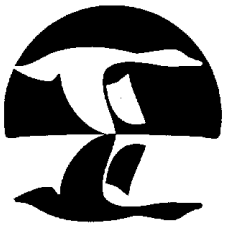
Sea Duck Joint Venture Implementation Plan 2015-2017



North American Waterfowl Management Plan

Plan nord-américain de gestion de la sauvagine

Plan de Manejo de Aves Acuáticas de Norteamérica

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Scoter flock, Alaska; Tim Bowman

Sea Duck Joint Venture
Implementation Plan

January 2015 through December 2017

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OBJECTIVE

The objective of the Sea Duck Joint Venture (SDJV) Implementation Plan is to describe current SDJV priorities, identify deliverables, set out time lines, and identify the individual(s) responsible for implementation of priority tasks outlined in the SDJV Strategic Plan over the period January 2015 through December 2017. The Implementation Plan also reports on progress toward addressing tasks during the previous two years. The 3-year Implementation Plan is a living document that is revisited annually and revised to reflect changing SDJV priorities, mandates, and progress toward objectives. This document revises the plan published in April 2013.

INTRODUCTION

This Implementation Plan steps down the SDJV 2014-2018 Strategic Plan, providing more specific direction and priorities over a shorter, 3-year, time frame. It is intended to be a flexible, dynamic document that is reviewed and revised annually to reflect progress toward addressing science priorities and adapted to address new initiatives.

The Implementation Plan is reviewed each year by the SDJV Continental Technical Team (CTT) at their annual fall meeting. The CTT makes preliminary recommendations for revisions to the Plan. A subcommittee, composed of SDJV Coordinators, CTT and Management Board co-chairs, and a few other Board members, meets immediately following the annual fall CTT meeting and drafts a revision to present to the Management Board prior to their annual spring meeting.

PRIORITIES 2015 – 2017

Priorities set out in this Implementation Plan are designed to help meet the SDJV mission, which is to "…promote the conservation of all North American sea ducks through partnerships by providing greater knowledge and understanding for effective management." The 2014-2018 strategic plan reflects a significant shift in focus for the SDJV, from a broad-based science program to a more focused program intended to provide information most needed by managers to make informed decisions. The strategic plan identifies the SDJV's highest priorities as: 1) estimate parameters needed to manage and ensure sustainability of sea duck harvest, 2) better understand habitat use and needs, and 3) ensure that the SDJV maximizes learning from research that has already been done. The plan also prioritizes among species; the highest priority species are surf scoter, black scoter, white-winged scoter, long-tailed duck, and American common eider.

A summary of recent accomplishments and tasks for the next three years are described below for SDJV science initiatives as well as for administrative, outreach, and communication programs.

POPULATION DELINEATION

At the inception of the SDJV, the lack of understanding about population delineation was seen as one of the highest priority topics for future work. Identifying links among breeding, molting, staging, and wintering areas will help improve the design of monitoring surveys and interpretation of trends, and more effectively direct management actions including harvest management. The primary method for tracking sea ducks is satellite telemetry, which also yields a wealth of data on seasonal habitat use and site fidelity, thus informing habitat conservation efforts.

The Population Delineation subcommittee now consists of Sean Boyd – Chair (EC-WLSD) and includes SDJV CTT members Scott Gilliland (CWS), Chris Dwyer (USFWS), Myra Robertson (CWS), Grant Gilchrist (EC-WLSD), Tim Bowman (USFWS), and other invited scientists as needed. The highest priority activity 2015 - 2017 will be to complete population delineation for black scoter, surf scoter, and white-winged scoter on a continental scale, and for long-tailed duck in eastern North America.

ACCOMPLISHMENTS: 2013-2014

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES	OUTCOME:
Advise agencies, JV's etc., responsible for habitat conservation about results of satellite tracking studies	Protection of important areas	SDJV Coordinators and flyway reps on CTT	Recurring activity	Annual progress report provided to Atlantic Flyway technical reps and also posted on SDJV web site
Re-evaluate progress and design of Atlantic and Great Lakes study after completion of 2013 trapping.	Evaluate original study design to ensure goals are being met in most cost effective way.	CTT steering Committee	Review to commence annually in late May.	Discussed during Sept teleconference and at Nov 2013 CTT meeting and April 2014 teleconference
Compile annual report on cumulative results and data from Atlantic and Great Lakes Sea Duck Migration Study	Check progress; identify remaining gaps and need for re-direction	Tim Bowman in concert with PIs with data base manager	Annually, early December.	Completed Feb 2014
Update telemetry database for Atlantic and Great Lakes study	Availability of most current research results; more	Data base and mapping coordinator	Annually	Ongoing via contractor BRI
Population Delineation subcommittee convenes annually in September to review progress , revise strategy, and recommend priority projects for next year's funding	Ensure that delineation projects address SDJV's highest priorities	Chair, Population Delineation subcommittee	Meets in September; Recommendations for next year to CTT by early October.	Met in August 2013 and April 2014
Conduct analyses of PTT sample size requirements using hypothetical data and existing data sets	Guidance on effort required for all satellite telemetry studies	Contracted via Pacific Wildlife Foundation, BC	Annual report due Sept 29, 2013	Not completed/ delayed; new contractor identified Feb2015.
Mark Pacific Scoters with implant PTTs in Douglas Channel (Kitimat), BC	Complete delineation of Pacific Scoter populations	Boyd, WS	Marking done in April 2014. Report completed by 2016.	SUSC were marked at 2 locations; most birds marked near Hartley Bay died within 2 weeks however most birds marked near Kitimat survived.

Mark white-winged scoters with PTTs on Atlantic coastal wintering areas	ID population structure of Atlantic-wintering WWSC	Lucas Savoy, Biodiversity Research Institutue	Annual progress report by Sept 28, 2014	Marked 3 adult female WWSC; tracked to breeding areas.

WORK PLAN (2015-2017): Core Annual Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
Advise agencies, JV's etc., responsible for habitat conservation about results of satellite tracking studies	Protection of important areas	SDJV Coordinators and flyway reps on CTT	Recurring activity accomplished through posted reports and executive summaries.
Re-evaluate progress and design of Atlantic and Great Lakes study after completion of fall 2015 trapping session; develop strategy to address remaining priority gaps	Evaluate original study design to ensure goals are being met in most cost effective way.	CTT steering Committee	Review after completion of each field season (dates will vary among years)
Compile annual report on cumulative results and data from Atlantic and Great Lakes Sea Duck Migration Study	Check progress; identify remaining gaps and need for re-direction	Tim Bowman in concert with PIs with data base manager	Annually, each Feb/Mar
Update telemetry database for Atlantic and Great Lakes study	Availability of most current research results	Data base and mapping coordinator	Ongoing via contractor BRI

WORK PLAN (2015-2017): Unique In-Year Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
2015			
Implement satellite telemetry study of white-winged scoters and long-tailed ducks along southern New England coast	Complete basic level population delineation of eastern high priority species	University of Rhode Island	Deploy PTTs as per recommendations from Steering Committee and CTT; Captures planned Nov/Dec 2015
Conduct analyses of PTT sample size requirements using hypothetical data and existing data sets	Guidance on effort required for all satellite telemetry studies	Contracted via Pacific Wildlife Foundation, BC	Report due September 1, 2015
Investigate delineation of Pacific Barrow's goldeneye populations using genetic markers	ID population structure and complement sat telemetry results with another technique	Sarah Sonsthagen USGS Alaska Science Center	Complete progress report by Sept 28, 2015
Satellite telemetry of Pacific Black Scoters in Alaska	Work to fill remaining gaps for Pacific scoters	Alaska Dept Fish and Game	Captures April 2015; progress report by Sept 28, 2015
Conduct pilot capture project in Lake Michigan for LTDU telemetry studies	Work to fill gaps for Great Lakes	USGS	Captures Feb-Mar 2015; progress report

	LTDU		by Sept 28, 2015
2016			
Satellite te*lemetry of Pacific Black Scoters in Alaska	Work to fill remaining gaps for Pacific scoters	Alaska Dept Fish and Game	Captures April 2016; progress report by Sept 28, 2016
Investigate husbandry techniques to improve survival rates of sea ducks implanted with PTTs (esp. SUSC and LTDU).	Increase survival and effective PTT sample sizes; address concerns about animal welfare.	TBD, possibly via RFP	TBD.
2017			
Satellite telemetry of Surf Scoters in Alaska	Work to fill remaining gaps for Pacific scoters	Alaska Dept Fish and Game	Captures April 2017; progress report by Sept 28, 2017

MONITORING

The SDJV has emphasized the importance of documenting the distribution and relative abundance of sea duck populations as a precursor to establishing population objectives, determining population trends, predicting potential effects of threats such as climate change, and evaluating the effects of management actions including harvest. Monitoring for many sea duck species remains inadequate for these purposes. The SDJV has so far focused on developing and testing alternative survey methodology, with the expectation that once developed, surveys would be administered by wildlife agencies in the U.S. and Canada. The Monitoring Subcommittee is currently chaired by Scott Gilliland (CWS) and includes Emily Silverman (USFWS), Eric Taylor (USFWS), Tim Bowman (USFWS), Don Kraege (WDFW), Chris Dwyer (USFWS), Myra Robertson (CWS), and Shannon Badzinski (CWS).

The priorities of the SDJV are to develop programs to monitor abundance and distribution of sea ducks to support management decisions:

- at a sufficiently large geographic scale to permit detection of broad-scale changes in distribution or densities that may result from habitat changes, such as those induced by climate change.
- for manageable discrete population units that may be subject to specific threats, and for which conservation actions could be taken and evaluated.
- cost-effectively, while providing the greatest possible confidence in the survey results.
- to provide information on distribution and abundance to developers so that they can reduce or mitigate their effects on sea duck populations (e.g. new and expanded offshore wind, tidal, and oil energy development).

The following strategies were identified for meeting the SDJV monitoring objective:

1. Engage the policy and management community to identify and prioritize information needed to support decision-making, and ensure that SDJV monitoring objectives and programs are inclusive of such needs where feasible.
2. Foster development of methods and survey designs to determine most efficient way to monitor high priority species.
3. Support implementation of these surveys, through SDJV “bridge” funding and coordination efforts.
4. Secure agency funding for long-term implementation of operational surveys with the help of Management Board advocacy.
5. Once survey methods are sufficiently developed for high priority species, revisit priorities for remaining species and design surveys that address local or regional management issues.

ACCOMPLISHMENTS: 2013-2104

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES	OUTCOME
Implement priority	Evaluate feasibility	Various PIs	Progress Reports	All but one

monitoring projects for year	of various options for monitoring sea ducks		for funded projects due end of August.	survey/project completed as planned
Subcommittee members solicit progress reports from PIs of monitoring surveys	Ensure decisions are based on most recent analyses	CTT Monitoring Subcommittee	By end of August	Received all from 2013, most from 2014
Subcommittee convenes annually in September to review progress, revise strategy, and recommend priority projects for next year's funding	Ensure that survey plans meet SDJV needs	CTT Monitoring Subcommittee	Recommendations for next year to CTT by early October.	Met in fall 2013, not in 2014.
Plan for bringing on new surveys as per Table 2	SDJV annual priorities are adaptive, reflecting knowledge gained through survey development	CTT Monitoring Subcommittee	November 2013	Done in 2013; not in 2014
Revise Implementation Plan to reflect current monitoring priorities	Monitoring priorities continue to promote adequate monitoring of all sea ducks	CTT and Board sub-group	November 2013	Plan was revised in 2013, not in 2014.

WORK PLAN (2015-2017): Core Annual Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
Implement priority monitoring projects for year	Evaluate feasibility and utility of alternatives for monitoring sea ducks	Various PIs	Progress Reports for funded projects due end of August.
Subcommittee members solicit progress reports from PIs of monitoring surveys	Ensure decisions are based on most recent analyses	CTT Monitoring Subcommittee	By end of August
Notify principal investigators for monitoring projects in year funded; set up agreements to support projects.	Identify partners best able to accomplish task to meet SDJV needs	US Coordinator	February
As monitoring programs are established, continue to evaluate species population objectives for validity, and determine whether any new species could have objectives determined	Provide information to guide conservation of sea ducks at smallest scale possible	CTT Population Objectives subcommittee	Periodically

WORK PLAN (2015-2017): Unique In-Year Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
2015			
Complete 2nd year of Pacific common eider surveys in central arctic Canada	Determine relative densities, estimates for comparison with historical data	CWS	Survey June 2015; Progress report end of August 2015
Conduct 2nd year of surveys in "Barrenlands" area west of Hudson Bay	Reconnaissance survey of previously unsurveyed area; determine spp-specific densities and distribution of sea ducks, particularly Atlantic Black Scoter	USFWS	Survey June 2015; Progress report end of August 2015
Complete Sea Duck Aerial Detection Rate study	Enable scaling of abundance indices to actual abundance	USFWS, Washington Dept Fish and Wildlife; USFWS	March 2015; Progress report end of August 2015
Conduct Eider Spring Migration Survey at Point Barrow, Alaska	Estimate numbers of COEI and KIEI for northern Alaska and western Canada	Wildlife Conservation Society, North Slope Borough	Survey April-June 2015; Progress report end of August 2015
Evaluate "crowdsourcing" methods to assist with processing and analyses of aerial photographic data sets	Part of study to estimate aerial detection rates	USFWS	Progress report end of August 2015
Review current status of sea duck surveys and recommend monitoring strategy for next 3 years	Ensure monitoring meets the needs of waterfowl managers	CTT and others as appropriate	1-day workshop to be held in conjunction with fall CTT meeting
2016			
Complete Pacific Coast Winter Sea Duck Survey Phase 2 – BC, CA coasts	Document distribution and relative abundance at coarse scale	USFWS, Washington Dept Fish and Wildlife	February 2016
Conduct Eider Spring Migration Survey at Point Barrow, Alaska	Estimate numbers of COEI and KIEI for northern Alaska and western Canada	Wildlife Conservation Society, North Slope Borough	Survey April-June 2016; Progress report end of August 2016
2017			
Begin analyses of data from Pacific Coast Winter Sea Duck Survey	Assess precision and recommend study design for operational	USFWS	Report by September 2017

	survey		

HARVEST MANAGEMENT

As a first step toward addressing the needs of decision-makers, a Harvest Management Subcommittee was established in 2011. CTT members on the Harvest Management Subcommittee include: Chris Dwyer (USFWS, chair), Jay Osenkowski (RI DF&W), Dan McAuley (USGS, PWRC), Scott Gilliland (CWS), Grant Gilchrist (EC, NWRC), Eric Taylor (USFWS), Don Kraege (WA DF&W) Emily Silverman (USFWS), Anthony Roberts (USFWS) and Nic McLellan (DU Canada). Additional members of the subcommittee from the harvest management community include: Randy Milton (NS DNR), Brad Allen (ME IF&W), Kelsey Sullivan (ME IF&W), Mark Koneff (USFWS), Eric Reed (CWS), Paul Padding (USFWS), Kathy Fleming (USFWS), Ken Richkus (USFWS), Barb Avers (MI DNR), Jim Kelley (USFWS), Guthrie Zimmerman (USFWS), Steve Olson (USFWS), Todd Sanders (USFWS) and Andre Breault (CWS). The purpose of this subcommittee is to: 1) engage the harvest management community (sport and subsistence) to estimate the harvest potential of priority sea duck populations and, 2) determine the priority information needed to support harvest management decision–making that the SDJV can address through focused research and/or monitoring program development. Priority populations include black, surf and white-winged scoters, American common eiders and long-tailed ducks. The geographic scope includes the Atlantic, Mississippi and Pacific Flyways.

The subcommittee is intended to provide support to, and work through, existing harvest management processes in place through the Flyway Councils and the Harvest Management Working Group rather than to provide independent recommendations and actions regarding sea duck harvest management.

ACCOMPLISHMENTS: 2013-2014

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES	OUTCOME
Identify priority actions and next steps in harvest management strategy	Inform sea duck harvest management decision-making community	Harvest Management Subcommittee	Report to CTT and MB on the prospectus, priority actions and proposed timelines during Fall meetings	Completed
Compile relevant demographic and survey information to use in conducting an assessment of the harvest potential of scoters, long-tailed ducks and American common eiders	Inform sea duck harvest management decision-making community	Harvest Management Subcommittee	Report to CTT, MB, relevant flyway technical committees and the Harvest Management Working Group on progress and results	Completed
Develop timeline for action items and incorporate into planning documents	Inform sea duck harvest management	Harvest Management Subcommittee	Incorporate priority needs, costs and timelines into the	In progress

	decision-making community		research and monitoring plan updates, and the Implementation Plan & Strategic Plan revisions	

WORK PLAN (2015-2017): Core Annual Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
Compile relevant demographic and survey information to use in conducting an assessment of the harvest potential of scoters, long-tailed ducks and American common eiders	Inform sea duck harvest management decision-making community	Harvest Management Subcommittee	Report to CTT, MB, relevant flyway technical committees and the Harvest Management Working Group on progress and results
Develop timeline for action items and incorporate into planning documents	Inform sea duck harvest management decision-making community	Harvest Management Ssubcommittee	In progress
As monitoring programs are established or improved, continue to work with the harvest management community to evaluate whether species population objectives are warranted.	Provide information to managers to guide conservation of sea ducks at smallest scale possible	CTT Population Objectives subcommittee	As needed and during continued evaluation of progress toward fillinghigh priority information gaps..
Support the communication needs of the harvest management community as needed	Sea duck harvest management decision-making community, sea duck hunters/guides and the interested public.	Harvest Management Subcommittee	Provide information as needed to support agency outreach for management decisions made based on the science provided (Fall 2015-16), and as described in the SDJV Communications Plan

WORK PLAN (2015-2017): Unique In-Year Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
2015			
Conduct a 4-point expert elicitation process to allow for a review of demographic and survey information being used, and obtain input on parameter uncertainty values among sea duck experts	Inform sea duck harvest management decision-making community	Harvest Management Subcommittee	Expert opinion received and incorporated into the final modelling effort by March, 2015

Complete the assessment, modelling effort and complete draft report for subcommittee review. Provide a draft final report to the MB for review and distribution. to determine priority information needs for the SDJV to address	Inform sea duck harvest management decision-making community and SDJV committees	Harvest Management Subcommittee	Draft assessment report completed, reviewed by the subcommittee, and forwarded to the MB for review and release by June, 2015. Use to inform science priorities and planning for FY16.
Determine priority information needs for the SDJV to address through Its science program. Develop timeline for action items and incorporate into planning documents	Inform the SDJV on priority information needs identified through this process and determine feasibility/capacity for the SDJV to address them	Harvest Management Subcommittee	Conduct a special session at the Fall 2015 CTT meeting to discuss and develop a plan for integration, costs and timelines into the research and monitoring plan updates, and the Implementation Plan & Strategic Plan revisions

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
2016			
Evaluate progress toward addressing the information needs of harvest management decision-makers	Inform sea duck harvest management decision-making community	Harvest Management Subcommittee	Report out at the fall 2016 CTT and MB meetings
Make recommendations for addressing information needs/priorities through the SDJV RFP process	Researchers, universities, agencies	Harvest Management Subcommittee	Conduct a special session at the Fall 2015 CTT meeting to discuss and develop a plan for integration, costs and timelines into the research and monitoring plan updates, and the Implementation Plan & Strategic Plan revisions
Support the communication needs of the harvest management community as needed	Sea duck harvest management decision-making community, sea duck hunters/guides and the interested public.	Harvest Management Subcommittee	Provide information as needed to support agency outreach for management decisions made based on the science provided (Fall 2016-17), and as described in the SDJV Communications Plan

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
2017			
Identify priority actions	Inform sea duck harvest	Harvest	Report out at the fall 2017

and next steps in harvest management strategy	management decision-making community	Management subcommittee	CTT and MB meetings
Make Recommendations for addressing information needs/priorities through the SDJV RFP process	Researchers, universities, agencies	Harvest Management Subcommittee	Update next iteration of planning documents such as Implementation Plan & Strategic Plan revisions
Support the communication needs of the harvest management community as needed	Sea duck harvest management decision-making community, sea duck hunters/guides and the interested public.	Harvest Management Subcommittee	Provide information as needed to support agency outreach for management decisions made based on the science provided (Fall 2015-16), and as described in the SDJV Communications Plan

HABITAT CONSERVATION

While the SDJV partnership has made progress in understanding where important sea duck habitats are, what times of the year they are used and for how long, and what proportion of certain populations use those areas, information on seasonal habitat use has not yet been consolidated into a centralized database that is easily accessible to waterfowl managers, habitat conservationists, and industries that need this information to prioritize sea duck habitat management. In 2013, a Sea Duck Habitat Management and Conservation Subcommittee was formed to lay out a strategy to better address habitat needs and identify priority actions for North American sea ducks. The Habitat Management and Conservation Subcommittee includes: Nic McClellan (DUC, chair), Tim Bowman (USFWS), Sean Boyd (EC S&T), Shannon Badzinski (CWS), Chris Dwyer (USFWS), and Anthony Roberts (USFWS). In addition, representatives from Habitat Joint Ventures will be engaged within the subcommittee to determine information needs of the Joint Venture and habitat management communities as well as to identify opportunities whereby the SDJV may inform or influence land use and other policy issues.

The Habitat Management and Conservation Subcommittee envisioned a three-step process moving forward: 1) develop a static “Key Sites” atlas that delineates and describes the most important sea duck areas in North America, 2) engage an entity to develop a web-based queryable geospatial database that includes data on seasonal sea duck use, and 3) encourage studies to determine what makes habitats important to sea ducks and whether certain sea duck habitats are affecting population growth.

ACCOMPLISHMENTS: 2013-2014

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES	OUTCOME
Determine strategy for identifying and addressing needs relative to habitat conservation	Ensure that SDJV is working towards obtaining information	Habitat Management and Conservation	Work within the SDJV in 2013 to identify information needs and linkages.	Only initial scoping meeting held.

	needed by habitat managers.	Subcommittee		
Engage appropriate stakeholders to identify what information is most needed to protect and manage sea duck habitats	Ensure best available science is made available to habitat conservationists, industry, and marine spatial planners.	Habitat Management & Conservation Subcommittee		Feedback from Habitat JV coordinators received in 2014. Other needs identified in Communicaitons Plan
Begin development of a sea duck "key sites" atlas.	Make readily available static maps that provide planners information on areas most important to sea ducks including seasaonal importance.	Habitat Management & Conservation Subcommittee	Workshop at fall CTT meeting	Contractor hired to lead workshop in Oct 2014; data currently being compiled and reviewed.

WORK PLAN (2015-2017): Core Annual Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
Review strategy for addressing information needs relative to habitat conservation	Ensure that SDJV is working towards obtaining information needed by the sea duck habitat conservation and policy development communities	Habitat Management & Conservation Subcommittee	Report to CTT and MB on progress, priority actions and proposed timelines reviewed annually
Develop timeline for action items and incorporate into planning documents	Ensure that SDJV is working towards obtaining information needed by the sea duck habitat conservation and policy development communities	Habitat Management & Conservation Subcommittee	Incorporate priority needs, costs and timelines into the Implementation Plan

WORK PLAN (2015-2017): Unique In-Year Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
2015			
Develop a sea duck "key sites" atlas.	Make readily available static maps that provide planners with information on areas most important to sea ducks including seasaonal importance.	Habitat Management & Conservation Subcommittee	Maps and metadata reviewed by experts by September 2015. Progress report to CTT and MB in October 2015.
Identify existing data sources that can be used to better inform habitat	Ensure best available science is made available to habitat conservationists,	Habitat Management & Conservation	Initial list of data sources and contacts compiled by September 2015

conservation and protection efforts; characterize strengths and limitations of available data sets	industry, and marine spatial planners.	Subcommittee	
Identify and engage organizations that have the skills and capacity to integrate sea duck data into a geospatial database.	Provide accessibility to geo-referenced information already collected and provide links to LCCs, Habitat Joint Ventures, and other audiences.	Habitat Management & Conservation Subcommittee	By December 2015, identify entities that could provide a system
2016			
Publication of a sea duck "key sites" atlas.	Make readily available static maps that provide planners information on areas most important to sea ducks including seasaonal importance.	Habitat Management & Conservation Subcommittee	Report and maps reviewed by experts and posted on SDJV web site by May 2016.
Write a scope of work for development or integration of a web-based geospatial database of sea duck spatial and temporal distribution and relative abundance information	Provide accessibility to information already collected and provide links to LCCs, Habitat Joint Ventures, and other audiences.	Habitat Management & Conservation Subcommittee	Scope of work written by July 2016
2017			
Work with contractor to develop queryable geospatial database	Ensure best available science is made available to habitat conservationists, industry, and marine spatial planners.	Habitat Management & Conservation Subcommittee	TBD

OTHER RESEARCH

To support the science needed to meet the objectives of the SDJV, the U.S. Fish and Wildlife Service has made available funds to support research on behalf of the SDJV. From 2002 to 2010, the SDJV annually issued a Request for Proposals (RFP) that solicited research addressing a broad array of information needs described in the SDJV Strategic Plan. This process resulted in significant advances in our understanding about sea duck migration patterns, habitat use, biology, and ecology. Beginning in 2011, the SDJV focused on a smaller set of topics and discontinued the RFP, but recognized that many other knowledge gaps remained that may help identify limiting factors for sea ducks.

During the time frame of this plan, we anticipate that much of the SDJV funding will be directed to the priority topics of harvest management and habitat conservation, including studies of population delineation and monitoring that support those topics and provide requisite baseline information. The CTT and Management Board would also like to make funding available for broader research that addresses priorities of the SDJV, capitalizes on opportunities offered by partners, and further leverages SDJV funds. We anticipate that there will be a competitive request for proposals for FY2016 that addresses priorities outlined in this plan (see Table 1).

ACCOMPLISHMENTS: 2013-2014

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES	OUTCOME
Revise Implementation Plan to reflect current research priorities	Effectively communicate research priorities and conservation actions with partners	CTT and Board sub-group	Begin revisions in Oct/Nov each year. Present to Board at March meeting for finalization	Revision of Plan deferred to 2015-2017, with new timeframe, starting 1 January and ending 31 December.
Improve access of sea duck management community to services for disease detection and surveillance .	Address current backlog of response to previous disease events, and improve understanding of conservation risks posed by diseases	Chris Dwyer and Grant Gilchrist	Briefing document describing partner-based efforts to address disease issues affecting sea ducks. Present to CTT/MB in Fall	Info on Wellfleet Bay virus distributed at CTT/MB fall meeting

WORK PLAN (2015-2017): Core Annual Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
Revise Implementation Plan to reflect current research priorities	Effectively communicate research priorities and conservation actions with partners	CTT and Board sub-group	Begin revisions in Oct-Dec each year. Present draft to Board prior to spring teleconference for finalization
Improve access of sea duck management community to services for disease detection and surveillance.	Address current backlog of response to previous disease events, and improve understanding of conservation risks posed by diseases	Chris Dwyer and Grant Gilchrist	Briefing document describing partner-based efforts to address disease issues affecting sea ducks. P resent to CTT/MB in Fall
Implement research program addressing new priorities and focal areas	Ensure that the research program culminates in strong foundation for conservation actions	CTT	Decisions made by December each year.

WORK PLAN (2015-2017): Unique In-Year Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
2015			

Re-evaluate priorities and focal areas for research program	Ensure that the research program culminates in strong foundation for conservation actions	CTT subcommittees and Mgt Board	Incorporate into revision of Implementation Plan 2015-2017
Re-institute a competitive RFP addressing sea duck research priorities	Address priority knowledge gaps and capitalize on partnership opportunities	CTT and Mgt Board	RFP to be posted in July 2015; funding decisions made during fall CTT and Mgt Board meetings

COMMUNICATION AND OUTREACH

A Strategic Communications Plan was completed in March 2015 (Dayer 2015; http://seaduckjv.org/science-resources/#planningdocuments). The plan is focused on helping the SDJV address four goals, or outcomes:

- Goal 1. The SDJV contributes to scientific information about sea ducks and their habitats that is readily available and used by stakeholders.
- Goal 2. SDJV partners collaborate on research and monitoring to address sea duck conservation and management needs.
- Goal 3. SDJV priority actions are implemented that advance sea duck conservation and management.
- Goal 4. The SDJV is widely recognized as the leading conservation program for sea ducks and has a strong and informed constituency for sea ducks.

ACCOMPLISHMENTS: 2013-2014

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES	OUTCOME
Work with agency outreach specialists to identify priority communication and education needs of SDJV	Create an outreach plan for the SDJV, rather than using an ad hoc approach	Board co-chairs have lead; USFWS outreach officer identified at HQ, also in Region V	December 2012; Outreach plan is drafted, initial products prepared	Strategic Communications Plan completed March 2015.
Improve communication and increase awareness of SDJV progress and accomplishments within the waterfowl community	Creates an easily accessible summary of annual work completed or supported, to help compare progress against priorities	Coordinators	Annual report / newsletter highlighting key findings; post on web by January 2012	Annual report not completed ; annual report on Atlantic and Great Lakes Migration study completed and distributed to partners in Feb 2014..
Interact with Communications/Outreach group on	Ensure that messages about SDJV priorities	Carey Smith represented SDJV on	ongoing	Provided SDJV highlights to outreach team

Association of JV Management Boards	are included in outreach materials	AJVMB		re: JV Fact sheet
Interact with National Science Support Team	Ensure that the needs of sea ducks are incorporated into NAWMP Science Team activities	CTT and Board members on NSST	Annually	Ongoing; provided input into population objectives and mapping of significant sea duck areas.
Interact with LCC planning, climate change and other initiatives	Ensure sea duck needs are addressed	Chris Dwyer, USFWS R5 Mgt Board rep, Tim Bowman Keith McAloney, Richard Elliot, Sean Boyd, Christine Lepage, Scott Gilliland	Use this information to brief CWS Regional Directors who are sitting on the LCC Boards.	Interacting with LCCs on an individual basis. Environment Canada has representation on LCC Boards and Technical Committees, interacting with LCCs on individual basis as opportunities arise.
Facilitate an international sea duck conference every 3 years	Facilitate information exchange and priority-setting in the research community at large	SDJV members of conference organizing committees, past and present	Next conference will be September, 2014 in Reykjavik, Iceland	Conference held Sept 2014 in Iceland.
Maintenance and improvements to SDJV web site	Web site serves as clearinghouse for sea duck information, research updates, and news	Tim Bowman	ongoing	On track; web site overhaul planned for 2014. Contractor hired.
Revise Sea Duck Information Series to reflect current state of knowledge	General up-to-date information about all sea duck species. Distributed as hardcopy series and on web.	Tim Bowman	ongoing	Some revisions made, and more needed
Provide an update on SDJV for Habitat Matters publication	Improve communication and foster partnerships	Canadian Coordinator	ongoing	Completed; 2013 story featuring Black Scoter monitoring in Hudson and James Bays; 2014 article about Aerial Survey Training Guide.

WORK PLAN (2015-2017): Core Annual Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
Work with agency outreach specialists to identify priority communication and education needs of SDJV	Outreach efforts targeted to specific issues or audiences.	Board co-chairs have lead	Assignments to be made based on project subject matter and scope.
Improve communication and increase awareness of SDJV progress and accomplishments within the waterfowl community	Creates an easily accessible summary of annual work completed or supported, and results of studies	Coordinators	Annual report / newsletter and/or e-blast highlighting key findings.
Facilitate communication and information sharing among sea duck managers and researchers internationally	Share scientific information, help facilitate research partnerships, policy development	Coordinators, conference planning committee	6th International sea duck conferenceplanned for 2017; distribute annual report; reports by flyway reps to flyway councils
Interact with Communications/Outreach group on Association of JV Management Boards	Ensure that messages about SDJV priorities and accomplishments are included in outreach materials as appropriate	SDJV rep to AJVMB is Brad Bales	ongoing
Maintain and Improve SDJV web site	Web site serves as clearinghouse for sea duck information, research updates, and news	Tim Bowman	Overhaul done by March 2015; Ongoing updates as needed
Revise Sea Duck Information Series to reflect current state of knowledge	General up-to-date information about all sea duck species. Distributed as hardcopy series and on web.	Tim Bowman	ongoing
Provide an update on SDJV for Habitat Matters publication	Improve communication and foster partnerships	Canadian Coordinator	ongoing
Provide progress reports and results of SDJV research and monitoring programs to BOEM, NOAA and other relevant agencies	Ensure that consideration is given to sea duck habitat use and requirements in the development and assessment of offshore wind farms and Coastal and Marine Spatial Planning activities.	Tim Bowman, CTT and Board Members as applicable	Report for Atlantic and Great Lakes Migration Study is circulated to all partners and posted on web site.

WORK PLAN (2015-2017): Unique In-Year Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
2015			
Chapters written on various subjects for sea duck book.	Synthesise scientific information about North	Various CTT members and	Publication of Sea duck book expected March

	American sea ducks; make available in one volume	U.S. coordinator on chapters	2015
Complete Strategic Communications Plan	Create a communications and outreach plan for the SDJV, rather than using an ad hoc approach	Contractor (Ashley Dayer)	Completed March 2015
Overhaul SDJV web site	Update site that was designed 13 years ago	Tim Bowman	New web site operational by March 2015
Include an e-blast feature on web site	Draw attention to news or new features of SDJV web site	Tim Bowman	By April 2015
Progress report on Atlantic and Great Lakes Sea Duck Migraiton Study	Support information needs of marine habitat & policy decision-makers.	Tim Bowman	May 2015
Work with agency outreach specialists to identify and produce outreach products focused on specific issues	Outreach efforts targeted to specific issues or audiences (e.g., sea duck hunting, key habitat maps)	Assignments to be made based on project subject matter and scope.	Completion dates based on project subject matter and scope.
2016			
Work with agency outreach specialists to identify and produce outreach products focused on specific issues	Outreach efforts targeted to specific issues or audiences (e.g., sea duck hunting, key habitat maps)	Assignments to be made based on project subject matter and scope.	Completion dates based on project subject matter and scope.
2017			
6th International Sea Duck Conference, San Francisco, CA	Share scientific information, help facilitate research partnerships, policy development	Members of conference planning committee; presenters	6th International sea duck conference for fall or winter 2017

ADMINISTRATION AND COORDINATION:

The administration of the SDJV is the responsibility of the Management Board and is achieved through direction from the Management Board to the two National Coordinators and the co-chairs of the CTT as well as assignments to sub-committees of the Board and CTT. It is incumbent upon the Management Board, Coordinators, CTT co-chairs and relevant committees to develop and undertake an annual, on-going process to ensure that the Joint Venture focuses on the highest priority research and monitoring needs that can inform conservation management decisions. Progress toward achieving measureable objectives and focusing the SDJV research and monitoring programs should be discussed on a frequent basis to ensure that the SDJV continues to move strategically toward meeting the needs of managers, decision-makers and Habitat Joint Ventures.

ACCOMPLISHMENTS: 2013-2014

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES	OUTCOME
Review Strategic priorities to be focused on by JV. Refine their integration into Implementation Plans	Ensure that research and monitoring programs are addressing most pressing conservation and management needs.	Board and CTT co-chairs and sub-committees, and Coordinators.	Review at November CTT meeting; present draft at March Management Board meeting.	Discussed at joint CTT/MB meeting Nov2013. Priorities integrated into this plan.
Define PART* measures and performance target requirements for SDJV	Ensure SDJV activities are contributing to USFWS performance review	U.S. Board co-chair and Tim to consult with DBHC staff and other Species JV coordinators	May 2013 Work with other species JVs to define measures; report to Division of Bird Habitat Conservation on annual JV PART progress	No interest or imperative to do this. Drop from task list unless asked by USFWS to develop performance targets.
Post RFPs in appropriate ornithological and public outlets	Ensure awareness of funding opportunities and priorities	Tim Bowman	In years when research funds are available for allocation, the RFP is posted in July	General RFP not warranted in 2013 or 2014. Studies competed individually or awarded as sole-source agreements.
Process and distribute proposals for CTT review and scoring	Ensure adequate review time and consistency	Tim Bowman	October, annually	Completed
Solicit and post on web all annual reports from SDJV-sponsored research and monitoring projects	Information is effectively communicated with SDJV and waterfowl managers received to permit evaluation of SDJV approach	Tim Bowman	October annually	Completed
Prepare summary of funding and other recommendations for Board review	Ensure effective communication among JV entities	Tim Bowman	December annually, prior to Board teleconference	Completed
Notify successful applicants for research and monitoring projects	Administrative	Tim Bowman	By 10 January annually	Completed
Process contracts, purchase orders, and coop agreements in	Administrative	Tim Bowman	January-April annually	Completed

support of SDJV funded projects				
Facilitate and coordinate purchase of satellite transmitters for SDJV projects as required.	Capitalize on efficiencies related to bulk discounts	Tim Bowman	January – April annually	Completed
Prepare summary notes and briefing documents for CTT and Board meetings	Ensure adequate communication among JV staff	Coordinators - Tim Bowman, Patricia Edwards	As needed	Completed
Secure adequate meeting space, logistics, and arrange teleconferencing in support of CTT and Board meetings	Ensure effective communication and efficiency	Tim Bowman; hosting staff	As needed	Completed
Annual Financial Report to USFWS Division of Bird Habitat Conservation	Document use and leveraging of all SDJV funds	Tim Bowman	December annually	Completed
Annual financial summary to NTS Canada	Document use and leveraging of SDJV funds in Canada only	Canadian coordinator – Patricia Edwards	December annually	Completed

* PART = Performance Assessment and Rating Tool

WORK PLAN (2015-2017): Core Annual Tasks

TASK/DELIVERABLE	NEED BEING SERVED	LEAD	BENCHMARKS / COMPLETION DATES
Review Strategic priorities to be focused on by JV. Refine and integrate into Implementation Plans	Ensure that research, monitoring, and outreach programs are addressing most pressing conservation and management needs.	Board and CTT co-chairs and sub-committees, and Coordinators.	Review at fall CTT meeting; present draft to Management Board at spring meeting or teleconference.
Post RFPs in appropriate ornithological and public outlets	Ensure awareness of funding opportunities and priorities	Tim Bowman	In years when research funds are available for allocation, the RFP is posted in July
Process and distribute proposals for CTT review and scoring	Ensure adequate review time and consistency	Tim Bowman	October, annually
Solicit and post on web all annual reports from SDJV-sponsored research and monitoring projects	Information is effectively communicated with SDJV and waterfowl managers received to permit evaluation of SDJV approach	Tim Bowman	October annually
Prepare summary of funding and other recommendations for Board review	Ensure effective communication among JV entities	Tim Bowman	Compiled after fall CTT meeting annually, presented to Mgt Board at their next meeting
Notify successful	Administrative	Tim Bowman	By 10 January annually

applicants for research and monitoring projects in 2010			
Process contracts, purchase orders, grants, and coop agreements in support of SDJV funded projects	Administrative	Tim Bowman	January-July annually
Provide debriefings to unsuccessful applicants	Constructive feedback to researchers; done only on request by applicant	Tim Bowman & USFWS contracting	In January, if required
Facilitate purchase of satellite transmitters for SDJV projects as required.	Capitalize on efficiencies related to bulk discounts	Tim Bowman	January – April annually
Prepare summary notes and briefing documents for CTT and Board meetings	Ensure adequate communication among JV staff	Coordinators - Tim Bowman, Patricia Edwards	As needed
Secure adequate meeting space, logistics, and arrange teleconferencing in support of CTT and Board meetings	Ensure effective communication and efficiency	Tim Bowman; hosting staff	As needed
Annual Financial Report to USFWS Division of Bird Habitat Conservation	Document use and leveraging of all SDJV funds	Tim Bowman	December annually
Annual financial summary to NTS Canada	Document use and leveraging of SDJV funds in Canada only	Canadian coordinator – Patricia Edwards	December annually

Table 1. High priority species- and cross-species science needs. Highlighted science needs include those that 1) are ongoing projects already funded in FY16 (in blue), or, in yellow, 2) will be identified as topics of interest in a competitive *Request for Proposals* for FY16, or 3) considered for funding directly through agencies or sole-source entities in FY16. Science needs not highlighted remain high priority, but likely do not require SDJV funding in FY16 or will not be pursued in FY16.
Cross-species **Science Needs**
Evaluate and modify veterinary and/or husbandry techniques to improve survival of sea ducks, particularly Surf Scoter, White-winged Scoter, and Long-tailed Duck, marked with implantable transmitters
Evaluate the utility (e.g., spatial resolution) of stable isotope analyses of feather samples to determine breeding or molting areas for sea ducks, in the absence of reference samples from across the continent
Analyze existing tissue samples for key contaminant levels in sea ducks to document species- and geographic variation and identify potential contaminant problems, or lack thereof
Develop a proof-of-concept model/procedure for estimating sea duck carrying capacity on wintering areas
Evaluate alternatives for improving species identification on breeding, molting, and wintering areas
Develop efficient methods for automating counts of birds in aerial photographs of large flocks, including birds with varying distribution and density patterns, and uniform vs dimorphic plumage
Test feasibility of determining age and sex ratios (over a broad range) using ground surveys and/or aerial photos on fall/wintering areas to obtain an index of annual productivity for some species (e.g., Surf Scoter, Black Scoter)
Develop or refine techniques to estimate detection rates during aerial surveys
Assess and improve both subsistence harvest estimates and fall sport harvest surveys, including enhanced parts collection surveys to provide more precise estimates of harvest and to determine age and sex ratios
American Common Eider
Determine if recruitment is a problem, and if so, identify the limitations. This broad topic includes things that could affect breeding propensity (e.g. food limitation and female condition; disease and female condition, effects of the presence of mammalian predators and eagles on colony use), duckling survival (e.g. direct: duckling predators [gulls, eagles, mammals, etc.], indirect: effects of disease, food etc. on female condition and quality as brood mom), etc.
Determine affiliations among breeding, molting and wintering areas in order to assess whether the population should be managed as stocks or sub-populations
Evaluate monitoring programs targeted at key periods during the annual cycle (breeding, molting, wintering) to determine which approach will provide information on trend and abundance necessary for management of the subspecies in the most cost

effective manner
Improve estimates of harvest by improving the sample for eider hunters in current national harvest surveys (including consideration of a hunter outreach program to increase hunter participation in the survey)
Improve estimates of harvest using genetics techniques to discriminate among the dresseri from borealis subspecies in the Species Composition Survey (parts collection)
Long-tailed Duck
Develop and implement surveys that provide indices of population size and trend for a significant portion of the continental population
Develop estimates of annual survival rates for Long-tailed Ducks
Quantify the reproductive life history estimates for Long-tailed Ducks in various portions of their breeding range
Complete satellite telemetry studies of Long-tailed Ducks wintering in the Great Lakes and Atlantic coast to determine the following: a) linkages among breeding, molting, staging and wintering areas, b) key migration corridors and timing of migration, c) important habitats/sites used during the above stages, d) level of inter-annual site fidelity to breeding, molting and wintering habitats, and e) determine the magnitude of overlap in breeding distribution between Pacific and Atlantic/Great Lakes wintering Long-tailed Ducks
Determine important limiting factors for Long-tailed Ducks throughout the annual cycle
Identify and characterize attributes of key seasonal use areas (e.g., winter, staging)
Surf Scoter
Complete satellite telemetry projects on the Pacific coast to determine the following: a) linkages among breeding, molting, staging and wintering areas, b) key migration corridors and timing of migration, c) important habitats/sites used during the above stages, d) level of inter-annual site fidelity to breeding, molting and wintering habitats, and e) determine the magnitude of overlap in breeding distribution between Atlantic and Pacific wintering populations
Determine survival rates for surf scoters wintering in specific areas on the Pacific and Atlantic coasts, with emphasis on adult birds
Determine sustainability of current harvest rates for the Pacific and Atlantic/Great Lakes wintering populations
White-winged Scoter
Complete satellite telemetry projects on the Atlantic coast and Pacific coast to determine the following: a) linkages among breeding, molting, staging and wintering areas, b) key migration corridors and timing of migration, c) important habitats/sites used during the above stages, d) level of inter-annual site fidelity to breeding, molting and wintering habitats, and e) determine the magnitude of overlap in breeding distribution between Atlantic and Pacific wintering populations
Estimate seasonal and annual survival rates for the Pacific and Atlantic/Great Lakes wintering populations and determine important driving factors
Estimate productivity and recruitment rates across the breeding range and determine

important driving factors
Determine sustainability of current harvest rates for the Pacific and Atlantic/Great Lakes wintering populations
Atlantic Black Scoter
Evaluate options for long-term monitoring of trends in abundance and changes in distribution
More precisely define breeding distribution in eastern North America through aerial surveys or additional satellite telemetry
Determine important factors (weather, predators, food, etc.) affecting survival and reproductive success (fitness) of the species throughout its range
Characterize molting habitats, identify the factors responsible for their selection, and predict how climate change may impact molting habitats and distribution of molting birds
Pacific Black Scoter
Encourage USFWS to Reinstate annual operational survey of breeding black scoters in Alaska to provide long term indices of population trajectory and provide a basis for evaluating sustainability of harvest (sport and subsistence)
Complete satellite telemetry studies on the Pacific coast to determine the following a) linkages among breeding, molting, staging and wintering areas, b) key migration corridors and timing of migration, c) important habitats/sites used during the above stages, and d) level of annual site fidelity to breeding, molting and wintering habitats
Analyze existing feather samples using stable isotope analyses to help determine wintering and molting areas for black scoters that breed in Alaska north of the Seward Peninsula, where satellite telemetry has proved impossible