

Sullivan's Island Bird Banding Station

2021 End of Year Report

Prepared by Sarah Díaz

Federal Permit #24230

SC State Permit BB-20-28

I. Spring 2021 Banding Season

Overview

The Sullivan's Island Bird Banding Station's Spring 2021 season commenced on February 21st and ended on June 16th with a total of 48 days of banding. A total of 296 new bands were issued in the spring season across 33 different species. Highlights of this season's captures were a Swainson's Warbler (*Limnothlypis swainsonii*), 7 Painted Buntings (*Passerina ciris*), and a Louisiana Waterthrush (*Parkesia motacilla*). As expected during Spring migration along the Southeastern coast, the capture rate was low: The average capture rate was 0.257 birds/net hr. The Spring 2020 capture rate was only slightly lower at 0.215 birds/net hr.

Background

The Spring 2021 Season marked the light of the end of the tunnel for the Covid-19 pandemic. Cases in our area have fallen significantly and vaccinations are readily available for the general public. The banding station's volunteer program remained active; however, educational outreach in schools was still not possible due to ongoing Covid restrictions for after-school programming. Busier days early in the season allowed for more intensive volunteer training. Eight volunteers from the Fall 2020 season returned for Spring 2021. Planned collaboration with Wings for Kids (for in-school programming) as well as the National Park Service (for bird walks and talks) had to be postponed once more.

The Spring 2021 season varied substantially from the Spring 2020 season. Not only was the station operated for additional 27 additional banding days: The start date was also bumped back from March 1st (2020 start date) to February 21st and the end date was pushed forward from June 2nd to June 16th. Data collected from late-winter to early-spring in 2021 gave a clearer picture of the overwintering species utilizing the Protected Land. A later end date also allowed for additional collection of data from both resident and migratory breeding birds. As observed in 2020, migration is considerably lighter at the banding site during the Spring than during the Fall migration period. Recapture data continues to indicate that long-term monitoring will provide important longevity data for both resident and migrant species.

The destructive land management plan approved by Sullivan's Island Town Council members in October 2020 could possibly be modified or annulled by the new Council in 2022. The future of the scrubland and maritime forest remains uncertain. The author hypothesizes that the aggressive cutting and stump poisoning planned for many native shrubs and trees throughout the conservation easement will lower the habitat quality as a wintering grounds, breeding

grounds, and migration stopover location. Continued constant effort operation of the SIBBS will provide more detailed data on long-term changes in habitat use, habitat quality, and population trends.

Methods

Temperature and wind speed/direction played a major role in determining which nets could be opened each morning and what time they needed to be closed. Temperatures were monitored at the more exposed ends of vulnerable nets and they were furled if the temperature reached 82 degrees Fahrenheit. Other combinations of factors were also continually assessed to determine if nets needed to be closed early including high humidity, low or no breeze, and no or little cloud cover. Steady or gusting winds of at least 14mph resulted in net closures depending on wind direction. Nets closed due to wind or sun exposure were taken down completely and not reopened, since the sea breeze usually increases steadily, and the temperature rises throughout the morning. Nets were not opened in the rain or drizzle. Radar was carefully monitored to assure that nets were not open during rain showers or storms. Nets were checked once every 25 minutes in ideal weather conditions and once every 15 or 20 minutes on windy or hotter days. Opening of nets commenced approximately one-half hour before sunrise. Closing time ranged from 11am at the beginning of the season to 9am towards the end of the season and on other hot days. A maximum of ten nets were opened each morning.

The “dunes” net lanes (the net lanes to the east of the access path as well as net lanes 15 and 21) are more vulnerable to wind and sun exposure than the “woods” nets (the remaining nets to the west of the access path). Consequently, the dunes nets were frequently closed earlier than the woods nets

Net 25 was added on 3/1. Net 27 was added on 4/12. Net 26 was added on 4/19. Net lane 6 was put back to use on 4/26. Net lane 6 had not been in use since Fall 2016 due to a large fallen Myrtle that has since decayed.

12m nylon mist nets with 30mm mesh were used for nets 3 and 4. A 12m nylon mist net with 36mm mesh was used only in net lane 26, with the intention of capturing Chuck-will's Widow that were frequently heard and seen shortly before dawn. In addition, an American Woodcock was also seen close to the net lane 26. Neither species was captured this Spring. The author did not open the 36mm net until she was confident that the Myrtle Warblers had cleared out of the area. The 36mm mesh size is not ideal for extraction of smaller warblers, especially foraging flocks of Myrtle Warblers. The remainder of the mist nets were 9m nets with 30mm mesh.

Results

Table 1. Summer Residents Totals for Spring 2020 and Spring 2021

Summer Resident Species	Scientific Name	Spring 2020	Spring 2021	Total
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	0	2	2
Common Yellowthroat	<i>Geothlypis trichas</i>	4	2	6
Gray Catbird	<i>Dumetella carolinensis</i>	24	69	93
Great-crested Flycatcher	<i>Myiarchus crinitus</i>	6	0	6
Northern Parula	<i>Setophaga americana</i>	1	1	2
Painted Bunting	<i>Passerina ciris</i>	11	8	18
Swainson's Warbler	<i>Lymnophylis swainsonii</i>	0	1	1
White-eyed Vireo	<i>Vireo griseus</i>	1	0	1
Yellow-breasted Chat	<i>Icteria virens</i>	1	0	1
Total		48	83	131

Table 1. Neotropical migrants within their breeding range captured in Spring 2020 and Spring 2021 seasons.

Table 2. Migratory Species Totals for Spring 2020 and Spring 2021

Migratory Species	Scientific Name	Spring 2020	Spring 2021	Total
Blackpoll Warbler	<i>Setophaga striata</i>	1	1	2
Louisiana Waterthrush	<i>Parkesia motacilla</i>	0	1	1
Northern Waterthrush	<i>Parkesia novaboracensis</i>	1	0	1
Total		2	2	4

Table 2. Neotropical Migrant species outside of their breeding range captured in Spring 2020 and Spring 2021

Table 3. Winter Resident Species Totals for Spring 2020 and Spring 2021

Winter Resident Species	Scientific Name	Spring 2020	Spring 2021	Total
Black-and-white Warbler	<i>Mniotilta varia</i>	0	4	4
Blue-headed Vireo	<i>Vireo solitarius</i>	0	1	1
Eastern Phoebe	<i>Sayornis phoebe</i>	0	2	2
Hermit Thrush	<i>Catharus guttatus</i>	3	7	10
House Wren	<i>Troglodytes aedon</i>	2	1	3
Myrtle Warbler	<i>Setophaga coronata</i>	10	100	110
Orange-crowned Warbler	<i>Oreothlypis celata</i>	0	3	3
Ruby-crowned Kinglet	<i>Regulus calendula</i>	0	3	3
Savannah Sparrow	<i>Passerculus sandwichensis</i>	0	3	1
Sharp-shinned Hawk	<i>Accipiter striatus</i>	0	1	1
Song Sparrow	<i>Melospiza melodia</i>	0	2	2
White-throated Sparrow	<i>Zonotrichia albicollis</i>	0	19	19
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	0	3	3
Total		15	149	164

Table 3. Species within their wintering range captured in Spring 2020 and Spring 2021

Table 4. Non-migratory Resident Species for Spring 2020 and Spring 2021

Non-migratory Resident Species	Scientific Name	Spring 2020	Spring 2021	Total
Brown-headed Cowbird	<i>Molothrus ater</i>	0	1	1
Blue Jay	<i>Cyanocitta cristata</i>	2	1	3
Brown Thrasher	<i>Toxostoma rufum</i>	2	7	9
Carolina Chickadee	<i>Poecile carolinensis</i>	12	3	15
Carolina Wren	<i>Thryothorus ludovicianus</i>	5	8	13
Common Grackle	<i>Quiscalus quiscula</i>	2	5	7
Downy Woodpecker	<i>Picoides pubescens</i>	3	4	7
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	1	14	15
House Finch	<i>Haemorhous mexicanus</i>	0	3	3
Tufted Titmouse	<i>Baeolophus bicolor</i>	0	1	1
Northern Cardinal	<i>Cardinalis cardinalis</i>	8	14	22
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	0	1	1
Total		35	62	97

Table 4. Non-migratory Residents captured in Spring 2020 and Spring 2021.

Table 5. Birds Processed, Net Hours, and Capture Rates for 2/21-3/31/2021

<i>Date</i>	<i>Captures</i>	<i>Net Hours</i>	<i>Capture Rate</i>
2/21/2021	15	20.580	0.729
2/23/2021	20	28.917	0.692
2/24/2021	26	35.083	0.741
2/26/2021	23	36.417	0.632
2/28/2021	13	32.333	0.402
3/1/2021	5	26.830	0.186
3/2/2021	26	38.917	0.668
3/5/2021	13	36.666	0.355
3/7/2021	18	33.083	0.544
3/8/2021	15	34.750	0.432
3/9/2021	11	35.583	0.309
3/10/2021	11	36.750	0.299
3/14/2021	5	32.750	0.153
3/16/2021	9	33.666	0.267
3/17/2021	15	34.750	0.432
3/19/2021	3	24.660	0.122
3/23/2021	10	37.300	0.295
3/24/2021	7	39.250	0.178
3/26/2021	2	35.417	0.056
3/30/2021	13	37.667	0.345
3/31/2021	6	31.667	0.189
Total	266	703.036	0.382

Table 5. Number of birds captured, net hours, and capture rate by day. Totals include total captures, total net hours, and average seasonal capture rate. "Captures" includes new bands, recaptures, and unbanded birds.

Table 6. Birds Processed, Net Hours, and Capture Rates from 4/5-4/30/2021

<i>Date</i>	<i>Captures</i>	<i>Net Hours</i>	<i>Capture Rate</i>
4/5/2021	3	34.333	0.087
4/6/2021	4	35.830	0.112
4/7/2021	1	34.917	0.029
4/8/2021	4	35.417	0.113
4/9/2021	3	32.167	0.093
4/12/2021	3	38.333	0.078
4/13/2021	11	42.250	0.260
4/14/2021	9	40.083	0.225
4/19/2021	11	40.160	0.274
4/20/2021	4	42.830	0.093
4/21/2021	8	40.160	0.274
4/23/2021	23	38.833	0.592
4/26/2021	10	39.833	0.251
4/27/2021	10	42.083	0.238
4/28/2021	7	39.830	0.176
4/30/2021	8	38.167	0.210
6/11/2021	1	12.333	0.081
6/16/2021	4	22.500	0.178
Total	419	1611.844	0.261

Table 6. Number of birds captured, net hours, and capture rate by day. Totals include total captures, total net hours, and average seasonal capture rate. "Captures" includes new bands, recaptures, and unbanded birds.

Table 7. Birds Processed, Net Hours, and Capture Rates from 5/2-6/16/2021

<i>Date</i>	<i>Captures</i>	<i>Net Hours</i>	<i>Capture Rate</i>
5/2/2021	4	39.083	0.102
5/3/2021	5	42.000	0.119
5/25/2021	2	31.417	0.064
5/26/2021	2	31.250	0.064
5/27/2021	3	32.500	0.092
6/1/2021	0	23.333	0.000
6/2/2021	4	30.083	0.133
6/8/2021	9	29.083	0.309
6/11/2021	1	12.333	0.081
6/16/2021	4	22.500	0.178
Total	34	293.582	0.114

Table 7. Number of birds captured, net hours, and capture rate by day. Totals include total captures, total net hours, and average seasonal capture rate. "Captures" includes new bands, recaptures, and unbanded birds.

Figure 1. Migrant and Resident Birds Banded in Spring 2021

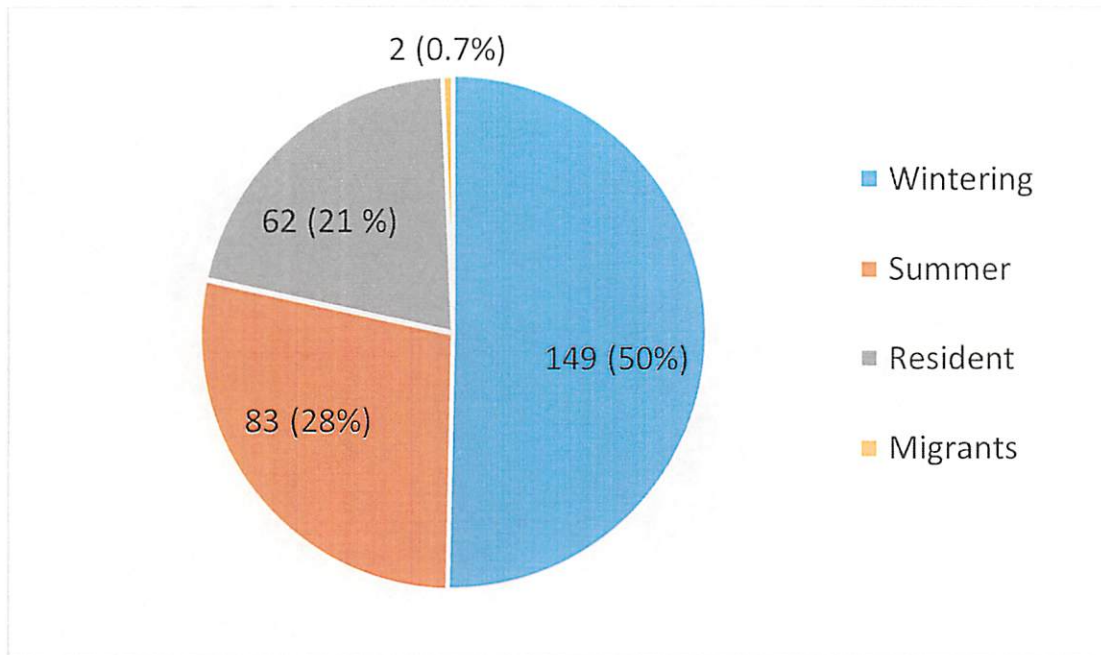


Figure 2. Number of individuals banded in Spring 2021 (n=296) and percentage of total birds banded in Spring 2021. "Wintering" includes winter residents, "Summer" includes migrants within their breeding range, "Residents" includes non-migratory residents, and "Migrants" includes migrants outside of their breeding and wintering ranges

Recaptures

Table 8. Recaptures of the Spring 2021 Season

Common Name	Scientific Name	Number Recaptured
Brown Thrasher	<i>Toxostoma rufum</i>	1
Carolina Chickadee	<i>Poecile carolinensis</i>	4
Carolina Wren	<i>Thryothorus ludovicianus</i>	7
Downy Woodpecker	<i>Picoides pubescens</i>	3
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	2
Gray Catbird	<i>Dumetella carolinensis</i>	16
Hermit Thrush	<i>Catharus guttatus</i>	2
House Wren	<i>Troglodytes aedon</i>	1
Myrtle Warbler	<i>Setophaga coronata</i>	43
Northern Cardinal	<i>Cardinalis cardinalis</i>	12
Painted Bunting	<i>Passerina ciris</i>	4
Ruby-crowned Kinglet	<i>Regulus calendula</i>	3
Song Sparrow	<i>Melospiza melodia</i>	1
White-throated Sparrow	<i>Zonotrichia albicollis</i>	3
Total		102

Table 8. Recaptured individuals banded in 2021.

Table 9. Recaptured individuals of Spring 2021 banded in prior seasons

Species	Band Number	Original Banding Date	Recapture date
Gray Catbird	289172960	10/21/2020	2/28/2021
Northern Cardinal	245139019	9/22/2015	3/1/2021
Northern Cardinal	245158308	6/2/2020	3/2/2021
Hermit Thrush	179172805	3/15/2020	3/8/2021

Table 9. Recaptured individuals banded in prior banding seasons at SIBBS.

II. Summer and Fall 2021 Banding

Overview

The station opened for a total of 41 days between the months of July and November. Seven trained volunteers assisted on a weekly basis and 10 additional volunteers assisted on an irregular basis. A total of 934 new bands were issued this season across 41 different species. Highlights of this season's captures include a Louisiana Waterthrush (*Parus motacilla*), 12 Painted Buntings (*Passerina ciris*), and two Prothonotary Warblers (*Protonotaria citrea*). The average capture rate for Fall 2021 (1.014 birds/net hr) was slightly higher than the average capture rate in Fall 2020 (0.644 birds/net hr). As expected, the Fall 2021 average capture rate was significantly higher than the Spring 2021 average capture rate (0.257 birds/net hr).

Methods

The net lane set-up in Fall 2021 was modified slightly from the Spring 2021 set-up. Net lanes 1, 2, 25 and 26 were not used during peak migration season due to the unreasonable walking distance from the nets to the banding table. Net lane 27 was not used during the Fall season due to excessive sun exposure on the ocean end of the net as well as complaints about abundant cacti around the net lane. In addition, Net lane 21 was not used during the Fall season due to sun exposure and heat. Operational protocols outlined in Spring 2021 Methods were maintained for the Fall 2021 season.

12m nylon mist nets with 30mm mesh were used for nets 3, 4, and 15. The remainder of the mist nets were 9m nets with 30mm mesh.

Results

Table 10. Neotropical Migrant Species Totals for Fall 2021

Neotropical Migrant Species	Scientific Name	Total
American Redstart	<i>Setophaga ruticilla</i>	24
Black-throated Blue Warbler	<i>Setophaga caerulescens</i>	9
Blue-gray Gnatcatcher	<i>Poliophtila caerulia</i>	1
Common Yellowthroat*	<i>Geothlypis trichas</i>	94
Gray Catbird*	<i>Dumetella carolinensis</i>	370
Hooded Warbler	<i>Setophaga citrina</i>	1
Louisiana Waterthrush	<i>Parkesia motacilla</i>	1
Magnolia Warbler	<i>Setophaga magnolia</i>	2
Northern Parula	<i>Setophaga americana</i>	4
Northern Waterthrush	<i>Parkesia noveboracensis</i>	9
Ovenbird	<i>Seiurus aurocapilla</i>	3
Painted Bunting	<i>Passerina ciris</i>	12
Prairie Warbler	<i>Setophaga discolor</i>	15
Prothonotary Warbler	<i>Protonotaria citrea</i>	2
Red-eyed Vireo	<i>Vireo olivaceus</i>	26
Swainson's Thrush	<i>Catharus ustulatus</i>	2
Traill's Flycatcher	<i>Empidonax traillii/alnorum</i>	3
Veery	<i>Catharus fuscescens</i>	1
White-eyed Vireo*	<i>Vireo griseus</i>	17
Yellow Warbler	<i>Setophaga petechia</i>	6
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	3
Yellow-breasted Chat	<i>Icteria virens</i>	1
Total		606

Table 10. Neotropical migrants banded during the Fall 2021 migration season.

*Some individuals do overwinter in coastal SC. The majority of birds banded from this species had substantial fat stores, indicating that they were most likely using the area as a stopover location. Subsequent recaptures in Spring 2022 may provide evidence of overwintering individuals.

Table 11. Winter Resident Species Totals for Fall 2021

Winter Resident Species	Scientific Name	Total
Black-and-white Warbler	<i>Mniotilta varia</i>	1
Eastern Phoebe	<i>Sayornis phoebe</i>	1
House Wren	<i>Troglodytes aedon</i>	9
Myrtle Warbler	<i>Setophaga coronata</i>	225
Ruby-crowned Kinglet	<i>Regulus calendula</i>	12
Savannah Sparrow	<i>Passerculus sandwichensis</i>	1
Song Sparrow	<i>Melospiza melodia</i>	6
Swamp Sparrow	<i>Melospiza georgiana</i>	2
Western Palm Warbler	<i>Setophaga palmarum</i>	19
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	3
Total		279

Table 11. Species within their wintering range banded in Fall 2021.

Table 12. Non-migratory Resident Species Fall 2020

Non-migratory Resident Species	Scientific Name	Total
Blue Jay	<i>Cyanocitta cristata</i>	1
Brown Thrasher	<i>Toxostoma rufum</i>	7
Carolina Chickadee	<i>Poecile carolinensis</i>	7
Carolina Wren	<i>Thryothorus ludovicianus</i>	5
Cooper's Hawk	<i>Accipiter cooperii</i>	1
Downy Woodpecker	<i>Picoides pubescens</i>	1
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	4
Northern Cardinal	<i>Cardinalis cardinalis</i>	23
Total		49

Table 12. Non-migratory Residents banded in Fall 2021.

Table 13. Birds Captured, Net Hours, and Capture Rates for July, August, and September 2021

Date	Birds Captured	Net Hours	Capture rate
7/1/2021	4	18.5	0.216
7/22/2021	9	10	0.9
8/10/2021	2	10.25	0.195
8/30/2021	9	18.33	0.492
8/31/2021	4	15.75	0.254
9/3/2021	8	19.75	0.405
9/7/2021	9	24.83	0.362
9/8/2021	8	18.83	0.425
9/10/2021	17	14.67	1.159
9/12/2021	7	16.75	0.418
9/13/2021	12	17.58	0.682
9/14/2021	5	16.42	0.305
9/15/2021	4	18	0.222
9/17/2021	29	30.58	0.948
9/19/2021	19	20.75	0.916
9/23/2021	15	27.17	0.552
9/24/2021	37	24.08	1.536
9/26/2021	50	23.08	2.166
9/27/2021	37	20.25	1.827
9/28/2021	17	23.25	0.731
9/29/2021	5	25.92	0.193
Total:	307	414.74	0.71

Table 13. Number of birds captured, net hours, and capture rate by day for July, August and September 2021. Totals include total captures, total net hours, and average capture rate.

Table 14. Birds Banded, Net Hours, and Capture Rates for October 2021

Date	Birds Captured	Net Hours	Capture Rate
10/1/2021	49	24.33	2.014
10/3/2021	16	24.92	0.642
10/4/2021	14	26.83	0.522
10/5/2021	10	19.33	0.466
10/8/2021	29	22.83	1.27
10/10/2021	31	27.5	1.127
10/11/2021	23	24.17	0.952
10/12/2021	25	30.17	0.829
10/13/2021	27	25.58	1.145
10/15/2021	20	33.92	0.59
10/18/2021	54	22.92	2.356
10/19/2021	51	23.92	2.132
10/20/2021	36	27.58	1.305
10/24/2021	54	25.67	2.104
10/27/2021	60	23.25	2.581
10/31/2021	14	25.5	0.549
Total:	513	408.42	1.287

Table 14. Number of birds captured, net hours, and capture rate by day for October 2021. Totals include total captures, total net hours, and average capture rate.

Table 15. Birds Banded, Net Hours, and Capture Rates for November 2021

Date	Birds Captured	Net Hours	Capture Rate
11/1/2021	35	28.083	1.246
11/2/2021	49	33.417	1.466
11/16/2021	65	2.167	2.167
11/17/2021	34	27.917	1.218
November Total:	183	91.58	1.524
Summer/Fall Season Total:	1003	914.74	1.014

Table 15. Number of birds captured, net hours, and capture rate by day for November 2021. November Totals include total captures, total net hours, and average capture rate in November. Seasonal Totals include total captures, total net hours, and average capture rate for the Summer/Fall 2021 banding season.

Figure 2. Migrant and Resident Birds Banded in Summer and Fall 2021

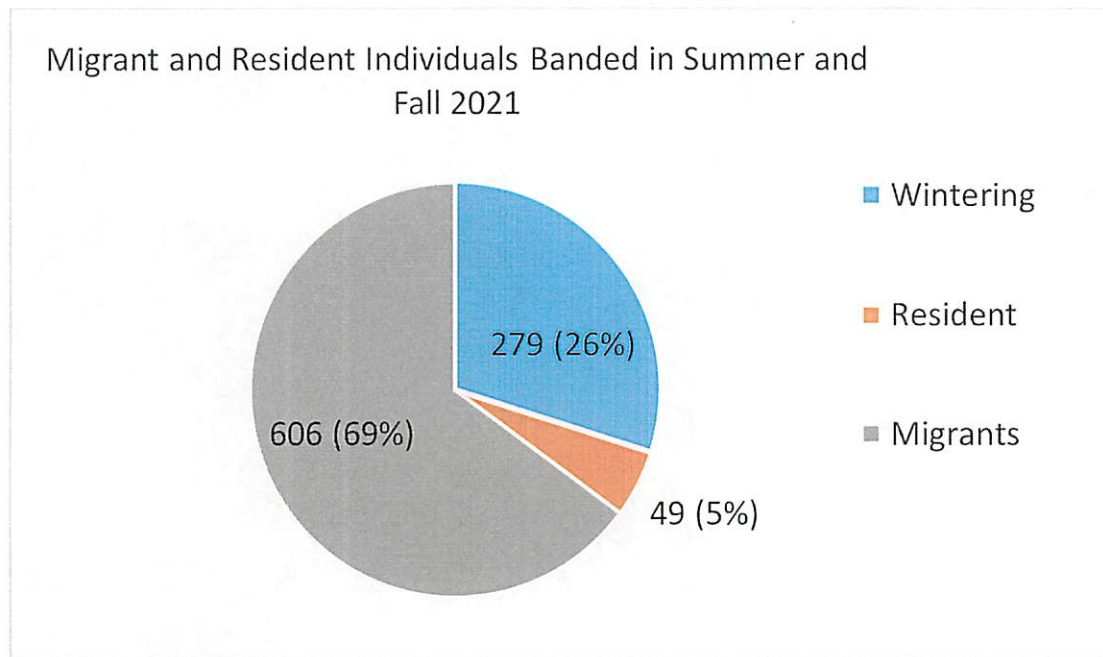


Figure 2. Number of individuals banded in Summer and Fall 2021 (n=) and percentage of total birds banded in Fall 2021. "Wintering" includes winter residents, "Residents" includes non-migratory residents, and "Migrants" includes migrants that are most likely outside of their wintering ranges.

Recaptures

Table 16. Recaptures of the Summer and Fall 2021 Season

Species	Scientific Name	Number of Recaps
Field Sparrow	<i>Spizella pusilla</i>	1
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	1
Northern Cardinal	<i>Cardinalis cardinalis</i>	10
Painted Bunting	<i>Passerina ciris</i>	1
Red-eyed Vireo	<i>Vireo olivaceus</i>	1
White-eyed Vireo	<i>Vireo griseus</i>	1
Myrtle Warbler	<i>Setophaga coronata</i>	1
Prairie Warbler	<i>Setophaga discolor</i>	1
American Redstart	<i>Setophaga ruticilla</i>	1
Gray Catbird	<i>Dumetella carolinensis</i>	15
Carolina Wren	<i>Thryothorus ludovicianus</i>	3
House Wren	<i>Troglodytes aedon</i>	2
Carolina Chickadee	<i>Poecile carolinensis</i>	6
Total:		44

Table 16. Recaptured individuals banded in Summer and Fall 2021.

Table 17. Recaptured individuals of Fall 2021 banded in prior banding seasons

Species	Band Number	Original Banding Date	Recapture date(s)
Field Sparrow	2890-06682	11/13/2020	11/01/2021
Painted Bunting	1851-96102	04/21/2020	4/21/2021, 09/28/2021
Gray Catbird	1681-45830	11/17/2020	11/16/2021

Table 17. Recaptured individuals banded in prior banding seasons at SIBBS.

Table 18. Foreign Recaptures

Species	Band Number	Original Banding Date	Recapture date
Gray Catbird	270199559	10/19/2017	10/20/2021

Table 18. Foreign recapture from the Spring 2020 season. The original banding location was on Kiawah Island.

Discussion

A total of 33 species were banded in Spring 2021 and a total of 41 species were banded in Fall 2021. To date, 65 species have been banded at the Sullivan's Island Bird Banding Station. 1,230 new bands were issued in 2021 and there were 146 recaptures. Fewer birds were banded in 2020 (965) than were banded in 2021. This was likely due to the reduced hours of operation in early 2020 due to the pandemic lockdown and restrictions.

In the Spring and Summer months, data collected shows that Neotropical migrant species are utilizing the Protected Land as a breeding grounds. Painted Buntings (*Passerina ciris*), a focal species for the SIBBS, were observed in breeding condition during the months of May, July, and August. One female with a smooth brood patch was banded on July 22nd and a female with a wrinkled brood patch was banded on August 31st. Two second year males with cloacal protuberances were banded on May 27th and June 2nd. Importantly, an after second year male Painted Bunting banded on 4/21/2020 was recaptured on 4/21/2021 in the same net. The ASY male was subsequently recaptured on September 28th indicating that he had remained in the same territory for the duration of the breeding season.

Documentation of breeding behavior in Painted Buntings was possible this year due to the eight additional banding days that were added in the summer. The station had not previously been operated during the months of June, July and early-August. According to Cornell Lab, Painted Buntings commence egg laying in April and tend to young until mid-August (Birds of the World). Fall migration commences in late-July and ends in mid-October (Birds of the World).

Other Neotropical migrants that may have utilized the Protected Land as a breeding grounds include two Blue-gray Gnatcatchers (*Polioptila caerulea*) banded on March 17th and April 9th and two Prairie Warblers (*Setophaga discolor*) banded on July 22nd. The Prairie Warblers both had a fat score of 2, so they may have been early migrants utilizing the area as a stopover location. According to Birds of the World, Prairie Warblers breed from May through July and they migrate from August to October. Additional years of data collection are necessary to determine if the Protected Land contains suitable breeding habitat for Prairie Warblers or if the species is mainly using the area as a stopover location.

Other Neotropical migrants banded in 2021 that are within their year-round ranges include White-eyed Vireo (*Vireo griseus*) (n=17), Gray Catbird (*Dumetella carolinensis*) (n=439), and Common Yellowthroat (*Geothlypis trichas*) (n=96). The first White-eyed Vireo of the year was banded on September 12th and the last was banded on October 24th, indicating that the species is using the area mainly as a stopover location. Fourteen of the 17 WEVI banded this year had substantial fat stores, which is an indication that the Protected Land contains high quality stopover habitat.

Of the 439 Gray Catbirds that were banded this year, 69 were banded during the Spring season. The 10 GRCA banded between February and mid-March were likely overwintering in the area. Between March 24th and May 3rd, 58 GRCA were banded. These birds could have been overwintering or passing through the area during Spring migration. According to Birds of the World, Spring migration for Gray Catbirds occurs between mid-March and late-May. Only one male captured on May 27th was in breeding condition. Data collected in Spring 2020 similarly indicated that smaller numbers of Gray Catbirds overwinter in the area and that the bulk of the birds banded were utilizing the area as a stopover location. Data collected in the past two years indicates that Gray Catbirds are not breeding in the Protected Land. No females with brood patches or Local birds have been captured.

The foreign recapture of a Gray Catbird originally banded in October of 2017 on Kiawah Island was noteworthy for multiple reasons: The bird was observed with scaly leg and was missing its right foot. Scaly leg likely caused the band to cut off the circulation to the right foot, eventually causing necrosis. The remaining portion of the tarsus had fully healed and it was decided that it would be safer for the bird not to attempt band removal. The band was compressed into the lower leg and there was no space to insert wires or banding removal pliers. Despite only having one leg, the bird was enormous and robust. The wing measurement of 97 was the longest catbird wing ever measured at SIBBS. In addition, the bird had a fat score of 4 and weighed 46.7g! The bird was clearly able to forage effectively with only one leg.

A Field Sparrow originally banded on 11/13/2020 was recaptured on 11/1/2021. Ebird records indicate that Field Sparrows are present during the nonbreeding season in Charleston County, SC. This recapture is an apparent example of site fidelity to a wintering grounds. According to Birds of the World, Fall migration for Field Sparrows commences in late-August and ends in late-October. Since the bird was captured in November, it is likely utilizing the Protected Land as a wintering grounds.

The Fall 2021 average capture rate of 1.01 birds/net hour was higher than the Fall 2020 rate of 0.64 birds/net hour. The station operated six days per week during Fall 2020 and only five days per week in Fall 2021. Consequently, the total number of net hours in Fall 2020 (1,440.85) was higher than the Fall 2021 total of 914.74. Despite the lower net hours, more birds were captured in Fall 2021 (1,003) than were captured in Fall 2020 (865). The discrepancy in captures is due to an increase in the number of Myrtle Warblers, Common Yellowthroats, and Gray Catbirds banded this year.

Year-round long-term monitoring will provide important data on breeding behavior of Neotropical migrants in the Protected Land, including Painted Buntings. Adding additional banding days in June and July will allow for data collection on breeding behavior and post-breeding dispersal. Two Prothonotary Warblers captured in July of 2021 provided definitive examples of post-breeding dispersal. Additional years of data collection will also allow for important recapture data to be collected, including site fidelity and longevity data.

The future of the Protected Land on Sullivan's Island is uncertain. A destructive land management plan approved in October of 2020 appears unlikely to be implemented in the near

future by a new Council. A majority block of Council members has pledged to draft and implement a new environmentally conscious management plan if it is within their power to do so, which has yet to be legally determined. There remains a possibility that the Protected Land will be harshly managed, including widespread areas of clear-cut native vegetation in early-successional zones. This would impact over half of the banding station's net lanes and permanently alter the vegetation in the adjacent 100+ acres of the easement. Continued operation of the Sullivan's Island Bird Banding Station before, during, and after a land management is implemented will provide important data on the effects of habitat alteration on migrant as well as resident species in the Protected Land.

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