

Appendix 7:
Marine Seabirds and Marine Mammals
(Envirosphere 2009c)

Marine Bird and Mammal Observations— Minas Passage Study Site

Submitted to:

Minas Basin Pulp and Power Co. Ltd.
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Submitted by

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1. INTRODUCTION

The field studies in support of the Fundy Tidal Power Project offer an opportunity to collect information on distribution, species composition and abundance of sea and coastal birds, and marine mammals. These groups of organisms, because of their importance in the ecosystem, and their legal status under the Migratory Birds Convention and Marine Mammal Protection Act, as well as their social and ecological value, are important Valued Environmental Components in most environmental assessments of marine systems. Formal seabird and marine mammal observations were collected on the July 7-9 and October 1-3, 2008 cruises of the *MV Dominion Victory* while the geophysical survey was taking place. Incidental observations were made by project team members on the February 2 and March 10, 2009 seabed video surveys.

2. METHODS

In July, the marine biologist on the cruise (Patrick Stewart, M. Sc., EnviroSphere Consultants Ltd) carried out routine watches for seabirds and marine mammals during the course of the cruise. On the October 1-3, 2008, a team of biologists (S. Wehrel and R. Jeppesen) were on board to make observations¹.

The standard watch for seabirds was carried out following the Canadian Wildlife Service protocol (Wilhelm *et al.* 2008). A watch of 5 min was carried out roughly every hour while the vessel was steaming. This frequency is lower than the 5 min/half hour recommended; the protocol is designed for continuous lines, generally covering larger areas than the current survey; consequently the data collected in a small area would provide too many data records, and the longer spacing of observations is warranted. Although the protocol includes a stationary watch procedure (for when the vessel is stopped, for example, on station), the stationary protocol was not used on the cruise. In addition, fairly continuous watches were conducted for marine mammals, and any seabirds observed during these observations were noted. After this data is used in providing information summaries for the environmental assessment process, the data, in standard reporting form, will be given to the Canadian Wildlife Service for inclusion in their seabird database.

A protocol and reporting forms used by DND-MARLANT for marine mammal observations, including the MARLANT Whale identification Guide (EnviroSphere Consultants 2006) were on board for use in identification.

1 . The biologist making the July observations (P. Stewart) was experienced in carrying out PIROP surveys and marine mammal surveys, including DND observation protocols. The biologists on the October survey were given a short course on bird and marine mammal observation protocols and supplied with suitable identification information and reporting forms.

3. RESULTS

MARINE AND COASTAL BIRDS

Relatively low seabird densities and diversity were observed during the cruise (Tables 1 & 2). Only six species were recorded overall, and only 29 individuals counted. On the quantitative portions of the observations (Table 1), 17 seabirds were observed in 3.61 nm of transects (2.5 birds/ km). The observations cover an area roughly 300 m wide, particularly due to the slightly foggy conditions. In general observations were not made when visibility was less than about 200 m.

Table 1. Records of sea and coastal birds during routine observations, in Minas Passage study area, MV *Dominion Victory*, July 7-9, 2008.

Date	Time	Distance (nm)	Number of Seabirds		Seabird Species
			Flying	On Water	
<i>Quantitative Seabird Watches</i> ¹					
7 July '08	1615-1620	0.33	3	0	Black Backed Gull (3)
	1645-1650	0.21	0	0	-
	2014-2019	0.21	0	0	-
8 July '08	0745-0750	0.56	2	0	Gull (juvenile)(1), Black Backed Gull (1)
	0840-0845	0.6	0	0	-
	0940-0945	0.25	0	0	-
	1055-1100	0.3	0	0	-
	1240-1245	0.14	4	2	Black Backed Gull (5), Gull (unidentified) (1)
	1345-1350	0.07	0	1	Herring Gull (1)
	1445-1450	0.53	0	0	-
	1545-1550	0.05	1	4	Black Backed Gull (1), Herring Gull (2), Double Crested Cormorant (1), Gull (unidentified) (1)
	1915-1920	0.37	0	0	-
<i>Incidental Observations</i>					
8 July '08	1540		1		Black Guillemot (1)
	1950			1	Common Loon (1)
	1955		1		Double Crested Cormorant (1)
	1959		2		Double Crested Cormorant (2)
	2012		6		Double Crested Cormorant (6)
9 July '08	0830			1	Northern Fulmar (1)
1. 5 minute watches separated by from half tone hour.					

Table 2. Approximate density of sea and coastal birds, Minas Passage, July 7-9, 2008 and October 1-3, 2008. Distances surveyed were 6.6 km in July and 20.7 km in October.		
Species	Number Observed	Density (number/km)
July 7-9, 2009		
Black Backed Gull	10	1.5
Double Crested Cormorant	10	1.5
Herring Gull	3	0.4
Gull Unidentified	3	0.4
Black Guillemot	1	0.2
Common Loon	1	0.2
Northern Fulmar	1*	0.2
October 1-3, 2009		
Herring Gull	1	0.05
Gull Unidentified	3	0.15
Wilson's Storm Petrel	1**	0.05
Bald Eagle	1	0.05
American Crow	4	0.19
* Observed in Minas Basin. ** Unverified sighting.		

Seabirds most commonly occurring in the study area include double-crested cormorants, greater black back gulls, and herring gulls, but a wide range of species can occur (Table 2). The Northern Fulmar observed near Blomidon in July (Figure 2) may have been blown into the Minas Basin by a storm. Black Rock at the study site is a common resting area and high densities occur there periodically, mostly in summer, and all species move throughout the area daily for feeding. Black back gulls have been observed in rafts at the site in February. A bald eagle and American crow were noted on the October survey.



Figure 1. Greater Black Back gulls and Double-Crested cormorants, Black Rock at study site, June 2008.



Figure 2. Northern fulmar, normally an offshore oceanic species, near Cape Blomidon, Minas Basin, July 2009.

MARINE MAMMALS

No marine mammals were seen on any of the surveys or incidental observations.

4. CONCLUSION

Minas Passage supports low densities of seabirds and no marine mammals were observed.

5. REFERENCES

Envirosphere Consultants Ltd. 2006. Identifying Whales, Dolphins, Seals and Sea Turtles in the MARLANT Operations Area. Including Porpoises and Walrus. Report to MARLANT Formation Safety and Environment, March 2006.

Wilhelm, S. I., C. Gjerdrum, and D.A. Fifield. 2008. Standardized protocol for pelagic seabird surveys conducted in eastern Canada from moving and stationary platforms. Canadian Wildlife Service, Atlantic Region, Technical Report Series Number (in press).