Mallette, R. 1973 [73.11]

JOB PROGRESS REPORT

State: California

Cooperators: U. S. Forest Service

Project No.: W-54-R-5 Project Title: Special Wildlife Investigations

Job No.: III-6 Job Title: Raptor Survey

Period Covered: July 1, 1972 to June 30, 1973

SUMMARY:

Raptor Survey, initiated December 1970, involves reporting all raptor species and numbers observed along permanently established survey routes throughout the state. Forty-one routes were surveyed during 1973 resulting in a report of 6,184 raptor sightings of 16 species. For a comparable survey period 7,375 raptors were reported in 1971 and 6,869 in 1972. Sightings in 1973 averaged 121.6 birds per 100 miles which compares with 106.7 in 1971 and 100.9 in 1972. A comprehensive evaluation of survey results is needed to reduce data interpretation bias.

Twenty-six newly discovered eyries were reported and entered in the Department's eyrie inventory files, increasing the statewide file to 493 eyries. Eyrie inventory has supplied a repository of eyrie information for a selected group of raptors. Inventory is not complete, but available information is being used to provide protection to many eyries by cooperating agencies for many threatened species.

BACKGROUND:

The objectives of the Raptor Survey and Raptor Eyrie Inventory are to establish population trends and determine seasonal distribution of selected raptor species. The numbers can never be used as absolute population data. They merely provide a comparative index used in the formulation of trends.

PROCEDURES:

Department personnel and cooperating agencies were requested to run selected raptor survey routes during the months of January, March and May and report newly discovered raptor eyries for eight selected raptor species. Attached are the directions for running routes and recording sightings on Form FG-887.

Eyrie locations were to be recorded on a nesting survey Form FG-882. Forms were forwarded to Sacramento for data processing and placed in the Department's permanent files.

FINDINGS:

Raptor Survey

Forty-six routes were selected for the 1973 raptor survey. Of these 46 routes,

41 were counted one to three times for the counting periods of January, March and May. Five routes were not counted in Region 5 because of other commitments. Nine of the original 55 raptor survey routes were discontinued in 1973. These nine routes were essentially sampling similar areas already covered. See Table 1 and Figure 1 for survey routes and their locations. Raptor sightings for the five Department regions are summarized in Table 2, which shows the number of birds reported for each species. Table 3 shows the number of birds per 100 miles of travel.

A total of 5,084.7 miles were covered for the survey period. Of 6,184 raptors reported, the turkey vulture (31.7%), red-tailed hawk (28.5%), American kestral (20.4%), marsh hawk (5.0%) and rough-legged hawk (2.7%) were most frequently reported. These five species made up 87.8 percent of all raptors sighted. Eleven other species constituted 7.7 percent of the raptors reported and 4.5 percent were unidentified. In 1971-72 the five species of raptors in order of their frequency reported for the same three months report period were: turkey vulture (32.2%), red-tailed hawk (30.0%), American kestral (19.3%), marsh hawk (4.5%) and white-tailed kite (2.5%). In 1973 the rough-legged hawk replaced the white-tailed kite as one of the five species most frequently reported.

Table 4 summarizes statewide raptor data reported for a comparable three month period for each of the last 3 years (1971-1973).

TABLE 4
RAPTOR SURVEY, STATEWIDE SUMMARY OF BIRDS PER 100 MILES
1971-1973

Year	Month	Miles Traveled	Raptors Reported	Raptors per 100 Miles
1971	January	2,335.2	2,793	106.2
	March	2,236.0	2,480	110.9
	May	2,337.7	2,103	90.0
	Total	6,908.9	7,375	106.7
1972	January	2,331.0	2,687	115.2
	March	2,297.0	2,471	107.6
	May	2,197.0	1,711	78.5
	Total	6,807.0	6,869	100.9
1973	January	1,658.7	2,394	144.3
	March	1,764.0	2,222	126.0
	May	1,662.0	1,568	94.3
	Total	5,084.7	6,184	121.6

Raptors totaling 121.6 for each 100 miles of travel were reported in 1973. This reflects an increase of 14.9 birds for each 100 miles of travel from 1971 and an increase of 20.7 from 1972.

Monthly figures also reflect an increase in raptors. However, a comprehensive evaluation of the data will be necessary to show a true picture of the survey results, nine routes were deleted and five routes were not run in 1973. Routes from the areas not run in 1973 generally had lower bird counts reported for 1972 and this will bias the statewide summary.

Tables 5 and 6 summarizes the sightings and birds per 100 miles of travel by geographical regions. Survey data indicates the Sacramento Valley-Delta area is the principal raptor wintering area, followed by the North Coast, Cascade Mountains, South Coast and San Joaquin-Antelope Valleys geographical areas. A comprehensive evaluation will be made as additional survey data is accumulated.

Eyrie Inventory

Department personnel and cooperating agencies were requested to report newly discovered raptor eyries for the following species: red-shouldered hawk, Swainson's hawk, golden eagle, bald eagle, osprey, peregrine falcon, prairie falcon and goshawk. Twenty-six newly discovered eyries were reported and entered in the Department's eyrie inventory files, increasing the statewide file to 493 eyries. New eyrie entries include 6 red-shouldered hawk, 1 golden eagle, 6 bald eagle, 10 osprey, 1 peregrine falcon, 1 prairie falcon, and 1 goshawk.

Eyrie inventory has supplied a repository of eyrie information for a selected group of raptors. Inventory is not complete, but available information is being used to provide protection to many eyries by cooperating agencies for many threatened species.

Prepared by: Robert D. Mallette Date: December 7, 1973
Robert D. Mallette
Associate Wildlife Manager-Biologist

Approved: Howard R. Leach
Howard R. Leach
Wildlife Management Supervisor

Approved: Eldridge G. Hunt
Eldridge G. Hunt, Chief
Wildlife Management Branch

TABLE 1 (Contd.)

Raptor Survey Routes - 1973

Route Name	County	Route No.
Region IV		
Kings Wildlife Unit	Fresno	R4-10-01
Los Banos Wildlife Unit	Fresno	R4-10-02
Tehachapi Wildlife Unit	Kern	R4-15-01
Avernal Wildlife Unit	Kings-Kern	R4-16-01
Madera Wildlife Unit #1	Madera	R4-20-01
Madera Wildlife Unit #2	Madera	R4-20-02*
Turlock Wildlife Unit	Merced	R4-24-01
Ridgecrest Wildlife Unit	San Bernardino-Inyo	R4-36-01
Sequoia Wildlife Unit	Tulare	R4-54-01
Sonora Wildlife Unit	Tuolumne-Mariposa	R4-55-01
	Total -- 9 Routes	
Region V		
Coachella Canal	Imperial	R5-13-01
Colorado River Wildlife Unit	Imperial	R5-13-02*
Imperial Wildlife Area	Imperial	R5-13-03
Pleasant Valley-Big Pine	Inyo	R5-14-01
Palmdale-Gorman	Los Angeles	R5-19-01
Palmdale-Lancaster	Los Angeles and Kern	R5-19-02*
North Mono	Mono	R5-26-01
Lake Mathews	Riverside	R5-33-01 1/
Palo Verde Valley	Riverside	R5-33-02 1/
San Jacinto Unit	Riverside	R5-33-03 1/
Chemehuevi Valley-Essex	San Bernardino	R5-36-01*
Topock Gorge	San Bernardino	R5-36-02 1/
New York-Providence Mt.	San Bernardino	R5-36-03 1/
Camp Pendleton	San Diego	R5-37-01
New Cuyama-Santa Maria	Santa Barbara	R5-42-01*
Lompoc-Santa Ynez Valley	Santa Barbara	R5-42-02*
Orcutt-Vandenberg	Santa Barbara	R5-42-03
	Total -- 12 Routes	
	State Total -- 46 Routes	

* Deleted in 1973

1/ Not counted in 1973

TABLE 2

RAPTOR SURVEY, SIGHTINGS SUMMARIZED BY REGION
1973

REGION	NO. OF ROUTES	MONTH	MILES	TURKEY VULTURE	CALIF. CONDOR	GOLDEN EAGLE	BALD EAGLE	OSPREY	RED-TAILED HAWK	RED-SHOULDERED HAWK	SWAINSON'S HAWK	ROUGH-LEGGED HAWK	FERRUGINOUS HAWK	MARSH HAWK	GOSHAWK	COOPER'S HAWK	SHARP-SHINNED HAWK	WHITE-TAILED KITE	PEREGRINE FALCON	PRAIRIE FALCON	PIGEON HAWK	AMERICAN KESTRAL	UNKNOWN	TOTAL
1	6	Jan.	238.8	17	--	19	24	--	78	5	--	59	--	10	--	1	--	--	--	2	--	25	70	310
	6	March	238.8	25	--	25	14	--	71	--	--	43	1	8	--	1	--	--	--	2	--	10	11	211
	6	May	238.8	62	--	8	2	--	61	--	--	--	--	5	--	--	--	--	--	3	--	5	4	150
Total	6		716.4	104	--	52	40	--	210	5	--	102	1	23	--	2	--	--	--	7	--	40	85	671
2	7	Jan.	298.8	73	--	2	5	--	141	2	--	20	--	46	--	1	1	39	--	2	2	169	31	534
	7	March	298.8	94	--	4	3	--	149	1	--	32	1	65	--	--	--	36	--	1	--	106	38	530
	8	May	340.3	105	--	4	--	--	47	--	--	1	--	7	--	1	--	6	--	--	--	31	7	209
Total	8		937.9	272	--	10	8	--	337	3	--	53	1	118	--	2	1	81	--	3	2	306	76	1,273
3	11	Jan.	522.6	278	--	10	3	1	293	11	--	3	1	49	--	4	6	34	--	3	1	343	26	1,066
	11	March	519.6	406	--	16	--	11	286	12	--	2	3	39	--	3	5	27	--	2	--	206	35	1,053
	11	May	522.6	607	--	8	--	3	123	--	--	--	--	9	--	4	1	6	--	--	--	27	13	801
Total	11		1564.8	1,291	--	34	3	15	702	23	--	5	4	97	--	11	12	67	--	5	1	576	74	2,920
4	9	Jan.	441.6	1	--	9	--	--	172	2	1	3	3	36	--	4	1	2	--	4	--	176	15	429
	9	March	437.6	74	--	6	1	--	151	1	--	--	--	16	--	7	1	2	--	2	--	41	15	317
	8	May	392.4	140	--	11	--	--	91	2	--	--	--	6	--	4	--	--	--	--	--	60	7	321
Total	9		1271.6	215	--	26	1	--	414	5	1	3	3	58	--	15	2	4	--	6	--	277	37	1,067
5	4	Jan.	156.9	--	--	--	--	--	19	--	--	7	--	5	--	--	1	4	--	1	--	17	1	55
	6	March	269.2	24	--	2	--	--	46	1	--	--	--	9	--	2	--	1	--	--	--	25	1	111
	4	May	167.9	17	--	1	--	--	37	3	--	--	--	2	--	--	--	2	--	--	--	19	6	87
Total	7		594.	41	--	3	--	--	102	4	--	7	--	16	--	2	1	7	--	1	--	61	8	253
ALL REGIONS	37	Jan.	1658.7	369	--	40	32	1	703	20	1	92	4	146	--	10	9	79	--	12	3	730	143	2,394
	39	March	1764.	623	--	53	18	11	703	15	--	77	5	137	--	13	6	66	--	7	--	388	100	2,222
	37	May	1662.	931	--	32	2	3	359	5	--	1	--	29	--	9	1	14	--	3	--	142	37	1,568
GRAND TOTAL	41		5084.7	1,923	--	125	52	15	1,765	40	1	170	9	312	--	32	16	159	--	22	3	1,260	280	6,184

TABLE 3

RAPTOR SURVEY, BIRDS PER 100 MILES,
SUMMARIZED BY REGION, 1973

REGION	NO. OF ROUTES	MONTH	TURKEY VULTURE	CONDOR	GOLDEN EAGLE	BALD EAGLE	OSPREY	RED-TAILED HAWK	RED-SHOULDERED HAWK	SWAIN-SON'S HAWK	ROUGH-LEGGED HAWK	FURRUGINOUS HAWK	MARSH HAWK	GOSHAWK	COOPER'S HAWK	SHARP-SHINNED HAWK	WHITE-TAILED KITE	PEREGRINE FALCON	PRAIRIE FALCON	PIGEON HAWK	SPARROW HAWK	UN-KNOWN	TOTAL
1	6	Jan.	7.1	--	8.0	10.1	--	32.7	2.1	--	24.7	--	4.2	--	.4	--	--	--	.8	--	10.5	29.3	129.8
	6	March	10.5	--	10.5	5.9	--	29.7	--	--	18.0	.4	3.4	--	.4	--	--	--	.8	--	4.2	4.6	88.4
	6	May	26.0	--	3.4	.8	--	25.5	--	--	--	--	2.1	--	--	--	--	--	1.3	--	2.1	1.7	62.8
Total	6		14.5	--	7.3	5.6	--	29.3	.7	--	14.2	.1	3.2	--	.3	--	--	--	1.0	--	5.6	11.9	93.7
2	7	Jan.	24.4	--	.7	1.7	--	47.2	.7	--	6.7	--	15.4	--	.3	.3	13.1	--	.7	.7	56.6	10.4	178.7
	7	March	31.5	--	1.3	1.0	--	49.9	.3	--	10.7	.3	21.8	--	--	--	12.1	--	.3	--	35.5	12.7	177.4
	8	May	30.9	--	1.2	--	--	13.8	--	--	.3	--	2.1	--	.3	--	1.8	--	--	--	9.1	2.1	61.4
Total	8		29.0	--	1.1	.9	--	35.9	.3	--	5.7	.1	12.6	--	.2	.1	8.6	--	.3	.2	32.6	8.1	135.7
3	11	Jan.	53.2	--	1.9	.6	.2	56.1	2.1	--	.6	.2	9.4	--	.8	1.2	6.5	--	.6	.2	65.6	5.0	204.0
	11	March	78.1	--	3.1	--	2.1	55.0	2.3	--	.4	.6	7.5	--	.6	1.0	5.2	--	.4	--	39.7	6.7	202.7
	11	May	116.2	--	1.5	--	.6	23.5	--	--	--	--	1.7	--	.8	.2	1.2	--	--	--	5.2	2.5	153.3
Total	11		82.5	--	2.2	.2	1.0	44.9	1.5	--	.3	.3	6.2	--	.7	.8	4.3	--	.3	.1	36.8	4.7	186.6
4	9	Jan.	.2	--	2.0	--	--	39.0	.5	.2	.7	.7	8.2	--	.9	.2	.5	--	.9	--	39.9	3.4	97.2
	9	March	16.9	--	1.4	.2	--	34.5	.2	--	--	--	3.7	--	1.6	.2	.5	--	.5	--	9.4	3.4	72.4
	8	May	35.7	--	2.8	--	--	23.2	.5	--	--	--	1.5	--	1.0	--	--	--	--	--	15.3	1.8	81.8
Total	9		16.9	--	2.0	.1	--	32.6	.4	.1	.2	.2	4.6	--	1.2	.2	.3	--	.5	--	21.8	2.9	83.9
5	4	Jan.	--	--	--	--	--	12.1	--	--	4.5	--	3.2	--	--	.6	2.6	--	.6	--	10.8	.6	35.1
	6	March	8.9	--	.7	--	--	17.1	.4	--	--	--	3.3	--	.7	--	.4	--	--	--	9.3	.4	41.2
	4	May	10.1	--	.6	--	--	22.0	1.8	--	--	--	1.2	--	--	--	1.2	--	--	--	11.3	3.6	51.8
Total	7		6.9	--	.5	--	--	17.2	.7	--	1.2	--	2.7	--	.3	.2	1.2	--	.2	--	10.3	1.4	42.6
ALL REGIONS	37	Jan.	22.3	--	2.4	1.9	.1	42.4	1.2	.1	5.6	.2	8.8	--	.6	.5	4.8	--	.7	.2	44.0	8.6	144.3
	39	March	35.3	--	3.0	1.0	.6	39.9	.9	--	4.4	.3	7.8	--	.7	.3	3.7	--	.4	--	22.0	5.7	126.0
	37	May	56.0	--	1.9	.1	.2	21.6	.3	--	.1	--	1.7	--	.5	.1	.8	--	.2	--	8.5	2.2	94.3
GRAND TOTAL	41		37.8	--	2.5	1.0	.3	34.7	.8	--	3.3	.2	6.1	--	.6	.3	3.1	--	.4	.1	24.8	5.5	121.6

TABLE 5

RAPTOR SURVEY, SIGHTINGS SUMMARIZED
BY GEOGRAPHICAL AREA, 1973

AREA	NO. OF ROUTES	MONTH	MILES	TURKEY VULTURE	CONDOR	GOLDEN EAGLE	BALD EAGLE	OSPREY	RED-TAILED HAWK	RED-SHOULDERED HAWK	SWAIN-SON'S HAWK	ROUGH-LEGGED HAWK	FERRUGINOUS HAWK	MARSH HAWK	GOSHAWK	COOPER'S HAWK	SHARP-SHINNED HAWK	WHITE-TAILED KITE	PEREGRINE FALCON	PRAIRIE FALCON	PIGEON HAWK	SPARROW HAWK	UN-KNOWN	TOTAL
North Coast	6	Jan.	298.1	242	--	8	5	1	163	15	--	--	--	7	--	1	5	10	--	2	1	199	10	669
	6	March	298.1	312	--	11	2	11	143	11	--	1	2	5	--	2	--	24	--	--	--	138	20	682
	6	May	298.1	470	--	7	--	3	68	--	--	--	--	--	--	2	--	5	--	--	--	14	7	576
Total	6		894.3	1,024	--	26	7	15	374	26	--	1	2	12	--	5	5	39	--	2	1	351	37	1,927
Cascade Mountains	3	Jan.	119.3	15	--	16	21	--	49	--	--	25	--	5	--	--	--	--	--	--	--	10	16	157
	3	March	119.3	25	--	23	12	--	47	--	--	25	1	6	--	--	--	--	--	2	--	4	7	152
	3	May	119.3	37	--	3	2	--	31	--	--	--	--	3	--	--	--	--	--	3	--	--	1	80
Total	3		357.9	77	--	42	35	--	127	--	--	50	1	14	--	--	--	--	--	5	--	14	24	389
South Coast	6	Jan.	293.4	38	--	2	--	--	120	1	--	--	1	7	--	3	1	4	--	1	--	167	11	356
	7	March	355.7	112	--	7	--	--	171	2	--	--	1	3	--	4	5	1	--	2	--	90	10	408
	7	May	355.7	175	--	3	--	--	92	3	--	--	--	1	--	2	1	2	--	--	--	33	11	323
Total	7		1004.8	325	--	12	--	--	383	6	--	--	2	11	--	9	7	7	--	3	--	290	32	1,087
Sac. Valley & Delta	6	Jan.	216.	69	--	--	--	--	132	2	--	7	--	79	--	1	1	63	--	2	2	172	34	564
	6	March	213.	86	--	4	1	--	101	--	--	8	--	92	--	--	--	38	--	1	--	98	37	466
	7	May	257.5	91	--	2	--	--	31	--	--	1	--	16	--	--	--	7	--	--	--	20	7	175
Total	7		686.5	246	--	6	1	--	264	2	--	16	--	187	--	1	1	108	--	3	2	290	78	1,205
San Joaquin & *Antelope Valleys*	9	Jan.	446.9	5	--	9	1	--	186	2	1	6	3	38	--	4	1	2	--	4	--	177	17	456
	10	March	492.9	82	--	4	3	--	190	2	--	5	--	20	--	7	1	3	--	1	--	49	20	387
	8	May	397.7	154	--	8	--	--	100	2	--	--	--	6	--	5	--	--	--	--	--	64	7	346
Total	10		1337.5	241	--	21	4	--	476	6	1	11	3	64	--	16	2	5	--	5	--	290	44	1,189
Great Basin	5	Jan.	198.8	--	--	5	5	--	46	--	--	54	--	5	--	1	--	--	--	2	--	3	55	176
	5	March	198.8	--	--	4	--	--	47	--	--	38	1	2	--	--	--	--	--	1	--	7	6	106
	5	May	195.7	4	--	9	--	--	37	--	--	--	--	3	--	--	--	--	--	--	--	11	4	68
Total	6		593.3	4	--	18	5	--	130	--	--	92	1	10	--	1	--	--	--	3	--	21	65	350
Colo. River Desert	2	Jan.	86.2	--	--	--	--	--	7	--	--	--	--	5	--	--	1	--	--	1	--	2	--	16
	2	March	86.2	6	--	--	--	--	4	--	--	--	--	9	--	--	--	--	--	--	--	2	--	21
	1	May	38.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	2		210.4	6	--	--	--	--	11	--	--	--	--	14	--	--	1	--	--	1	--	4	--	37

TABLE 6

RAPTOR SURVEY, BIRDS PER 100 MILES,
SUMMARIZED BY GEOGRAPHICAL AREA, 1973

AREA	NO. OF ROUTES	MONTH	TURKEY VULTURE	CONDOR	GOLDEN EAGLE	BALD EAGLE	OSPREY	RED-TAILED HAWK	RED-SHOULDERED HAWK	SWAIN-SON'S HAWK	ROUGH-LEGGED HAWK	FERRUGINOUS HAWK	MARSH HAWK	GOSHAWK	COOPER'S HAWK	SHARP-SHINNED HAWK	WHITE-TAILED KITE	PEREGRINE FALCON	PRAIRIE FALCON	PIGEON HAWK	SPARROW HAWK	UN-KNOWN	TOTAL
North Coast	6	Jan.	81.2	--	2.7	1.7	.3	54.7	5.0	--	--	--	2.4	--	.3	1.7	3.4	--	.7	.4	66.8	3.4	224.4
	6	March	104.7	--	3.7	.7	3.7	48.0	3.7	--	.3	.7	1.7	--	.7	--	8.1	--	--	--	46.3	6.7	228.8
	6	May	157.7	--	2.4	--	1.0	22.8	--	--	--	--	--	--	.7	--	1.7	--	--	--	4.7	2.4	193.2
Total	6		114.5	--	2.9	.8	1.7	41.8	2.9	--	.1	.2	1.3	--	.6	.6	4.4	--	.2	.1	39.3	4.1	215.5
Cascade Mountains	3	Jan.	12.6	--	13.4	17.6	--	41.1	--	--	21.0	--	4.2	--	--	--	--	--	--	--	8.4	13.4	131.6
	3	March	21.0	--	19.3	10.1	--	39.4	--	--	21.0	.8	5.0	--	--	--	--	--	1.7	--	3.4	5.9	127.4
	3	May	31.0	--	2.5	1.7	--	26.0	--	--	--	--	2.5	--	--	--	--	--	2.5	--	--	.8	67.1
Total	3		21.5	--	11.7	9.8	--	35.5	--	--	14.0	.3	3.9	--	--	--	--	--	1.4	--	3.9	6.7	108.7
South Coast	6	Jan.	13.0	--	.7	--	--	40.9	.3	--	--	.3	2.4	--	1.0	.3	1.4	--	.3	--	56.2	3.8	121.3
	7	March	31.5	--	2.0	--	--	48.1	.6	--	--	.3	.8	--	1.1	1.4	.3	--	.6	--	25.3	2.8	114.7
	7	May	49.2	--	.8	--	--	25.9	.8	--	--	--	.3	--	.6	.3	.6	--	--	--	9.3	3.1	90.8
Total	7		32.3	--	1.2	--	--	38.1	.6	--	--	.2	1.1	--	.9	.7	.7	--	.3	--	28.9	3.2	108.2
Sac. Valley & Delta	6	Jan.	31.9	--	--	--	--	61.1	.9	--	3.2	--	36.6	--	.5	.5	29.2	--	.9	.9	79.6	15.7	261.1
	6	March	40.4	--	1.9	.5	--	47.4	--	--	3.8	--	43.2	--	--	--	17.8	--	.5	--	46.0	17.4	218.8
	7	May	35.3	--	.8	--	--	12.0	--	--	.4	--	6.2	--	--	--	2.7	--	--	--	7.8	2.7	68.0
Total	7		35.8	--	.9	.2	--	38.5	.3	--	2.3	--	27.2	--	.2	.2	15.7	--	.4	.3	42.2	11.4	175.5
San Joaquin & Antelope Valleys	9	Jan.	1.1	--	2.0	.2	--	41.6	.5	.2	1.3	.7	8.5	--	.9	.2	.5	--	.9	--	39.6	3.8	102.0
	10	March	16.6	--	.8	.6	--	38.6	.4	--	1.0	--	4.1	--	1.4	.2	.6	--	.2	--	9.9	4.1	78.5
	8	May	38.7	--	2.0	--	--	25.1	.5	--	--	--	1.5	--	1.3	--	--	--	--	--	16.1	1.8	87.0
Total	10		18.0	--	1.6	.3	--	35.6	.5	.1	.8	.2	4.8	--	1.2	.2	.4	--	.4	--	21.7	3.3	88.9
Great Basin	5	Jan.	--	--	2.5	2.5	--	23.1	--	--	27.2	--	2.5	--	.5	--	--	--	1.0	--	1.5	27.7	88.5
	5	March	--	--	2.0	--	--	23.6	--	--	19.1	.5	1.0	--	--	--	--	--	.5	--	3.5	3.0	53.3
	5	May	2.0	--	4.6	--	--	18.9	--	--	--	--	1.5	--	--	--	--	--	--	--	5.6	2.0	34.8
Total	6		.7	--	3.0	.8	--	21.9	--	--	15.5	.2	1.7	--	.2	--	--	--	.5	--	3.5	11.0	59.0
Colo. River Desert	2	Jan.	--	--	--	--	--	8.1	--	--	--	--	5.8	--	--	1.2	--	--	1.2	--	2.3	--	18.6
	2	March	7.0	--	--	--	--	4.6	--	--	--	--	10.4	--	--	--	--	--	--	--	2.3	--	24.4
	1	May	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	2		2.9	--	--	--	--	5.2	--	--	--	--	6.7	--	--	.5	--	--	.5	--	1.9	--	17.6

CALIFORNIA DEPARTMENT OF FISH AND GAME
1416 Ninth Street
Sacramento, California 95814

ENDANGERED WILDLIFE INVENTORY

NESTING SURVEY

Species _____ Nest No. _____

Nest Description

General Location: _____

_____

Specific Location: _____
(Township and Range)

County _____ Region _____

Nest Description: _____

_____

_____

Property Owner: _____

_____

CURRENT STATUS OF NEST

Active Nest: ☐

Observation Date _____

Nesting activity _____

Eggs (Number) _____

Young (Number) _____

Inactive Nest: ☐

Reason for Abandonment

☐ Land Use Change _____

☐ Harassment _____

☐ Other _____

☐ Unknown _____

Observer: _____ Date: _____

NOTES

_____

_____

FG 882 8/69

California Department of Fish and Game
Special Wildlife Investigations

RAPTOR SURVEY

Directions for Running Routes and Recording Sightings

Purpose

To obtain an index of abundance of wintering and breeding diurnal raptor populations in California. Such a survey method will provide information on relative abundance, seasonal occurrence and an index to population trends. Survey is not designed to provide total population.

Survey Routes

Routes are selected in areas which are known to have high raptor populations during the winter and/or breeding season. A map and specific instructions for running this route are herein attached. Routes are selected along all-weather roads when possible and are generally 30 to 50 miles long. Routes shall be run at a speed not to exceed 20 miles per hour where road conditions permit, stopping only to identify and record raptor sightings.

Time Period

Routes will be run three times this fiscal year under favorable conditions -- once each month between the first and fifteenth for the months of January, March and May. Start routes at 1100 (11:00 a.m.) and complete survey within a four-hour period.

Please do not change your survey route. If you have problems or difficulty in conducting your survey, contact your supervisor or survey coordinator for instructions.

Equipment and Observers

Check the following list of equipment to ensure you have necessary items to conduct survey: map of route, forms supplied by Department of Fish and Game, clipboard, pencils, 7x binoculars or better, reference book for bird identification, and vehicle equipped to run entire route without refueling. Scopes may be taken to identify birds only, not to scan area for birds. Two people will conduct survey, driver and one additional observer. Include the names of both observers on the report form.

Weather

For comparing survey results, routes must be run under favorable weather conditions -- good visibility, no precipitation and light winds. Do not run surveys when winds exceed a Beaufort 3 (12 miles/hour) or when sky conditions exceed 2 (fog, drizzle or rain). Make your judgment on weather conditions according to criteria listed below and enter appropriate Beaufort wind and sky condition code numbers in proper space.

Weather Codes

Beaufort Number	Wind Speed MPH	Indicators of Wind Speed
0	Less than 1	Smoke rises vertically
1	1 to 3	Wind direction shown by smoke drift
2	4 to 7	Wind felt on face; leaves rustle
3	8 to 12	Leaves and small twigs in constant motion; wind extends light flag
4	13 to 18	Raises dust and loose paper; small branches are moved
5	19 to 24	Small trees in leaf begin to sway; crested wavelets form on inland waters

Sky Conditions

0	Clear or a few clouds	4	Fog or smoke
1	Partly cloudy (scattered) or variable sky	5	Drizzle
2	Cloudy (broken) or overcast	8	Shower(s)

Raptor Survey Form

Survey route name and number is provided on special route instructions with route map.

A place is provided for you to record time survey was started, finished snd total time taken. Surveys should be started at 1100. Use the 2400-hour system (1100, 1350, etc.) for recording time.

A place is provided to record the speedometer reading your survey was started and finished. Mileage driven should be to the nearest one-tenth mile.

Name and address of observer(s) is required. Be sure to include the proper Beaufort wind and sky condition code numbers for the start and finish of each survey.

Column Headings -

Species - Listed are the principal species of raptors you will most likely see along route. Record all raptors sighted regardless of distance from your route of travel. Write in those species not listed.

A.O.U. Number - This is a number assigned to each species by the American Ornithologist Union and will be a code number for computer analysis of survey data.

Number of Birds - Make a special effort to age species wherever possible and record each sighting under the appropriate column (adult, immature and unknown). Use a tally system in recording numbers of each species and age class on the form provided or transcribe totals from notes at the end of the survey. Care must be taken not to report duplicate sightings of the same bird. Add up sightings for each species placing totals in the right hand column and a total of all raptors entered below.

Processing Completed Survey Forms

Check survey form to ensure it is filled out completely. Mail survey form to your immediate supervisor or to the Department of Fish and Game, Wildlife Management Branch, Special Wildlife Investigations, 1416 Ninth Street, Sacramento, California 95814, within two days after each month's survey is run. Include notes which are pertinent in evaluating survey results at the bottom of the form. If you have need for additional forms or questions, insert these on the completed form.