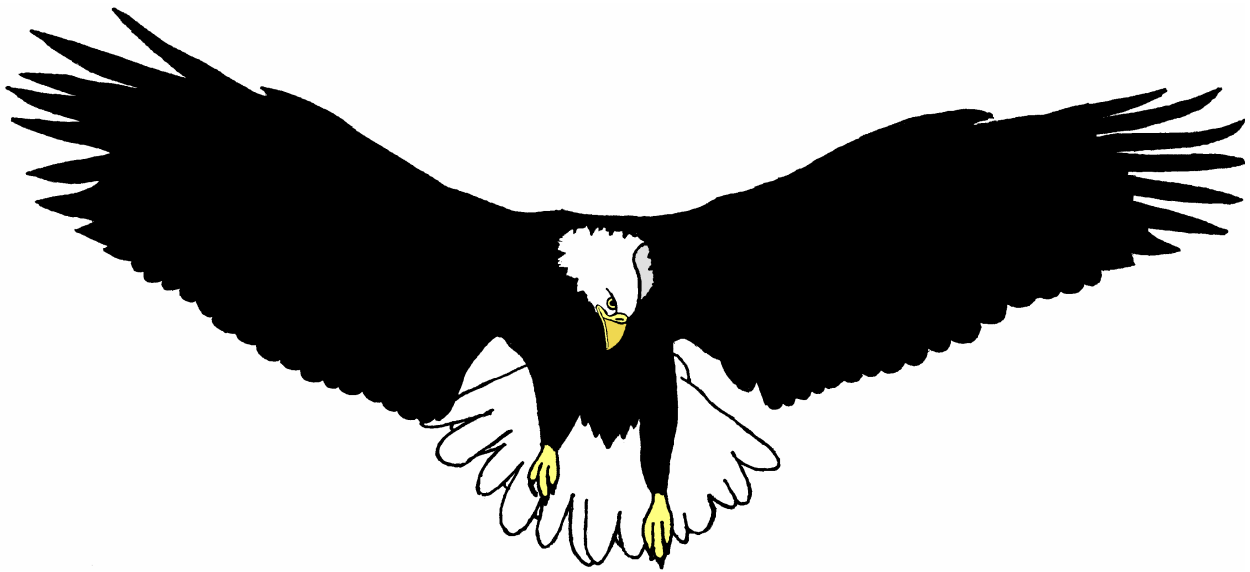


ARIZONA BALD EAGLE 2001 NEST SURVEY

John G. Koloszar, Nongame Birds Biologist
James T. Driscoll, Bald Eagle Management Coordinator
Nongame Branch, Wildlife Management Division



Technical Report 189
Nongame and Endangered Wildlife Program
Program Chief: Terry B. Johnson
Arizona Game and Fish Department
2221 West Greenway Road
Phoenix, Arizona 85023-4399

December 2001

CIVIL RIGHTS AND DIVERSITY COMPLIANCE

The Arizona Game and Fish Commission receives federal financial assistance in Sport Fish and Wildlife Restoration. Under Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, the U.S. Department of the Interior prohibits discrimination on the basis of race, color, religion, national origin, age, sex, or disability. If you believe you have been discriminated against in any program, activity, or facility as described above, or if you desire further information please write to:

Arizona Game and Fish Department
Office of the Deputy Director, DOHQ
2221 West Greenway Road
Phoenix, Arizona 85023-4399

and

The Office for Diversity and Civil Rights
U.S. Fish and Wildlife Service
4040 North Fairfax Drive, Room 300
Arlington, Virginia 22203

AMERICANS WITH DISABILITIES ACT COMPLIANCE

The Arizona Game and Fish Department complies with all provisions of the Americans with Disabilities Act. This document is available in alternative format by contacting the Arizona Game and Fish Department, Office of the Deputy Director at the address listed above or by calling (602) 789-3290 or TTY 1-800-367-8939.

RECOMMENDED CITATION

Koloszar J.G. and J.T. Driscoll. 2001. Arizona bald eagle 2001 nest survey. Nongame and Endangered Wildlife Program Technical Report 189. Arizona Game and Fish Department, Phoenix, Arizona.

ACKNOWLEDGMENTS

We thank the following agencies and individuals for assistance in this project: Abigail Meyers, Mike Neil, Arizona Public Service; Marilyn Ethelbah, Ft. McDowell Yavapai Nation; Steve Parker, Debra Frein, Salt River Pima-Maricopa Indian Community; Bob Culver, Bill Hines, John Keane, Lance Stewart, Salt River Project; Casandra Schlefsky, Homer J. Stevens, San Carlos Apache Recreation and Wildlife Department; Bob Hall, U.S. Bureau of Land Management; Henry Messing, Mark Santee, U.S. Bureau of Reclamation; Bob Berry, U.S. Department of Defense (Luke Air Force Base); Greg Beatty, Tom Gatz, Michelle James, U.S. Fish and Wildlife Service; Cavetta Jones, Genevieve Masters, Mike Ross, Albert Sillas, Todd Willard, Craig Woods, U.S. Forest Service; Cynthia Westfall, White Mountain Apache Recreation and Wildlife Department; and Bill Burger, Basil Coffman, Dan Groebner, Dave Hunt, Mike Ingraldi, Susi MacVean, Bob Vahle, and Bill Van Pelt, Arizona Game and Fish Department.

PROJECT FUNDING

Funding for this protect 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); Arizona Public Service; Army Corps of Engineers; Fort McDowell Yavapai Nation; Geomarine Incorporated; Salt River Project; U.S. Bureau of Land Management; U.S. Bureau of Reclamation; U.S. Department of Defense (Luke Air Force Base); and U.S. Forest Service.

TABLE OF CONTENTS

Introduction 1

Survey Area 1

Methods 2

Results 3

Discussion..... 5

 Survey Sites 5

 Historical BAs..... 6

 Survey Sites with Existing Large Nests..... 6

 Breeding Areas..... 6

 Overview 7

Management Recommendations 8

Literature Cited 9

Appendix A: Postupalsky's (1974) Raptor Reproductive Success Criteria 12

Appendix B: Bald Eagle Reproductive Summaries 13

Appendix C: Nest Survey Summaries 15

Appendix D: 2001 Winter Count/ORR Flight Summaries 17

LIST OF FIGURES

Figure 1. Known Arizona Bald Eagle BAs, 2001 4

LIST OF TABLES

Table 1. Arizona bald eagle breeding area productivity summary.....	13
Table 2. Arizona bald eagle productivity summary,	14
Table 3. Arizona bald eagle nest survey summary: new locations surveyed,	15
Table 4. Arizona bald eagle nest survey summary: historical BAs surveyed,	15
Table 5. Arizona bald eagle nest survey summary: nest sites surveyed,	16
Table 8. Arizona bald eagle nest survey summary: BAs surveyed,	16
Table 7. Results of January 8, 2001, winter count	17
Table 8. Results of January 9, 2001, winter count	17
Table 9. Results of January 11, 2001, winter count	17
Table 10. Results of January 15, 2001, winter count	18
Table 11. Results of January 22, 2001, winter count	18
Table 12. Results of January 29, 2001, ORA flight	19
Table 13. Results of January 30, 2001, ORA flight	20
Table 14. Results of March 6, 2001, ORA flight	21
Table 15. Results of March 12, 2001, ORA flight	22
Table 16. Results of April 12, 2001, ORA flight	23
Table 15. Results of April 19, 2001, ORA flight	24
Table 18. Results of May 21, 2001, ORA flight	24
Table 19. Results of June 15, 2001, ORA flight.....	25

ARIZONA BALD EAGLE 2001 NEST SURVEY

John G. Koloszar and James T. Driscoll

INTRODUCTION

In 1978, the U.S. Fish and Wildlife Service (USFWS) classified the bald eagle (*Haliaeetus leucocephalus*) as endangered in 43 states (including Arizona) and threatened in five others (USFWS 1982). In Alaska, the USFWS did not list the species and it does not occur in Hawaii. The USFWS downlisted the bald eagle to threatened in 1995 (USFWS 1995), and has proposed to delist the species (USFWS 1999). Until delisting, bald eagle protection continues under the Endangered Species Act. Thereafter, the Airborne Hunting Act, the Bald and Golden Eagle Protection Act, the Lacey Act, the Migratory Bird Treaty Act, Convention of International Trade of Endangered Species, and A.R.S. Title 17 will protect the species.

In Arizona, only three breeding areas (BA) existed 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 et al. 1988; Tibbitts et al. 1989, 1990; Corman and Rayner 1991; Driscoll et al. 1992, 1995a, 1995b, 1997, 1998, 1999; Driscoll and Beatty 1994; Koloszar and Driscoll 2001). The Arizona Game and Fish Department (AGFD) administered and performed the 2001 nest survey, in cooperation with Arizona Public Service, Fort McDowell Yavapai Nation, Salt River Pima-Maricopa Indian Community, Salt River Project (SRP), San Carlos Apache Recreation and Wildlife Department, 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, Verde Valley Train, 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, 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 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, south to Aravaipa Creek, west to the Bill Williams River below Alamo Dam, and east to the Becker Lake near Springerville. Survey elevations ranged from 960 ft (293 m) at the Bill Williams River, to 6910 ft (2106 m) at Becker Lake.

Most surveys were conducted within the following biotic communities (Brown 1982): Great Basin Conifer Woodland, Interior Chaparral, Plains Grassland, Great Basin Grassland, Rocky Mountain Montane Conifer Forest, Madrean Montane Conifer Forest, and Sonoran Desertscrub-Arizona

Upland Subdivision. Other biotic communities visited include Chihuahuan Desertscrub, Mohave Desertscrub, and Sonoran Desertscrub-Lower Colorado Subdivision.

Plant species vary in each of these biotic communities. Characteristic species of the Great Basin Conifer Woodland are junipers (*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*) exist in the Interior Chaparral. Typical species of the Plains Grassland and Great Basin Grassland include bluestem grasses (*Andropogon* spp.), cholla and prickly pear cacti (*Opuntia* spp.), grama grasses (*Bouteloua* spp.), junipers, and sagebrush (*Artemisia* spp.). Species often found in the Rocky Mountain and Madrean Montane Conifer Forest are firs (*Pseudotsuga* spp.), junipers, oaks (*Quercus* spp.), pines, and spruces (*Picea* spp.). Common species in the Sonoran Desertscrub-Arizona Upland Subdivision are barrel cacti (*Ferocactus* spp.), cholla and prickly pear cacti, creosotebush (*Larrea tridentata*), foothill palo verde (*Cercidium microphyllum*), mesquite (*Prosopis* spp.), and saguaro (*Carnegiea gigantea*).

Excluding the Dupont, Luna and Rock Creek BAs (located in Rocky Mountain and Madrean Montane Conifer Forest), all other current BAs contain riparian vegetation of the Sonoran Riparian Deciduous Forest type. This includes plant species such as Arizona black walnut (*Juglans major*), catclaw (*Acacia greggii*), Fremont cottonwood (*Populus fremontii*), mesquite, introduced salt cedar (*Tamarix pentandra*), sycamore (*Platanus* spp.), and willow (*Salix* spp.).

METHODS

The presence of nests, habitat quality, previous 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 2000 (Driscoll et al. 1992, 1995a, 1995b, 1997, 1998, 1999; Driscoll and Beatty 1994; Koloszar and Driscoll 2001). Also investigated were reports of bald eagles, and/or nests by other biologists, agencies, and the public.

A one to three person team conducted surveys between January and June 2001. Boats, helicopters, and trucks helped us access survey areas. We used Questar spotting scopes (40-160x), 10x50 binoculars, and nest map atlases from Hunt et al. (1992), and SRP (1998) to aid observations, relocate historical BAs, and find alternate nests in existing BAs.

Numbers assigned to new nests are consecutive to the last number assigned in that breeding area. Nest numbers assigned before this document can be found in Driscoll et al. (1992, 1995a, 1995b, 1997, 1998, 1999), Driscoll and Beatty (1994), Hunt et al. (1992), and Koloszar and Driscoll (2001).

We recorded habitat quality, human activity, sightings of other species, and plotted nests. Determination of breeding status followed Postupalsky's (1974) criteria (Appendix A). "Tall" and "short," "large" and "small" are terms used in this report to describe cliff height, tree, and nest

size. "Tall" and "large" refer to structures suitable for breeding bald eagles (compared to current Arizona bald eagle nests and locations). Conversely, "short" and/or "small" are of inadequate height and size.

Winter count flights (January) and monthly occupancy and reproduction assessment (ORA) flights (February to June) helped locate nests and survey for new BAs. ORA flights were conducted during specific breeding stages (i.e. incubation, the presence of nestlings, fledging). A helicopter, provided by SRP and USBR, flew at approximately 200 ft (70 m) above ground level and at 45 to 70 mph (50 to 60 kt). Drainage topography, high-tension wires, and wind influenced altitude and speed. If occupancy could not be determined from the air, a ground search ensued.

RESULTS

We examined all 43 BAs for breeding activity (Fig. 1). In 37 occupied BAs, there were 29 breeding attempts, and 19 pairs successfully produced 28 fledglings (Appendix B).

We surveyed 11 locations for new BAs, found no new bald eagle nest, one nest of unknown species, and observed bald eagles in five (Appendix C, Table 3). Surveyed areas include the lower Black River and nearby tanks (George's Basin, and Nash Creek Reservoir), Burro Creek (Six Mile Crossing), lower Gila River, Goldwater lakes (near Prescott), lower Salt River, upper Salt River, lower San Pedro River, Tanks Canyon (near the Salt River Canyon), lower Verde River, upper Verde River and West Clear Creek. We recorded sightings of bald eagles at the lower Salt River, upper Salt River, Tanks Canyon, lower Verde River, and the upper Verde River.

Of the 24 historical BAs in Arizona (Hunt et al. 1992, Driscoll et al. 1997 and 1999), we relocated historic nests at Ash, Eagle, Hell Point, Muldoon, and Sullivan BAs and observed bald eagles at Eagle, LF, Muldoon, Needle Rock, Rock Creek and Sullivan BAs (Appendix C, Table 4). USFS personnel found a new large nest (nest #2), and an adult bald eagle near the Rock Creek historical BA. A flight in August confirmed reoccupancy of Rock Creek BA. In 2003, Devil's Post and Mule Hoof BAs will be removed from the list of current BAs and designated as historical after being unoccupied for 10 consecutive years.

We monitored seven nest sites of other or unknown species (Driscoll et al. 1992, 1995a, 1995b, 1997, 1998, 1999; Driscoll and Beatty 1994; Koloszar and Driscoll 2001) for bald eagle activity (Appendix C, Table 5). These include five golden eagle (Granite, Hell Canyon, Mormon Pocket, Sullivan Lake, and Watson Lake) and two osprey nest sites (Granite Reef Dam, and Lynx Lake). We observed bald eagles at Granite, Granite Reef, Lynx Lake, Mormon Pocket, and Watson Lake nest sites.

Surveys in 18 known BAs revealed three new/rebuilt bald eagle nests. We found new alternate nests at Orme (nest #6), Pinto (nest #5), and Sycamore (nest #4). We discovered Orme nest #6

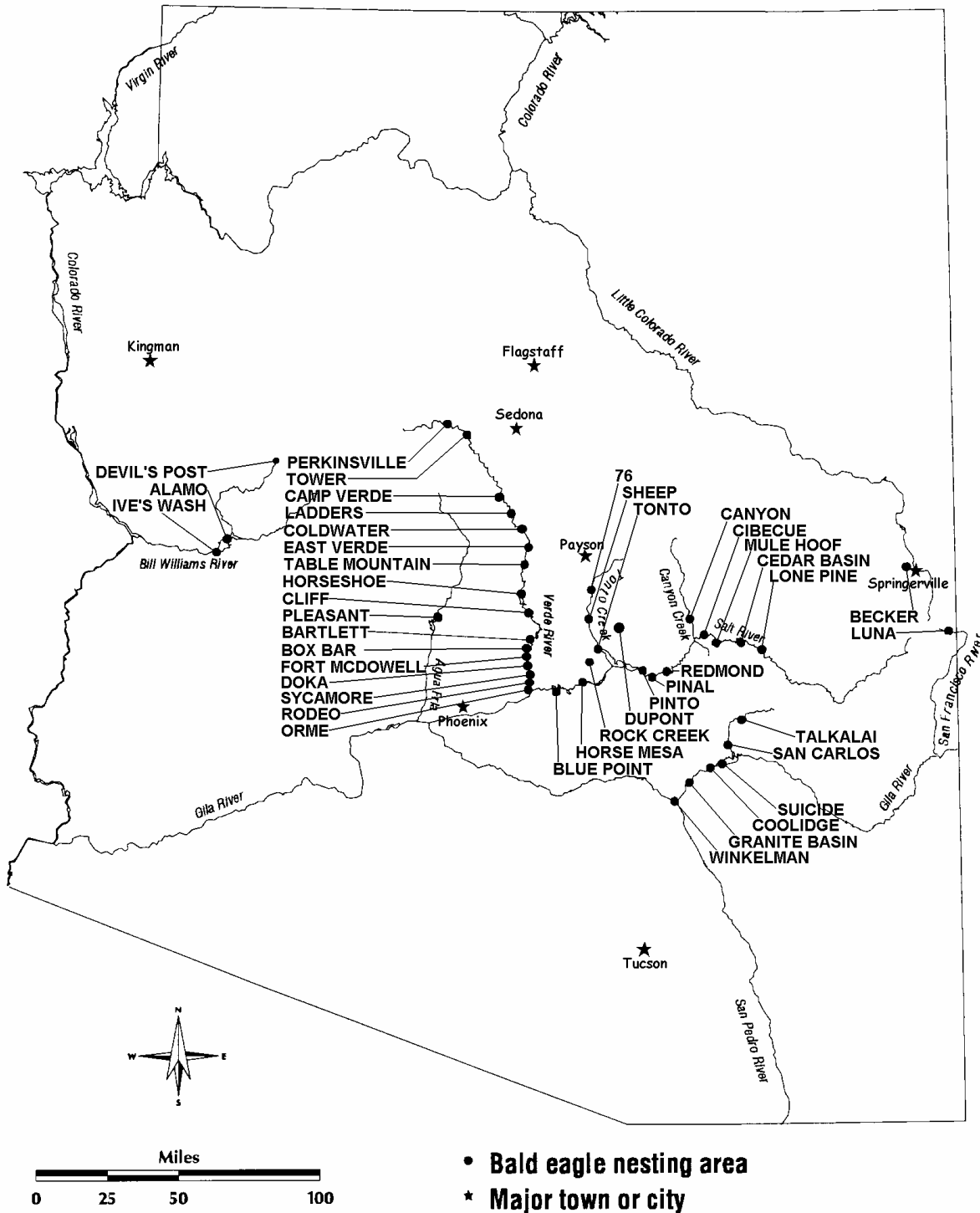


Figure 1. Known Arizona Bald Eagle BAs, 2001.

last year, and presumed it to be occupied by the Orme pair. However, after discovery of a new nest, and identification of the adults, we found Orme nest #6 was occupied by a new pair (Rodeo BA). Orme nest #6 (Koloszar and Driscoll 2001) was renumbered Rodeo nest #1, and we named the new nest Orme nest #6.

Three bald eagle nests fell this season. Horseshoe nest #12 and Sycamore nest #3 fell prior to the winter count flight. Dupont nest #1 fell before our February ORA flight.

DISCUSSION

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

SURVEY SITES

Goldwater Lakes

The Prescott area lakes have been the focus of nest surveys for many years, due to the abundance of suitable nesting substrate (cliffs, pinnacles, large cottonwoods and conifers), and the multitude of stocked lakes. Watson and Lynx lakes have been our primary focus, but sightings of bald eagles by USFS biologists in late spring on the Goldwater lakes prompted helicopter surveys in April and May. No bald eagles or nests were observed and nest substrate size (small trees and no cliffs) was limited in the area immediately adjacent to the lakes.

Lower San Pedro River

After receiving reports of bald eagles carrying sticks south from the confluence of the Gila and San Pedro rivers, we surveyed the San Pedro from Winkelman to Aravaipa Creek. No new nests or bald eagles were found. Nest substrate is limited to immature cottonwoods on the San Pedro River. The only suitable foraging area would be on the Gila River.

Lower Salt River

Given the dense occupancy on the lower Verde River, we continue to examine the lower Salt River for similar occurrence. Although we found no new BAs, we did find a new large nest of an unknown species, and continue to document presence of an additional pair downstream Stewart Mountain Dam. The new nest is downstream of the confluence of the Salt and Verde rivers.

HISTORICAL BAS

Rock Creek

The historical Rock Creek BA has not been occupied since 1955, and the nest tree was destroyed by fire in 1959 (Hunt et al 1992). This year, Genevieve Masters, USFS, reported an adult bald eagle and a large nest in a pine tree near Buckhorn Mountain. We flew the area on August 16 and discovered a large nest in one of the only pine stands remaining after the Four Peaks fire. The new nest is five miles south of the historic BA nest location.

Muldoon

Although all known historic nests were empty and no new nests were found, we observed adult bald eagles on three ORA flights.

SURVEY SITES WITH EXISTING LARGE NESTS

We observed no significant activity at the existing large nest sites this year.

BREEDING AREAS

Cliff

The pair occupying the Cliff BA has not laid eggs since 1994. Since then, each year we have surveyed the BA for new nests, and monitored presence of bald eagles (Driscoll et al. 1992, 1995a, 1995b, 1997, 1998, 1999; Driscoll and Beatty 1994; Koloszar and Driscoll 2001). This year we observed bald eagles on every ORA flight. However, all known nests were empty and no new nests were found. On a ground visit in March, we observed two adults perched on the nest cliff, showing territorial aggression toward near by nesting ravens.

Devil's Post

Devil's Post was last occupied and no new nests have been constructed since 1992. If the Devil's Post BA remains unoccupied in 2002, it will be removed from the list of known BAs and designated historical, after remaining unoccupied for ten consecutive years.

Dupont

Prior to the winter count, Dupont nest #1 fell. In March, we observed both adults standing in renovated nest # 2, although no new nests were found.

Mule Hoof

Mule Hoof was last occupied in, and no new nests have been constructed since, 1992. If the Mule Hoof BA remains unoccupied in 2002, it will be removed from the list of known BAs and designated historical, after remaining unoccupied for ten consecutive years.

Orme

We discovered Orme nest #6 last year and presumed it to be occupied by the Orme pair. However,

after discovery of a new nest, and identification of the adults, we found Orme nest #6 was occupied by a new pair (Rodeo BA). Orme nest #6 (Kolozsar and Driscoll 2001) was renumbered Rodeo nest #1, and we named the new nest Orme nest #6.

Pinto

On the winter count flight, we observed the Pinto pair incubating in a new nest #5. Nest #5 is located in the remaining portion of the old nest #3 tree.

Rodeo

Orme nest #6 was thought to be occupied by the Orme pair in 2000. However, identification of the adults in 2001 revealed this nest is actually occupied by a new pair, and the Orme pair had built a new nest near the confluence of the Salt and Verde rivers. Orme nest #6 was renamed Rodeo nest #1 and the new Orme nest is now nest #6.

San Carlos

Nest #3 was renovated, but we observed no birds on the winter count. Recent woodcutting was evident within the nest grove during a ground visit on March 16, and the adjacent heron rookery was abandoned. All known nests were empty and no new nests were found.

Sycamore

Nest #3 fell during the winter, and we found the breeding pair in a new nest #4 on the winter count flight.

OVERVIEW

Significant findings include the discovery of one new BA (Rodeo) and one reoccupied historic BA (Rock Creek), We found three new alternate bald eagle nests, one nest of unknown species, and three fallen nests.

The Rock Creek BA, similar to the Dupont BA, is a substantial distance from any suitable foraging location, and the elevation is well above the lake (4500 ft). With reoccupancy of the Rock Creek historical BA, we now have five BAs near Roosevelt Lake (Dupont, Tonto, Pinto, and Pinal BAs). Because the Rock Creek and Dupont BAs are located off the lake, the limiting factor for these pairs productivity may be nesting substrate close to the lake. However, both pairs have suitable nesting substrate in the canyons of Salome and Rock Creek. Continuous monitoring of the productivity alone will not show if this distance has an effect on productivity. Identifying foraging areas, foraging attempts, and the time spent in obtaining prey through use of telemetry may contribute to identifying the factors limiting productivity.

The consistent observations of bald eagles around the Cliff BA warrant continued search efforts in the future. Since the pair's last known breeding attempt in 1996, many factors (adult replacement,

disturbance during the breeding cycle, unknown nest locations etc.) may be affecting documentation of the breeding attempt. We will continue to search this location annually for new nests.

Taking into account the activity of nearby BAs, observations below Stewart Mountain Dam also suggest bald eagles maybe setting up new BAs on the lower Salt River. A large nest by an unknown species near the Granite Reef Dam, coupled with observation of an additional pair near Stewart Mountain Dam, lends support to our conclusion. We will continue to survey the lower Salt River for further bald eagle activity.

Devil's Post and Mule Hoof BAs were last occupied and no new nests have been constructed since 1992. If these BAs remain unoccupied in 2002, both will be removed from the list of known BAs and designated historical, after remaining unoccupied for ten consecutive years.

Constant monitoring through ORA flights, and additional support from the Arizona Bald Eagle Nestwatch Program, allowed us to document that at least 37 nestlings hatched, and 28 survived to fledge from the 19 successful nests. This is the second highest number of fledglings produced since in 1999 (32 fledglings).

MANAGEMENT RECOMMENDATIONS

Future survey efforts should monitor historical BAs, potential BAs, and large nests reported in Driscoll et al. (1992, 1995a, 1995b, 1997, 1998, 1999), Driscoll and Beatty (1994), Hunt et al. (1992), and Koloszar and Driscoll (2001). These documents are useful tools for locating new BAs. Since 1992, these reports have described four reoccupied historical BAs and 11 new BAs.

Create digitized maps plotting all current nests and nest sites suitable for bald eagles. Locations should be recorded on 7.5 minute computerized topographic maps to increase accuracy and accessibility. This will also prove beneficial to future studies of other species (i.e. golden eagles and ospreys).

Documenting the current and dynamic changes of riparian habitat status as related to bald eagle nesting substrate (cottonwoods and willows) could provide a list of areas for proactive habitat improvement projects.

Surveyors should continue to use the nest survey, ORA, and winter count flights, in concert with follow-up ground surveys, to inspect areas. From the air, surveyors can easily cover large sections of bald eagle habitat. Follow-up ground surveys thoroughly investigate an area.

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

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

Big Sandy River drainage - Upper Trout Creek.

Bill Williams River drainage - Bill Williams National Wildlife Refuge

- Black River drainage - Little and Big Bonito creeks to the confluence of the Black River, Paucity 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, Chevelon Canyon Lake, Cholla Lake, Christmas Tree Lake, Doney Park, Dry Lake, George's Basin, Nash Creek Reservoir, Phillips Park Tank, Paucity Lake, Point of Pines, Roger's Lake, Tonto 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.
- Salt River drainage - Blue Point BA to Orme BA, Gun/Tonto creek confluence, Mormon Flat Dam, Redmond BA to Canyon BA, Mule Hoof BA to Cedar Basin BA, Tanks Canyon.
- White River – Whiteriver to confluence with Black and Salt rivers.

LITERATURE CITED

- Brown D.E. (ed.). 1982. Biotic communities of the American Southwest - United States and Mexico. University of Arizona. Desert Plants 4:1-342.
- Corman, T.E. and J.J. Rayner. 1991. 1991 Arizona bald eagle nest survey final report and recommendations. Arizona Game and Fish Department, Phoenix, Arizona.
- Driscoll J.T. and G. L. Beatty. 1994. 1993 Arizona bald eagle nest survey. Nongame and Endangered Wildlife Program Technical Report 31. Arizona Game and Fish Department, Phoenix, Arizona.
- Driscoll J.T., G.L. Beatty, and J.D. Hanna. 1992. 1992 Arizona bald eagle nest survey final report and recommendations. Nongame and Endangered Wildlife Program Technical Report. Arizona Game and Fish Department, Phoenix, Arizona.
- Driscoll J.T., G.L. Beatty, and J.G. Koloszar. 1995b. Arizona bald eagle 1995 nest survey. Nongame and Endangered Wildlife Program Technical Report 87. Arizona Game and Fish Department, Phoenix, Arizona.
- Driscoll J.T., G.L. Beatty, and M.C. Siemens. 1995a. Arizona bald eagle 1994 nest survey. Nongame and Endangered Wildlife Program Technical Report 71. Arizona Game and Fish Department, Phoenix, Arizona.

- Driscoll J.T., G.L. Beatty, and J.G. Koloszar. 1997. Arizona bald eagle 1996 nest survey. Nongame and Endangered Wildlife Program Technical Report 117. Arizona Game and Fish Department, Phoenix, Arizona.
- Driscoll J.T., G.L. Beatty, and J.G. Koloszar. 1998. Arizona bald eagle 1997 nest survey. Nongame and Endangered Wildlife Program Technical Report 127. Arizona Game and Fish Department, Phoenix, Arizona.
- Driscoll J.T., G.L. Beatty, and J.G. Koloszar. 1999. Arizona bald eagle 1998 nest survey. Nongame and Endangered Wildlife Program Technical Report 138. Arizona Game and Fish Department, Phoenix, Arizona.
- Driscoll J.T., G.L. Beatty, and M.C. Siemens. 1995a. Arizona bald eagle 1994 nest survey. Nongame and Endangered Wildlife Program Technical Report 71. Arizona Game and Fish Department, Phoenix, Arizona.
- Glinski, R.L. 1985. Bald eagle nesting survey in Arizona: 1985 reconnaissance and recommendations. Arizona Game and Fish Department, Phoenix, Arizona.
- Glinski, R.L. 1986. Bald eagle nesting survey in Arizona: 1986 reconnaissance and recommendations. Arizona Game and Fish Department, Phoenix, Arizona.
- Gooch, M.T., T.J. Tibbitts, and R.L. Glinski. 1988. Bald eagle nesting survey in Arizona: 1988 reconnaissance and recommendations. Arizona Game and Fish Department, Phoenix, Arizona.
- Grubb, T.G. 1986. Arizona bald eagle research 1983-1985, final report. U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Tempe, Arizona.
- Hildebrandt, T.D. and R.L. Glinski. 1987. Bald eagle nesting survey in Arizona: 1987 reconnaissance and recommendations. Arizona Game and Fish Department, Phoenix, Arizona.
- Hunt, W.G., D.E. Driscoll, E.W. Bianchi, and R.E. Jackman. 1992. Ecology of bald eagles in Arizona. Volumes A-F. Report to U.S. Bureau of Reclamation, Contract 6-CS-30-04470. BioSystems Analysis, Inc., Santa Cruz, California.
- Koloszar J.G. and J.T. Driscoll. 2001. Arizona bald eagle 1999 and 2000 nest survey. Nongame and Endangered Wildlife Program Technical Report 182. Arizona Game and Fish Department, Phoenix, Arizona.

- Postupalsky, S. 1974. Raptor reproductive success: some problems with methods, criteria, and terminology. *In* F.N. Hammerstrom, B.E. Harrell and R.R. Olendorff, Eds. Management of raptors. Proceedings of the conference on raptor conservation techniques. Raptor Research Report 2:21-31.
- Rubink, D.M. and K. Podborny. 1976. The southern bald eagle in Arizona: a status report. U.S. Fish and Wildlife Service Endangered Species Report 1. Albuquerque, New Mexico.
- Tibbitts, T.J., T.J. Bagley, and C.D. Bagnoli. 1989. 1989 Arizona bald eagle nest search final report and recommendations. Arizona Game and Fish Department, Phoenix, Arizona.
- Tibbitts, T.J., M.J. Cross, and D.K. Ward. 1990. 1990 Arizona bald eagle nest survey report and recommendations. Arizona Game and Fish Department, Phoenix, Arizona.
- U.S. Fish and Wildlife Service. 1982. Bald eagle recovery plan (southwestern population). U.S. Fish and Wildlife Service, Albuquerque, New Mexico.
- U.S. Fish and Wildlife Service. 1995. Endangered and threatened species: bald eagle reclassification; final rule. Federal Register. 60(133): 36000-10. Department of the Interior, Washington, D.C.
- U.S. Fish and Wildlife Service. 1999. Endangered and threatened wildlife and plants; proposed rule to remove the bald eagle in the lower 48 states from the list of endangered and threatened wildlife; proposed rule. Federal Register. 64(128):36454-64. Department of the Interior, Washington, D.C.

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 Nest:	Any nest, which at least one of the following activity patterns was observed during the breeding season: <ul style="list-style-type: none">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.
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.

APPENDIX B: 2001 BALD EAGLE REPRODUCTION SUMMARIES

Table 1. Arizona bald eagle breeding area productivity summary, 2001.								
Breeding Area	Status ¹	Nest ²	Incubation Date	Eggs	Hatch Date	Young	Fledged	Fledge Date
Alamo	F	4	1/8-1/29	2	Failed 3/12-23			
Bartlett	F	2	2/3-3/4	1+	Failed 3/22-4/12			
Becker	O							
Blue Point	S	10	1/9-30	3+	1/30-3/1	3	1	4/19-5/21
	Two nestlings disappeared between 5.5–10.0 weeks of age.							
Box Bar*	S	3	>1/8	2+	2/9	2	2	5/7-12
Camp Verde	U							
Canyon	U							
Cedar Basin	O							
Cibecue	O							
Cliff	O							
Coldwater	F	3	1/29-3/12	1+	Failed 3/12-4/12			
Coolidge	F	2	1/30-3/6	1+	Failed 3/6-4/19			
Devil's Post	U							
Doka*	S	1	>1/8	2+	1/8-29	2	2	4/4, 4/5
Dupont	O							
East Verde	F	6	3/12-4/12	1+	Failed 4/12-6/15			
Fort McDowell*	S	17	>1/8	2+	2/4	2	2	4/27, 5/9-11
Granite Basin	F	1	1/30-3/6	1+	Failed 3/6-4/19			
Horse Mesa	S	4	1/9-30	2+	1/30-3/6	2	1	4/19-5/21
	One nestling disappeared between 6.0-10.5 weeks of age.							
Horseshoe*	S	11	1/29-2/3	2	3/6, 8	2	2	4/20-6/15
Ive's Wash	O							
Ladders*	S	4	1/29-2/5	2+	3/12-19	2	1	4/30-6/15
	One nestling disappeared between 6.0-12.5 weeks of age.							
Lone Pine	S	2	1/30-3/6	2+	3/6-4/19	2	1	>5/21
	One nestling died at 4.5 weeks old. Second nestling last observed on 5/21 at 7.5 weeks old.							
Luna*	F	1	>2/3	1+	3/5	1	Failed 3/11-16	
Mule Hoof	U							
Orme	S	6	1/30-3/1	1+	3/12-4/12	1	1	5/21-6/15
Perkinsville	S	4	1/30-3/12	1+	3/12-4/12	1	1	>6/15
Pinal	U							
Pinto	S	5	>1/15	2+	1/30-2/18	2	2	4/19-5/8
Pleasant*	S	2	1/8-2/3	2+	2/12-15	2	2	5/6, 5/7-11
Redmond	S	5	1/30-3/6	1+	3/6-4/19	1	1	5/21-6/15
Rodeo	F	1	1/30-3/1	1+	Failed 1/30-3/1			
Rock Creek	O							
San Carlos	O							
76	S	3	1/15-30	2+	3/6-31	2	2	5/21-6/15
Sheep	F	1	2/18-3/6	2+	3/6-4/19	2	Failed 5/11-21	
	Two nestlings disappeared between 5.0-6.0 weeks old.							

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

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

* 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
Suicide	S	1	1/30-3/6	2+	3/6-16	2	2	>5/21
Sycamore*	S	4	1/8-29	2+	2/12-15	2	2	5/9, 5/11
Table Mountain	F	4	1/29-2/12	1+	3/12-4/12	1	Failed 4/12-6/15	
	Nestling disappeared between 2.5-11.5 weeks of age.							
Talkalai	S	7	1/15-30	1+	1/30-3/6	1	1	4/19-5/21
	Nestling disappeared between 7.0-11.5 weeks of age.							
Tonto*	S	2	>1/15	2	1/30-2/16	1	1	4/22-5/8
Tower*	S	8	1/21-24	2	2/26-3/1	1	1	5/20-30
Winkelman	U							

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

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

* Nests monitored by the Arizona Bald Eagle Nestwatch Program.

Table 2. Arizona bald eagle productivity summary, 2001.			
Number of Bas	43	Number of Active BAs	29
Number of Occupied BAs	37	Number of Failed Breeding Attempts	10
Number of Eggs	47	Number of Successful Breeding Attempts	19
Nest Success = 19/37	0.51	Number of Young Hatched	37
Mean Brood Size = 28/19	1.47	Number of Young Fledged	28
		Productivity = 0.51 x 1.47	0.75

APPENDIX C: NEST SURVEY SUMMARIES

Table 3. Arizona bald eagle nest survey summary: new locations surveyed, 2001.			
New Locations	Date	Method	Results
Lower Black River Tanks	3/6, 4/19	Helicopter	No new nests or bald eagles.
Burro Creek	1/29	Helicopter	No new nests or bald eagles.
Lower Gila River	4/19, 5/21	Helicopter	No new nests or bald eagles.
Goldwater Lakes	4/12, 5/26	Helicopter	No new nests or bald eagles.
Lower Salt River	1/9, 1/30, 3/6, 3/12, 4/12, 4/19, 5/21	Helicopter	Two adults and one subadult on 1/9. One adult near Blue Point cliffs on 1/30. Two adults and 10 subadults near Blue Point Bridge on 3/6. Two adults below Verde confluence on 3/12. Found a new nest between Granite Reef Dam and Verde confluence on 4/12. One adult and two subadults near Blue Point cliffs on 4/19.
Upper Salt River	1/11, 1/30	Helicopter	Four adults and one subadult just upstream of Carrizo Creek confluence on 1/11.
Lower San Pedro River	4/19, 5/21	Helicopter	No new nests or bald eagles.
Tanks Canyon	1/15, 1/30, 3/6	Helicopter	Two adults on 1/15.
Lower Verde River	1/29, 1/30, 4/12	Helicopter Ground	One adult near Orme nest #6 (now Rodeo nest #1), two adults near new Orme nest #6 on 1/29 and 1/30. One subadult on Yellow Cliffs, north end Bartlett Lake on 4/12.
Upper Verde River	2/12	Helicopter	One adult near Tuzigoot Road bridge.
West Clear Creek	3/12	Helicopter	No new nests or bald eagles.

Table 4. Arizona bald eagle nest survey summary: historical BAs surveyed, 2001.			
Historical BAs	Date	Method	Results
Ash	1/15, 1/30, 3/6, 4/19	Helicopter	All known nest empty. No new nests or bald eagles.
Eagle	1/22	Helicopter	No new nests. Two adults and one subadult in area.
Hell Point	1/8, 1/29, 3/12, 4/12	Helicopter	One adult on 1/8 and 1/29. One subadult on 4/12.
LF	1/8, 1/29, 3/12, 4/12	Helicopter	All known nest empty. One adult on 1/8.
Muldoon	1/8, 1/29, 3/12, 4/12	Helicopter	All known nest empty. Two adults and one subadult on 1/8. One adult on 1/29 and 3/12. One osprey on 4/12.
Needle Rock	1/8, 1/29	Helicopter	All known nest empty. One subadult on 1/29.
Rock Creek	6/15, 8/16	Ground Helicopter	USFS personnel found a large nest with an adult on 6/15. Nest #2 observed on 8/16.
Sullivan	1/8, 1/29, 3/12, 4/12	Helicopter	No new nests. One subadult on 1/29
Willow	1/22	Helicopter	All known nest empty. No new nests or bald eagles.

Table 5. Arizona bald eagle nest survey summary: nest sites surveyed, 2001.			
Nest Sites	Date	Method	Results
Granite	1/8, 1/29, 3/12, 4/12	Helicopter	One adult on 1/29. One golden on 3/12.
Granite Reef	1/9, 3/12, 4/12, 5/21	Helicopter	Ospreys incubating on 3/12 and 4/12. One abandoned osprey egg on 5/21.
Hell Canyon	1/29	Helicopter	Two golden eagles on 1/29.
Lynx Lake	1/8, 1/29, 4/12, 6/15	Helicopter	Three adults on 1/8. One adult on 1/29.
Mormon Pocket	1/29, 3/12	Helicopter	All known nest empty. No new nests or bald eagles.
Sullivan Lake	1/8, 1/29, 3/12, 4/12, 6/15	Helicopter	All known nest empty. No new nests or bald eagles.
Watson Lake	1/8, 3/12	Helicopter	One adult on 1/8.

Table 6. Arizona bald eagle nest survey summary: BAs surveyed, 2001.			
Breeding Area	Date	Method	Results
Becker		Ground	
Camp Verde	1/8, 1/29, 3/12	Helicopter	One adult golden eagle on 1/8.
Canyon	1/11, 1/15, 1/30, 3/6, 4/19	Helicopter	All known nest empty. No new nests or bald eagles.
Cedar Basin	1/11, 3/6, 4/19	Helicopter	One adult on 1/11. Nest #3 renovated, one adult, and one subadult on 3/6.
Cibecue	1/11, 1/30, 3/6, 4/19	Helicopter	Two adults upstream of nest #1 on 1/11. Two adults perched near nest #3 on 1/30.
Cliff	1/8, 1/29, 3/12, 3/22, 4/12	Helicopter Ground	One adult on 1/8 and 1/29. Two adults on 3/12 and 4/12. Two adults attacking nesting ravens near old nest #4, on 3/22.
Devils Post	1/29	Helicopter	All known nest empty. No new nests or bald eagles.
Dupont	1/30, 3/6, 4/19, 5/21	Helicopter	One adult, nest #1 fell and nest #2 covered in snow on 1/30. One adult standing in renovated nest #2 on 3/6. Two adults near nest #2 on 5/21.
Horseshoe	1/8	Helicopter	Nest #12 fell, two adults on lake.
Ive's Wash	1/8, 1/29, 3/12, 4/19	Helicopter	One adult downstream of nest on 4/12.
Mule Hoof	1/11, 3/6, 4/19	Helicopter	All known nest empty. No new nests or bald eagles.
Orme	1/8, 1/29, 1/30	Helicopter	One subadult on 1/8. Orme nest #6 renamed Rodeo nest #1. New nest #6 found on 1/30.
Pinal	1/15, 1/30, 3/6, 4/19, 5/21	Helicopter	All known nest empty. No new nests or bald eagles.
Pinto	1/15	Helicopter	Adult incubating in new nest #5 (same tree as nest #3).
Rodeo	1/29, 1/30, 2/16, 3/6, 3/12, 5/21	Helicopter Ground	One adult at nest #1 (old Orme #6) on 1/29. Grackles removing eggshell fragments from failed nest #1 on 2/16. One adult near renovated nest #1 on 3/6.
San Carlos	1/15, 1/30, 3/6, 3/16, 4/19	Helicopter Ground	Nest #3 renovated on 1/15. Evidence of woodcutting on 3/16. One adult at nest #3 on 4/19.
Sycamore	1/8	Helicopter	Nest #3 fell. New nest #4 and one adult on 1/8.
Winkelman	1/15, 1/30, 3/6, 4/19, 5/21	Helicopter	All known nest empty. No new nests or bald eagles.

APPENDIX D: 2001 WINTER COUNT/ORAL FLIGHT SUMMARIES

Table 7. Results of January 8, 2001, winter count.		
Location	Time	Comments
Orme	0846	All known nests empty. No new nests. One subadult in area.
Sycamore	0850	New nest #4 found. Nest #3 fell. One adult in area.
Doka	0855	One adult incubating in nest #1. Second adult in area.
Ft. McDowell	0856	One adult incubating in nest #17. Second adult in area.
Box Bar	0859	One adult incubating in nest #3. Second adult in area
Needle Rock historical BA	0901	No new nests or bald eagles.
Bartlett	0904	All know nests empty. No bald eagles.
Cliff	0921	All known nests empty. No new nests. One adult in area.
Horseshoe	0939	All known nests empty. Nest #12 fell. No new nests. Two adults on lake.
Table Mountain	0950	All known nests empty. No bald eagles.
LF historical BA	1003	No new nests. One adult downstream.
East Verde	1039	All known nests empty. One adult flying in area.
Coldwater	1045	All known nests empty. Two adults downstream near power lines.
Ladders	1055	All known nests empty. Two adults near Brown's Ranch.
Camp Verde	1109	No new nests or bald eagles. One golden eagle in area.
Tower	1328	All known nests empty. No bald eagles.
Perkinsville	1339	All known nests empty. One adult and one subadult.
Hell Point historical BA	1350	All known nests empty. One adult in area.
Muldoon historical BA	1354	All known nests empty. One subadult and two adults in area.
Granite nest site	1358	All known nests empty. No bald eagles.
Sullivan Lake nest site	1400	All known nests empty. No bald eagles.
Sullivan historical BA	1401	All known nests empty. No bald eagles.
Watson Lake nest site	1443	All known nests empty. Two golden eagles in area.
Lynx Lake nest site	1445	All known nests empty. Three adults on lake.
Alamo	1524	All known nests empty. One adult on the north end of lake.
Ive's Wash	1529	All known nests empty. No bald eagles.
Pleasant	1624	All known nests empty. One adult on lake.

Table 8. Results of January 9, 2001, winter count.		
Location	Time	Comments
Orme	0841	Two adults standing in nest #1.
Granite Reef nest site	0843	One osprey in the area. Four osprey eggs scattered around nest.
Lower Salt River	0854	Two adults and one subadult in area.
Blue Point	0858	Two adults perched on nest #10.

Table 9. Results of January 11, 2001, winter count.		
Location	Time	Comments
Bartlett	0817	One adult nest #2 pinnacle.
Cibecue	1003	All known nests empty. Two adults upstream of nest #1.
Canyon	1023	All known nests empty. No bald eagles.
Mule Hoof Historical BA	1029	All known nests empty. No bald eagles.
Cedar Basin	1046	All known nests empty. One adult in area.
Upper Salt River	1053	No new nests. Four adults and one subadult just upstream from Carrizo Creek confluence.
Lone Pine	1058	All known nests empty. Two adults in nest #2 tree.

Table 10. Results of January 15, 2001, winter count.		
Location	Time	Comments
76	0859	One adult in nest #3.
Sheep	0911	All known nests empty. No bald eagles.
Tonto	0920	One adult incubating in nest #2.
Pinto	1130	One adult incubating in new nest #5. Second adult in area.
Pinal	1141	All known nests empty. No bald eagles.
Redmond	1149	All known nests empty. One adult in the area.
Canyon	1209	All known nests empty. No bald eagles.
Tanks Canyon	1232	No new nests. Two adults in the area.
Ash Historical BA	1240	All known nests empty. No bald eagles.
Talkalai	1336	Two adults in nest #7.
San Carlos	1345	Nest #3 is renovated. No bald eagles.
Suicide	1400	All known nests empty. No bald eagles.
Coolidge	1420	All known nests empty. No bald eagles.
Granite Basin	1438	All known nests empty. No bald eagles.
Winkelman	1444	All known nests empty. No bald eagles.

Table 11. Results of January 22, 2001, winter count.		
Location	Time	Comments
Willow historical BA	1031	One adult in area.
Eagle historical BA	1057	All known nests empty. One subadult and two adults in area.

Table 12. Results of January 29, 2001, ORA flight.		
Location	Time	Comments
Orme	0934	One adult near #6 nest tree (See ORA flight results for Orme on 1/30).
Sycamore	0937	One adult incubating in nest #4. Eight subadults in the area.
Doka	0942	Two adults brooding nestlings.
Ft. McDowell	0944	All known nests empty. No bald eagles.
Box Bar	0948	One adult incubating in nest #3. Second adult just downstream.
Needle Rock historical BA	0949	No new nests. One subadult in the area.
Bartlett	0953	All known nests empty. Two adults standing on nest #2 pinnacle.
Lower Verde River	0959	No new nests. Two adults perched together on north end of Bartlett Lake.
Cliff	1007	No new nests. One adult in area.
Horseshoe	1021	One adult on nest #11.
Table Mountain	1034	All known nests empty. No bald eagles.
LF Historical BA	1048	No new nests or bald eagles.
East Verde	1057	All known nests empty. Two adults in the area.
Coldwater	1106	All known nests are empty. One adult downstream of power lines.
Upper Verde River	1111	Two golden nests on east side of river upstream from Brown's Ranch.
Ladders	1114	Nest #3 renovated. No bald eagles.
Camp Verde	1117	No new nests or bald eagles.
Tower	1158	One adult incubating in nest #8.
Mormon Pocket nest site	1329	All known nests empty. No new nests or bald eagles.
Perkinsville	1338	All known nests empty. No bald eagles.
Hell Point historical BA	1356	All known nests empty. One adult in area.
Muldoon historical BA	1401	All known nests empty. One adult in area.
Granite nest site	1405	All known nests empty. One adult in area.
Sullivan Lake nest site	1409	All known nests empty. No bald eagles.
Sullivan historical BA	1410	All known nests empty. No bald eagles.
Watson Lake nest site	1424	All known nests empty. No bald eagles.
Lynx Lake nest site	1427	All known nests empty. One adult on lake.
Devil's Post	1500	All known nests empty. No bald eagles.
Alamo	1525	One adult incubating in nest #4. Second adult in area.
Ive's Wash	1530	All known nests empty. No bald eagles .

Table 13. Results of January 30, 2001, ORA flight.		
Location	Time	Comments
Granite Reef nest site	0748	One osprey near platform.
Orme	0750	Nest #6 renamed Rodeo BA nest #1. Found new nest #6 at confluence of Salt and Verde Rivers.
Lower Salt River	0754	No new nests. One adult and two subadults near Blue Point Cliffs.
Blue Point	0759	One adult incubating in nest #10.
Horse Mesa	0813	One adult incubating in nest #4. One adult on lake.
Tonto	0820	One adult incubating in nest #2.
Sheep	0829	All known nests empty. No bald eagles.
76	0836	One adult incubating in nest #3.
Dupont	0848	Nest #1 fell. Nest #2 covered in snow. One adult in the area.
Pinto	0858	One adult incubating in nest #5.
Pinal	0902	All known nests empty. No bald eagles.
Redmond	0915	One adult on nest #5.
Canyon	1050	All known nests empty. No bald eagles.
Cibecue	1109	Two adults perched near nest #3.
Upper Salt River	1112	No new nests or bald eagles.
Lone Pine	1152	All known nests empty. One adult in area.
Tanks Canyon	1331	No new nests or bald eagles.
Ash historical BA	1335	All known nests empty. No bald eagles.
Talkalai	1354	One adult incubating in nest #7. Second adult on Talkalai Lake.
San Carlos	1407	Nest #3 newly renovated. No bald eagles.
Suicide	1435	All known nests empty. No bald eagles.
Coolidge	1441	All known nests empty. No bald eagles.
Granite Basin	1453	All known nests empty. One adult in area.
Winkelman	1501	All known nests empty. No bald eagles.

Table 14. Results of March 6, 2001, ORA flight.		
Location	Time	Comments
Orme	0801	One adult incubating in nest #6. Second adult in the area.
Rodeo	0803	One adult near renovated nest #1.
Lower Salt River	0810	No new nests. Ten subadults and two adults near Blue Point bridge.
Blue Point	0819	One adult brooding two nestlings in nest #10.
Horse Mesa	0836	One adult brooding two nestling in nest #4.
Sheep	0850	One adult incubating in nest #7.
76	0857	One adult incubating in nest #3.
Dupont	0909	One adult standing in renovated nest #2.
Pinto	0917	Two three week old nestlings in nest #5.
Pinal	0920	All known nests empty. No bald eagles.
Redmond	0932	One adult incubating in nest #5.
Canyon	1105	All known nests empty. No bald eagles.
Cibecue	1119	All known nests empty. No bald eagles.
Mule Hoof	1122	All known nests empty. No bald eagles.
Cedar Basin	1127	Nest #3 is renovated. One adult and one subadult in area.
Lone Pine	1145	Adult incubating in nest #2.
Lower Black River Tanks	1213	No new nests or bald eagles.
Tanks Canyon	1347	No new nests or bald eagles.
Ash historical BA	1351	All known nests empty. No bald eagles.
Talkalai	1422	One adult brooding one two week old nestling in nest #7.
San Carlos	1426	Nest #3 renovated. No bald eagles.
Suicide	1449	One adult incubating in nest #1.
Coolidge	1454	One adult incubating in nest #2. One subadult downstream.
Granite Basin	1459	One adult incubating in nest #1.
Winkelman	1506	All known nests empty. No bald eagles.

Table 15. Results of March 12, 2001 ORA flight.		
Location	Time	Comments
Granite Reef nest site	0813	Osprey incubating in platform nest.
Orme	0818	One adult incubating in nest #6. Two adults between osprey nest and nest #6.
Rodeo	0821	All known nests empty. One adult in area.
Sycamore	0824	Two three week old nestlings in nest #4.
Cliff	0846	No new nests. Two adults in area.
Table Mountain	0900	One adult incubating/brooding in nest #4.
LF historical BA	0908	No new nests or bald eagles.
East Verde	0919	One adult standing on nest #6. Second adult in area.
Coldwater	0953	One adult incubating in nest #3.
West Clear Creek	1004	No new nests or bald eagles.
Camp Verde	1017	No new nests or bald eagles.
Upper Verde River	1025	No new nest. One adult near Tuzigoot Road.
Tower	1032	One adult brooding nestlings in nest #8.
Mormon Pocket nest site	1034	All known nests empty. No bald eagles.
Perkinsville	1036	One adult incubating in nest #4.
Hell Point historical BA	1048	All known nests empty. One adult in area.
Muldoon historical BA	1052	All known nests empty. One adult in area.
Granite nest site	1054	All known nests empty. One golden eagle in area.
Sullivan Lake nest site	1059	All known nests empty. No bald eagles.
Sullivan historical BA	1101	All known nests empty. Three subadults in area.
Watson Lake nest site	1244	One golden eagle incubating.
Alamo	1340	One adult incubating in nest #4.
Ive's Wash	1343	All known nests empty. No bald eagles.

Table 16. Results of April 12, 2001 ORA flight.		
Location	Time	Comments
Granite Reef nest site	0800	Osprey incubating in platform nest.
Lower Salt River	0803	New nest structure found on north side of river.
Orme	0806	One adult in nest #6 with one three week old nestling.
Rodeo	0809	All known nests empty. One subadult in area.
Doka	0812	Two adults in area.
Fort McDowell	0813	Two nine week old nestlings in nest. No adults.
Box Bar	0815	Two adults in area.
Bartlett	0819	All known nests empty. No bald eagles.
Lower Verde River	0823	No new nests. One subadult on Yellow Cliffs, north end of Bartlett Lake.
Cliff	0837	No new nests. Two adults upstream.
Table Mountain	0848	One 2.5 week old nestling in nest #4.
East Verde	0853	One adult incubating in nest #6.
Coldwater	0901	All known nests empty. No bald eagles.
Perkinsville	0953	One adult brooding one one week old nestling in nest #4.
Hell Point historical BA	1004	All known nests empty. One subadult in area.
Muldoon historical BA	1013	All known nests empty. One osprey in the area.
Granite nest site	1019	All known nests empty. No bald eagles.
Sullivan Lake nest site	1022	All known nests empty. No bald eagles.
Sullivan historical BA	1024	All known nests empty. No bald eagles.
Watson Lake nest site	1123	One golden incubating.
Lynx Lake nest site	1128	One osprey on nest.
Goldwater Lakes	1148	No new nests or bald eagles.
Alamo	1220	All known nests empty. No bald eagles.
Ive's Wash	1238	All known nests empty. One adult downstream of nest.

Table 17. Results of April 19, 2001, ORA flight.		
Location	Time	Comments
Orme	0747	Two adults and a five week old nestling in nest #6.
Lower Salt River	0751	Three subadults near Blue Point bridge.
Blue Point	0755	Three four to six week old nestlings in nest #10.
Horse Mesa	0810	Two six week old nestlings in nest #4.
Sheep	0820	Two two week old nestlings in nest #7. One adult in area.
76	0827	Two five week old nestlings in nest #3.
Dupont	0839	All known nests empty. No bald eagles.
Pinto	0848	Two three week old nestlings in nest #5.
Pinal	0855	All known nests empty. No bald eagles.
Redmond	0900	One four week old nestling in nest #5.
Canyon	1045	All known nests empty. No bald eagles.
Cibecue	1050	All known nests empty. No bald eagles.
Mule Hoof Historical BA	1053	All known nests empty. No bald eagles.
Cedar Basin	1110	All known nests empty. No bald eagles.
Lone Pine	1119	Two four week old nestlings in nest #2.
Lower Black River Tanks	1130	No new nests or bald eagles.
Tanks Canyon	1324	No new nests or bald eagles.
Ash historical BA	1329	All known nests empty. No bald eagles.
Talkalai	1337	One six week old nestling in nest #7.
San Carlos	1406	One adult at nest #3.
Suicide	1412	Two five week old nestlings in nest #1. Two adults in the area.
Coolidge	1416	All known nests empty. No bald eagles .
Granite Basin	1432	All known nests empty. No bald eagles.
Winkelman	1439	All known nests empty. No bald eagles.
Lower San Pedro River	1440	No new nests or bald eagles.

Table 18. Results of May 21, 2001, ORA flight.		
Location	Time	Comments
Granite Reef nest site	0805	One osprey egg in nest. No new nests or bald eagles.
Orme	0809	Two adults and one nine week old nestling in nest.
Rodeo	0811	All know nest empty. No bald eagles.
Lower Salt River	0812	No new nests or bald eagles.
Blue Point	0821	One juvenile in Willow Springs Cove. Nest #10 is empty.
Horse Mesa	0839	One juvenile near nest #4.
Pinto	0850	One adult and juvenile in area.
Pinal	0852	All known nests empty. No bald eagles.
Redmond	0903	One 8.5 old nestling in nest #5.
Dupont	0919	Two adults near empty nest #2.
Sheep	0925	All known nests empty. One adult just upstream.
76	0953	Two 9.5 week old nestlings in nest #2.
Lone Pine	1141	One 7.5 week old nestling in nest #2.
Talkalai	1204	All known nests empty. No bald eagles.
Suicide	1218	Two adults and two nestlings in nest #1.
Granite Basin	1242	All known nests empty. No bald eagles.
Winkelman	1248	All known nests empty. No bald eagles.
Lower San Pedro River	1249	No new nests or bald eagles.

Table 19. Results of June 15, 2001, ORA flight.		
Location	Time	Comments
Lynx lake nest site	0753	Two ospreys brooding
Goldwater Lakes	0804	No new nests or bald eagles.
Watson Lake nest site	0815	One golden nestling.
Sullivan Historical BA	0822	All known nests empty. No bald eagles.
Sullivan Lake	0824	All known nests empty. No bald eagles.
Granite	0827	All known nests empty. No bald eagles.
Perkinsville	0844	One 10-11 week old nestling in nest #4.
Tower	0850	One juvenile flying in area.
Ladders	0913	One juvenile and adult in area.
Coldwater	0918	All known nests empty. No bald eagles.
East Verde	0924	All known nests empty. No bald eagles.
Table Mountain	0930	All known nests empty. One adult in area.
Horseshoe	0951	Two juveniles in branches of nest #11 tree.
76	1007	Two juveniles in the area.
Redmond	1035	All known nests empty. Two adults in area.
Orme	1110	All known nests empty. No bald eagles.