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Risk avoidance by parental gulls in a tidal salt marsh

Birds I View

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Laughing Gull and chick in a straw nest in a tidal salt marsh on the southern coast of New Jersey (photo: B. Montevecchi)

Recently I had the opportunity to review my doctoral studies at Rutgers University on the nesting behavior of gulls and decided to share some of that with you. This research was my first formal study with wild birds, and I was introduced to laughing gulls and their nesting patterns in the tidal saltmarshes of southern New Jersey. The bird's name derives from their raucous high-pitched staccato calling that to some sounds like laughing (check it out - https://www.allaboutbirds.org/guide/Laughing_Gull/overview).

In coastal tidal marshes, laughing gulls construct straw nests often on mats of straw debris from the preceding year's growth of salt hay or spartina grass. Many nests are attached to grass stalks growing along their perimeter. Some of the large nests are actually floating platforms, and all nests have some floatation capacity.

And as it happened, nest floatation turned out to be a critical parental tactic for their survival of eggs and chicks. The salt marsh exists in ebb and flow with tides and during exceptionally new and full moon high spring tides when the earth, moon and sun are aligned, the saltmarsh is often completely inundated.

Flooding is most severe during strong north-easterly storm surges especially those coincident with spring tides. These floods are relatively common occurring about once every two years with very severe consequences for the gulls destroying 70% – 100% of the nests in the colony. Nests are torn asunder by wave action and stressed parents riding atop nests are carried away by the tides.

When this devastation happened, I was intrigued to try to understand what determined which parents were successful and which were not. To attempt to unravel the mystery, I measured the micro-habitat features at each nest, including grass height, distance to open water, and whether or not the nests was built on a straw mat.

Location, location, location

As it turned out the nests that survived had very distinctive microhabitat features. For instance, nests built in taller grasses fared better during storm floods that those in shorter grasses. And as might be expected, there was an advantage to building nests on the straw mats which provided a structural stability during flooding.

Some findings were not intuitively obvious, for instance nests build closer to open water had higher survival than those further away. This pattern was explained when I was able to show that the grass height on the water's edge is the tallest and strongest vegetation. So nests closer to the water were in grasses that were the most structurally robust and more likely to hold a nest in place during a flood.

The most interesting finding however was that firm attachment on the southwestern sides of nests was the best predictor of survival as this anchorage held the nest in place during north-easterly storm surges.

Age and experience

Gulls nesting in the centre of the colony fared better that gulls nesting in a peripheral area. Central nests are physically better protected from storm tides than nests on the outer areas of the colony.

Yet what was most intriguing about this finding was that the gulls nesting in the centre of colony laid larger eggs, laid more eggs per clutch and laid earlier than the birds nesting in the peripheral area. The characteristics suggested that gulls nesting in the interior of the colony were older than those gulls on the colony edge.

It could be that as the gulls age and lay larger egg and clutches, that they relocate to more central locations in the colony. This is a possibility that another student working with banded known-aged birds may one day attempt to assess.

And that indeed is most fascinating aspect of behavioral ecology or any scientific pursuit for that matter … it never ends. Nor should it as our knowledge of the nature of things will always be incomplete, dynamic and never absolute.

Christmas bird count

On a balmy Boxing Day, an intrepid crew of birders (Tony Lang, Darroch Whitaker, Giles Dodds, Marina, Gioia Montevecchi and me) scoured the hills, waterways and coasts of PCSP as part of the St. John's Christmas Bird Count. We recorded 27 species – higher than any of our previous counts that are often in the low 20s.

The warm winter conditions likely facilitated our species diversity, though it also slowed the bird activity at feeders which is often important in our searches and counts. Some of the highlights of this year's count included glaucous and Iceland gulls, about 50 dovekies, a downy woodpecker,2 belted kingfishers, a sharp-shinned hawk, a dozen golden-crowned kinglets and about 3 dozen goldfinches.

We also had two sparrows – a song sparrow warming in the early morning sun at Neary's Pond and a white-throated sparrow that had been at Marlene Create's feeder near Blast Hole Ponds for about a week and which luckily burst upon the scene when Darroch and I were visiting Marlene.

What is also interesting in these counts are species that are frequently in the area but that are not seen on count day. A case in point included pine siskins and evening grosbeaks neither of which were seen on Boxing Day but which were at Rex Porter's feeder on Tolt Road a day later.

Birds in area

A quick look around Quidi Vidi Lake on 10 January yielded 2 American coots , Eurasian and American wigeons, pintails, greater scaup, tufted ducks, glaucous, Iceland and black-headed gulls, as well as a song sparrow near the Virginia Lake outflow.

In early December, Jesse Kearley saw 3,000 eiders at Cape St. Francis. George Mayo noted a ruffed grouse in a birch at Second Pond in The Goulds.

The first winter snow storm of 3 January brought the birds flocking to feeders. More than 100 juncos danced and squabbled on the seeds scattered atop the newly fallen snow in our yard. Linda Gaborko was impressed with a large flock of cedar waxwings feeding on the barberry bushes in their pasture in Long Pond – Manuals. And goldfinches blanketed the ground under their feeders.

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