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THE STATE



OF ARIZONA

GAME & FISH DEPARTMENT

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November 13, 1998

Scott Travis
Canyon de Chelly National Monument
P.O. Box 588
Chinle, AZ 86503

Dear Mr. Travis:

I greatly appreciated your efforts in June in helping us gain access to the Monument to conduct Arizona Breeding Bird Atlas surveys. Not only did we find the scenery spectacular, we also discovered that the Monument has a very rich diversity of breeding birds.

Enclosed is a summary of the data we collected June 10 - 13, 1998 in the five blocks that encompass sections of the Monument. One survey on the Lower Wheatfield block had previously been conducted by volunteers on June 10, 1994 and some of that information is also included. Also enclosed are copies of the field cards and atlas code definitions.

I hope you will find this information useful. If you have any questions or would like additional information, please contact me at 602-789-3508.

Sincerely,

Troy E. Corman

Troy E. Corman
Neotropical Migratory Birds Coordinator

:tc

Enclosures

cc: David Mikesic, Navajo Natural Heritage

Document: TEC-9811.001

BIRD SPECIES DETECTED ON FIVE ARIZONA BREEDING BIRD ATLAS BLOCKS IN
CANYON DE CHELLY NATIONAL MONUMENT: 10-13 JUNE 1998

SPECIES	BCODE ¹	ABU ²	HABITATS ³
Mallard	FL	2	ARU,WGB
Cinnamon Teal	O	0	ARU
Turkey Vulture	#	2	FPJ,WGB,FMM
Sharp-shinned Hawk	#	2	FMM,FPJ
Cooper's Hawk	UN	2	WMR
Red-tailed Hawk	NY	2	FPJ,FPP,WGB
Golden Eagle	P	1	FPJ,FMM
American Kestrel	#	2	FPP,DGB
Peregrine Falcon	NY	2	FMM,FPJ,WGB
Prairie Falcon	NY	2	FMM
Wild Turkey	NE	2	FMM,FPO
American Coot	O	0	ARU
Killdeer	DD	2	ARU
Mourning Dove	NY	3	FPJ,FMM,WGB,DGB
Flammulated Owl	#	3	FMP,FPO,FMM
Great Horned Owl	#	2	FPJ,FPO,FMM
Northern Pygmy-Owl	#	2	FMM,FPJ,WGB
Spotted Owl	#	1	FMM
Long-eared Owl	P	2	FPP
Common Nighthawk	C	3	FPJ,FPP,FPO
Common Poorwill	#	2	DGB,FPP
White-throated Swift	ON	4	FPJ,FMM,WGB,DGB
Black-chinned Hummingbird	NE	3	FPJ,WGB,
Broad-tailed Hummingbird	CN	3	FMM,WMR,FPJ,FMP,FPO
Hairy Woodpecker	CF	3	FPJ,FMM,WGB,FMP,FPO,FPP
Northern (Red-shafted) Flicker	NY	3	FPJ,FMM,FPP,WGB
Olive-sided Flycatcher	O	0	FPO
Western Wood-Pewee	X	3	FPJ,WMR,WGB,FMM,FPO
Dusky Flycatcher	CN	3	FMM,FPO
Gray Flycatcher	CN	3	FPJ
Cordilleran (Western) Flycatcher	X	3	WMR,FMM
Say's Phoebe	NY	2	FPJ,FMM,WGB,GPL
Ash-throated Flycatcher	CF	3	WMR,FPJ
Cassin's Kingbird	#	2	FPJ
Horned Lark	FL	3	GPL
Violet-green Swallow	NB	4	FMM,WMR,WGB,FPJ,FPO
Northern Rough-winged Swallow	P	2	FPO
Cliff Swallow	ON	3	FPO
Steller's Jay	P	3	FMM,FPO
Western Scrub-Jay	#	3	FPJ,FPP
Pinyon Jay	FL	3	FPJ,FPP
Clark's Nutcracker	#	2	FMM
American Crow	#	2	FPJ,DGB
Common Raven	NY	3	FPJ,FMM,WGB,FPO,DGB

SPECIES	BCODE	ABU	HABITATS
Mountain Chickadee	NY	3	FPJ,FMM,FPP,WMR
Juniper (Plain) Titmouse	P	3	FPJ
Bushtit	FY	3	FPJ,WGB,FPP
Red-breasted Nuthatch	CF	2	FPP,FPO,FMM
White-breasted Nuthatch	CF	3	FPJ,FMM,FPO,FPP
Pygmy Nuthatch	P	3	FPP,FPO
Brown Creeper	#	2	FMP
Rock Wren	CF	3	FPJ,WGB,GPL,FPO
Canyon Wren	NB	3	FPJ,FMM,WMR,WGB,FPO
Bewick's Wren	FL	3	FPJ
House Wren	#	2	FPO
American Dipper	FY	1	WMR
Blue-gray Gnatcatcher	NB	3	FPJ,WGB,WMR,FPP
Western Bluebird	NY	4	FPP,FPJ,WGB,FPO
Mountain Bluebird	NY	3	FPJ,DGB
Townsend's Solitaire	X	2	FPO
Hermit Thrush	P	3	FMM,FPO
American Robin	NE	3	FPP,WMR,WGB,FPO,FMM
Gray Vireo	X	2	FPJ
Plumbeous (Solitary) Vireo	NY	3	FPJ,FMM,WMR,FPO,FPP
Warbling Vireo	ON	2	FPP,WGB,WMR
Virginia's Warbler	CF	3	FPP,WMR,FMM,WGB
Yellow-rumped Warbler	X	3	FMM,FPP
Black-throated Gray Warbler	CF	4	FPJ,FMP,FPP
Grace's Warbler	P	3	FPP,FPO
Yellow-breasted Chat	X	2	WGB
Western Tanager	FL	3	FMM,WMR,WGB,FPO
Black-headed Grosbeak	NE	3	FMM,WMR,WGB
Blue Grosbeak	X	2	WGB
Lazuli Bunting	X	2	WGB
Green-tailed Towhee	CF	2	DGB
Spotted (Rufous-sided) Towhee	FY	4	FPJ,FMM,WMR,WGB,FPP,DGB
Chipping Sparrow	NE	4	FPJ,FMM,DGB,FPP,FPO
Brewer's Sparrow	P	3	DGB
Vesper Sparrow	DD	4	GPL,DGB
Lark Sparrow	CF	2	DGB,FPJ,ARU
Dark-eyed Junco	FY	3	FMM,FPO,FPP
Western Meadowlark	X	3	DGB,GPL,
Brewer's Blackbird	NY	2	WMR,DGB
Brown-headed Cowbird	NE	3	WMR,DGB,FPP,FPJ
House Finch	CF	3	FPJ,WGB
Red Crossbill	FY	2	WMR
Pine Siskin	FL	2	FMM,WMR
Lesser Goldfinch	X	2	WGB,FMM

¹BCODE = highest breeding code observed for species - see code definitions

²ABU = highest relative abundance code reported for block (s) - see code definitions

³HABITATS = general habitat codes where species was observed - see code definitions

Breeding Criteria

Finding a nest is not the only evidence that can confirm breeding on your block. In fact, nests need not be seen at all. Many other things, especially behavior, can be used as evidence for breeding. We use breeding criteria agreed upon by the North American Ornithological Atlas Committee (NORAC). The following codes and definitions are also briefly listed on the back of the Field Card for reference while surveying. The most important parts of the atlas project are using these codes correctly and putting them in the right place on the Field Cards. Study the breeding criteria carefully and clear up any questions before you go out to your block.

The list is divided into four categories of breeding evidence: observed, possible, probable, and confirmed. The codes are listed in increasing order of certainty of breeding. As the season progresses and in later field seasons, you will be continually upgrading these codes for your block list from possible to probable and probable to confirmed. You may also upgrade within categories, for example within the probable category from T (transient territory) to N (visiting probable nest-site). When you turn in your data card, it should contain only the highest code (under each category) you observed for each species and the visit number when you observed that behavior. The ultimate goal would be to confirm all likely breeding species you find in your block. Remember, once a species is confirmed on your block you don't need to worry about it ever again.

Many of the coded breeding behaviors which appear under the possible and probable categories (like singing males for warblers or pairs for ducks), may also be seen in birds during their migration. Other atlases have provided "safe dates" for each species: dates after the spring migrants have passed through (and before fall migration) when you can assume the birds you see are summer residents. Much of this information appears to be lacking, especially for common breeding birds in the state. Dates you assign to breeding codes, especially those in the confirmed category, will be used on our eventual list of "safe dates".

BREEDING CODES AND INTERPRETATIONS

Observed (Ob)

- O** Non-breeder or migrant **observed** in block during breeding season, but not believed to be breeding. Use this for species in unlikely breeding habitat, out of their normal breeding range and with no indication of breeding. This could apply to ducks summering on an urban or sewage settling pond with no breeding habitat or a Great Blue Heron foraging when no heronry exists on the block.

Possible (Po)

- #** Species observed or identified by vocalizations in suitable nesting habitat during its breeding season. Also use this code for those species that do not have true songs (e.g. owl, woodpeckers, corvids, raptors, etc.) Use this for birds seen in likely breeding habitat, such as a Western Tanager in a ponderosa pine forest. Be especially cautious during the migration period of birds which may be passing

through or birds that may linger on wintering areas. Some wintering species may be present in late winter and early spring in the desert, while some resident species have commenced breeding.

- X** **Singing male** present in suitable nesting habitat during its breeding season. If you hear that same tanager singing, code it X (though if you hear it singing on a second trip, see if it qualifies as probable).

Probable (Pr) Always a one-letter code.

- P** **Pair** observed in suitable habitat during its breeding season. If you see a male and female of the same species in proper breeding habitat, use this code. Note that some birds (e.g. ducks) are often paired during migration.
- S** Permanent territory presumed through song at same location on at least 2 occasions 7 days or more apart. If the Western Tanager mentioned above was heard singing twice in the same place a week apart, code it S.
- T** Permanent territory presumed through defense of breeding territory (chasing individuals of the same species). One male American Robin chasing another falls under this code. **Caution:** some species, especially raptors and hummingbirds, exhibit territorial behavior in defense of feeding areas, favorite perches, etc. while wintering or migrating.
- C** **Courtship** behavior or **copulation** between a male and female. This includes courtship displays or food exchange.
- N** Visiting probable **nest-site**, but no further evidence obtained. This applies to a bird which consistently flies into the same likely nest site, but which provides insufficient behavior for upgrading to confirmed. This is especially useful for cavity-nesters.
- A** **Agitated** behavior or anxiety calls of adult, indicating nest site or young in the vicinity. Two birds circling above your head or a Northern Goshawk distress call falls into this category. Do not include agitation which you induce by "pishing" or using taped calls.
- B** **Nest building** by Verdins and some species of wrens (Cactus, Bewick's, House, and Marsh) or excavation of cavities by woodpeckers. Woodpeckers and other cavity excavators usually make only one nest hole, but use other holes for roosting; some species of wrens and Verdins will build several nests before a female selects one, and unmated males do this, too.

Confirmed (Co) Always a two-letter code.

- CN** Bird seen **carrying nesting** material (e.g. sticks, grass, mud, cobwebs). This applies for all species except some species of wrens (Cactus, Bewick's, House, Marsh) and Verdins.

- NB** **Nest building** seen at the actual nest site, excluding some species of wrens (Cactus, Bewick's, House, Marsh), woodpeckers, and Verdins.
- DD** **Distraction displays**, defense of unknown nest or young or injury feigning. Used if adult bird is seen trying to lead people away from nest or young. Commonly seen in most ground nesters, this is the typical Killdeer broken-wing act. This also includes active defense such as a Cooper's Hawk diving at you. Does not include agitated behavior (A under Probable).
- UN** **Used nest** or eggshells found. Unless carefully identified, use this only for unmistakable eggshells and nests which were used during the atlas period. Magpie nests, for example, are very characteristic, but if you are unsure don't use this code. Do not use this code for species that build multiple nests in a breeding season, such as Verdins and Cactus Wrens. Do not collect the nest, as some species roost in them all year and it is also illegal to collect nests or eggs (Migratory Bird Treaty Act).
- FL** **Recently fledged** young of altricial species incapable of sustained flight or downy young of precocial species restricted to the natal area by dependence on adults or by limited mobility. A duck brood on an isolated pond merits this code, but note that barely fledged blackbirds and swallows may fly considerable distances. The presence of young cowbirds confirms both the cowbird and the host.
- ON** **Occupied nest** indicated by adult entering or leaving nest site in circumstances indicating an occupied nest, including those in high trees, cliffs, cavities, and burrows where the contents of the nest and incubating or brooding adult cannot be seen.
- CF** Adults seen **carrying food**, excluding raptors, corvids (e.g. jays, ravens, crows, nutcrackers, magpies), roadrunners, shrikes, and kingfishers. These birds often carry food some distance before eating it themselves, so be very cautious when using this code.
- FY** Adults **feeding** recently fledged **young**. Young cowbirds begging food confirm both the cowbird and the host.
- FS** Adult carrying **fecal sac**. Many passerines keep their nests clean by carrying fecal sacs away from the nest.
- NE** **Nest with eggs** found. Unless you see the adult, the same warnings under the UN code apply here. Cowbird eggs confirm both the cowbird and the host.
- NY** **Nest with young** seen or heard. Use when you actually see the young or, as with most cavity nesters, if you only hear the young. A cowbird chick in the nest confirms both the cowbird and the host.

HABITAT CODES

HABITAT: The column marked "Hab" is for the habitat code, representing the type of habitat(s) the species was found in. The habitat codes were created based primarily on information from *Biotic Communities of the American Southwest* which was edited by Dave Brown. This data will be very useful for several reasons. It will add to our knowledge of the natural history of each of these species in Arizona and help planners and land managers assess the impacts of changing land management for each species. You don't need to be a botanist to do it, either. Though the list is long, only a few of these habitat types will probably occur on your block. Start with the most general category and narrow it down. Choose the habitat code that contains the majority of the listed plant species you found on your block.

If you confirm a species, indicate the nesting habitat in the appropriate place on the field card. For species which you do not confirm, enter habitat(s) in which you observe the most activity. If you find a species in more than one habitat, squeeze in codes for all the habitats on the field card.

HABITAT CODES FOR THE BIOTIC COMMUNITIES OF ARIZONA

Tundra

TAL Alpine Tundra - alpine meadow, boulder field, talus (above 11,000 ft)

Forests and Woodlands

FSC Subalpine Conifer Forest - Engelmann spruce, corkbark fir

Montane Forests

FMP Ponderosa Pine Forests - primarily pure ponderosa

FPO Ponderosa-Gambel's Oak Forest

FMM Mixed Conifer Forests - Douglas-fir, white fir, ponderosa, some aspen and Gambel's oak

FMA Aspen Forest - >50% pure aspen

Great Basin Conifer Woodland

FPJ Pinyon-Juniper Woodland

FPP Pinyon-Juniper Woodland - with scattered ponderosa

FME Mexican Evergreen Woodland - evergreen oaks, juniper, pinyon pine

FMO Madrean Pine-Oak Woodland - evergreen oaks, juniper, Chihuahua and Apache pines, ponderosa

Scrublands

SSS Subalpine Scrub - dwarfed Engelmann spruce and bristlecone pine, dwarf juniper

SIC Interior Chaparral - shrub live oak, manzanita, mountain-mahogany, cliffrose

Grasslands

- GSA** Subalpine Grasslands
GMM Montane Meadow Grassland
GGB Great Basin Grassland - scattered pinyon and juniper
GPL Plains Grassland - predominantly flat and open continuous grassland, primarily between 5,000 and 7,500 feet in elevation (northern Arizona)
GSD Semidesert Grassland - often with scattered sotol, agaves, burroweed, snakeweed, yucca, mesquite
GSS Sonoran Savanna Grassland - scattered mesquite, ironwood, palo verde

Desertlands

- DGB** Great Basin Desertscrub - sagebrush, blackbrush, shadscale
DMO Mohave Desertscrub - Joshua tree, creosote bush, saltbush
DC Chihuahuan Desertscrub - creosote bush, tarbush, whitethorn acacia
DSL Sonoran Desertscrub:
1) Lower Colorado River Biome - mesquite, saguaro, creosote bush, white bursage, brittlebush, saltbush
DSU 2) Arizona Upland Biome - palo verde, ironwood, mesquite, catclaw acacia, saguaro, cholla, barrel cactus, prickly pear, creosote bush, jojoba, crucifixion-thorn

Wetlands

- WAB** Arctic-Boreal Wetlands - scrub willow, alder
WMR Montane Riparian Wetlands - cottonwood, maple, box elder, alder, willow, some Gambel's oak, Ponderosa pine, Douglas-fir, white fir, and aspen
WGB Great Basin Riparian Wetlands - cottonwood, scrub willow, Russian olive, saltcedar (tamarisk)
WMC Marshlands, cienegas, ponds, and lake edges - bulrush, sedges, pondweeds, cattail, duckweed, saltgrass
WL Interior Riparian Deciduous Forests and Woodlands - sycamore, cottonwood, willow, ash, walnut, bigtooth maple, hackberry, cypress, juniper, oak
WRS Riparian Scrubland - common reed, willow, seepwillow, saltcedar (tamarisk)
WSD Sonoran Riparian Deciduous Forest and Woodlands - primarily cottonwood, willow, mesquite, saltcedar (tamarisk), some ash, walnut, and hackberry
WSO Sonoran Oasis Woodlands - California fan palm
WSR Sonoran Riparian Scrubland (dry wash) - mesquite, burrobrush, arrowweed, desert broom, quailbush, saltcedar (tamarisk), seepwillow, desert-willow
WAR Altered Riparian - primarily saltcedar (tamarisk)

Urban/Agricultural

- URS** Residential - ornamental plantings, yards, residential ponds, lakes, and canals
UPG Parks - city parks planted to grass and trees, golf courses, cemeteries
UIN Industrial - downtowns, commercial districts, warehouses, little vegetation
ARU Rural - scattered farm buildings, shelterbelts, sewer and settling ponds, canals, pastures, feedlots
ACW Cultivated Woodlands - orchards, tree farms
ACR Cropland - grainfields, hayfields, cotton fields, etc.
ABG Barren Ground - plowed fields, disturbed areas, fallow fields (tumbleweeds, etc.)

ABUNDANCE: The column marked "Abu" is for the abundance code, an estimate of the number of breeding pairs of each species on your block. Estimates of abundance are an important part of the historical record of this atlas. Imagine if Audubon had noted only "the Passenger Pigeon is present" rather than estimating that in one flock over 300 million birds flew by him each hour! We recognize that estimates will be biased and very rough, so you only need to estimate the number of breeding pairs of each species in your block to the nearest power of ten. Be sure to estimate the total number of pairs in your block, not just the numbers you confirm or observe. You can get an idea of this by figuring how much suitable nesting habitat is on your block and multiplying by the approximate nesting density of the birds.

SPECIES ABUNDANCE CODES

<u>Code</u>	<u>Explanation</u>	<u>Example</u>
A1	One breeding pair in block	Eared Trogon in Ramsey Canyon
A2	2-10 breeding pairs in block	Great Horned Owls along San Pedro River
A3	11-100 breeding pairs in block	Great Blue Heronry
A4	101-1000 breeding pairs in block	Cactus Wren in cholla desert
A5	> 1000 breeding pairs in block	House Finches or Inca Doves in residential Tucson

Nest Record Cards

You will find an example of one of these cards in your packet along with directions to properly fill it out. This is an optional but useful part of the atlas project. The Cornell Laboratory of Ornithology keeps a database of North American nest records. These can provide detailed information on the nests of rare species or special concern species in Arizona, as well as describe unique Arizona nest characteristics for species with wider geographic ranges. Fill the card out and return it to the Atlas Coordinator. We will record the data and send the Nest Record Card to Cornell. Ask your RC or the Atlas Coordinator for more cards if you would like to gather this information. Also keep in mind that disturbing an active nest is a violation of the Migratory Bird Treaty Act, so keep your distance!