

ARIZONA BALD EAGLE 2003 NEST SURVEY

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TABLE OF CONTENTS

Introduction1

Survey Area1

Methods3

Results4

Discussion5

 New Locations Surveyed5

 Historical BAs6

 Breeding Areas6

 Overview8

Management Recommendations9

Literature Cited10

Appendix A: Raptor Reproductive Status Criteria13

Appendix B: Bald Eagle Productivity Summaries14

Appendix C: Nest Survey Summaries16

Appendix D: 2003 Winter Count/ORR Flight Summaries20

LIST OF FIGURES

Figure 1. Known Arizona Bald Eagle BAs, 20032

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INTRODUCTION

In 1978, the U.S. Fish and Wildlife Service (USFWS) listed the bald eagle as endangered in 43 states, including Arizona, and as threatened in 5 others (USFWS 1982). After protection measures were instituted, including the 1972 ban on DDT use in the United States, the species slowly began to recover. The bald eagle was subsequently downlisted to threatened status (USFWS 1995), and later proposed for delisting (USFWS 1999). Until delisting, the bald eagle continues to be protected under the Endangered Species Act (ESA) as amended (1973). Thereafter, protection will be provided under the Airborne Hunting Act, the Bald and Golden Eagle Protection Act, the Lacey Act, the Migratory Bird Treaty Act, the Convention on International Trade of Endangered Species of Wild Fauna and Flora, and A.R.S. Title 17.

In Arizona, only 3 breeding areas (BA) were known when bald eagle nest surveys began in 1972 (Rubink and Podborny 1976). These annual surveys have continued to the present, excluding 1976 and 1977 (Glinski 1985, 1986; Grubb 1986; Hildebrandt and Glinski 1987; Gooch and others 1988; Tibbitts and others 1989, 1990; Corman and Rayner 1991; Driscoll and Hanna 1992; Driscoll and Beatty 1994; Driscoll and others 1995a, 1995b, 1997, 1998, 1999; Koloszar and Driscoll 2001a, 2001b; Koloszar and others 2002). The Arizona Game and Fish Department (AGFD) administered and performed the 2003 nest survey, in cooperation with the 17 other members of the Southwestern Bald Eagle Management Committee. The members include: Arizona Public Service (APS), Arizona State Parks Department, Army Corps of Engineers, Fort McDowell Yavapai Nation, Geo-Marine (U.S. Air Combat Command), Maricopa County Parks and Recreation Department, Salt River Pima-Maricopa Indian Community, Salt River Project (SRP), San Carlos Apache Recreation and Wildlife Department, U.S. Bureau of Indian Affairs, U.S. Bureau of Land Management, U.S. Bureau of Reclamation (USBR), U.S. Department of Defense (Luke Air Force Base), U.S. Forest Service (USFS), USFWS, U.S. National Park Service, and White Mountain Recreation and Wildlife Department.

The nest survey enhances our understanding of breeding bald eagles in Arizona. Discovery of new BAs and alternate nests, coupled with the knowledge of current and historical BAs, allows for an accurate description of the distribution, status, and annual productivity of Arizona's breeding population. Timely discovery of BAs also identifies sensitive areas requiring proactive management from potentially adverse impacts.

SURVEY AREA

We conducted the nest surveys primarily along creeks, reservoirs, and rivers in Arizona. Survey boundaries extended north to Sullivan Lake (near Chino Valley), south to Aravaipa Creek (near Dudleyville), west to the Bill Williams River below Alamo Dam, and east to the Little Colorado River near Springerville (Fig. 1). Survey elevations ranged from 293 m (960 ft) at the Bill Williams River, to 2106 m (6910 ft) at Springerville.

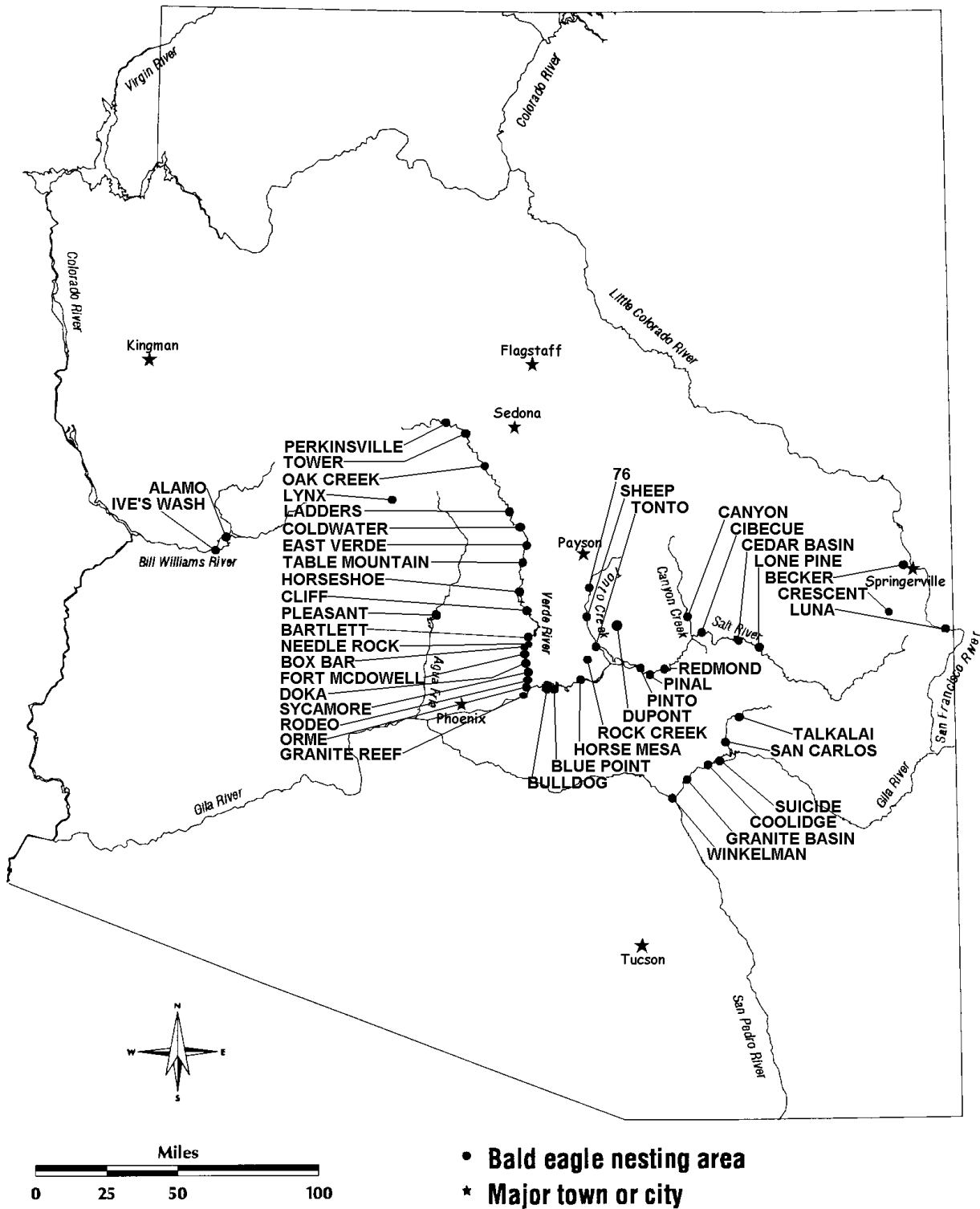


Figure 1. Known Arizona Bald Eagle BAs, 2003.

Most surveys were conducted within 5 biotic communities, (Brown 1994): Great Basin Conifer Woodland, Interior Chaparral, Plains and Great Basin Grasslands, Rocky Mountain (Petran) and Madrean Montane Conifer Forest, and Sonoran Desertscrub-Arizona Upland Subdivision. Other biotic communities visited include Chihuahuan Desertscrub, Mohave Desertscrub, Sonoran Riparian Deciduous Forest and Woodlands, and Sonoran Desertscrub-Lower Colorado Subdivision.

Most of Arizona's bald eagle breeding habitat exists between 329 and 1719 m (1080 and 5640 ft) elevation in central Arizona. These BAs occur within the Upper and Lower Sonoran Life Zones and transition areas (Brown 1994). Plant Species vary in each of the 5 biotic communities. Characteristic species of the Great Basin Conifer Woodland are juniper (*Juniperus* spp.) and pinyon (*Pinus* spp.). Interior Chaparral consists of agave (*Agave* spp.), crucifixion thorn (*Canotia holocantha*), evergreen oaks (*Quercus* spp.), manzanita (*Arctostaphylos* spp.), and skunkbush sumac (*Rhus trilobata*). Typical species of the Plains and Great Basin Grasslands include bluestem grasses (*Andropogon* spp.), teddy bear cholla (*Opuntia bigelovii*), and prickly pear cacti (*Opuntia* spp.), grama grasses (*Bouteloua* spp.), and sagebrush (*Artemisia* spp.). Species often found in the Rocky Mountain and Madrean Montane Conifer Forests are firs (*Pseudotsuga* spp.), Fremont cottonwood (*Populus fremontii*), oaks (*Quercus* spp.), pines, and spruces (*Picea* spp.). Common species in the Sonoran Desert-Arizona Upland Subdivision are barrel cacti (*Ferocactus* spp.), blue palo verde (*Cercidium floridum*), creosotebush (*Larrea tridentata*), foothill palo verde (*Cercidium microphyllum*), mesquite (*Prosopis* spp.), saguaro (*Carnegiea gigantea*), Goodding willow (*Salix gooddingii*), Arizona sycamore (*Platanus wrightii*), and introduced salt cedar (*Tamarix* spp.).

The Becker BA is within a Plains and Great Basin Grassland biotic community (Brown 1994). An isolated patch of cottonwoods along the eastern shore of Becker Lake creates local nesting habitat similar to the riparian areas of the Upper and Lower Sonoran Life Zones.

Crescent, Dupont, Luna, Lynx, and Rock Creek BAs are in Montane-Conifer Forest (Brown 1994). Representative vegetation includes; blue spruce (*Picea pungens*), Engelmann spruce (*P. engelmannii*), white fir (*Abies concolor*), Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), quaking aspen (*Populus tremuloides*), Gambel oak (*Quercus gambelii*), and common juniper (*Juniperus communis*). Riparian vegetation includes narrowleaf cottonwood (*Populus angustifolia*), thinleaf alder (*Alnus tenuifolia*), Bebb's willow (*Salix bebbiana*) and coyote willow (*S. exigua*). Crescent, Dupont, Lynx, and Rock Creek BAs are located in isolated patches of ponderosa pine surrounded by Interior Chaparral, which consists mainly of pinyon – juniper woodland, shrub live oak (*Quercus turbinalla*), pointed and pringle manzanita (*Arctostaphylos pungens* and *A. pringlei*).

METHODS

The presence of nests, habitat quality, previous bald eagle sightings, and spacing of current BAs prioritized survey areas. We monitored breeding activity at historical and current BAs, and nest sites discovered between 1992 and 2003 (Driscoll and others 1992, 1995a, 1995b, 1997, 1998, 1999; Driscoll and Beatty 1994; Koloszar and Driscoll 2001a, 2001b; Koloszar and others 2002). We also investigated reports of bald eagles and nests by other biologists, agencies, and the public.

A 1 to 3 person team conducted surveys between January and June 2003. Boats, helicopters, and trucks were used to access survey areas. We used Questar[®] spotting scopes (40-160x), binoculars (10x), and nest map atlases from Hunt and others (1992) and SRP (1998) to aid observations, relocate historical BAs, and find alternate nests in existing BAs.

Numbers assigned to new nests were consecutive with the last number assigned in that BA. Nest numbers assigned before this document are found in Koloszar and Driscoll (2001a, 2001b), and Koloszar and others (2002).

Determination of breeding status followed operational definitions derived from Postupalsky (1974, 1983) and Steenhof and Kochert (1982) (Appendix A). "Tall" and "short," "large" and "small" are terms used in this report to describe cliff height, and the size of trees and nests. "Tall" and "large" refer to substrates suitable for breeding bald eagles as compared to current Arizona bald eagle nests and locations. The terms "short" and "small" refer to structures of inadequate height and size.

Winter count flights (January) and monthly occupancy and reproduction assessment (ORA) flights (February to June) were used to locate nests and survey for new BAs. Timing of the ORA flights corresponded with the different breeding stages (that is incubation, nestling, fledging). Helicopters, provided by APS, SRP, and USBR, flew at approximately 70 m (200 ft) above ground level and at 50 to 60 kt (45 to 70 mph). Drainage topography, high-tension wires, and wind influenced altitude and speed. If nest occupancy could not be determined from the air, a ground survey ensued.

RESULTS

We examined all known BAs (n=47) for breeding activity (Fig.1). Of 42 occupied BAs, 31 pairs attempted to breed, and 18 pairs successfully produced 25 fledglings (Appendix B). Significant findings of the 2003 nest survey include the discovery of 2 new BAs (Bulldog and Crescent). We found 3 new alternate bald eagle nests, 1 rebuilt nest, and discovered 18 nests that have either fallen with at most only a few remaining sticks or completely missing.

We surveyed 15 new locations, found 1 new BA (Crescent), 7 large nests, and observed bald eagles in 5 areas (Appendix C, Table 3). Surveyed lakes and drainages included: Agua Fria River, Burro Creek (Six Mile Crossing), Del Rio Ponds, Eagle Creek, Hell Canyon, Mogollon Rim (Bear Canyon Lake, Blue Ridge Reservoir, Chevelon Canyon, Chevelon Canyon Lake, Knoll Lake, Stoneman Lake, West Clear Creek, Willow Springs Lake, and Woods Canyon Lake), Lower Salt River, Upper Salt River, San Francisco River, Lower San Pedro River, Tanks Canyon (near the Salt River Canyon), Lower Verde River, Upper Verde River, and White Mountain Lakes (Crescent Lake, Lee Valley Reservoir, Nelson Reservoir, and Big Lake). We discovered a new BA at Crescent Lake and 7 osprey nests on the Mogollon Rim. We recorded sightings of bald eagles at Del Rio Ponds (Chino Valley), Eagle Creek, Mogollon Rim, San Francisco River, and White Mountain Lakes.

We examined 13 historical BAs for occupancy, and observed bald eagles in 7 (Hunt and others 1992; Driscoll and others 1997 and 1999) (Appendix C, Table 4). Surveyed historical BAs include:

Ash, Chino, Devil's Post, Eagle, Hell Point, LF, Lower Mary, Upper Mary, Muldoon, Mule Hoof, Stoneman Lake, Sullivan, and Willow. We observed bald eagles at Ash, Hell Point, LF, Lower Mary, Upper Mary, Muldoon, and Willow.

We monitored 4 nest sites of other or unknown species for bald eagle activity, and observed bald eagles in 2 (Driscoll and others 1999; Driscoll and Beatty 1994; Koloszar and Driscoll 2001a, 2001b; Koloszar and others 2002) (Appendix C, Table 5). These consisted of 4 golden eagle nests (*Aquila chrysaetos*) (Granite, Mormon Pocket, Sullivan Lake, and Watson Lake). We observed bald eagles at Granite and Watson Lake nest sites.

Surveys of 26 known BAs revealed 1 new BA, 1 rebuilt nest, 3 new bald eagle nests, and 18 nests that were blown/disappeared from cliffs, or fallen from trees. We found 1 new BA (Bulldog nest #1), and new alternate nests at Granite Reef (nest #3), Oak Creek (nest #3), and Pinal (nest #7). Cibecue (nests #7 and #8), and Horseshoe (nest #8) nests, only have a few sticks remaining. Blue point nests #1, #8, and #9, Canyon (nests #1, #2, #3, #4, and #7), Coldwater (nest #8) Horseshoe (nest #1), and Redmond (nest #4), disappeared from cliffs. Becker (nest #1), Lone Pine (nest #3), and Sycamore (nest #2) fell before the 2003 survey season. Lynx (nest #1) fell on April 1, 2003, after a failed breeding attempt.

DISCUSSION

Summaries of the winter count and ORA flights are located in Appendix D. Areas worthy of further discussion (bald eagle observations, fallen nests, new nests, potential nest sites) are described in this section. Nest locations are sensitive data, considered confidential by AGFD, and omitted from this report. Management agencies requiring specific locations should contact the AGFD Heritage Data Management System at (602)-789-3612.

NEW LOCATIONS SURVEYED

Agua Fria River

On January 6 and May 16, we surveyed the Upper Agua Fria River and found no new nests or bald eagles.

Mogollon Rim Lakes

On April 10, we surveyed Chevelon Canyon Lake, Knoll Lake, and Woods Canyon Lake. We observed osprey incubating at Knoll Lake and found one unoccupied osprey nest at Woods Canyon Lake and upstream of Chevelon Canyon Lake. On June 10, we received reports from USFS personnel of an adult bald eagle standing on a nest at Woods Canyon Lake. On our June 13 ORA flight, we observed one adult bald eagle at Chevelon Canyon Lake, and found two additional osprey nests at Knoll and Woods Canyon Lakes.

Upper Salt River

On our January 13 winter count flight, we found a small nest in a cottonwood tree on the north side of Gleason Flats. This nest was monitored on subsequent ORA flights, but no nesting activity was observed.

White Mountain Lakes

During our winter count flight on January 9, we observed an adult bald eagle in the area of Crescent Lake. Upon receiving a report of bald eagles breeding at the lake by Dan Groebner, AGFD, the Luna Lake Arizona Bald Eagle Nestwatch Program contractors visited the area and confirmed nesting activity on April 22. We traveled to the site on May 20 and found a large nest and 2 adults in the incubation stage of the breeding cycle.

HISTORICAL BAS

Devil's Post

Devil's Post BA was removed from the list of known BAs in 2003 and designated historical after remaining unoccupied for 10 consecutive years. The last year of occupancy was 1992.

Hell Point

During the January winter count and February ORA flights, adult bald eagles were consistently seen downstream of the Hell Point nests at the confluence of Hell Canyon and Verde River. All known nests remained in disrepair and no new nests were found. We will continue to monitor this area to document possible re-occupancy.

Mule Hoof

Mule Hoof BA was removed from the list of known BAs in 2003 and designated historical after remaining unoccupied for 10 consecutive years. The last year of occupancy was 1992.

BREEDING AREAS

Becker

On an April 14 ground visit, we observed Becker nest #1 had mostly fallen. The remnants were used by nesting common ravens (*Corvus corax*).

Blue Point

On January 13, an adult bald eagle was observed standing in a new nest near the location of Blue Point nest #1 downstream of Stewart Mountain Dam, and one adult was incubating in Blue Point nest #10. Blue point nests #1, #8, and #9 are no longer existing. On February 4, one adult was observed incubating in the new nest (Bulldog nest #1) and a second adult was still incubating in Blue Point nest #10.

Camp Verde

Camp Verde was last occupied in 1993. Since then, the BA has remained unoccupied and no new nests have been constructed. Camp Verde BA will be removed from the list of known BA's in 2004 and designated historical, after remaining unoccupied for 10 consecutive years.

Canyon

On February 4, we discovered nest #1, #2, #3, #4, and #7 were gone after years of only remnant materials being present.

Cibecue

On February 4, we found only a few remnant sticks from nests #7 and #8.

Cliff

A breeding attempt has not been documented for the resident bald eagles occupying the Cliff BA since 1994. We have annually surveyed the BA for new nests, and monitored the presence of bald eagles (Driscoll and others 1999; Driscoll and Beatty 1994; Koloszar and Driscoll 2001a, 2001b). Our surveys exhausted all suitable nesting habitat close to the river, therefore 2003 efforts focused on the cliffs to the east of the river and west of Horseshoe lake.

We surveyed the drainages surrounding the Cliff BA on April 17 and June 13. Although we observed bald eagles on multiple ORA flights and ground visits, all known nests were empty and no new nests were located.

Coldwater

On our January 6 ORA flight, we observed Coldwater nests #8 was blown off the cliff and only remnants remained.

Granite Reef

On our February 4 ORA flight, we found a new nest #3 on the east side of the Salt River.

Horseshoe

On our February 3 ORA flight, we observed Horseshoe nests #1 and #8 were blown off the cliff and only remnants remained.

Lone Pine

On March 14, we observed Lone Pine nest #3 had completely fallen from the tree.

Lynx

Lynx nest #1, the only known nest in the breeding area, was reported to have fallen on April 1 by Noel Fletcher, USFS.

Needle Rock

On the January 6 Winter Count flight, we observed one adult incubating in a rebuilt nest #2. A second adult was in the area.

Oak Creek

On a March 21 ground visit, we located a new alternate cliff nest #3 upstream from nest #2.

Pinal

On our March 14 ORA flight, we observed on adult incubating in a new cliff nest #7.

Redmond

On our March 14 ORA flight, we observed Redmond nest #4 was blown off the cliff and only remnants remained.

Sycamore

On our February 3 ORA flight, we could not find Sycamore nest #2, concluding that it had fallen from the tree.

OVERVIEW

According to Hunt and others (1992), the Blue Point pair's home range covered most of Saguaro Lake downstream to Blue Point Cliffs. Given their extensive home range, the Blue Point pair was very successful between 1991 and 1997, although productivity has recently varied (1997 to 2003). The Blue Point BA produced 15 fledglings between 1991 and 1997, and 4 fledglings between 1998 and 2003. We initially believed this recent decline in productivity was due to mate replacement. However, with the discovery the Bulldog pair this year, we now question if this loss could be attributed to the split in the home range. It is possible the Bulldog pair was defending the lower Salt River from the Blue Point adults as early as 2000, as we observed additional bald eagles in the BA during the breeding season (Kolozsar and Driscoll 2001a, 2001b; and Kolozsar and others 2002).

Similar to the lower Verde River, the availability of prey in the lower Salt River may have promoted the establishment of new BAs. The AGFD annually stocks this stretch with rainbow trout (*Oncorhynchus mykiss*) for a coldwater fishery. In addition, SRP cleans a portion of their canals and relocates salvaged desert suckers (*Colostomies clarki*), Sonoran sucker (*Catostomus insignis*), and roundtail chub (*Gila robusta*) to the confluence of the Salt and Verde rivers annually. These native fish may be dispersing upstream, which, in combination with the stocked rainbow trout, increases the abundance of prey items for bald eagles. This abundance of food may be a factor in the split of the Blue Point BA (by the Bulldog pair), as well as the split of the Orme BA in 2002 (by the Granite Reef pair).

Once again, extensive surveys for the Cliff pair's nest have been unsuccessful. After exhausting all of the typical locations, we decided to explore the less typical nesting locations in 2003 by looking off the Verde River to the cliffs and trees surrounding the watershed. Hunt and others (1992) stated that diversity of prey species (mainly carp and largemouth bass) may be a factor in this pair's success. While we continue to search for an active nest, a comprehensive fish survey may need to occur to determine if the diversity and abundance of prey is a limiting factor in the Cliff BA's productivity.

The Devil's Post and Mule Hoof BAs were removed from the list of known BAs in 2003, and designated historical after remaining unoccupied for 10 consecutive years. The Camp Verde BA will be removed from the list of known BAs in 2004. The pair last occupied the BA in 1993 when floods washed away their only known nest tree.

The discovery of a small nest in a cottonwood tree on the north side of Gleason Flats on the Salt River has potential. For multiple years, we have examined the Gleason Flat area for bald eagles due to a large gap between the Redmond and Canyon BAs, the loss of the Ash BA, and the recent inability to locate the Canyon pair. Further monitoring of this area will continue to see if bald eagles build upon the existing nest structure.

We received multiple reports of bald eagles around the Mogollon Rim Lakes (Bear Canyon Lake, Chevelon Canyon Lake, Knoll Lake, and Willow Springs Lake). Osprey are nesting at a few of these lakes, which indicate that prey populations may be adequate to support breeding bald eagles. Similar to Luna and Crescent, sport fish (mainly rainbow trout) are annually stocked which may provide enough prey for bald eagles to establish a BA. Reports of an adult bald

eagles standing on a nests this year at Woods Canyon Lake and Chevelon Lake may be our first indications of occupancy along the Mogollon Rim.

MANAGEMENT RECOMMENDATIONS

Future survey efforts should monitor historical BAs, potential BAs, and large nests reported in past nest survey reports. These documents have been useful tools for locating new BAs, and monitoring areas of expansion.

On 2 separate occasions, bald eagles banded in Arizona (1988 Cliff nestling and possible 1993 Pleasant nestling) have been observed near, or on El Novillo Reservoir, Sonora. This suggests the current distribution of our population may extend into Sonora, Mexico. We recommend conducting ground-based surveys at the reservoir during the breeding season to aid with identifying the distribution of Arizona's bald eagles. We recommend a cooperative effort between the State of Arizona and Mexico to determine status of bald eagles breeding in Mexico.

Surveyors should continue to use the nest survey, ORA, and winter count flights, in concert with follow-up ground surveys to inspect areas. Aerial surveys provide a large-scale extensive survey effort of bald eagle habitat. Ground surveys provide an intensive investigation of localized areas.

Examine the following areas for breeding bald eagles and/or nests:

- Agua Fria River drainage – Upstream from Lake Pleasant BA for a second BA.
- Bill Williams River drainage – Bill Williams National Wildlife Refuge
- Black River drainage – Little and Big Bonito Creeks, Paucity Creek, Pacheta Creek, Reservation Creek, osprey nesting areas on East and West Fork Black River.
- Central and Eastern Mountain Lakes – Bear Canyon, Black Canyon, Blue Ridge, Casadore Springs, Chevelon Canyon, Cholla, Christmas Tree, Doney Park, Dry, George's Basin, Knoll, Nash Creek, Phillips Park Tank, Paucity, Points of Pines, Roger's, Tonto, Willow Springs.
- 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, Gila Box.
- Salt River drainage – Gun/Tonto creek confluence, Mormon Flat Dam, Redmond BA to Canyon BA, Cibecue BA to Cedar Basin BA, Tanks Canyon, Sawmill Canyon.
- White Mountain Lakes – Big, Canero, Lee's Valley, McNary Ponds, Nelson Reservoir, Nutrioso, Rainbow, Sierra Blanca.
- White River – White River to confluence with Black and Salt rivers.

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APPENDIX A: RAPTOR REPRODUCTIVE STATUS CRITERIA

[Known] Breeding Area (BA): An area containing one or more nests within the range of 1 mated pair of birds. Operationally, a BA is recognized only after an active nest has been documented. Once a BA is established, we consider it a BA whether it is occupied by bald eagles in a given year or not, until/unless it is designated historical.

Occupied BA/Nest: An occupied BA must have an occupied nest, which is any nest, where at least one of the following activity patterns was observed during the 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 1 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: One in which eggs have been laid. Activity patterns (a), (b), and (c) above are diagnostic of an active nest.

Unoccupied BA/Nest: 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. BAs must be existing as occupied before they can be recognized and classified as unoccupied.

Successful BA/Nest: An occupied nest from which at least 1 young fledged during the breeding season under consideration. We classified nests as successful if at least 1 young was raised past 8 weeks of development.

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

Historical BA: A BA that has remained unoccupied for 10 consecutive years. Given that some records of breeding occupancy are sparse in the literature before 1973, this term also applies to any BA recorded not showing signs of occupancy since that time.

Reoccupied Historical BA: A Historical BA, which shows signs diagnostic of being active. Due to intensity survey effort and BA location, a reoccupied historical BA can be discovered reoccupied the first year of activity, or may have been active prior.

Pioneer Effort: The occupancy of a new nest, in previously undocumented breeding habitat, where there is no evidence of prior activity. These occur in areas monitored before discovery due to 1) the presence of a large nest built by another or unknown species, or 2) the observed suitability of the habitat.

Existing BA: A BA that shows signs of prior occupancy (for example multiple large nests) and/or signs of prior activity (for example prey remains below an existing nest) upon discovery.

APPENDIX B: 2003 BALD EAGLE PRODUCTIVITY SUMMARIES

Table 1. Arizona bald eagle breeding area productivity summary, 2003								
Breeding Area	Status ¹	Nest ²	Incubation Date	Eggs	Hatch Date	Young	Fledged	Fledge Date
Alamo	O							
Bartlett*	S	1	2/3-5	1+	3/13	1	1	5/26-30
Becker	U							
Blue Point	F	10	<1/13	1	Failed 3/14-21			
Box Bar*	S	3	1/6-2/3	1+	2/14	1	1	5/6
Bulldog*	S	1	1/13-2/4	2+	2/18-3/10	2	2	5/20, 5/23
Camp Verde	U							
Canyon	U							
Cedar Basin	U							
Cibecue	F	2	2/4-3/14	1+	Failed 3/14-4/10			
Cliff	O							
Coldwater	S	3	2/3-3/13	2+	3/13-4/17	2	1	5/16-6/13
	One young died between 4/25-5/16 at 4-7 weeks of age.							
Coolidge	S	4	3/13-6/10	2+	3/13-6/10	2	1	6/25
	One young died in nest on 6/20 at 8 weeks of age from dehydration.							
Crescent	F	1	<4/30	1+	Failed 5/20-6/6.			
Doka*	S	2	12/20-1/6	1+	1/6-2/3	1	1	3/13-4/17
Dupont	F	2	1/13-2/4	1+	Failed 3/14			
East Verde	O							
Fort McDowell*	F	16	1/6-2/3	1+	Failed 3/7			
Granite Basin	O							
Granite Reef*	F	3	2/4-2/7	2+	3/18-3/21	2	Failed 3/31-4/4	
	Two nestlings died at 2 weeks of age.							
Horse Mesa	S	4	1/14-2/4	2+	2/4-3/14	2	2	5/16-6/13
Horseshoe	S	11	1/6-2/3	1+	3/13-4/2	1	1	5/22-6/13
Ive's Wash	O							
Ladders*	S	4	2/3-21	2+	3/26	2	2	6/16, 6/20
Lone Pine	O							
Luna*	S	1	<2/8	1+	3/4-6	1	1	5/30
Lynx*	F	1	12/9-1/6	1+	Failed 2/3-7			
Needle Rock*	S	2	<1/16	1+	2/16	1	1	5/4
Oak Creek	S	3	2/3-3/5	1+	3/13-25	1	1	5/16-6/13
Orme*	S	6	1/13-2/3	1+	3/4-9	1	1	5/24
Perkinsville	S	4	1/6-2/3	2+	3/13-25	2	2	4/25-6/13
Pinal	F	7	2/4-3/14	1+	Failed 3/14-25			
Pinto	O							
Pleasant*	S	2	1/6-29	1	3/2	1	1	5/20
Redmond	O							
Rock Creek	F	2	2/4-3/14	1+	3/14-4/10	1	Failed 5/16-6/13	
	Nestling last observed at 6 weeks old.							
Rodeo*	F	2	1/6-2/3	2+	3/7	2	Failed 3/15	
	Nestlings killed by intruding female at 1 week of age.							
San Carlos	O							

¹ Breeding area status codes (Postupalsky 1974): U=unoccupied, O=occupied, S=successful, F=failed.

² Nest numbers are from Hunt and others 1992; Driscoll and others 1992; Driscoll and Beatty 1994; Driscoll and others 1995a, 1995b, 1997, 1998, 1999; Koloszar and Driscoll 2001a, 2001b; Koloszar 2002.

* Nests monitored by the Arizona Bald Eagle Nestwatch Program.

Table 1 (continued).								
Breeding Area	Status ¹	Nest ²	Incubation Date	Eggs	Hatch Date	Young	Fledged	Fledge Date
76	O							
Sheep	F	1	1/13-2/4	1+	2/24-3/5	1	Failed 3/14	
	Nestling died in nest at 2 weeks of age.							
Suicide*	S	1	1/13-2/4	3	2/26	3	3	5/20, 5/22
Sycamore*	S	4	12/20-1/6	2	1/6-2/3	2	2	4/5, 4/20
Table Mountain	F	4	2/3-3/13	2	Failed 4/17			
Talkalai	O							
Tonto*	F	2	1/13-2/4	2	2/26-27	1+	Failed 3/9	
	One nestling died at < 1 week, other died while pipping.							
Tower*	S	8	1/6-2/3	2	2/28	2	1	5/27
	One nestling died on 5/28 at 12 weeks of age from Mexican Chicken Bug Infestation.							
Winkelman	U							

¹ Breeding area status codes (Postupalsky 1974): U=unoccupied, O=occupied, S=successful, F=failed.

² Nest numbers are from Hunt and others 1992; Driscoll and others 1992; Driscoll and Beatty 1994; Driscoll and others 1995a, 1995b, 1997, 1998, 1999; Koloszar and Driscoll 2001a, 2001b; Koloszar 2002.

* Nests monitored by the Arizona Bald Eagle Nestwatch Program.

Table 2. Arizona bald eagle productivity summary, 2003			
Number of BAs	47	Number of Active BAs	31
Number of Occupied BAs	42	Number of Failed Breeding Attempts	13
Number of Eggs	45+	Number of Successful Breeding Attempts	18
Nest Success = 18/42	0.43	Number of Young Hatched	35
Mean Brood Size = 25/18	1.39	Number of Young Fledged	25
		Productivity = 0.43 x 1.39	0.60

APPENDIX C: NEST SURVEY SUMMARIES

Table 3. Arizona bald eagle nest survey summary: new locations surveyed, 2003.			
New Locations	Date	Survey Method	Results
Agua Fria River	1/6, 5/16	Helicopter	No new nests or bald eagles.
Burro Creek	3/13	Helicopter	No new nests or bald eagles.
Del Rio Ponds	1/6, 2/3, 3/13	Helicopter	1/6- No new nests. Seven adults and 20 subadults. 2/3-One adult and 7 subadults. 3/13-Four subadults.
Eagle Creek	1/10	Helicopter	1/10- No new nests. Ten adults bald eagles.
Hell Canyon	3/13	Helicopter	No new nests. No bald eagles.
Mogollon Rim	4/10, 4/25, 6/13	Helicopter	4/10- One new osprey nest at Woods Canyon Lake, 1 new osprey nest upstream of Chevelon Canyon Lake, and 1 osprey nest at Knoll Lake. 6/13- One adult at Chevelon Canyon Lake, 2 new osprey nests at Woods Canyon Lake, and 2 new osprey nests at Knoll Lake.
Oak Creek	5/16	Helicopter	Surveyed north past Sedona. No new nests. No bald eagles.
Lower Salt River	1/13, 2/4, 3/14, 4/10 5/16, 6/13	Helicopter	No new nests.
Upper Salt River	1/9, 1/13, 2/4, 3/14, 4/10	Helicopter	1/13-One small tree nest discovered on north side of Gleason Flats.
San Francisco River	1/10	Helicopter	No new nests. Four adults.
Lower San Pedro River	2/4	Helicopter	No new nests or bald eagles
Tanks Canyon	1/13	Helicopter	No new nests or bald eagles.
Lower Verde River	1/6, 2/3, 3/13, 4/17, 5/16	Helicopter	No new nests.
Upper Verde River	1/6, 2/3, 3/13, 4/17, 4/25, 5/16, 6/13	Helicopter	2/3-Golden eagle nest just past Bull Run Creek. 3/13-Adult golden eagle incubating just past Bull Run Creek.
White Mountain Lakes	1/9, 4/14, 5/20, 6/6	Helicopter Ground	1/9-Eleven adults and 3 subadults. 5/20-One adult incubating at Crescent Lake in new nest #1. 6/6- Nesting attempt failed.

Table 4. Arizona bald eagle nest survey summary: historical BAs surveyed, 2003			
Historical BAs	Date	Survey Method	Results
Ash	1/13	Helicopter	No new nests. One bald eagle at tank.
Chino	2/3, 3/13	Helicopter	No new nests or bald eagles.
Devil's Post	3/13	Helicopter	All known nest empty. No new nests or bald eagles.
Eagle	1/10	Helicopter	No new nests.
Hell Point	1/6, 2/3, 3/13, 4/17	Helicopter	1/6-All known nests empty. One adult at Verde River and Hell Canyon confluence. 2/3-Two adults downstream at Verde and Hell Canyon confluence.
LF	1/6, 2/3, 3/13	Helicopter	No new nests. 2/3- One adult in area. 3/13-One adult in area.
Lower Mary	2/22	Ground	No new nests. Wintering bald eagles in area.
Upper Mary	2/22	Ground	No new nests. Wintering bald eagles in area.
Muldoon	1/6, 2/3, 3/13, 4/17	Helicopter	All known nests empty. 2/3- One adult in area. 3/13- One adult and 1 subadult upstream of area.
Mule Hoof	1/9, 2/4, 3/14, 4/10	Helicopter	All known nests empty. No new nests or bald eagles.
Stoneman Lake	4/25	Helicopter	No new nests or bald eagles. Lake dry.
Sullivan	1/6, 2/3, 3/13, 4/17	Helicopter	No new nests or bald eagles.
Willow	1/10	Helicopter	No new nests. One adult at Eagle Creek confluence.

Table 5. Arizona bald eagle nest survey summary: nest sites surveyed, 2003			
Nest Sites	Date	Survey Method	Results
Granite	1/6, 2/3, 3/13, 4/17	Helicopter	All known nests empty. No new nests. 1/6- One subadult. 2/3- Three adults in area. 3/13- Two adults.
Mormon Pocket	2/3, 3/13	Helicopter	All known nests empty. No new nests or bald eagles.
Sullivan Lake	1/6, 2/3, 3/13, 4/17	Helicopter	All known nests empty. No new nests or bald eagles.
Watson Lake	1/6	Helicopter	All known nests empty. No new nests. 1/6-One adult.

Table 6. Arizona bald eagle nest survey summary: BAs surveyed, 2003			
Breeding Area	Date	Survey Method	Results
Alamo	1/9, 2/3, 3/13, 4/17	Helicopter Ground	All known nests empty. No new nests. 2/3-Two adults standing in nest #4.
Becker	4/14	Ground	4/14-Nest #1 has fallen. No bald eagles.
Blue Point	1/13, 2/4, 2/20, 3/14, 3/21, 4/10	Helicopter Ground	1/13-One adult observed standing in a new nest (Bulldog nest #1) below old Blue Point nest #1 (fallen) and a second adult incubating in nest #10. Nest #8 and #9 gone. 2/4-One adult incubating in new nest, and 1 adult incubating in Blue Point nest #10. 3/21- Blue Point nesting attempt failed.
Camp Verde	1/6, 2/3, 3/13	Helicopter	No new nests. 1/6-One adult in area.
Canyon	1/13, 2/4, 3/14, 4/10	Helicopter	All known nests empty. No new nests. 1/13-One adult in area. 2/4-Only remnants of nests #1, #2, #3, #4, and #7.
Cedar Basin	1/9, 2/4, 3/14, 4/10	Helicopter	All known nests empty. No new nests. 4/10-One adult.
Cibecue	1/9, 2/4, 3/14, 4/10	Helicopter	2/4-Nests #7 and #8 almost gone.
Cliff	1/6, 2/3, 2/28, 3/1, 3/2, 3/13, 4/17, 5/16, 6/13	Helicopter Ground	All known nests empty. No new nests. 1/6-Two adults in area. 2/28-3/2 One adult and 1 blue VID banded subadult in area.
Coldwater	1/6, 2/3, 3/13, 4/17, 4/25, 5/16, 6/13	Helicopter	1/6-Nest #8 fallen. 3/13-One adult incubating in nest #3.
East Verde	1/6, 2/3, 3/13, 4/17, 4/25	Helicopter	All known nests empty. No new nests. 1/6-One adult perched on snag near nest. 2/3-One adult standing in nest #6. Second adult in area.
Granite Basin	2/4, 3/14	Helicopter	All known nests empty. No bald eagles.
Granite Reef	1/13, 2/3, 2/4, 4/17	Helicopter	2/4-Found new nest #3 on east side of river.
Horseshoe	1/6, 2/3, 3/13, 4/17, 4/25, 5/16, 6/13	Helicopter	2/3-Nest #8 mostly fallen and nest #1 gone.
Ive's Wash	1/9, 2/3, 3/13, 4/17	Helicopter Ground	2/3-One adult standing in nest #3. 3/13-One adult standing in nests #3. Second adult near dam.
Lone Pine	1/9, 2/4, 3/14, 4/10	Helicopter	2/4-One adult flushed from area near nest #4. 3/14-Nest #3 gone. No bald eagles.
Lynx	1/6, 2/3, 3/13	Helicopter Ground	1/6-One adult incubating in nest #1. 2/3-Adult incubating in nest #1. 4/01-nest #1 fallen (reported by USFS).
Needle Rock	1/6, 2/3, 4/17	Helicopter	1/6- One adult incubating in rebuilt nest #2. Second adult in area.
Oak Creek	1/6, 2/3, 3/13, 3/21, 4/17, 4/25, 5/16, 6/13	Helicopter Ground	3/13- One adult incubating in nest #1. 3/21- New nest #3 on cliff upstream of nest #2.
Pinal	1/13, 2/4, 3/14, 4/10	Helicopter	1/13-All known nests empty. One adult perched near nest #6. 3/14-One adult incubating in new nest #7.

Table 6 (continued).			
Breeding Area	Date	Survey Method	Results
Pinto	1/13, 2/4, 3/5, 3/14, 4/10	Helicopter Ground	1/13-Nest #4 with new construction. 2/4-One adult. 4/10-One adult.
Redmond	1/13, 2/4, 3/14, 4/10	Helicopter	2/4-One adult near empty nest #5. 3/14- Nest #4 fallen.
76	1/13, 2/4, 2/24, 3/24, 4/10	Helicopter Ground	All known nest empty. No new nests. 1/13-One adult perched near nest #3. 2/24-Two adults.
Talkalai	1/13, 2/4, 3/14, 6/13	Helicopter Ground	All known nests empty. 1/13-One subadult in area. 3/14-Two adults standing in nest #7.
San Carlos	1/13, 2/3, 3/14, 6/13	Helicopter Ground	All known nests empty. 1/13-One adult near nest #3.
Sycamore	1/6, 2/3, 4/17	Helicopter	1/6-One adult incubating in nest #4. Second adult in the area. 2/3-One adult brooding 2 1.5 week old nestlings. Nest #2 fallen.
Winkelman	2/4, 3/14	Helicopter	All known nests empty. No new nests.

APPENDIX D: 2003 WINTER COUNT/ORR FLIGHT SUMMARIES

Table 7. Results of January 6, 2003, winter count		
Location	Time	Comments
Orme	0801	All known nests empty. One adult near nest #6.
Rodeo	0806	Nest #2 empty. One adult upstream.
Sycamore	0812	One adult incubating in nest #4. Second adult in area.
Doka	0815	One adult incubating in nest #2. Second adult in area.
Ft. McDowell	0819	Two adults standing in nest #16.
Box Bar	0823	Two adults standing in nest #3.
Needle Rock	0825	One adult incubating in rebuilt nest #1. Second adult in area.
Bartlett	0834	All known nests empty. One adult at Bartlett Lake.
Cliff	0847	All known nests empty. Two adults in area.
Horseshoe	0856	All known nests empty. No bald eagles.
Table Mountain	0920	All known nests empty. No bald eagles.
LF historical BA	1003	No new nests or bald eagles.
East Verde	1105	All known nests empty. One adult perched on snag near nest #6.
Coldwater	1108	Nests #1, #2, #3, and #4 empty. Nest #8 mostly gone. Two subadults in area.
Ladders	1123	All known nests empty. One adult in area.
West Clear Creek	1129	One subadult.
Camp Verde	1145	No new nests. One adult in area.
Oak Creek	1201	All known nests empty. No bald eagles.
Pecks Lake	1215	No new nests or bald eagles.
Tower	1225	All known nests empty. One adult in area.
Perkinsville	1316	One adult standing in nest #4.
Hell Point historical BA	1329	All known nests empty. One adult at confluence of Verde and Hell Canyon.
Muldoon historical BA	1336	All known nests empty. No bald eagles.
Granite nest site	1341	All known nests empty. One subadult in area.
Sullivan Lake nest site	1343	All known nests empty. No bald eagles.
Del Rio Ponds	1350	Seven adults and 20 subadults.
Willow Lake	1501	No new nests. One near adult in area.
Watson Lake nest site	1503	All known nests empty. One adult in area.
Lynx	1510	One adult incubating in nest #1.
Agua Fria River	1533	No new nests or bald eagles.
Pleasant	1538	All known nests empty. One adult standing in nest #2.

Table 8. Results of January 9, 2003, winter count.		
Location	Time	Comments
Crescent Lake	1110	One adult in area.
Cibecue	1452	All known nests empty. Two adults and 1 subadult in area.
Mule Hoof	1456	All known nests empty. No bald eagles.
Cedar Basin	1501	All known nests empty. No bald eagles.
Lone Pine	1535	All known nests empty. Two adults and 3 subadults.

Table 9. Results of January 10, 2003, winter count.		
Location	Time	Comments
Willow Historical BA	1039	No new nests or bald eagles.
Eagle Creek Historical BA	1100	Observers were unsure of BA location but 10 adults were observed along the creek. No new nests.

Table 10. Results of January 13, 2003, winter count.		
Location	Time	Comments
Granite Reef	0953	All known nests empty. Two adults in area.
Orme	0958	All known nests empty. One subadult in area.
Bull Dog (new BA)	1008	One adult standing in new nest #1.
Blue Point	1011	One adult incubating in nest #10. Nest #1, #8, and #9 fell.
Horse Mesa	1041	All known nests empty. No bald eagles.
Rock Creek	1100	All known nests empty. One adult in area.
Tonto	1144	One adult standing in nest #2.
Sheep	1156	One adult near nest #1.
76	1206	One adult perched near nest #3.
Dupont	1343	All known nests empty. No bald eagles.
Pinto	1402	New nest #6 is built up. No bald eagles.
Pinal	1409	All known nests empty. One adult near nest #6.
Redmond	1417	All known nests empty. No bald eagles.
Gleason Flat	1439	Small tree nest on east side of river.
Canyon	1442	All known nests empty. One adult in area.
Ash Historical BA	1516	No new nest. One adult on tank.
Talkalai	1545	All known nests empty. One adult and 1 subadult in area.
San Carlos	1558	All known nests empty. One adult near nest #3.
Suicide	1613	All known nests empty. Two adults near nest #1.
Coolidge	1620	All known nests empty. One adult in area.

Table 11. Results of February 3, 2003, ORA flight.		
Location	Time	Comments
Granite Reef	0812	All known nests empty. One adult in area.
Orme	0816	One adult incubating in nest #6.
Rodeo	0818	One adult incubating in nest #2.
Sycamore	0822	One adult in nest #4. Brooding 2 nestlings 1.5 weeks old. Nest #2 fallen.
Doka	0828	Two adults in nest #2. Brooding 1 nestling 1 week old.
Ft. McDowell	0831	One adult incubating in nest #16. Second adult in area.
Box Bar	0835	One adult incubating in nest #3.
Needle Rock	0836	One adult brooding in nest #2. Second adult in area.
Bartlett	0844	All known nests empty. No bald eagles.
Cliff	0906	No new nests or bald eagles.
Horseshoe	0924	One adult on nest #11. Nest #8 mostly fallen. Nest #1 gone.
Table Mountain	0940	Two adults near #4 nest.
LF Historical BA	1009	No new nests. One adult at LF Ranch.
East Verde	1020	One adult standing in nest #6. Second adult in area.
Coldwater	1033	All known nests empty. One adult near nests #1, 3, and 4.
Upper Verde River	1044	One golden eagle nest just past Bull Run Creek.
Ladders	1046	One adult in nest #4 with fresh lining. Second adult in area.
Camp Verde	1058	No new nests or bald eagles.
Oak Creek	1110	All known nests empty. No bald eagles.
Tower	1306	One adult incubating in nest #8. Second adult in area.
Mormon Pocket nest site	1312	All known nests empty.
Perkinsville	1319	One adult incubating in nest #4. Second adult in area.
Hell Point historical BA	1340	All known nests empty. Two adults downstream at Confluence of Verde River and Hell Canyon.
Muldoon historical BA	1345	All known nests empty. One adult in area.
Granite nest site	1350	All known nests empty. Three adults in area.
Sullivan Lake nest site	1358	All known nests empty. No bald eagles.
Del Rio Ponds	1400	One adult and 7 subadults.
Lynx	1500	One adult incubating in nest #1.
Alamo	1541	Two adults standing in nest #4.
Alamo Lake Dam	1543	Two adults in area.
Ive's Wash	1548	One adult standing at nest #3.
Pleasant	1646	One adult incubating one egg in nest #2. Second adult standing at nest.

Table 12. Results of February 4, 2003, ORA flight.		
Location	Time	Comments
Granite Reef	0814	Fresh sticks in nest #2, new nest #3 on east side of river. Two adults in area.
Bull Dog	0828	One adult incubating in nest #1.
Blue Point	0830	One adult incubating in nest #10. Nest #1 not found.
Horse Mesa	0837	One adult incubating in nest #4.
Rock Creek	0849	All known nests empty. No bald eagles.
Tonto	0854	One adult incubating in nest #2.
Sheep	0902	One adult incubating in nest #1.
76	0906	All known nests empty. No eagles in area.
Dupont	0920	One adult incubating in nest #2.
Pinto	0938	One adult in area. Nest #4 appears worked on.
Pinal	0946	All known nests empty. No bald eagles.
Redmond	0950	One adult standing near empty nest #5.
Gleason Flat	1005	Tree nest is empty. Nest too small for bald eagles. No bald eagles in area.
Canyon	1129	All known nests empty. No bald eagles. Only remnants of nests #1, #2, #3, #4, and #7.
Cibecue	1142	Nest #2 recently rebuilt. Nests #7 and #8 almost gone. No bald eagles
Mule Hoof	1150	All known nests empty. No bald eagles.
Cedar Basin	1203	All known nests empty. No bald eagles.
Lone Pine	1210	One adult flushed from nest #4. Nest #2 with some recent repairs.
Talkalai	1405	All known nests empty. No bald eagles.
San Carlos	1418	All known nests empty. No bald eagles.
Suicide	1424	One adult incubating in nest #1.
Coolidge	1428	All known nests empty. One adult in area.
Granite Basin	1459	All known nests empty. No bald eagles.
Winkelman	1501	All known nests empty. No bald eagles.

Table 13. Results of March 13, 2003, ORA flight		
Location	Time	Comments
Bartlett	0746	One adult incubating in nest #1. Second adult in area.
Cliff	0813	All known nests empty. No bald eagles. Searched area extensively.
Horseshoe	0834	One adult incubating in nest #11. One subadult at north end of Horseshoe Lake.
Table Mountain	0847	Nest #4 with two eggs. One adult flying to nest #4.
LF Historical BA	0912	All known nests empty. One adult in area.
East Verde	0918	All known nests empty. One adult at Child's power plant.
Coldwater	0941	One adult incubating in nest #3.
Upper Verde River	0948	Golden eagle incubating just past Bull Run Creek.
Ladders	0952	One adult incubating in nest #4.
Camp Verde	1000	No new nests or bald eagles.
Oak Creek	1014	One adult incubating in nest #1.
Tower	1121	One adult brooding in nest #8. Second adult in area.
Mormon Pocket nest site	1129	All known nests empty. No bald eagles.
Perkinsville	1130	One adult incubating in nest #4. Second adult in area. Third adult near Wildcat Draw.
Hell Point historical BA	1145	All known nests empty. No bald eagles. Searched Hell Canyon.
Muldoon historical BA	1150	All known nests empty. One adult and 1 subadult upstream.
Granite nest site	1200	All known nests empty. Two adults in area.
Sullivan Lake nest site	1204	All known nests empty. One subadult in area.
Del Rio Ponds	1206	Four subadults in area.
Lynx	1345	Nest # 1 empty. No bald eagles.
Burro Creek	1421	All known nests empty. No bald eagles.
Devil's Post	1424	All known nests empty. No bald eagles.
Alamo	1454	All known nests empty. Two adults at Alamo Lake.
Ive's Wash	1509	One adult standing in nest #3 with white material. Second adult near dam.

Table 14. Results of March 14, 2003 ORA flight.		
Location	Time	Comments
Bull Dog	0815	One adult brooding 2 1-week old nestlings.
Blue Point	0820	One adult incubating.
Horse Mesa	0835	One adult feeding 2 2-week old nestlings.
Rock Creek	0840	One adult incubating in nest #2.
Tonto	0845	Nest failed and empty. No bald eagles.
Sheep	0850	Nest failed and empty. No bald eagles.
76	0858	One adult perched on nest tree. Nest #3 empty.
Dupont	0915	All known nests empty. No bald eagles.
Pinto	0930	All known nests empty. No bald eagles.
Pinal	0935	One adult incubating in new nest #7.
Redmond	0940	All known nests empty. No bald eagles. Nest #4 fallen.
Canyon	1000	All known nests empty. No bald eagles.
Cibecue	1115	One adult incubating in nest #2.
Mule Hoof	1118	All known nests empty. No bald eagles.
Cedar Basin	1131	All known nests empty. No bald eagles.
Lone Pine	1150	All known nests empty. No bald eagles. Nest #3 fallen.
Talkalai	1340	Two adults standing in nest #7.
San Carlos	1353	All known nests empty. No bald eagles.
Suicide	1359	One adult brooding 3 2-week old nestlings. Second adult in area.
Coolidge	1403	All known nests empty. No bald eagles.
Granite Basin	1430	All known nests empty. No bald eagles.
Winkleman	1435	All known nests empty. No bald eagles.

Table 15. Results of April 10, 2003 ORA flight		
Location	Time	Comments
Bull Dog	0755	One adult on standing in nest with 2 6-week old nestlings. Second adult in area.
Blue Point	0758	Nest #10 empty. No bald eagles in area. Two adults at Canyon dam.
Horse Mesa	0810	Two adults and 2 6-week old nestlings.
Rock Creek	0815	One adult brooding 1 1-week old nestling.
Tonto	0820	All known nests empty. One adult in area.
Sheep	0822	All known nests empty. Two adults downstream of nest area.
76	0825	All known nests empty. No bald eagles.
Dupont	0850	All known nests empty. No bald eagles.
Pinto	0900	All known nests empty. One adult in area.
Pinal	0910	All known nests empty. No bald eagles.
Redmond	0920	All known nests empty. No bald eagles.
Canyon	0930	All known nests empty. No bald eagles.
Cibecue	1100	All known nests empty. No bald eagles.
Mule Hoof	1110	All known nests empty. No bald eagles.
Cedar Basin	1017	All known nests empty. One adult.
Lone Pine	1120	All known nests empty. No bald eagles.
Lost Mule	1205	Three cliff nests. No bald eagles.
Chevelon Canyon Lake	1345	New Osprey nest #1 upstream of Chevelon Canyon Lake.
Woods Canyon Lake	1400	One new Osprey nest #1 empty.
Knoll Lake	1415	One new Osprey nest #1 with resident Osprey incubating.

Table 16. Results of April 17, 2003, ORA flight.		
Location	Time	Comments
Granite Reef	0720	Two adults in area.
Orme	0732	One 5-week old nestling.
Sycamore	0737	One fledgling (4/11). Second nestling branched.
Doka	0740	Two adults and 1 fledgling. Fledged on (4/17)
Box Bar	0745	One nestling at edge of nest.
Needle Rock	0747	One nestling.
Bartlett	0751	Two adults and 1 5-week old nestling.
Cliff	0820	Search cliffs west of Horseshoe Lake. No bald eagles.
Horseshoe	0824	One adult and 1 6-week old nestling.
Table Mountain	0831	Nest failed. No bald eagles.
East Verde	0900	All known nests empty. No bald eagles.
Coldwater	0924	One adult in nest with 2 2-week old nestlings.
Ladders	0930	Two 3-week old nestlings.
Oak Creek	0940	One adult in nest with 1 3.5-week old nestling.
Towers	0950	Two 6-week old nestlings.
Perkinsville	1003	Two 4.5-week old nestlings.
Hell Point historical BA	1016	All known nests empty. No bald eagles.
Muldoon historical BA	1023	All known nests empty. No bald eagles.
Granite nest site	1028	All known nests empty. No bald eagles.
Sullivan Lake nest site	1030	All known nests empty. No bald eagles.
Alamo	1230	All known nests empty. No bald eagles.
Ive's Wash	1245	All known nests empty. No bald eagles.

Table 17. Results of April 25, 2003, ORA flight.		
Location	Time	Comments
Perkinsville	0825	Two 5.5-week old nestlings.
Oak Creek	0850	One 4.5-week old nestling. One adult in area.
West Clear Creek	0910	No new nests or bald eagles.
Blue Ridge Reservoir	0930	No new nests or bald eagles.
Stoneman Lake	0940	Appeared recently dry. No new nests and no bald eagles.
Coldwater	1150	One adult and 2 4-week old nestlings.
East Verde	1205	All known nests empty. One adult.
Horseshoe	1235	One 6-week old nestling (landed for banding). One adult in area.
Cliff	1530	No new nests or bald eagles.

Table 18. Results of May 16, 2003, ORA flight.		
Location	Time	Comments
Rock Creek	0650	One 6-7-week old nestling.
Horse Mesa	0700	Two 8-week old nestlings.
Bulldog	0715	Two 8-week old nestlings.
Orme	0720	One nestling perched above nest.
Bartlett	0728	One 9-week old nestling.
Cliff	0745	Search surrounding area. No new nests.
Horseshoe	0825	One 8-week old nestling.
Coldwater	0900	One adult and 1 7-week nestling.
Ladders	0920	Two adults and 2 7-week old nestlings.
Oak Creek	0955	One 7.5-week old nestling.
Tower	1230	Two 10-week old nestlings.
Perkinsville	1300	One 8.5-week old nestling. Could not find second nestling in BA.
Agua Fria River	1420	No new nests or bald eagles.

Table 19. Results of June 13, 2003, ORA flight.		
Location	Time	Comments
Orme	0634	One fledgling downstream of nest.
Bulldog	0642	All known nests empty. No bald eagles.
Horse Mesa	0650	All known nests empty. One adult near Canyon Lake.
Rock Creek	0712	All known nests empty. No bald eagles.
Talkalai	0800	All known nests empty. No bald eagles.
San Carlos	0810	All known nests empty. No bald eagles.
Coolidge	0830	Two nestlings in nest. Two adults flying in area.
Willow Springs Lake	1115	No bald eagles. One osprey.
Chevron Canyon Lake	1118	One adult at lake. Upstream nest empty.
Woods Canyon Lake	1125	Two additional osprey nests #2 and #3 found. No bald eagles.
Bear Canyon Lake	1151	No bald eagles. One osprey.
Knoll Lake	1202	Two additional osprey nests #2 and #3 found. No bald eagles. Two ospreys.
Blue Ridge Reservoir	1220	No new nests or bald eagles.
Perkinsville	1255	No bald eagles. Nest empty.
Tower	1305	One adult bald eagle. Nest empty.
Oak Creek	1415	Nestling branched.
Ladders	1430	Two 11-week old nestlings in nest.
Coldwater	1432	All known nests empty. No bald eagles. Lots of white wash.
Horseshoe	1500	Nest empty. No bald eagles.
Cliff	1510	No new nests or bald eagles.