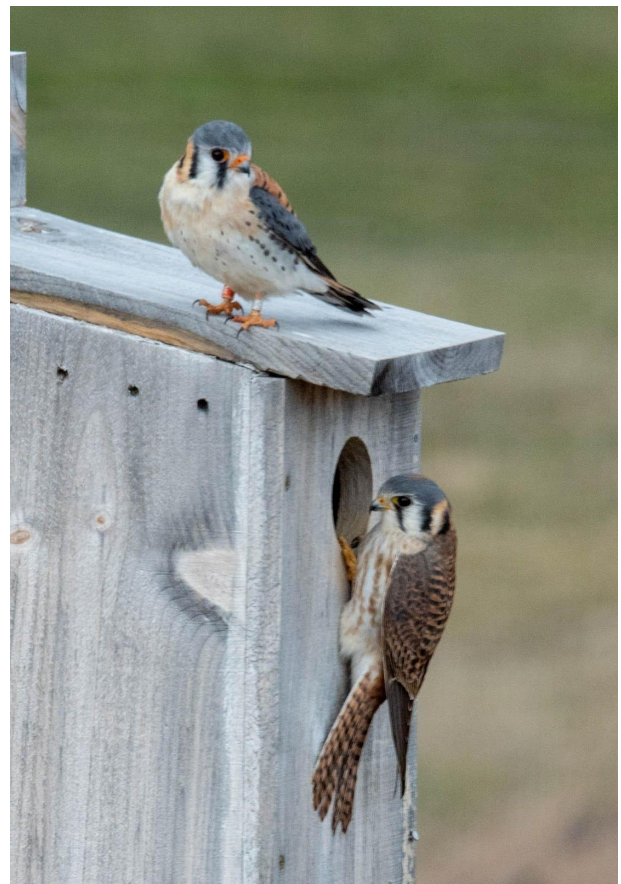




Maine Nest Box Monitoring Project 2020 Year End Report Maine Natural History Observatory

Introduction

Each breeding season, Maine experiences an influx of migratory breeding birds, many of which utilize cavities in which to nest. Many of these species will readily take to man-made nest boxes in lieu of naturally-occurring nest sites, presenting a unique opportunity to observe breeding success or failure. This willingness to inhabit man-made cavities is also of conservation significance as some species suffer declines attributed to increased competition for suitable nest sites. Threats such as invasive species, habitat destruction, and climate change all present challenges for cavity-nesting species which demand monitoring efforts with a focus on conservation. Despite some cavity-nesting species being listed as of conservation concern in Maine, there has not been a comprehensive effort to monitor cavity-nesting breeding birds in Maine. To address this gap in knowledge, the Maine Natural History Observatory (MNHO) initiated a nest box monitoring effort throughout Maine in 2019 in partnership with the Maine Department of Inland Fisheries and Wildlife's Maine Bird Atlas project, a comprehensive, 5-year, volunteer-driven atlasing effort.



2020 Project Summary

In 2019, MNHO launched a state-wide nest box monitoring project. The goal of this project was to build and distribute a number of nest boxes to volunteer monitors throughout Maine. During this first field season, the project was focused primarily on three focal species: American Kestrel, Eastern Bluebird, and Northern Saw-whet Owl. Following the 2019 field season, a goal to expand the project to cover additional priority species was established. Tree

Swallows and Cliff Swallow were identified as priorities for the 2020 field season.



A combination of MNHO staff and volunteers met in early spring of 2020 to construct nest boxes designed specifically to accommodate nesting Tree Swallow. A total of 27 were constructed. Additionally, MNHO initiated a partnership with the Massachusetts-based nonprofit, Swallow Conservation, who provided artificial, clay Cliff Swallow nests. These artificial nests were provided by Swallow Conservation at cost and were paid for by a charitable contribution. Additionally, MNHO staff created two monitoring handbooks which were distributed to volunteer monitors receiving boxes and clay nests and volunteers who sought to participate in the project using their own boxes. These handbooks detailed when and where the nest boxes/clay nests should be deployed,

monitoring protocols, and species profiles for the target bird species. Boxes and clay nests were distributed to volunteers by project staff and the Maine Bird Atlas regional coordinators throughout the spring.

A total of 59 MNHO built nest boxes were delivered to project monitors during the 2019 field season and assembled an additional 27 swallow nest boxes in 2020. Additional nest boxes were monitored by project volunteers who either already owned or built their own boxes during this first field season. Breeding was confirmed for American Kestrel, Eastern Bluebird, Tree Swallow, and House Wren.

Summary of nest boxes deployed and confirmed breeding.

Species	# of Target Boxes Deployed in 2019	# of Target Boxes Deployed in 2020	# of Boxes with Confirmed Breeding in 2019	# of Boxes with Confirmed Breeding in 2020
American Kestrel	20	21	1	4
Eastern Bluebird	31	36	6	5**
Northern Saw-whet Owl	11	12	0	0
Black-capped Chickadee	0*	0	1	0
Tree Swallow	1	10	8	6
House Wren	1*	0	3	2

*Although not a designated focal species, boxes created for Eastern Bluebird and Tree Swallow were suitable for use by other cavity-nesting songbirds. **One box supported a double brood of Eastern Bluebirds during the 2020 field season.

Summary of artificial nests deployed and confirmed breeding.

Species	# of sites where artificial nests were deployed in 2020	# of sites with confirmed use of artificial nests in 2020
Cliff Swallow	3	0

The project's expansion was promoted through a variety of channels including social media, the MNHO website, and Maine Bird Atlas training workshops. Nest boxes were distributed to project volunteers either at Maine Bird Atlas workshops or were delivered to volunteers by MNHO staff. The distribution of boxes throughout the state was



dictated by volunteer interest. Volunteers who received boxes were instructed to deploy their box according to the habitat and nest cavity requirements of the bird species of interest. Nest boxes were distributed within 12 of Maine's 16 counties.

In October, MNHO hosted a well-attended virtual presentation by Mara Silver of Swallow Conservation focused on swallow monitoring and conservation via Zoom. This event was held to raise awareness about widespread swallow declines and increase public interest in the swallow-focused projects.

Nest box distribution by Maine county.

County	American Kestrel	Eastern Bluebird	Northern Saw-whet Owl	Tree Swallow
York	0	0	0	0
Cumberland	1	3	0	0
Sagadahoc	0	0	0	0
Androscoggin	0	0	1	0
Kennebec	6	6	3	5
Lincoln	0	0	1	0
Knox	2	0	0	0
Waldo	5	10	0	1
Hancock	2	9	3	0
Washington	1	0	1	0
Oxford	2	3	3	1
Franklin	1	1	0	0
Somerset	1	4	0	1
Penobscot	0	0	0	2
Piscataquis	0	0	0	0
Aroostook	0	0	0	0

Future directions

Future directions for the project include expanding the volunteer effort into other parts of the state with limited to no volunteer coverage. In addition, efforts will be made to distribute all available nest boxes to volunteers prior to the 2021 field season and to increase participation in our Cliff Swallow colony monitoring project. MNHO is partnering with the Maine Department of Corrections to construct additional American Kestrel and/or Northern Saw-whet Owl nest boxes which will be deployed in 2021.

While many nest boxes were distributed during the 2019 and 2020 field seasons, not all boxes were deployed by volunteers in time for the arrival of migratory cavity-nesters. Now that most of the available boxes have been distributed to volunteers, they can be deployed earlier during the 2021 field season ahead of the arrival of these species to their breeding grounds.

Acknowledgements

MNHO would like to thank the Lapointe Lumber Company for their generous support of Maine's cavity-nesting bird species through the donation of nest box materials. Their support greatly enhanced the capacity of the Maine Nest Box Monitoring Project to reach volunteers and provide suitable nesting cavities throughout the state. MNHO would also like to thank Mara Silver of Swallow Conservation for providing the project with materials, guidance, and assistance



with outreach. Last but certainly not least, MNHO would like to thank all of the 2020 project volunteers for assisting with nest box construction and for their dedicated monitoring efforts.

Photo credits (by order of appearance):

Tree Swallow nestlings - Logan Parker

American Kestrel Pair - Kshanti Greene

Eastern Bluebird nestling - Amy Meehan

American Kestrel fledgling - Logan Parker

American Kestrel nestlings - Logan Parker