



# Revised Objectives

## An Addendum to the 2012 North American Waterfowl Management Plan

September 2014



*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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The North American Waterfowl Management Plan (NAWMP or Plan) Committee (PC) acknowledges the considerable effort during the last year by the waterfowl management community to revisit the objectives upon which the 1986 Plan was based. The result is this addendum to the 2012 NAWMP Revision, which outlines revised objectives for waterfowl conservation planning over the next few years.

Developing, revising, or reaffirming NAWMP objectives was one of seven recommendations offered in the 2012 NAWMP Revision and further defined in the NAWMP Action Plan. Much work remains to address the other six recommendations. Work already underway in this regard will soon be summarized in a more inclusive progress narrative that will be posted at <http://www.nawmprevision.org/>.

The PC invites waterfowl managers to engage in the critical next steps towards implementing the 2012 NAWMP Revision. Among these are efforts to: participate in the survey of waterfowl stakeholders to assess values, “step-down” revised population objectives to various landscapes, seek to understand and apply human dimensions knowledge and tools, refine focus on priority waterfowl landscapes, and other important tasks ahead.

We acknowledge the complexity involved in the task of integrating across the revised objectives – especially now with the greater emphasis on supporters. Undoubtedly, this complexity is greater than the authors of the 2012 NAWMP Revision likely envisioned. However, the challenge to maintain the momentum of Plan implementation is one that we are confident can be addressed with the same innovation and enthusiasm typical of waterfowl managers over many decades.

In a short time, within just two to three years, it will be time to again consider updating the NAWMP. Please join us in making as much progress as possible to inform the next update with new management insights.

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*September 2014*



## ***Revised Objectives: An Addendum to the 2012 North American Waterfowl Management Plan***

The recommendation outlined in the 2012 Revision of the North American Waterfowl Management Plan (NAWMP or Plan) to “Develop, revise or reaffirm NAWMP objectives so that all facets of North American waterfowl management share a common benchmark” presented a timely challenge for the waterfowl management community. Work throughout 2013-14 has led to this document, an addendum to the Plan, which outlines revised objectives for waterfowl populations, waterfowl habitat, and those who enjoy and actively support waterfowl and wetlands conservation. These revised objectives should guide waterfowl management as the Plan continues to evolve and as new information is acquired about supporters’ values, habitat conservation is focused, and harvest management perspectives are assessed.

The 2012 Revision of the North American Waterfowl Management Plan (NAWMP or Plan) represents a significant maturity in waterfowl conservation planning. The Plan 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 challenge now is to maintain the momentum of Plan implementation, despite complexity that is greater than the authors of the 2012 revision likely envisioned. 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, the NAWMP Committee maintains an ongoing commitment to review and amendment as new insights emerge.

Common objectives are the necessary first step in ensuring that management programs are aligned and work in a complementary fashion. They are, however, only the first step. More than 30 key actions were laid out in the NAWMP Action Plan, and an integrated waterfowl management system will require that the revised objectives outlined here are linked through these management actions at various scales (e.g., continental, regional, and local) to achieve fundamental goals of the Plan. This is a highly complex challenge, and the waterfowl management community has come to realize that integration of objectives and management actions will occur at a few key decision linkages at certain vital spatial and temporal scales.

### ***NAWMP Goal for Waterfowl Populations: Abundant and resilient waterfowl populations to support hunting and other uses without imperiling habitat.***

Average populations of many duck species over the long term are the result 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 (Traditional Survey Area – TSA) over the last 60 years.

In light of the dynamic nature of waterfowl populations, both the long-term averages (LTA) of individual species as well as periodic abundance in total numbers serve as dual objectives for duck populations. For the TSA, an objective of 40 million or more breeding ducks in about 20% of the years over the long term (i.e., 80<sup>th</sup> percentile of LTA) represents an objective for breeding duck populations that is truly aspirational for waterfowl management in light of current economic, environmental, and social pressures. Similarly, for the Eastern Survey Area (ESA), breeding populations exceeding 2.7 million reflect periodic abundance for eastern U.S. and Canada. For individual species, LTA abundance is aspirational for some, but already achieved by others. Revisions outlined here are viewed as “working objectives” and should be revisited when new data are available from social, biological, and ecological science efforts currently underway.

**Revised Objective:** Maintain long-term average populations of breeding ducks [1955 to 2014 in traditional survey area (TSA) and 1990 to 2014 in eastern survey area (ESA)] and periodically, 40 million or more total breeding ducks and 2.7 million<sup>1</sup> or more breeding ducks in the TSA and ESA, respectively.

**Average breeding populations (thousands) of ducks over the long-term (LTA) in the Traditional Survey Area (TSA, 1955-2014) and the Eastern Survey Area (ESA, 1990-2014) and duck species composition over the long-term, during the 1970s, and 1997-2014<sup>2</sup>.**

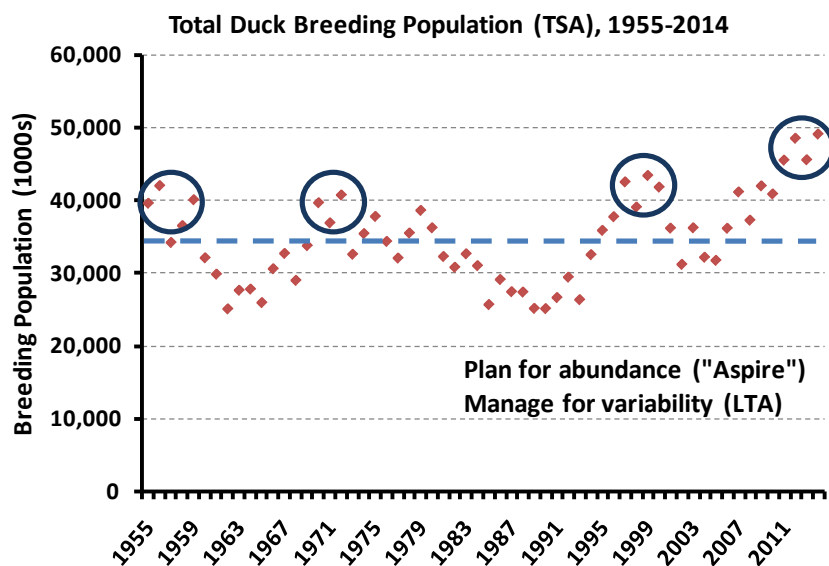
Species / species group	Long-term average	80th percentile of the LTA	Average during 1970s	Percent of average total ducks		
				1955-2014	1970s	1997-2014
<b>TSA (1955-2014)</b>						
Mallard	7,726	9,297	8,199	22.3%	22.5%	22.0%
Gadwall	1,921	2,977	1,518	5.5%	4.2%	7.7%
American Wigeon	2,596	3,048	2,974	7.5%	8.2%	6.3%
Green-winged Teal	2,059	2,631	1,858	5.9%	5.1%	7.1%
Blue-winged Teal	4,949	6,329	4,653	14.3%	12.8%	16.5%
Northern shoveler	2,515	3,592	1,990	7.2%	5.5%	9.7%
Northern Pintail	4,003	5,722	5,596	11.5%	15.4%	7.6%
Redhead	701	918	639	2.0%	1.8%	2.4%
Canvasback	581	691	542	1.7%	1.5%	1.6%
Scaup	5,026	5,984	6,302	14.5%	17.3%	9.9%
Total Breeding Ducks (TSA)	34,703	40,748	36,364			
<b>ESA (1990-2014)</b>						
Mallard	409	426				
American Black Duck	628	648				
Green-winged Teal	263	281				
Ring-necked Duck	515	529				
Goldeneyes	433	449				
Mergansers	436	462				
Total Breeding Ducks (ESA)	2,685	2,783				



**Explanation:** A number of options were considered as alternatives for revised NAWMP population objectives. These included 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 were generally not favored by the management community. The concern was that using one period versus another lacked strong rationale. Using the long-term data available from survey efforts (60 years for TSA and 25 years for ESA) 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, the dual objective of a long-term average population for each species coupled with “peaks” in abundance of total ducks over the long term (long-term averages include both “peaks” and “troughs” in abundance, accounting for the “average”).

<sup>1</sup>The estimate for total ducks includes only the 6 species/species groups reported in the annual waterfowl status report for the Eastern Survey Area. Population objectives for other species / species groups (e.g., wood ducks, sea ducks, etc.) will be based on other survey data or methods.

<sup>2</sup>Inclusion of species composition does not imply a duck population objective; instead, it is included to characterize different trends in population status among species over time.



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 80<sup>th</sup> percentile of the LTA), while in contrast, northern pintails, scaup, and American wigeon populations have been less abundant.

Although the initial emphasis was on revisiting the original objectives of the 1986 NAWMP, which were based primarily on populations from the TSA, other regions (e.g., ESA), duck species (e.g., wood ducks, mottled ducks, and several sea duck species), other mallard stocks, and goose species/populations also require specific planning efforts if management perspectives vary from a long-term average<sup>3</sup>. 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 to affect duck populations among all regions and throughout the annual cycle. 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 remaining:** 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

<sup>3</sup> Objectives for duck and goose species and populations not listed in this table are found in Tables 1, 2, and 3 of the “NAWMP 2012: People Conserving Waterfowl and Wetlands,” pp. 37-40. Future updates should be considered by species and population work groups and associated conservation agencies.

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 management professionals in the process of informing and influencing objectives for waterfowl 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. A critical task is for the waterfowl management community to define the role of harvest management in achieving 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<sup>4</sup>. A revision to NAWMP population objectives (using the LTA) invites a resolution of how population objectives relate 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 (Atlantic Flyway). These initiatives address long-standing disagreements about harvest and population objectives and clarify the expected role of harvest management relative to achieving population objectives.

***NAWMP Goal for Waterfowl Supporters: Growing numbers of waterfowl hunters, other conservationists and citizens who enjoy and actively support waterfowl and wetlands conservation.***

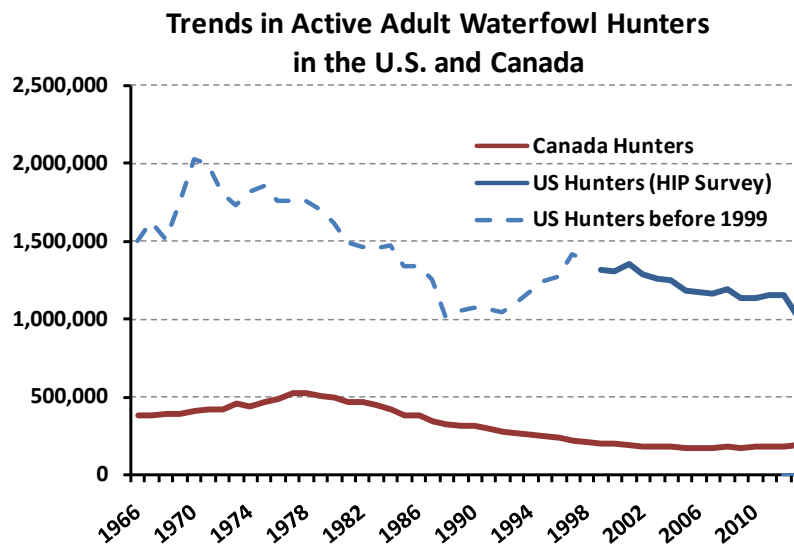
Traditional (waterfowl hunter-conservationists) and nontraditional support (waterfowl conservationists who do not hunt) both will be essential to sustain the system of waterfowl conservation. Integrating management actions that balance objectives for waterfowl populations versus waterfowl supporters from various groups represents a key future challenge for waterfowl management. A number of concerns and uncertainties must be addressed as management actions are employed to maintain and increase waterfowl support and the relevance of waterfowl management. A shift from rural to urban residence, high turnover rate among user segments, and an aging base of support are key sources of concern. Undoubtedly, different engagement strategies will be required in different regions of the continent depending on regional demographics, hunting traditions, perspectives about wetlands and waterfowl, and other social characteristics. In combination, these should yield an increase in active support for waterfowl and wetlands conservation.

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<sup>4</sup>[http://nawmprevision.org/sites/default/files/jtg\\_final\\_report.pdf](http://nawmprevision.org/sites/default/files/jtg_final_report.pdf)

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

- Increase support for waterfowl conservation through involvement in the hunting tradition
  - Numbers of active hunters in the U.S. averaged 1.2 million during 1999-2013 (range = 1.12 to 1.35 million during the period of Harvest Information Program data collection in the U.S.).
  - Numbers of active hunters in Canada averaged 178,000 during 1999-2013 (range=167,000 to 200,000).
- Increase support from 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 traveled a mile or more from home to view waterfowl averaged 14.4 million during 1996 to 2011 (range = 13.3 to 15.4 million).
  - Numbers of U.S. waterfowl viewers who traveled out of state to view waterfowl averaged 4.6 million during 1996 to 2011 (range = 4.2 and 5.1 million).
  - Birders in Canada numbered 4.7 million (18% of the population<sup>5</sup>).
  - The sale of Migratory Bird Hunting and Conservation Stamps (Duck Stamps) in the U.S. averaged ~ 1.6 million during 1999 with annual average revenue of ~ \$23.5 million.
  - The sale of Migratory Game Bird Hunting Permits in Canada averaged ~178,000 with annual revenue of ~\$3.2 million.
- Increase numbers of landowners participating in habitat conservation programs – implement actions to engage landowners in programs relevant to specific waterfowl landscapes.



**Explanation:** Although the 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 substantial changes in the social landscape as well as practical data realities justify a fairly recent period of reference for supporter objectives (i.e., the last 20 years).

<sup>5</sup>Federal, Provincial, and Territorial Governments of Canada 2014. [www.biodivcanada.ca](http://www.biodivcanada.ca)



Long-term measures of waterfowl support outside of hunter numbers are not readily available. The sale of Migratory Bird Hunting and Conservation Stamps, however, is a tangible reflection of support for waterfowl conservation, which can increase through greater numbers sold (both hunters and supporters who do not hunt), an increase in stamp price, or both.

Achieving the overall NAWMP goal related to a growing number of waterfowl supporters will likely be through a combination of engagement strategies that will differ among countries and delivered at much smaller scales.

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. Communicating the ecological-services value provided by waterfowl landscapes presents a means to further advance waterfowl and wetlands conservation. A recent example from Manitoba (Broughton's Creek) illustrates the value of linking watershed condition to water quality and subsequently, policy change.<sup>6</sup>

**Work Remaining:** Information already available resulting from draft Waterfowl Hunter Recruitment and Retention Strategy (HRR draft, 2008) provides a strong social-science basis for developing supporter objectives. Revised objectives offered in this addendum 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, which to date, 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 HRR Strategy related to decisions, identity, and capacity will provide hypotheses about supporter engagement. Using the alternative models from the HDWG efforts, a PET public engagement strategy will provide a framework for increasing support for waterfowl conservation.

***NAWMP Goal for Waterfowl Habitat: Wetlands and related habitats sufficient to sustain waterfowl populations at desired levels, while providing places to recreate and ecological services that benefit society.***

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 specific landscapes. 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 landscape-specific because the actions that affect waterfowl status (reproduction, survival, movement, body condition) and supporters (access, crowding, opportunity) are determined by the landscapes involved. Thus, each nation, flyway, joint venture, state, and conservation area will require conservation planning specific to their location and stakeholders. 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 1980s.

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<sup>6</sup>[http://www.gov.mb.ca/waterstewardship/iwmp/willow\\_creek/documentation/ducks.pdf](http://www.gov.mb.ca/waterstewardship/iwmp/willow_creek/documentation/ducks.pdf)



***Revised Objective:*** *Conserve a habitat system with the capacity to maintain long-term average waterfowl population levels, to periodically support abundant populations<sup>7</sup>, and to consistently support resource users at objective levels.*

**Explanation:** 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. The management actions required to protect, restore, or enhance landscape features will be different from one region to another.

Habitat management strategies can be employed to maintain support from existing traditional and nontraditional constituencies. Just as waterfowl landscapes are unique, varying in their influence on 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 on management actions, measurable attributes, and evaluative processes.

**Work Remaining:** 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 in progress in many Joint Ventures as part of their normal planning cycles and will continue. Likewise, 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***

With revised objectives in place, it is now time for the waterfowl community to turn attention to integrating management actions. This will involve the elaboration and adoption of linked decision processes and a commitment to the monitoring and assessment capacity needed to better inform those decisions. Throughout the process of implementation, clearly articulating the objectives, assumptions and uncertainties, alternative management actions, and continually adhering to this deliberate process of adaptive management will help ensure the effective development of integrated waterfowl management.

Effective integration among conservation programs and partners will most effectively 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. The Plan articulated how successful management of waterfowl populations, conservation of waterfowl habitat, and engagement of waterfowl users and supporters are inseparably linked components of waterfowl conservation. A management system that embraces these interrelationships will need to be employed.

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. “System” should not be viewed simply in an administrative sense, but rather as 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

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<sup>7</sup> 40 million or more breeding ducks in the TSA and 2.7 million or more in the ESA

the Plan goals will require integrating the 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. Such a coherent system will help focus on things that matter most for efficient achievement of all NAWMP goals. This 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.