

JACKSON HOLE



WILDLIFE  
FOUNDATION

## Monitoring Avian Productivity and Survivorship (MAPS) Banding

### 2023 Report

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## BACKGROUND

The Monitoring Avian Productivity and Survivorship (MAPS) program has been operating across North America for over 30 years with the goal of collecting information on avian productivity, recruitment, and survival. These vital rates aid scientists in recognizing factors which contribute to population declines and guide actions to directly address threats, removing much of the guesswork from conservation. A key finding of the MAPS program includes the realization that winter habitat and migration routes are crucial components of landbird ecology that contribute to reproductive success in the following breeding season.

The permanence of MAPS data collection allows investigation into long-term phenomena such as the impacts of a changing climate on avian populations and their shifts in phenology, geography, and survival rates. These data allow land and wildlife managers to make decisions and adjustments in management plans to protect avian species in the face of growing environmental threats. At the Jackson Hole Wildlife Foundation (JHWF) and Teton Raptor Center (TRC), we are proud to contribute to a body of knowledge that can inform decision-making and regulations around the globe, as well as at home in Teton County, Wyoming. Our adoption of the local MAPS stations in Teton County has continued adding to a deep and long-standing dataset that began in 1991 with station number 11114-Teton Science Schools (TSS-) station.

This year was JHWF’s sixth year running the MAPS banding program in Jackson Hole, Wyoming, under the master banding permit of Bryan Bedrosian, Research Director at Teton Raptor Center. All data were collected according to the Institute for Bird Population’s MAPS protocol. Banding took place at both Jackson MAPS banding stations this year – the Teton Science School’s Kelly Campus station (TSS-) and the Boyles Hill station (JACK).

**MAPS BANDING AT KELLY CAMPUS, TETON SCIENCE SCHOOL STATION #11114 (TSS-)**

This marked the 32<sup>nd</sup> consecutive year of operation for the TSS- station, which is one of the longest running MAPS banding stations in the United States.

Banding ran from MAPS Intended Periods 4 through 10 (May 31 to August 1, 2023). The team banded a total of ten times between May 31 and August 1, making sure to operate the station at least once every 7 days. This year’s effort resulted in a total of 537.7 net-hours. We opened nets late on a few cold mornings and closed nets early on occasion for heat and wind but there was no weather-induced cancellation of any full days of banding. We captured 409 individual birds of 39 species (Table 1).

*Table 1. A summary of effort and results for the TSS- MAPS station in 2023.*

<b>2023 TSS- Station Summary</b>	
	<b>TSS-</b>
Total net hours	537.7
Total captures	409
Newly banded birds	273
Recaptures	83
Unbanded birds	53
Bands changed	0
Bands lost/destroyed	2
Total Species	39

The ten most frequently captured species were Yellow Warbler (40), MacGillivray's Warbler (36), Ruby-crowned Kinglet (29), American Robin (27), Song Sparrow (23), Broad-tailed Hummingbird (22), Gray Catbird (21), White-crowned Sparrow (*oriantha*; 19), Warbling Vireo (19), and Dusky Flycatcher (18; Figure 1).

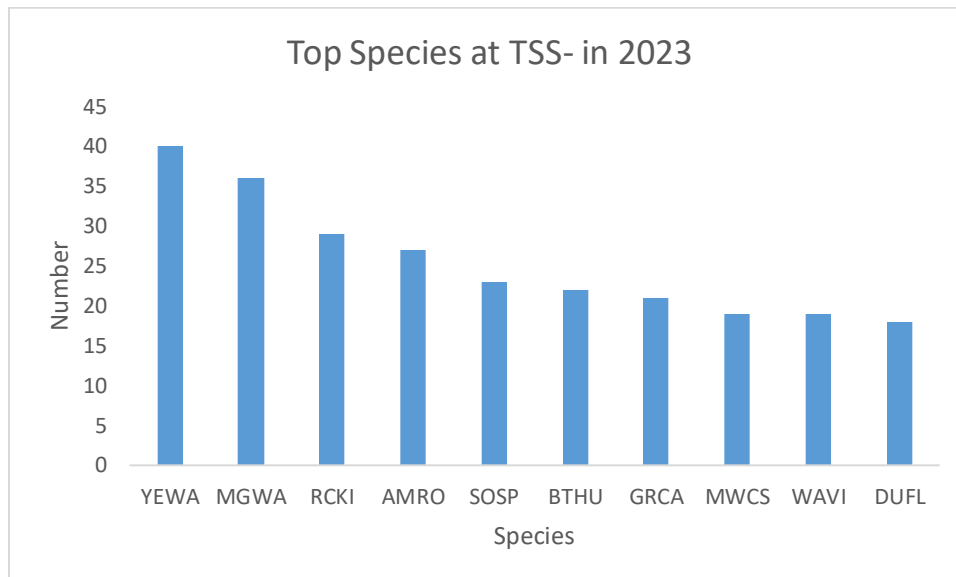


Figure 1. The ten most frequently captured species at the TSS- MAPS banding station in 2023.

Interesting captures from 2023 include Vesper Sparrow, Hermit Thrush, and Red-breasted Nuthatch (Figure 2). A full list of species including newly banded birds, recaptures, and unbanded birds can be found in Table 2.



Figure 2. A first cycle formative Red-breasted Nuthatch was captured at our TSS- MAPS banding station in 2023.

Table 2. A summary of banding data using the [ALPHA Code](#), including newly banded, recaptured, and unbanded birds caught at the Teton Science Schools – Kelly Campus station (TSS-) in 2023.

TSS- New	
Species	# of Birds
AMRO	22
AUWA	4
BCCH	5
BHCO	1
BHGR	4
BRSP	8
CEDW	11
CHSP	3
DUFL	14
FOSP	2
GRCA	17
GTTO	6
HAWO	1
HETH	1
HOWR	4
LISP	5
MGWA	19
MOCH	1
MWCS	16
OCWA	10
PISI	4
PSJU	8
RBNU	1
RCKI	22
RNSA	3
RSFL	1
SOSP	20
SWTH	8
VESP	1
WAVI	19
WETA	5
WIFL	2
WIWA	2
YEWA	23

TSS- Recaptures	
Species	# of Birds
AMRO	5
AUWA	3
BCCH	1
CEDW	1
CHSP	1
DUFL	4
FOSP	2
GRCA	3
HOWR	1
LISP	1
MGWA	17
MOCH	4
MWCS	3
OCWA	1
PISI	1
PSJU	1
RCKI	7
RNSA	3
SOSP	3
SWTH	4
YEWA	17

TSS- Unbanded	
Species	# of Birds
BCHU	2
BTHU	22
CAHU	16
CEDW	1
GRCA	1
GTTO	1
RUGR	1
RUHU	9

## MAPS BANDING AT BOYLES HILL, JACKSON STATION #11235 (JACK)

This marked the 19<sup>th</sup> year of operation for the JACK station.

Banding ran from MAPS Intended Periods 4 through 10 (June 9 to August 7, 2023). The team banded a total of ten times between June 9 and August 7, making sure to operate the station at least once every 7 days. This year’s effort resulted in a total of 536.2 net-hours. We opened nets late on a few occasions due cold temperatures. There was one weather-induced cancellation of a full day of banding on June 2. Throughout the season we captured 273 individual birds of 32 species (Table 3).

Table 3. A summary of effort and results for the JACK MAPS station in 2023

2023 JACK Station Summary	
	JACK
Total net hours	536.2
Total captures	273
Newly banded birds	164
Recaptures	88
Unbanded birds	21
Bands changed	0
Bands lost/destroyed	1
Total Species	32

The most frequently captured species were Yellow Warbler (80), American Robin (38), Song Sparrow (17), Cedar Waxwing (16), Gray Catbird (12), Black-headed Grosbeak (11), Ruby-crowned Kinglet (11), House Wren (10), Calliope Hummingbird (9), Black-capped Chickadee (7) and Bullock’s Oriole (7; Figure 3).

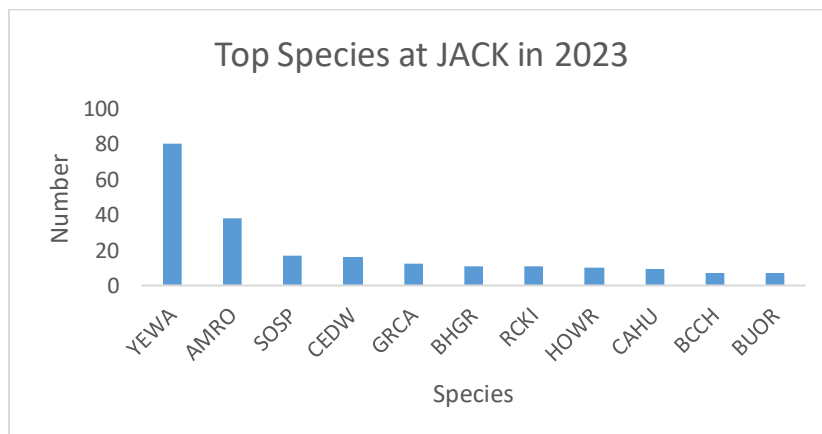


Figure 3. The most frequently captured species at the JACK MAPS banding station in 2023.

Notable captures from the season include Common Yellowthroat, Red-winged Blackbird, and Cassin's Vireo.

Until 1997, members of solitary vireo complex were considered to be one species (Goguen and Curson 2020). The status and distribution of the two most expected vireos from the complex (Cassin's and Plumbeous Vireo) are poorly understood in northwestern Wyoming (S. Patla, pers comm.). The Cassin's Vireo we captured this year was a female in heavy molt which had evidence of a brood patch. Definitive basic plumage in this species is acquired on the breeding grounds after nesting, indicating that she had likely bred somewhere within the Greater Yellowstone Ecosystem, not too far from where she was captured (Goguen and Curson 2020). A Cassin's Vireo banded at JACK in 2022 was the first record of that species at the station and was in similar condition to the 2023 bird, with heavy molt and a molting brood patch (Figure 4). Understanding the status and distribution of cryptic species such as those in the solitary vireo complex is one benefit of long-term banding station operation.



*Figure 4. This Cassin's Vireo was banded in 2022 and another individual with similar characteristics was banded in 2023. We did not take a photo of the 2023 bird, as it was in very heavy molt, and we prioritized processing it quickly over getting photos.*

A full list of species including newly banded birds, recaptures, and unbanded birds can be found in Table 4.

Table 4. A summary of banding data using the [ALPHA Code](#), including newly banded, recaptured, and unbanded birds caught at the Teton Science Schools – Boyles Hill station (JACK) in 2023.

<b>JACK New</b>	
<b>Species</b>	<b># of Birds</b>
AMGO	1
AMRO	28
AUWA	1
BCCH	3
BHGR	5
BRBL	1
BUOR	4
CAVI	1
CEDW	12
CHSP	3
COYE	1
DUFL	5
GRCA	5
GTTO	1
HOWR	7
MGWA	1
MOCH	1
MWCS	2
RBNU	2
RCKI	7
SOSP	10
SWTH	1
TRES	5
WAVI	4
WBNU	2
WETA	2
WEWP	4
WIWA	1
YEWA	44

<b>JACK Recaptures</b>	
<b>Species</b>	<b># of Birds</b>
AMRO	10
BCCH	4
BHGR	6
BUOR	3
CEDW	4
GRCA	6
HOWR	2
MOCH	1
RCKI	4
SOSP	7
TRES	1
WAVI	1
WCSP	1
WEWP	2
YEWA	35

<b>JACK Unbanded</b>	
<b>Species</b>	<b># of Birds</b>
AUWA	1
BCHU	1
BTHU	4
CAHU	9
GRCA	1
HOWR	1
RUHU	3
YEWA	1



### Volunteer and Visitor Engagement

We were assisted by 18 volunteers and interns throughout the season. Additionally, we engaged 109 visitors at the banding station in education/outreach this summer. Of these, 10 were reached through the JHWF's Being Wild campaign, a voluntourism outreach effort. Fifteen children visited the banding station this year, ranging from 2 to 18 years old. We are happy that visitation has grown at the banding station and we hope to continue expanding outreach and education efforts because a visit to a banding station can be a very influential experience in someone's life, especially for children (Figure 5).



*Figure 5. During the 2023 season, the MAPS banding stations had record visitation, including tourists engaged through Being Wild and many local families.*

### References

Goguen, B. and D. R. Curson. 2020. Cassin's Vireo (*Vireo cassinii*), version 1.0. In *Birds of the World* (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.casvir.01>