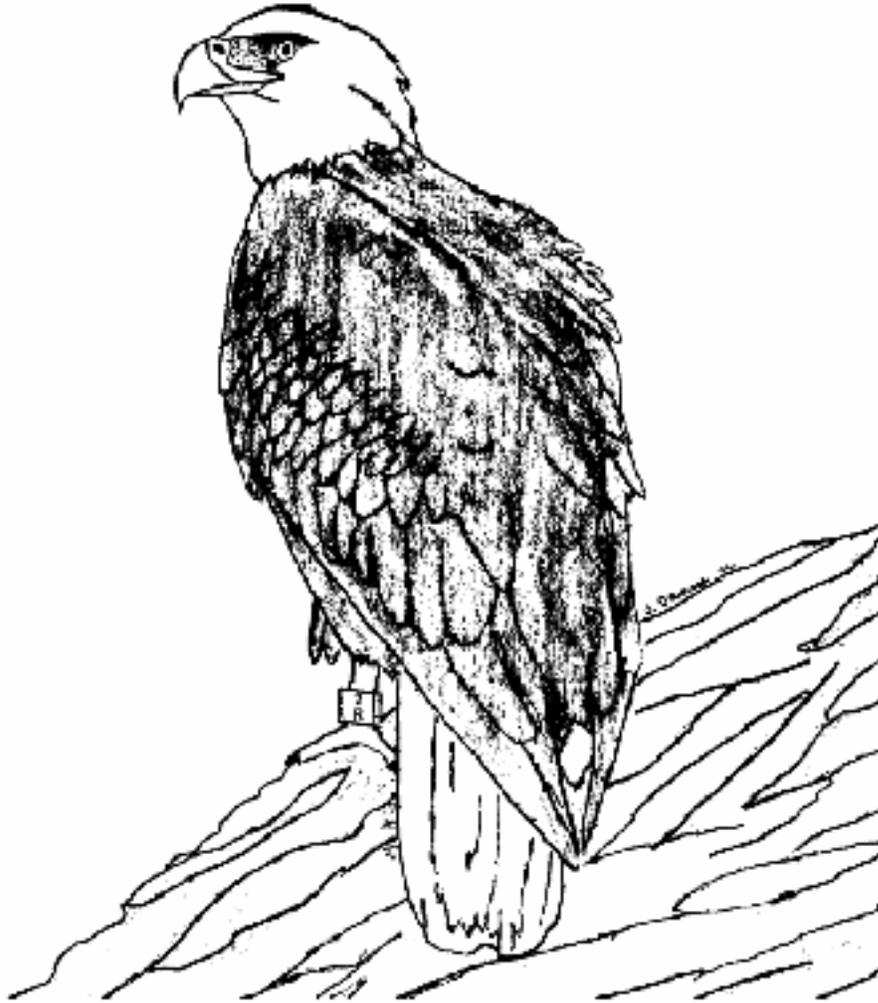


# ARIZONA BALD EAGLE 1996 NEST SURVEY

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Technical Report 117



Nongame and Endangered Wildlife Program  
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2221 West Greenway Road  
Phoenix, Arizona 85023-4399

September 2003

## RECOMMENDED CITATION

Driscoll J.T., G.L. Beatty, and J.G. Koloszar. 1997. Arizona bald eagle 1996 nest survey. Nongame Endangered Wildlife Program Technical Report 117. Arizona Game and Fish Department, Phoenix, Arizona.

## ACKNOWLEDGMENTS

The authors thank the following agencies and individuals for assistance in this project: Bob Hall, Bureau of Land Management; Henry Messing, Mark Santee, Bureau of Reclamation; Bob Culver, Teah Nobel, Leray Todd, Salt River Project; Amanda Moors, Paul Nosie Jr., Matt Rushtin, San Carlos Apache Game and Fish Department; Tom Gatz, Mary Richardson, U.S. Fish and Wildlife Service; Heather Green, Mike Ross, U.S. Forest Service; John Caid, Joe Jojola, Ron Lupe, Cynthia Westfall, White Mountain Apache Game and Fish Department; and Mike Ingraldi, Terry Johnson, Susi MacVean, Ron Thompson, Bob Vahle, Arizona Game and Fish Department.

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## PROJECT FUNDING

Funding for this project was provided by: Arizona's Nongame Wildlife Checkoff; the Arizona Game and Fish Department's Heritage Fund; Project W-95-M (Jobs 2 and 5), under the Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act); a contract with US. Bureau of Reclamation (Agreement Modification Number 10: 7-FC-32-00090); and Salt River Project.

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## INTRODUCTION

In 1978, the bald eagle (*Haliaeetus leucocephalus*) was classified by the U.S. Fish and Wildlife Service (USFWS) as endangered in 43 states (including Arizona) and threatened in five others (USFWS 1982). It was not listed in Alaska and did not occur in Hawaii. In 1995, the USFWS downlisted the bald eagle to threatened in the lower 48 states (USFWS 1995). It is still protected by the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act.

In Arizona, bald eagle nest surveys began in 1972 when three Breeding Areas (BA) were known (Rubink and Podborny 1976). These surveys continued annually, excluding 1976 and 1977, from 1972 to present (Glinski 1985, 1986; Grubb 1986; Hildebrandt and Glinski 1987; Gooch et al. 1988; Tibbitts et al. 1989, 1990; Corman and Rayner 1991; Driscoll et al. 1992, 1995a, 1995b; Driscoll and Beatty 1994). The 1996 nest search was administered and performed by Arizona Game and Fish Department (AGFD) in cooperation with the Bureau of Land Management, San Carlos Apache Game and Fish Department (SCAGF), Salt River Project (SRP), U.S. Bureau of Reclamation (USBR), U.S. Forest Service (USFS), USFWS, and White Mountain Apache Game and Fish Department (WMAGF).

The nest search refines our understanding of breeding bald eagles in Arizona. Discovery of new BAs and alternate nests, compiled with the knowledge of active and historical BAs, accurately describes the distribution, status, and annual productivity of Arizona's breeding population. Timely discovery of BAs also identifies sensitive areas requiring proactive management from adverse impacts.

## SURVEY AREA

Nest searches were conducted along rivers, creeks, and around reservoirs in Arizona. We searched as far north as Lake Mead, on the Colorado River, and as far south as Kearny, on the Gila River. The western boundary occurred at Copper Basin Reservoir in California, just west of the Colorado River, and the eastern boundary was the Blue River, in the Apache National Forest. Survey elevations ranged from 750 ft (230 m) at Gene Wash Reservoir, in California, to 6800 ft (2070 m) at Lower Lake Mary.

Surveys were primarily conducted within three biotic communities: Great Basin Conifer Woodland, Interior Chaparral, and Sonoran Desertscrub-Arizona Upland Subdivision (Brown 1982). Great Basin Conifer Woodland occurs at: lower Black River and nearby cattle tanks; upper Gila River and tributaries; and upper Verde River nest sites. Interior Chaparral occurs at: Bill Williams River and tributaries; Burro Creek; upper Gila River tributaries; Granite Creek; Salome Creek; and upper Salt River. Finally, the Sonoran Desertscrub-Arizona Upland Subdivision occurs at: Bill Williams River and tributaries; lower Gila River; lower Salt River; and lower Verde River.

Vegetation varies within the Great Basin Conifer Woodland, Interior Chaparral and the Sonoran Desertscrub-Arizona Upland Subdivision biotic communities. Typical plants of the Great Basin Conifer Woodland are juniper (*Juniperus* spp.) and pinyon pine (*Pinus* spp.). Agave (*Agave* spp.), crucifixion thorn (*Canotia holocantha*), evergreen oak (*Quercus* spp.), juniper, manzanita (*Arctostaphylos* spp.), and skunkbush sumac (*Rhus trilobata*) are found in the Interior Chaparral. Common species in the Sonoran Desertscrub-Arizona Upland Subdivision are barrel cacti (*Ferocactus* spp.), cholla and prickly pear cacti (*Opuntia* spp.), creosotebush (*Larrea tridentata*), foothill palo verde (*Cercidium microphyllum*), mesquite (*Prosopis* spp.), and saguaro (*Carnegiea gigantea*).

Other biotic communities in our surveys were: Chihuahuan Desertscrub (upper Gila River and tributaries), Mohave Desertscrub (Lake Mead), Montane-Conifer Forest (Lower Lake Mary), Plains and Great Basin Grasslands (Lyman Lake), Semidesert Grassland (Granite Creek), and Sonoran Desertscrub-Lower Colorado Valley Subdivision (Bill Williams River and tributaries, Gene Wash, Copper Basin).

Excluding the Luna BA located in the Montane-Conifer Forest, all active BAs contain riparian vegetation of the Sonoran Riparian Deciduous Forest type. Typical plants include: Arizona black walnut (*Juglans major*), catclaw (*Acacia* spp.), Fremont cottonwood (*Populus fremontii*), mesquite, introduced salt cedar (*Tamarix pentandra*), sycamore (*Platanus* spp.), and willow (*Salix* spp.).

#### METHODS

This year's nest search was conducted between October 1995 and October 1996 by a one to three person team. Search areas were prioritized by the presence of existing nest structures, previous sightings, habitat quality, and spacing of active BAs. Large nests discovered between 1992 and 1995 (Driscoll et al. 1992, 1995a, 1995b; Driscoll and Beatty 1994) were revisited to determine occupancy. Suggestions and sightings of bald eagles by other biologists, agencies, and the public were also considered.

Survey areas were hiked, floated, flown, and/or driven, and all trees and cliffs were inspected for nests. Observations were made with 8x35 and 10x50 binoculars and Questar spotting scopes (4-160x). All nests were plotted and sightings of bald eagles were recorded. BioSystems Analysis Incorporated's (Hunt et al. 1992) nest and river map atlas and SRP's bald eagle nest map atlas were used to relocate historical and active BAs.

Nests were categorized as empty or active (Postupalsky 1974) (Appendix A). A raptor observed near a nest structure was not considered occupied using Postupalsky's (1974) criteria. The observation was noted and included in our text. Sightings of other wildlife species, habitat quality and human activity were also recorded.

Cliff height, tree, and nest size were classified as Atall or short@ and Alarge or small.@ ATall or large@ describe structures that appeared suitable for breeding bald eagles, compared to known Arizona bald eagle nests and locations. Conversely, Ashort or small@ would not be considered adequate size for

breeding bald eagles.

Monthly occupancy and reproduction assessment (ORA) helicopter flights and two nest search flights were used to locate nests and to search for new BAs. BAs were then searched by ground if occupancy could not be determined from the air. ORA flights, provided by the USBR and SRP, were flown from February to June. In addition, January winter count flights assisted in examining BAs. Timing of these flights corresponded with the observation of breeding stages (i.e., incubation, the presence of nestlings, fledging). Drainages were flown at approximately 200 ft (70 m) above ground level at 57 to 69 mph (50 to 60 kt). Speed and elevation were modified for safety concerns associated with wind speed, high tension wires, and drainage topography.

## RESULTS

All 35 BAs were examined for breeding activity. There were 27 breeding attempts by 26 pairs of bald eagles (the Box Bar pair double-clutched) in 30 occupied BAs. Fifteen pairs successfully fledged 25 young (Appendix B).

We searched 13 new locations (Appendix C). Areas searched include: Bill Williams River below the Ive's Wash BA; Burro Creek near Six Mile Crossing; upper Gila River and its tributaries (Bonita Creek, Eagle Creek, lower Blue and San Francisco rivers); lower Gila River between the San Pedro River and Walnut Canyon; lower Black River and adjacent stock tanks; Gene Wash and Copper Basin Reservoirs; Granite Creek in Prescott; Lyman Lake in the White Mountains; Lake Mead; Salome Creek north of Roosevelt Lake; lower Salt River between Saguaro Lake and Apache Lake; upper Salt River above Highway 77 bridge; and the lower Verde River between the active BAs.

No new BAs were documented in 1996. However, there may be five new BAs in 1997. Eagles were sighted near large nests at three new locations: Dupont Canyon in the Sierra Ancha mountains west of upper Salome Creek; Gene Wash and Copper Basin Reservoirs, in California west of Parker Dam; and the upper Verde River downstream of the R.R. tunnel. A pair was observed near a rebuilt nest at the Lower Lake Mary historical BA, south of Flagstaff, and two pairs at separate nests within the Horse Mesa BA (suggesting a possible split of the BA). Finally, lone birds were seen in the summer at Lake Mead and Gila Box on the Gila River.

Fifteen historical BAs were examined for occupancy (Hunt et al. 1992). Eagles were observed at nine sites: Bronco, Coldwater, Eagle, Hell Point, LF, Lower Lake Mary, Muldoon, Natanes, and Willow. Historical nests were relocated at eight sites: Ash, Coldwater, Eagle, Havasu, Hell Point, Lower Lake Mary, Muldoon, and Upper Lake Mary. Only the Lower Lake Mary historical BA showed signs of occupancy.

We searched areas where large nests exist, but occupancy never documented. These include nest sites on the upper Verde River and the Prescott lakes. Bald eagles were observed along the Verde River near Granite Creek in winter and the R.R. Tunnel site into summer, but no breeding activity was observed.

Five alternate bald eagle nests and two large nests (species unknown) were discovered in five active BAs. New nests were found at: Ft. McDowell #15 and #6 (not used since 1979), Horseshoe #11, Pinal #5, and Tower #8. Large nests (species unknown) were also found at Alamo #5 and Pinal #4.

Five nests fell in 1996. Fort McDowell nest tree #14 died in June 1995 and the nest fell by December 1995. The tree holding Table Mountain nest #2 died and fell. Ives Wash nest #1, Redmond #6, and Orme #4 were blown from their ledges and pinnacles by wind. Luna nest #1 blew out of the tree just days after the eaglets fledged, and was rebuilt and reinforced with chicken wire by AGFD.

#### DISCUSSION

A summary of the ORA, winter count, and nest search flights are found in Appendix D. Areas worthy of further discussion (promising nests or sightings, new nests, fallen nests) are described below. Nest locations are considered sensitive and confidential by the AGFD, and have been omitted from this report. Managing agencies requiring more specific descriptions should contact the AGFD Heritage Data Management System.

#### SURVEY SITES

##### *Upper Gila River and its tributaries*

In April, Glenn Frederick, AGFD, saw an adult bald eagle in Gila Box on the Gila River. The Gila River drainage has been examined during nest search and winter counts since 1992 (Driscoll et al. 1992; Beatty 1992; Beatty et al. 1995a, 1995b; Beatty and Driscoll 1994, 1996). We rechecked the area on May 24 and found two golden eagle BAs, one each on the Blue and San Francisco rivers. No bald eagles were observed.

##### *Gene Wash and Copper Basin Reservoirs*

Barbara Raulston, USFWS, reported two bald eagles carrying sticks to a nest above Gene Wash Reservoir Dam in February. We surveyed by ground on April 17 and 18, and by air on June 3. A large nest was found in good shape with mute stains on nearby perches. An adult was observed perched at Copper Basin Reservoir on both April 18 and June 3.

Gene Wash Reservoir is located in California, 1.0 mi (1.6 km) west of Parker Dam. The lake's water is supplied, via an aqueduct, from Lake Havasu. A pumping station near the southern end of the reservoir transfers water, via an aqueduct, to Copper Basin Reservoir, 3.0 mi (4.8 km) to the northwest. These reservoirs are the property of Metropolitan Water District (MWD), a private company delivering water to southern California.

Eagles were first sighted at Gene Wash Reservoir in December 1994 (B. Raulston pers. comm.). In February 1995, Raulston observed one adult standing in a nest above the dam. This adult was soon joined by a subadult and they both flew to a power pole at the dam. The birds then flew down to drink near the north end of the reservoir before soaring to the north. Ellen Mackey, biologist for MWD, reported that workers of MWD had observed a lone eagle in the area throughout 1994 and 1995, and

a pair in 1996.

Both reservoirs have suitable habitat for breeding bald eagles. Large cliffs near the dam at Gene Wash Reservoir turn talus and slope northwest of the dam. Trees are absent from the shallow lake, but there is a small cliff on the western end. Copper Basin Reservoir has tall cliffs surrounding the lake but no large trees. According to MWD biologists, both reservoirs contain a variety of fish including catfish, bass, and carp. A locked gate on the main road restricts human activity to MWD personnel.

#### *Lake Mead*

On May 9, Bill Pelle, National Park Service, observed an adult at a nest near the Colorado River inlet to Lake Mead. The nest was reported on a cliff face near South American Point.

We surveyed the northeastern end of the lake from Pearce Ferry to South Cove on June 30 and July 1. Lake size and surrounding terrain made it logistically impossible to examine the entire lake thoroughly. Although the nest did not exist, we did see an unbanded adult eagle flying from the north to perch on a shaded rock with numerous mute stains. Six small nests were found and an osprey was observed foraging in God's Pocket.

Lake Mead is very large and could support many bald eagle BAs. The northeastern end of the lake has large cliffs, pinnacles, and ledges to support a large nest. No large trees were observed. Human activity included anglers, campers, jet skis, and power boats.

#### *Upper Salome Creek*

In April, Charles Hagen, a private citizen, reported an adult and a large nest, 14.0 mi (22.4 km) north of Salome Bay, Roosevelt Lake, near J.R. Ranch. We searched by ground on May 16 and 17, and by air on May 24.

On our first visit, we found turkey vulture roosts in the steep canyons northwest of the ranch, however, no eagles or nests were found.

We continued the search by air and included Salome Creek and Parker Creek. Lower Salome Creek has sporadic large trees and cliffs. Closer to the Sierra Ancha Mountains, tall trees and large cliffs become more abundant as the canyon narrows. Parker Creek has a continuous occurrence of large trees extending from Roosevelt Lake to the base of the Sierra Ancha Mountains. One active golden eagle nest was found on a cliff west of Parker Creek. No adults or nests were observed.

In September, Mr. Hagen replotted the location after visiting the area over the summer. We searched on October 15 and 16, 1996, and found an adult perched near a large nest in Dupont Canyon. The nest was in a ponderosa snag on a northeast slope from Greenback Peak. Catfish and carp prey remains were retrieved from under the nest and monofilament was observed in the branches.

#### *Lower Salt River*

The Horse Mesa adults moved to nest #4, upstream of nest #2 in 1995. This left a large distance

between the Blue Point and Horse Mesa BAs. SRP operators at Mormon Flat Dam reported two adults perched near the dam in April 1995. We searched the area during the winter count flight, by ground on February 20, the nest search flight, and on every ORA flight except May.

On the February flight, one adult was perched near Mormon Flat Dam, two adults were standing near Horse Mesa nest #2, and an adult was incubating in nest #4. On February 20, an adult was observed on two separate occasions, and two subadults were soaring downstream of Horse Mesa Dam. Nest #2 had new construction with down on top. In April, we found an adult perched near nest #2 and two adults near nest #4.

#### HISTORICAL BAS

##### *Ash Historical BA*

The Ash BA was removed from the list of active BAs after remaining unoccupied for ten consecutive years. The BA now has historical status, but will continue to be examined for occupancy.

##### *Lower Lake Mary Historical BA*

The Lower Lake Mary historical BA was first reported in 1970 and possibly used from 1970 to 1972 (Stumph and Creighton 1977). In February, Alan Frederickson, AGFD, reported an adult perched near the historical nest location. In March, Heather Green, USFS, reported a near-adult and a subadult roosting near the nest.

We surveyed on June 6, 19, and 20, and found historical nest #1 rebuilt. On June 6, a near-adult wearing a blue visual identification band (VID) was perched near the nest. The nest was climbed and contained large sticks and eagle feathers. However, the absence of eggshell fragments suggested it had not been active in 1996.

##### *Muldoon Historical BA*

The Muldoon historical BA was first reported in 1986, however occupancy has never been documented (Hunt et al. 1992). Historical nest #1 was believed to have been washed away in 1993 (Driscoll and Beatty 1994). We searched during the winter count flight in 1996 and relocated nest #1 in its original location. The nest was checked on the February, March, and April flights. Two adults were observed in March and single birds in February and April. No new nests were observed.

##### *Upper Lake Mary Historical BA*

The Upper Lake Mary historical BA was first reported in 1971, when one juvenile bald eagle reportedly fledged (Stumph and Creighton 1977). The area was surveyed by ground on June 19. Historical nest #1 was relocated, but was in poor condition. One osprey platform and one active osprey nest were discovered. No eagles or new nests were observed.

#### SURVEY SITES WITH EXISTING LARGE NESTS

##### *R.R. Tunnel*

In February 1995, a large nest was found on a cliff just downstream of the R.R. Tunnel along the upper Verde River (Driscoll et al. 1995b). An adult was observed in March 1995 but was believed to be a wintering eagle. In mid-May, 1996, Steve Wolfe, Verde River Canyon Train operator, reported an adult perched with a near-adult wearing a blue VID band near the R.R. tunnel.

In 1996, the nest was checked on every flight except May and by ground on June 25 and 26. On the June flight, we observed a subadult and a telemetered adult perched in the area. During the ground visit, a near-adult wearing a blue VID band was observed with a telemetered adult wearing a green VID band. Both adults were flying and perching together throughout the area. No new nests were observed.

#### BREEDING AREAS

##### *Alamo BA*

The Alamo pair failed in nest #4 in April. We surveyed in June and found a new nest #5 (species unknown) on the northeast side of nest #4 cliff. Mute stains were observed behind and below the nest.

##### *Chino BA*

The Chino BA has been unoccupied since 1987 (Hunt et al. 1992). Chino nest #1, the only nest remaining, fell between 1991 and 1994. In June, we searched the lower Big Sandy River and lower Santa Maria River. No eagles or new nests were observed. This BA will be removed from the list of active BAs and be designated as historical in 1998 if it remains unoccupied for the 1997 breeding season.

##### *Fort McDowell BA*

In 1995, the only nest in the Fort McDowell BA (nest #14) was toppled by flood waters. We searched for new nests in October and December 1995, on the winter count, and every flight in 1996. Nest #6 was found rebuilt on December 8, 1995, and a new cottonwood nest #15 was discovered on March 13, 1996. One adult and one subadult in February, and three adults in March were observed near nest #6. This year was the first season this pair failed to lay eggs since 1972.

##### *Horseshoe BA*

A new Horseshoe cottonwood tree nest #11 was found on the winter count flight. Nest #11 is downstream from nest #10.

##### *Luna BA*

Luna nest #1 has deteriorated annually during the 1994 and 1995 breeding seasons. This year, nest #1 was blown out of the tree near June 4, days after the eaglets fledged. We rebuilt the nest on June 10, and reinforced it with chicken wire.

##### *Pinal BA*

The Pinal BA was surveyed during the winter count flight, the February and March flights, and by ground on March 20, 21, and 22. During the ground search, one adult was discovered incubating in new pinnacle nest #5, upstream of the Salt River/Pinal Creek confluence. We also found a large nest #4

(species unknown) upstream of nest #3 on the March flight.

#### *Tower BA*

The Tower BA was checked on the winter count flight, the February flight, and by ground on January 16 and February 9. During the winter count flight, nest #7 had new construction, and two adults were observed near the nest on January 16. At the end of January, Steve Wolfe, Verde Valley Train operator, reported two adults near a new nest south of the gaging station. On February 9, the Tower pair were found incubating in new cliff nest #8.

#### OVERVIEW

The 1996 breeding season was the first in four years where we did not document a new or reoccupied BA. Based upon our observations, there is a potential for five new BAs in 1997. These include four new BAs (Dupont Canyon, Gene Wash, R.R. Tunnel, and a split of the Horse Mesa BA), and one reoccupied historical BA (Lower Lake Mary). Strict interpretation of BA and occupancy criteria could cause us to call these sites "Breeding Areas" (Postupalsky 1974) (Appendix A). However, we decided to monitor their status in 1997 before officially calling them ABreeding Areas. @

The Gene Wash and R.R. Tunnel sites are the most promising places for breeding activity in 1997. Both areas contain large nests and were occupied into the early summer. Each site has a consistent food base, which is necessary for a pair to remain throughout the year.

Dupont Canyon may also become active in 1997; although, productivity may be affected by the nest=s distance to a dependable food source. Roosevelt Lake, 14.0 mi (22.4 km) south, is the only consistent food supply for the eagles. However, prey remains and monofilament observed in the nest in 1996 indicate young hatched and/or fledged in previous seasons. The Ash historical BA was similar in respect, nesting 8.0 mi (13 km) from the Salt River. The Ash historical BA was occupied only four years and fledged three young (Hunt et al. 1992).

Bald eagles may attempt to breed at the Lower Lake Mary historical BA, but the lack of a consistent food supply may affect productivity. Following the summer of 1996, Lower Lake Mary and other nearby lakes (Mormon, Ashurst, Marshall etc.) nearly went dry. However, should we have enough precipitation, and/or the eagles can find food elsewhere, the eagles may be productive.

Sightings of a second pair at the Horse Mesa BA, and lone eagles at Gila Box and Lake Mead are encouraging signs of new BAs. In three other areas, a new pair has entered an existing BA and split it in two (Pinto/Pinal, Camp Verde/Ladders, Box Bar/Ft. McDowell). Additionally, the upper Gila River and Lake Mead appear to have suitable nesting habitat and prey base for breeding bald eagles.

#### MANAGEMENT RECOMMENDATIONS

Future survey efforts should monitor historical BAs, potential BAs and large nests reported in Hunt et al. (1992), Driscoll et al. (1992, 1995a, 1995b), and Driscoll and Beatty (1994). These documents are

useful tools in locating new BAs. Since 1992, two reoccupied historical BAs and four new BAs were previously described in these reports.

Surveyors should continue to use ORA, winter count, and the nest search flights in concert with follow-up ground searches to inspect areas. Large sections of habitat are easily inspected for the presence of eagles and nests by helicopter. Follow-up ground searches more thoroughly investigate an area for occupancy.

The following areas should continue to be examined for breeding eagles and/or nests:

Agua Fria River drainage - Lake Pleasant for a second BA.

Big Sandy River drainage - Burro Creek near Six Mile Crossing, Upper Trout Creek.

Black River drainage - Little Bonito and Big Bonito Creek to the confluence of the Black River, Paucity Creek, Reservation Creek, Pacheta Creek, Reservation Creek, osprey nesting areas on East and West Fork and main stem of the Black River.

Central and Eastern Mountain Lakes - Casadore Springs, Phillips Park Tank, Dry Lake, Christmas Tree Lake, Point of Pines, Cholla Lake, Tonto Lake, Paucity Lake, George=s Basin, Nash Creek Reservoir, Chevelon Canyon Lake.

Colorado River drainage - Lake Mead (Grand Wash), Gene Wash Reservoir, Nankoweap Creek, Lee=s Ferry.

North Fork of White River - Known osprey nesting locations.

Gila River drainage - Lower Blue River, San Francisco River to Gila River confluence, Gila Box, lower Gila River between the Winkelman and Coolidge BAs and downstream of the Winkelman BA.

Salt River drainage - Salome Creek, Gun Creek/Tonto Creek confluence, Mormon Flat Dam, Carrizo Creek, Redmond BA to Canyon BA, Mule Hoof BA to Cedar Basin BA, Tanks Canyon.

White River - Whiteriver to confluence with Black and Salt rivers.

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APPENDIX A: POSTUPALSKY=S (1974) RAPTOR REPRODUCTIVE SUCCESS CRITERIA

Breeding Area: An area containing one or more nests within the range of one mated pair of birds.

Occupied Breeding Area: Consists of one occupied nest.

Unoccupied Breeding Area: A nest or group of alternate nests at which none of the activity patterns diagnostic of an occupied nest were observed in a given breeding season.

Occupied Nest: Any nest at which at least one of the following activity patterns was observed during a given breeding season:

- a. Young were raised;
- b. Eggs were laid;
- c. One adult sitting low in the nest, presumably incubating;
- d. Two adults present on or near the nest;
- e. One adult and one bird in immature plumage at or near a nest, if mating behavior was observed (display flight, nest repair, coition).
- f. A recently repaired nest with fresh sticks, or fresh boughs on top, and/or droppings and/or molted feathers on its rim or underneath.

Active Nest: A nest in which eggs have been laid. Activity patterns (a), (b), and (c) are diagnostic of an active nest.

Successful Nest: An occupied nest from which at least one young fledged during the breeding season under consideration, or, and occupied nest in which at least one young was raised to an advanced stage of development.

Failed Nest: An occupied nest from which no young fledged due to any cause.

APPENDIX B: 1996 BALD EAGLE REPRODUCTION SUMMARIES

| Table 1. Arizona bald eagle productivity, 1996. |                        |                     |                 |        |                           |         |                                   |  |
|---|------------------------|---------------------|-----------------|--------|---------------------------|---------|-----------------------------------|--|
| Breeding Area                                   | BA Status <sup>1</sup> | Nest # <sup>2</sup> | Incubation Date | # Eggs | Hatch Date                | # Young | # Fledged                         | Fledge Date  |
| Alamo*  | F                      | 4                   | 1/29            | 2+     | Failed March 31 - April 2 |         |                                   |  |
| Bartlett* <sup>3</sup>                          | S                      | 2                   | 1/9-2/6         | 2+     | 2/28-29                   | 2       | 2                                 | 5/12   |
| Blue Point                                      | S                      | 7                   | 1/10-17         | 2+     | 2/13-3/11                 | 2       | 2                                 | 5/6-5/24   |
| Box Bar*  | F                      | 2                   | 1/23-2/5        | 1+     | Abandoned 2/9             |         |                                   |  |
| Box Bar 2*                                      | F                      | 2                   | 2/9-3/7         | 1+     | 4/1-5                     | 1       | Died 6/6 Heat Stress              |  |
| Camp Verde                                      | U                      |                     |                 |        |                           |         |                                   |  |
| Canyon  | O                      | 6                   |                 |        |                           |         |                                   |  |
| Cedar Basin                                     | F                      | 3                   | 2/2-3/11        | 2      | Failed 4/5-5/6            |         |                                   |  |
| Chino   | U                      |                     |                 |        |                           |         |                                   |  |
| Cibecue   | O                      | 1                   |                 |        |                           |         |                                   |  |
| Cliff   | O                      | 4                   |                 |        |                           |         |                                   |  |
| Coolidge*                                       | F                      | 3                   | 2/2-26          | 1+     | Failed 3/11-28            |         |                                   |  |
| Devil's Post                                    | U                      |                     |                 |        |                           |         |                                   |  |
| East Verde                                      | S                      | 6                   | 1/9-2/6         | 2      | 2/6-3/7                   | 1       | 1                                 | 5/6-6/3  |
| Ft. McDowell*                                   | O                      | 6                   |                 |        |                           |         |                                   |  |
| Horse Mesa                                      | S                      | 4                   | 1/17-2/2        | 2+     | 2/2-3/11                  | 2       | 2                                 | ~5/24  |
| Horseshoe*                                      | S                      | 11                  | 1/9-2/6         | 3      | 3/16                      | 1       | 1                                 | 6/3-5  |
| Ive's Wash*                                     | S                      | 3                   | 2/6-21          | 1+     | 2/21-3/30                 | 1       | 1                                 | 4/18-6/3   |
| Ladders*  | S                      | 4                   | 1/9-2/6         | 2      | 3/9                       | 1       | 1                                 | >6/3   |
| Lone Pine                                       | F                      | 1                   | 2/2-3/11        | 1+     | Failed 4/5-5/6            |         |                                   |  |
| Luna  | S                      | 1                   | <2/5            | 2+     | 2/5-3/20                  | 2       | 2                                 | 5/28-6/4, Nest blew down<br>5/28-6/4, one nestling dead<br>6/6 other died 6/10, both eaten by canine |
| Mule Hoof                                       | U                      |                     |                 |        |                           |         |                                   |  |
| Orme*   | F                      | 3                   | 1/17-2/2        | 2      | 2/19-3/8                  | 1+      | Failed 2/19-3/8, killed by eagle? |  |
| Perkinsville                                    | U                      |                     |                 |        |                           |         |                                   |  |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed.

<sup>2</sup> Nest numbers are from Hunt et al. (1992).

<sup>3</sup> Ash BA removed from list in 1996 after going unoccupied for 10 consecutive years.

\* =sites monitored by 1996 Arizona Bald Eagle Nestwatch Program.

| Table 1 (continued). Arizona bald eagle productivity, 1996. |                        |                     |                 |        |  |         |  |  |
|---|------------------------|---------------------|-----------------|--------|--|---------|--|--|
| Breeding Area   | BA Status <sup>1</sup> | Nest # <sup>2</sup> | Incubation Date | # Eggs | Hatch Date                                       | # Young | # Fledged  | Fledge Date                            |
| Pinal   | F                      | 5                   | 3/11-22         | 1+     | 3/26-4/5?  | 1+      | Failed 4/5-29, Adult last seen brooding, no young observed |  |
| Pinto   | S                      | 3                   | <1/17           | 3+     | 1/29-3/4   | 3       | 3  | 5/6-24                                 |
| Pleasant*   | F                      | 3                   | 1/9-24          | 2+     | 2/27-3/1   | 2       | Both eaglets died 4/29-5/3, heat stress                    |  |
| Redmond   | F                      | 5                   | 2/2-3/11        | 1      | 3/14-4/5?  | 1       | Failed 4/5-29, Adult last seen brooding, no young observed |  |
| San Carlos*   | S                      | 1                   | <1/17           | 2      | 2/2-28   | 1       | 1  | 5/6-24                                 |
| 76*   | S                      | 3                   | 1/30-2/10       | 2+     | 3/11-13  | 2       | 1  | >5/31, 1 eaglet died 5/5, malnutrition |
| Sheep*  | S                      | 1                   | 1/17-29         | 2+     | 3/9-10   | 2       | 2  | 6/3                                    |
| Table Mountain  | S                      | 4                   | 1/9-2/6         | 3+     | 2/6-3/13   | 2       | 2  | ~6/3                                   |
| Talkalai  | F                      | 4                   | 2/2-3/11        | 1+     | 3/19-4/5   | 1+      | Failed 4/5-29  |  |
| Tonto*  | S                      | 2                   | 1/17-30         | 2+     | 2/26-3/1   | 2       | 2  | 5/21                                   |
| Tower*  | S                      | 8                   | 1/16-2/9        | 2+     | 3/9  | 2       | 2  | ~6/3                                   |
| Winkelman*  | F                      | 1                   | 2/2-14          | 2      | Incubated 45 days - collected infertile eggs 4/1 |         |  |  |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed.

<sup>2</sup> Nest numbers are from Hunt et al. (1992).

\* =Sites monitored by 1996 Arizona Bald Eagle Nestwatch Program.

| Table 2. Arizona bald eagle productivity summary, 1996. |      |                                     |      |
|---|------|-------------------------------------|------|
| Number of BAs   | 35   | Number of Active Nests              | 26   |
| Number of Occupied BAs                                  | 30   | Number of Failed Nests <sup>1</sup> | 12   |
| Number of Eggs  | 49+  | Number of Successful Nests          | 15   |
| Nest Success  | 0.50 | Number of Young Hatched             | 33+  |
| Mean Brood Size   | 1.7  | Number of Young Fledged             | 25   |
|   |      | Productivity                        | 0.85 |

<sup>1</sup> Box Bar laid two unsuccessful clutches in 1996.

APPENDIX C: NEST SEARCH SUMMARIES

| Table 3. Arizona bald eagle 1996 nest search: new locations searched. |                                       |                      |   |
|---|---------------------------------------|----------------------|---|
| New Location Searched   | Date                                  | Method               | Results   |
| Bill Williams River   | 6/3                                   | Helicopter           | No adults or new nests in area.   |
| Lower Black River   | 1/11, 2/2, 3/11, 5/6                  | Helicopter           | Three adults each were seen on 1/11, 2/2, 3/11. Two subadults were also seen on 3/11. Two large nests near the Natanes historical BA, appeared to be golden eagle construction.   |
| Burro Creek   | 6/3                                   | Helicopter           | No adults or new nests in area.   |
| Upper Gila River and tributaries                                      | 5/24                                  | Helicopter           | Found a golden eagle nesting area on each the Lower San Francisco and Lower Blue Rivers. No adults in area.   |
| Lower Gila River  | 5/24                                  | Helicopter           | No adults or new nests in area.   |
| Gene Wash Reservoir   | 4/17-18, 6/3                          | Helicopter<br>Ground | One adult observed on two occasions at Copper Basin, large nest found above dam with mute stained rocks nearby.   |
| Granite Creek   | 3/13                                  | Helicopter           | Found a small nest on the northeastern side of the mountain to the northeast of Watson Lake. No adults in area.   |
| Lyman Lake  | 6/19                                  | Ground               | One large nest below dam appears to be golden eagle construction. No adults in area.  |
| Lake Mead   | 6/30-7/1                              | Ground               | One adult observed in area of Grand Wash. No large nests in area.   |
| Salome Creek  | 5/16, 5/24, 10/24                     | Helicopter<br>Ground | One adult perched near a large nest in Dupont Canyon, nest had prey remains and monofilament in the branches.   |
| Lower Salt River  | 1/17, 2/2, 2/20, 3/11, 4/5, 5/6, 5/24 | Helicopter<br>Ground | One adult observed near Mormon Flat Dam and an extra pair of adults near Horse Mesa Dam, one adult observed on two occasions and two subadults and an extra adult near Horse Mesa Dam on 2/2, 2/20 and 4/5, respectively. |
| Upper Salt River  | 1/11, 1/17 2/2, 3/11, 5/6             | Helicopter           | Two adults at Gleason Flat on 1/11. No large nests in area.   |
| Lower Verde River   | 1/9, 2/6, 3/13, 4/5                   | Helicopter           | Two near-adults and one subadult near Houston Creek on 3/13. No large nests in area.  |

| Table 4. Arizona bald eagle 1996 nest search: historical BAs searched. |                          |            |   |
|--|--------------------------|------------|---|
| Historical BAs Searched  | Date                     | Method     | Results   |
| Ash  | 1/17, 2/2, 3/11          | Helicopter | Historical nests #1, #2 found. No adults or new nests in area.  |
| Bronco   | 1/11, 2/2, 3/11          | Helicopter | Two adults, one adult, one adult and a near-adult on each flight, respectively. No historical or new nests in area.                     |
| Cold Water   | 1/9, 2/6, 3/13, 4/5, 5/6 | Helicopter | One adult observed on 1/9. Historical nests #1, #2, #3, #4, #5, and #6 found. No new nests in area.                                     |
| Eagle  | 1/10, 5/24               | Helicopter | Historical nest #1 found. No adults or new nests in area.   |
| Fort Whipple   | 3/13                     | Helicopter | Historical nest #1 was not found. No adults or new nests in area.   |
| Havasu   | 6/3                      | Helicopter | Historical nest #2 found. No adults or new nests in area.   |
| Hell Point   | 1/9, 2/6, 3/13           | Helicopter | Historical nests #2, #3, #4 and #5 found. One adult observed on 3/13. No new nests in area.   |
| LF   | 1/9, 2/6, 3/13           | Helicopter | One subadult, one adult and three subadults and one adult were observed on each flight, respectively. Historical nest #1 was not found. |
| Lower Lake Mary  | 6/6, 6/19-20             | Ground     | One near-adult perched next to rebuilt nest #1.   |
| Muldoon  | 1/9, 2/6, 3/13, 4/5      | Helicopter | One adult, two adults and one adult on each flight respectively. Historical nest #1 found. No new nests in area.                        |
| Natanes  | 1/11, 2/2, 3/11          | Helicopter | One adult and two subadults, and one adult near two golden eagle nests on 1/11 and 3/11, respectively. Historical nest not found.       |
| Needle Rock  | 1/9                      | Helicopter | On adult golden eagle observed, historical nest not found.  |
| Sullivan   | 1/9, 2/6, 3/13           | Helicopter | Historical nest tree found, nest was absent. No adults or new nests in area.  |
| Upper Lake Mary  | 6/19                     | Ground     | Historical nest #1 found. Osprey platform erected in front of historical nest. Active osprey nest across from boat ramp.                |
| Willow   | 1/10                     | Helicopter | Historical nest not found. No adults or new nests in area.  |

| Table 5. Arizona bald eagle 1996 nest search: nest sites searched. |  |                      |  |
|--|--|----------------------|--|
| Nests Sites Searched   | Date                                       | Method               | Results  |
| Granite  | 1/9, 2/6,<br>3/13, 4/5                     | Helicopter           | One adult and one subadult observed on 2/6. No new nests in area.  |
| Hell=s Canyon  | 1/9  | Helicopter           | No adults or new nests in area.  |
| R.R. Tunnel  | 1/9, 2/6,<br>3/13, 4/5,<br>6/3,<br>6/25-26 | Helicopter<br>Ground | One adult, one subadult, one adult and subadult observed 1/9, 2/6, and 6/3 respectively. One near adult with a blue VID band and one adult with a green VID band and a transmitter observed 6/25-26. |
| Sullivan Lake  | 1/9, 2/6,<br>3/13                          | Helicopter           | No adults or new nests in area.  |
| Watson Lake  | 1/9, 2/6,<br>3/13                          | Helicopter           | A small nest was found on the northeast side of the mountain. No adults in area.   |
| Lynx Lake  | 1/9, 2/6,<br>3/13                          | Helicopter           | No adults or new nests in area   |

| Table 6. Arizona bald eagle 1996 nest search: BAs searched. |   |                      |   |
|---|---|----------------------|---|
| BAs Searched  | Date  | Method               | Results   |
| Alamo   | 6/3   | Helicopter           | Small nest #5 found on the northeast side of nest #4 cliff. Species unknown.  |
| Camp Verde  | 1/9, 2/6, 3/13, 6/3                         | Helicopter           | Two adults observed on 2/6. No new nests in area.   |
| Canyon  | 1/17, 2/2, 3/11, 4/5, 5/6                   | Helicopter           | Two adults at Gleason Flat on 1/17. One adult observed on 2/2 and 3/11. No new nests in area  |
| Chino   | 6/3   | Helicopter           | No adults or new nests in area.   |
| Cibecue   | 1/11, 2/2, 3/11, 4/5, 5/6                   | Helicopter           | Two adults observed on 1/11. No new nests in area.  |
| Cliff   | 12/14/95, 1/9, 1/26, 2/6, 3/13, 4/5, 5/6    | Helicopter<br>Ground | One adult observed on 2/6 and 4/5. One subadult observed on 3/13. No new nests in area.   |
| Devil=s Post  | 6/3   | Helicopter           | No adults or new nests in area.   |
| Fort McDowell   | 10/12/95, 12/8/95, 1/9, 2/6, 3/13, 4/5, 5/6 | Helicopter<br>Ground | Found rebuilt nest #6 on 12/8/95, found new nest #15 on 3/13. One adult and one subadult, and three adult observed on 2/6 and 3/13, respectively. |
| Horseshoe   | 1/9   | Helicopter           | Found new nest #11.   |
| Ive=s Wash  | 2/6, 6/3                                    | Helicopter<br>Ground | Nest #1 blown off cliff.  |
| Mule Hoof   | 1/11, 2/2, 3/11, 4/5, 5/6                   | Helicopter           | No adults or new nests in area.   |
| Orme  | 12/8/95                                     | Ground               | Nest #4 blown off cliff.  |
| Perkinsville  | 1/9, 2/6, 3/13, 4/5                         | Helicopter           | No adults or new nests in area.   |
| Pinal   | 1/17, 2/2, 3/11, 3/20-22                    | Helicopter<br>Ground | Found new nest #4 (unknown species) and new nest #5.  |
| Redmond   | 1/17  | Helicopter           | Nest #6 blown off cliff.  |
| Table Mountain  | 1/9   | Helicopter           | Nest #2 and tree fell.  |
| Tower   | 1/9, 2/6, 2/9                               | Helicopter<br>Ground | Found new nest #8.  |

APPENDIX D: WINTER COUNT/ORI FLIGHT SUMMARIES

| Table 7. Results of January 9, 1996, winter count flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, T. Nobel-SRP and pilot B. Culver-SRP. |      |                     |   |
|---|------|---------------------|---|
| Location  | Time | Status <sup>1</sup> | Comments  |
| Orme  | 0838 | O                   | Two adults standing by nest #3. All known nests empty.  |
| Ft. McDowell  | 0847 | O                   | No adults or new nests in area. All known nests empty.  |
| Box Bar   | 0854 | O                   | Two adults in snag west of nest #2. All known nests empty.  |
| Bartlett  | 0859 | O                   | No adults or new nests in area. All known nests empty.  |
| Cliff   | 0917 | U                   | No adults or new nests in area. All known nests empty.  |
| Horseshoe   | 0938 | O                   | One adult flying near nest #8. New nest #11 found downstream from nest #10. All known nests empty.        |
| Table Mountain  | 1026 | O                   | One adult perched above nest #4, one adult flying near nest #5. Nest #2 tree fell. All known nests empty. |
| LF historical BA  | 1039 | ---                 | One subadult near historical nest site.   |
| East Verde  | 1049 | O                   | One adult perched in snag upstream of nest #6. All known nests empty.                                     |
| Coldwater historical BA   | 1050 | ---                 | One adult flying in area. No new nests in area. All known nests empty.                                    |
| Ladders   | 1103 | O                   | One adult and one subadult in area. All known nests empty.  |
| Camp Verde  | 1145 | U                   | No adults or new nests in area.   |
| Tower   | 1346 | O                   | Nest #7 has soft material in nest cup. No adults in area. All known nests empty.                          |
| R.R. Tunnel Nest  | 1356 | ---                 | One adult and one subadult in area. No new nests in area. All known nests empty.                          |
| Perkinsville  | 1400 | U                   | No adults or new nests in area. All known nests empty.  |
| Hell=s Canyon Nest  | 1417 | ---                 | No adults in area. All known nests empty.   |
| Hell=s Point historical BA  | 1423 | ---                 | Three adults in vicinity of nests. No new nests in area. All known nests empty.                           |
| Muldoon historical BA   | 1456 | ---                 | One adult in area. No new nests in area. Nest #1 empty.   |
| Granite Nest  | 1501 | ---                 | No adults or new nests in area. All known nests empty.  |
| Sullivan Lake Nests   | 1506 | ---                 | No adults or new nests in area. All known nests empty.  |
| Watson Lake Nest  | 1523 | ---                 | No adults in area. All known nests empty.   |
| Lynx Lake Nest  | 1550 | ---                 | No adults in area. All known nests empty.   |
| Lake Pleasant   | 1613 | ---                 | One adult standing in nest #2. Nest #3 has soft material in nest cup.                                     |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed, ---=is not a BA therefore does not receive a status code.

| Table 8. Results of January 10, 1996, winter count flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, C. Klug and pilot M. Santee-USBR. |      |                     |  |
|--|------|---------------------|--|
| Location   | Time | Status <sup>1</sup> | Comments   |
| Eagle historical BA  | 1136 | ---                 | No adults or new nests in area. All known nests empty. |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed, ---=is not a BA therefore does not receive a status code.

| Table 9. Results of January 11, 1996, winter count flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, C. Westfall-WMAGF, and pilot M. Santee-USBR. |      |                     |  |
|---|------|---------------------|--|
| Location  | Time | Status <sup>1</sup> | Comments   |
| Cibecue   | 1039 | O                   | One adult near nest #1, one near nest #2. All known nests empty. |
| Mule Hoof   | 1047 | U                   | No adults or new nests in area. All known nests empty.           |
| Cedar Basin   | 1104 | U                   | No adults or new nests in area. All known nests empty.           |
| Lone Pine   | 1126 | O                   | Two adults in area. No new nests in area. All known nests empty. |
| George=s Basin  | 1430 | ---                 | One adult on nearby tank. No new nests in area.                  |
| Nash Creek Reservoir  | 1435 | ---                 | Two adults perched in snag on reservoir. No new nests in area.   |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed, ---=is not a BA therefore does not receive a status code.

| Table 10. Results of January 17, 1996, winter count flight. Crew: J. Driscoll-AGFD, C. Klug-AGFD, W. Zarlingo-AGFD, M. Rushtin-SCAGF and pilot L. Todd-SRP. |      |                     |  |
|---|------|---------------------|--|
| Location  | Time | Status <sup>1</sup> | Comments   |
| Orme  | 0830 | O                   | No adults in area. All known nests empty.                                |
| Blue Point  | 0840 | A                   | One adult incubating in nest #7. Second adult flying in area.            |
| Horse Mesa  | 0859 | U                   | No adults or new nests in area. All known nests empty.                   |
| Tonto   | 0914 | O                   | One adult near nest #1. No new nests in area. All known nests empty.     |
| Sheep   | 0922 | O                   | One adult south of nest #1. No new nests in area. All known nests empty. |
| 76  | 0930 | U                   | No adults or new nests in area. All known nests empty.                   |
| Pinto   | 1038 | A                   | One adult incubating in nest #3.   |
| Pinal   | 1047 | U                   | No adults or new nests in area. All known nests empty.                   |
| Redmond   | 1056 | U                   | No adults or new nests in area. All known nests empty.                   |
| Canyon  | 1126 | U                   | No adults or new nests in area. All known nests empty.                   |
| Tanks Canyon  | 1137 | ---                 | No adults in area.   |
| Ash historical BA   | 1147 | ---                 | No adults in area. All known nests empty.                                |
| Talkalai  | 1250 | O                   | Two adults standing in nest #4.  |
| San Carlos  | 1306 | A                   | One adult incubating in nest #1.   |
| Winkelman   | 1410 | O                   | Two adults in snag at confluence. All known nests empty.                 |
| Coolidge  | 1432 | O                   | Eleven subadults and 1 adult in area. All known nests empty.             |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed,

---is not a BA therefore does not receive a status code.

Table 11. Results of February 2, 1996, ORA flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, C. Westfall-WMAGF, M. Rushtin-SCAGF and pilot M. Santee-USBR.

| Location  | Time | Status <sup>1</sup> | Comments   |
|---|------|---------------------|--|
| Orme  | 0843 | A                   | One adult incubating in nest #3.   |
| Blue Point  | 0850 | A                   | One adult incubating in nest #7.   |
| Mormon Flat Dam to Horse Mesa Dam                       | 0854 | ---                 | One adult near Mormon Flat Dam. No new nests in area.                                |
| Horse Mesa  | 0911 | O                   | Two adults near nest #2 with new construction.                                       |
| Horse Mesa  | 0914 | A                   | One adult incubating in nest #4. Searched area near nest #2.                         |
| Pinal   | 0941 | U                   | No adults or new nests in area. All known nests empty.                               |
| Redmond   | 0946 | U                   | No adults or new nests in area. All known nests empty.                               |
| Gleason Flat  | 0953 | ---                 | No adults or new nests in area.  |
| Canyon  | 1002 | O                   | One adult flying downstream of nest #8. No new nests in area. All known nests empty. |
| Nash Creek Reservoir                                    | 1117 | ---                 | One adult perched in snag west of reservoir. No new nests in area.                   |
| George=s Basin  | 1121 | ---                 | Two adults on catchment. No new nests in area.                                       |
| Black River from east of George=s Basin to White River. | 1126 | ---                 | No adults or new nests in area.  |
| Lone Pine   | 1140 | O                   | Two adults in area. No new nests in area. All known nests empty.                     |
| Cedar Basin   | 1154 | O                   | One adult upstream of nest #2. No new nests in area. All known nests empty.          |
| Sawmill Canyon  | 1157 | ---                 | No adults or new nests in area.  |
| Mule Hoof   | 1203 | U                   | No adults or new nests in area. All known nests empty.                               |
| Cibecue   | 1209 | O                   | No adults or new nests in area. All known nests empty.                               |
| Tanks Canyon  | 1327 | ---                 | No adults or new nests in area.  |
| Ash historical BA                                       | 1339 | ---                 | No adults in area. All known nests empty.  |
| San Carlos  | 1435 | A                   | One adult incubating in nest #1. Second adult flying in area.                        |
| Coolidge  | 1443 | O                   | Eight subadults in area. No adults or new nests in area. All known nests empty.      |
| Talkalai  | 1504 | O                   | No adults or new nests in area. All known nests empty.                               |
| Winkelman   | 1534 | O                   | One adult in area. All known nests empty.  |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed, ---=is not a BA therefore does not receive a status code.

Table 12. Results of February 6, 1996, ORA flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, and pilot M. Santee-USBR.

| Location                 | Time | Status <sup>1</sup> | Comments  |
|--------------------------|------|---------------------|---|
| Ft. McDowell             | 0756 | O                   | One adult and one subadult near nest #6. No new nests in area. All known nests empty.                 |
| Bartlett                 | 0802 | A                   | One adult incubating in nest #2.  |
| Cliff                    | 0804 | O                   | One adult downstream of nest #4. No new nests in area. All known nests empty.                         |
| Horseshoe                | 0828 | A                   | One adult incubating in nest #11.   |
| Dry Wash to Red Creek    | 0829 | ---                 | No adults in area.  |
| Table Mountain           | 0832 | A                   | One adult incubating in nest #4.  |
| LF historical BA         | 0842 | ---                 | One adult and 3 subadults near historical nest site. No new nests in area.                            |
| East Verde               | 0852 | A                   | One adult incubating in nest #6.  |
| Coldwater historical BA  | 0900 | ---                 | No adults or new nests in area. All known nests empty.  |
| Ladders                  | 0904 | A                   | One adult incubating in nest #4.  |
| Camp Verde               | 0908 | U                   | One adult at Beasley Flats and one adult downstream of fallen nest #1 location. No new nests in area. |
| Peck=s Lake              | 0922 | ---                 | One adult flying over lake.   |
| Tower                    | 0928 | O                   | No adults or new nests in area. All known nests empty.  |
| R.R. Tunnel Nest         | 0931 | ---                 | One adult downstream of nest. No new nests in area. All known nests empty.                            |
| Perkinsville             | 0935 | U                   | One subadult near bridge. No adults or new nests in area.   |
| Hell Point historical BA | 0943 | ---                 | No adults in area. All known nests empty.   |
| Muldoon historical BA    | 0942 | ---                 | Two adults in area. All known nests empty.  |
| Granite Nest             | 0949 | ---                 | One adult and one subadult in area. All known nests empty.  |
| Sullivan Lake Nests      | 0953 | ---                 | No adults in area. All known nests empty.   |
| Watson Lake Nest         | 1041 | ---                 | No adults in area. All known nests empty.   |
| Lynx Lake Nests          | 1046 | ---                 | No adults in area. All known nests empty.   |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed, ---=is not a BA therefore does not receive a status code.

Table 13. Results of March 11, 1996, ORA flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, C. Westfall-WMAGF, M. Rushtin-SCAGF and pilot M. Santee-USBR.

| Location                          | Time | Status <sup>1</sup> | Comments  |
|-----------------------------------|------|---------------------|---|
| Orme                              | 0913 | F                   | No adults in area. All known nests empty.   |
| Blue Point                        | 0923 | A                   | One adult shading two 3 week old nestlings.   |
| Mormon Flat Dam to Horse Mesa Dam | 0925 | ---                 | No adults or new nests in area. All known nests empty.                                      |
| Horse Mesa                        | 0938 | A                   | One adult shading two 1.5 week old nestlings.   |
| Pinal                             | 0948 | U                   | Found new unoccupied nest #4 upstream of nest #3. No adults in area. All known nests empty. |
| Redmond                           | 1013 | A                   | One adult incubating in nest #5. Second adult perched nearby.                               |
| Canyon                            | 1025 | O                   | One adult perched at nest #6. No new nests in area.   |
| Nash Creek Reservoir              | 1159 | ---                 | No adults in area.  |
| George=s Basin                    | 1204 | ---                 | Three adults and two subadults near dead cow carcass.                                       |
| Black River                       | 1210 | ---                 | Found two large golden eagle nests south of George=s Basin. One adult downstream of nests.  |
| Lone Pine                         | 1241 | A                   | One adult incubating in nest #1. One adult and one subadult at Black/White confluence.      |
| Cedar Basin                       | 1248 | A                   | Two adults standing on nest #3. Two eggs in nest.   |
| Cedar Basin to Highway 77         | 1251 | ---                 | No adults or new nests in area.   |
| Mule Hoof                         | 1259 | U                   | No adults in area. All known nests empty.   |
| Cibecue                           | 1301 | O                   | No adults or new nests in area. All known nests empty.                                      |
| Tanks Canyon                      | 1437 | ---                 | No adults in area.  |
| Ash historical BA                 | 1439 | ---                 | No adults in area. All known nests empty.   |
| San Carlos                        | 1505 | A                   | One adult brooding in nest #1.  |
| Coolidge                          | 1512 | A                   | One adult incubating in nest #2. One subadult in area.                                      |
| Talkalai                          | 1523 | A                   | One adult incubating in nest #4.  |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed, ---=is not a BA therefore does not receive a status code.

Table 14. Results of March 13, 1996, ORA flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, H. Messing-USBR , and pilot M. Santee-USBR.

| Location                           | Time | Status <sup>1</sup> | Comments  |
|------------------------------------|------|---------------------|---|
| Orme                               | 0817 | F                   | No adults in area. All known nests empty.   |
| Ft. McDowell                       | 0823 | O                   | Three adults in area. Found new nest #15 upstream of nest #6. All known nests empty.  |
| Cliff                              | 0848 | O                   | One subadult downstream of BA. No adults or new nests in area. All known nests empty. |
| Horseshoe                          | 0856 | A                   | One adult incubating in nest #11.   |
| Table Mountain                     | 0902 | A                   | One adult brooding in nest #4. One adult perched above nest.                          |
| Table Mountain BA to Houston Creek | 0904 | ---                 | Two near-adults and a subadult near gaging station. No new nests in area.             |
| East Verde                         | 0906 | A                   | One adult brooding in nest #6.  |
| LF historical BA                   | 0913 | ---                 | One adult near historical nest site. No new nests in area.                            |
| Coldwater historical BA            | 0930 | ---                 | No adults or new nests in area. All known nests empty.                                |
| Camp Verde                         | 0939 | U                   | No adults or new nests in area.   |
| West Clear Creek                   | 0941 | ---                 | No adults or new nests in area.   |
| Tower                              | 1003 | A                   | One adult standing on nest #8.  |
| R.R. Tunnel Nest                   | 1006 | ---                 | No adults or new nests in area. All known nests empty.                                |
| Perkinsville                       | 1008 | U                   | One adult standing on top of great blue heron nest. No new nests in area.             |
| Hell Point historical BA           | 1013 | ---                 | One adult observed downstream of nests. All known nests empty.                        |
| Muldoon historical BA              | 1017 | ---                 | One adult flying in area. All known nests empty.                                      |
| Granite Nest                       | 1020 | ---                 | No adults in area. All known nests empty.   |
| Sullivan Lake Nests                | 1023 | ---                 | No adults in area. All known nests empty.   |
| Watson Lake Nest                   | 1113 | ---                 | No adults in area. All known nests empty.   |
| Granite Creek                      | 1114 | ---                 | No adults or new nests in area.   |
| Lynx Lake Nest                     | 1123 | ---                 | No adults in area. All known nests empty.   |
| Lake Pleasant                      | 1146 | A                   | One adult brooding small young in nest #3.  |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed, ---=is not a BA therefore does not receive a status code.

Table 15. Results of April 5, 1996, ORA flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, M. Rushtin-SCAGF, and pilot L. Todd-SRP.

| Location                          | Time | Status <sup>1</sup> | Comments  |
|-----------------------------------|------|---------------------|---|
| Orme                              | 0756 | F                   | One adult perched near nest #1. All known nests empty.  |
| Ft. McDowell                      | 0803 | O                   | No adults or new nests in area. All known nests empty.  |
| Cliff                             | 0835 | O                   | One adult perched on cliff near K.A. Ranch. No new nests in area. All known nests empty.                  |
| Dry Wash to Red Creek             | 0854 | ---                 | No adults in area.  |
| Table Mountain                    | 0852 | A                   | One adult and two 4 week old nestlings in nest #4.  |
| Table Mountain to Houston Creek   | 0854 | ---                 | No adults in area.  |
| East Verde                        | 0859 | A                   | Two adults in BA. One 5 week old nestling in nest #6.   |
| Coldwater historical BA           | 0901 | ---                 | No adults or new nests in area. All known nests empty.  |
| R.R. Tunnel Nest                  | 0935 | ---                 | No adults or new nests in area. All known nests empty.  |
| Perkinsville                      | 0938 | U                   | No adults or new nests in area.   |
| Hell Point historical BA          | 0942 | ---                 | No adults in area. All known nests empty.   |
| Muldoon historical BA             | 0944 | ---                 | No adults in area. All known nests empty.   |
| Granite Nests                     | 0948 | ---                 | No adults in area. All known nests empty.   |
| Lone Pine                         | 1150 | A                   | One adult incubating in nest #1.  |
| Cedar Basin                       | 1155 | A                   | One adult incubating in nest #3.  |
| Mule Hoof                         | 1202 | U                   | No adults in area. All known nests empty.   |
| Cibecue                           | 1204 | O                   | No adults or new nests in area. All known nests empty.  |
| Canyon                            | 1228 | O                   | No adults or new nests in area. All known nests empty.  |
| Redmond                           | 1250 | A                   | One adult in brooding posture in nest #5. Cannot see any young.   |
| Pinal                             | 1255 | A                   | One adult in brooding posture in nest #5. Cannot see any young.   |
| Pinto                             | 1258 | A                   | Three 6 week old nestlings in nest #3.  |
| San Carlos                        | 1424 | A                   | Two adults in area. One 6.5 week old nestling in nest #1.   |
| Talkalai                          | 1433 | A                   | One adult standing on nest #4 with at least one small young. Second adult perched on cliff above nest.    |
| Horse Mesa                        | 1504 | A                   | One adult standing on nest #4 with two 4.5 week old nestlings. Second adult perched on cliff behind nest. |
| Horse Mesa Dam to Mormon Flat Dam | 1510 | ---                 | One adult on cliff above Horse Mesa Dam. No new nests in area. All known nests empty.                     |
| Blue Point                        | 1531 | A                   | Two six week old nestlings in nest #7.  |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed,  
---is not a BA therefore does not receive a status code.

Table 16. Results of May 6, 1996, ORA flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, T. Nobel-SRP, C. Westfall-WMAGF, M. Rushtin-SCAGF, and pilot L. Todd-SRP.

| Location                | Time | Status <sup>1</sup> | Comments  |
|-------------------------|------|---------------------|---|
| Ft. McDowell            | 0819 | O                   | No adults or new nests in area. All known nests empty.                    |
| Cliff                   | 0830 | O                   | No adults or new nests in area. All known nests empty.                    |
| Horseshoe               | 0846 | A                   | One 7 week old nestling in nest #11.                                      |
| Table Mountain          | 0850 | A                   | Two 7 week old nestlings in nest #4. Two adults in area.                  |
| East Verde              | 0855 | A                   | One 9.5 week old nestling in nest #6.                                     |
| Coldwater historical BA | 0857 | ---                 | No adults or new nests in area. All known nests empty.                    |
| Nash Creek Reservoir    | 1103 | ---                 | No adults in area.  |
| George=s Basin          | 1106 | ---                 | No adults in area.  |
| Lone Pine               | 1117 | F                   | One adult in area.  |
| Cedar Basin             | 1121 | F                   | No adults in area.  |
| Mule Hoof               | 1131 | U                   | No adults in area. All known nests empty.                                 |
| Cibecue                 | 1141 | O                   | No adults or new nests in area. All known nests empty.                    |
| San Carlos              | 1355 | A                   | One 10 week old nestling in nest #1. Two adults in area.                  |
| Talkalai                | 1412 | F                   | No adults in area.  |
| Canyon                  | 1456 | O                   | No adults or new nests in area. All known nests empty.                    |
| Redmond                 | 1513 | F                   | No adults in area.  |
| Pinal                   | 1518 | F                   | One adult flying in area.   |
| Pinto                   | 1528 | A                   | Three 10 week old nestlings in nest #3.                                   |
| 76                      | 1546 | A                   | One 7 week old nestling in nest #3. Observed one nestling dead on ground. |
| Horse Mesa              | 1643 | A                   | Two 8 week old nestlings in nest #4.                                      |
| Blue Point              | 1652 | A                   | Two 11 week old nestlings in nest #7. One adult flying in area.           |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed, ---is not a BA therefore does not receive a status code.

Table 17. Results of May 24, 1996, nest search/ORAs flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, and pilot L. Todd-SRP.

| Location  | Time | Status <sup>1</sup> | Comments  |
|---|------|---------------------|---|
| Gila River from Sanchez upstream to Bonita Creek                    | 0910 | ---                 | No adults or new nests in area.   |
| Bonita Creek to ~5 km upstream from Gila River                      | 0914 | ---                 | No adults or new nests in area.   |
| Gila River from Bonita Creek upstream to Eagle Creek                | 0918 | ---                 | No adults or new nests in area.   |
| Eagle Creek upstream from Gila River to dam                         | 0928 | ---                 | No adults or new nests in area.   |
| Eagle historical BA   | 0938 | ---                 | No adults or new nests in area. All known nests empty.  |
| Blue River from Juan Miller Creek downstream to San Francisco River | 0953 | ---                 | One large empty nest found. Golden eagle construction. No adults in area.                       |
| San Francisco River from Blue River downstream to Gila River        | 0959 | ---                 | One large empty nest found. Second BA area with multiple nests. Both golden eagle construction. |
| Gila River from the San Francisco River downstream to Eagle Creek   | 1044 | ---                 | No adults or new nests in area.   |
| San Carlos  | 1248 | S                   | Nest #1 empty. Last known age of nestling was 11 weeks.   |
| Coolidge  | 1309 | F                   | One adult standing in nest #3.  |
| Gila River from Coolidge BA downstream to Winkelman BA              | 1315 | ---                 | No adults or new nests in area.   |
| Winkelman   | 1331 | F                   | No adults in area.  |
| Gila River from Winkelman BA downstream to Walnut Creek             | 1348 | ---                 | No adults or new nests in area.   |
| Pinto   | 1421 | S                   | Nest #3 empty. Last known age of nestling was 10 weeks.   |
| Parker Creek and adjacent high cliffs                               | 1426 | ---                 | One active golden eagle BA along cliffs.  |
| J.R. Ranch  | 1453 | ---                 | No adults or new nests in area.   |
| Salome Creek from J.R. Ranch downstream to Roosevelt Lake           | 1457 | ---                 | No adults or new nests in area.   |
| Horse Mesa  | 1517 | S                   | One juvenile perched next to nest #4.   |
| Mormon Flat Dam   | 1521 | ---                 | No adults or new nests in area.   |
| Blue Point  | 1528 | S                   | One adult and one juvenile flying in area.  |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed, ---=is not a BA therefore does not receive a status code.

Table 18. Results of June 3, 1996, nest search/ORR flight. Crew: J. Driscoll-AGFD, J. Koloszar-AGFD, and pilot L. Todd-SRP.

| Location   | Time | Status <sup>1</sup> | Comments   |
|--|------|---------------------|--|
| Horseshoe  | 0743 | A                   | One 11 week old nestling in nest #11. One adult perched in area.                         |
| Table Mountain   | 0750 | A                   | One 12.5 week old eaglet in nest #4. One adult flying in area.                           |
| East Verde   | 0805 | S                   | Nest #6 empty. Last known age of nestling was 9.5 weeks.                                 |
| Ladders  | 0805 | A                   | One 12.5 week old nestling in nest #4.   |
| Camp Verde   | 0809 | ---                 | No adults or new nests in area.  |
| Tower  | 0826 | A                   | One 12.5 week old nestling in nest #8. One adult flying in area.                         |
| Verde Valley Canyon  | 0832 | ---                 | One 2 year old flies off cliff near golden nests in Mormon Pocket. No new nests in area. |
| R.R. Tunnel Nest   | 0839 | ---                 | One adult flies off cliff near nest. Adult has transmitter. No new nests in area.        |
| Perkinsville   | 0847 | U                   | No adults or new nests in area.  |
| Devil=s Post   | 1007 | U                   | No adults or new nests in area.  |
| Pinky Canyon   | 1015 | ---                 | No adults or new nests in area.  |
| Francis Creek  | 1018 | ---                 | No adults or new nests in area.  |
| Burro Creek from Devil=s Post BA upstream to Happy Hollow Canyon | 1023 | ---                 | No adults or new nests in area.  |
| Burro Creek from Devil=s Post BA downstream to Six Mile Crossing | 1034 | ---                 | No adults or new nests in area.  |
| Chino  | 1104 | U                   | No adults or new nests in area.  |
| Bill Williams River from Chino BA downstream to Alamo BA         | 1106 | ---                 | No adults or new nests in area.  |
| Santa Maria River from Bill Williams River upstream ~5 kms       | 1110 | ---                 | No adults or new nests in area.  |
| Alamo  | 1114 | F                   | No adults in area. All known nests empty. New large nest on east side of nest #4 cliff.  |
| Ive=s Wash   | 1121 | S?                  | All known nests empty. Last known age of nestling was 3.5 weeks.                         |
| Bill Williams River from Ive=s Wash BA downstream to Lake Havasu | 1122 | ---                 | No adults or new nests in area.  |
| Gene Wash Nest   | 1141 | ---                 | One adult observed on Copper Basin. No new nests in area.                                |
| Havasu historical BA   | 1249 | ---                 | No adults in area. All known nests empty.  |

<sup>1</sup> BA status codes (Postupalsky 1974) - U=unoccupied, O=occupied, A=active, S=successful, F=failed,

--=is not a BA therefore does not receive a status code.