

On the Flight Home from Denver
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Mike Anderson

Some musings after a week of talking about NAWMP objectives and related items with waterfowl managers at the North American conference:

Given: 1) The desires expressed for objectives that address all three of the common purposes of objectives, i.e. inspiration, planning targets and performance measures; 2) The difficulty of accommodating those desires with a single objective at the continental scale; 3) The desire for coherent, integrated objectives; and 4) The existence of proponents for both average BPOP values and BPOP ranges for population objectives.....

I wonder if a workable option might be to adopt multiple expressions of objectives for populations, habitat and people that are logically consistent and interrelated, without necessarily being portrayed in identical terms. And to recognize that Plan objectives of greatest value may need to be developed at various scales for various purposes and metrics.

Before diving into the details, let me say that I think I understand, and have a growing affinity for the idea that serving the public good in a sustainable manner provides a rationale for the primacy of the HD goal in the 2012 Plan. Having said that; however, I'm intimidated by the thought of resolving, in anything less than several years, a working utility function for human satisfaction that incorporates all the key elements connecting to population, harvest and habitat objectives AND in the process somehow reconciles (weighs, averages, or ???) the wide geographic diversity (social & ecological) of human interests (diverse stakeholders, states, countries, breeding vs. wintering, etc.). I think that quest might well describe some of the top-priority work of the HDWG for the next decade, but I have been unable to see how modeling in those terms NOW can get us to a better set of objectives anytime soon that would help elucidate all three NAWMP goals. Perhaps there would be value in trying to rapid-prototype these relationships now, but it seems to me that with our current state of knowledge, in the near term choice of objectives will inevitably come down to a judgment call by some knowledgeable group.

So, back to wondering if a workable option to move us forward might be to adopt multiple expressions of objectives for populations, habitat and people that are logically consistent and interrelated.

For instance, might we choose:

As an inspirational objective, and for purposes of existing harvest management --

Mean BPOP objectives from some period of time that represents, overall, adequate waterfowl population sizes to satisfy current perceived demands of hunters and other users. Admittedly, that is much like what the original NAWMP planners did in 1986. I would advocate; however, that this should be a more recent time period than the 1970s to account for more contemporary system dynamics. Until someone comes up with a more logical recent period than 1997-2012 (consistent harvest policy in the U.S. mid-continent, a liberalizing trend in Canada, and wide range of wetness on the mid-continent breeding grounds) I will stick with that as an example.

Such an objective could be couched in terms of total ducks, individual species populations as today, species guilds, or any other combination of species/populations that the waterfowl community

chooses as their focus. Moreover, we could choose to identify a few species of “special concern” and manage those populations toward different objectives, tied to a different time period, if we have strong *a priori* reasons to do so. Northern pintails or black ducks may be examples of species where we might consider doing that. Geese, swans, Eastern ducks and sea ducks could be dealt with as per the 2004 Update and subsequent Flyway management plans.

For habitat planning purposes --

Use the upper bound of the same recent range of BPOP sizes to step down regional population and therefore habitat objectives for the Joint Ventures. This would, in effect, become the link to desired large-scale carrying capacity. Using this upper bound would generate very risk-averse and ambitious habitat objectives that may not be attainable for many of the JVs over the long term, but it would provide them with stretch targets in the short term (perhaps, say, the next 10 years), which most of the JVs seem to desire. Even for those JVs approaching completion of their present caloric/acreage objectives there is the important matter of the long-term security of those habitats still to accomplish. For the breeding grounds these would be stretch targets indeed, but at least based on a relatively recent period in terms of the system dynamics at play.

At the continental scale, habitat objectives would continue to be simply “rolled up” from regional (mostly JV, Flyway or State/Provincial) objectives for habitat needs for waterfowl. While such a formulation of harvest, habitat and people objectives does not offer as elegant a solution as the JTG yield-curve model for harvest and habitat management, this approach to objectives would avoid the problem that Joint Venture don’t know how to apply or step down a demographically derived “continental K”, which varies annually mostly due to uncontrolled wetness and NOT to NAWMP-partner management actions. Continental “K” as we derived it in the JTG is thus not a very useful metric for habitat planning or habitat management decision purposes.

And, at least in its present formulation, the JTG yield curve does not incorporate any explicit human-dimension metric, though arguably the choice of a shoulder point for optimization would be an expression of human values.

Andy Raedeke has advocated a simple cumulative approach (Fig. 1) to modifying regional habitat objectives, as required, to satisfy recreational and other desires of people, which in various places may or may not require habitat management beyond that needed for life-cycle support for waterfowl. An approach something like this could be advocated, at the local/regional scales where habitat conservation planning typically occurs, as a means to augment the habitat objectives derived to achieve waterfowl population benefits (see above). Such augmentation may be in the form of additional acreages or modified delivery strategies designed to accommodate the interests of people related to recreation, ecosystem services and the like.

I don’t know exactly how this would be accomplished, but I do believe it needs to be done at the scale (JVs, States, Focus Areas) where habitat planning normally occurs and via linkages with the people managers at those scales – much as we advocated in the linkage diagram coming out of our January meeting at Patuxent (Fig. 2).

NAWMP Objectives Fundamental vs. Means Objectives

How much habitat do you need for waterfowl, people, and ecological goods and services?



Fig. 1. Theoretical relationship of cumulative habitat utility for fundamental value purposes, waterfowl support, recreation and ecosystem services. This construct could provide useful conceptual guidance for states, Joint Ventures, or other small-scale planning authorities to develop habitat objectives. Drawing appropriated from Andy Raedeke.

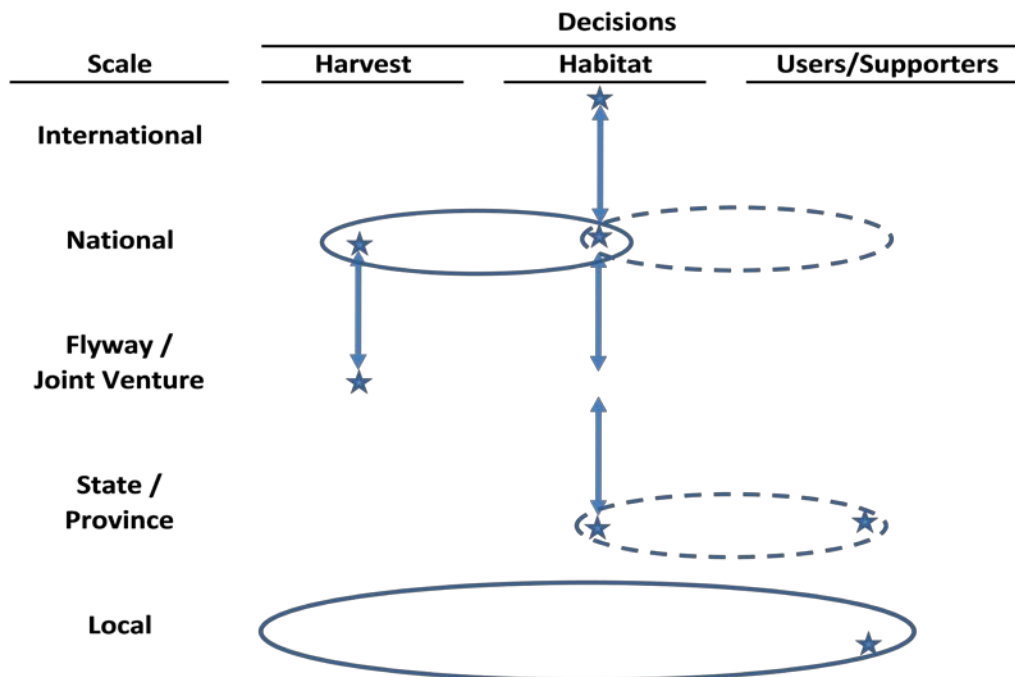


Fig. 2. Hypothetical approach to linking key waterfowl management decision processes among management actions and spatial scales.

For user and supporter objectives, for inspiration AND planning purposes --

Although we lack anything approaching a comprehensive and spatially/temporally explicit understanding of the desires of people for waterfowl and associated habitats, we do have expressed in the 2012 Revision a declaration of the desire of the Plan community to increase numbers of hunters, other recreationists, and supporters of waterfowl conservation. While we have been discussing the challenge of re-shaping the NAWMP HD goal as an expression of human desires that could direct our “public trust” efforts, we don’t seem to have the knowledge to do that available today (?). I suggest that while we commit to acquiring that understanding we could for now choose a few inspirational user/supporter objectives developed at the continental scale (e.g., a 10% increase in waterfowl hunters over the next 10 years; a 10% increase in NAWCA revenue; or a metric hopefully derived in a less *ad hoc* fashion than I just did). For starters we could review the previously circulated IIC candidate list (July 2013) and considered how that might be high-graded and refined. This would respond to the fundamental goal statement of the 2012 Revision and help emphasize the growing recognition of people objectives under the NAWMP. This would not; however, make progress in linking population, harvest, habitat and user/supporter objectives in a coherent decision framework. Can we live with that at this stage, or must we find a more rigorous way of doing this? I’m not certain, frankly.

User/supporter objectives, linked to population and habitat objectives, may be an element of NAWMP objectives which, like habitat objectives, are NOT derived at the continental scale but are instead an emergent property at the largest scale. They too just “roll up”. I have come to believe that the most meaningful expression of user-supporter objectives, while not unaffected by continental waterfowl population sizes, will be tied mostly to habitat objectives at regional or smaller scales. And that should be the scale of our search for a better expression of a utility function for user/supporter value – in whatever way that might be measured. For the next few years while we improve our understanding of human attitudes and values around waterfowl and their habitats, other HD regional objectives, related to habitat for recreation or ecosystem services could be developed in concert with waterfowl habitat objectives as described in the previous section (Fig. 1 and associated text above).

Still other objectives could be developed within Flyway or State/Provincial jurisdictions related to regulation complexity, ease of starting to hunt, etc. and tested on a local basis before expanding such objectives to larger jurisdictions. As Mike Carter has articulated to us many times, I see much opportunity for fruitful experimentation at smaller spatial scales where system control may be adequate and replication is feasible.

Related discussion items, in no particular order, that would need to be resolved:

Respecting the role of harvest management in attaining NAWMP population objectives, here is one option -- For harvest management purposes, no reduction in harvest utility should be imposed until populations drop below, not the median NAWMP objective, but below the lower historical bounds of the selected range of years. In that sense it would serve not so much to devalue harvest over a range of population sizes, but more like a “stop-loss” trigger in the event of unprecedented low population levels. What that might mean for the shape of a devaluation function, or “knife-edge” framework transitions, or better alternatives, I will defer to Scott, Ken and others.

Harvest could still be managed toward a shoulder point on a yield curve for those few species where that level of management precision is possible and still desirable. What consensus-supported value proposition would derive the point on the shoulder would still need to be determined. I suggest that we should not encourage development of further species-specific plans that would aspire to this level of optimality and system control, at least for the next several years.

For other species of concern we could continue with current species restrictions (e.g., Black Duck, Northern Pintail, Canvasback) but perhaps experiment with various multi-stock management alternatives. It seems premature; however, attractive as it might be, to adopt a much simplified harvest strategy immediately (e.g., 4-5 splashes with a few exceptional species) until we have learned more about both user values and the effectiveness of such a harvest approach – likely several years down the road – and hopefully after some small-scale experimentation.

In essence, by using this approach of “multiple expressions of linked objectives” we would commit to doing what we can NOW to integrate harvest, population, user/supporter and habitat objectives, while serving a multiplicity of desires for objectives (inspiration, planning, decision-support), and committing to learning about how to improve the connections among these when we revise objectives next time around. The other need most apparent to me is social research designed to better understand stakeholder values and desires and the most important sources of variation in those parameters. I expect these may vary strongly across geography (and perhaps time), which might greatly complicate our work at large scales, but might greatly facilitate improving human satisfaction and engagement at smaller scales.

An immediate advantage of this “multiple expression approach” might be minimal change in existing institutions; on the other hand, one could argue that minimal change could promote continued inertia. But change for change sake is not what we seek.

We would also need to commit to linking harvest/habitat/user & supporter decisions at strategically vital spatial/temporal nexuses as discussed at the January Patuxent meeting of the *ad hoc* objectives working group (Fig. 2). That would help ensure a meaningful degree of coherence among programs that we manage in pursuit of multiple NAWMP objectives.

Along with this we would need to ensure continuing communication among the waterfowl management “parts” and seek additional means to ensure continuing momentum toward closer integration of our decisions and programs.

Although somewhat complex, and we would need to find ways to communicate it succinctly, I think this approach could still allow us to achieve the essence of “integration” as envisioned in the 2012 Action Plan; namely: 1) common linked objectives (at scales where linkages are essential); 2) linked decisions where dependencies are clear, and linked decisions imperative; and 3) structures and processes that support and continue to enhance integrated management. Admittedly more thought is needed to define the work that must be undertaken in support of point #3.

Meanwhile, any reactions to these rambling thoughts would be welcome before we head back to Denver – as would the articulation a different approach altogether. The more we can challenge ourselves now to think about these next crucial steps with objectives, the better off we should be when we gather face-to-face.

Thanks for time you all are investing in finding a path forward.

Cheers,
Mike Anderson