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# **SUSITNA HYDROELECTRIC PROJECT**

FEDERAL ENERGY REGULATORY COMMISSION  
PROJECT No. 7114

## **SUMMARY STATEMENT ON NEST LOSSES AND CONFLICTS FOR BALD AND GOLDEN EAGLES IN THE SUSITNA HYDROELECTRIC PROJECT AREA**



Research Associates

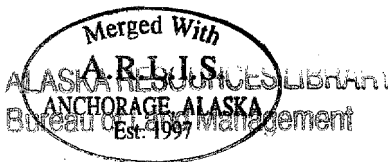
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## SUSITNA HYDROELECTRIC PROJECT

### SUMMARY STATEMENT ON NEST LOSSES AND CONFLICTS FOR BALD AND GOLDEN EAGLES IN THE SUSITNA HYDROELECTRIC PROJECT AREA

Report by  
LGL Alaska Research Associates, Inc.

D.G. Roseneau

### **ARLIS**

Alaska Resources  
Library & Information Services  
Anchorage, Alaska

Under Contract to  
Harza-Ebasco Susitna Joint Venture

Prepared for  
Alaska Power Authority

Final Report  
June 1984

**NOTICE**

**ANY QUESTIONS OR COMMENTS CONCERNING  
THIS REPORT SHOULD BE DIRECTED TO  
THE ALASKA POWER AUTHORITY  
SUSITNA PROJECT OFFICE**

## 1. Introduction

This statement has been prepared to identify all of the bald and golden eagle nests that will be lost as a result of the Watana and Devil Canyon impoundments and those that potentially have conflicts with current plans for access roads, transmission lines, borrow and quarry sites, etc. In the case of these latter conflicts, they have been provided without consideration of the proposed mitigation measures (except where the proposed mitigation measures have led to alignment changes, such as the route change along Deadman Creek). It is recognized that mitigation measures can and will be implemented to reduce or eliminate disturbances to nesting eagles by providing spatial and temporal buffer zones. These measures have been proposed in the license application and are presently being refined. The intention of this summary statement is to provide an up-to-date listing of the nests that will be lost due to the impoundment and the nests where other conflicts will require mitigation. The information provided has been updated to include the results of the June 1984 middle Susitna Basin raptor survey.

## 2. Golden Eagle

### 2.1 Watana

#### 2.1.1 Direct Losses due to the Impoundment

Twelve of the 23 golden eagle nesting locations that are known to occur near the project area in the middle basin of the Susitna River drainage are located upstream of a point even with the proposed Watana damsite.

Five of the 12 nesting locations will be directly lost as a result of filling of the Watana reservoir to a maximum operating level of 2,185 ft and a maximum flood level of 2,202 ft. All five of these nesting locations (GE-4, GE-5, GE-6, GE-8 and GE-9) are located within the impoundment zone at elevations that vary between about 1,700 ft and 1,850 ft. A sixth nesting location (GE-2) will be partially lost because one of the three nest sites at it is situated at about 2,100 ft. This nest site will be inundated, but two other nest sites at this

nesting location are situated at about 2,300 ft, and will remain about 115 ft above maximum operation level and about 100 ft above maximum flood level. They will still be usable by golden eagles.

#### 2.1.2 Other Potential Conflicts

Eight of the 12 golden eagle nesting locations located upstream of the Watana damsite (GE-1 through GE-6, GE-8 and GE-9) would be potentially vulnerable to disturbing activities as a result of Watana reservoir clearing, if those clearing activities were to occur during the nesting season in years when these nesting locations were occupied. Two of these eight nesting locations (GE-8 and GE-9) would also be potentially vulnerable to disturbing activities as a result of Watana borrow site excavation, if construction activities at Watana Borrow Site J were to occur during the nesting season in years when these nesting locations were occupied. However, Borrow Site J is not currently planned for use as a material site (Harza-Ebasco Susitna Joint Venture 1984, memo 4.3.3.2 of 24 September 1984 from C.L. Elliott to R.G.B. Sener). Five of the eight nesting locations (GE-4, GE-5, GE-6, GE-8 and GE-9), including the two that are potentially subject to disturbance from Borrow Site J, will eventually be inundated.

Two additional golden eagle nesting locations that are located between the Watana and Devil Canyon damsites (and that will not be inundated by filling Devil Canyon Reservoir) would also be vulnerable to potentially disturbing activities as a result of Watana borrow site excavation, if excavation activities were to occur during the nesting season at Watana Borrow Site E (GE-11) and Watana Borrow Site H (GE-23 -- discovered in 1984). One of these nesting locations (GE-11; consisting of three nest sites) was previously thought to occur within Watana Borrow Site E and, as a result, to be subject to physical destruction. This is incorrect; material will be excavated from the creek bottom at elevations of about 1,650 ft or less, whereas the three nest sites are located at elevations of between about 1,750 ft and 1,800 ft and at horizontal distances of several hundred feet beyond the borrow site's northern boundary. However, it is noted that Watana Borrow Site E will be a major source of

material. It's boundaries are not fixed and excavation may occur to within a few hundred feet of the nest sites at GE-11. It is also noted that Watana Borrow Site H is of low priority and may not be used. In the event it is used, excavation may occur to within several hundred feet of the nest site at GE-23.

## 2.2 Devil Canyon

### 2.2.1 Direct Losses due to the Impoundment

Eleven of the 23 golden eagle nesting locations that are known to occur near the project area in the middle basin of the Susitna River are associated with the Devil Canyon project area. Ten are located upstream of a point even with the proposed Devil Canyon damsite, but downstream of a point even with the Watana damsite, and one is located a short distance downstream of the Devil Canyon damsite.

One of the 11 nesting locations associated with the Devil Canyon project area is likely to be directly lost as a result of filling of the Devil Canyon reservoir to a maximum operation level of 1,455 ft and a maximum flood level of 1,465 ft. Although the exact location of this historical nest (GE-14) cannot be determined with certainty, it was probably located on one of three rock outcroppings that occur along a 1.5-mile section of the river at an elevation of less than 1,500 ft. (The three rock outcroppings currently do not have nests on them.) Several possible nesting ledges on these outcroppings are at elevations of about 1,450 ft or less. In the event that the actual nest ledge is not inundated, it will likely be so near maximum operating level that it will no longer be usable.

Another of the nesting locations (GE-13) will be partially inundated during filling of the Devil Canyon reservoir and may become unusable; the nest site at the location will remain only about 55 ft above maximum operating level and 45 ft above maximum flood level. It should be noted, however, that golden eagles occasionally nest at elevations of 50 ft or less above water bodies in Alaska. Furthermore, about 100 ft of excellent cliff-face will remain above water-level, and a new nesting ledge and nest could be constructed 75-80 ft above maximum water-level during implementation of mitigative measures. An

attractive natural-appearing nest site constructed at that height should assure the continued viability of this nesting location for golden eagles.

#### 2.2.2 Other Potential Conflicts

Four of the 11 golden eagle nesting locations associated with the Devil Canyon project area (GE-13, GE-14, GE-16 and GE-18) would be potentially vulnerable to disturbing activities during clearing of the Devil Canyon impoundment zone, if the clearing operations were to occur during the nesting season in years when these nesting locations were occupied. (It has been assumed that adequate clearing would already be complete near GE-11 as a result of earlier operations at Watana Borrow Site E, and that clearing operations will remain 0.5 mi or more from GE-12 and GE-23.) Only one of these four nesting locations (GE-14: see section 2.2.1) may be lost later as a result of reservoir filling. One of these four golden eagle nesting locations that would be potentially vulnerable to disturbing activities and that is not in danger of inundation is located downstream of the Devil Canyon damsite. This nesting location (GE-18) lies in close proximity to (1) the proposed Watana-to-Devil Canyon access road and bridge (the roadbed is about 0.25 mi north of the top of the cliff, and the access road bridge crossing is about 0.5 mi downstream to the west), (2) the Devil Canyon damsite (about 0.6 mi upstream to the east), and (3) the Devil Canyon dam substation and transmission route (about 0.5 mi north). It is noted that the access road cannot be realigned. It is also noted that the current proposed location of the access road bridge is not fixed; it may be repositioned 1/10 mile or more either side of the current alignment because of engineering constraints. Considerable disturbance will occur near this nesting location during construction of the Devil canyon damsite and associated facilities, and if construction were to occur during the nesting season in years when eagles attempted to occupy it, the nesting location would likely be abandoned. Furthermore, the close proximity of so many permanent features and sources of on-going potentially disturbing activities may cause this nesting location to be permanently abandoned (i.e., it may be unusable not only during the construction phase, but also after construction is completed).

### 3. Bald Eagle

#### 3.1 Watana

##### 3.1.1 Direct Losses due to the Impoundment

Seven of the 10 bald eagle nesting locations that are known to occur near the project area in the middle basin of the Susitna River drainage are located upstream of a point even with the Watana damsite. Three of the seven nesting locations (BE-3 [a tree-nest], BE-4 [a cliff-nest] and GE-5 [a tree-nest]) will be directly lost as a result of filling of the Watana Reservoir to a maximum operating level of 2,185 ft and a maximum flood level of 2,202 ft. All three of these nesting locations are located within the impoundment zone at elevations that vary between about 1,630 ft and 1,910 ft. (Estimated elevations of tree-nests are the approximate elevations of the bases of the trees. In both cases sited here, actual nest sites are located about 40-50 ft above the bases of the trees containing them. Estimated elevations given for cliff-nests are elevations of the actual nest sites.) The loss of the three nesting locations is judged to represent the loss of a minimum of two and maximum of three actual nesting pairs of bald eagles. A fourth nesting location (BE-2 [a tree-nest]) is located very near 2,200 ft; the base of the nest tree will remain about 15 ft above maximum operating level, but may be flooded to a depth of a few feet whenever a maximum flood level of 2,202 ft occurs. Although this bald eagle nesting location is unlikely to be lost, the potential exists for some damage to occur to the nest tree during events of maximum flooding. (It should be noted, however, that during implementation of mitigative measures, steps can be taken to shore up, brace and protect the nest tree against ice or debris carried past it during occasional floods, and several natural-appearing nest sites can be constructed in other nearby spruce trees beyond the potential danger zone. Protective measures for the current nest tree and construction of several nearby alternate nest sites should assure the continued viability of this nesting location for bald eagles.)

##### 3.1.2 Other Conflicts

Four of the seven bald eagle nesting locations located upstream of the Watana damsite (BE-2, BE-3, BE-4 and BE-5) would be potentially vulnerable to disturb-



ing activities during reservoir clearing. However, three of the four locations will eventually be lost as a result of a combination of Watana reservoir clearing and filling (BE-3 and BE-5) or of filling alone (BE-4). As a consequence, only one location that will not be inundated (BE-2) will remain potentially vulnerable to disturbing activities during the last phases of reservoir clearing.

One of the seven bald eagle nesting locations located upstream of the Watana damsite that is not near the impoundment zone and that will not be inundated (BE-6) was initially in danger of physical destruction as a result of construction of the Denali-to-Watana portion of the proposed access road. The access road has been realigned about 0.5 mi north and west of nesting location BE-6 to avoid this loss, and to minimize potential disturbance at the nesting location during construction and operation of the access road.

### 3.2 Devil Canyon

#### 3.2.1 Direct Losses due to the Impoundment

Three of the 10 bald eagle nesting locations that are known to occur near the project area in the middle basin of the Susitna River drainage are located downstream of a point even with the Watana damsite (including one located well downstream of the Devil Canyon damsite). However, these nesting locations (BE-7, BE-8 and BE-10) are not near the proposed Devil Canyon impoundment zone. Consequently, no complete or partial direct losses of bald eagle nesting locations will occur during construction and filling of this reservoir.

#### 3.2.2 Other Conflicts

One of the 10 bald eagle nesting locations that are known to occur near the project area in the middle basin of the Susitna River drainage is located well downstream of the Devil Canyon damsite. This nesting location (BE-8), near the confluence of the Susitna and Indian rivers, will be potentially vulnerable to disturbing activities associated with the construction and operation of the Devil Canyon-to-Gold Creek railroad link. The proposed railbed lies only about

0.25 mi southeast across the river. (This nesting location would also be potentially vulnerable to the same disturbing activities, if a Watana-only option includes a similar railroad link.)

#### 4. Summary of Golden Eagle Nest Losses and Conflicts

##### 4.1 Watana

Twelve (52.2%) of the 23 golden eagle nesting locations that are known to occur near the project area in the middle basin of the Susitna River drainage are found upstream of a point even with the proposed Watana damsite. Five nesting locations (21.7% of the 23 total known nesting locations) will be completely lost and one additional nesting location (4.3% of the total 23 known nesting locations) will be partially lost as a result of Watana reservoir filling. The nesting location that will be partially lost will still be usable, as two of the three nest sites and a large area of cliff will remain well above maximum flood level. The five nesting locations that will be completely lost do not necessarily represent the direct loss of an equivalent number of nesting pairs of golden eagles in the middle Susitna basin. Golden eagles often have several alternate nesting locations, and it is possible that the loss of the five nesting locations may only represent the loss of only two or three actual nesting pairs. (No more than two of the five locations have been occupied in the two years for which complete data are available.)

In addition to the complete and partial direct losses outlined above, five other nesting locations (21.7% of the 23 total known nesting locations) that will not be eventually lost as a result of reservoir filling would be potentially vulnerable to disturbing activities (reservoir clearing and borrow site excavation) as a result of Watana construction, if construction and other associated activities were to occur near the nesting locations during the nesting season in years when these locations were occupied.

##### 4.2 Devil Canyon

Ten (43.5%) of the golden eagle nesting locations that are known to occur near the project area in the middle basin of the Susitna River drainage are found

upstream of a point even with the proposed Watana damsite, and an additional nesting location (4.3%) that lies downstream of the proposed Devil Canyon damsite is in close proximity to it and to other project facilities. The following losses will occur as a result of Devil Canyon construction, in addition to the losses as a result of Watana construction.

Direct complete losses from filling the Devil Canyon reservoir, and from construction and operation of the Devil Canyon damsite, access road, and associated bridge will not exceed a total of three nesting locations (13.0% of the 23 total known nesting locations), and are not expected to exceed a total of two nesting locations (8.7% of the 23 total known nesting locations). One nesting location is judged likely to be completely lost as a result of inundation, and another will be partially inundated and may become unusable unless mitigative measures are taken to construct a new nest site at a higher elevation on the cliff-face. A third nesting location may be abandoned as a result of its close proximity to the damsite, access road and bridge. The complete loss of these three nesting locations, if it occurs, may represent the loss of one or two pairs of nesting eagles. The complete loss of two nesting locations (considered the more likely event) may represent the loss of only one pair of golden eagles. (Only one of the two locations that are most likely to be lost has been occupied in the two years for which complete data are available.)

In addition to the losses outlined above, two other nesting locations (8.7% of the 23 total known nesting locations) that will not be lost as a result of reservoir filling and placement of project facilities, would be potentially vulnerable to disturbing activities (reservoir clearing) as a result of Devil Canyon construction, if construction and other activities were to occur during the nesting season in years when these nesting locations were occupied. (The above assumes that clearing operations will remain 0.5 mi or more from nesting locations GE-12 and GE-23.)

#### 4.3 Combined Watana and Devil Canyon

A total of 23 golden eagle nesting locations are known to occur near the project area in the middle basin of the Susitna River drainage. At least five (21.7%)

and probably seven (30.4%) of these nesting locations will be completely lost as a result of project actions, and two (8.7%) additional nesting locations will be partially lost as a result of project actions. (One of the two partially lost locations will remain usable by golden eagles in its present condition; the other can easily be modified to maintain its viability as a suitable golden eagle nesting location.) The loss of seven nesting locations may represent the loss of only three or four actual nesting pairs of golden eagles. Seven (30.4%) other nesting locations that will not completely or partially lost as a result of inundation or placement of project facilities will be potentially vulnerable to disturbing activities as a result of reservoir clearing and material excavation from borrow sites.

## 5. Summary of Bald Eagles Nest Losses and Conflicts

### 5.1 Watana

Seven (70.0%) of the 10 bald eagle nesting locations that are known to occur near the project area in the middle basin of the Susitna River drainage are found upstream of a point even with the proposed Watana damsite. Three nesting locations (30.0% of 10 known locations) will be completely lost as a result of Watana reservoir clearing (two nesting locations) and filling (one nesting location). A fourth nesting location (10.0% of the 10 total known locations) may incur some damage as a result of Watana reservoir filling. (Damage to this nesting location might occur only on those occasions when the reservoir reaches maximum flood level.) These four nesting locations will also be potentially vulnerable to disturbing activities during reservoir clearing. The loss of the three nesting locations as a result of reservoir clearing and filling is judged to represent the loss of a minimum of two and a maximum of three actual nesting pairs of bald eagles.

### 5.2 Devil Canyon

Three (30.0%) of the 10 bald eagle nesting locations that are known to occur near the project area in the middle basin of the Susitna River drainage are found downstream of a point even with the Watana damsite (including one located

well downstream of the Devil Canyon damsite). None of these nesting locations will be lost or damaged as a result of Devil Canyon construction. However, one nesting location (10.0% of the 10 total known locations) will be potentially vulnerable to disturbing activities during construction and operation of the Devil Canyon-to-Gold Creek railroad link.

### 5.3 Combined Watana and Devil Canyon

A total of 10 bald eagle nesting locations are known to occur in the vicinity of the project in the middle basin of the Susitna River drainage. Three nesting locations (30.0%) will be completely lost. The loss of these three nesting locations is judged to represent the loss of a minimum of three actual nesting pairs of bald eagles. One additional nesting location (10.0%) may incur some damage as a result of project actions (inundation of the base of the tree at maximum flood levels). These four nesting locations will also be potentially vulnerable to disturbing activities during reservoir clearing. A fifth nesting location (10.0%) that will not be lost or damaged by project actions will also be vulnerable to disturbing activities.

REVISED TABLE E.3.127. Location and Status of Golden and Bald Eagle Nesting Locations in the Middle Susitna Basin, Alaska (as of June 1984).

Species	Nesting Location No.	Corresponding U of A Museum No. (Kessel et al. 1982a; B. Cooper 1982 pers. comm.)	Status <sup>a</sup>					USGS Talkeetna Mountains 15' x 30' Quad No.	Location <sup>c</sup>			Estimated Elevation <sup>f</sup> m (ft)
			1974 <sup>b</sup>	1980 <sup>c</sup>	1981 <sup>c</sup>	1982 <sup>d</sup>	1984 <sup>e</sup>		Township	Range	Section	
Golden Eagle	GE-1	V, C, ii	-	x	x	NC	x	C-1	T30N	R11E	8	725-737 (2380-2420)
	GE-2	D, T, gg	-	x	x	NC	x	D-2	T31N	R9E	17	640-701 (2100-2300)
	GE-3	E, kk, ll	-	x	x	NC	0	D-2	T31N	R8E	1	701-713 (2300-2340)
	GE-4	qq	-	-	0	x	0	D-2	T31N	R8E	22	558 (1830)
	GE-5	F	-	x	0	NC	0	D-2	T31N	R8E	9/10 boundary	564 (1850)
	GE-6	-	0?	-	-	NC	*	D-2	T31N	R8E	8/9 boundary	533 (1750)
	GE-7	R	-	-	x	NC	x	D-3	T31N	R7E	14	966 (3170)
	GE-8	G	-	x	0	NC	0	D-3	T32N	R6E	28	518 (1700)
	GE-9	ff	-	-	0	NC	0	D-3	T32N	R6E	29	533 (1750)
	GE-10	-	-	-	0	NC	0	D-4	T33N	R5W	28	1204 (3950)
	GE-11	dd	-	-	0	NC	0	D-4	T32N	R4E	25&26	533-549 (1750-1800)
	GE-12	-	0?	-	-	NC	0	D-4	T31N	R3E	14/15 boundary	610-640 (2000-2100)
	GE-13	Z	-	0	0	NC	0	D-4	T31N	R3E	17	460 (1510)
	GE-14	-	0?	-	-	NC	*	D-4	T31N	R3E	12	< 457 (<1500)
	GE-15	X, Y	-	-	0	NC	0	D-5	T32N	R2E	22&23	533-579 (1750-1900)

continued

REVISED TABLE E.3.127. (continued)

Species	Nesting Location No.	Corresponding U of A Museum No. (Kessel et al. 1982a; B. Cooper 1982 pers. comm.)	Status <sup>a</sup>					USGS Talkeetna Mountains 15' x 30' Quad No.	Location			Estimated Elevation <sup>f</sup> m (ft)
			1974 <sup>b</sup>	1980 <sup>c</sup>	1981 <sup>c</sup>	1982 <sup>d</sup>	1984 <sup>e</sup>		Township	Range	Section	
Golden Eagle	GE-16	1	-	x	x	NC	*?	D-5	T32N	R2E	27	470-485 (1540-1590)
	GE-17	pp	-	-	0	NC	0	D-5	T31N	R2E	17	588 (1930)
	GE-18	M	-	-	x	NC	-(*)?	D-5	T32N	R1E	32	335 (1100)
	GE-19	-	NC	NC	NC	NC	0	D-1	T31N	R11E	19	914-945 (3000-3100)
	GE-20	-	NC	NC	NC	NC	0	C-2	T30N	R8E	9	747 (2450)
	GE-21	-	NC	NC	NC	NC	0	D-4	T32N	R5E	20	549-610 (1800-2000)
	GE-22	-	NC	NC	NC	NC	x	C-4	T30N	R3E	27	732 (2400)
	GE-23	-	NC?	-	-	NC	0	D-4	T31N	R4E	15	561 (1840)
Bald Eagle	BE-1	-	0?	-	*	NC	*	C-1	T31N	R12E	33	686 <sup>g</sup> (2250)
		RBN <sup>h</sup>	NP	NP	NP	NC	x	C-1	T31N	R12E	28	716 <sup>g</sup> (2350)
	BE-2	B	-	x	x	NC	x	C-1	T29N	R11E	9, 10	671 <sup>g</sup> (2200)
	BE-3	hh	x	-	0	NC	0	C-2	T30N	R10E	16	582 <sup>g</sup> (1910)
	BE-4	S	x	-	x	NC	x	D-2	T31N	R8E	11	533 (1750)
	BE-5	A	x	x	*	NC	*	D-3	T31N	R7E	2	497 <sup>g</sup> (1630)
		RBN <sup>h</sup>	NP	NP	NP	NC	x	D-3	T31N	R7E	3	495 <sup>g</sup> (1625)

continued

REVISED TABLE E.3.127. (continued)

Species	Nesting Location No.	Corresponding U of A Museum No. (Kessel et al. 1982a; B. Cooper 1982 pers. comm.)	Status <sup>a</sup>					USGS Talkeetna Mountains 15' x 30' Quad No.	Location			Estimated Elevation <sup>f</sup> m (ft)
			1974 <sup>b</sup>	1980 <sup>c</sup>	1981 <sup>c</sup>	1982 <sup>d</sup>	1984 <sup>e</sup>		Township	Range	Section	
Bald Eagle	BE-6	K	-	x	x	NC	x	D-3	T33N	R5E	34	754 <sup>g</sup> (2475)
	BE-7	N	-	-	x	NC	0	C-4	T30N	R3E	1	567 <sup>g</sup> (1860)
	BE-8	L	0?	x	x	NC	x	D-6	T31N	R2W	10	221 <sup>g</sup> (725)
	BE-9	RBN <sup>h</sup>	NP	NP	NP	NC	x	C-1	T30N	R12E	9	683 <sup>g</sup> (2240)
	BE-10	-	-	-	-	NC	0	C-4	T30N	R2E	36	541 <sup>g</sup> (1775)

<sup>a</sup> x = active; 0? = apparently inactive; 0 = inactive; \* = nest no longer present; - = not reported (1974) or not located (1980-81), although suitable habitat was present in most cases; NC = not checked; NP = not present.

<sup>b</sup> Data from White (1974).

<sup>c</sup> Data from Kessel et al. (1982a), B. Kessel and B. Cooper (unpubl. data).

<sup>d</sup> Data from B. Kessel and B. Cooper (unpubl. data).

<sup>e</sup> Data from LGL Alaska Research Associates, Inc. survey, 29-30 May 1984.

<sup>f</sup> Differences occur between elevations given here and those reported by Kessel et al. (1982). Original estimates were obtained by attempting to locate nests as accurately as possible on USGS 1:63,360 maps with contour intervals of 100 ft (majority) or 50 ft (Talkeetna Mtns C-1), but it was often difficult to precisely locate nests and to locate them relative to tightly-spaced contour intervals (Cooper pers. comm.). All elevations were checked with a helicopter altimeter ( $\pm 30$ -foot accuracy in 20-foot intervals) and with an American Paulin precision altimeter (accuracy estimated at about  $\pm 10$  ft in a hovering helicopter in 1-foot increments) on 29-30 May 1984. Ranges in elevation include two or more nest sites at the same nesting location.

<sup>g</sup> Estimated elevations given for bald eagle nests in trees are approximate elevations of the bases of the nest trees. Nest sites in these trees are estimated to average about 14 m (45 ft) above ground level (range 10.5 - 23 m [35 - 75 ft]).

<sup>h</sup> RBN = recently built nest.



REVISED TABLE E.3.127b: Locations of Golden and Bald Eagle  
Nests in the Middle Susitna Basin  
(as of June 1984)

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GE-1	2.4 km (1.5 mi) upriver from Vee Canyon and 1.1 km (0.7 mi) up a narrow canyon on the north side of the Susitna River. Three nests reported: 1980 nest 26 m (85 ft) up a 33 m (110 ft) cliff, 100 m (330 ft) back from and 67 m (220 ft) above unnamed creek; 1981 nest 8 m (26 ft) up 12 m (40 ft) cliff 81 m (265 ft) back from and 67 m (220 ft) above unnamed creek (Kessel et al. 1982a; Kessel, unpubl. data); 1984 nest farthest upstream and highest of the three sites.
GE-2	4.2 km (2.6 mi) up the Susitna River from the mouth of Jay Creek and in a canyon on the north side of the Susitna River. Three nests reported: 1980 nest 5 m (15 ft) up 13 m (40 ft) cliff, 10 m (35 ft) back from and 18 m (60 ft) above unnamed creek; 1981 nest 1 m (5 ft) up 5 m (15 ft) vegetated cliff, 14 m (45 ft) back from and 33 m (110 ft) above unnamed creek (Kessel et al. 1982a; Kessel, unpubl. data); 1984 nest highest of the three sites.
GE-3	2.4 km (1.5 mi) up Jay Creek from its confluence with the Susitna River. Three nests reported: 1981 nest 5 m (15 ft) up 30 m (100 ft) cliff, 150 m (490 ft) from west bank and 115 m (375 ft) above Jay Creek (Kessel et al. 1982a; Kessel, unpubl. data); the nests were still present in 1984.
GE-4	1.6 km (1.0 mi) up Kosina Creek from its confluence with the Susitna River and on the east side of Kosina Creek. A single nest was identified as an inactive raven nest in 1981 but golden eagles constructed a nest there in 1982 (B. Cooper 1982 pers. comm.). The nest was still present in 1984.
GE-5	1.0 km (0.6 mi) down the Susitna River from the mouth of Kosina Creek. A single nest reported: 32 m (105 ft) up 38 m (125 ft) cliff on north river bank (Kessel et al. 1982a). The nest was still present in 1984.
GE-6	2.8 km (1.7 mi) down the Susitna River from the mouth of Kosina Creek on the north bank of the river. White (1974) reported a golden eagle nest at this location in 1974, and his location was thought to correspond to GE-5 since the area he indicated did not appear to contain suitable

nesting habitat. However, the small cliff was reevaluated in 1984. Although a nest was clearly no longer present, the cliff was comparable to some other marginal locations where golden eagles have built nests in Alaska (D.G. Roseneau, unpubl. data).

- GE-7 9.6 km (6.0 mi) down the Susitna River from the mouth of Kosina Creek. A single nest reported: 7 m (25 ft) up a 12 m (40 ft) cliff on a south-facing hillside high above the south bank of the river (Kessel et al. 1982a). The nest was still present in 1984.
- GE-8 4.0 km (2.5 mi) down the Susitna River from the mouth of Watana Creek. A single nest reported: 13 m (45 ft) up a 23 m (75 ft) cliff, 40 m (130 ft) back from and 34 m (110 ft) above the north bank of the river. The nest was inactive in 1981 although it contained a fresh spruce lining (Kessel et al. 1982a; Kessel, unpubl. data). The nest was still present in 1984.
- GE-9 5.4 km (3.4 mi) up the Susitna River from the mouth of Deadman Creek. A single nest reported on a cliff on the north bank of the river (Kessel, unpubl. data). The nest was still present in 1984 but it contained a large rock (the nest is no longer usable).
- GE-10 11.2 km (7.0 mi) north of the proposed Watana dam-site. A single nest reported high on the southeast side of Tsusena Butte (Kessel, unpubl. data). The remains of the nest and a good ledge were still present in 1984.
- GE-11 1.0 km (0.6 mi) down the Susitna River from the mouth of Tsusena Creek and 0.8 km (0.5 mi) up a small unnamed drainage. A single nest reported on the east side of the creek (Kessel, unpubl. data). The nest on the east side of the creek was still present in 1984. In 1984 two additional, older alternate nests were also discovered on the west side of the creek.
- GE-12 White (1974) reported a golden eagle nest about 10 km (6.3 mi) down the Susitna River from the mouth of Fog Creek but his location was thought to correspond to GE-13, since the area he indicated did not contain suitable nesting habitat. However, two nests and a previously used ledge were discovered in 1984 in a side canyon 8.6 km (5.4 mi) downstream of Fog Creek and 1.6 km (1 mi) up an unnamed creek on the north side of the river. The side canyon is now considered as the correct location of GE-12.

- GE-13 9.4 km (5.9 mi) up the Susitna River from the mouth of Devil Creek. A single nest reported on a cliff on the north bank of the river (Kessel, unpubl. data). The nest was still present in 1984.
- GE-14 5.6 km (3.5 mi) up the Susitna River from the mouth of Devil Creek. White (1974) reported a golden eagle nest at this location on the west side of the river, but the nearest suitable habitat appeared to be 1.4 km (0.9 mi) and 2.0 km (1.3 mi) farther downstream (B. Cooper, pers. comm. 1982). All three possible locations were searched in 1984; habitat tended to be marginal, but the nest reported by White (1974) might have occurred at any one of the three locales. (The exact location of this nest will likely never be known.)
- GE-15 2.8 km (1.8 mi) up Devil Creek from its confluence with the Susitna River. At least two nests reported: one on the cliffs on the west side of Devil Creek and one on the cliffs on the north side of a small, unnamed tributary that empties into Devil Creek (Kessel, unpubl. data). Both nests were still present in 1984, and a third nest was discovered on the north side of the unnamed tributary.
- GE-16 0.6 km (0.4 mi) up Devil Creek from its confluence with the Susitna River. A single nest reported: 30 m (100 ft) up 45 m (150 ft) vegetated cliff, 100 m (330 ft) back from and 120 m (395 ft) above Devil Creek on the west bank (Kessel et al. 1982a). The nest appeared to be gone in 1984.
- GE-17 6.8 km (4.3 mi) down the Susitna River from the mouth of Devil Creek and 3.5 km (2.2 mi) up a small drainage that joins the river from the south. A single nest reported on the east side of the unnamed creek (Kessel unpubl. data). The nest was still present in 1984.
- GE-18 3.4 km (2.1 mi) up the Susitna River from the mouth of Portage Creek. A single nest reported on a moderate-sized cliff on the north bank of the river (Kessel et al. 1982a). Effects to relocate the nest in 1984 were unsuccessful. (This section of the canyon is difficult to survey--the nest may still be present.)
- GE-19 2.4 km (1.5 mi) upriver from Vee Canyon and 9.5 km (5.9 mi) up a large unnamed tributary on the north side of the Susitna River. Four nests discovered

in 1984: three on the east side of the creek and one on the west side of the creek.

- GE-20 9.6 km (6.0 mi) up Kosina Creek on the southeast side about 0.5 km (0.3 mi) above the confluence of Gilbert Creek. A single nest discovered in 1984.
- GE-21 4.8 km (3.0 mi) up Tsusena Creek on the southeast side. Three nests discovered in 1984.
- GE-22 4.8 km (3.0 mi) up a west-flowing, unnamed tributary of Prairie Creek on the north side and about 4.2 km (2.6 mi) due east of Daneka Lake. Three nests discovered in 1984.
- GE-23 2.1 km (1.3 mi) up Fog Creek on the north side. The remains of one old nest discovered in 1984.
- BE-1 4.2 km (2.6 mi) up the Susitna River from the mouth of Tyone River on the east bank. White (1974) reported two closely associated nests on the east side of the Susitna River in 1974 that were no longer present by 1980-81. (These nests were probably constructed in white spruce.) Sometime after 1981 bald eagles reoccupied this section of the river. In 1984 a recently constructed nest was found in a live white spruce on the east side of the river only 0.8 km (0.5 mi) upstream from the two previous historical nest sites.
- BE-2 3.4 km (2.1 mi) up the Oshetna River from its confluence with the Susitna River. A single nest reported 4 m (15 ft) from edge of the west bank in the top of a live 22 m (70 ft) white spruce (Kessel et al. 1982a). The nest was still present in 1984.
- BE-3 4.0 km (2.5 mi) down the Susitna River from the midpoint of Vee Canyon on the south bank of the Susitna River, just west of the mouth of a small unnamed tributary. A single nest reported in a live balsam poplar (White 1974; Kessel unpubl. data). The nest was still present in 1984.
- BE-4 1.8 km (1.1 mi) up the Susitna River from the mouth of Kosina Creek. A single nest reported 25 m (80 ft) up a 33 m (110 ft) cliff on the north bank of the river (White 1974; Kessel et al. 1982a). The nest, possibly originally constructed by golden eagles, was still present in 1984.
- BE-5 8.8 km (5.5 mi) up the Susitna River from the mouth of Watana Creek. A single nest reported on

a wooded island in a live white spruce (White 1974; Kessel et al. 1982a). The nest, relocated in 1980, was no longer present in 1981. Sometime after 1981 bald eagles reoccupied this section of the river. In 1984 a recently constructed nest was found in a live white spruce on the south side of a small island 0.4 km (0.25 mi) from the original island, and 0.8 km (0.5 mi) from the 1974-1980 nest site.

- BE-6      9.2 km (5.7 mi) up Deadman Creek from its confluence with the Susitna River. A single nest reported on top of a 15 m (50 ft) live broken-topped balsam poplar, 25 m (80 ft) from the north bank of Deadman Creek (Kessel et al. 1982a). The nest was still present in 1984.
- BE-7      A single nest reported on the south shore of a small pond (WB105), 1.2 km (0.7 mi) east of the northeast end of Stephan Lake and on top of a 13 m (45 ft) live broken-topped balsam poplar (Kessel et al. 1982a). The nest was still present in 1984.
- BE-8      1.0 km (0.6 mi) up the Susitna River from its confluence with Indian River. A single nest reported on top of a 23 m (75 ft) live broken-topped poplar, 4 m (15 ft) from the north river bank (White 1974; Kessel et al. 1982a). The nest was still present in 1984.
- BE-9      0.5 km (0.3 mi) up the Tyone River and about 100 m from the northeast bank. A recently-constructed single nest discovered in 1984. The nest is in a live white spruce -- it was not present in 1981 (D.G. Roseneau, unpubl. data).
- BE-10     5.6 km (3.5 mi) downstream from the south end of Stephan Lake on the west bank of Prairie Creek and 1.4 km (0.9 mi) southwest of the south end of Daneka Lake. A single nest discovered in 1984. The nest is in a live broken-topped poplar.