THE LINNAEAN NEWSLETTER

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EASTERN BLUEBIRD AND TREE SWALLOW NESTING SUCCESS IN THE GREAT SWAMP

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I often wonder how successful birds are in fledgling their young. Whenever I find a bird nest in the open and especially if it is a ground nesting bird, it seems the nest is eventually predated before the eggs hatch or young fledge. This happens even though I leave the nest area in a different direction from which I came. This avoids creating a dead end path that a mammalian predator could use to follow the scent trail to locate the nest. It also may be that if I can find a nest a predator would also be likely to find it.

Monitoring nest boxes provides an excellent opportunity to assess the nesting success of birds – at least for cavity nesting birds such as Eastern Bluebirds (*Sialia sialis*) and Tree Swallows (*Tachycineta bicolor*) that are the primary occupants of the approximately 140 songbird nest box trail in the Great Swamp National Wildlife Refuge (GSN WR). This same assessment would be very difficult to do for birds that use open nests due to the difficulty of locating and monitoring a significant number of nests.

A nesting (nest with eggs) is considered successful if at least one young bird from the clutch of eggs hatches and leaves the nest as a fledgling. Another way of measuring success is how many eggs eventually hatch and fledge.

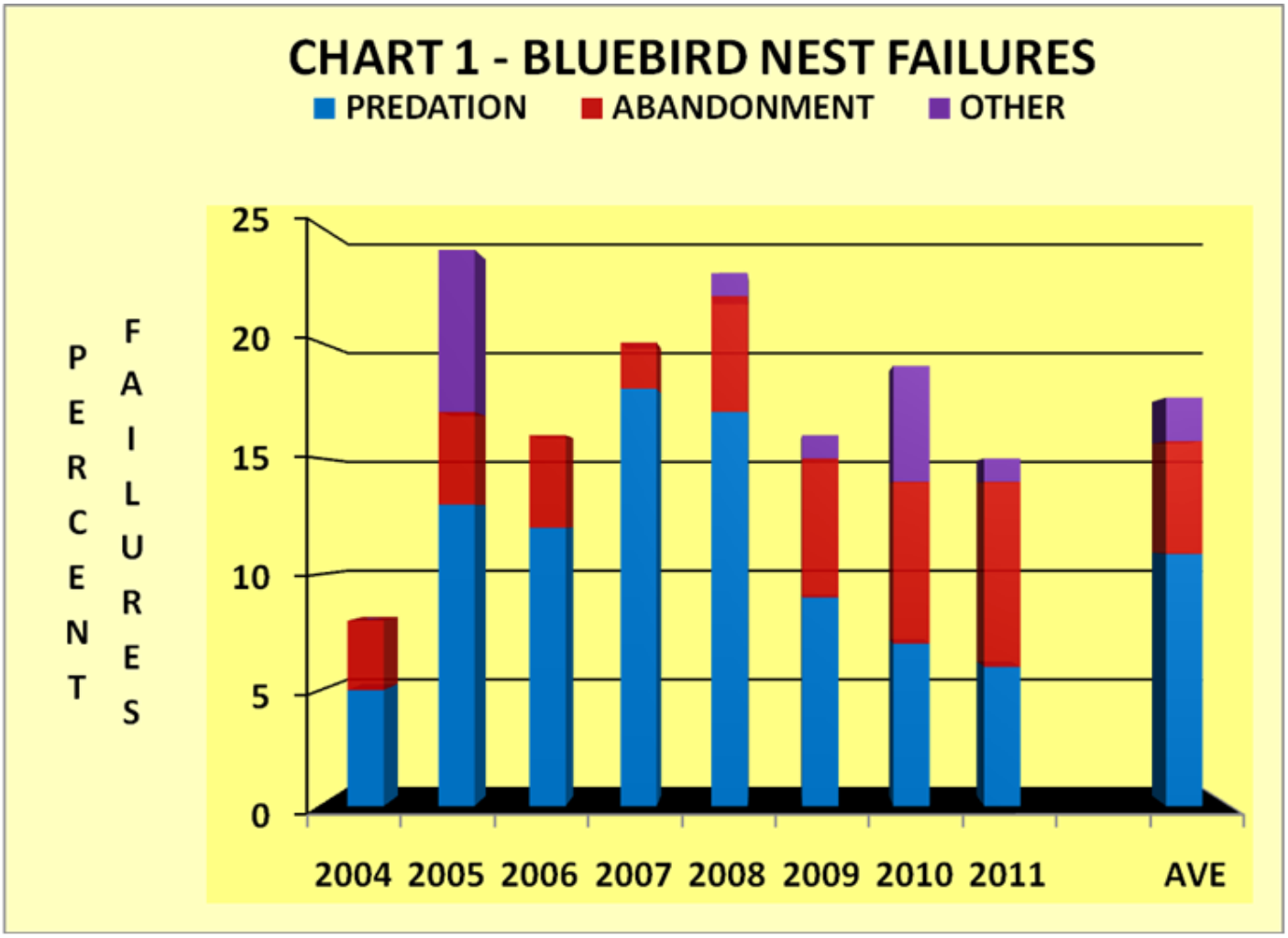
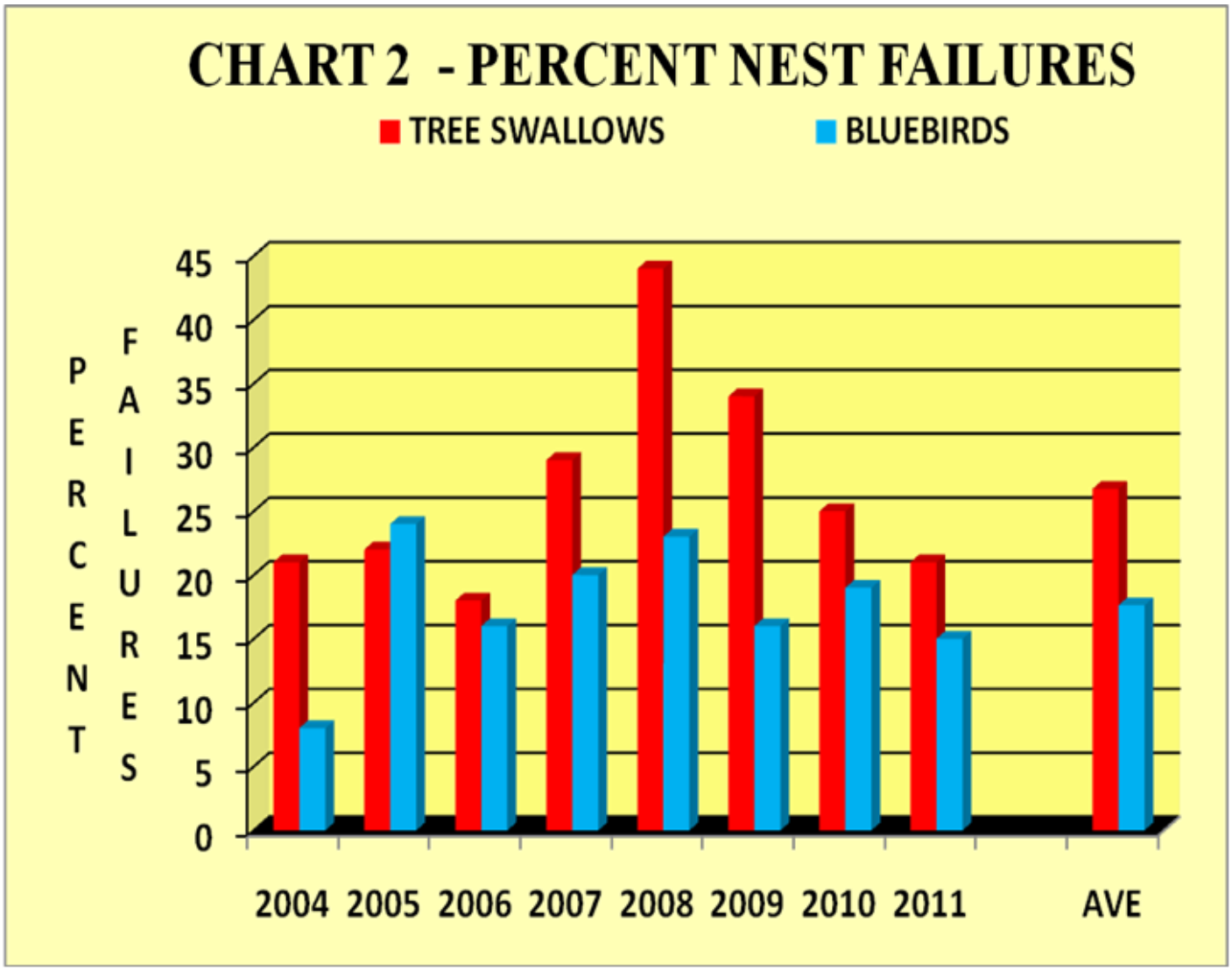


Chart 1 presents the percentage of bluebird nesting failures over an eight year period (2004 -2011) that covers 503 nesting attempts. On average about 18% of the nestings fail to fledge a bluebird; in other words over 82% of the nestings are successful. Nest failure rates ranged from a low of 8% in 2004 to a high of 24% in 2005. Weather is a significant factor in the variation of nesting success from year to year.

Chart 2 compares Eastern Bluebird and Tree Swallow nesting success for the same eight year period. Bluebird nesting success exceeded Tree Swallow nesting success in seven of the eight years. Tree Swallows had an average nesting failure rate of 27% or a success rate of 73%. This is based on 652 Tree Swallow nesting attempts.

Tree Swallows have higher nesting failure rates than bluebirds for several reasons. Bluebirds can raise two clutches in GSNWR in a season. They begin laying eggs in April, and continue laying in May, June, and July. The success or failure of a nesting is independent of the month. Tree Swallows raise one clutch per year. They essentially start all their nestings in May or June. Over 80% of swallow nestings are begun in May. Eggs laid in May will hatch in late-May or early-June when the daylight hours are longest and flying insect population is greatest. Tree Swallows will have the best conditions to capture enough food for their young. If a Tree Swallow nest is predated in May, they will immediately renest in the same box and likely have their nest predated again. If the renesting is delayed until June, the eggs hatch in late-June or July when the Swamp is usually dry and the flying insect population is lower. About 70% of the Tree Swallow nestings started in June fail.



Another way of measuring nesting success is to compare the number of eggs that eventually fledge. Table 1 is a comparison for Eastern Bluebirds and Tree Swallows for the 2004-2011 period.

As expected the rate of eggs that eventually fledge is lower than the overall nesting success rate as not all the eggs in a given clutch may ultimately produce a fledgling. However, 95% of the eggs eventually fledge in both Eastern Bluebird and Tree Swallow successful nests.

The greatest reason for nest failure is predation followed by nest abandonment (eggs fail to hatch). The "other" category shown in Chart 1 includes death of the entire clutch due to starvation as well as undetermined causes. Abandonment of a clutch of eggs could be due to the death of one or both of the parents during the incubation stage, infertile eggs or improper incubation. Extremely high nest box temperatures exceeding 100° F could result in overheating eggs, killing the embryos. Inclement weather (extended periods of rain, mist and/or high wind) or drought in the case of Tree Swallows can prevent adults from obtaining enough food to keep their hatchlings from starvation.

Predation rates vary from year to year and remedial action is taken annually to reduce predation. Bird nests in the GSNWR have been predated by mammalian, avian and perhaps reptilian predators. The greatest threat is from mammalian predators. The known songbird nest box predators in the GSNWR are mice, Southern Flying Squirrel

(*Glaucomys volans*), Long-tailed Weasels (*Mustela frenata*), Raccoon (*Procyon lotor*), Black Bear (*Ursus americanus*), House Wren (*Troglodytes aedon*) and House Sparrows (*Passer domesticus*).

wire mesh tunnels (Noel guards) on nest box holes has met with limited success. The Noel guards prevented raccoon predation but bluebirds are reluctant to nest in these boxes.

Table 1: Comparison of success rates.

	Eastern Bluebirds	Tree Swallows
Eggs hatched	84%	79%
Hatchlings fledged	93%	89%
Eggs resulting in fledglings	78%	70%
Successful nests	82%	73%

The use of metal support posts with close fitting cylindrical predator guards has essentially eliminated the threat from mice and Long-tailed Weasels as long as vegetation is trimmed around the posts to prevent an alternative pathway to the nest box. White-footed Mice (*Peromyscus leucopus*) occupied one third of the nest boxes and disrupted nesting when the nest boxes were supported by wooden posts with loose fitting cylindrical predator guards. A mouse can enter the seemingly smallest of openings. Flying squirrels are deterred by locating the nest boxes far enough away from trees so they cannot glide from a tree to the nest box.

The robust Raccoon population is currently the primary predator. Raccoons forage near water and are a threat to boxes along waterways. In dry years when food is scarce they tend to raid more boxes. Raccoons climb atop the nest boxes and use their manual dexterity to reach into the nest box hole to retrieve eggs or hatchlings. The addition of plastic conical guards atop the cylindrical guards has deterred Raccoon predation on a number of boxes. A program to install more such guards in areas subject to Raccoon predation is ongoing. The use of

Tree Swallows readily enter and use these boxes (see page 1).

There is no way to deter one mammalian predator – the Black Bear. Below is a picture of nest box and post destroyed by a black bear. Fortunately, bears are infrequent predators. They have poor eye sight and evidently confuse the nest boxes with bird feeders that offer a substantial meal. All nest boxes raided by bears contained hatchlings. A bear will stop after raiding one nest box in a year because the resulting caloric reward is minuscule.

House Sparrows will displace nesting Eastern Bluebirds and Tree Swallows from nest boxes. They may also kill adult Eastern Bluebirds (below) and Tree Swallows. House Sparrows only nest on the periphery of the GSNWR in areas near houses especially those with livestock or bird feeders that are a source of food. Boxes only used by House Sparrows are relocated. The nest hole is modified on boxes used by both Eastern Bluebird and House Sparrow. The normal one and a half inch round hole is replaced with an oval hole that is one and three eighths inches wide by two and a quarter inches long. The somewhat plumper House Sparrows have difficultly entering the narrower hole.

The diminutive House Wren and the nonnative House Sparrow are nest box predators. House Wrens nestings are minimized by locating the nest boxes over 50 feet from brush or the tree line as wrens like to nest close to cover. Once a wren has taken up residence, it will often visit nearby nest boxes and destroy any eggs in that box by pecking them open and dropping them out of the nest box entrance hole (above).

ANNOUNCEMENTS

SOCIETY LOOKING FOR EDITOR

The Linnaean Society needs to fill the office of Editor in order to re-start parts of its publishing program that have been inactive for at least five years. As an officer of the Society, the Editor is expected to attend monthly Council meetings when convenient. The position is described in the Constitution:

> Section 3, Article 5. The Editor, with the assistance of Associate Editors who may be appointed from time to time by the President, shall edit and supervise all publications of the Society and shall arrange for their exchange and distribution.

In practice, the Editor and the Editorial Committee are not involved with the minutes of meetings, the newsletter, or the website of the Society, all of which are handled by other volunteers. Rather, their role is confined to the *Proceedings* of the Society and the *Transactions* of the Society, as described below.

Proceedings: This publication represents the historical memory of the Society.

The first issue of the *Proceedings* was published in 1889. The most recent*, #75,* was published in 2009 and covered the period from 1996-97 to 2007-2008. (A copy is available.) It included the following:

- An Annual Report for each season listing the officers and new council members elected that year; speakers at meetings; and the number of field trips offered.
- Beginning in 2001, the Treasurer's Report for the year.
- Lists of workshops held and awards bestowed during the year.

The Society's Constitution says this about the *Proceedings*:

> Section 4, Article 2: An Editorial Committee, with the Editor acting as chairman, shall . . . from time to time, publish with the consent of the Council an issue of the Society's *Proceedings*, which shall contain the annual reports of the Secretary and Treasurer, reports of pertinent Committees, general notes, and scientific papers.

The current Council feels the *Proceedings* should be published approximately every five years and that future issues should include notes and papers, as mentioned in the Constitution. These would in general be shorter than those included in the *Transactions* and, perhaps, more likely to be contributed by informed amateurs rather than university researchers. They would also include field notes compiled by Society members.

Transactions: The most recent volume of this publication, Volume X, entitled *Natural History of New York City's Parks and Great Gull Island*, was published in September of 2007 and is available online: http://linnaeannewyork.org/about-publications/images/Transactions_X.pdf

Previous volumes ranged from the first, issued in 1882, to IX, issued in 1980.

The Constitution has this to say about the *Transactions:*

> Section 4, Article 2: . . . The Editorial Committee shall also recommend to the Council, for inclusion in the Society's *Transactions*, publications of extensive papers that are submitted to it from channels of scientific communication. Upon recommendation by the Council, the publication of a volume of the *Transactions* shall be subject to the approval of a majority of the Active, Supporting and Life Members, Benefactors and Fellows present at a regular meeting of the Society.

Over the years, the *Transactions* has enjoyed a certain cachet within the ornithological community, with many articles being written by eminent members/scientists such as Ernst Mayr and Ludlow Griscom. It is hoped and expected that a revived editorial effort can restore the publication's reputation for articles of scientific interest that for some reason are not appropriate for other journals. These articles would be peer-reviewed.

The Editor will not be expected to determine the publishing program of the *Transactions* or participate in the peer review of articles. The Editorial Committee together with other Council members will decide on a theme for the each issue and suggest authors for articles.

The Editor's responsibility will then be to ensure that potential authors are contacted; that follow-up is made; and, to the extent possible, that a reasonable schedule is in place. The Editor will also be responsible for:

- communication and coordination among all parties participating in the effort;
- copyediting articles for readability (rather than scientific accuracy) and proofreading, either doing the work him/herself or assigning it to another Committee member;
- in conjunction with other officers, setting the publication budget and ensuring funding; and
- arranging for design, printing, and distribution.

Some scientific knowledge and previous experience in editing journals would be helpful but are not required for the post of Editor. Rather, the applicant should have a keen interest in the subject matter, a talent for organization, and the ability to work collaboratively. Anyone interested in the role of Editor or having questions about the skills and responsibilities involved should get in touch with the President of the Society.

(Drafted by Mary Jane Kaplan, January, 2014)

EXCLUSIVE OFFER TO LINNAEAN SOCIETY MEMBERS

In partnership with the International Society for Behavioral Ecology (ISBE), the Linnaean Society of New York is delighted to offer the following benefit:

On Monday evening, August 4th, the ISBE www.isbe2014.com/program.html will be hosting an event at the American Museum of Natural History celebrating Isabella Rossellini's Mammas film series. Ms. Rossellini will hold a Q&A after the showing. This event is part of the ISBE's week-long conference and a limited number of tickets (no charge) have been set aside for Linnaean Society members, available on a first come, first serve basis.

Registration for this event is open only to Linnaean Society of New York members. All registration is to be done by emailing secretarylsny@gmail.com or phoning Lydia Thomas at 212-874-3338 before July 15th.

Specific event information will be sent once your registration has been confirmed. Names will be held at the door.

LINNAEAN "HOMECOMING"

Save the date on your calendar! The fall Linnaean Society "Homecoming" get together for members will be on Thursday, September 18, 2014 from 6:00 to 8:00 pm. This has been a very popular evening in recent years. A chance for members to say hello after the summer break and often to get a preview of the new Linnaean year.

SUMMER PROGRAMS

Three programs, led by experts in their fields, will be held on the third Tuesdays of the summer months. The venue for each will be Central Park, with the meeting places and times as indicated. The programs will take place in drizzle but not in rain. For the July and August programs please bring a flashlight if you can. No registration is needed for these programs.

June 17, 2014: Horticultural Walk in the Ramble. (Meet at the northeast corner of 81st Street and Central Park West at 6:30 pm.)

Leslie Baglio is a graduate of the School of Professional Horticulture at the New York Botanical Garden. She worked four years as Foreman Gardener at J. Mendoza Gardens, and for the past two years has been a horticulturalist at Blondie's Treehouse, the horticultural firm that absorbed J. Mendoza Gardens in a merger. She will lead a walk in her favorite spot in Central Park, the Ramble, discussing, among other things, the original design of the Ramble and how it has evolved for good and bad, the question of non-native versus native plants and animals there, and the benefits of the Ramble's flora for its fauna.

July 15, 2014: Mushrooms in Central Park. (Meet at 103rd Street and Central Park West at 6:30 pm.)

Over 500 species of mushrooms have been found in New York City, nearly 200 of them in Manhattan alone. Gary Lincoff, author of The Joy of Foraging, The Complete Mushroom Hunter, Simon and Schuster's Guide to Mushrooms, and National Audubon Society's Field Guide to [North American] Mushrooms, will lead a hunt for them in the Ravine. He cautions that mushroom abundance is dependent on the amount of recent rainfall – the wetter, the better – but he adds that even in a dry July we should see oysters, turkeytails, inky caps, reishis, and more.

August 19, 2014: Mothing in Central Park. (Meet at 103rd Street and Central Park West at 7:45 pm.)

"On any given August night, hundreds of species of moths are on the wing in Central Park. Harry Zirlin will attempt to attract as many as possible – especially the numerous species of the large, colorful moths of the Underwing family, which are a late summer specialty – using light and his own recipe for the moth delicacy called 'mung': a mash of fermented fruit, sugar and beer." This was the write-up for the first Linnaean moth crawl, held on August 21, 2012, which, because an announcement of it had appeared in the "Spare Times" section of the *New York Times*, drew a cumbersome crowd of 84 people. For this second try, there will be no announcement in the *New York Times* and Mr. Zirlin will try some new ingredients in his mung. We hope to attract many fewer people and many more moths.

NEWS-LETTER MATERIAL NEEDED

The Linnaean News-Letter depends on the Society's members for material. We are currently running low on material for future issues. The coming summer months are a great time to write something that you would like to share with your fellow members. The winter of 2013/2014 was a great one locally for interesting birds and was followed by one of the best spring migrations in recent years. Many members probably have stories or birding accounts they can share with their fellow members. Please consider writing something and sending it to the News-Letter editor over the summer.

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