



**Black Duck Joint Venture Strategic Plan, 2008–2013  
Plan Conjoint Sur Le Canard Noir, Plan Stratégique 2008–2013**

**By:**

**Black Duck Joint Venture**

**27 March 2008**

**A North American Waterfowl Management Plan Conservation Partnership  
Un Partenariat de conservation du Plan Nord-Américain de Gestion de La Sauvagine**

## **PREFACE**

The Black Duck Joint Venture (BDJV) is an international partnership formed under the North American Waterfowl Management Plan. It was initiated in 1989 to coordinate a cooperative monitoring, research, and communications program to ensure the future sustainability of black ducks and other waterfowl species in eastern North America. The purpose of the BDJV Strategic Plan is to describe the history, mission, and structure of the BDJV and identify the goals and objectives of the joint venture over the 5-year planning horizon 2008—2013. Included in the strategic plan are four program-specific (i.e., population monitoring, research, communications, and evaluation) implementation plans that identify specific objectives, tasks, and schedules to ensure the joint venture makes progress in achieving its goals under the North American Waterfowl Management Plan. The strategic plan will be revised every 5-years to provide a contemporary vision of the mission, goals and objectives of the BDJV. The program-specific implementation plans will be reviewed annually and revised as necessary to reflect progress in addressing information and management needs related to the conservation of the American black duck and other waterfowl species in eastern North America.

### Suggested citations:

Black Duck Joint Venture Management Board. 2008. Black Duck Joint Venture Strategic Plan 2008—2013. U.S. Fish and Wildlife Service, Laurel, Maryland; Canadian Wildlife Service, Ottawa, Ontario. 51 pp.

## TABLE OF CONTENTS

<b>PREFACE</b> .....	<b>I</b>
<b>TABLE OF CONTENTS</b> .....	<b>II</b>
<b>INTRODUCTION</b> .....	<b>1</b>
<b>MISSION</b> .....	<b>5</b>
<b>PAST ACCOMPLISHMENTS</b> .....	<b>6</b>
<b>ADMINISTRATIVE STRUCTURE AND FUNCTION</b> .....	<b>7</b>
<b>PROGRAM COMPONENTS</b> .....	<b>10</b>
POPULATION MONITORING PROGRAM .....	10
<i>Background and Justification</i> .....	10
<i>Implementation and Responsibilities</i> .....	12
RESEARCH PROGRAM .....	12
<i>Background and Justification</i> .....	12
<i>Implementation and Responsibilities</i> .....	12
COMMUNICATIONS PROGRAM.....	13
<i>Background and justification</i> .....	13
<i>Implementation and Responsibilities</i> .....	13
EVALUATION PROGRAM.....	13
<i>Background and Justification:</i> .....	13
<i>Implementation and Responsibilities</i> .....	14
<b>CONTACTS</b> .....	<b>15</b>
<b>REPRESENTATIVES</b> .....	<b>16</b>
<b>LITERATURE CITED</b> .....	<b>20</b>
APPENDIX A: BLACK DUCK JOINT VENTURE POPULATION MONITORING IMPLEMENTATION PLAN, 2008.....	22
APPENDIX B: BLACK DUCK JOINT VENTURE RESEARCH PROGRAM IMPLEMENTATION PLAN, 2008 .....	26
APPENDIX C: BLACK DUCK JOINT VENTURE COMMUNICATION PROGRAM IMPLEMENTATION PLAN, 2008 .....	38
APPENDIX D: BLACK DUCK JOINT VENTURE EVALUATION PROGRAM IMPLEMENTATION PLAN, 2008 .....	45

## INTRODUCTION

The American black duck (*Anas rubripes*) of eastern North America (Fig. 1) has great social, economic and cultural value to the people of Canada and the United States. Historically, the black duck was the most abundant duck species in eastern North America and comprised the largest portion of the duck harvest in the region (Longcore et al. 2000 *b*). Today, the black duck is still highly valued by hunters and birdwatchers. Despite the value placed on this species, the population declined by >50% between the late 1950s and



Figure 1. Distribution of the American black duck (Longcore et al. 2007).

1980s (Fig. 2). Researchers and managers proposed several hypotheses to explain the historic decline of black ducks including over-harvest, competition and hybridization with mallards (*Anas platyrhynchos*), decrease in quality and quantity of wintering and breeding habitat, and environmental contaminants (Conroy et al. 1989, Rusch et al. 1989, Longcore et al. 2000 *a,b*, Merendino et al. 1993, Nudds et al. 1996, Conroy et al. 2002, McAuley et al. 2004, Zimpfer and Conroy 2006). Research into each of these hypotheses has provided valuable insight into black duck ecology and management. However, the population remains below the North American Waterfowl Management Plan (NAWMP) population goal and has been identified as a species of greatest conservation need by 23 states in the Mississippi and Atlantic Flyways (Table 1). Finally, indices of abundance and productivity paint a mixed picture of population growth making the status and sustainability of the American black duck uncertain.

Based on mid-winter inventory (MWI) data the average finite growth rate between 1990 and 2007 was 0.98 ( $\pm 0.121$  S.D.; Fig. 3). However, the trend differed between the Atlantic Flyway ( $\bar{x} = 1.0, \pm 0.117$  S.D.) and the Mississippi Flyway ( $\bar{x} = 0.95, \pm 0.288$  S.D.;

*Table 1. Atlantic and Mississippi Flyway states identifying the American black duck as a “species of greatest conservation need”, 2007.*

<b>State</b>	<b>Flyway</b>	<b>Species of Greatest Conservation Need?</b>
Connecticut	Atlantic	Yes
Delaware	Atlantic	Yes
Florida	Atlantic	No
Georgia	Atlantic	No
Maine	Atlantic	Yes
Maryland	Atlantic	Yes
Massachusetts	Atlantic	Yes
New Hampshire	Atlantic	Yes
New Jersey	Atlantic	Yes
New York	Atlantic	Yes
North Carolina	Atlantic	No
Pennsylvania	Atlantic	Yes
Rhode Island	Atlantic	Yes
South Carolina	Atlantic	Yes
Vermont	Atlantic	Yes
Virginia	Atlantic	Yes
West Virginia	Atlantic	Yes
Alabama	Mississippi	Yes
Arkansas	Mississippi	Yes
Illinois	Mississippi	Yes
Indiana	Mississippi	No
Iowa	Mississippi	No
Kentucky	Mississippi	Yes
Louisiana	Mississippi	No
Michigan	Mississippi	Yes
Minnesota	Mississippi	Yes
Mississippi	Mississippi	Yes
Missouri	Mississippi	No
Ohio	Mississippi	Yes
Tennessee	Mississippi	No
Wisconsin	Mississippi	Yes

Fig. 4). Similarly, a recent analysis of Christmas Bird Count (CBC) data suggested regional variation in population trends of black ducks (Link et al. 2006). The CBC provides data over a larger portion of black duck winter range than the MWI and indicated black ducks are declining in the southern and central portion of wintering range, but populations in the northeastern range are stable (Link et al. 2006).

Estimates of the breeding population between 1990 and 2006 suggest the black duck population is stable or slightly increasing (Fig. 3). The mean finite growth rate between 1990 and 2006 based on the integrated fixed-wing/helicopter hierarchical breeding population model was  $1.01 (\pm 0.082 \text{ SD})$ . However, this estimate only applies to that portion of the black duck breeding

range covered by the initial surveys and may not reflect the overall population growth rate.

Estimates of black duck wintering and breeding populations in 2007 were 204,075 and 539,100, respectively. In contrast to these population indices, estimates of age ratios based on band return and hunter survey data indicate black duck productivity has been declining since the early 1990s (Fig. 5).

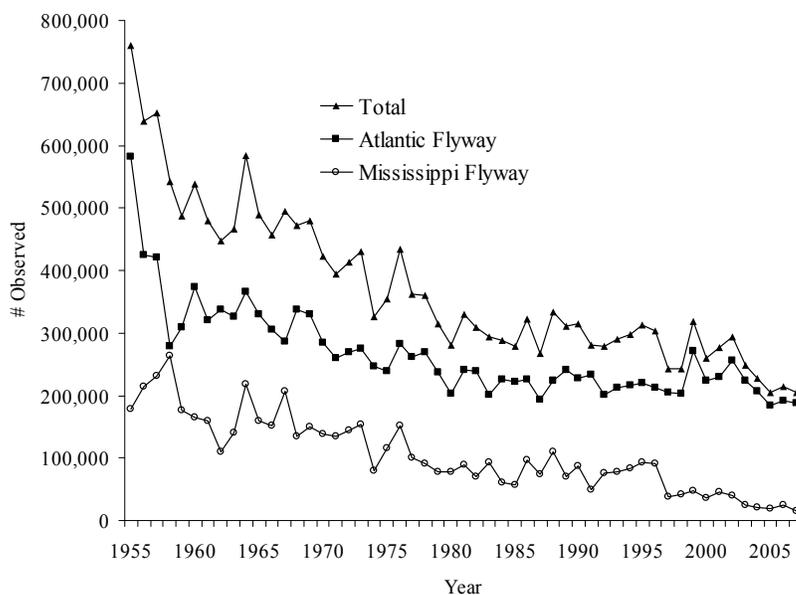


Figure 2. Estimates of American black duck abundance over time based on the Mid-winter Inventory

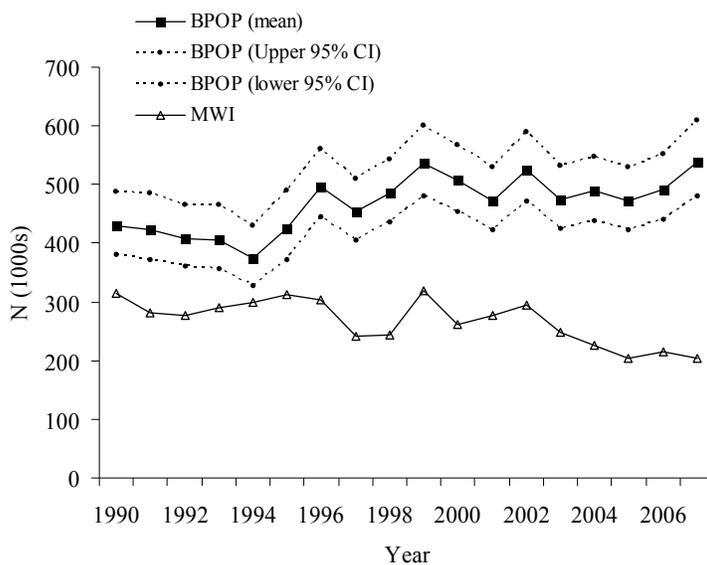


Figure 3. Indices of American black duck abundance based on the Mid-Winter Inventory (MWI) and breeding population (BPOP) surveys between 1990 and 2006.

Though questions still remain about the cause(s) of the drastic decline of black ducks between the 1950s and 1980s, the factors that caused the decline may not be the same as those

Black Duck Joint Venture, Strategic Plan 2008–2013

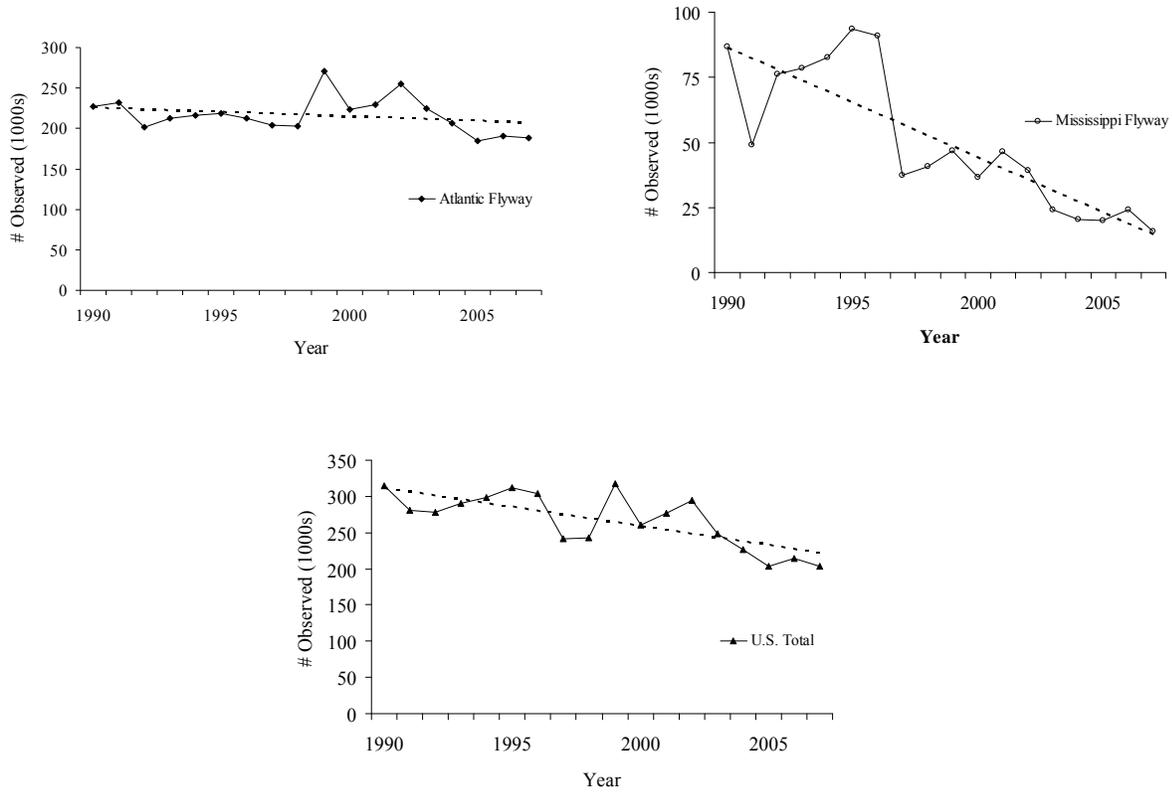


Figure 4. Indices of American black duck abundance based on the Mid-Winter Inventory, 1990-2007.

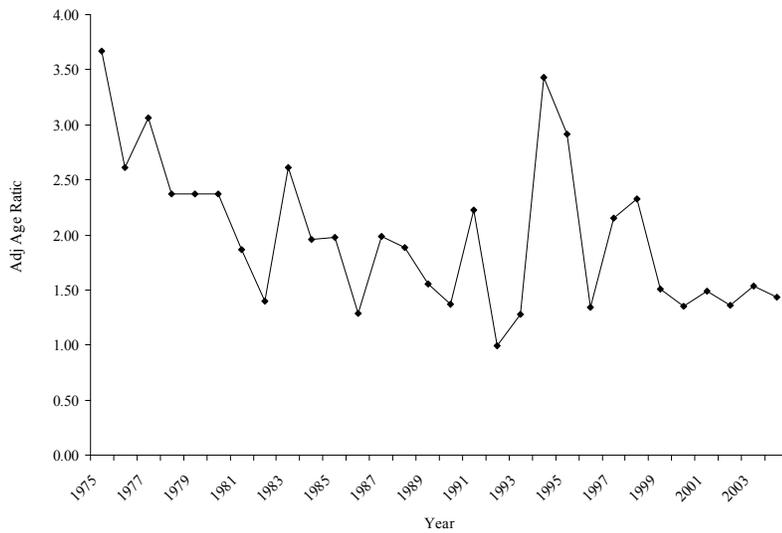


Figure 5. Trend in age ratios of American black ducks harvested in the United States, 1975-2004

currently limiting black duck population growth. Identifying and understanding current limiting factors is critical to black duck management and meeting North American Waterfowl Management Plan (NAWMP) population goals. Further, emerging issues including global climate change and increasing human activities will present important challenges to the future of black duck conservation.

### **MISSION**

The mission of the Black Duck Joint Venture (BDJV) is to implement and coordinate a cooperative population monitoring, research, and communications program to provide information required to manage black ducks and restore numbers to the North American Waterfowl Management Plan (NAWMP) goal of 640,000<sup>a</sup> breeding birds in the original breeding ground survey area. The goals of the BDJV are:

- I. Develop, support and guide monitoring programs to provide information on the distribution, population growth trends, and demographic parameters of black ducks throughout their annual range;*
- II. Support and guide research on black duck population dynamics, habitat ecology, monitoring programs, and management techniques to identify and mitigate limiting factors; and*
- III. Communicate results of monitoring and research programs to associated habitat joint ventures, natural resource agencies, policy-makers, and stakeholders to support black duck conservation efforts.*

<sup>a</sup> The American black duck population objective was developed from the predictions of a model relating MWI counts to population estimates derived from the Breeding Waterfowl Plot Survey (BWPS) of eastern Canada. The objective, and average population size, corresponds to that portion of the black duck breeding range sampled during the BWPS. For management purposes, the black duck objective has been partitioned for three portions of the breeding range: eastern, central, and western. In the future, combined estimates from fixed-wing and helicopter surveys may be evaluated for monitoring and objective-setting for this species (North American Waterfowl Management Plan, Plan Committee 2004).

## PAST ACCOMPLISHMENTS

Since its inception, the BDJV has contributed to black duck management by implementing and improving population monitoring efforts, supporting research, and communicating with a variety of stakeholders. Monitoring the black duck population is accomplished via the MWI and breeding population (BPOP) surveys. The BDJV has been instrumental in the development, refinement, and implementation of these surveys. Between 1989 and 2004, the BDJV spent >\$6.5 million (U.S.)<sup>b</sup> dollars on MWI and BPOP surveys. These surveys provide important information about trends in wintering and breeding populations. The BPOP survey was initiated in 1990 to provide a statistically reliable index of population trends and relative densities of black ducks and other waterfowl species throughout the primary breeding range of black ducks. This survey has contributed greatly to our understanding of range-wide and regional breeding distributions of the black duck. Recently, new analytical techniques have been developed for composite analysis of aerial count data collected using disparate survey protocols. These new analytical methods improve the precision of population estimates and geographic scope of the BPOP survey data. The MWI and BPOP surveys are considered operational and are conducted by the USFWS, CWS, and several state agencies in the Atlantic Flyway.

Preseason banding of black ducks has occurred annually since the early 1960s as part of the cooperative program supported by CWS, USFWS, and state and provincial agencies in the Atlantic and Mississippi Flyways. However, logistical and financial obstacles have made it difficult to obtain a representative sample of the black duck population. To assist this important program, the BDJV committed \$4.1 million<sup>b</sup> in support of waterfowl banding efforts in eastern North America between 1989 and 2004. Information from the banding program is currently being used to develop an adaptive harvest management (AHM) framework for American black ducks. The black duck banding program is operational and implemented by the banding committees of the AFC and MFC.

The BDJV has supported research on multiple aspects of black duck ecology including survival, harvest, productivity, habitat use and carrying capacity, and inter-specific competition. Between

<sup>b</sup> Includes all BDJV partner's funds. Partners include, but are not limited to USFWS, CWS, Ducks Unlimited Inc., Ducks Unlimited Canada, Ontario Ministry of Natural Resources, Ohio Division of Wildlife, USGS, Atlantic and Mississippi Flyway Councils, New York Department of Environmental Conservation, Quebec Ministère des Ressources naturelles et de la Faune, Nova Scotia Department of Natural Resources.

1989 and 2004 the BDJV provided > \$4.3 million<sup>b</sup> in support of research. Results from BDJV supported research projects have been incorporated into a variety of management activities including the development of population and adaptive harvest management models (Conroy et al. 2002).

### **ADMINISTRATIVE STRUCTURE AND FUNCTION**

The BDJV was initiated in 1986 under the framework of the NAWMP. Black Duck Joint Venture partners include the U.S. Fish and Wildlife Service (USFWS), Canadian Wildlife Service (CWS), U.S. Geological Survey Biological Resources Division (USGS-BRD), Atlantic Flyway Council (AFC), Mississippi Flyway Council (MFC), provincial and state conservation agencies, and non-government organizations (Table 3). The BDJV consists of two bodies: a Management Board and a Technical Committee. The purpose of the BDJV Management Board is to provide leadership and program coordination, some financial resources, and logistical support for BDJV activities. Representatives to the Management Board typically hold high-level positions within their agencies and have the authority to represent their organization's interests in terms of black duck management activities and commit financial support and staff time to BDJV projects. The Management Board is co-chaired by representatives from CWS and USFWS. Specific responsibilities of Management Board members include:

- Reviewing and providing final approval for the BDJV strategic plan, implementation strategies, and projects;
- Providing program guidance by approving budget allocations;
- Serving as liaisons to the North American Waterfowl Management Plan Committee, Flyway Councils and other organizations, as appropriate.
- Working within their agency or organization to support the BDJV mission and projects;
- Attending BDJV meetings and participating in BDJV special meetings, web conferences, and phone conferences as needed to ensure progress towards BDJV and NAWMP goals.

The Technical Committee works with the BDJV science coordinator to advise the Management Board about black duck research and management needs. The Technical Committee consists of managers, biologists, and researchers from USFWS, CWS, USGS-BRD, provincial and state wildlife agencies, university faculty, and non-government organizations. It is responsible for

development of annual work plans, project implementation, and progress evaluation. To maximize the Technical Committee's efficiency and productivity, members are organized into working groups representing each BDJV program (i.e., population monitoring, research, communications, and evaluation; see below). Working groups consist of 3-6 members and are responsible for developing annual implementation plans and coordinating the efforts of the Technical Committee to complete program-specific objectives. Members are appointed to working groups for a 2-year term. Program-specific proposals and products (e.g., assessments, reports, brochures, and recommendations) developed by the working groups are reviewed by the full Technical Committee for approval and forwarded to the Management Board for final approval. This structure is designed to increase the efficiency and productivity of the Technical Committee by allowing members to focus on a subset of issues while allowing the entire membership to provide constructive review and input of all BDJV activities. This structure is particularly critical to ensure effective and objective internal evaluation of the BDJV. The Technical Committee is co-chaired by representatives from the CWS and USFWS. Science Coordinators for the Eastern Habitat Joint Venture, Atlantic Coast Joint Venture, and the Upper Mississippi River/Great Lakes Region Joint Venture serve on the BDJV Technical Committee to ensure communication and integration of scientific planning and project implementation between the BDJV and the habitat joint ventures.

The BDJV is officially recognized by the USFWS, which provides financial support for a full-time science coordinator and base operating funds. The BDJV Science Coordinator (a USFWS employee) is responsible for organization and management of BDJV scientific efforts. The Science Coordinator serves as the BDJV representative to the NAWMP National Science Support Team, the Black Duck Adaptive Harvest Management Working Group, and the Adaptive Harvest Management Working Group. The Canadian Wildlife Service provides funds for a part-time BDJV Coordinator. The BDJV Coordinator (a CWS employee) is responsible for administrative support to the Management Board and Technical Committee.

Funding for BDJV activities and programs is provided by the U.S. and Canadian federal governments, state and provincial wildlife agencies, and non-government organizations. The

*Table 3. Organizations represented on the Black Duck Joint Venture Management Board and Technical Committee.*

<b>Organization</b>	<b>Management Board</b>	<b>Technical Committee</b>
Canadian Wildlife Service – National Headquarters	X	X
Canadian Wildlife Service – Atlantic, Quebec, and Ontario Regions	X	X
Ontario Ministry of Natural Resources	X	X
Québec Ministère des Ressources naturelle et de la Faune		X
Atlantic Canada Provincial Ministries of Natural Resources (Labrador & Newfoundland; Prince Edward Island; Nova Scotia; New Brunswick)	X	X
U.S. fish and Wildlife Service – Division of Migratory Bird Management	X	X
U.S. fish and Wildlife Service – Northeast Region	X	X
U.S. Geological Survey – Biological Resources Division	X	X
Mississippi Flyway Council	X	X
Atlantic Flyway Council	X	X
Ducks Unlimited Canada	X	X
Ducks Unlimited	X	X
Atlantic Coast Joint Venture		X
Eastern Habitat Joint Venture		X
Upper Mississippi River and Great Lakes Joint Venture		X

BDJV manages U.S. Congressional funds (1234 funds) to support administration of the joint venture and BDJV activities. These funds are leveraged to the greatest degree possible to support monitoring, research, and communications efforts. Additional funding for BDJV activities is provided by partner organizations, usually as matching funds for specific activities (i.e., banding, surveys, or research).

Membership to the BDJV is voluntary. Member organizations are expected to appoint a representative to both the Management Board and Technical Committee. Active participation of representatives is important to the success of the BDJV. Decisions concerning BDJV activities and allocation of resources are made through discussion and general consensus during meetings, web conferences and phone conferences. A quorum is not required to make official decisions

related to BDJV activities and policies. However, organizations do not have recourse to challenge a decision by the Technical Committee or Management Board, if a quorum was present, and their representatives were not in attendance when the decision was made. Representatives to either the Management Board or Technical Committee will be considered “inactive” if they miss four consecutive meetings. If this occurs the Management Board will ask the member organization to appoint a new representative. The organization can appoint a new representative to the respective body, or elect to end its participation in the Joint Venture. To ensure continuity of the BDJV and its activities, member organizations can appoint an alternate representative to both the Management Board and Technical Committee to serve when the primary representatives are unable to participate in a planned meeting. Member organizations can replace their representatives to the Management Board or Technical Committee at any time by submitting a letter to the Management Board. New organizations wishing to join the BDJV may submit a request for membership to the Management Board at anytime. The Technical Committee and Management Board will review the request and make a determination during the annual fall meeting.

## **PROGRAM COMPONENTS**

### **POPULATION MONITORING PROGRAM**

*Background and Justification:* Possessing annual estimates of black duck population characteristics, including abundance, sex and age structure, and vital rates (i.e., survival and recruitment) is critical to fulfilling the mission of the BDJV and achieving the goals of the NAWMP. These estimates form the basis of black duck adaptive management and allow researchers and managers to assess model predictions, evaluate responses of black ducks to management, and track progress towards NAWMP goals. Black duck population monitoring consists of three complementary programs: pre-season banding, the MWI, and the BPOP survey.

Banding is an important tool in migratory bird management. When combined with population and harvest data banding provides important information about population dynamics and structure, distribution, and derivation of harvest. This information in turn helps guide management activities. The first “Continental Waterfowl Banding Program” was issued jointly by CWS and USFWS in 1959. This cooperative plan, and subsequent updates in 1967, 1971,

1975, 1985, and 1989, has served as the principle framework for waterfowl banding and provides specific banding goals (i.e., quotas) by region for the black duck. Another update to the plan is currently in progress. Pre-season banding of black ducks is coordinated by two programs, the Eastern Canada Cooperative Banding Program (ECCBP) and the Northeast States Banding Program (NESBP). The ECCBP was initiated in 1963 to focus efforts on duck banding in eastern Canada and to obtain representative samples of black ducks and mallards. The ECCBP is coordinated by the banding committee of the Atlantic Flyway. Funding for the ECCBP is provided by the Atlantic Flyway, state and provincial agencies, and the BDJV. The NESBP is funded by the BDJV to increase the number of black ducks and mallards banded in northeastern U.S.

The MWI has been conducted in the United States since 1955. Because it provides the longest time series of black duck abundance data the MWI have been used extensively in research, particularly population modeling. However, the MWI has several limitations. First, it is only conducted in the United States so it does not provide an estimate of the entire wintering population. Second, recent research suggests the distribution of wintering black ducks may have shifted north, further limiting the usefulness of the MWI. Third, the MWI lacks the precision necessary to monitor population changes and does not provide estimates of variance. Finally, the MWI cannot be used to differentiate regional changes in breeding populations.

Information and data on the black duck breeding population have been limited because the species breeds in eastern Canada, which is outside the traditional mid-continent breeding survey area (Fig. 1). Due to lack of information about the breeding population and limitations of the MWI, a breeding population survey program was initiated in 1990. The breeding population survey is conducted throughout black duck breeding range by the CWS and USFWS. However, the two agencies use different protocols. The CWS conducts plot surveys from helicopter, whereas the USFWS survey consists fix-winged transects. Estimates from the two surveys are integrated in a hierarchical model to produce a single estimate of the black duck breeding population. For the foreseeable future, the mid-winter and breeding population surveys will be conducted and used in research and management. However, it is anticipated that research and management will place greater reliance on the breeding population survey as the time series

lengthens. The goals of the BDJV population monitoring program are to assess trends in the black duck population to evaluate progress towards NAWMP goals and develop, implement, and refine monitoring methodology.

*Implementation and Responsibilities:* The Population Monitoring Working Group (PMWG) is responsible for coordinating and leading the efforts of the Technical Committee in relation to monitoring the black duck population. The PMWG is responsible for developing and maintaining an annual Population Monitoring Implementation Plan (Appendix A) that explicitly states the objectives and operating procedures of the program. As part of the population monitoring program, the BDJV will maintain black duck banding and survey databases to facilitate research and management efforts by associated partners, conduct an annual assessment of population trends, and explore opportunities to improve existing monitoring methods or test and implement novel methods.

## **RESEARCH PROGRAM**

*Background and Justification:* Researchers and managers have considerable interest in understanding the causes of the declining black duck population and potential mitigating actions. Despite research efforts, there is no clear consensus among researchers and managers as to the principal cause(s) of the black duck decline or current limiting factors. The goal of the BDJV research program is to facilitate the gathering of information about black duck ecology and limiting factors that is applicable to the development and implementation of management plans by associated habitat joint ventures, regulatory committees, wildlife agencies, and nongovernmental organizations.

*Implementation and Responsibilities:* The Research Working Group (RWG) is responsible for coordinating and leading the research efforts of the BDJV. Led by the RWG, the BDJV serves as a central, one-stop clearing house for information related to black duck ecology and management. The RWG is responsible for developing an annual Research Implementation Plan to guide research efforts (Appendix B). The implementation plan provides a detailed description of operating procedures and the BDJV competitive grant program. As part of the research program, the BDJV will maintain a current, state-of-the-art synthesis of the knowledge of black

duck ecology, management, and information needs. From this synthesis, the BDJV will maintain an up-to-date categorization and prioritization of information and research needs and administer a competitive grant program to support efforts to fill the information gaps. In cooperation with the Communication Working Group (CWG), the RWG will ensure results of research efforts are made available to joint venture partners and the general public in a timely fashion.

### **COMMUNICATIONS PROGRAM**

*Background and justification:* Effective communication, both internal and external, is critical to achieving the goals of the BDJV. Communication helps raise awareness, build partnerships, and develop financial and political support for black duck conservation. The goal of internal communication is to share information among existing partners, particularly members of the Management Board and Technical Committee and to facilitate the implementation of the population monitoring and research programs. The goal of external communication is to provide recommendations to management bodies and associated habitat joint ventures, recruit new partners to the BDJV, and raise awareness and support for black duck conservation among stakeholders and policy-makers.

*Implementation and Responsibilities:* Implementation of the communications program is led by the CWG and guided by an annual Communications Implementation Plan (Appendix C). The Communications Implementation Plan provides a detailed description of standard operating procedures, objectives, target audiences, and a list of communication products, budgets, and timelines. The CWG is also responsible for coordinating efforts by the Technical Committee and Management Board to engage in outreach efforts including the completion and distribution of annual reports, popular articles, presentations, and hosting periodic black duck symposia.

### **EVALUATION PROGRAM**

*Background and Justification:* It is essential to evaluate BDJV programs and products to measure progress in relation to stated goals and ensure stated objectives and priorities remain appropriate. The recently completed NAWMP Continental Progress Assessment (Assessment Steering Committee 2007) highlighted the need for all joint ventures to improve methods of evaluating accomplishments and progress towards NAWMP goals. Further, the Assessment Steering

Committee stressed that evaluation should be based on principles and methods of adaptive management, including the use of scientifically based models to evaluate biological and policy hypotheses through management implementation (Assessment Steering Committee 2007). The BDJV has embraced the principles of adaptive management and has committed resources to the development and refinement of a population model to discriminate among alternative hypotheses (Conroy et al. 2002). The BDJV also supports efforts by partner organizations to develop an adaptive harvest management process for black ducks. However, full implementation of each of these models and adaptive processes requires continued technical development and commitment by the BDJV. The goal of the BDJV evaluation program is to continually improve the effectiveness and efficiency of the BDJV and to facilitate attainment of NAWMP goals for the American black duck.

*Implementation and Responsibilities:* The BDJV evaluation program consists of two parts, technical and operational evaluation. The technical aspect of the evaluation process focuses on the development and refinement of biological models, identifying model assumptions, reviewing information needs, and assessing the quality and applicability of supported research projects. The technical evaluation is based on the principles of adaptive resource management (Walters 1986). The operational aspect of the BDJV evaluation process focuses on tracking financial expenditures, assessing the applicability and timeliness of BDJV products, and assessment of internal and external communication efforts. The Evaluation Working Group is responsible for developing an annual Evaluation Implementation Plan (Appendix D) and leading the Technical Committee in evaluation efforts. The EWG is comprised of the Technical Committee co-chairs, and one representative from the Management Board and Technical Committee respectively. This structure will allow the EWG to provide objective and constructive review of the entire BDJV.

## CONTACTS

### Management Board Co-Chairs

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**REPRESENTATIVES**

(as of January 2008)

<b>Management Board</b>				
Name	Primary/Alternate Representative	Organization	Year Appointed	Email
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N/A	Alternate	Canadian Wildlife Service – National HQ	N/A	N/A
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N/A	Alternate	Canadian Wildlife Service – Atlantic	N/A	N/A
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Paul Padding	Alternate	U.S. Fish and Wildlife Service – Division of Migratory Bird Management	2008	<a href="mailto:paul_padding@fws.gov">paul_padding@fws.gov</a>

<sup>1</sup> Position currently vacant due to Retirement.

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**Management Board**

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Name	Primary/Alternate Representative	Organization	Year Appointed	Email
Sherry Morgan	Primary	U.S. Fish and Wildlife Service – Northeast Region	2007	<a href="mailto:Sherry_morgan@fws.gov">Sherry_morgan@fws.gov</a>
N/A	Alternate	U.S. Fish and Wildlife Service – Northeast Region	N/A	N/A
Graham Smith	Primary	U.S. Geological Survey – Biological Resources Division	2005	<a href="mailto:gwsmith@usgs.gov">gwsmith@usgs.gov</a>
N/A	Alternate	U.S. Geological Survey – Biological Resources Division	N/A	N/A
Dave Risley	Primary	Mississippi Flyway Council		<a href="mailto:dave.risley@dnr.state.oh.us">dave.risley@dnr.state.oh.us</a>
N/A	Alternate	Mississippi Flyway Council	N/A	N/A
John Major	Primary	Atlantic Flyway Council	2006	<a href="mailto:jxmajor@gw.dec.state.ny.us">jxmajor@gw.dec.state.ny.us</a>
N/A	Alternate	Atlantic Flyway Council	N/A	N/A
Mark Gloutney	Primary	Ducks Unlimited	2000	<a href="mailto:M_gloutney@ducks.ca">M_gloutney@ducks.ca</a>
N/A	Alternate	Ducks Unlimited	N/A	N/A

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<b>Technical Committee</b>				
Name	Primary/Alternate Representative	Organization	Year Appointed	Email
Eric Reed	Primary	Canadian Wildlife Service – National HQ	2002	<a href="mailto:eric.reed@ec.gc.ca">eric.reed@ec.gc.ca</a>
N/A	Alternate	Canadian Wildlife Service – National HQ	N/A	N/A
Bruce Pollard	Primary	Canadian Wildlife Service – Atlantic	2006	<a href="mailto:bruce.pollard@ec.gc.ca">bruce.pollard@ec.gc.ca</a>
Scott Gilliland	Alternate	Canadian Wildlife Service – Atlantic	2008	<a href="mailto:scott.gilliland@ec.gc.ca">scott.gilliland@ec.gc.ca</a>
Daniel Bordage	Primary	Canadian Wildlife Service – Quebec	1986	<a href="mailto:daniel.bordage@ec.gc.ca">daniel.bordage@ec.gc.ca</a>
N/A	Alternate	Canadian Wildlife Service – Quebec	N/A	N/A
Ken Ross	Primary	Canadian Wildlife Service – Ontario	1986	<a href="mailto:ken.ross@ec.gc.ca">ken.ross@ec.gc.ca</a>
N/A	Alternate	Canadian Wildlife Service – Ontario	N/A	N/A
Rod Brook	Primary	Ontario Ministry of Natural Resources	2006	<a href="mailto:rod.brook@ontario.ca">rod.brook@ontario.ca</a>
N/A	Alternate	Ontario Ministry of Natural Resources	N/A	N/A
Emmanuel Dalpé-Charron	Primary	Québec Ministère des Ressources naturelle et de la Faune		<a href="mailto:Emmanul.dalpe-charron@mrnf.gouv.qc.ca">Emmanul.dalpe-charron@mrnf.gouv.qc.ca</a>
N/A	Alternate	Québec Ministère des Ressources naturelle et de la Faune	N/A	N/A
Kevin Connor	Primary	Atlantic Canada Provincial Ministries of Natural Resources		<a href="mailto:kevin.connor@gnb.ca">kevin.connor@gnb.ca</a>
N/A	Alternate	Atlantic Canada Provincial Ministries of Natural Resources	N/A	N/A
Paul Padding	Primary	U.S. Fish and Wildlife Service – Division of Migratory Bird Management	2007	<a href="mailto:Paul_padding@fws.gov">Paul_padding@fws.gov</a>
Mark Koneff	Alternate	U.S. Fish and Wildlife Service – Division of Migratory Bird Management	2007	<a href="mailto:mark_koneff@fws.gov">mark_koneff@fws.gov</a>
Chris Dwyer	Primary	U.S. Fish and Wildlife Service – Northeast Region	2006	<a href="mailto:Chris_dwyer@fws.gov">Chris_dwyer@fws.gov</a>

<b>Technical Committee</b>				
Name	Primary/Alternate Representative	Organization	Year Appointed	Email
N/A	Alternate	U.S. Fish and Wildlife Service – Northeast Region	N/A	N/A
Nathan Zimpfer	Primary	U.S. Fish and Wildlife Service – Division of Migratory Bird Management/Population and Habitat Assessment Branch	2007	<a href="mailto:Nathan_zimpfer@fws.gov">Nathan_zimpfer@fws.gov</a>
Guthrie Zimmerman	Alternate	U.S. Fish and Wildlife Service – Division of Migratory Bird Management/Population and Habitat Assessment Branch	2008	<a href="mailto:guthrie_zimmerman@fws.gov">guthrie_zimmerman@fws.gov</a>
Dan McAuley	Primary	U.S. Geological Survey – Biological Resources Division	2004	<a href="mailto:dan_mcauley@usgs.gov">dan_mcauley@usgs.gov</a>
John Sauer	Alternate	U.S. Geological Survey – Biological Resources Division	2004	<a href="mailto:jsauer@usgs.gov">jsauer@usgs.gov</a>
Rocky Pritchert	Primary	Mississippi Flyway Council	2008	<a href="mailto:rocky.pritchert@ky.gov">rocky.pritchert@ky.gov</a>
N/A	Alternate	Mississippi Flyway Council	N/A	N/A
Paul Castelli	Primary	Atlantic Flyway Council	1996	<a href="mailto:pcastelli@icdc.com">pcastelli@icdc.com</a>
N/A	Alternate	Atlantic Flyway Council	N/A	N/A
John Coluccy	Primary	Ducks Unlimited Inc.	2007	<a href="mailto:Jcoluccy@ducks.org">Jcoluccy@ducks.org</a>
N/A	Alternate	Ducks Unlimited Inc.	N/A	N/A
Tim Jones	Primary	Atlantic Coast Joint Venture	2005	<a href="mailto:Tim_jones@fws.gov">Tim_jones@fws.gov</a>
Mark Gloutney	Primary	Eastern Habitat Joint Venture	2006	<a href="mailto:M_gloutney@ducks.ca">M_gloutney@ducks.ca</a>
Greg Soulliere	Primary	Upper Mississippi River and Great Lakes Joint Venture	2006	<a href="mailto:Greg_soulliere@fws.gov">Greg_soulliere@fws.gov</a>
John Bidwell	Primary	U.S. Fish and Wildlife Service – Division of Migratory Bird Management/Migratory Bird Survey Branch	2006	<a href="mailto:John_bidwell@fws.gov">John_bidwell@fws.gov</a>

## LITERATURE CITED

- Assessment Steering Committee. 2007. North American Waterfowl Management Plan: Continental Progress Assessment Final Report. North American Waterfowl Management Plan, Plan Committee, Washington D.C.
- Conroy, M. J., G. R. Costanzo, and D. B. Stotts. 1989. Winter survival of female American black ducks on the Atlantic coast. *Journal of Wildlife Management* 53:99–109.
- Conroy, M. J., M. W. Miller, and J. E. Hines. 2002. Identification and synthetic modeling of factors affecting American black duck populations. *Wildlife Monographs* No. 150.
- Link, W. A., J. R. Sauer, and D. K. Niven. 2006. A hierarchical model for regional analysis of population change using Christmas bird count data, with application to the American black duck. *The Condor* 108:13–24.
- Longcore, J. R., D. G. McAuley, D. A. Clugston, C. M. Bunck, J. Giroux, C. Ouellet, G. R. Parker, P. Dupuis, D. B. Stotts, and J. R. Goldsberry. 2000 *a*. Survival of american black ducks radiomarked in quebec, nova scotia, and vermont. *Journal of Wildlife Management* 15::238-252.
- Longcore, J. R., D. G. McAuley, G. R. Hepp, and J. M. Rhymer. 2000 *b*. American Black Duck (*Anas rubripes*). In *The Birds of North America*, No. 481 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- McAuley, D. G., D. A. Clugston, and J.R. Longcore. 2004. Dynamic use of wetlands by black ducks and mallards: evidence against competitive exclusion. *Wildlife Society Bulletin* 32:465–473.
- Merendino, T. D., C. D. Ankney, and D. G. Darrell. 1993. Increasing mallard, decreasing American black ducks: more evidence for cause and effect. *Journal of Wildlife Management* 57:199–208.
- North American Waterfowl Management Plan, Plan Committee. 2004. North American Waterfowl Management Plan 2004. Strategic Guidance: Strengthening the Biological Foundation. Canadian Wildlife Service, U.S. Fish and Wildlife Service, Secretaria de Medio Ambiente y Recursos Naturales, 22 pp.
- Nudds, T. D., M. W. Miller, and C. D. Ankney. 1996. Black ducks: harvest, mallards, or habitat? *Proceedings of the International Waterfowl Symposium* 7:50–60.

Rusch, D. H., C. D. Ankney, H. Boyd, J. R. Longcore, F. Montalbano, III., J. K. Ringleman, and V. D. Stotts. 1989. Population ecology and harvest of the American black duck: a review. *Wildlife Society Bulletin* 17:379–406.

Walters C. J. 1986. *Adaptive Management of Renewable Resources*. MacMillan, New York.

Zimpfer, N. L., and M. J. Conroy. 2006. Models of production rates in American black duck populations. *Journal of Wildlife Management* 70:947–954.

**APPENDIX A: BLACK DUCK JOINT VENTURE POPULATION MONITORING IMPLEMENTATION PLAN, 2008**

## **Introduction**

Since its inception, the BDJV has provided critical support in the development and implementation of waterfowl monitoring programs in eastern North American, including pre-season banding and aerial surveys (e.g., mid-winter inventory and spring breeding population survey). The mission of the BDJV Population Monitoring Program is to serve as an advisory group that evaluates USFWS and CWS waterfowl monitoring (i.e., banding and aerial survey efforts) programs with a bias towards the management of American black ducks. The goals of the BDJV population monitoring program are:

- I. Evaluate trends in black duck populations based on monitoring data (i.e., banding and aerial surveys) and make recommendations for research and management;
- II. Evaluate and quantify changes in black duck population and vital rates to contrast support for competing hypotheses;
- III. Explore opportunities and make recommendations to improve the accuracy and inference of existing monitoring programs;
- IV. Explore opportunities to test and implement novel monitoring techniques to provide better or complimentary data to existing monitoring programs.

The Population Monitoring Working Group (PMWG) is a sub-committee of the BDJV Technical Committee and is responsible for leading efforts by the Technical Committee to accomplish the goals and objectives of the BDJV Population Monitoring Program. Recommendations and products of the PMWG are presented to the Technical Committee for review and approval and forwarded on to the Management Board for final approval and implementation. To meet the goals of the Population Monitoring Program, the PMWG has established the following objectives to complete during the 5-year planning horizon of the 2008-2013 strategic plan.

- I. Annual assessments and reporting; and
- II. Assessment of current and novel monitoring methods.

### **Annual Assessments and Reporting**

The PMWG is responsible for providing detailed review and assessment of annual monitoring results to the Technical Committee and Management Board. This will include basic summary of banding and survey efforts and trend in population estimates. The purpose of the annual assessment is to identify changes in population trends or vital rates, propose hypotheses to explain the observed changes, and make recommendations for research and management needs. This assessment will consist of a summary of the banding and aerial surveys (e.g., number of trap days by region, number of black ducks banded, dates of aerial surveys, etc.) and results. The PMWG will compile and synthesize information provided by the parties responsible for conducting monitoring programs (e.g., USFWS Population and Habitat Assessment Branch) efforts. The PMWG will provide a brief overview of the annual assessment at the fall BDJV meeting and in writing. The written report will be incorporated in the annual BDJV report compiled by the CWG. The report is due to the CWG by 1 October.

### **Assessment of Current and Novel Monitoring Methods**

Members of the PMWG will engage in efforts to explore opportunities to improve existing monitoring methods and develop novel methods to provide complimentary data to existing programs. These efforts will result in a variety of products ranging from recommendations provided in the annual report to detailed scoping documents. During the course of the planning horizon of this strategic plan, the PMWG will address the following topics:

<b>Topic</b>	<b>Completion Date</b>
Develop explicit hypotheses about the influence of biotic and abiotic factors influence on black duck population dynamics that can be contrasted using existing monitoring programs.	Fall 2009
Develop recommendations for studies designed to identify sources and quantify effects of detection rates and availability bias on estimates derived from fixed-winged and helicopter surveys.	Fall 2009
Produce a scoping document that reviews opportunities to implement a regional black duck productivity monitoring program.	Fall 2010
Produce a scoping document that reviews the potential usefulness and feasibility of genetic methods to monitor the black duck population.	Fall 2011
Complete a scoping document reviewing the availability, commonalities, strengths and weakness of black duck monitoring efforts employed by state and provincial agencies.	Fall 2012

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**APPENDIX B: BLACK DUCK JOINT VENTURE RESEARCH PROGRAM IMPLEMENTATION PLAN,  
2008**

## **Introduction**

The mission of the BDJV is to support scientific research on black duck ecology to inform management actions. The goals of the research program are to facilitate the exchange of ideas and data among cooperators and stakeholders, coordinate and support research, and serve as a 1-stop clearinghouse of current scientific knowledge of black duck ecology and management. To fulfill these goals the BDJV, led by the Research Working Group (RWG), is committed to completing the following objectives during the 5 year planning horizon of this strategic plan:

- I. Identify and prioritizing research and information needs;
- II. Administer a competitive grant program;
- III. Produce annual reports
- IV. Engage in outreach activities

The Research Working Group (RWG) is a sub-committee of the BDJV Technical Committee and is responsible for spearheading efforts by the Technical Committee to accomplish the goals and objectives of the BDJV research program. Recommendations and products of the RWG are presented to the Technical Committee for review and approval and forwarded on to the Management Board for final approval and implementation. This Working Group will meet as required, but no less than once a year.

## **Research and Information Needs**

The RWG is responsible for leading the efforts to identify and prioritize research and information needs (Table B1.) to guide the BDJV competitive grant program. The list is to be up-dated every 5 years as part of strategic plan revision process, or more often if needed. The list is to be developed with input from BDJV cooperators and stakeholders including the Atlantic and Mississippi Flyway Councils, Canadian Wildlife Service, U.S. Fish and Wildlife Service, state and provincial wildlife management agencies, and associated habitat joint ventures. The prioritized research is to be accessible on [BDJV website](#).

*Table B1. Description and categorization of priority research needs for the American black duck as identified by the Black Duck Joint Venture during the 5-year planning horizon, 2008-2013.*

<b>Category</b>	<b>Issue</b>	<b>Priority w/in Category</b>	<b>Overall Priority</b>
Population Monitoring	Identify sources of and quantify heterogeneity in band reporting rates.	1 <sup>a</sup>	3 <sup>a</sup>
	Evaluate genetic methods to monitor changes in black duck population size and structure.	2	9
	Quantify and identify sources of variation and bias in estimates of fall age ratios.	3	15
	Quantify effect of “availability” bias in aerial surveys	4	16
	Evaluate and quantify influence of behavioral responses of black ducks to survey related disturbances.	5	17
	Integration of ground breeding population surveys with aerial surveys.	6	18
	Development of post-season banding and aging techniques.	7	19
Population Ecology	Development of Adaptive Harvest Management models.	1 <sup>a</sup>	2 <sup>a</sup>
	Quantify the rate and identify causes of apparent decline in black duck productivity.	2	4
	Quantify regional differences in and factors influencing black duck productivity.	3	5
	Evaluate and quantify population structure and sub-units.	4	10
	Test hypotheses of range contraction versus population decline.	5	13
Habitat Ecology	Quantify regional nutritional carrying capacity on seasonal ranges.	1 <sup>a</sup>	1 <sup>a</sup>

<sup>a</sup> Research needs currently being addressed with on-going research projects.

Table B1. Continued.

Category	Issue	Priority w/in Category	Overall Priority
Integration of population dynamics and habitat.	Evaluate and quantify influence of habitat patch size and human disturbance (e.g., road density, perforation, fragmentation, and recreation) on black duck habitat selection, use and quality.	2	6
	Identify and quantify habitat factors influencing productivity.	3	8
	Evaluate the quality and availability of healthy coastal marshes and other large (>10 ha) marsh/open water complexes during winter and spring.	4	14
	Develop synthetic models integrating black duck habitat and population dynamics as recommended by the Joint Task Group.	1	7
	Develop synthetic models predicting the effects of climate change of black duck population dynamics and habitat use.	2	11
	Identify migration routes and factors influencing time budgets and distribution during migration.	3	12

<sup>a</sup> Research needs currently being addressed with on-going research projects.

### **Competitive Grant Program**

The BDJV has limited funds available to support directed research. Further, the amount of funds is variable from year to year. Consequently, the BDJV will support priority research contingent upon available funds. Proposed studies should address  $\geq 1$  of the priority research and information needs as identified by the BDJV (Table B1.) Studies should be well designed, comprehensive, and integrated where possible to minimize conflicts involving overlap with on-going research, maximize resources, and broaden the application of the results.

To advance the development of research projects, interested parties are encouraged to contact the BDJV Science Coordinator or any member of the Technical Committee to confirm current research priorities, anticipated funds, and progress of on-going projects.

#### *Proposal format*

1. **Cover page:** project title, principal investigator name(s) and affiliation, date, current cooperators and funding partners.
2. **Problem/issue statement:** what is the problem or issue addressed by the proposed work, specifically what issue identified by the BDJV 5-year strategic plan is it addressing? (50 words).
3. **Justification:** complete and concise review of the issue and why it is important to management.
4. **Objectives or hypotheses:** Clearly and explicitly stated research objectives or hypotheses (i.e., null and alternative hypotheses).
5. **Scope and location:** Provide a description of the proposed study area(s) and the temporal and spatial bounds of the project.

6. **Study design:** Described the proposed methods including statistical treatments, experimental or observational units, replications, and sample size(s), and anticipated analyses. If the project is an observational study, describe the a priori model sets and associated variables in model development or selection.
7. **Anticipated output:** Provide a descriptive list of anticipated products and data sets.
8. **Management implications:** Describe how the results of this project may inform management activities.
9. **Relationship to other projects:** Describe the relationship of the proposed work to other projects in terms of shared resources, complementary scientific objectives or direct collaboration.
10. **Literature cited:** as appropriate.
11. **Personnel:** Provide a brief description of key personnel including background and experience, role and responsibilities on the project. Append curriculum vitae for the principle investigator(s).
12. **Schedule:** Provide the beginning and end dates, anticipated completion dates for various milestones, and dates for submitting interim report(s).
13. **Budget:** Include personnel requirements, operating expenses, capital costs, and administrative or overhead charges. Summarize annual costs and total project costs. List all funds currently secured for the project, funds applied for, and cooperators.
14. **Schedule**

The BDJV competitive grant program will be administered annually (contingent upon available funds) following the timeline below:

- November: BDJV Technical Committee and Management Board meeting – Technical Committee will review available funds to support on-going and new research projects and priority research needs. The Technical Committee will recommend funding levels and priority research needs to the Management Board for approval. Management Board makes final determination about research funding levels and priorities and determines if a request for proposal will be announced.
- December: Request for Proposals announced through [www.grants.gov](http://www.grants.gov), the [BDJV webpage](#), and through various email list-serves.
- February: Proposals due to the BDJV Science Coordinator by 1 February. Proposals forwarded to the Technical Committee and Management Board.
- March: Research Working Group completes review and initial rankings. Full Technical Committee reviews rankings by the research working group and makes recommendations to management board during winter technical meeting. Management Board makes final selection during winter meeting.
- April: Selected recipients informed of selection for funding; grant paperwork completed.

*Evaluation of research proposals*

The BDJV Technical Committee will review all research proposals and make recommendations for funding to the Management Board. The final decision on funding will be made by the

Table B2. Evaluation form for proposals submitted to the Black Duck Joint Venture.

<b>Research Proposal – FY</b>			
Proposal (assigned #):	_____		
Res. Category (e.g., population ecology):	_____		
Proposal Title:	_____		
Principal Investigators:	_____		
Reviewer:	_____		
Does the study address a BDJV information priority for American black ducks? (i.e., appropriate for funding as part of NAWMP?)	Yes	No	
<b>Scoring Criteria: Range of 1 to 5 where 1= weak - meets few criteria in Evaluation Category; 3= average - meets most criteria in Evaluation Category, but exceptional in few of them; 5= strong - meets all criteria at consistently high level</b>			
<b>EVALUATION CATEGORY</b>	Score for category	Relative Weight of Category	Score x Relative Weight For Category
<b>Management/Conservation Considerations</b>		<b>5</b>	
What information need(s) will this study address?	_____		_____
Does the proposal address a part of the population with a conservation concern (i.e., declining segment in western areas of range)	_____		_____
Do clear management implications exist that will result from the study and broadly applicable?	_____		_____
Will the study provide information necessary or useful for improving monitoring or management of the black duck population?	_____		_____
<b>Methodology and Approach</b>		<b>4</b>	
Is the approach appropriate and as presented, justified, and logical?	_____		_____
Are the methods appropriate?	_____		_____
Are sample sizes adequate?	_____		_____
Is the timing and data collection schedule realistic?	_____		_____
Are objectives clear and realistically achievable?	_____		_____
Is the study being conducted in an appropriate location?	_____		_____
Is the proposal adequately documented and relevant literature cited?	_____		_____
Proposal (assigned #):	_____		

Table B2. Continued.

EVALUATION CATEGORY	Score for category	Relative Weight of Category	Score x Relative Weight For Category
<b>Funding and Partnership Considerations</b>		<b>3</b>	
Total cost of the proposed project?	_____		_____
Is the study cost efficient / logistically efficient (e.g., is logistical infrastructure in place that will make efficient use of BDJV contributions?)	_____		_____
Is there a substantial match of contributions, particularly from non-US-federal sources?	_____		_____
Are the requested budget items appropriate for BDJV and are cost estimates reasonable?	_____		_____
If requesting multi-year funding, are final products/results worth the risks of failure, the potential for inadequate funding in future years to achieve objectives, and the lost opportunity to fund other studies? (consider total costs over all years to the value of expected end products)	_____		_____
Does the study involve multiple partners?	_____		_____
Will this study bring on new partners to the BDJV?	_____		_____
<b>Other Considerations</b>		<b>2</b>	
Does the study significantly complement other ongoing studies (i.e., is there added value to the study?)	_____		_____
Do PIs have a proven track record of successful investigations?	_____		_____
Will results be communicated effectively and in a timely manner?	_____		_____
Is this a ONE-TIME opportunity that the BDJV shouldn't pass up?	_____		_____
Does study integrate multiple research categories? (see above)	_____		_____
<b>Comments on Proposal</b>			

Management Board. The Technical Committee will evaluate each proposal based on several criteria including management/conservation considerations, methodology, funding and partnership considerations (Table B2). Additionally, on-going projects will be reviewed to evaluate progress towards stated goals and efficient use of BDJV funds.

*Progress and final reports*

Annual progress and a final report are required for all projects supported by the BDJV. Reports should be sent to the BDJV Science Coordinator by 30 September. Annual and final reports should be complete and concise, but ≤5 and ≤25 pages, respectively. If a project is on-going, the report should describe accomplishments to date (including publications), confirm the need for continued support, and detail changes in project objectives or methods. Reports should be completed in MS WORD or compatible program using the following format.

**Project title:**

**Principal investigator(s):** name, affiliation, phone, and email address

**Duration:** provide the start and end dates of the project. For multi-year projects, indicate it was Year-x of Y-year project.

**Partners:** list all organizations and individuals that provide some kind of support.

**Project description:** identify issue being addressed, objectives, hypotheses, study area, and general methods.

**Results:** provide concise review and summary and preliminary or final results.

**Project status:** identify which objectives were completed; describe unexpected obstacles and changes in methodology, and objectives for remainder of the project.

**Project funding sources (US\$).** Provide information about previous year’s expenditures.

BDJV	Other US federal	US non-federal	Canadian federal	Canadian non-federal	
Contribution	contributions	contributions	contributions	contributions	Other

**Total cost:** provide total cost of project.

**Total BDJV funds:** provide total amount supported by BDJV during the life of the project.

### **Reporting**

The RWG will produce an annual report summarizing the status and results of on-going and completed research projects, revisions or changes to the prioritized list of research and information list, or competitive grant program. The RWG report will be incorporated in the annual BDJV report compiled by the communications working group (CWG). The annual report is due to the CWG by 1 October. The purpose of the annual report is to facilitate internal communication among the Technical Committee and Management Board, external communication with BDJV cooperators and stakeholders, and evaluation of progress towards BDJV and NAWMP goals.

### **Outreach**

A critical component of the BDJV research program is to serve as a 1-stop clearinghouse of information and resources related black duck research and conservation. To accomplish this objective, the BDJV will pursue several outreach strategies, including hosting the “Second American Black Duck Symposium: evaluation, management, and research” and producing an electronic book “Black Duck Ecology and Management: State of the Art 2008-2013”.

The Second Black Duck symposium will provide a forum for researchers and managers to exchange ideas and strategies for black duck conservation based on the best available science. The symposium, to be held between 2009 and 2011, will serve as a foundation for the revision of the BDJV strategic plan due in 2013. The RWG, in coordination with the CWG, is responsible for organizing the symposium.

In concert with the Second Black Duck conference, the RWG and CWG will produce an e-book reviewing the current state of the art in black duck ecology, research and management. This book will review current knowledge, hypotheses, and leading paradigms in black duck population dynamics, habitat ecology, survey methods, and management recommendations. The e-book will also include a complete bibliography of black duck literature. The e-book will be

accessible through the [BDJV webpage](#) and will be revised every 5 years, or as needed, to reflect the most current paradigms, status, and management of the American black duck.

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**APPENDIX C: BLACK DUCK JOINT VENTURE COMMUNICATION PROGRAM IMPLEMENTATION  
PLAN, 2008**

## **Introduction**

The Black Duck Joint Venture’s mission is to promote and coordinate the gathering and sharing of scientific information among Flyway Councils, universities and wildlife agencies in Canada and the U.S. that is vital to ensuring sustained populations of Black Ducks and other waterfowl that share their breeding range. The communication program consists of both internal and external communication. The goal of internal communication is to share information among existing partners, particularly members of the Management Board and Technical Committee. The goal of external communication is to provide recommendations to management bodies and associated habitat joint ventures, recruit new partners to the BDJV, and raise awareness and support for black duck conservation among stakeholders and policy-makers. To fulfill these goals the BDJV, led by the Communication Working Group (CWG), is committed to completing the following objectives during the 5 year planning horizon of this strategic plan:

## **Objectives**

### **1. Maintain and increase participation and support (e.g., logistical, financial, and political) for black duck research and management**

- **Audience:** Senior Management, U.S. Fish and Wildlife Service, Canadian Wildlife Service, State and Provincial Resource Agencies, Atlantic and Mississippi Flyway Councils, government policy-makers, and non-government organizations,
- **Message:** American black ducks are a valued resource in eastern North America that requires active research, monitoring, and management to ensure future sustainability. Logistical, financial, and political support are required for ongoing monitoring, research, and management activities, and to develop and implement new efforts.

### **2. To assist in habitat conservation**

- **Audience:** NAWMP Habitat Joint Ventures and NABCI partners (e.g., Atlantic Coast, Eastern Habitat, and Upper Mississippi & Great Lakes Region

Joint Ventures), Federal, State and Provincial Resource Agencies, and non-government agencies

- **Message:** Recommendations for habitat management based on current and best available science. Request feedback on the information gaps and needs related to black duck habitat ecology and management.

### **3. Facilitate regulatory management**

- **Audience:** U.S. Fish and Wildlife Service, Canadian Wildlife Service, U.S. State and Provincial Wildlife Agencies.
- **Message:** Recommendations for monitoring or management activities based on current and best available science. Request feedback on the information gaps and needs related to black duck ecology and management.

The CWG, a sub-committee of the BDJV Technical Committee, is charged with leading the efforts the BDJV related to communications. The roles of the Working Group are to coordinate, implement, and revise the Communications Plan on an annual basis. This Working Group will meet as required, but no less than once a year. Recommendations and products of the CWG are presented to the Technical Committee for review and approval and forwarded on to the Management Board for final approval and implementation.

#### **Internal Communications**

The BDJV is an international organization consisting of representatives of federal, state, provincial, and non-government organizations in Canada and the United States. Internal communications is essential to maintaining existing partnerships, implementation of program activities, and evaluation of progress towards BDJV and NAWMP goals. The CWG is responsible for ensuring timely and effective communication among working groups, the technical committee, and the management board. To fulfill this responsibility the CWG will manage the [BDJV webpage](#), coordinate annual BDJV meetings, and produce an annual BDJV report.

The [BDJV webpage](#), specifically the member's only section, serves as the primary vehicle for sharing information among BDJV partners. The member's only section will serve as a repository for all BDJV communications and a way to share working documents. The CWG is responsible for ensuring the webpage is updated quarterly or more often if needed. The CWG is also responsible for coordinating annual BDJV meetings in cooperation with the hosting partner(s). The BDJV holds three annual meetings, a fall meeting of the Technical Committee and Management Board, a winter Technical Committee meeting held in association with the Atlantic Flyway Technical Section meeting, and a winter Management Board meeting held in association with the North American Wildlife and Natural Resources Conference. Finally, the CWG is responsible for compiling and editing the annual BDJV report. The annual report will consist of brief updates from each working group, general BDJV information, and review of the budget. The annual report is to be completed and available by 15 October of each year.

### **External Communications**

A primary role of the BDJV is to serve as a 1-stop clearinghouse for information related to the management of American black ducks. The CWG is responsible for leading the BDJV in compiling and sharing scientific information related to black duck ecology and management, and facilitating communication among organizations responsible for black duck conservation. The CWG will coordinate with the PMWG, RWG, and EWG to compile and produce BDJV communications products. Similar to internal communications, the [BDJV webpage](#) will serve as the primary vehicle for managing and sharing information about black duck ecology and management. In addition to maintaining and updating the [BDJV webpage](#), the CWG has identified several products to facilitate the management and sharing of information over the 5-year planning horizon of this strategic plan, 2008-2013 (Table C1).

Black Duck Joint Venture, Strategic Plan 2008–2013

Table C1. Description of products to be developed and implemented by the BDJV as part of the 2008-2013 communications plan.

<b>Product</b>	<b>Objective(s)</b>	<b>Description</b>	<b>Timeline</b>	<b>Est. Cost (U.S.\$)</b>
BDJV Webpage	1,2,3	Revise the <a href="#">BDJV webpage</a> and update quarterly.	Spring 2008	\$10,000.00
BDJV Powerpoint Presentation	1,2,3	A succinct overview of the BDJV mission, program elements, current status and knowledge targeted at potential partners, public, administrators, and policy-makers.	Spring 2008	\$0.00
American Black Duck Fact Sheet	1	An overview of the American black duck life-history, status, and management directed towards the public and stakeholders. The fact sheet will be made available to partners and the public through the <a href="#">webpage</a> and limited hard copies will be published.	Spring 2008	\$2,000.00
Annual Report	1,2,3	The annual report developed for BDJV partners will also be made publicly available on the <a href="#">webpage</a>	Annual	\$0.00
Research and Status Reports	2,3	Provide electronic copies of pertinent research and status reports publicly available on the <a href="#">BDJV webpage</a> (as permitted by applicable policies).	Annual	\$0.00
Popular Articles	1	Publish $\geq 1$ popular article about the American black duck, current status and research findings, and management. When possible, articles should be written in conjunction with researchers and managers supported by the BDJV.	Annual	\$150.00

Table C1. Continued.

<b>Product</b>	<b>Objective(s)</b>	<b>Description</b>	<b>Timeline</b>	<b>Est. Cost (U.S.\$)</b>
Best Management Practices	2	Work with private and commercial forest certification programs (e.g., Forest Stewardship Council) to develop Best Management Practices for forested wetlands.	Spring 2009	\$0.00
American Black Duck Symposium	1,2,3	Host the Second American Black Duck Symposium. The symposium will serve as a forum for researchers and managers to exchange ideas and strategies for black duck conservation based on the best available science.	2009-2011	
e-book	1,2,3	Produce an electronic book accessible through the <a href="#">BDJV webpage</a> on the state of the art of black duck ecology and management. The e-book should include a complete bibliography of black duck literature and should be updated every 5-years or more often as need.	2009-20011	\$0.00

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**APPENDIX D: BLACK DUCK JOINT VENTURE EVALUATION PROGRAM IMPLEMENTATION  
PLAN, 2008**

## **Introduction**

The recently completed Continental Progress Assessment report (2007) stressed the need for Joint Ventures to employ an adaptive management framework that links planning with monitoring and evaluation in an iterative process to ensure progress towards fulfilling NAWMP goals. The BDJV has embraced the principles of adaptive management and is committed to continued evaluation of its efforts and products to ensure progress is made towards BDJV and NAWMP goals. The goal of the BDJV evaluation program is to conduct regular assessments of BDJV programs, projects, and products to continually improve the effectiveness and efficiency of the BDJV. The BDJV evaluation program consists of two parts: technical and operational evaluation.

## **Objectives**

### *Technical:*

- I. Review and assess the quality and effectiveness of BDJV supported monitoring, research, and communications projects;
- II. Conduct a 5-year assessment of population trends and progress towards NAWMP goals.

### *Operational:*

- I. Annual tracking of financial expenditures;
- II. Conduct a 3-year internal assessment of BDJV programs and products.

The Evaluation Working Group (EWG), a sub-committee of the BDJV Technical Committee and Management Board, is responsible for the development and coordination of the BDJV evaluation plan. To meet the goals of the evaluation plan, the EWG will have to work cooperatively with the Management Board, Technical Committee, and other working groups. This Working Group will meet as required, but no less than once a year. The evaluation plan is to be revised every 5 years in conjunction with the revision of the BDJV strategic plan.

## **Technical Evaluation**

The BDJV engages in and supports a variety of scientific and technical activities, including the development and implementation of monitoring programs and research studies. The EWG is

responsible for providing on-going internal review of these projects and products. The EWG is responsible for developing the protocol and tool(s) necessary to complete these reviews. On-going assessments of the monitoring, research, and communications projects are conducted to determine if objectives are being met and to identify necessary changes where objectives are not being achieved. These reviews are to be completed within 6 months of receipt of final reports and deliverables. Reviews will be provided to the Technical Committee, but not made public (i.e., not provided in annual reports). In addition to the on-going assessments, the EWG will complete a 5-year assessment of population trends and progress towards NAWMP goals. This assessment should evaluate the trend in population growth, changes in vital rates, and assessment of population sustainability. Assessment of the black duck population will be accomplished via compiling 5-year trends in spring breeding survey cross-referenced with the mid-winter inventory and will be completed in cooperation with the PMWG.

### **Operational Evaluation**

The EWG is responsible for completing annual and 3-year evaluation of the overall conduct and operation of the BDJV. The annual review consists of tracking financial expenditures and status of BDJV supported projects. Tracking of annual expenditures will be achieved through the National Reporting Systems in the U.S. and Canada and internal records. On-going projects will be reviewed to ensure they are on schedule and budget.

The 3-year evaluation will proceed and serve as the foundation of the revision of the BDJV strategic plan and will fulfill the requirements of the “NAWMP Triennial Reporting Procedure” recently implemented by the NAWMP Plan Committee and National Science Support Team. The 3-year evaluation should include a 3-year budget summary and completed projects. Additionally, the 3-year evaluation will include a detailed assessment of the BDJV programs (i.e., population monitoring, research, and communications). The EWG is responsible for developing the necessary protocols and tools to complete the 3-year evaluation. The BDJV is scheduled to complete their Triennial Review with the NAWMP Plan Committee in summer of 2008.

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