

Census of Seabirds Nesting in Nova Scotia

May 18 to June 30, 1971

for Canadian Wildlife Service

A. R. Lock

The work was carried out with a 12 foot aluminium boat with a 9½ hp motor provided by the C.W.S. Air survey work was done in a North American Aviation "Yankee" hired for \$22.00 per hour from the Halifax Flying Club. Map 1 shows which areas were covered from the ground and which were surveyed from the air. Earlier exploratory flights were done as a passenger on planes chartered by Dr. E. Mills.

Where the density of birds was such that an accurate count could not be made from the air, a series of photographs was taken with a 35 mm camera and 135 mm lens from a height of 300-350 feet, and 8 X 10 enlargements allowed Herring and Black-backed Gulls to be distinguished and counted. Colour transparency film was used on Cormorant colonies as their dark colour can present a contrast problem on black and white film. Where numbers were estimated from the air the birds were actually counted in groups of five. This method gave accurate and repeatable counts.

When a colony was censused on the ground, the number of nests was counted if it was possible to do so accurately. For Cormorants this was usually possible but for Gulls it proved more expedient to count adults. Kadlec and Drury (Journal of Wildlife Management, Vol. 32, No. 2) have shown that the number of pairs nesting on an island can be gauged with some

accuracy by counting the number of adult Gulls "on territory." On islands off the coast of Massachusetts they found that the ratio of the number of territorial Gulls in photographs and air counts to the number of counted nests ranged from .98 to 1.45. As the territory I had to cover was large and money for air charters limited, I could not, except for a few occasions, take time to count only "territorial" Gulls, I counted all Gulls around a colony. By so counting my aerial estimates are compatible with my ground counts: when one visits a colony and birds take wing in alarm it is not possible to judge which are "territorial" unless the island is very small. As deducing how many pairs nest from the number of adults in an area involves substantial error I have, in this report, quoted numbers of adults encountered unless a fair estimate of the number of pairs was possible by counting "territorial" birds or nests. Probably, for Gulls, it would be reasonable to expect a ratio of adults: nests to be 1.5 or greater.

As the larger species of seabirds, Gulls and Cormorants, are quite visible from the air it is to be expected that I have found all but a few of their breeding places and been able to get fair estimates of their numbers. Consequently I list the colonies of the two Gull and two Cormorant species with those of the Great Blue Heron in one table arranged by county. The smaller species, whose numbers are more difficult to assess and many of whose nesting places I may have missed, I deal with separately. For each species I have presented a map showing known places of breeding.

On the species distribution maps large dots represent five closely spaced colonies.

Due to the limited time available to me I was not able to census, completely the whole province. I did not manage to reach St. Esprit I. in Richmond Co. and I spent no time in St. Margaret's Bay in Halifax County. I spent one day in Mahone Bay on a traverse from Pearl I. to Indian Point via Little Duck I., Chockle Cap and Westhaver's I.

Abbreviations used in the tables and text.

Birds:	B.Guil.	Black Guillemot
	BB	Great Black-backed Gull
	DCC	Double -crested Cormorant
	EC	European or Great Cormorant
	GBH	Great Blue Heron
	HG	Herring Gull
	Rbill	Razor-billed Auk

Census Methods

APE	Aerial Photographic Estimate
AVE	Aerial Visual Estimate
GC	Ground Count

Sources of Information

AJE	A. J. Erskine
AM	A. MacDonald
ARL	A.R. Lock
EM	E. Mills
FWS	F.W. Scott
NSBSNL	Nova Scotia Bird Society Newsletter
MNR	Maritime Nest Records Scheme
PNSIS	Proceedings of the Nova Scotia Institute of Science
RKR	R. K. Ross
WN	W. Neilly

General

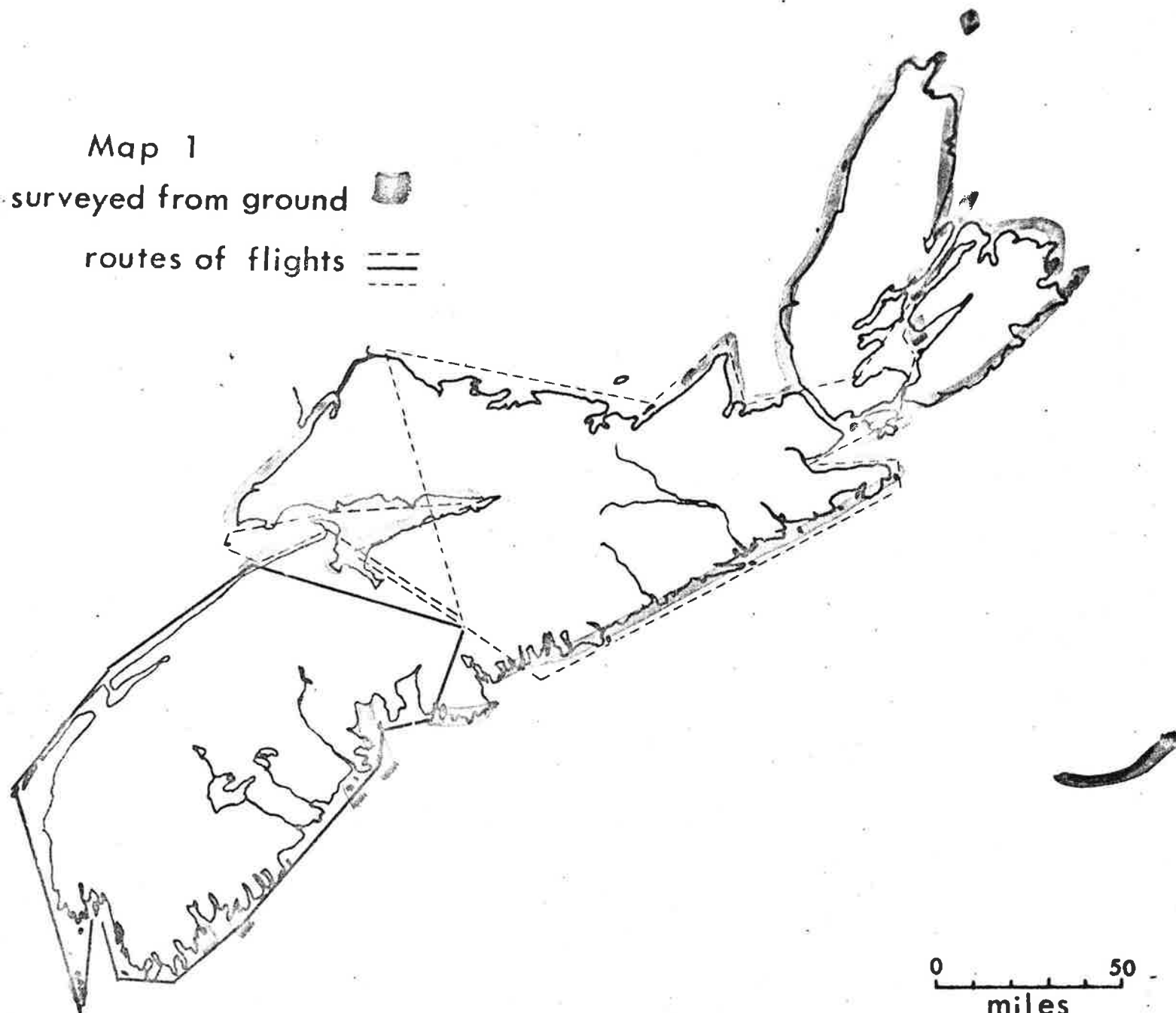
p	pair or pairs
a	adult or adults
Auth	Authority

Map 1

surveyed from ground



routes of flights



HERRING GULL Larus argentatus

All known colonies are included in the county lists following. The locations of colonies of this species are shown on Map 2. Assuming an adult:nest ratio of 1.5, I estimate 12,700 pairs on Mainland Nova Scotia. An estimated 1,500 pairs breed on Sable I. As estimates have been at all times conservative, though realistic, this figure can be thought of as a minimal estimate. On Map 2 large dots represent 5 colonies.

GREAT BLACK-BACKED GULL Larus Marinus

These were censused in the same way as Herring Gulls and if an adult:nest ratio of 1.5 is assumed a total of ^{14,600}~~12,650~~ pairs is found to breed on the mainland of Nova Scotia. An estimated 700 pairs breed on Sable I. Locations of colonies of this species are shown on Map 3. Large dots represent 5 colonies.

EUROPEAN OR GREAT CORMORANT Phalacrocorax corbo

This species proved fairly easy to count as it nests in dense colonies on bare rocks or on cliffs. Errors of up to 10% can occur in ground nest counts of dense colonies when the observer misses groups of nests or counts twice. In aerial photos of Blue Gull I. I counted 457 nests but on a visit to the island I counted 398 nests. As one might count a few dark spots on photographs as nests I decided that 450 was a reasonable estimate and that I had probably missed counting some part of the colony in the ground count. On Portnova I. I was not able to land because of rough seas but I was able to drive all the birds off their nests and do an accurate count. I have assumed that the 507 birds counted represent about 300 pairs.

In the 23 colonies included in the county lists and shown on Map 4 there are 2,100 pairs of breeding birds.

Colonies shown by a half shaded circle are those in which some Double-crested Cormorants breed. In the northern mixed colonies Greats predominate in 2 out of the 3, while in the southern colonies Double-crests predominate. Interestingly, both species nest on islands off the Halifax County coast but here, where the choice of colony sites is wide, the species nest separately.

DOUBLE-CRESTED CORMORANTS Phalacrocorax auritus

Twenty-one colonies of this species are shown in Map 5 and listed in the county lists. Those shown by a half shaded circle are colonies in which both species of Cormorants breed. Comparison of present distribution of colonies with data of Dr. H. F. Lewis and others shows that colonies built on small islands may only endure for 15-20 years. When all trees are killed the colony will move to a new island. In areas where there are no suitable islands nearby they may start to nest on the fallen trees or on the ground. This situation obtains on the Red Islands and Toothbrush I. in Bras d'Or Lake. Large colonies in living trees are quite difficult to census accurately however repeated traverses of a colony eventually provide fairly good estimates. I estimated that close to 4,200 pairs breed in Nova Scotia.

GREAT BLUE HERON Ardea herodias

I cannot on the basis of my census, offer an accurate estimate of the breeding Heron population of Nova Scotia. I

have, certainly, not found all their colonies as they breed around fresh as well as salt water. I have been able to search out some of those breeding on the sea coast; these are given on Map 6 and in the county lists. It is interesting that of the 29 Double-crested Cormorant colonies in this province, 10 contain breeding Great Blue Herons. If one eliminates those of the 29 Cormorant colonies in which there is no room for Herons only 12 remain. The two of these with no Herons are Crow I. and Little Duck I. However Egg I. which lacks trees is associated with a hernery on Pinnacle I., 150 m away.

Since compiling the county lists I have received word of 2 other colonies from Mr. Charles Kelsey of Liverpool.

1. At Port Hebert Harbour near Timber I. 43.50 64.57
2. At a fresh water lake near Port Joli

Both of these are in Queens County and contain, between them, 20-25 birds.

CUMBERLAND COUNTY

Colony	Lat.	Long.	HG	BB	GBH	DCC	Other	Method	Date	Auth
Three Sisters	45.25	64.56	48a					APE	28/5/71	ARL
Isle Haut	45.15	65.00	500+a	50+ a				APE	11/6/71	ARL
Spencer I.	45.20	64.42	140-150p	75-80p			Eider	GC	20/5/71	ARL
I. off Union Valley	45.22	64.24	75a	43a				APE	28/6/71	ARL
Outer Brother I	45.23	64.13	60p					AVE	28/6/71	ARL
Pinnacle I.	45.23	64.07	200p	250p	6p			GC	18/5/71	ARL
Egg I.	45.23	64.07	30p	32p		60-65p		GC	18/5/71	ARL
Egg I.	"	"	110a	81a		79p		APE	28/5/71	ARL

COLCHESTER COUNTY

Amet I.	45.50	63.11	136a	81a			Terns	APE	29/5/71	ARL
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KINGS COUNTY

Boot I.	45.08	64.16	250a	650a	34a	40-45p	B. Guil	GC	25/6/71	ARL
Cape Split	45.20	64.30	40-45p	77p		26p		GC	18/5/71	ARL
Shellcamp Lake	44.50	64.48		37p				GC	1964	MNR

ANNAPOLIS COUNTY

Goat I.	44.42	65.37	210a	140a				APE	11/6/71	ARL
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DIGBY COUNTY

Bear I.	44.38	65.43	80-100a	120a				APE	11/6/71	ARL
Peskewa Lake	44.18	65.22			3p			GC	2/6/64	MNR
Briar I.	44.15	66.22	2000+p	400p			Terns	GC	1970	EM

YARMOUTH COUNTY

Big Gooseberry I.	43.42	65.50	35a	100a				AVE	11/7/71	ARL
Peggy I.	43.42	65.50	20-25a	160a				"	"	"
Ram I.	43.41	65.51	200-250 p					"	"	"

YARMOUTH COUNTY

Colony	Lat.	Long.	HG	BB	GBH	DCC	Other	Method	Date	Auth
Jones I.	43.42	65.53	18a	8a				AVE	11/7/71	ARL
Shoal E of Wilson point	43.42	65.54								
Gull I	43.40	65.55	90a	90a				AVE	11/7/71	ARL
I. N.E. of Lear I.	43.42	65.56	12a	130a				"	"	"
Eastern Bar I.	43.42	65.56	12a	140a				"	"	"
Lear I.	43.47	65.57	50a	500a				"	"	"
Inner Fish I.	43.42	65.57		120a				"	"	"
Green I.	43.41	66.00	40p	200p				"	"	"

SHELBURNE COUNTY

St. John I.	43.3 ³ 8	65.48	125a					AVE	11/6/71	ARL
Robinson Ball	44.3 ³ 0	65.46	25a	25a				"	"	"
Fish I.	43.31	65.46		40p				"	"	"
Round I.	43.31	65.59	20-25p				Terns	"	"	"
Flat I.	43.31	66.00	40p	30p				"	"	"
Seal I.	43.25	66.01	500-700p	50-100p			B.Guil.	GC	22/5/71	ARL
Mud I.	43.28	65.59		140-150p				AVE	11/6/71	ARL
Bon Portage I.	43.28	64.45	300a	350a				"	"	"
Blanche I.	43.28	65.24	50-60a	300a			Terns	"	"	"

SHELLBURNE COUNTY

Colony	Lat.	Long.	HG	BB	GBH	DCC	Other Method	Date	Auth
Grey I.	43.36	65.18		400p			AVE	11/6/71	ARL
MacNutt I.	43.37	65.17	1000+a	80a			"	"	"
Blue Gull I.	43.40	65.13	145p	290a		400p	30-50p of EC B.Guil.	APE GC	11/6/71 22/6/71 ARL ARL
Ram I.	43.41	65.02	30-40a	100a			AVE	11/6/71	ARL
Green I.	43.45	64.56	20-30a	170-180a		250p	30p EC B.Guil.	APE GC	11/6/71 23/6/71 ARL ARL

QUEENS COUNTY

I. W. of Jacket I.	43.54	64.49		45a			AVE	11/6/71	ARL
Mouton I.	43.54	64.46	110p	35p			"	"	"
Coffin I.	44.03	64.38	100a	50a			"	"	"
Fryingpan I.	44.06	64.32		60a			"	"	"
Toby I.	44.07	64.32		60-100a			"	"	"

LUNENBURG COUNTY

Indian I.	44.10	64.24	502a	177a			Osprey Petrel	GC	14/8/71	ARL
"	"	"			5-6a	170p		APE	11/6/71	ARL
Cross I.	44.18	64.11	650a	50a				APE	11/6/71	ARL
Little Duck I.	44.22	64.11	200a	60a		170p+20		GC	27/6/71	ARL
Pearl I.	44.23	64.03	97a	68a			Puffin Petrel R.bill. B.Guil.	GC	27/6/71	ARL

LUNENBURG COUNTY

Colony	Lat.	Long.	HG	BB	GBH	DCC	Other	Method	Date	Auth
Chockel Cap	44.24	64.13	65a	65a				GC	27/6/71	ARL
Saddle I.	44.32	64.11			2-5p		Terns	GC	1965	MNR
Gravel I.	44.30	64.02	380p	130p				GC	30/5/71	ARL

HALIFAX COUNTY

Southwest I.	44.30	64.00	10p	70p	6a	175p	B.Guil	GC	31/5/71	ARL
Taylor I. group	44.29	63.52	1500p	180p						
Hopson I	44.27	63.27	65p	46p				GC	25/5/71	ARL
Betty I.	44.26	63.46	#unknown						Not visited	
Mackerel I.	44.28	63.41		8p				GC	27/5/71	ARL
Saddle I.	44.27	63.39	9p	17p				GC	27/5/71	ARL
Power I.	44.28	63.40		25p				"	"	"
Wooly I.	44.27	63.39		56p				"	"	"
Inner Gull I	44.30	63.48	30-35a	40-45a				"	"	"
Duck I.	44.27	63.47	90-95p	55p				"	"	"
Inner Sambro I.	44.27	63.34	10-12p	10p				"	25/5/71	"
Martin I.	44.27	63.39	35p	5p				"	27/5/71	"
Dover Castle	44.28	63.52		30-35a				APE	11/6/71	"
MacNab I.	44.37	63.22			19-30p			GC	Jun. '66	MNR
Jeddore Rock	44.40	63.01		55a			B.Guil	GC	12/6/71	ARL

HALIFAX COUNTY

Colony	Lat.	Long.	HG	BB	GBH	DCC	Other Method	Date	Auth.
Barren I.	44.41	62.59	80-100a	60a	12-15a	140-150p	B.Guil Osprey	12/6/71	ARL
Roger I.	44.42	62.58	65a	30a			"	"	"
Duck I.	44.42	62.56	150a	130a			"	"	"
Long I.	44.41	62.54	110a	130a			B.Guil	"	"
Goose I.	44.42	62.54		90a			"	"	"
Laybold I.	44.42	62.50	25a				"	"	"
Bald I.	44.42	62.48		160a		170-180 p	"	"	"
Cutfinger I.	44.42	62.48		22a			"	"	"
Friar I.	44.43	62.46		32a			"	"	"
Western I.	44.45	62.43		65a			Osprey	"	"
Outer I.	44.45	62.40		22a	1p		Osprey	"	"
Stony I.	44.47	62.36		20p			GC	13/6/71	ARL
I.off GuildfordI.	44.48	62.32		15p			17p EC	GC	14/6/71
Guildford I.	44.48	62.32	5p	2p	2-4p		Osprey	GC	14/6/71
Horse I.	44.41	62.32	50p	5p		33p	"	"	"
Pumpkin I.	44.49	62.23		175a			B.Guil	"	ARL
Speck I.	44.50	62.24				8p	"	"	"
Brother Is.	44.49	62.22		87a			227p EC Petrel	"	"

HALIFAX COUNTY

Colony	Lat.	Long.	HG	BB	DCC	GBH	Other	Method	Date	Auth
Western Is.	44.50	62.31	100p	20p				GC	14/6/71	ARL
I. S. of Mink I.	44.50	62.26	47a					GC	14/6/71	ARL
Horse I.	44.50	62.22		6p	213p		B. Guil Eider	"	"	"
Harbour I.	44.52	62.20	16-18p	12p			Osprey	"	"	"
Long I.	44.5 ³ 8	62.18	50p	10p	68p	5a		"	"	"
Goose I.	44.58	62.18	15p	20p				"	"	"
Bird Is.	44.52	62.17		70p			Petrel	AVE	29/5/71	ARL
Brokenback I.	44.54	62.16		10-15p				GC	14/6/71	ARL
Inner Halibut I.	44.54	62.12	12-15a	68a			Petrel	GC	15/6/71	ARL
Mid. Halibut I.	44.54	62.12	40-60p	53a	230p	2+a	Petrel	"	"	"
Out. Halibut I.	44.53	62.12	a few	25-30a			B. Guil	GC	1959	MNR
I. S.E. of Orkney	44.57	62.10	17p	14a				GC	15/6/71	ARL
Little White I.	44.54	62.06	11p	142a	200 ¹²⁰ 200	a	B. Guil	"	"	"
White Is.	44.53	62.06		236a			B. Guil	"	"	"
Camp I.	44.53	62.06		77a				"	"	"

GUYSBOROUGH COUNTY

Barren I.	44.57	62.03	100p	10p				AVE	3/6/71	ARL
Tobacco I.	45.01	61.55	200+ a	300+ a	180-200 ^p	3a		GC	15/6/71	ARL
Wedge I.	45.00	61.52	30p	20-25p				AVE	29/5/71	ARL
Eickerton I.	45.05	61.43	100p	150-200p				GC	16/6/71	ARL

GUYSEBOROUGH COUNTY

Colony	Lat.	Long.	HG	BB	DCC	GBH	Other	Method	Date	Auth.
Goose I.	45.07	61.34	230a	420a	91p	1a		GC	16/6/71	ARL
Coddle I.	45.09	61.32		54a				"	"	"
I. off Coddle I.	45.09	61.32	58a	6-10p				"	"	"
I. N.E. of Coddle.	45.09	61.31	27a	48a	10p			"	"	"
Black I.	47.17	60.58	31a					GC	18/6/71	ARL
E. Sugar I.	45.13	61.16	12a	107a				GC	17/6/71	ARL
W. Sugar I.	45.13	61.16	280a	280a	300+ p	3+ p	Terns	"	"	"
Winter I.	45.13	61.15	15p					"	"	"
I. S. of Winter	45.13	61.15	15p	10p		8p		AVE	24/6/71	"
Hog I.	45.14	61.13	185a	41a				"	"	"
I. S.W. of Port Felix	45.14	61.14			10p			"	"	"
I. W. of White- -head I.	45.12	61.08	29a	12a				"	"	"
I. W. Whitehead	45.15	61.00	26a	14a				"	"	"
Floating I.	45.14	61.03	23a					"	"	"
Little Dover I.	45.13	61.04	167a	34a				"	"	"
Millstone I.	45.12	61.08	54a	208a	23p			GC	17/6/71	ARL
I. off D.O.T. at Whitehaven	45.13	61.11	34a	25a				"	"	"

GUYSBOROUGH COUNTY

Colony	Lat.	Long.	HG	BB	GBH	DCC	Other	Method	Date	Auth.
Cape Canso I.	45.18	60.56	34a					GC	18/6/71	ARL
George I.	45.20	60.58		104a			Terms	"	"	"
Crow I.	45.21	60.57	22a	180a		172p		"	"	"
Derabie I.	45.22	60.57	106a	167a				"	"	"
I. S.W. Derabie I.	"	"	68a	33a				"	"	"
Rock E. Welsh I.	45.22	60.59		51a				"	"	"
Welsh I.	45.22	60.59	137a	72a				"	"	"
Walsh I.	45.22	60.59		87a				"	"	"
Hog I.	45.22	60.59	130a	80a				"	"	"
* Tickle I.	45.22	61.02	75+ a	15+ a				APE	29/6/71	ARL
Fox I.	45.22	61.05	60a	230a				GC	18/6/71	ARL

ANTIGONISH COUNTY

Cape George	45.53	61.54					12p EC	AVE	7/5/71	ARL
Lakevale	45.47	61.50					E. Guil 2p EC	GC	July 71	AM
Crystal Cliffs	45.43	61.54					34p EC B. Guil	GC	July 71	AM
Pomquet I.	45.39	61.45			18a			AVE	29/6/71	ARL

* Exposure error allowed only part of island to be censused

PICTOU COUNTY

Colony	Lat. Long.	HG	BB	GBH	DCC	Other	Method	Date	Auth
Pictou I.	45.48 62.34			*			GC	1966	MNR
Pictou Wharf	45.40 62.43				38p		GC	1970	MNR

RICHMOND COUNTY

Rock N.E. of Forchu Head	45.43 60.13				74 p	40p EC B.Guil	GC	17/6/71	ARL
E. Basque I.	45.35 60.39		45a		20-25p	95p EC	GC	18/6/71	ARL
Middle Basque I.	45.35 60.39	50p	65p			Eider	GC	18/6/71	ARL
W. Basque I.	45.35 60.39	25p	30p			Eider	GC	18/6/71	ARL
Red Is.	45.48 60.46	80-90p	370a		315p		GC	2/6/71	ARL
Berry I.	45.35 61.04	45-50a	30-35a				APE	28/5/71	ARL
Birch I.	45.37 61.14			8a			GC	2/6/71	ARL
Campbell I.	45.33 61.09	20a	110a	5-8p	305p		GC	4/6/71	ARL
Delorier I.	45.32 61.09	75-80p	150p				GC	2/6/71	ARL

CAPE BRETON COUNTY

Aconi I.	46.21 60.71		5-10p				GC	17/5/71	ARL
Cape Perce	46.11 59.49					94p EC B.Guil	GC	6/6/71	ARL
Cape Morien	46.08 59.48					70p EC	AVE	7/5/71	ARL

* E. Holdway states that the Doctor I. colony moved to Pictou I. 30pairs.

CAPE BRETON COUNTY

Colony	Lat.	Long.	HG	BB	GBH	EC	Other	Method	Date	Auth.
Aconi I.	46.21	60.17		5-10p				GC	17/5/71	ARL
Cape Perce	46.11	59.49				94p	B.Guil	GC	6/6/71	ARL
Cape Morien	46.08	59.48				70p		GC	7/5/71	ARL
Scatari I.	46.00	59.45		10-15p			B.Guil	GC	6/6/71	ARL
Hay I.	46.02	59.42	70a	Ca.1000a		94p	B.Guil	GC	8/6/71	ARL
Isle aux Cannes	45.58	59.58	60a	550a			B.Guil	GC	6/6/71	ARL
Portnova I.	45.56	59.48	28a	190a		507a	B.Guil	GC	6/6/71	ARL
Battery Is.	45.58	59.48	130a	160a				GC	7/6/71	ARL
White Point	45.53	60.00		30p				GC	7/6/71	ARL
Kennington Rocks	45.53	60.04		28p		84p		GC	7/6/71	ARL
Green I.	45.49	60.04		190a		27p	Kittw. B.Guil	GC	7/6/71	ARL
Guyon I.	45.41	60.07	165a	310a				GC	7/6/71	ARL
Sugarloaf I.	45.48	60.05				160-180 P	20p DCC	GC	7/6/71	ARL

VICTORIA COUNTY

Shagruse	47.02	60.23				12-20a		AVE	17/5/71	ARL
Ingonish I.	46.42	60.20	400a	850a		99p		GC	17/5/71	ARL
Middle Head	46.39	60.21		10 p				GC	1970	WN

VICTORIA COUNTY

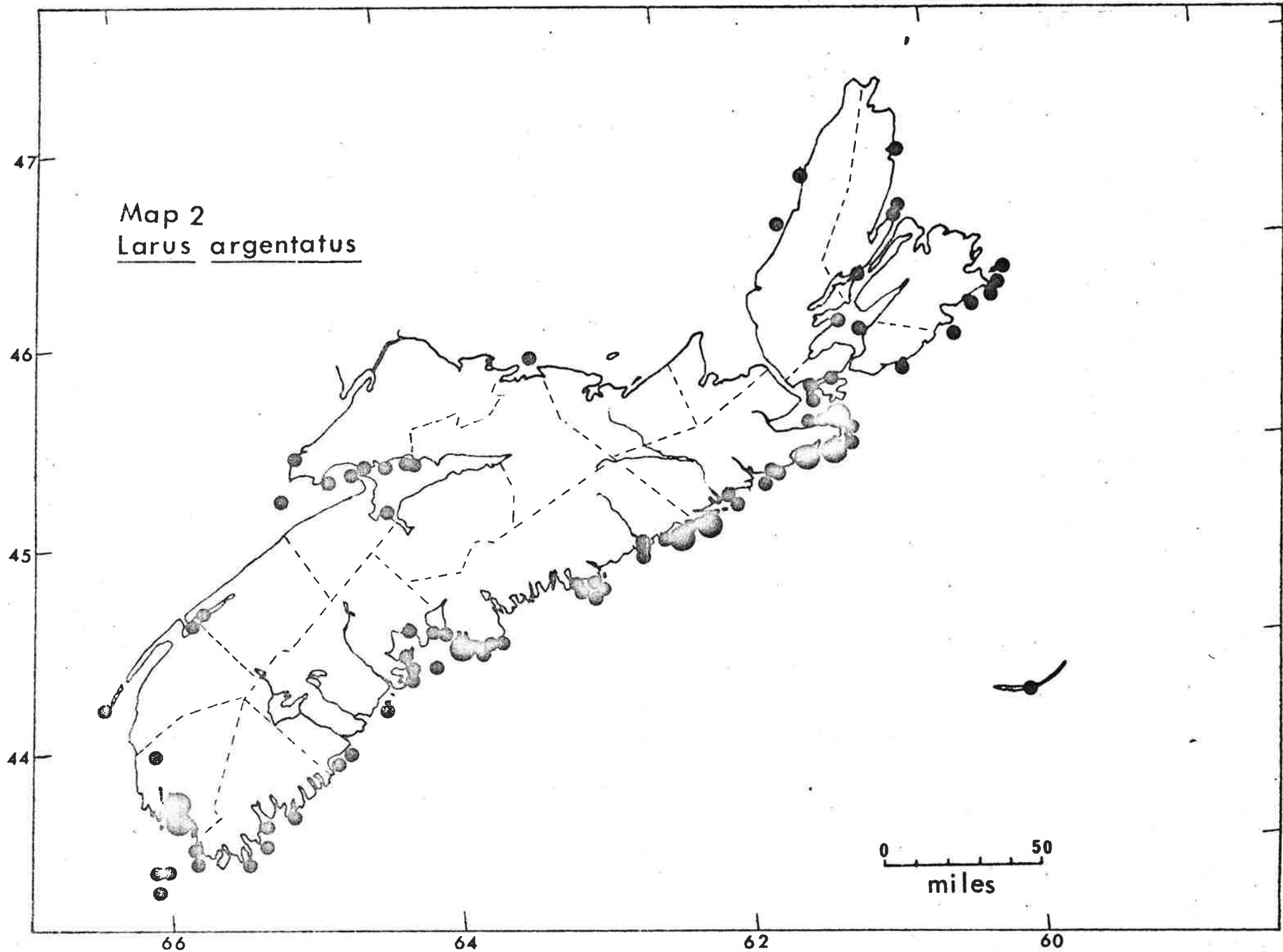
Colony	Lat.	Long.	HG	BB	GBH	EC	Other	Method	Date	Auth
Hertford I.	46.22	60.24	300p	350p		310p	Petrel	GC	4/6/71	ARL
Ciboux I.	46.23	60.44		400p		88p	Puffin R.bill B.Guil	GC	4/6/71	ARL
Toothbrush I.	46.04	60.44	3a	231a			225pDCC B.Guil	GC	3/6/71	ARL
St. Paul I.	47.12	60.09		50a*			Petrel Alcid	GC	20/8/71	ARL

INVERNESS COUNTY

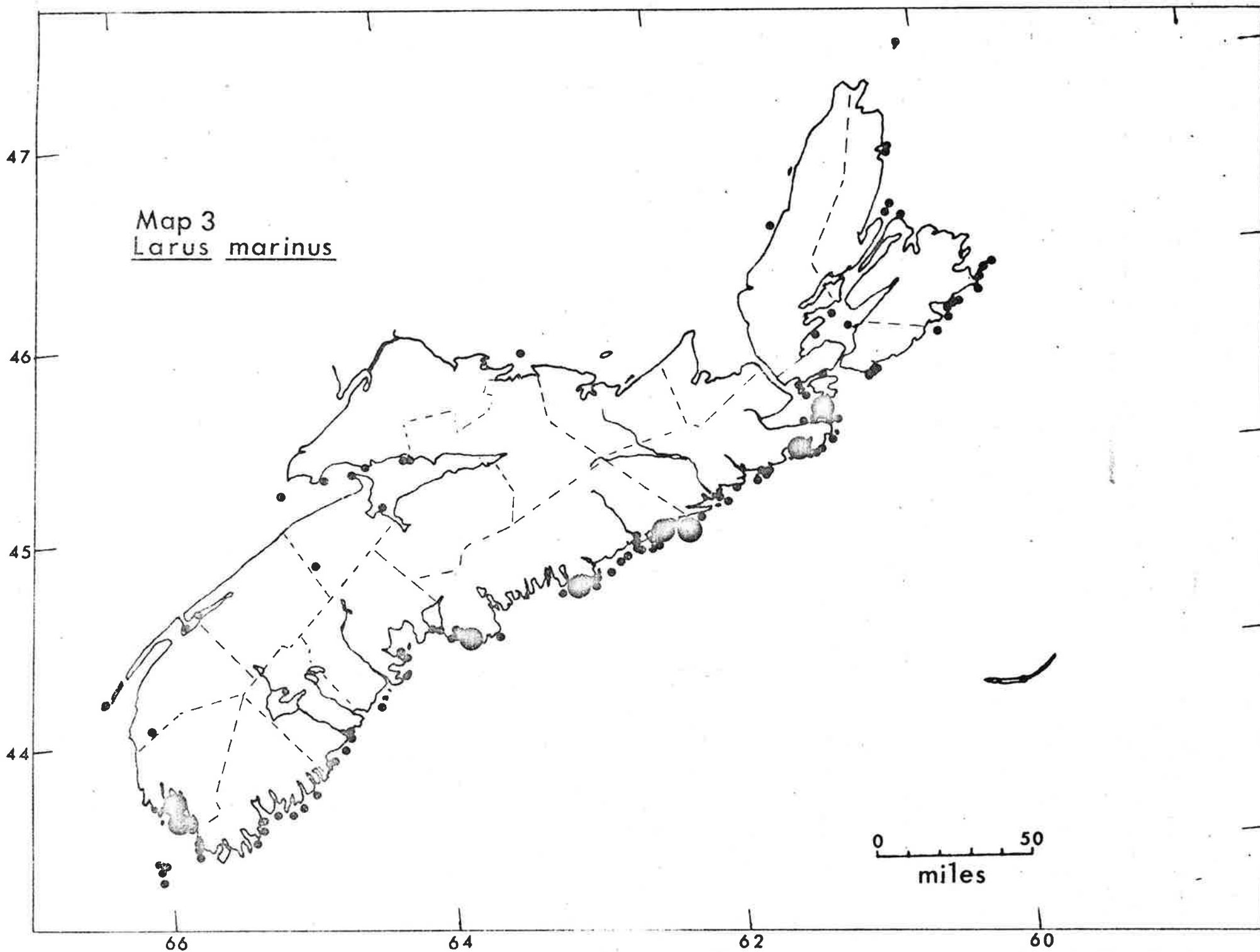
Colony	Lat.	Long.	HG	BB	GBH	EC	Other	Method	Date	Auth
Coalmine Pt.	46.07	61.28				80-90p		GC	7/6/71	ARL
Margaree I.	46.22	61.16	12-15p	50+ p		80p	Terns B.Guil	AVE	7/5/71	ARL
Cheticamp I.	46.36	61.04	4p				B.Guil	GC	1960	AJE
"	"	"				50p		AVE	7/5/71	ARL
MacDonald Pond	45.56	61.07			15-20p			GC	12/7/63	AJE
Ronald I.	45.47	61.04		50p				AVE	29/6/71	ARL
Islands S.E. of Grammo Pt.	45.58 ³	60.57	15-25a	150-160a				APE	28/5/71	ARL
Little Judique Ponds	45.57	61.30			19-25p			GC	19/7/63	AJE

* I am not certain that they breed here.

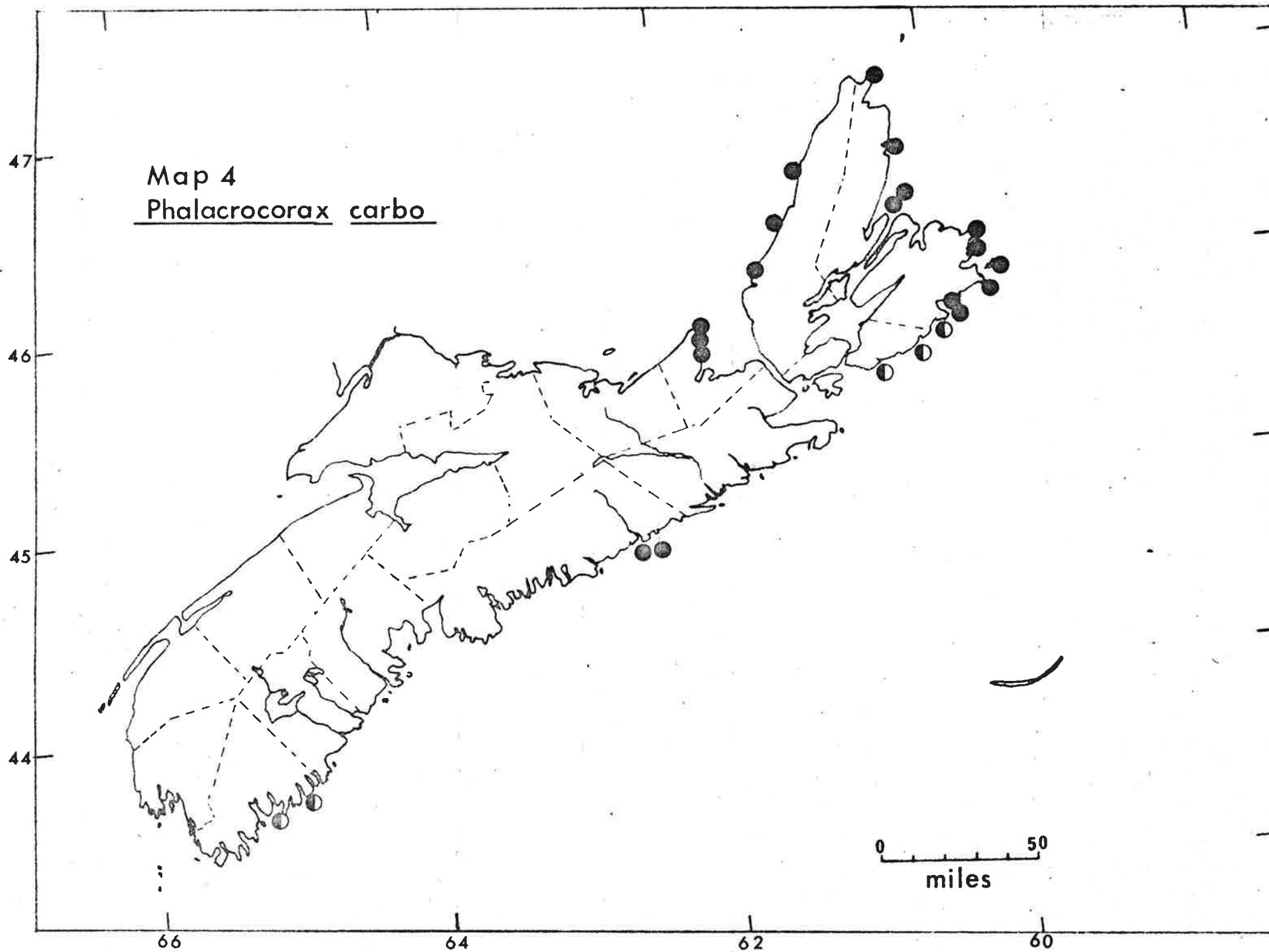
Map 2
Larus argentatus



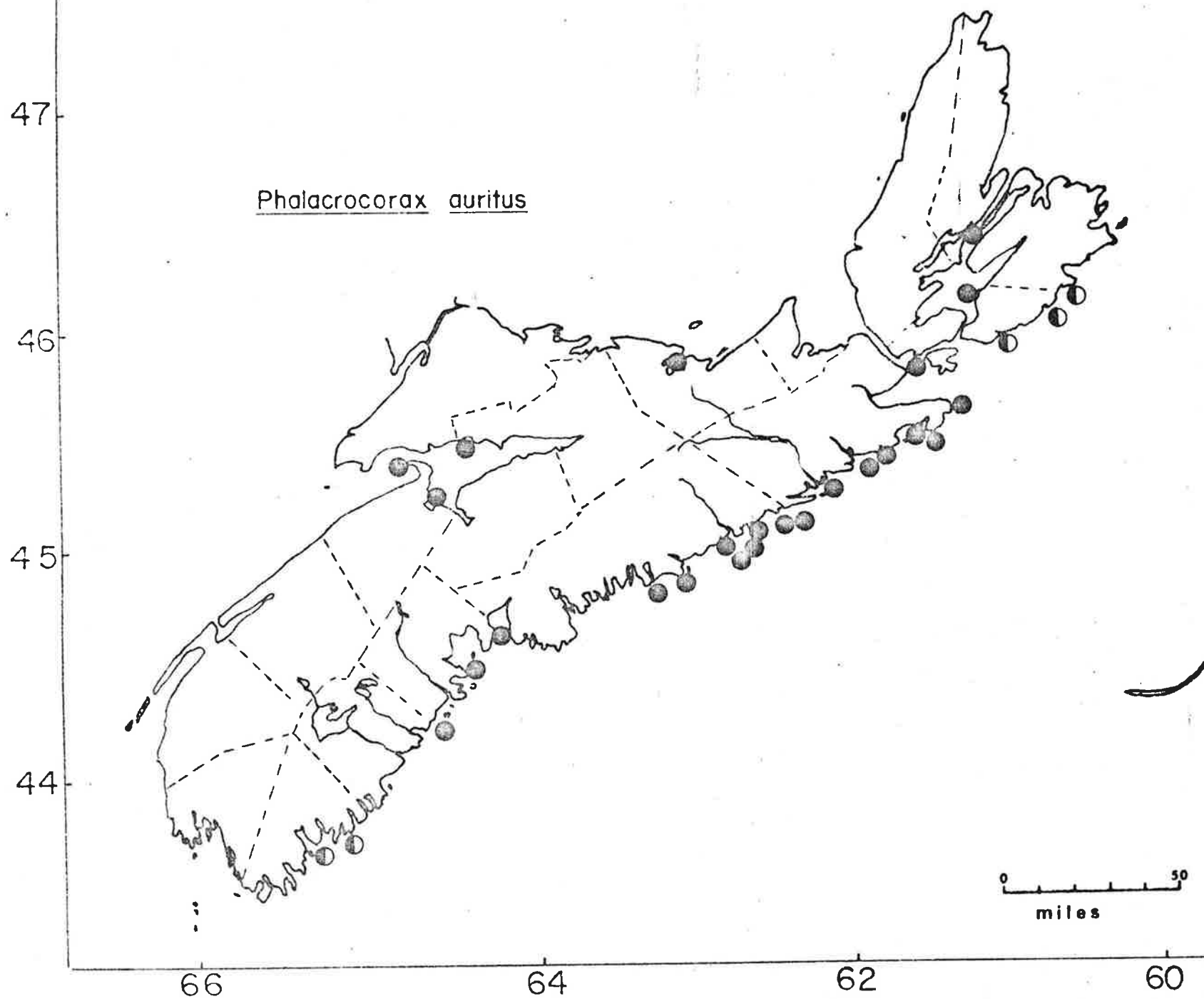
Map 3
Larus marinus



Map 4
Phalacrocorax carbo



Phalacrocorax auritus



Map 6

Ardea herodias

47

46

45

44

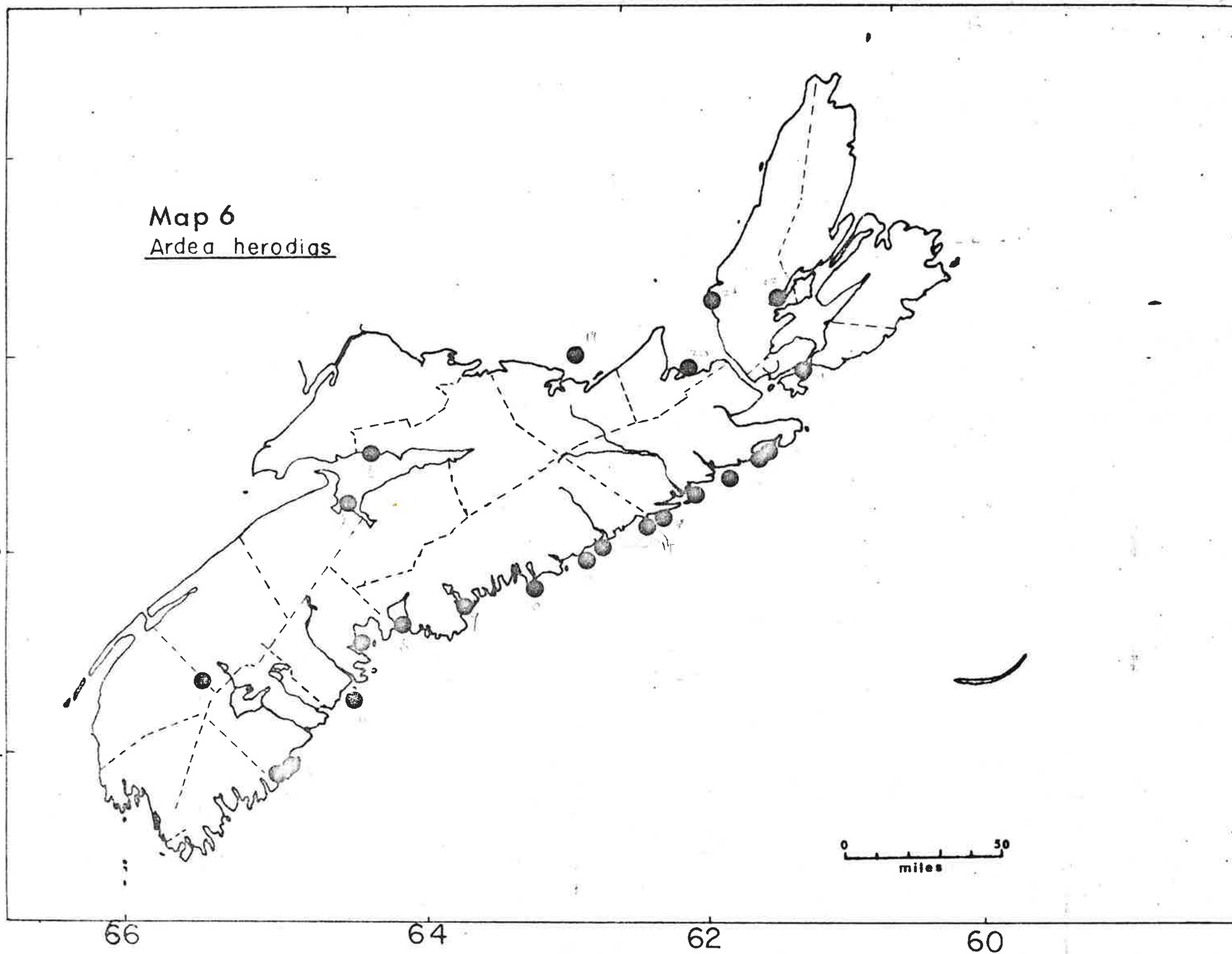
66

64

62

60

0 50
miles



COMMON TERN Sterna hirundo

ARCTIC TERN Sterna paradisaea

ROSEATE TERN Sterna dougallii

Terns are late nesters among seabirds and they had not yet settled into colonies in the first weeks of my census. I present, then, as many colonies as I have knowledge of (Map 7) but there are undoubtedly many unknown. These birds are often difficult to speciate in the field and as so many of these records were gathered by other people, whose abilities I am not certain of, I have chosen to list all these species together.

Colchester County

Amet I. 45.50 63.11 1969 24 nests of Common Terns reported M.N.R.

Annapolis County

Frozen Ocean Lake 44.27 65.21 1966 M. Henry suspects Common Terns breeding on a stony reef.

Digby County

Brier I. 44.15 66.23 1969 Arctic and Common Terns breed. E. Mills, Nov. 1969. N.S.B.S.N.L.

Peters I. 44.16 66.20 1970 200+ pairs Common and 100+pairs Arctic. E. Mills.

Yarmouth County

Tusket Island Group 1967 I. Pothier in Vol. 9, No. 2 of N.S.B.S.N.L. states that the Bald Tusket Is. are "covered" with Arctic and Common Terns. D. Henry, 1970, says that Roseates breed there also.

a Little Bald I. 43.37 66.02 10 Terns seen from air 1971 June 11. In 1956 a few pairs reported by Mrs. D. Henry (Tufts.)

b Half Bald I. 43.37 66.02 1971 June 11 I counted 30-35 Terns AVE.

c Little Half Bald I. 43.37 66.02 1971 June 11 I counted 30 Terns AVE.

d Bald Tusket I. 44.36 66.02 Fewer than 60 Terns on island

e Inner Bald I. 44.37 66.02 1971, June 11. I found fewer than 10 terns on the island. AVE

f Holmes I. 44.38 66.04 1957, 200+ nests of Common and Arctic terns. MNR

Jones I. 43.37 65.43 1970, B.J. Smith notes a "Tern colony"

West Bar I. 44.40 65.59 1967, I. Pothier in N.S.B.S.N.L. vol.9, #2 reports 50p of Common and Arctic Terns.

Green I. 43.41 66.00 1971, June 11. 170-200 terns . AVE

I. N of Twin Is. 43.38 65.50 1971, June 11. 200-300 terns. AVE

Shellburne County

Round I. 43.30 65.59 1971, June 11. 15.20 terns over island.
AVE

Noddy I., Flat I., Mud I. Though these were known as sites of large tern colonies 50 or so years ago, I saw no terns on them June 11, 1971.

Stony I. on S side of Barrington Bay. 1971, June 11. 200+ terns on island. AVE

Little Green I. in Clark's Harbour. 1970 B.J.Smith noted terns used to nest here.

Unnamed I. in Barrington Passage. 1967. 3Nests of Common Tern.
MNR

Dog Thrum 43.23 65.37 1970 B. J. Smith reports 50+ nests of Common Terns and notes numbers are decreasing. N.S.B.S.N.L. vol. 9 # 3.

East Baccaro Beach. 43.28 65.20 1969. 40 Arctics on colony. MNR

Blanche I. 43.28 65.24 1971, June 11. 12 terns on I. AVE

Queens County

Kejimikujik Lake - an island. 1966 Mrs. D Henry noted 1p of Common Terns breeding. NS.B.S.N.L. Ap. 1967

Little Tupper Lake 44.14 65.16 1964, 2 Common Tern nests. MNR

Lunenburg County

Spectacle I. 44.15 64.20 1965 20 nests Common Terns. MNR

Meisner I. 44.32 64.14 1965. 100-200p Common and Arctic Terns. FWS

Hobson's Nose. 44.25 64.14 1971, June 27. 250-280 Terns, 45% Arctic, 45% Common and 10% Roseate. GC

Westhaver I. 44.26 64.20 1971, June 24. 60 Terns. Equal numbers of Arctic and Common. GC

Island In Crow cove, Mahone Bay. 1965. 30 adults and 7 nests of Common terns. MNR

Saddle I. 44.42 64.12 1964. 200+ Common Tern adults. MNR
1971. Still nest. FWS

Halifax County

Wedge I. 44.36 63.56 1970. About 300p. 70% Common, 15% Arctic and 15% Roseate. I. A. MacLaren.

I. E. of Gerard I. 44.48 62.37 1971, June 13. 45-50a - no nests yet, species not noted. ARL

Island between Calf I. and Low I. 44.57 62.12 1971, June 14 150 terns over island. 60% Common, 30% Arctic, 10% Roseate. GC

Gravel bar off Necum Teuch, possible Boson I. 1966. 12p of Roseate, 30-40p of Arctic and 15-20p of Common. MNR

Island off Quoddy. 1962 R. Dicks claims 300-400 terns, Common and Arctic nest here. MNR

Mink I. 44.51 62.25 1971, June 14. On shoreward side spit. 27a Common Terns and 7 nests found. ARL

I. between Sober I and Sheet Hbr. Passage. 1971, June 14. 275 terns over island. 90% Common, 10% Arctic. ARL

Island in Boutillier Bay near Spry point. 1971 K. Ross reports "small" colony with all three species.

Guysborough County

Thrum Cap. 44.48 62.03 1957 L. B. MacPherson reported 20p Arctic, 10 p Roseate and 100p Common.

Island in Spanish Ship Bay. 45.01 62.01 1970, K. McAloney reports 16 p Common Terns. MNR

Island in Liscomb Harbour. 45.01 62.00 1970 k. McAloney reports 25 nests Common Terns. MNR

Island W of Hog I. 45.19 61.33 1971, June 17 I counted 117 Arctics over colony. GC

Westmost Sugar I. 45.13 61.16 1971, June 17. 20 Arctic and 10 Common Terns breed here. ARL

Small I. in Dover Harbour. 45.17 61.02 1971, June 17.
I counted 16 Arctics over Colony.

George I. 45.20 60.58 1971, June 18. 15 Arctics bur no
nests. ARL GC

Pictou County

Merigomish Big I. 45.40 62.25 1969 Nine nests Common Tern. MNR

Victoria County

Toothbrush I. 46.04 60.44 In 1965 and 1966 I counted about
50 pr. of Common terns breeding here.

Middle Head 46.39 60.21 1967, 170 Common and 25 Arctic. MNR

Englishtown Spit. 46.17 61.33 1967 30 Common Terns nest. MNR

Inverness County

Margaree I. 46.02 59.40 1965, A.-J. Erskine reported 50a
Common Tern. MNR

Cape Breton County

Brown I. 46.02 59.40 1971, June 6. I counted 100+ Common
and Arctic Terns, but was unable to determine ratio.

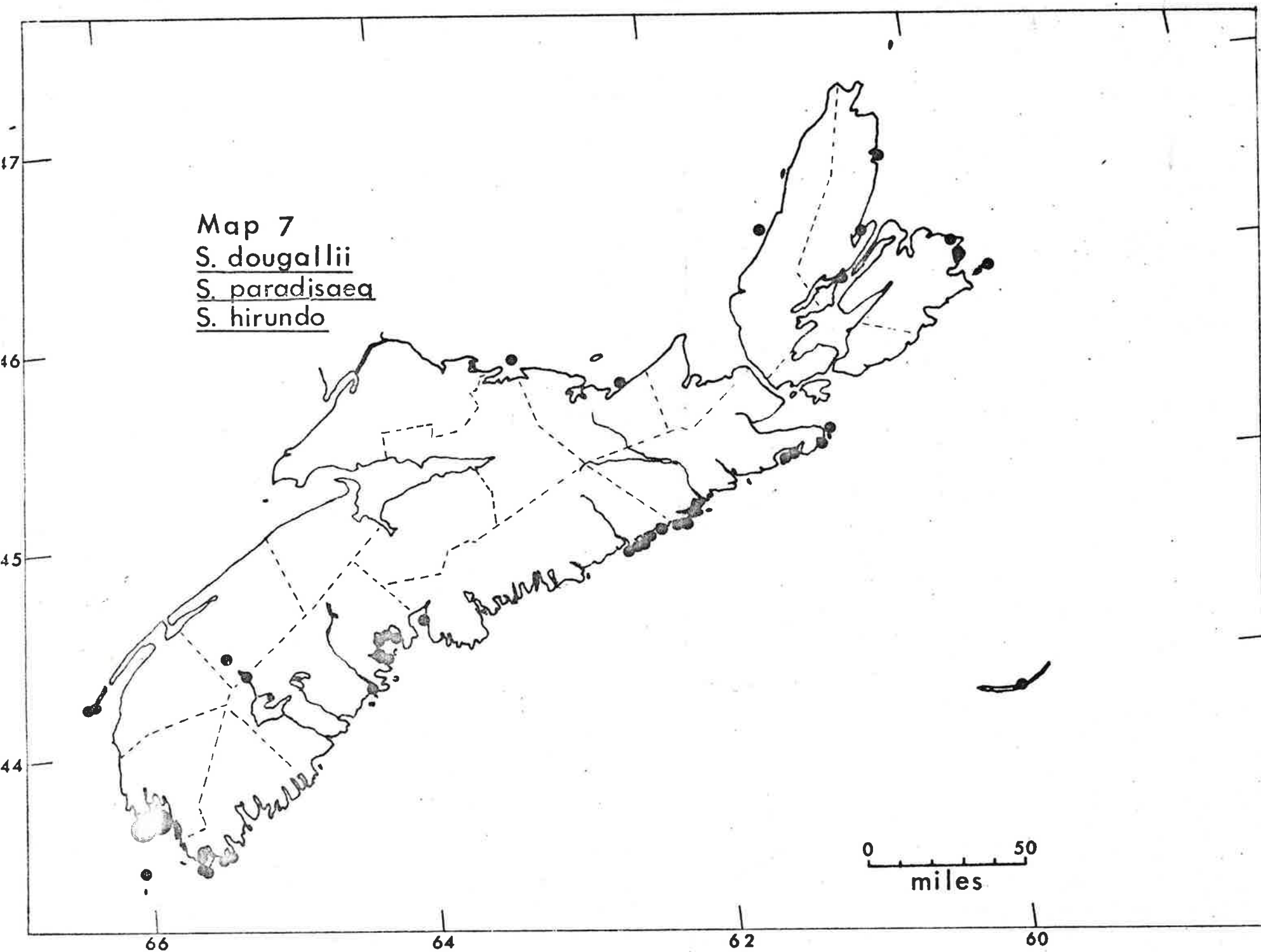
Port Morien Hay Bar. 40.08 65.52 1968, 50 nests of common
Tern. MNR

Glace Bay Sanctuary. 46.10 59.56. 1967 About 60a Arctics. MNR

COMMON MURRE Uria aalge

This species is reported to have bred on Gannet Rock and
Green I. In Yarmouth County, on Seal I and on Hertford and Ciboux
but is not thought to breed in Nova Scotia at present. I
found no evidence of their breeding anywhere in the province.

Map 7
S. dougallii
S. paradisaea
S. hirundo



BLACK GUILLEMOT Cepphus grylle Map 8

This is by far our most common Alcid. It nests deep in fissures in rocks or among large boulders and its nest is very difficult to discover. Concentrations of these birds are found around coasts with large tumbled boulders or cliffs and it is almost certain that they breed in such places. In the list following I give counts of adult Guillemots around places with suitable coastline for nesting. The isolated birds encountered between islands or at sea I have not counted. So while I have found nests on only a half a dozen islands I can name more than thirty places which, I am quite confident, are breeding areas.

Cumberland County

Spencer I. 45.20 64.42 20/6/71 4a around island, probably breed. ARL.

Kings County

Cape Split. 45.20 64.30 Tufts 1933 mentions colony. I saw two birds fly off cliffs May 18, 1971

Yarmouth County

Little Half Bald I. 43.37 66.02 1956, D. Henry found 3 nests

Shelburne County

Blue Gull I. 43.40 65.13 22/6/71 61 birds around the island but I only found one nest.

Green I. 43.45 64.56 23/6/71 Guillemots around I. but it was too foggy to count them. Obviously breed on island.

Lunenburg County

Pearl I. 44.23 64.03 27/6/71 80+ a around I., several nests found.

Halifax County

Southwest I. 44.30 63.59 30/5/71 14 around I., obviously breed.

Jeddore Rock 44.41 62.59 15/6/71 8 around I., obviously breed.

Barren Is. 44.41 62.58 12/6/71 4 around I. obviously breed.

Long I. 44.41 62.54 12/6/71 4 around I., probably nest.

Horse I. 44.50 62.22 3 around I., may breed.

Little White I. 44.54 62.13 15/6/71 7 around I., may breed.

Pumpkin I. 44.49 62.23 14/6/71 36 around island and almost certainly they breed here.

Big White I. 44.53 62.06 15/6/71 11 around I. prob. breed.

Halibut Is. 44.54 62.13 15/6/71 2 around I. may breed.

Guysborough County

Gull ledge. 44.55 62.02 1957; L. MacPherson noted four birds around the island and suggested that they may breed.

Cape Moca dome 45.05 61.40 16/6/71 4 around and they may breed on the low cliffs.

Antigonish County

Monk's Head 45.41 61.50 7/5/71 2 flying from cliffs AVE
Between Cape George and Crystal Cliffs 6 flew from the cliffs.

Richmond County

Rock off Forchu 45.43 60.13 17/5/71 6 birds around rock.

Cape Breton County

Guyon I. 45.41 60.07 7/6/71 9 around I., probably breed.

Green I. 45.49 60.04 6/6/71 14 around I. certainly breed.

Green I. 45.54 59.58 6/6/71 11 around I. may breed.

Portnova I. 45.56 59.48 6/6/71 6 around I. breed.

Isle Aux Cannes 45.57 59.48 11 around I., probably breed.

Coromandierre Rocks and Scattari I. 13 seen, breed.

Flint I. 46.11 59.46 6/6/71 12 around I., probably breed.

Cape Perce 46.11 59.49 56 around cape, breed. 6/6/71

Inverness County

Henry I. 45.58 61.36 3/6/71 3 around I., probably breed.

Cheticamp I. 46.38 61.03 1962 10 prs MNR

Margaree I. 46.22 61.16 1965 5 prs probably breed here. AJE

Victoria County

Hertford and Ciboux 46.23 66.23 4/6/71 I counted only 20 birds around the two islands whereas R.G. Brown in 1966 estimated 100p and W. Neilly counted 123 p (no date)

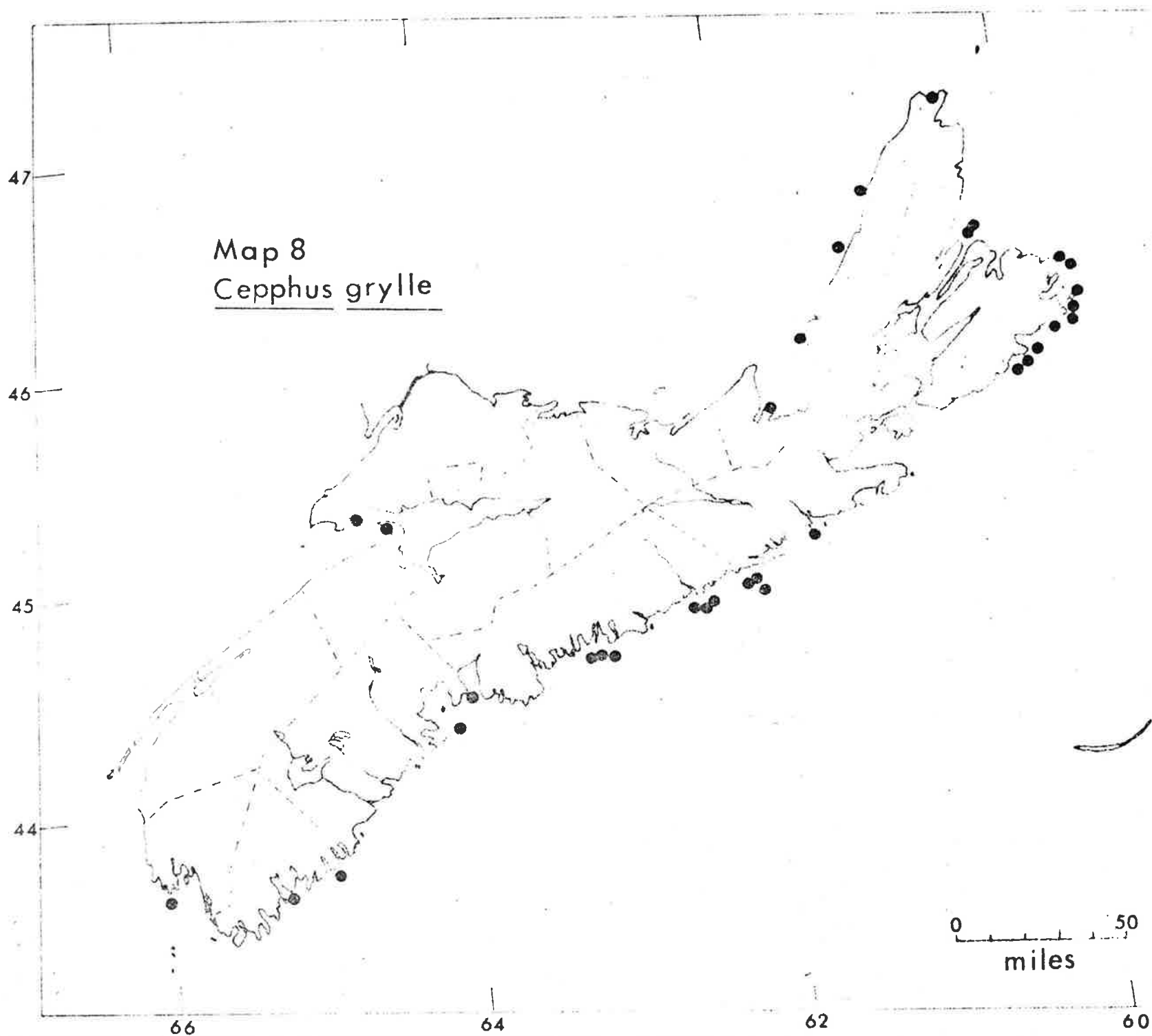
Bay St. Lawrence 47.00 60.00 42 adults counted in a colony at the harbour mouth. There may well have been more but as I was counting from land my vision was limited.

St. Paul I. 47.12 60.00 20/8/71 I was too late for Alcids but this island has all requirements for their nesting and I suspect they will be found here. I noted only one guano-stained ledge that appeared to have housed an Alcid but there may be many more such.

OSPREY Pandion haliaetus

My census discovered six nests of this species and their locations are entered in the county lists. I made no special effort to look for these birds and so may well have missed them even on islands I counted other birds on. The pair on Indian Island in Lunenburg County were seen in August and observed to have reared three young.

Map 8
Cepphus grylle



RAZORBILL Alca torda

Razorbills (Map 9) are now almost extinct in Nova Scotia, surviving in numbers only on Hertford and Ciboux (ca 50 pairs.) One pair remains on Pearl I. and St. Paul I. may well have some on its cliffs but the Nova Scotian population is unlikely to be much above 100 pairs. The species was reported by Audubon on Seal I., by Bryant in 1856 on Gannet Rock and Green I. in Yarmouth County, and by Downs in 1888 as nesting on Sable I. This last report is obviously mistaken but Bryant's observations are reliable. I was not able to visit the Yarmouth County sites but I feel sure they would have been reported if they remained there in numbers.

PUFFINS Fratercula arctica

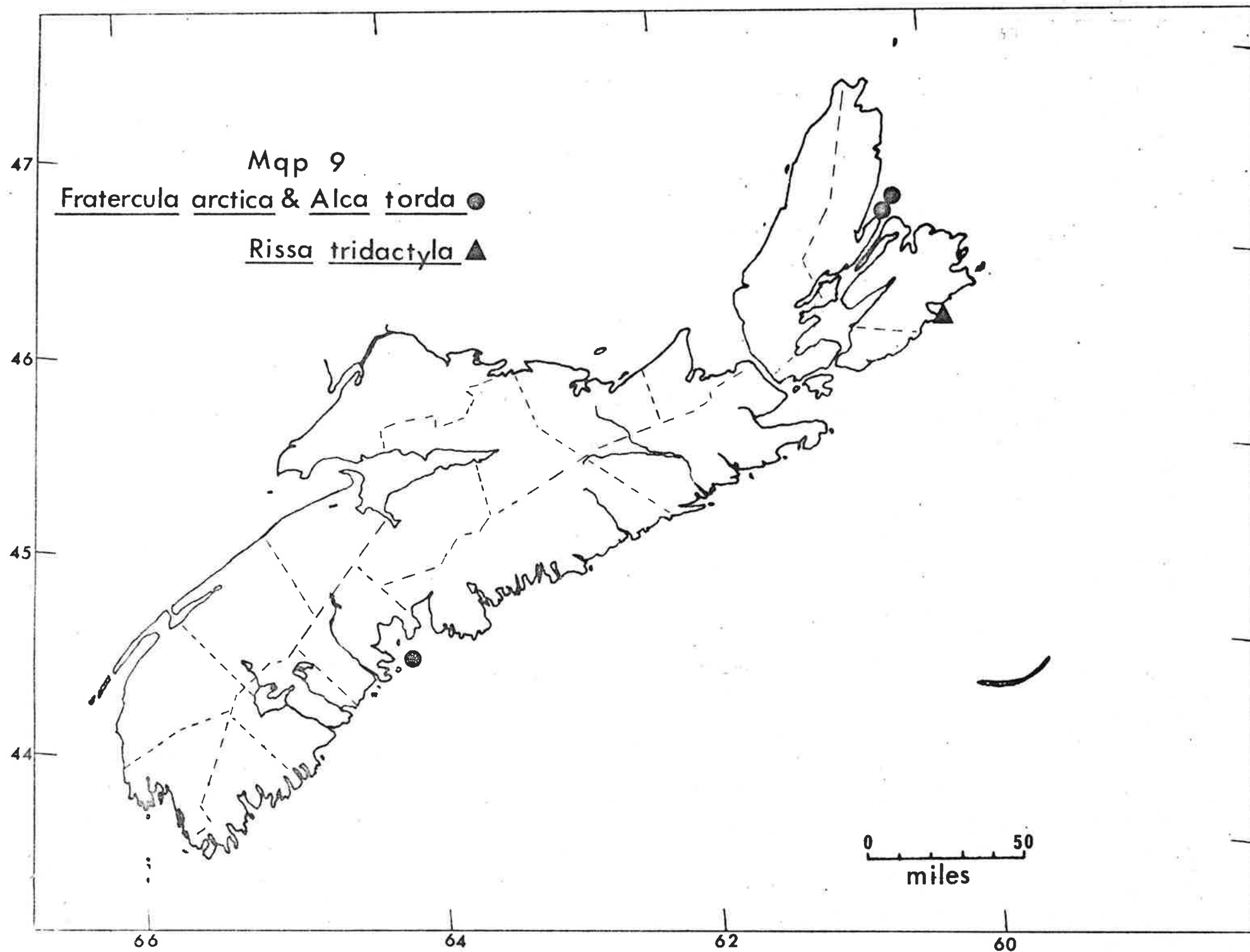
This species, like the Razorbill, has been much reduced in numbers in historic times in North America. Bryant found them abundant on Green I. (Yarmouth Co.) in 1856 and H. F. Tufts reported them breeding on Seal I. as late as 1907. On both of these islands they are now extinct, nesting in Nova Scotia on Hertford and Ciboux (50-70p) and on Pearl I. (2p), shown on Map 9. I also saw a single adult puffin in breeding colours close to Pumpkin I. Possibly a few pairs may breed on such islands off Halifax and Guysborough Counties, but like the Razorbill, not many more than a hundred pairs can still be breeding here. On my visit to St. Paul I. I saw traces of occupancy on a narrow ledge about 70 feet above the sea. Black Guillemots do not nest this high, so possibly Puffins or Razorbills breed in small numbers on this island.

BLACK-LEGGED KITTIWAKE Bissa tridactyla

Prior to my discovery of the colony on Green I. off Cape Gabarus (Map 9), this species was not known to breed south of Newfoundland and Gaspe. I counted 77 nests on my visit on June 7 and I suspect that a further dozen or so pairs nest on the face of a cliff I was unable to examine. The sea was quite rough and as I was alone I was able to land only briefly, but I examined 14 nests, six contained 3 eggs, seven had 2 eggs, and one only 1 egg. I collected ~~three~~ ^{one} ~~eggs~~ ^{egg} from three nests with clutches of three and deposited them in the Nova Scotia Museum. The most advanced was $\frac{3}{4}$ incubated.

Twenty-seven pairs of Great Cormorants, about 125 pairs of Great Black-backs and an unknown number of Black Guillemots also nest on Green I. making it one of the more ornithologically interesting islands in the province. It merits some degree of protection or supervision; when I visited a large marker had been erected on top of the Kittiwake colony by some governmental agency. If a light is to be built there it should be sited so that construction will not obliterate the colony.

The survival and apparent success of the Kittiwakes in spite of the proximity of a large Black-back colony must be due to their reluctance to leave the nest in the face of an intruder and their habit of returning to the nest immediately after a disturbance. Lobster traps are set in the waters very close to the colony but the birds are not disturbed by this. I questioned some local fishermen but they were not aware that anything other than "gulls and shags" nested on the island and they could not tell me if the colony was of recent foundation. I have no reason



to believe it to be a new colony. The mean clutch size and size of two of the eggs collected indicated that a fair proportion of the birds had bred previously. This colony is, as far as I can tell, the southern most nesting place of this species in the world.

LEACH'S PETREL Oceanodroma leucorhoa (Map 10)

As the time I had available for this census was very limited I was not able to land on every island and look for petrel burrows. Furthermore Petrels were only beginning to nest at the time I was in the field. I list below all the data I was able to gather on colonies likely to exist today.

Undoubtedly, many of the islands off the Halifax and Guysborough County coasts are sites of Petrel colonies. On St. Paul I. I examined several burrows but encountered no live birds or chicks. I think it would be well worthwhile examining this species for pesticide residue accumulations.

Yarmouth County

Bald Tusket I. 43.31 66.02 Reported by I. Pothier in 1967 and D. Henry in 1970.

Inner Bald I. 43.37 66.02 A. J. Erskine reports breeding Vol. 23. P.N.S.I.S.

Holmes I. 43.38 66.04 B. C. Carter reports breeding, 1957.

Seal I. 43.25 66.01 One of the earliest reported colonies. I visited Seal I. this year and found rats in what were, apparently, Petrel burrows. I do not know if any Petrels survive.

Mud I. 43.28 65.29 Godfrey quotes Mud I. as a breeding place. I have not been able to visit it.

Lunenburg County

Indian I. 44.09 64.24 1971 Aug. 14 I found 13 Petrel wings in a clearing containing burrows, but no eggs or chicks. Obviously the Gulls are eliminating the Petrels on this island.

Pearl I. 44.23 64.03 1971 June 27 An area of 2-3 hectares in the centre of the island is occupied by a large and, apparently, flourishing colony. At the densest part of the colony I found 19 burrows in an area of 16m².

Halifax County

Bird Is. 44.52 62.17 L. B. MacPherson in 1957 estimated 500+ Petrel nests.

Brother Is. 44.49 62.22 1971 June 14 I found burrows with rudimentary nests and Petrel feathers - no eggs.

Halibut Is. 44.54 62.12 I visited too early for Petrels. Latest report is B. Hinds who reported 40+ burrows on the middle island in 1957.

Guysborough County

Gull Ledge 44.55 62.02 L. B. MacPherson reports breeding 1957.

Victoria County

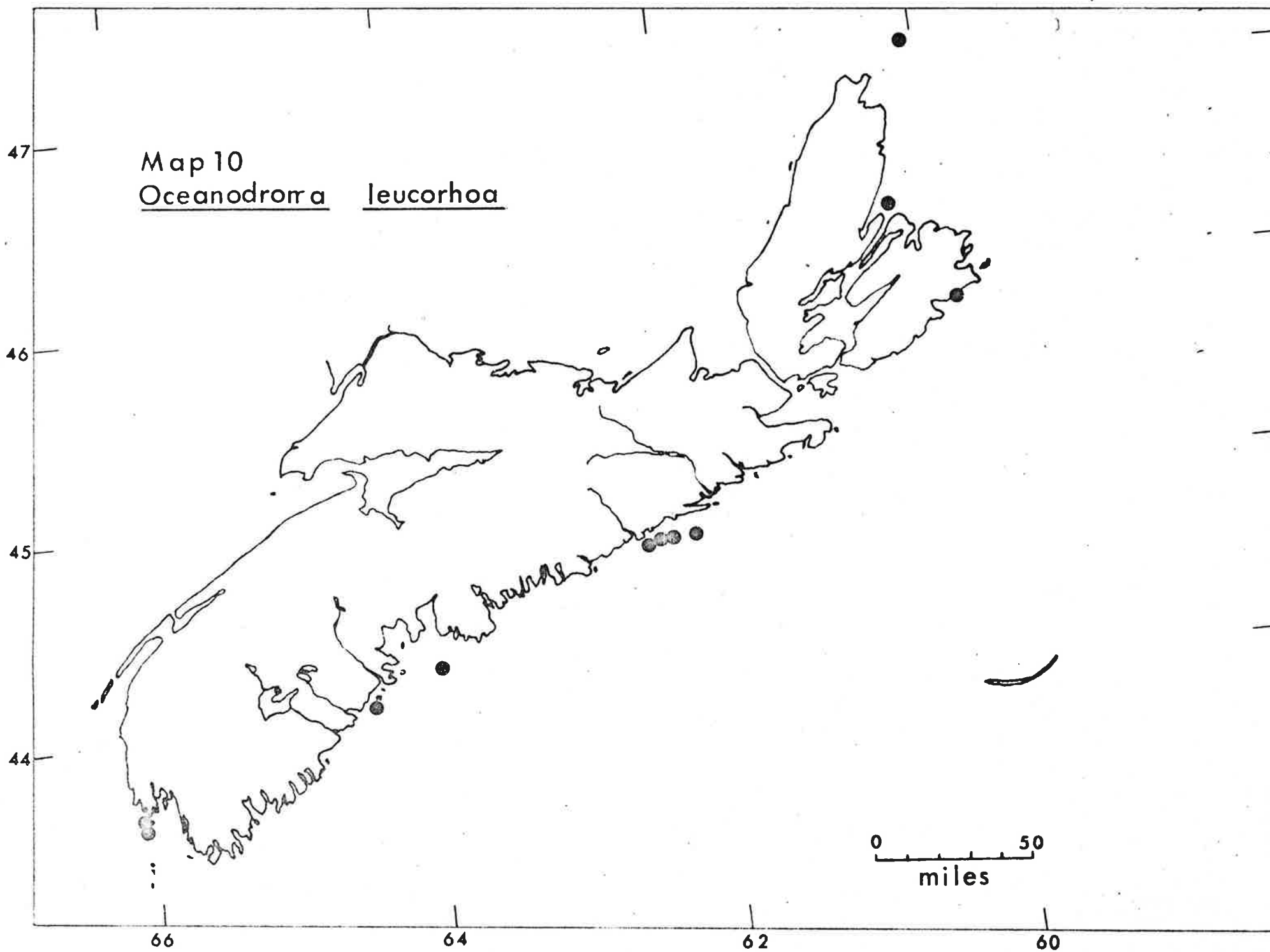
Ciboux I. and Hertford I. Petrels found by R. G. Brown in 1966. I visited these islands this year before Petrels are likely to be found.

St. Paul I. 47.12 60.09 1971 Aug.21 I found Petrel burrows fairly abundant but found mainly dead chicks or eggs.

LAUGHING GULL Larus atricilla

The colony of this species on Bird Is., Halifax County broke up around 1942-1943 (R. Tufts, M.N.R.) but Ronald Dicks (M.N.R.) reported them breeding on "an island off Quoddy" as late as 1962. I kept close watch for this species especially around Harrigan Cove but failed to see any. I made the acquaintance of a fisherman who was quite familiar with the bird (having ferried bird watchers to look for it in earlier years) and he reported he saw them regularly up to 1968 or so but since then has seen none.

Map 10
Oceanodroma leucorhoa



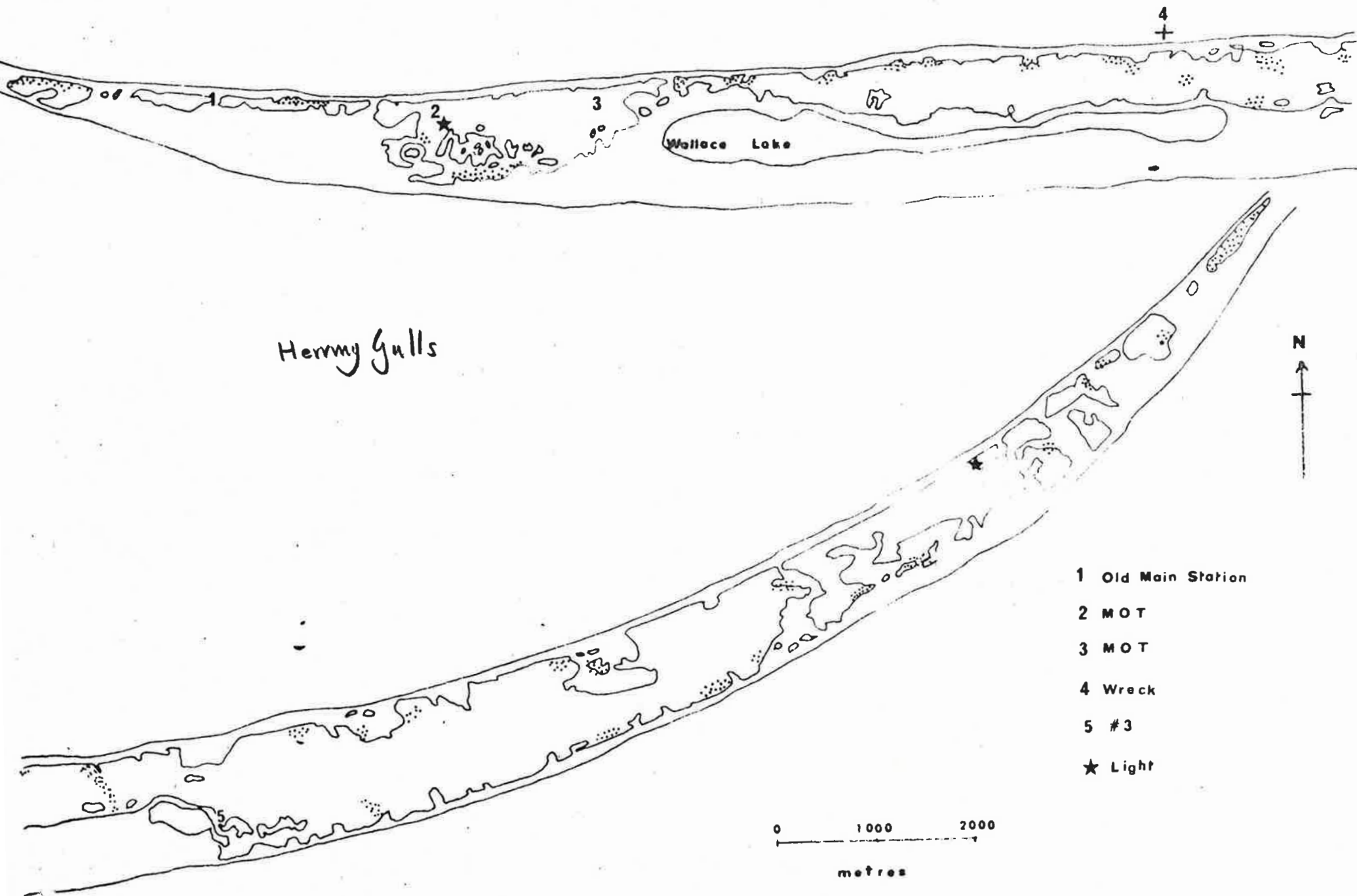
SABLE ISLAND: GULLS

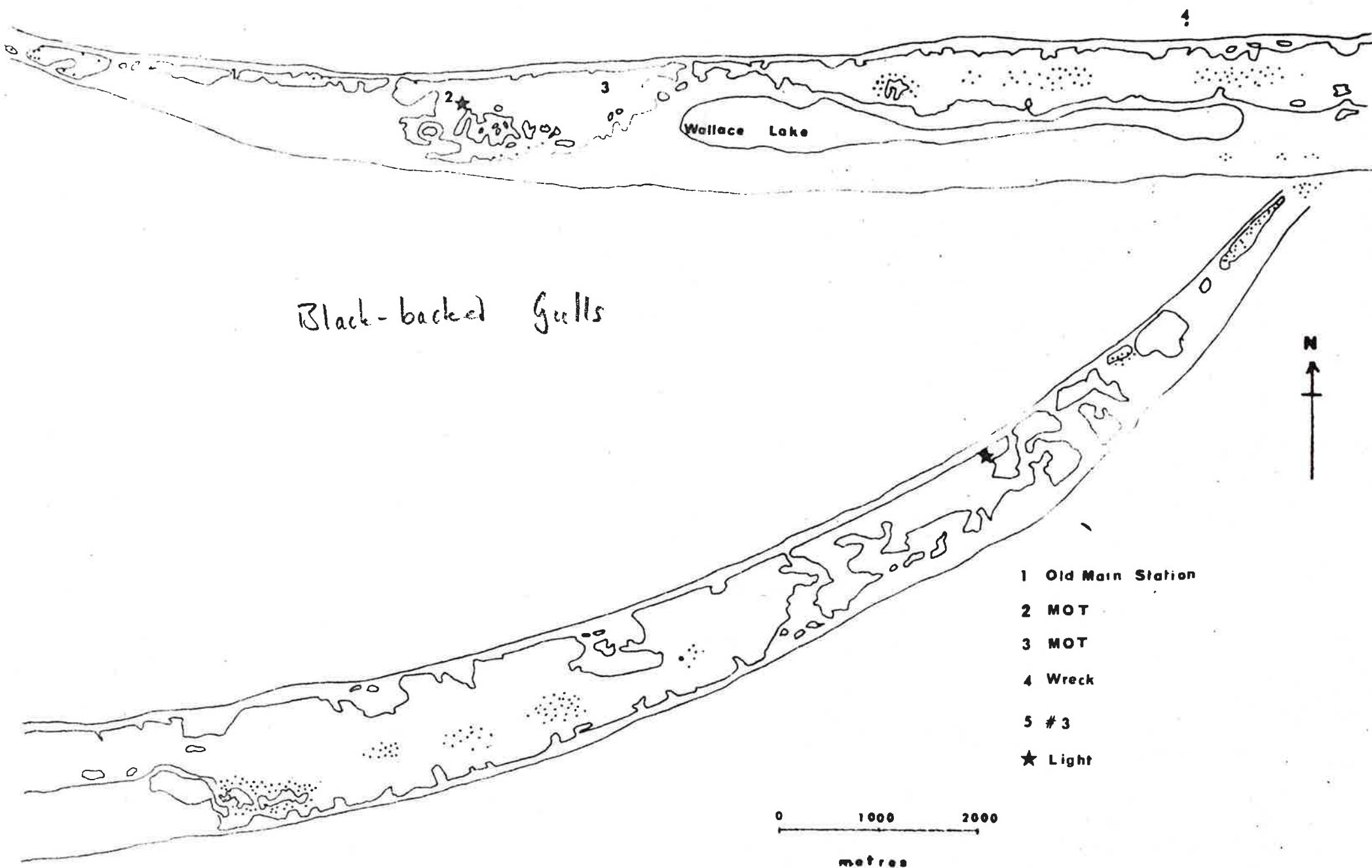
a. Herring Gulls

Colonies of this species are shown on Map as dotted areas. The number of dots is not a direct indication on the number of nests in a colony but rather the area shaded shows the extent of the colony and the number of nests will be approximately proportional to the physical size of the colony. About 90% of the Herring Gulls on the island breed in colonies of substantial size, almost all of which are inhabited by a few pairs of Great Black-Backed Gulls. The remainder nest individually or in groups of ten or less pairs. A census of the island was carried out on July 12 and 15: 2765 adult Herring Gulls were counted. It is not unreasonable to expect several hundred gulls to be missed if they were at sea at the time of the count and so I would estimate that a minimum of 1500 pairs nest on the island.

b. Great Black-Backed Gulls

This species breed in large colonies around #3 Station and among the inland dunes of the central part of the island. Around 250 to 300 pairs breed thus, but the majority nest solitarily or among Herring Gulls on the dunes of the north shore of the island. The population was censused on July 12 and 15 and 1131 adults and 176 2nd or 3rd year birds were counted. This probably represents a minimum of 700 breeding pairs. The locations of the larger colonies of this species are shown on Map





SABLE ISLAND: TERNS

Tern colonies are notoriously labile, but the larger colonies listed in this report have been stable for the three seasons I have worked on the island. Only two have disappeared: one at old main station of about thirty nests was not in existence this year possibly because of a fair amount of human activity in this area; the other was on a large piece of wreckage on the Wallace Lake flats a few hundred metres east of colony #12. This colony dispersed after an American film company destroyed the wreck by blasting in late July of 1969.

Terns nesting on Sable Island seem not to be very successful. Certainly the gulls, particularly L. marinus, consume both eggs and newly fledged young but my examination of the feeding habits of these birds suggest that gull predation might not be the only important source of egg and juvenile mortality. The terns seem to be unable to keep the horses out of the colonies and an unknown but possibly significant number of eggs and young are trampled. By the middle of July many of the colonies have either disappeared or been greatly reduced in size; the unsuccessful birds seem to concentrate in loafing groups or clubs on sand bars at either end of the island.

On July 15 and 16 I did a circumnavigation of the island counting all terns seen over colonies and fishing in the surf or loafing in clubs. A total of 2585 birds were counted and I estimate that sixty percent are Arctic Terns, thirty percent are common terns and ten percent are Roseate Terns.

Colony #

1. West Bar. On July 12, 298 terns were counted. I estimate that 30 to 60 pairs nest here on the ground often among clumps of Sandwort or close to bits of driftwood.
2. West Dune Colony. On July 12 I counted 380 birds above the colony and estimated 20% Arctic, 60% Common and 20% Roseate. I. A. MacLaren estimated 550 birds on Jun. 26: 75% common, 15% Roseate and 10% Arctic.
3. A small colony south of West Light. On July 13 I estimated 75 birds: equal numbers of Common and Arctic with about 10% Roseate. On Jun. 28 I. A. MacLaren counted 250 birds, 90% Common.
4. Island in pond 200m east of Radio Tech. House. I counted 48 birds on July 12.
- 4'. Island in pond 350m east of Radio Tech. House. July 12, 53 birds were counted: 25% Arctic, 75% common and a few Roseate. I. A. MacLaren counted 80 birds on Jun. 28. estimating 30 prs. of Common and 10 prs. of Roseate Terns.
5. I. A. MacLaren counted 20 birds in a scattered colony east of the ponds on Jun. 26.
6. July 15. About 200m east of the Psychology house on the north beach a small colony of 20 terns, all Arctic.
7. July 16. Colony by Psychology seal pen. Twenty three birds were counted and estimated to be approximately equal numbers of all three species.
8. July 15. Near #2 Lifesaving Station. 28 birds counted, all Arctic Terns.

Colony #

- 9 Approx. 50 terns, 80% Arctic and 20% Common
- 10 Terns nest along the sandy plain within 100m of the ocean.
These are almost all Arctic Terns and they nest individually
or in small groups. Between M. O. T. installations and colony #12
on the south beach I counted 131 terns on July 16. Of these
42 were fishing in the surf and may well have been from other
colonies; I estimate 30 to 40 pairs nest in this area.
- 11 From colony # 12 to #3 Lifesaving Station 143 terns were counted.
About 50 of these were fishing in the ocean and a further 50
were loafing in a club near #3 so probably no more than 30
pairs nest on this part of the plain.
- 12 July 16. An isolated dune south of the Computing Devices hut.
I. A. MacLaren counted 100 Arctic, 40 Common and 10 Roseate on
July 1. I counted 125 to 140 terns over the colony and estimated
80 Arctic, 30 Common and 20 Roseate. This colony used to be
on a more easterly isolated dune but this dune washed away
last winter and the new site is about 1Km west of the old one.
- 13 July 1. I. A. MacLaren counted 20 Arctics above a colony
at #3 station. On July 24 I counted 24 birds.
- 14 July 15. 25 Arctic Terns nesting on a grassy area of the
upper beach.
- 15, 16 On July 15, 40 birds were estimated to be on each colony. I
neglected to note the species but they are probably Arctic.
- 17 On July 15 there were about 35 Arctic and 10 Common in this
colony.
- 18 On July 26, 20 Roseates were on this colony.
- 19 July 26. 36 terns counted: 75% Roseate and 25% Common. At
the beginning of July about 400 Roseates occupied this area.
- 20 Approx. 80 terns, 60% Arctic and 40% Common. July 15

Colony #

21

July 15. A very small colony of only 8 Arctic Terns

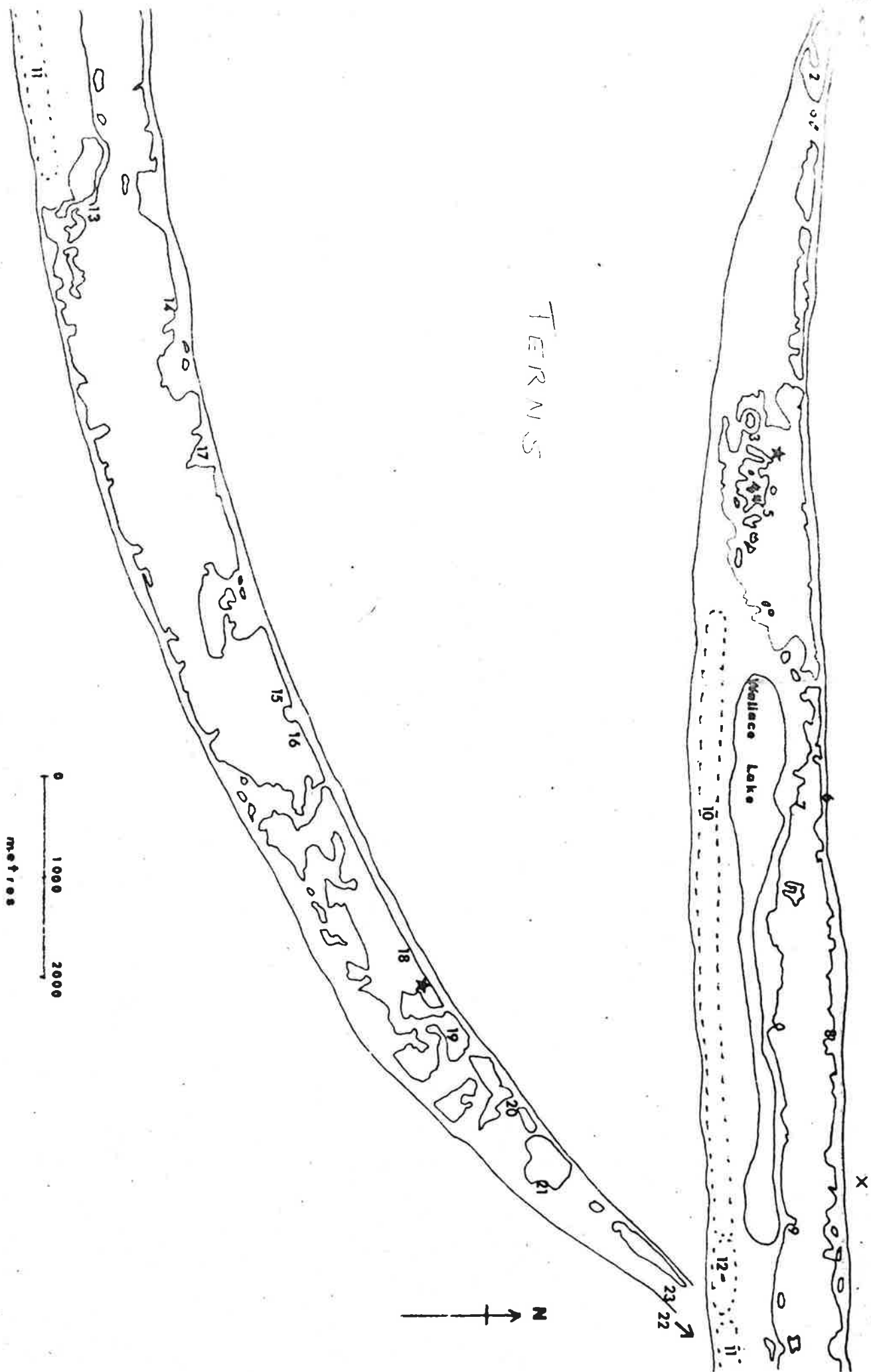
22

On July 15 292 terns were counted on the East Bar. Arctics and Commons occurred in a ratio of about 5:3 and around 5% were Roseate. A colony of about 140 birds was situated about $\frac{1}{2}$ km east of the eastmost dune. All were Arctic and Common Terns but the proportions were not determined.

23

July 15. 65 terns over the colony: most were Arctic and the remainder were Common.

TERNIS



Additions and corrections to the sea-bird census prepared for the
Canadian Wildlife Service by A.R. Lock.

Total number of L. marinus breeding in^{Memland} Nova Scotia is 14,100 pairs.

Total number of P. carbo breeding in Nova Scotia is ~~200~~²¹⁰⁰ pairs.

Total number of P. auritus breeding in Nova Scotia is 4,200 pairs.

Corrections and additions to County Lists

Lake George, Yarmouth County, 44.00N 66.05W. 2015 L. marinus

adults were counted from air photographs taken June 11, 1971

The position of Horse I., Halifax County, should be 44.51N and 62.28W and not 44.41N and 62.32W.

The P. auritus colony listed for Horse Island, 44.50N and 62.22 is actually on an unnamed islet close to Horse I.

On Little White I., Halifax County, there were 120 adult P. auritus and not 200.

On Tobacco I. Guysborough County, there are 180-200 pairs of P. auritus and not 180-200 adults.

On Tobacco Island there were 40 pairs of Great Blue Herons breeding in 1971 according to Mr. K. McAloney.

On Goose I., Guysborough County, a total of 185 pairs of P. auritus are breeding in two groups of 91 pairs and 94 pairs.

Winter I., 45.13N 61.15W, Guysborough County. The data are an air visual estimate made 20 May 1971