

Summary of 2013 Field Season (Lauren Scopel)

This year's primary field crew consisted of Lauren Scopel (supervisor), Sydney Sheedy, and Caitlin Smith. The season started on May 14, when Andy Patterson dropped off the primary crew and three helpers: UNB graduate students Kevin Kelly, Erin Whidden, and Tony Einfeldt. We were visited by PI Tony Diamond three times during the summer, as well as several film crews and CWS personnel. Lauren and Tony Diamond attended the annual GOMSWG meeting on August 12. Our last day was August 26; closing was assisted by UNB forestry technician Ed Czerwinski and UNB graduate student Adrian Hards.



MSI opening crew banding puffins, clockwise from top: Lauren Scopel, Kevin Kelly, Erin Whidden, Sydney Sheedy, Caitlin Smith. Photo by Tony Einfeldt (foot visible on chair).

This was a difficult year for seabirds on MSI. Rain was abundant; at 397.5 mm it was the 2nd highest total recorded since 1995. Puffins in particular were two weeks late to lay, and had the lowest productivity on record since monitoring began in 1995. Terns experienced complete reproductive failure for the eighth consecutive year. We expanded our monitoring of Common Murres, adding feeding watches and a late-season census to our research protocol.

The 2012-2013 winter featured many alcid wrecks in the North Atlantic; in May we collected blood samples from 27 adult Puffin and 16 Razorbill to assess their incoming breeding condition. Becky Holberton (University of Maine) is analyzing the samples. We retrieved 12 of 26 geolocators deployed on Puffins in 2012, but the waterproofing on many of the loggers failed, and no more than two months of data could be retrieved from any of the loggers. This year was also notable in that we were allowed to conduct limited lethal control of gulls for the first time since 1999.

Alcids

Following the wrecks and strange winter range of Razorbills over the winter, we expected them to have a difficult year. However they appeared to be on time phenologically, but Puffins laid later than usual by about 15 days, and 25 days later than 2012. Keepers informed us that the arrival of alcids to the island was later than usual, but no data were collected. Both research staff and tourists witnessed many Puffin copulations on land, a generally unusual event (Puffins normally mate at sea). No formal census was conducted for Puffin or Razorbill, but occupancy rates were similar to recent years (see below). Attendance of loafing alcids seemed very low, especially on sunny days; our Puffin resighting and

banding totals were lower than 2011 and 2012 as a result. We counted 219 Common Murre nests in July, which is likely an underestimate. We banded 40 murre chicks this year, doubling the total number of murre chicks ever banded on MSI.



A Razorbill chick fledges with its dad. Photo by Sydney Sheedy.

Prey brought in by alcids were mainly fish (not invertebrates), but chick growth rates were still quite low. Many herring were seen early in the season, but by August virtually all prey observed were haddock, which has a lower energy density than herring. Hatch success of Razorbill and Puffin was rather low, but whereas most Razorbill chicks that hatched also fledged, many Puffin chicks died in the first two weeks of life. We suspect that the feeding rate by Puffins was not high enough to sustain chicks, but we cannot collect precise feeding rate data of alcids. We saw several unknown gadoid species, especially brought in by Razorbill, but we were unable to identify them conclusively. Common Murres appeared to do well, and brought in predominantly gadoids (72.4 %).

Details of alcid productivity, growth, and identified diet are described in the tables below. Note that diet data are percent by number here, not biomass as they will be in Tables.

Productivity

	Monitored Burrows	Mean Lay Date	Mean Hatch Date	Burrow Occupancy	Hatching Success (hatch/active nest)	Nesting Success (fledge/active nest)	Linear Growth Rate (mass)
PUFFIN	160	28 May	7 July	0.75	0.61	0.15	4.4 grams/day
RAZORBILL	88	22 May	27 June	0.75	0.58	0.41	4.6 grams/day

Provisioning

	N	Herring	Hake	Krill	Butterfish	Sand Lance	Larval Fish	Other*
PUFFIN	2027	19.4	34	4.4	1.2	1.1	0.8	38.7
RAZORBILL	758	62.7	19.1	0.1	0.8	4.1	0.4	12.8

*Mainly haddock, pollock, polychaetes

Terns

Terns once again attempted to breed, but were thwarted primarily by predatory gulls. We monitored 41 nests (35 Arctic, 1 Common, 5 unknown) and estimate 90 total nests; no formal census was conducted. We estimate a maximum of 400 individuals present on the island at any given time, most of which were Arctic. While most of the resighted birds were former breeders on MSI, there were several new breeders from other colonies. Terns first landed on May 16. Courtship provisions were initially of very poor quality (invertebrates and larval fish), but by late May terns regularly brought in large hake. We found our first egg on May 25, and mean lay was June 11. Attendance varied throughout the season. Some pairs would incubate throughout the day, but most would attend the island at night and stay only part of the morning. Daytime incubation occurred frequently on foggy or rainy days. Gulls depredated most tern eggs on the island in an event on June 2; many terns relaid. We conducted early morning gull watches around our living area, which reduced gull predation there (although the depredation rate outside of the living area is still near 100%). We also periodically had two Peregrine Falcon visit to hunt seabirds, which agitated terns. Although terns initially would chase off Peregrines and return to incubate, the increasing attendance by Peregrines and unrelenting gull predation in June appeared to be too much for terns to overcome. On June 11, two Peregrines stayed on the island during a storm, and although terns initially tried incubating, they eventually abandoned daytime incubation for two days. Most eggs were probably made inviable at this time. A second wave of laying occurred around June 20, but attendance decreased in July, and no eggs hatched. 50% of all monitored eggs were depredated, down markedly from last year's 100% depredation.



Arctic Terns courting on the lawn. Photo by Sydney Sheedy

Predator Control

As in previous years, we were equipped with a pellet gun, slingshot, and noisemakers to conduct non-lethal gull control. This year we were also given a paintball gun to use as a scare device, which was surprisingly effective (but only while we were in the colony). After an entreaty to CWS to consider lethal gull control following the June 2 depredation event, CWS agreed to permit a contracted predator control specialist to remove problem gulls on June 22-23. We removed 11 Herring Gulls and 1 Great Black-backed Gull during this time. The potential for future lethal control will be evaluated by CWS after this season. Immediately following lethal control, gulls were wary. Without the continued presence of a firearm, however, gulls re-established their hierarchy and gradually reverted back to their pre-control behaviour. Gulls were frequently seen scavenging dead Puffin chicks and stealing fish from alcids in July.

Gulls nested on Gull Rock (0.25 km away) and near the NW shore of MSI itself; for the second consecutive year, more gulls nested on MSI than Gull Rock. Heavy swells overwhelming Gull Rock in May and June may have forced gulls to nest on MSI. We found 37 nests on MSI and poked 69 eggs. We

found 16 nests on Gull Rock and poked 30 eggs. All nests were Herring Gull, save one 3-egg Great Black-backed Gull nest on MSI.

Other Species

We conducted a full Common Eider census for the first time since 2009, finding 128 nests. Twenty-nine large ducklings were seen in late August. Northern Gannets did not nest this year, but did loaf on the island in July and August. Leach's Storm-petrel were also breeding on the island, but we did not monitor them this year; we occasionally found eggs ejected from burrows, suggesting that some burrows may have been flooded. Interesting bird sightings include a Glaucous Gull, Grasshopper Sparrow, and Red Knot. A Brown Booby was seen by tour boat operators near Grand Manan, but was not seen on MSI.



A pair of Northern Gannets loaf with some Razorbills on the western shore. Photo by Caitlin Smith



2013 Field Crew: Caitlin, Lauren, and Sydney.