	0		1	1	
			1993-06-02	0		1	1	
			1994-06-06	2			1	
			1995-06-09	1		1	1	1
			1996-06-05	1		1	1	1
			1997-06-10	1			1	1
			1998-06-06			1	1	
			2000-06-03	1			1	1
			2001-06-05	0		1	1	
3	MB6070	PRIMROSE LAKE GYR	1982-06-07	1			1	2
			1983-03-19	2			1	3
			1983-06-12	0			2	2
			1987-06-12	1	1	1	1	1
			1997-06-10	1			1	1
4	MB5756	ROTHWELL GYR	1987-06-12	1	1	1	1	1
			1988-06-02	1	2	1	1	1
BALD EAGLE								
1	MC3823	KUSAWA LAKE	1987-06-12	2	0	0	1	0

