Beaverhill Bird Observatory

Summer Report 2022

By Shane Abernethy

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Introduction

The 2022 summer season at the Beaverhill Bird Observatory (BBO) saw the completion of a number of avian monitoring projects and site maintenance tasks. Operations were carried out by head biologist Sara Pearce Meijerink, assistant biologists Shane Abernethy, Jana Teefy and Jon Van Arragon, and volunteer Myrthe Van Brempt. The primary operational task of MAPS (Monitoring of Avian Productivity and Survivorship) banding occurred between the dates of June 10th and August 8th, but additional projects included Tree Swallow chick banding, Purple Martin colony monitoring, the Breeding Bird Forest Census, numerous student intern projects, and a Least Flycatcher nest productivity study.

In addition to these projects, staff worked on various maintenance and stewardship activities, including a significant re-graveling of the access road, installation of a BBO sign at the turn by the front gate and site facility maintenance tasks. BBO Staff also hosted the sixth Geoff Holroyd's Young Ornithologist Workshop, with eleven youth from Alberta, Saskatchewan and Oregon attending to learn about bird ID, handling, banding and more! Workshop participants spent a full week helping with bird banding operations, learning about field biology, wetland ecology, butterflies, falconry, wildlife rehab and more.

Monitoring Avian Productivity and Survivorship

The MAPS program is a protocol standardized across North America and used to assess the breeding status and condition of land birds during the summer, and is geared to provide a detailed overview of nest productivity, fledgling and adult survivorship, post-fledging activity and overall population. The protocol involves catching birds with ten 12m songbird mist nets once every ten day period at each station. Nets are opened at sunrise and monitored for 6 hours. Nets were closed in the event of inclement weather, namely precipitation, wind in excess of 20 km/h or temperatures above 27°C. The BBO has operated three MAPS stations since 1989, making it one of Canada's oldest MAPS operators. The BLAB station has been operating since 1989, and the more recently established SOPO and LILA stations have operated since 2016. This year we accumulated 635 net-hours and captured 477 birds across all three stations, for an area-wide capture rate of 75.1 captures/100 net-hours.

A fledgling Yellow-Bellied Sapsucker, still fully in juvenile plumage.

BBO Lab

The BLAB MAPS station is located in the area around the banding lab and clearing (N53.38055º W112.52737º), in a habitat mostly characterized by mixed-age poplar forest. It is the longest-running MAPS station at BBO, but has also been significantly impacted by forest succession in the 33 years since its inception. The habitat is now dominated by Trembling Aspen and Balsam Poplar, with a canopy level far above the level of our nets, resulting in a major decline in capture rate over the years. Nonetheless, it

remains one of Canada's oldest MAPS stations, and provides valuable data by virtue of how forest succession and growth impacts bird numbers and diversity.

BLAB was run on June 11th, 20th, 30th, July 10th, 21st, and 31st. 333 net-hours were accumulated, yielding 73 total captures and a capture rate of 21.9 captures/100 net-hours. The most common capture was Red-winged Blackbirds (30), followed by Least Flycatchers (22) and American Robins (7). Other captures of interest were Baltimore Orioles (3), Yellow Warblers (2) and a single White-throated Sparrow.

Sora Pond

The Sora Pond, or SOPO MAPS station covers a region of forest edge immediately southwest of Sora Pond at the intersection of the Flicker Freeway and Harrier Highway trails (N53.37936º W112.51921º). The station was established in 2016 and consistently has the highest capture volume of the three stations. Its survey area is on a boundary between mid-succession aspen forest and wetland, with a transition area of willow shrubland between them. Water levels were highly variable this year, and several of the nets could not be run for two periods due to high water making them inaccessible.

SOPO was run on June 12th, 21st, July 1st, 11th, 22nd and August 1st. The six monitoring periods accumulated 275 net-hours, and captured 223 birds, for a total capture rate of 81.1 captures/100 net-hours, making it the most productive station for both capture rate and absolute volume. Red-Winged Blackbirds (48) were the most common capture, closely followed by Least Flycatchers (45) and Yellow Warblers (34). Other noteworthy captures were a Nelson's Sparrow (1), an Eastern Kingbird (1), a Blue-Headed Vireo (1) and a Veery (1), an uncommon bird in this region.

This Veery, an uncommon species of thrush in this area, was one of the highlight captures at SOPO.

Lister Lake

The LILA MAPS station is located along the shores of Lister Lake near the lookout off Harrier Highway trail, (N53.37216º W112.52930º) close to the Visitor Parking Lot. It includes mid-succession poplar forest and willow grassland as well as a section of lakeshore, characterized by dense willow shrubs. Historical beaver activity in the nearby area is heavy and resulted in the clearance of a swath of forest, as well as the formation of a large beaver trench in the number 2 net lane, requiring that particular net lane's retirement in 2021.

Dates of LILA's operation were June 13th, 22nd, July 3rd, 15th, 23rd and August 3rd. 278 net-hours were accumulated for a total of 181 captures and a capture rate of 65.1 captures/100 net-hours. Least Flycatchers (40) were the most commonly caught, followed by Red-Winged Blackbirds (36), Yellow Warblers (15) and Song Sparrows (13). Of note were a number of Yellow-Bellied Sapsuckers (11), a pair

of Philadelphia Vireos (2), a Common Grackle (1), several Cedar Waxwings (5) a single Myrtle Warbler (1).

Nest Site Banding

During the summer, BBO maintains nearly 200 Tree Swallow nest boxes in three grids throughout and outside the Beaverhill Natural Area, as well as two Purple Martin colony boxes and 100 House Wren nest boxes. After years of hope and maintenance, our Purple Martin colony boxes were finally occupied in force! In previous years only two pairs attempted nesting without success, but this year saw 11 active nests in the two colony boxes, most of which successfully fledged young!

One of many Tree Swallow chicks banded at nest boxes this summer. They can be safely banded at only 11 days old!

Staff and summer interns monitored these nest sites, and banded Purple Martin and Tree Swallow chicks when they were at the appropriate age, as well as the two broods of Mountain Bluebirds that occupied one of the nest boxes on the road grid. After a painful period of waiting, staff were able the capture and band the male of the pair, and a stroke of luck allowed the capture of the female as well, who had already been banded at that same box the previous year. Staff were able to band over 400 chicks, mostly Tree Swallows, and were able to recapture two adults that had been banded as chicks the previous year.

Nest Searching and Monitoring

Another regular summer activity is nest searches and recording incidentally found bird nests within the natural area. With the aid of Myrthe, our international volunteer, we were able to scale up our searching and commence a monitoring project specifically focused on Least Flycatchers, a very common local breeder. During a number of days of searching, Myrthe was able to find 36 flycatcher nests, which were then checked for progress every three days with a pole-mounted camera. More than half of these nests were successful, fledging an average four young. While searching for flycatcher nests, we also found a number of other nests (Table 1), which were checked throughout the summer for status and progress and the results noted for reporting to Nature Counts.

A Least Flycatcher feeds her four young at her nest.

Table 1. Nest Searching Results

Species	Number of nests located
Least Flycatcher	36
Yellow Warbler	5
Red-winged Blackbird	3
Blue-winged Teal	3
Gadwall	3
Unknown Duck	3
Ruby-throated Hummingbird	2
American Robin	2
Downy Woodpecker	1
Tree Swallow (tree cavity!)	1
Clay-colored Sparrow	1
Marsh Wren	1
White-throated Sparrow	1
House Wren	1
Baltimore Oriole	1
Unknown Sparrow	1

The Franklin's Gull colony that formed on the lake last year returned once again, although once again efforts to locate the colony were stymied by a combination of high water levels and the threat of avian flu. Nonetheless, the number of fledgling gulls wandering around the natural area in early August spoke to the colony's density and productivity, and serves as a good sign that the lake water levels are doing well.

Breeding Bird Census

Another summer project was the completion of the two Breeding Bird Censuses, a standardized effort to map breeding territories within two 25ha sections of the natural area. Summer intern Raegan Giesbrecht surveyed the grassland grid, while assistant biologist Jon Van Arragon surveyed the forest grid. The grids were surveyed 6 times between in June and July with surveys starting at sunrise. Repeat sightings of singing males, as well as counter-singing events between two males, were used to generate species-specific maps and counts of breeding territories. The reports for these census surveys will be published on our website once completed. One particular highlight was the detection of an estimated 99 Least Flycatcher territories within the 0.25 km^2 area of the forest breeding bird grid, indicating a considerable local density of this species.

Wetland and Marsh Survey

Another project this summer was the Wetland and Marsh Bird Survey, which is the revival of a past project done by interns. This project was conducted by assistant biologist Jana Teefy, who performed three surveys in the wetlands edges along Lister Lake. These surveys involved targeting secretive marsh bird species using playback recordings at a number of standardized points. Yellow Rail, Sora, Virginia Rail, American Bittern and Pied-billed Grebe. 12 Virginia Rail detections were logged at several points, as well as Sora and Pied-billed Grebes, allowing us to properly document the presence of a usually overlooked and understudied species.

Young Ornithologists participating in a benthic invertebrate survey at the Weir lookout point.

Summer Internships

This year BBO was able to host eight summer interns, thanks to funding generously provided from Carole and Gary Dodd and the Alberta Conservation Association. These interns assisted with several of our other long-term monitoring projects, and performed regular field surveys throughout the summer. Projects included monitoring the productivity, progress and success rate of nesting tree swallows and house wrens, surveying seasonal occurrence of butterflies in the natural area, surveying breeding bird territories in the grassland grid, and surveying for bats by checking bat houses for occupancy and acoustic detection surveys. Their reports will be published on the BBO website upon completion. The list of interns, mentors and their projects is listed below.

Tree Swallows: Tessa Frisky and Jonathan Kells, mentored by Karin Snyder

House Wrens: Amelia Murray and Madison Pusch, mentored by Zack Antoniw

Grassland Breeding Birds: Raegan Giesbrecht, mentored by Jon Van Arragon

Butterfly Monitoring: Dylan Perrott, mentored by John Acorn

Bat Surveys: Grace Wagram and Hailey Lewicki, mentored by Lizelle Odendaal and Erin Low

Young Ornithologists Workshop

The sixth Geoff Holroyd's Young Ornithologists Workshop, despite some less-than-ideal weather, was another great success. Eleven youth from across Alberta, Saskatchewan and Oregon, were hosted on site and spent a week being immersed in the life of a field biologist. This year's group was composed of a pleasant mix of skill levels, from passionate birders and naturalists to interested beginners looking for a head start, and it was a great pleasure watching their skills and confidence increase as the week went on. The attendees tented in the clearing in front of the lab building, were woken up each morning by the sonorous blare of Shane's trumpet if they didn't get up themselves in time, and assisted with the

banding process, learning to apply bands, age and sex birds in the hand, extract from mist nets and record data. The ravenous youth were fueled in all this by a generous donation from the Edmonton Nature Club, which covered most of our culinary needs for the week.

In the afternoon, they participated in other activities, including a riveting talk by Dave Lowrie on butterflies and moths, a trip to the UpsanDowns falconry farm to learn about captive breeding from Phil and Helen Trefry, a duckling release with WildNorth and Kim Bloom and a benthic invertebrate survey at the weir with Matt Turnbull. On their last day, they embarked on a Big Birding Day, a quest to spot and identify as many species as possible while traveling to various birding hotspots and documented an amazing 115 species!

Several of the 2022 Young Ornithologists pose with one of their first banded birds.

A BIG THANK YOU to Helen Trefry who is the coordinator of this workshop and not only reviews and selects applicants to attend, but also coordinate and plans the meals, delivers food to site daily with the help of Geoff Holroyd and ensure every youth has the gear they need for this fun week of learning.

Volunteers

Several other volunteers assisted with MAPS banding (Melissa Chrisholm, Silas and Denise Fuellbrandt, Meghan Jacklin and Robyn Denn), bat box emergence counts (Christie and Peter Campbell), nest surveys (Silas and Denise Fuellbrandt), and other incidental tasks as needed.

BBO staff and volunteers spread gravel over a deeply rutted section of the access road. In the background, Bob Schwartz and his Bobcat make our job easy.

In addition, we embarked on some ambitious repairs to the access road, spreading 108 tons, or nine dump truck loads, over some of the roughest sections of the road and much improving them. While a daunting task on paper, the assistance of Bob Schwartz and his trusty Bobcat, as well as the extra hands provided by several volunteers (Hazel Flesher, Karin Snyder, Theodore, and Geoff), made it a single morning's work. Thank you to all that helped out with

this job in particular: your contribution will not go unnoticed by visitors to the observatory for years to come.

Acknowledgements

Any nonprofit is the work of a metaphorical village, from the tireless board members keeping everything running smoothly in the background, to the volunteers that provide much-needed extra hands, to the sponsors, grantors and donors that help keep the lights on. Thank you first to each of our board members: Geoff Holroyd for his guidance and role as chair, Helen Trefry (and Phil Trefry) for housing our ambassador birds and coordinating food and logistics for the Young Ornithologists Workshop, Rose Scott for her essential work as treasurer, Richard Hedley for his work on The Willet – our member-exclusive newsletter, Emily McLellan heading the fundraising committee, Glen Hvenegaard for coordinating our student internship program and strategic plan committee, Darren McGregor for managing our website, as well as board members; Julianne Hayes, Jac Curry, Alyssa Bohart, Christie Campbell, Kimberly Fulton, Warren Finlay, Brendan Casey and Pat Chan for all their excellent work!

Special thanks also goes to Myrthe Van Brempt for lending a valuable extra set of hands and an unexpected artistic talent. Without your help, projects like the Least Flycatcher nest productivity project would not have been possible. Thanks also goes to Robyn Denn, who volunteered for two weeks during the summer, assisting with MAPS banding and the Young Ornithologist Workshop, and Bob Schwartz, who receives a large credit for our road repair efforts going so smoothly. Thanks also goes to the numerous other volunteers who assisted in various roles throughout the summer: Melissa Chisholm, Irene Crosland, Hazel Flesher, Silas and Deana Fuellbrandt, Brad, Petra and Jessica Abernethy, and Meghan Jacklin.

Likewise, operations at the BBO would not be possible without the generous financial support of our sponsors. Our 2022 summer operations were made possible by financial support from the Alberta Gaming, Liquor and Cannabis Commission, Alberta Conservation Association, Edmonton Community Foundation, the Edmonton Nature Club, The Wildbird General Store, Bass Pro Shops and Cabela’s Outdoor Fund, TD Friends of the Environment, Nature Canada's Labatiuk Nature Endowment Fund, Alberta Environment and Parks, Claystone Waste Ltd., Environment and Climate Change Canada, Employment and Social Development Canada, Beaver County, Clean Harbors, Edmonton Nature Club, and Bird Studies Canada's Baillie Fund.

Appendix 1: Per-Station MAPS Banding Totals

BLAB Station	**Captures**				
Species	**Banded**	**Repeats**	**Return**	**Other**	**Total**
Least Flycatcher	11	5	3	3	22
Black-capped Chickadee	2				2
House Wren	1				1
Yellow Warbler	2				2
American Goldfinch			1		1
American Robin	2		4	1	7
Brown-headed Cowbird		1	2		3
Red-winged Blackbird	17		3	10	30
Baltimore Oriole	2		1		3
Hairy Woodpecker			1		1
White-throated Sparrow	1				1
Totals	38	6	15	14	73

SOPO Station	**Captures**				
Species	**Banded**	**Repeats**	**Return**	**Other**	**Total**
Traill's Flycatcher	4				4
Least Flycatcher	37		6	2	45
Eastern Kingbird	1				1
Black-capped Chickadee	11	1		3	15
House Wren	6				6
Marsh Wren				2	2
American Robin	1	4	2		7
Veery	1				1
Swainson's Thrush	2				2
Cedar Waxwing	3				3
Warbling Vireo	1				1
Red-eyed Vireo	1				1
Blue-headed Vireo	1				1
Yellow Warbler	25	5	3	1	34
Tennessee Warbler	3				3
Myrtle Warbler	1				1
Ovenbird	1				1
Common Yellowthroat	3				3
Clay-colored Sparrow	8	1		1	10
Swamp Sparrow	2	1	1		4
Song Sparrow	4	2	1	2	9
Nelson's Sparrow	1				1
American Goldfinch	4				4
Rose-breasted Grosbeak	2				2
Gray Catbird	2				2
Red-winged Blackbird	17	4	3	24	48
Brown-headed Cowbird	2		2	1	5

Baltimore Oriole	2		1	1	4
Downy Woodpecker	2				2
Yellow-bellied Sapsucker	1				1
Totals	149	18	19	37	223

LILA Station	**Captures**				
Species	**Banded**	**Repeats**	**Return**	**Other**	**Total**
Downy Woodpecker	1				1
Yellow-bellied Sapsucker	6	5			11
Least Flycatcher	25	9	5	1	40
Traill's Flycatcher	1				1
Black-capped Chickadee	9	1		1	11
House Wren	4	1		1	6
Marsh Wren	2				2
American Robin	6	1			7
Cedar Waxwing	5				5
Warbling Vireo	4				4
Red-Eyed Vireo	1				1
Philadelphia Vireo	2				2
Gray Catbird	1		1		2
Yellow Warbler	12		3		15
Common Yellowthroat	2				2
Myrtle Warbler	1				1
Clay-colored Sparrow	8		1		9
Song Sparrow	9	4			13
White-throated Sparrow	4	1		1	6
Brown-headed Cowbird	1		1	1	3
Red-winged Blackbird	20	1		15	36
Baltimore Oriole	1				1
Common Grackle				1	1
Ruby-throated Hummingbird				1	1
Totals	125	23	11	22	181