Raptor Monitoring Program for the MSCP
Raptor Techniques Workshop

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# Raptor Monitoring Techniques Manual

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Introduction/Background

Monitoring of raptors is a critical component of the MSCP. The MSCP targeted eight raptor species and the MSCP Biological Monitoring Plan proposed using raptors as one of four monitoring plans. With the exception of recently completed NCCP-funded raptor monitoring efforts by the Wildlife Research Institute, Inc. (WRI), no comprehensive study has been conducted for any of these species, within the geographical limits of the MSCP. WRI’s three-year study involved surveying 45 study areas within the MSCP for target and other raptors, identifying areas that would be appropriate for long-term raptor monitoring, and developing a monitoring protocol. This work has created a partnership between WRI and many MSCP participants to develop a scientifically based monitoring program for raptor species and identify alternatives for raptor population enhancements.

This workshop, which has also been funded by the NCCP Local Assistance grant program, and WRI matching funds, fills the next logical need to (1) familiarize agency biologists and other professionals with the details of the Raptor Monitoring Protocol and (2) provide a mechanism for additional professional input to the Long-term MSCP Raptor Monitoring Program. A major objective of this workshop is to train biologists in the technical details of the required survey techniques to assure consistent field techniques and maximize the utility of collected data. In that filling this latter training need has great transferability to other HCPs throughout much of California and neighboring states, we expect that much of what you learn at this workshop will be applicable to other HCPs.
Suggested Reference Sources

The following citations focus on field identification and raptor ecology. It is meant to be neither comprehensive nor judgmental about the many fine books that are available but not listed. The references listed should be helpful to those working, especially, in Southern California but many of the sources can be used more widely. For your information, Appendix B of this manual provides a more complete listing of references by MSCP Target Raptor Species as well as a more general section, which includes references on raptor management.
Selected Raptor References


** Books available for sale at WRI (20% discount to Workshop attendees).
RAPTOR TECHNIQUES WORKSHOP

Raptor I.D.—How Good are You?
Raptor ID
How good are you?

This is a verbal test to let you know what you don't know.

Pay close attention
There are ringers in the group

- Just record how many you get right
- Write down your answer (10 sec)
- We will ask for verbal responses
- Keep your own score
RAPTOR TECHNIQUES WORKSHOP

Field Identification of MSCP Target Raptors
and
Other Common Raptor Species
Raptors: How to Monitor Them

- Habitat! What kind are you in?
- Learn which raptors are likely to be present in your habitat.
- Learn the behavior of those raptors.
- Unusual behavior will then stand out.
- Use observations of others but verify them.

Habitat, Habitat, Habitat

San Diego County has multiple Habitats.

True

The reason we have so much biological diversity.
Coastal

Species most likely present:
- Peregrine Falcon
- Bald Eagle
- Osprey
- Northern Harrier

Oak Savannah /chaparral Habitat

Species most likely:
- Golden Eagle
- Red-tailed Hawk
- Zone-tailed Hawk
- Prairie Falcon
- Kestral
- Merlin

Mountain Habitat

Species likely to occur:
- Golden Eagle
- Saw Whet Owl
- Pygmy Owl
- Spotted Owl
- Goshawk
- Cooper's Hawk
Why Monitor Raptors?

- Visible Indicators of Habitat Changes
- Easier than mammals to observe
- Less expensive than mammals to observe
- i.e. Territory of Golden Eagle = Mountain Lion
- Species composition and abundance of raptors is indicator of prey base abundance
- Volunteers can assist in raptor counts but only permitted biologist can trap mammals

Golden Eagle territory
Changes due to human encroachment.

Ramona Grassland
Preservation for raptors

Also protects:
- Vernal Pools
- Silvery Kangaroo Rat
- Several endangered plant species
- Antelope Voles
Ferruginous Hawk

White Tail Flash

Ferruginous Hawk in flight

Often fly’s with pointed wings
White Underside

Juvenile Ferruginous Hawk
Nested in San Diego until the 1940's

Could be reintroduced and still migrates through (> 5000 per year)

Typical Coloration

Often in Dark Phase in California
Forest or Brushy Habitat
Oak Canyons and Backyards

Hunts birds, mammals and can switch to lizards when needed

The Hawk of Edge effects

Female incubating

- Male can be heard "kacking" to her in early AM
- This food exchange is a good time to locate nest area
Cooper's Hawk in White Pine

Five Young Fledged

Nests are often near the trunk

5 young are normal
Eggs in April
Young in May

Prepare to conduct surveys in April-June
Food Flexibility

Reptiles tend to have yellow or brown eggs during droughts.

Eye Color

Tail Shape

Juvenile eye and plumage
Peregrine Falcons

Peregrines have several subspecies. Mostly they are size and color differences and are geographically.
However they will migrate to San Diego and even over winter.

Northern Harriers

Local nesting concentrations are cyclic after winter rain events.

Prey can be up to pheasant size but is mostly voles.

White rump patch sexual dimorphism.
Only full adults show the white head and tail.

Nest building takes all year.
San Diego pair has now used three nests in three years.

HY Southern Bald Eagle
Variable plumage but never shows white windows or white in tail.
HY Bald Eagle

All dark plumage causes a lot of reporting errors of Golden Eagles

Juvenile Bald Eagle (3rd year) on Cummings Ranch, Ramona Grasslands

Burrowing Owl
Pair bonding begins in winter in San Diego.

Nesting begins in April and can go.

**Ramona Grasslands**

1994 = 8 pairs
2000 = 0 pairs
2006 = 4 pairs

**Burrowing Owl Habitat**

San Diego County 1970 = 250-300 pairs
2000 = 25-30 pairs
Lower Otay Lake
Artificial burrows and reintroductions

Captive Breeding Program

7 Captives from construction sites produced nine young in 4-year period. A few were released in 2005. Wild owls have since joined them.
Most Common Big Hawk

HY Red Tailed Hawk

Most juveniles seem to move out of San Diego in the fall since our RTHW start nesting in December.

Typical Plumage
Red-Tailed Hawk

Red-Shouldered Hawk

Dark Morph: Male, Red-Tailed Hawk

Dark Morphs are about 6% of the San Diego Population and slightly more in Baja, CA
Red-shouldered Hawk

Black and White pattern and Rufous Color pattern
Food can be lizards, snakes, mice, rabbits or road kill

Red-shouldered Hawk Juv.

Eastern Red-shouldered Hawk

Beach the nest in July
Note lighter color pattern of eastern RSHW

Black Hawk

Rare San Diego Migrant
Family groups are very subject to electrocutions.

Up to ten in a family group but 4-7 is normal. Individuals are often reported and are probably migrants north from Baja.

Goshawk

Sev'ral yi's of reading it. SD Moun'tain:' Migrants are occasionally seen, mostly in the San Diego Mountains.
Kestrels often nest in buildings in San Diego and artificial boxes.
Wing shape is typical falcon.

San Diego County has 20-30 pairs. 5-7 pairs are west of the Desert.

Typical desert nest.
Newly hatched chick Egg shells are on back of neck

Gyr Falcon
White-tailed Kite

Very cyclic populations and can almost disappear then become very abundant and breed everywhere in San Diego County.

Osprey

Nesting can be on almost any substrate
San Diego County currently has six pairs and expanding since 1999.

Ravens

Ravens are expanding their population due to man.
Population is appear stable but below former levels.

Black Vulture
Currently in Arizona and Baja and expanding north in the east. Warming will likely bring more north of border.

Screech Owl

Screech Owl Nest Cavity

Western Screech Owl Nest Cavity

More common than most people think.
Great Horned Owl

Occurs where Red-tailed hawks occur
considered as patriots

Elf Owl

Short-eared Owl
Species not specifically covered

- Northern Caracara
- Sharp-Shinned Hawk
- Zone-Tailed Hawk
- California Condor