

## **Implementing the 2012 NAWMP: An invitation for input from the waterfowl management Community (comments and editorial suggestions from Greg Soulliere)**

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The three highest recorded breeding duck population estimates in the Traditional Survey Area (TSA) occurred during the last three years(2011-2013) and populations of several goose and swan populations have reached or exceeded species-specific population management plans established by Flyway Councils. However, the waterfowl management community must not be lulled into thinking that the threats to future populations are not present and likely more prevalent than ever. Wet breeding ground conditions belie the known deterioration of breeding waterfowl habitat due to wetland drainage and grassland loss. In other landscapes, emerging impacts to the once pristine boreal forest, water challenges in the south and west, and continued Gulf Coast marsh loss are examples of impacts that likely will affect ducks and geese and waterfowlers as well.

The NAWMP has served as a model of conservation planning and implementation for more than 25 years. The evolution of the plan has involved increasing the range of partnerships, expansion well beyond waterfowl, strengthening the biological foundation, and in the current iteration, deliberately integrating the elements of birds, habitat, and supporters. In each instance, the management community has been challenged with new views about how to achieve waterfowl conservation goals. The 2012 revision is no different in that explicit integration of waterfowl hunters and other waterfowl enthusiasts into management planning is a stretch beyond our traditional framework. However, without this increased focus, the relevance and long-term sustainability of waterfowl conservation will undoubtedly erode.

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#### **Straw-man Objectives for Waterfowl Populations**

**NAWMP Goal:** Abundant and resilient waterfowl populations to support hunting and other uses

**Premise:** Recent populations of most waterfowl species have been at desired levels.

**Draft Objective:** Duck populations within the range estimated during 1997-2012 (10 species reported from the Traditional Survey Area, see table below) and goose and swan numbers reflecting ranges defined in contemporary species-specific (flyway) management plans.

**Explanation:** Largely stable and liberal harvest opportunities occurred during 1997-2012, a period of fluctuating habitat conditions and populations. The upper bounds of this contemporary range of population estimates reflect the capacity of the landscape to support waterfowl under favorable environmental conditions – although in large measure, this was due to above average precipitation and associated wetland abundance in primary breeding areas rather than secure and dependable habitat status. The lower bound could be viewed as a minimum level for satisfying current human recreational desires and a threshold for triggering heightened conservation attention. Maintaining populations within this recent range will require favorable policy affecting waterfowl landscapes and continued direct conservation delivery by waterfowl partners. Substantial hunting and viewing opportunities, which contemporary hunters and viewers likely have come to expect, should not be expected to continue based on favorable environmental conditions alone.

#### **Desired Outcomes:**

1. Waterfowl populations at biologically sustainable levels

2. Waterfowl populations sufficiently abundant and generally distributed to maximize use and enjoyment by current and future citizens.

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##### **Assumptions:**

1. Populations of waterfowl contribute to the feedback loop between hunters, viewers, and conservation support.
2. Habitat extent and quality (carrying capacity) can be maintained, given the caveat that we have no control over the weather.
3. Based on experience with managing duck populations in the 1997-2012 range and under associated liberal harvest regulations, a less risk-averse harvest management philosophy could be considered. Liberal hunting regulations and associated hunting and viewing opportunity have occurred since 1997 during a range of habitat conditions and population levels.
4. Duck population objectives should be reviewed more often than in the past and be adjusted based on increased knowledge and changing priorities (e.g., similar to flyway goose population plans). This would entail an adaptive decision framework to include periodic reassessment of objectives (“double looping”), based on landscape change and on human desires (harvest management).
5. Technical capacity is sufficient for assessment and management actions are sufficient to respond to system change.
6. Although accuracy has been questioned (i.e., HAPET ground-based density estimates vs. BPOP aerial survey-based estimates), results of the spring FWS-coordinated BPOP survey has adequate precision to track priority mid-continent duck populations.

##### **Key questions:**

1. Should objectives more explicitly address populations with increasing versus declining trends?
2. What should the anchor point be for the lower threshold (somewhere above biological sustainability)?
3. To what degree does harvest management serve to achieve population and people objectives?
4. Can distributions of non-breeding waterfowl be influenced by habitat management at the regional or continental scale?
5. Do/can mid-continent duck population trends (from TSA; primary regulatory driver) and associated U.S. regulations adequately represent regional environmental and social conditions outside the middle part of the continent (Atlantic Flyway, Great Lakes region; hunters/viewers of wood ducks, black ducks, Eastern/Great Lakes mallards, temperate nesting Canada geese, etc.)

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**Premise:** The current number and demographic (e.g., age distribution) trends of waterfowl hunters will not sustain waterfowling traditions in much of North America, and overall public support for conservation is insufficient to sustain current waterfowl habitat and populations. Support from hunters and non-hunters alike will be needed to achieve NAWMP objectives.

**Draft Objective:** Active waterfowl hunter numbers (as measured by federal surveys) that are stable or increasing from average levels during 1997-2012 (corresponds to period used to benchmark range of duck/goose population objectives).

**Explanation:** As we consider the “roll-up” of state-specific and province-specific hunter number objectives to a continental objective, states/provinces with declining numbers may want to set their objective higher than current levels, while states/provinces with stable or increasing numbers may want to use the current level as objective. “Active waterfowl hunter” numbers is a relevant attribute (at least at a regional scale) and is currently available on an annual basis. However, additional, less frequently measured attributes will be needed to help assess the status of hunting traditions (e.g., hunter identity, social capacity, support for conservation, etc.).

**Draft Objective:** Stable or increasing numbers of waterfowl viewers, based on the range measured by the USFWS National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (possibly augmented with measures of visitation to refuges).

**Explanation:** Participation measures and an approach similar to hunter numbers could be used. Issues of sample sizes for future surveys need to be addressed in order to derive state-specific measures. Similar survey data for Canada need to be acquired.

**Draft Objective:** Increasing ( X %) federal duck stamp revenue (from 1997-2012 average - assuming that new programs encourage or require duck stamp purchases for non-consumptive uses). Increase and maintain funding for NAWCA, Conservation Title of the Farm Bill, LWCF, and other waterfowl conservation funding ( X levels by the year X ).

**Explanation:** Measures of broad support for waterfowl conservation (beyond waterfowl hunters) are not readily available; however, duck stamp sales might serve as a near-term surrogate measure. Improved reliability, however, at the scale where management actions are taking place (e.g., state) is needed. This measure may be combined with measures of membership and direct support for conservation organizations to create an overall index of waterfowl conservation support. The sale of duck stamps, a surrogate for a more direct measure of financial capital, should be complemented by other measures of support for conservation reflecting financial, social, and political capital. (*Note:* Conservation revenues from supporters require a 2-3% annual increase to simply retain stable program spending power, when considering inflation.)

**Draft Objective:** Increased (from some baseline level) nonmarket valuation of EGS (water quality, quantity, flood control, etc.) of waterfowl habitats and increased recognition by the general public that conservation of waterfowl and their habitats supports important EGS.

**Explanation:** Measured from surveys conducted at scales where public education / marketing / engagement programs are being implemented (e.g., urban refuge initiative developing standards of excellence for engagement on urban refuges that are supposed to be SMART, based on logic models). Measures and monitoring tools for this group may need to be developed and/or expanded.

**Draft Objective:** Increased numbers of landowners who are participating in habitat conservation programs – measured at a JV region or more local scale in relation to different approaches.

**Assumptions:**

1. Maintaining waterfowl hunting “traditions” (and relation to the North American Model of Wildlife Conservation) is a fundamental objective (i.e., of value in and of itself).
2. Consumptive and non-consumptive uses are also “means objectives” to engender support for conservation, which is necessary to accomplish habitat objectives and which in turn, are essential for accomplishing waterfowl population objectives.
3. Harvest can have direct impacts on waterfowl population sizes for key species and habitat conservation can have direct impacts on people objectives by providing access and opportunities for hunting and viewing. These linkages need to be considered in developing all NAWMP objectives and measurable attributes.
4. Participation and traditions of waterfowl hunting are declining continentally, despite relatively high mid-continent waterfowl populations and liberal hunting regulations, and nonconsumptive uses may also be declining as well. While waterfowl managers may have little control over these trends, more efforts (including new, innovative ideas) need to be tried and evaluated in an informed management framework.
5. Management actions and scales of monitoring will be different for different user groups. Attributes for this goal, which can be measured with adequate precision at spatial scales where management actions occur, will be needed. Most management actions for user objectives will likely occur at the state/province level (or more local), and effective management actions will likely differ among states/provinces. Measures from local and regional scales can be rolled up to assess continental-level objectives.

**Key questions:**

1. Although large-scale institutions already exist for managing waterfowl population and habitat programs, no over-arching group exists to help coordinate people-related models, management actions, and monitoring. What is the scale of waterfowl-related users and people-related objectives that should be implemented?
2. States/provinces, some federal programs, and NGOs have a large number of independent programs aimed at people objectives (hunter recruitment programs, public engagement programs, etc.). To what degree will flyways and joint ventures engage in implementing coordinated management actions and monitoring related to people objectives?
3. Is current rule complexity too great to effectively recruit (e.g., via marketing) new hunters? Remember, if unnecessary rules (i.e., insignificant to sustaining populations at desired levels) and difficult to understand regulations overly burden novice (and potential) hunters, many other less costly forms of recreation are available. Also, should veteran and vocal hunters (i.e., those readily answering surveys and attending stakeholder forums) be the focus with rule development or should novice and potential recruits be the more important consideration? (i.e., the ardent hunters will likely still participate with any reasonable rules package, whereas the novice/potential hunters may need extra consideration and simplification).

**Straw-man Objectives for Waterfowl Habitat**

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

**Premise:** Waterfowl habitat – while sufficient today in many areas and for many species – is not secure and is being lost at a rate unsustainable for current waterfowl populations and to maintain landscape ecological functions important to society.

**Draft Objective:** Re-assess habitat objectives and recommend actions consistent at national and

regional/local scales with revised NAWMP population and people objectives.

**Explanation:** Stepping down new population objectives will not be a trivial matter, and although greatly facilitated by existing protocols will be significantly challenged by trends in land use,

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landscape change, and habitat quality. Sustaining habitat carrying capacity for continental waterfowl populations is

challenging enough without adding the explicit goals for satisfying regional people objectives.

However, for waterfowl conservation to be broadly relevant, the needs of human users/supporters, all birds, and strategic consideration of non-wildlife elements (e.g., ecological goods and services) will likely need to be considered. We will be challenged, as noted in the NAWMP Assessment, to find a way to estimate net habitat change at least in our most important waterfowl landscapes. Likewise, we need to recognize the logical linkage between habitat carrying capacity and waterfowl populations (acknowledging the impact of recent favorable weather/environmental conditions) if we expect to succeed in maintaining the recent range of breeding populations that we assume are needed to satisfy human desires and trust responsibilities.

To date, most JV partnerships have stepped down population objectives with only some regard to human considerations beyond human factors directly impacting habitat delivery. Integration of population and human objectives raise a number of considerations beyond the traditional mission of habitat delivery (most are listed below). Habitat conservation partnerships (largely through the Joint Ventures) have only begun to consider the implications of human objectives on JV mission and vice versa. Depending on the target audience(s), the challenge to habitat conservation varies from minimal (they already employ human dimensions considerations for habitat delivery) to very challenging (e.g., the role of habitat placement in maintaining hunter recruitment). Relative to human objectives there are many considerations related to the role of habitat in supporting these new objectives.

### **Assumptions:**

1. Objectives for waterfowl populations and waterfowl users/supporters will primarily be accomplished through habitat conservation delivery.
2. There is a relationship between habitat conservation delivery and habitat conservation support among various audiences.
3. Principle audiences will vary across landscapes (e.g., San Francisco Bay JV region versus Prairie Pothole JV region) and within landscape boundaries (sparsely populated versus metropolitan portions of JV regions).
4. Objectives for hunters, viewers and supporters will necessitate different habitat management approaches for each audience and in each landscape.
5. Support from the general public will involve habitat management for objectives beyond traditional foci of waterfowl habitat and waterfowl hunters (e.g., ecological goods and services).
6. Effective hunter recruitment and retention will require approaches and expertise from outside the waterfowl management community (e.g., HD, marketing expertise).