

Information needs to inform net landscape change assessment and cost-effective habitat allocation decision-making

Executive Summary

Introduction:

Across the conservation community, there is a strong need to measure environmental change at a landscape scale. Measuring landscape-level change allows us to better plan habitat conservation delivery. Joint Ventures need landscape-level change measurements to understand how these changes have influenced bird populations and their habitats. Other regional or national partnerships, such as the Landscape Conservation Cooperatives, look at net landscape change to predict how landscapes, habitats, and populations will respond to future change.

The Unified Science Team conducted an assessment across Joint Ventures to evaluate each partnership's need for net landscape change information in key habitats and to identify commonalities in needs across Joint Ventures. Initially, we considered reviewing a variety of habitat types (wetlands and coastal habitats, forest, and grassland and scrub-shrub) to assess net landscape change assessment information needs. For some of these habitat groupings it appeared that alternate sources of data allowed for cost-effective, alternative approaches to assessing changes in landscape composition. Eventually, we gravitated to a set of key habitat elements viewed as showing the greatest need for such information. Those elements resulted in the following identified needs:

1. Fulfill agency mandates to update National Wetlands Inventory (NWI)
2. Improve classification and quality assessment of grassland and shrubland habitats
3. Increase communication with Natural Resources Conservation Service (NRCS) National Resources Inventory (NRI) regarding data needs and accessibility
4. Increase opportunities to update National Land Conservation Database (NLCD)

Our objective for this whitepaper was to focus efforts to pursue data where alternate sources do not provide the requisite information to assess landscape composition change. Each section presents a brief description of limitations of existing data, what data is needed and at what resolution, the importance and value the desired data holds for JV conservation planning with examples showing how JVs intend to use the data in their net landscape change assessments and ultimately its value in habitat allocation decision making. To the extent possible, this will be supplemented with cost estimates.

In each section, we provide recommendations for the US NABCI committee to consider in their efforts to interact with agency leaders to address the paucity of information limiting more transparent and effective habitat conservation delivery. Those ten recommendations are summarized immediately below.

Recommendations for NWI:

1. Fulfill FWS mandates to update NWI as fully as practicable considering the following elements:
 - a. Strive to fund \$25 million annually to allow an average of 10% completion of the U.S. each year, and

- b. Strive for a seamless national digital database of wetlands consistent with the Emergency Wetlands Resources Act of 1986, including remapping wetlands in ecoregions that have been subject to significant wetland losses or gains since 1980 and that are priorities for FWS trust resource conservation. Existing hardcopy NWI maps should be converted to digital format in areas without digital data that are not scheduled for remapping.
2. Review NAWMP priorities for NWI mapping and remapping project needs annually with an objective to maximize project completion.

Recommendations for Grassland and Scrub-Shrub Habitat Quality:

3. Continue to develop remote sensing techniques to more accurately depict quality of grassland and shrubland habitat as it pertains to priority bird species.
4. Disseminate information on existing techniques and their utility for classifying grasslands and shrublands.
5. Identify priority grassland and shrubland areas where availability of more accurate grassland and shrubland land cover would be of the highest use for bird conservation.

Recommendations for NRCS NRI:

6. Communicate with NRCS regarding data needs for JV regional assessment of grassland and pastureland conditions.
7. Communicate with NRCS and Joint Venture science staff regarding accessibility of NRI data to JVs at scales appropriate for conservation planning.

Recommendations for NLCD:

8. At a minimum, continue to support production of NLCD on a 5-year frequency. This dataset is essential to work that Joint Ventures undertake for biological planning and conservation design.
9. Determine increased value of NLCD produced on a 2-year frequency. If value is deemed significant compared to existing frequency, pursue increased funding for a 2-year update cycle.
10. If feasible, pursue development of finer resolution imagery (e.g., 10-m) and better accuracy. Without adequate fine-resolution data or imagery, we are unable to adequately link changes in populations (size, demography, etc.) with changes in habitat. Higher resolution imagery would allow each region to do the landscape-scale analysis that is needed, as well as to roll up individual efforts into a collective net landscape change analysis.