

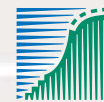
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# Waterbirds around the world

A global overview of the conservation,  
management and research of the  
world's waterbird flyways

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landbouw, natuur en  
voedselkwaliteit



SCOTTISH EXECUTIVE



EDINBURGH, UK: THE STATIONERY OFFICE

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First published in 2006 by The Stationery Office Limited  
71 Lothian Road, Edinburgh EH3 9AZ, UK.

Applications for reproduction should be made to Scottish Natural Heritage,  
Great Glen House, Leachkin Road, Inverness IV3 8NW, UK.

British Library Cataloguing in Publication Data  
A catalogue record for this book is available from the British Library

ISBN 0 11 497333 4

Recommended citation:

Boere, G.C., Galbraith, C.A. & Stroud, D.A. (eds). 2006.  
*Waterbirds around the world*. The Stationery Office, Edinburgh, UK. 960 pp.

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*Cover photography:* Whooper Swans *Cygnus cygnus* arriving at Martin Mere, England. Photo: Paul Marshall.  
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## Partnering to finance and deliver local flyway conservation in Nova Scotia, Canada

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Milton, G.R., Parsons, G.J. & Melanson, R. 2006. Partnering to finance and deliver local flyway conservation in Nova Scotia, Canada. *Waterbirds around the world*. Eds. G.C. Boere, C.A. Galbraith & D.A. Stroud. The Stationery Office, Edinburgh, UK. pp. 881-882.

Nova Scotia's coastal waters support regional and global waterbird populations. With most of the province and its coastline in private ownership, the conservation of waterbird habitat is a shared responsibility. This paper examines different forms of partnering to help deliver flyway conservation activities at a local level.

Nova Scotia's coastal habitats, located in the North American Atlantic Flyway, support regionally and globally significant numbers of migrating, staging, and wintering waterbirds. However, approximately 75% of the province and 95% of its coastline is in private ownership. Provincial and federal governments have historically applied provisions under legislation (e.g. sanctuaries and management areas) or listed areas under international agreements (e.g. Ramsar Convention) to regulate or influence activities that may directly impact waterbirds or their habitats. Although the Southern Bight Minas Basin Ramsar site has overlapping designation with the Western Hemispheric Shorebird Reserve Network (WHSRN), it receives no legislated habitat protection.

Since 1989 the Eastern Habitat Joint Venture (EHJV) partnership has delivered the North American Waterfowl Management Plan (NAWMP) to reduce/ reverse wetland loss and to restore waterfowl populations in Eastern Canada. Government agencies on the EHJV Management Board in 2002 identified the partnership as the principle delivery mechanism for bird habitat conservation under the North American Bird Conservation Initiative (NABCI). This decision by the North American Wetlands Conservation Council (NAWCC-Canada) to support NABCI objectives provided an opportunity to address threats to the waterbirds and habitat of the Southern Bight Minas Basin Ramsar and WHSRN site.

The Southern Bight Minas Basin is located in the upper reaches of the Bay of Fundy. Beginning in late July, 50-95% of the world population of Semipalmated Sandpiper *Calidris pusilla* migrates south through the upper bay. To complete the non-stop 5 000 km transoceanic flight to wintering grounds in South and Central America, the birds depend upon high quality foraging and undisturbed resting (roosting) habitat. An estimated 400 000 Semipalmated Sandpipers and 10 000 Least Sandpipers *Calidris minutilla* stop in the Southern Bight to feed on the high densities of mud shrimp *Corophium volutator* exposed at low tide in the extensive mud flats. During high tide, shorebirds will roost on the upper beach in flocks numbering tens or hundreds of thousands - a key roosting area that is a popular tourism destination where public ownership is limited.

Major threats to the birds and habitat are bloodworm *Glycera dibranchiata* harvesting, agricultural impacts, cottage development and tourism and recreation. To address these

threats, a multi-faceted conservation initiative builds upon a science base, legislation, and stewardship. Stewardship is the wise and ethical management of natural resources by stakeholders who share a common interest in the sustainable management of all resources that occur in the natural environment. Stewardship activities involving governments, landowners, interest groups and/or the general public are voluntary and promote cooperative partnerships.

Unregulated bloodworm harvesting was shown to occur at levels likely to exceed the population's replacement capacity, and the activity had a detrimental effect on populations of *Corophium*, the primary prey of most migrating shorebirds. The demand for bloodworms has led to conflicts between harvesters wishing to exploit the resource.

Research results presented to provincial and federal managers, harvesters, and the local community increased interest in the effects of bloodworm harvesting on the intertidal ecosystem. Uncertainties in federal and provincial legislative jurisdiction hampered introduction of regulatory controls on the industry, but efforts by the provincial government to work cooperatively with bloodworm harvesters yielded positive early results. Local harvesters formed an association and worked with the provincial government to develop conservation guidelines in the Ramsar/WHSRN site. Voluntary guidelines served a useful role for several years until conflict with outside harvesters resulted in active involvement by the federal government. Harvesters are now organized and regional representatives participate on a Marine Advisory Committee with federal and provincial counterparts to manage the resource and minimize impacts. In a period of ten years, an unregulated harvest moved to voluntary guidelines and a formal licensing and zoning system encompassing size restrictions allowing sexually mature worms to spawn.

Nova Scotia agriculture has declined in numbers but increased in the size of operations. For livestock producers, a limited landbase upon which to apply manure has predictable impacts on ground and surface water quality. Moreover, riparian areas and wetlands have been impacted by activities that have negatively affected wildlife habitat and water quality. High levels of nutrients flow into the Southern Bight from rivers draining the most intensively farmed agricultural regions in Nova Scotia.

The Kings County Agricultural Landscape Habitat Conservation Project is conserving wildlife habitats and improving water quality through partnerships with municipal governments, local conservation organizations and private landowners. This project forges alliances with new partners within the agricultural community, develops and distributes wildlife habitat information/education packages to a multitude of

stakeholders, negotiates and signs binding habitat conservation agreements, and jointly funds habitat conservation projects (e.g. riparian fencing and watering ponds, small marsh restoration, and wetland wastewater treatment systems). This project is strongly supported by agricultural and wildlife communities; and builds upon conservation and biodiversity components using Best Management Practices within the recently signed federal/provincial Agricultural Policy Framework (APF) Implementation Agreement.

Cottages and recreational areas line many sensitive shorelines that serve as roost sites, and human recreational and development activity frequently disturbs roosting flocks, while shoreline integrity is compromised through lack of protection on privately owned beaches. With a focus on the Southern Bight Minas Basin, the *Bay of Fundy Shorebird Project* (BoFSP) was initiated in 2001 with four objectives to address concerns related to disturbance of roosting shorebirds:

- Inform coastal landowners and other users about shorebird ecology and the potential effects of human activities to wildlife;
- Develop and implement stewardship initiatives to conserve the habitat of migratory shorebirds & other coastal wildlife;
- Produce educational materials and establish interpretive facilities to promote shorebird conservation;
- Secure key shorebird roosting habitat, through purchase, conservation easements and agreements.

The BoFSP has strong stewardship, educational and public awareness components. In cooperation with the Nova Scotia Nature Trust, a program was begun to cultivate a community-based stewardship ethic: landowners were provided with material on shorebirds and the site's sensitivity, and how to assist in conservation that could include a stewardship agreement. Community meetings, interpretive programs and field tours extended the message to visitors. Project staff identified critical roosting sites and installed information signs at public

access points and, with consent of landowners, private lands close to active shorebird areas.

The BoFSP partnered with local community organizations to jointly finance and construct an interpretive facility to inform visitors and residents about migratory shorebirds. The structure and its information panels, video and brochure reinforce local awareness and inform tourists about the conservation ethics promoted by the program. A proactive approach was undertaken with the tourism industry by offering information intended to familiarize visitors with 'wildlife-friendly' practices.

The initiatives with the bloodworm harvesters, agricultural community and the BoFSP advance the goals established for the NAWMP and the Canadian Shorebird Conservation Plan. Multi-lateral (NAWMP, NABCI) and bilateral (APF) agreements and international conventions (Ramsar, WHSRN), regional (EHJV) and national (NAWCC) supporting infrastructure, effective partnerships (EHJV, BoFSP) and evaluation processes (research) contribute to leverage financial and human resources to deliver flyway conservation activities at the local level. The conservation community recognizes and promotes the synergy that results from

- greater collaboration among governments, public agencies and NGOs;
- the sharing of information and pooling of expertise and resources; and
- combining forces to deliver specific conservation activities on-the-ground.

#### ACKNOWLEDGEMENTS

This work is being delivered through the Nova Scotia Eastern Habitat Joint Venture (EHJV) partnership with funding from Wildlife Habitat Canada, the North American Wetland Conservation Act, The Nature Conservancy, Nature Conservancy of Canada, Ducks Unlimited Canada, Environment Canada-Canadian Wildlife Service, Maritimes and North-East Pipelines and the Nova Scotia Department of Natural Resources.



A visitor reads the information panels at the interpretive pavilion overlooking the exposed mudflats of the Southern Bight Minas Basin Ramsar site, Nova Scotia, Canada. Photo: Randy Milton.