

Co-Chair, Canada
Basile van Havre,
Gatineau, Quebec

Co-Chair, México
Jorge Maksabedian de la
Roquette,
México City

Co-Chair, United States
Jerome Ford,
Washington, D.C.



*North American Waterfowl
Management Plan*

*Plan nord-américain de
gestion de la sauvagine*

*Plan de Manejo de Aves
Acuáticas de Norteamérica*

To: Waterfowl Management Community

From: Co-Chairs, North American Waterfowl Management Plan

Date: July 16, 2014

Subject: Implementing the 2012 NAWMP – Progress in Revising Objectives

Colleagues:

In our September 5, 2013 update on progress in implementing the 2012 Revision to the North American Waterfowl Management Plan (NAWMP) we indicated that the priority task for the Interim Integration Committee (IIC) in the coming months was to oversee the review and development of contemporary and coherent objectives for waterfowl populations, people, and habitat, and we sought your input in this process. We are pleased to report that since that time the IIC has accomplished this task and the revised objectives are presented in the attached document. The work was accomplished with the assistance of a temporary NAWMP Objectives Subcommittee that reviewed and considered broad input from the waterfowl community.

The IIC presented the recommended set of revised NAWMP objectives to the international NAWMP Committee on July 2 and the Committee strongly endorsed the proposed objectives in concept with the intention of finalizing the objectives at the September 2014 NAWMP Committee meeting in Halifax, Nova Scotia. These objectives will be in place until the next formal update to the Plan, likely in 2017, at which time refinements may be made incorporating new information acquired from planned studies and experience gained by implementing the proposed objectives in the interim.

As Co-Chairs of the international NAWMP Committee, we encourage the waterfowl community to actively engage in actions to achieve these objectives that support the three overarching goals of 2012 NAWMP Revision and enable the waterfowl community to move forward with implementation of the 2012 NAWMP Action Plan.

We look forward to your continuing collaboration in this vital work.

Yours in Conservation,

Jerome Ford, Co-Chair, United States

Basile van Havre, Co-Chair Canada

Jorge de la Roquette, Co-Chair Mexico

Executive Summary: Implementing the 2012 North American Waterfowl Management Plan: Revised Objectives and Work in Progress

The 2012 revision of the North American Waterfowl Management Plan (NAWMP or Plan) represents a significant maturity in waterfowl conservation planning. The Plan revision maintains a focus on waterfowl populations and habitat; however, an emphasis on revised and integrated NAWMP objectives and an explicit focus on waterfowl conservation supporters provide more complete context for waterfowl conservation going forward. Input from the waterfowl management community has been used to amend draft objectives developed by the IIC in July 2013. This report presents “working objectives” for each of the three NAWMP goals, supported by the NAWMP Committee, along with an invitation to the waterfowl conservation community to continue participating in the work ahead to implement the actions to achieve these objectives.

Conserve the System of Waterfowl Conservation: The management of waterfowl in North America over the past 60 years is a success story, but that will only continue with ongoing vigilance and conservation investments. As an overarching objective, leaders in waterfowl management should aspire to conserve the system of waterfowl conservation over the long term. We do not mean “system” in an administrative sense, but rather the inter-related elements of waterfowl populations, their habitat, and the relationship with people who enjoy and actively support waterfowl conservation. The purpose of the NAWMP then is to sustain the ecological and social capacity required to protect, restore, and manage the investments in waterfowl conservation.

Population Objective: *Maintain long-term average populations of breeding ducks [1955 to present in traditional survey area (TSA) and 1990 to present in eastern survey area (ESA)] and periodically, 40 million or more total breeding ducks (TSA).*

Average populations of ducks over the long term are the results of periodic “boom” and “bust” conditions typical of wetland habitats. In light of the dynamic nature of waterfowl populations, both the long-term averages among species as well as periodic abundance in total numbers are recommended as dual objectives for duck populations. This objective is viewed as preliminary and should be revisited when new data are available from social science efforts currently underway. Further, a critical related task is for the waterfowl management community to define the role of harvest management in achieving population objectives.

Supporter Objective: *Increase waterfowl conservation support among various constituencies to at least the levels experienced during the last two decades.*

Although the recommended objective for waterfowl populations reflects the entire period of record for available survey data, considerable changes in social systems justify a more contemporary period as a benchmark for supporter objectives. Landowners are critical partners in determining whether specific habitat management actions can effectively be applied on private lands. Thus, engaging landowners as a distinct group of supporters can have significant benefits.

Habitat Objective: *Conserve a system with capacity to maintain long-term average waterfowl population levels, that periodically supports 40 million or more breeding ducks, and consistently supports resource users at objective levels.*

Unlike objectives for waterfowl populations and supporters, which can be expressed in large-scale or even continental terms, quantitative objectives for waterfowl habitat are largely unique to a specific landscape. Habitat protection, restoration, and management strategies are unique to each landscape because the actions that affect waterfowl status (reproduction, survival, movement, body condition) and supporters (access, crowding, opportunity) are as unique as the landscapes involved. Thus, each nation, flyway, joint venture, state, and conservation area will require conservation planning regionally relevant to their location and nature of use.

Integrating Objectives for Waterfowl Populations, Supporters, and Habitat: A basic premise from the 2012 NAWMP is that effective integration among conservation programs and partners will occur at the scale at which decisions are made and management actions implemented. The 2012 NAWMP Revision accepted that successful management of waterfowl populations, conservation of waterfowl habitat, and engagement of waterfowl users and supporters are inseparably linked components of waterfowl conservation. To manage most effectively and responsively, a management system that embraces these interrelationships will need to be employed.

Implementing the 2012 North American Waterfowl Management Plan: Revised Objectives and Work in Progress

The 2012 revision of the North American Waterfowl Management Plan (NAWMP or Plan) represents a significant maturity in waterfowl conservation planning. The Plan revision maintains a focus on waterfowl populations and habitat; however, an emphasis on revised and integrated NAWMP objectives and an explicit focus on waterfowl conservation supporters provide more complete context for waterfowl conservation going forward.

The Interim Integration Committee (IIC) produced a work plan in July 2013, which included draft revised objectives. Input from the waterfowl management community has since been used to amend those initial proposals. This report presents “working objectives” for each of the three NAWMP goals, supported by the NAWMP Committee, along with an invitation to the waterfowl conservation community to continue participating in the work ahead to implement the actions to achieve these objectives.

The 2012 revision has advanced considerably, and the challenge now is to maintain the momentum of Plan implementation, despite complexity that is greater than the authors of the 2012 revision likely envisioned. The NAWMP continues to evolve, and the revised objectives outlined here should guide waterfowl management planning as new information is acquired about supporters’ values, harvest management perspectives are assessed, and regulations processes amended (SEIS). This work in progress should be concluded in time to inform any potential changes in objectives that can be addressed in the next NAWMP update scheduled for about 2017-18. As it has since 1986, NAWMP maintains an ongoing commitment to review and amendment as new insights emerge.

Conserving the System of Waterfowl Conservation

The management of waterfowl in North America over the past 60 years is a success story, but that will only continue with ongoing vigilance and conservation investments. As an overarching objective, leaders in waterfowl management should aspire to conserve the system of waterfowl conservation over the long term. We do not mean “system” in an administrative sense, but rather the inter-related elements of waterfowl populations, their habitat, and the relationship with people who enjoy and actively support waterfowl conservation. The purpose of the NAWMP then is to sustain the ecological and social capacity required to protect, restore, and manage the investments in waterfowl conservation. Achieving the Plan goals requires identifying specific objectives for the ecological and social capacities and providing the means to reach them. In addition, strategies for integrating the work of conservation across objectives and a deliberate process of review and amendment are central to sustaining and continually improving the system of waterfowl conservation. Institutions and processes in support of waterfowl conservation will continue to be essential; however, these should also be evaluated periodically to ensure an effective and efficient system of management.

Population Objective: Maintain long-term average populations of breeding ducks [1955 to present in traditional survey area (TSA) and 1990 to present in eastern survey area (ESA)] and periodically, 40 million or more total breeding ducks (TSA).

Inter-related Objectives

- Waterfowl populations sufficient to meet desires of hunters and viewers
- Waterfowl populations that will vary annually with the dynamic nature of habitat capacity

Average breeding populations (thousands) of ducks over the long-term (LTA), the 1970s, and 1997-2013 (TSA) with a comparison to 2014 breeding population estimate

Traditional Survey Area

Average	Total Ducks	MALL	GADW	AMWI	GWTE	BWTE	NSHO	NOPI	REDH	CANV	Scaup
LTA, 1955-2013	34,458	7,673	1,889	2,588	2,034	4,888	2,468	4,017	691	580	5,033
2014 vs. LTA	+43%	+42%	+102%	+20%	+69%	+75%	+114%	-20%	+85%	+18%	-8%
1997-2013 avg.	39,508	8,694	3,023	2,497	2,786	6,476	3,821	3,043	932	652	3,926
1970s avg.	36,364	8,199	1,518	2,974	1,858	4,653	1,990	5,596	639	542	6,302
80th %ile of LTA	40,090	9,266	2,836	3,002	2,587	6,124	3,521	5,722	916	691	5,984

Species Composition

% of avg. total ducks (LTA)		22.3%	5.5%	7.5%	5.9%	14.2%	7.2%	11.7%	2.0%	1.7%	14.6%
% of avg. total ducks (1997-13)		22.0%	7.7%	6.3%	7.1%	16.4%	9.7%	7.7%	2.4%	1.7%	9.9%
% of avg. total ducks (1970s)		22.5%	4.2%	8.2%	5.1%	12.8%	5.5%	15.4%	1.8%	1.5%	17.3%

Eastern Survey Area

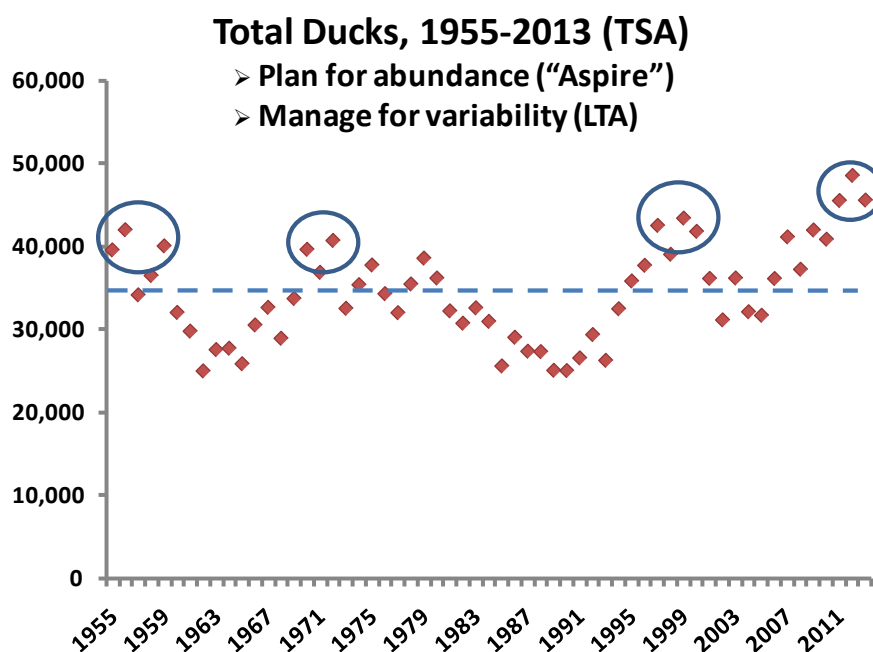
Average	Total Ducks	MALL	ABDU	GWTE	RNDU	Goldeneyes	Mergansers
1990-2013	2602	398	621	259	507	429	436
2014 vs. LTA	+2%	-12%	NC	+9%	+3%	+9%	+5%

Explanation: Average populations of many duck species over the long term are the results of periodic “boom” and “bust” conditions typical of wetland habitats, particularly in the U.S. and Canadian prairies. Variable environmental conditions, i.e., periods of drought versus abundant precipitation, account for breeding populations that have ranged from 25 to 49 million in the Midcontinent over the last 60 years. In light of the dynamic nature of waterfowl populations, both the long-term averages of individual species as well as periodic abundance in total numbers are recommended as dual objectives for duck populations. An objective of ≥ 40 million breeding ducks in about 20% of the years over the long term (essentially 80th percentile of LTA) represents an objective for duck populations that is truly aspirational for waterfowl management in light of current economic, environmental, and social pressures. For individual species, LTA abundance is aspirational for some, but already achieved by others. This objective is viewed as preliminary and should be revisited when new data are available from social science efforts currently underway. Further, a critical related task is for the waterfowl management community to define the role of harvest management in achieving population objectives.

A number of options were considered as alternatives for revised NAWMP population objectives. These included the draft objectives from the July 2013 work plan, which was the range of population levels during 1997-2012. In addition, retaining the 1970s benchmark or a contemporary “running average” was discussed. Relatively short-term periods as the basis for NAWMP objectives was generally not favored by the management community as input was received during July to March. The concern was that using one period vs. another lacked strong rationale. Using the long-term data available from survey efforts conducted for 60 years (TSA) was viewed as less arbitrary and ensured that the full range of environmental conditions affecting habitat was included. Retaining an aspirational tone in the objectives was viewed as important; thus, a dual objective of a long-term average population for each species

coupled with “peaks” in abundance of total ducks over the long term is recommended (long-term population estimates are comprised of both “peaks” as well as “troughs” in abundance, accounting for the “average”).

Despite a very favorable recent trend in habitat conditions, total ducks, and for a number of species populations, concern remains about the status of certain duck species (e.g., scaup and northern pintails) or species groups (e.g. sea ducks). Duck species composition during recent years has been different than over the long term or during the 1970s (basis for original NAWMP objectives). For example, although mallards have made up a similar proportion over time, numbers of gadwalls, green-winged teal, blue-winged teal, northern shovelers, redheads, and canvasbacks have recently exceeded 1970s levels (and the 80th percentile of the LTA), while in contrast, northern pintails, scaup, and American wigeon populations have been less abundant.



To date for the IIC, the primary emphasis has been on revisiting the original objectives of the 1986 NAWMP, which were based primarily on populations from the TSA. However, other regions (e.g., Eastern Survey Area - ESA), duck species (e.g., American black ducks, mottled ducks, whistling ducks, and wood ducks), other mallard stocks, and goose species/populations also require specific planning efforts if management perspectives vary from a long-term average. Duck breeding populations in areas outside the TSA, and especially outside of prairie habitats, experience less dramatic temporal fluctuations, reflecting somewhat more stable habitat conditions. However, periods of drought and extreme wetness characterize all naturally functioning wetland systems and are vital to maintaining ecological productivity. This variation should be recognized as management actions are employed for breeding duck populations in other regions, such as the Eastern Survey Area. In addition, changes in distributions of species across other landscapes during both breeding and nonbreeding periods (e.g., portions of the Great Lakes, Gulf Coast, East Coast, Central Valley of California, etc.) reflect possible ecological changes that should be acknowledged in both continental and regional conservation planning.

Work in Progress: Consistent with the Public Trust Doctrine, waterfowl population objectives should reflect societal desires and values. These values, however, have not been well-quantified and likely vary depending on the region and the scale at which populations are considered. For instance, desires for waterfowl abundance likely vary among different constituencies and political jurisdictions. Waterfowl

viewers may have a range of desires or values for waterfowl abundance; some viewers (e.g., avid birders) may place a high value on species that are rare, while others may value species that occur in large, spectacular concentrations (e.g., snow geese). Hunters likely value waterfowl populations at higher levels of abundance and broad distribution. We conclude that if continental waterfowl populations are managed to meet the desires/values of waterfowl hunters, the desires/values of viewers and the general public will also largely be met.

Objectives for waterfowl populations, however, as well as the underlying assumptions have not been well informed by contemporary social science methods. An objective for maximum harvest versus opportunities for hunters to “see ducks” likely would yield significantly different management objectives. Surveys presently proposed by the Human Dimensions Working Group will employ methods to help clarify objectives and management actions for NAWMP planning. This effort will represent the first continental planning effort that actively engages both a broad range of stakeholders as well as waterfowl management professionals in the process of informing and influencing objectives for wildlife management. In addition, this effort will assess stakeholder preferences regarding management actions (e.g., season lengths and bag limits, viewing opportunities).

In addition to uncertainties about stakeholder preferences and values, legitimate questions remain about the role of harvest management in achieving waterfowl population objectives. Although harvest management is generally accepted as having measurable effects on waterfowl populations, large-scale habitat and environmental conditions are believed to have a more important influence. Variation in habitat conditions operates at longer and more erratic temporal scales than the annual harvest regulations process, and managers have less control over large-scale habitat conditions than over annual harvests. The Joint Task Group (JTG) urged the community to consider coherence among objectives for populations and harvest. A revision in NAWMP population objectives (using the LTA) invites a resolution of how this population objective relates to the JTG model.

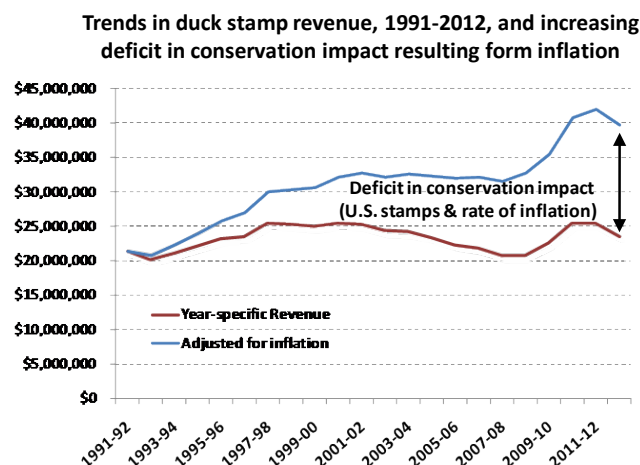
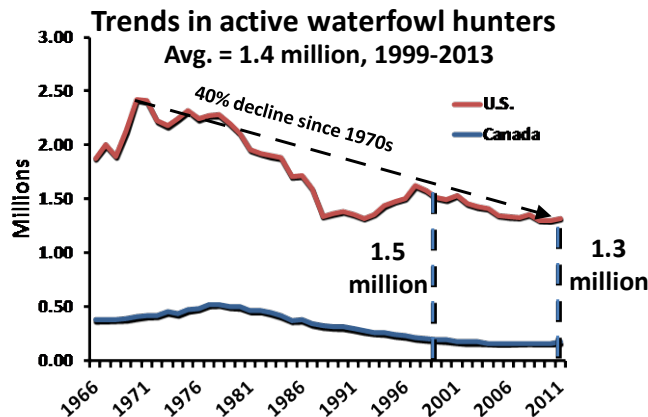
A common perspective from the waterfowl management community is that a NAWMP population “constraint,” currently included in the utility function for Midcontinent Mallard Adaptive Harvest Management (AHM), is unnecessary and largely redundant within an objective of maximum long-term harvest. Work is underway to revisit harvest management for Midcontinent Mallards (Mississippi and Central flyways) and for a harvest regime involving multiple species in the Atlantic Flyway. Both of these efforts are more than a year from completion; however, they need to directly address long-standing disagreements about harvest and population objectives and clarify the expected role of harvest management relative to achieving population objectives. To accomplish this, policy-level perspective and leadership will be required from the outset.

A number of modeling and assessment efforts also can provide key insights into management planning and inform future revisions of population objectives and management actions. Among these are modeling to assess the actual versus expected annual breeding populations across the range of habitat conditions (deficit vs. surplus), assessment of changes in waterfowl distribution during the nonbreeding period, further advancement of annual cycle models for key species (e.g., northern pintails, scaup, American black ducks), and modeling to inform highest priority landscapes for waterfowl conservation and waterfowl support. Existing and emerging work groups (e.g., NSST, HDWG, HMWG, flyways, etc.) have been and will continue to be the primary mechanism through which the actions proposed in the 2012 Plan are accomplished.

Supporter Objective: *Increase waterfowl conservation support among various constituencies to at least the levels experienced during the last two decades.*

Inter-related Objectives:

- Increase support for waterfowl conservation through involvement in the hunting tradition
 - Numbers of active hunters in the U.S. and Canada averaging 1.4 million (1999-2013 range = 1.3 to 1.5 million; period of Harvest Information Program, data collection in the U.S.)
- A North American citizenry who values and understands waterfowl/wetland conservation and takes action to demonstrate active support
 - Numbers of U.S. waterfowl viewers who travel a mile or more from home to view waterfowl averaging 14.4 million (range = 13.3 to 15.4 million, 1996-2011)
 - Numbers of U.S. waterfowl viewers who travel out of state to view waterfowl averaging 4.6 million (range = 4.2 and 5.1 million; similar data are needed for Canada.¹)
 - Increase revenue from the sale of Migratory Bird Hunting and Conservation Stamps (Duck Stamp) in the U.S. from the current average of ~\$23.5 million per year (likely to be considerable in light of the inflation-adjusted conservation impact of the \$15 stamp).
- Increase numbers of landowners participating in habitat conservation programs – implement actions to engage landowners in programs relevant to specific waterfowl landscapes (expanded in habitat objectives)



Explanation: Although the recommended objective for waterfowl populations reflects the entire period of record for available survey data, considerable changes in social systems, as elaborated in the 2012 Revision, justify a more contemporary period as a benchmark for supporter objectives. Available data for active waterfowl hunters (U.S.) has been acquired within a consistent sampling framework since 1999 (the Canadian protocol has been consistent for an even longer period of time); and outdoor recreation has been assessed with consistent survey questions in the U.S. since 1996. These practical data realities plus the substantial changes in the social landscape justify a fairly recent period of reference for supporter objectives (i.e., the last 20 years). Traditional (waterfowl hunter-conservationists) and nontraditional support (waterfowl conservationists) will be essential to sustain the system of waterfowl conservation. A high turnover rate among these segments and an aging base of support are sources of concern and uncertainty.

Landowners are critical partners in determining whether specific habitat management actions can effectively be applied on private lands. Thus, engaging landowners as a distinct group of supporters can have significant benefits. Demonstrating and communicating the ecological-services value of waterfowl landscapes to society presents a means to further advance waterfowl and wetlands conservation. A recent

¹ We will be reviewing the recent “2012 Canadian Nature Survey” report to determine if there is any appropriate metric already included in that survey that could serve the purpose of tracking viewers in Canada.

example from Manitoba (Broughten Creek) illustrates the value of linking watershed condition to water quality and subsequently, policy change.²

Work in Progress: Draft objectives regarding supporters from the July 2013 work plan received mostly positive response. Information already available resulting from the waterfowl hunter recruitment strategy provides a strong social-science basis for developing supporter objectives. Draft objectives offered here provide a way to maintain momentum in 2012 NAWMP implementation, however, this should not be viewed as reducing the value of new information to reassess objectives in the near future.

Notable advances resulting from the 2012 Plan include the formalization of the Human Dimensions Working Group (HDWG) and the Public Engagement Team (PET). Any set of objectives represents a subjective reflection of values, and to date, these have been largely assumed. A rigorous social science survey (using discrete choice methods) under development by the HDWG will be central to informing future revisions of NAWMP objectives. In addition, explicit connections between the supporter objectives and the social science-based models developed during the Waterfowl Hunter Recruitment and Retention Strategy related to decisions, identity, and capacity will provide hypotheses about supporter engagement. Using the alternative models from the HDWG efforts, a PET communication strategy will provide a framework for implementing communications designed to increase waterfowl supporter engagement.

Habitat Objective: *Conserve a system with capacity to maintain long-term average waterfowl population levels, that periodically supports 40 million or more breeding ducks, and consistently supports resource users at objective levels.*

Inter-related Objectives:

- Habitat sufficient to sustain waterfowl populations and produce periodic peaks in abundance
- Habitat to address priority drivers of hunter recruitment and retention
- Habitat to maintain and recruit waterfowl viewers
- Habitat to demonstrate to society, the ecological values and services provided by waterfowl landscapes

Explanation: Unlike objectives for waterfowl populations and supporters, which can be expressed in large-scale or even continental terms, quantitative objectives for waterfowl habitat are largely unique to a specific landscape. Certainly broad goals, such as “no net loss” capture the intent of habitat conservation, but the actions that account for waterfowl habitat delivery are most relevant at local and regional scales. Habitat protection, restoration, and management strategies are specific to each landscape because the actions that affect waterfowl status (reproduction, survival, movement, body condition) and supporters (access, crowding, opportunity) are as unique as the landscapes involved. Thus, each nation, flyway, joint venture, state, and conservation area will require conservation planning unique to their location and nature of use. With the presence of NAWMP Joint Ventures throughout the United States, much of Canada, and parts of Mexico, each with a history of conservation planning, the waterfowl community is well-positioned to achieve this. In each, the impact of ecological, biological, and social management actions will be “rolled up” to ultimately influence the continental status of both waterfowl populations and waterfowl support. This is consistent with how NAWMP habitat strategic planning has operated since the late 1980’s.

² http://www.gov.mb.ca/waterstewardship/iwmp/willow_creek/documentation/ducks.pdf

Work in Progress:

Habitat to support waterfowl abundance: Dynamic environmental conditions account for the dramatic flux in duck numbers, and the corresponding habitat dynamics should be viewed as an essential feature of productive waterfowl landscapes. Periodic drought and subsequent wetland recovery should be expected. Conservation planning should strive to maintain the landscape features that produce periodic duck abundance. These conditions will not be the same across landscapes nor will they occur with the same frequency or timing. Likewise, the management actions required to protect, restore, or enhance landscape features will be different from one region to another. As a result, waterfowl managers across these landscapes will need to assess the regionally relevant threats, opportunities, and management actions necessary to ensure that habitats remain in the condition needed to produce waterfowl abundance when environmental conditions allow. This work is already underway in many Joint Ventures as part of their normal planning cycles, and will continue.

Habitat to support resource users: Habitat management strategies can be employed to maintain support from existing traditional and nontraditional constituencies. Just as waterfowl landscapes are unique, varying in the role they play with regard to key vital rates affecting waterfowl abundance, managers should expect social landscapes to be unique as well. “One size does not fit all” with respect to waterfowl supporters. Thus, the need to develop long-term strategies for both waterfowl landscapes and waterfowl supporters should serve as an invitation to collaborate to craft strategies, measurable attributes, and evaluative processes. This more explicit consideration of human objectives is just getting underway in a subset of Joint Ventures and it will be important for the NAWMP Committee and its related technical bodies to support those efforts in the years ahead.

Integrating Objectives for Waterfowl Populations, Supporters, and Habitat

A basic premise from the 2012 NAWMP is that effective integration among conservation programs and partners will occur at the scale at which decisions are made and management actions implemented. This has occurred organically throughout the history of the NAWMP and even more so since the 2012 revision of the Plan. The 2012 NAWMP Revision accepted that successful management of waterfowl populations, conservation of waterfowl habitat, and engagement of waterfowl users and supporters are inseparably linked components of waterfowl conservation. To manage most effectively and responsively, a management system that embraces these interrelationships will need to be employed. Such a coherent system will help focus on things that matter most for efficient achievement of all NAWMP goals. Such a coherent system will set a shining, contemporary example of the North American Model of Wildlife Conservation in action and will help focus on things that matter most for efficient achievement of all NAWMP goals.

The IIC and an ad hoc integration group have been considering a framework for greater technical integration and made considerable progress in thinking about how to link objectives and decision processes for populations, harvest, habitat, and people at certain key cross-cutting decision points and scales. This framework was discussed briefly with the Plan Committee at their meeting in April, 2014 and will be developed in greater detail before the September meeting in Halifax. The framework will demonstrate how considerable integration is possible even in the absence of a grand over-arching and comprehensive decision model. At present, with the exception of the IIC, no group has responsibility for progress toward integration, and this remains a need if waterfowl management is to become a more formally integrated system of managing and conserving waterfowl for the future.