



## Fundy Model Forest

### *~Partners in Sustainability~*

**Report Title:** Apparent Survival and Population Viability of a Forest Bird Indicator Species in Relation to Landscape-Scale Forest Management

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***The Fundy Model Forest...  
...Partners in Sustainability***

*“The Fundy Model Forest (FMF) is a partnership of 38 organizations that are promoting sustainable forest management practices in the Acadian Forest region.”*

Atlantic Society of Fish and Wildlife Biologists  
Canadian Institute of Forestry  
Canadian Forest Service  
City of Moncton  
Conservation Council of New Brunswick  
Fisheries and Oceans Canada  
Indian and Northern Affairs Canada  
Eel Ground First Nation  
Elgin Eco Association  
Elmhurst Outdoors  
Environment Canada  
Fawcett Lumber Company  
Fundy Environmental Action Group  
Fundy National Park  
Greater Fundy Ecosystem Research Group  
INFOR, Inc.  
J.D. Irving, Limited  
KC Irving Chair for Sustainable Development  
Maritime College of Forest Technology  
NB Department of the Environment and Local Government  
NB Department of Natural Resources  
NB Federation of Naturalists  
New Brunswick Federation of Woodlot Owners  
NB Premier's Round Table on the Environment & Economy  
New Brunswick School District 2  
New Brunswick School District 6  
Nova Forest Alliance  
Petitcodiac Sportsman's Club  
Red Bank First Nation  
Remsoft Inc.  
Southern New Brunswick Wood Cooperative Limited  
Sussex and District Chamber of Commerce  
Sussex Fish and Game Association  
Town of Sussex  
Université de Moncton  
University of NB, Fredericton - Faculty of Forestry  
University of NB - Saint John Campus  
Village of Petitcodiac  
Washademoak Environmentalists



## **2004 Year-end report for Fundy Model Forest**

### **Apparent survival and population viability of a forest bird indicator species in relation to landscape-scale forest management**

Applicants: Dr. A.W. Diamond and B. Zitske

#### **Objectives**

The objectives of this project are to:

- (1) determine the influence of forest management at the landscape scale on the survival of a forest indicator species (Blackburnian Warbler *D. fusca*) and a more common forest bird species (Black-throated Green Warbler *Dendroica virens*).
- (2) use these data to develop Population Viability Models that will assess the influence of a range of forest management scenarios on forest bird populations.

This is a three-year project that requires data from each year to meet the overall objective of quantifying survival of our indicator species. In the first year of the project, we were successful in obtaining a strong sample size (101 Blackburnian warblers and 149 black-throated green warblers were banded) to continue the project. We had resight rates of 29% (n=5/17) for Blackburnian warblers and 42% (n=8/19) for black-throated green warblers, respectively, for individuals banded in 2003. See Table 1 for more detailed summary of banding and resighting statistics.

With a larger sample size, we expect to see differences in survival rates between landscape types. For example, we expect that birds banded in a fragmented/managed landscape (< 60 hectare patches of mature forest) will have lower survival rates than those banded in a contiguous landscape (> 250 hectare patches of mature forest) within Fundy National Park and remaining mature forest in private woodlots, freehold, and crown land in the surrounding landscape. The results of 2004 far surpassed our expectations and encourage two more years of collecting sound data. In 2005 intensive banding will resume as will resighting of birds banded in previous years.

#### **Costs of the project**

The project was expected to cost \$38,000. Total costs of the project were actually \$35,267. The difference was made up from spending less on food and saving on truck rental costs. NBDNRE supplied us with two field vehicles that were cheaper than renting through a car rental agency.

**Time frame of the project**

Training began on 21 May, banding began on 27 May and ended 28 July 28 2004. Training will begin in late May 2005 and banding will progress until the end of July 2005.

**Permits**

All required permits were obtained.

**Promotion**

On 11 November 2004, acknowledgements were given to FMF during a presentation given by Brad Zitske, M.Sc.F. student at UNB, at the 10<sup>th</sup> annual Atlantic Co-operative Wildlife Ecology Research Network meeting in Fredericton. Acknowledgements were given on 7 April 2005, in a class presentation at UNB and will continue to be given during any presentations or talks relevant to this project.

**Conclusion**

This is a three-year project. Continuing the project for all three years is essential to learn what the exact socio-economic and environmental impacts are. Private woodlot owners within the Fundy Model Forest were taken into the field twice in 2004 for hands-on observations of the project. They played roles in observing how the management of their woodlots directly affects migrant songbirds and they and other landowners are welcome into the field again any time in 2005.

**Sample Size (2000-2004)**

SPECIES	2000	2001	2002	2003	2004	Total
BLBW	15	12	16	17	101	161
BTNW	10	54	45	19	149	277
TOTAL	25	66	61	36	250	438

**Proportions resighted birds 2000-2004**

SPECIES	2000-03	2004
BLBW	0.23	0.29
BTNW	0.3	0.42

**2004 Banded BLBW**

AGE	C	F	TOTAL
AHY	4	1	5
ASY	36	24	60
SY	23	13	36
TOTAL	63	38	101

SEX	C	F	TOTAL
Female	4	1	5
Male	59	37	96
TOTAL	63	38	101

**2004 Banded BTNW**

AGE	C	F	TOTAL
AHY	10	9	19
ASY	34	33	67
SY	30	33	63
TOTAL	74	75	149

SEX	C	F	TOTAL
Female	1	2	3
Male	73	73	146
TOTAL	74	75	149

**# BLBW banded by Land Ownership in 2004**

Land Ownership	#
Crown	32
Irving	9
SNB Woodlot	11
Fundy NP	47
Lakeburn Lumber	2
Total	101

**# BTNW banded by Land Ownership in 2004**

Land Ownership	#
Crown	54
Irving	22
SNB Woodlot	12
Fundy NP	60
Lakeburn Lumber	1
Total	149

Table 1. Detailed summary of banded Blackburnian (BLBW) and black-throated green (BTNW) warblers in and around Fundy Model Forest from 2000-2004 with emphasis on this project in 2004. Where noted, 'C'=contiguous and 'F'=fragmented (or managed) landscapes, respectively and 'AHY'=After Hatch Year (unknown age), 'ASY'=After Second Year, and 'SY'=Second Year. Note that male-biased sex ratio reflects the capture method.