

# Integrated Monitoring in Bird Conservation Regions: Four Forest Restoration Initiative 2023 Annual Report



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# Bird Conservancy of the Rockies

*Connecting people, birds and land*

**Mission:** Conserving birds and their habitats through science, education and land stewardship

**Vision:** Native bird populations are sustained in healthy ecosystems

Bird Conservancy of the Rockies conserves birds and their habitats through an integrated approach of science, education, and land stewardship. Our work radiates from the Rockies to the Great Plains, Mexico and beyond. Our mission is advanced through sound science, achieved through empowering people, realized through stewardship, and sustained through partnerships. Together, we are improving native bird populations, the land, and the lives of people.

## **Core Values:**

1. **Science** provides the foundation for effective bird conservation.
2. **Education** is critical to the success of bird conservation.
3. **Stewardship** of birds and their habitats is a shared responsibility.

## **Goals:**

1. Guide conservation action where it is needed most by conducting scientifically rigorous monitoring and research on birds and their habitats within the context of their full annual cycle.
2. Inspire conservation action in people by developing relationships through community outreach and science-based, experiential education programs.
3. Contribute to bird population viability and help sustain working lands by partnering with landowners and managers to enhance wildlife habitat.
4. Promote conservation and inform land management decisions by disseminating scientific knowledge and developing tools and recommendations.

## **Suggested Citation:**

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## **Cover Photo:**

[Acorn Woodpecker](#) by Andy Reago and Chrissy McLaren. Licensed under [CC BY 2.0](#).

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## Overview

This report summarizes the 2023 avian monitoring effort by Bird Conservancy of the Rockies for the Four Forest Restoration Initiative during the 2023 field season in connection with agreement 21-CS-11030400-174. We conducted fieldwork as part of the Integrated Monitoring in Bird Conservation Regions (IMBCR) program: a large, multi-scale avian monitoring program with a statistically rigorous sampling design (Pavlacky et al. 2017). Field staff from Bird Conservancy used survey protocols developed by IMBCR partners (Buckland et al. 2001, McLaren et al. 2019). Avian density, occupancy, and trend estimates will be available once we complete analysis for the IMBCR program and will be summarized in the 2023 IMBCR Report.

## Field Season Accomplishments

Bird Conservancy field technicians conducted bird surveys between 16 May and 5 July 2023 within the Four Forest Restoration Initiative (FFRI) project area, completing 48 of 50 (96%) planned 1 km<sup>2</sup> grids (Figure 1) within 6 strata (Table 1), and 67 point-based surveys in one stratum. Strata were developed in cooperation with FFRI partners. Technicians conducted 594 individual point counts in 2023, completing an average of 11.4 points per grid. In total, we detected 6,508 individuals of 100 avian species.

## Accessing Data and Results

To view interactive maps illustrating survey and detection locations, species counts, and density and occupancy estimates from previous years, please visit Bird Conservancy's Rocky Mountain Avian Data Center (RMADC) at <http://rmbo.org/v3/avian/ExploretheData.aspx>. Instructions for using the RMADC are available at <http://rmbo.org/v3/avian/ExploretheData/HowToGuide.aspx>. Results from all strata and biologically meaningful combinations of strata, termed “superstrata”, can be queried on the RMADC, including estimates by state, BCR, National Forest, and forest region for areas with full IMBCR coverage. Current field protocols can be downloaded at <http://rmbo.org/v3/avian/DataCollection.aspx>. For raw data access or requests, please contact Jen Timmer, Conservation Delivery Biologist at Bird Conservancy of the Rockies: [jennifer.timmer@birdconservancy.org](mailto:jennifer.timmer@birdconservancy.org).

Figure 1: Completed surveys within the 4FRI project area in 2023

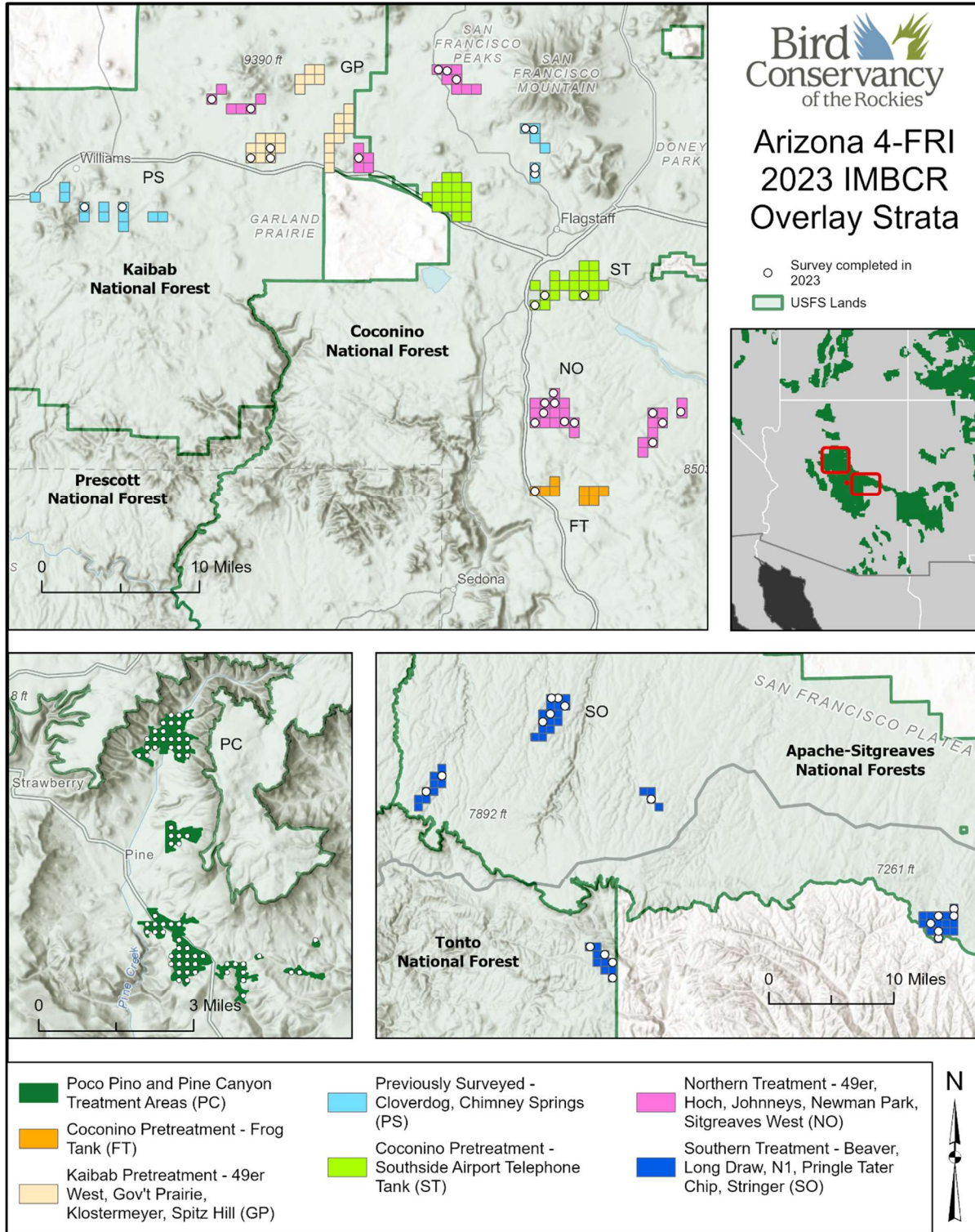


Table 1: Number of planned and completed IMBCR grid cells or point-based surveys completed by Bird Conservancy staff during the 2023 field season within each 4FRI stratum.

<b>Stratum</b>	<b>Stratum Name</b>	<b>Planned Surveys</b>	<b>Completed Surveys</b>
AZ-FFRI-FT	Coconino Pretreatment - Frog Tank	1	1
AZ-FFRI-GP	Kaibab Pretreatment - FW GP KL SH	3	3
AZ-FFRI-NO	4FRI Treatment areas Northern Area - FE HO JO NP SW	17	17
AZ-FFRI-PC	4FRI Poco Pino and Pine Canyon treatment areas (Point-based)	68	67
AZ-FFRI-PS	4FRI - Previously Surveyed	8	6
AZ-FFRI-SO	4FRI Treatment areas south - BE LD N1 PT ST	18	18
AZ-FFRI-ST	Coconino Pretreatment - Southside Airport and Telephone Tank	3	3
<b>Total</b>		<b>118</b>	<b>115</b>

Table 2: Species and number of individuals recorded by Bird Conservancy staff during the 2023 field season.

Species	AZ-FFRI-FT	AZ-FFRI-GP	AZ-FFRI-NO	AZ-FFRI-PC	AZ-FFRI-PS	AZ-FFRI-SO	AZ-FFRI-ST	Total
Acorn Woodpecker	1		2	55	7	57		122
American Crow		1	2	1	3		3	10
American Kestrel			2		6	5		13
American Redstart		1						1
American Robin		19	80	4	53	62	14	232
American Three-toed Woodpecker			3					3
Anna's Hummingbird				7				7
Ash-throated Flycatcher				46	7	45	2	100
Bald Eagle					1			1
Band-tailed Pigeon			6	8	1			15
Bewick's Wren				45		2		47
Black-chinned Hummingbird							1	1
Black-chinned Sparrow				1		9		10
Black-headed Grosbeak	1	20	6	30	14	54	1	126
Black-throated Gray Warbler	2	5	2	53		65	1	128
Blue-gray Gnatcatcher				2		26		28
Bridled Titmouse				14				14
Broad-tailed Hummingbird*	1	8	14	9	18	34	9	93
Brown Creeper*	1		7	2	1	5	8	24
Brown-headed Cowbird*	4	2	18	7	10	9	11	61
Bushtit				7		8		15
Canyon Wren						2		2
Cassin's Kingbird				7		18	2	27
Cassin's Vireo						2		2
Chipping Sparrow*	1	4	38	10		30	5	88
Clark's Nutcracker			1					1
Common Nighthawk		1	6			7		14
Common Poorwill						6		6
Common Raven		10	63	15	52	80	10	230
Cooper's Hawk			1			1		2

Species	AZ-FFRI-FT	AZ-FFRI-GP	AZ-FFRI-NO	AZ-FFRI-PC	AZ-FFRI-PS	AZ-FFRI-SO	AZ-FFRI-ST	Total
Cordilleran Flycatcher*		1	31	16	6	50	10	114
Dark-eyed Junco*	11	23	118	9	86	147	51	445
Downy Woodpecker		3	5					8
Dusky Flycatcher				1		18		19
Eurasian Collared-Dove				1				1
Grace's Warbler*	15	14	119	90	6	221	20	485
Gray Flycatcher			26	29		31		86
Gray Vireo			1					1
Great Blue Heron			1		1			2
Great Horned Owl				1				1
Greater Pewee						1		1
Green-tailed Towhee			1					1
Hairy Woodpecker*	1	3	27	9	25	43	5	113
Hammond's Flycatcher					1			1
Hepatic Tanager			4	53	1	56		114
Hermit Thrush*		2	4	1	2	40	2	51
House Finch	1		4		3	4	3	15
House Wren*			32	6	34	7	8	87
Hutton's Vireo				2				2
Lark Sparrow					2		1	3
Lazuli Bunting						1		1
Lesser Goldfinch	1		2	9	6	4	5	27
MacGillivray's Warbler						3		3
Mexican Jay				50		23		73
Mountain Chickadee*	6	13	71	5	23	65	39	222
Mourning Dove*		2	21	19	5	45	2	94
Northern Flicker*		3	48	18	28	51	13	161
Northern Mockingbird						1	1	2
Northern Saw-whet Owl					1			1
Olive Warbler			7					7
Olive-sided Flycatcher			3					3

Species	AZ-FFRI-FT	AZ-FFRI-GP	AZ-FFRI-NO	AZ-FFRI-PC	AZ-FFRI-PS	AZ-FFRI-SO	AZ-FFRI-ST	Total
Orange-crowned Warbler						2		2
Osprey					1			1
Painted Redstart			1	2		6		9
Peregrine Falcon					1			1
Pine Grosbeak	1		1					2
Pine Siskin	3	7	17		21	7	9	64
Pinyon Jay			1		1	1		3
Plumbeous Vireo	4	9	110	28	27	108	19	305
Purple Martin			4			23		27
Pygmy Nuthatch*		15	77	33	25	137	35	322
Red Crossbill		2	19		13	12	9	55
Red-breasted Nuthatch	1			2		5		8
Red-faced Warbler	3	1	14	12	1	22	2	55
Red-naped Sapsucker			4					4
Red-tailed Hawk			1			4		5
Red-winged Blackbird			1					1
Rock Wren						2		2
Rufous-crowned Sparrow						3		3
Say's Phoebe					2		2	4
Spotted Towhee		1	1	92	1	100		195
Squirrel, Red						1		1
Steller's Jay*	5	22	71	6	39	111	25	279
Townsend's Solitaire			2		2	9		13
Tree Swallow						2		2
Turkey Vulture				1	1	1		3
Vesper Sparrow							4	4
Violet-green Swallow*	2	3	85		61	50	25	226
Virginia's Warbler			2	17	2	42		63
Warbling Vireo			19	6	5	7	2	39
Western Bluebird*	4	10	36	5	16	40	12	123
Western Tanager*	7	8	79	53	52	152	23	374

Species	AZ-FFRI-FT	AZ-FFRI-GP	AZ-FFRI-NO	AZ-FFRI-PC	AZ-FFRI-PS	AZ-FFRI-SO	AZ-FFRI-ST	Total
Western Wood-Pewee*	1	21	65	19	62	45	35	248
White-breasted Nuthatch*	2	14	52	37	20	94	22	241
White-throated Swift				3				3
Wild Turkey			4	3		27		34
Williamson's Sapsucker			1					1
Woodhouse's Scrub-Jay						6		6
Yellow-rumped Warbler	3	2	114	2	25	54	12	212
Zone-tailed Hawk				1				1
Grand Total	82	250	1557	964	781	2411	463	6508

\*4FRI focal species (White et al. 2019)

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