RESPONSE TO "ENDANGERED SPECIES, PROVINCIALISM, AND A CONTINENTAL APPROACH TO BIRD CONSERVATION"

ROBERT A. ASKINS

Department of Zoology
Connecticut College
New London, CT 06320

Abstract. Species that happen to cross political boundaries on the periphery of their ranges should not necessarily have a high priority for conservation. However, entire communities of plants and animals that are native to a region should be protected even if they represented a small proportion of the natural landscape before European settlement. In the eastern deciduous forest, many of these localized communities were originally generated by natural disturbances such as fire, flooding, wind storms and the activity of beavers. Human activity greatly reduced the frequency of these natural disturbances, and many early successional species consequently became dependent on artificial disturbances associated with farming and timber harvests. With the decline of farming and logging in New England, many of these species have declined and some are listed as threatened or endangered. Species associated with grassland, thicket and young forest represent a major component of the original biological diversity of the eastern deciduous forest region, so their habitats should be sustained. This can be accomplished by reintroducing or simulating natural disturbances.

I agree with Dr. Craig's basic contention that species on the periphery of their ranges, with low densities inside a state boundary but much higher densities elsewhere, should not necessarily have a high conservation priority and perhaps should not even be listed on state endangered and threatened lists. I agree, for instance, that Black-throated Blue Warbler (*Dendroica caerulescens*) should not have a high priority for conservation in Rhode Island, and in the past, I have argued to state agencies and conservation groups in Connecticut that we should not focus on protecting species such as Kentucky Warbler (*Oporornis formosus*) and persimmon (*Diospyros virginiana*) that are rare in the state, but are common a relatively short distance south of the state line.

Where Dr. Craig and I differ is that I think we should be concerned if entire natural communities are disappearing, particularly when there is good evidence that these communities were continually represented under changing climatic conditions since the last glacial period. Bird communities associated with grasslands, shrublands and young forests fit this pattern. They have disappeared in many parts of the Northeast not only because of the decline of agriculture, but also because of the suppression of natural disturbances that originally sustained these habitats. Dr. Craig's contention that "even grasslands described as natural being demonstrated to be unsustainable without active manipulation" (page 4) completely ignores the issue of the suppression of natural disturbances (such as fires, beaver (*Castor canadensis*) activity and seasonal flooding) that would have originally sustained these habitats. For the past 75 years plant community ecologists have presented evidence that various types of open habitats, including grassland and shrubland, were present in the Northeast at the time of European settlement and even before extensive Native American agriculture (see Askins, 2000 for a review). If Dr. Craig disagrees with their assessments, then he should criticize the historical, archaeological and palynological data upon which they are based. This would require a discussion of natural disturbance regimes in the Northeast. He should also discuss recent evidence from the Adirondacks in New York, Algonquin Provincial Park in Ontario and Voyageurs National Park in Minnesota that untrapped beaver populations can generate a continual supply of meadow and shrubland habitat in the form of beaver meadows (abandoned ponds) (Coles and Orme, 1983; Remillard et al., 1987; Naiman et al., 1994), many of which are large enough to be used by early successional birds. There is extensive evidence that fire, flooding and beaver activity can create habitat for early successional species in the absence of human agriculture and burning (Whitney, 1994). If Dr. Craig's contention is that these habitats were a trivial component of the northeastern landscape before agriculture, then he should show explicitly why previous analyses are flawed.

Dr. Craig not only ignores the importance of natural disturbance processes in sustaining early successional populations, but also the importance of dispersal in sustaining populations that depend on ephemeral, patchy environments (Pulliam, 1988). On page 6, he indicates that a population of Grasshopper Sparrows (*Ammodramus savannarum*) in Maine is

unworthy of conservation concern because it would go extinct without immigration. Thus, Dr. Craig's arguments imply that the two features upon which many early successional species depend—periodic habitat disturbance and dispersal— should eliminate them from consideration as species that should be protected.

I agree with Dr. Craig that the decline of early successional species from the peak populations in the late 19th and early 20th century in the Northeast was not necessarily a cause for alarm because the peak resulted from large-scale farm abandonment and old field development (Litviatis, 1993). Population declines were expected and predictable following this period, but extirpation and near extirpation of a number of early successional bird species in New England indicates that the combination of regrowth of forest on abandoned farmland and suppression of natural disturbances has eliminating nearly all of the habitat of these species. Although some species such as Brown-headed Cowbird (*Molothrus ater*) and Dickcissel (*Spiza americana*) are known to have spread eastward from the prairies after forest clearing in the East, there is no evidence for this pattern for the majority of early successional species. Many of these species were recorded in the earliest ornithological records from the region. Moreover, the distinctive subspecies of the Greater Prairie Chicken, the Heath Hen (*Tympanuchus cupido cupido*), and several species and subspecies of grassland plants, were restricted to the Atlantic coastal plain, indicating that grassland communities have had long standing in the region. Dr. Craig dismisses the Heath Hen as a shrubland, not a grassland species (page 8), but it was common on Long Island's Hempstead Plain, a 20,000 hectare little bluestem prairie dominated by grasses and forbs that was described as treeless when it was first settled by Europeans in the early 1600s (Harper, 1911; Cain et al., 1937; Bull, 1974). To contend that eastern grasslands do not require conservation efforts, Dr. Craig needs to deal more directly and thoroughly with species and subspecies that are endemic to this habitat. For example, the Henslow's Sparrow (*Ammodramus henslowii*) population of the Northeast (which is clearly a peripheral population by Dr. Craig's definition) has been described as a separate subspecies. Should we be concerned that it is almost extinct? Similarly, should we dismiss the Cape Sable Seaside Sparrow (*Ammodramus maritimus mirabilis*) in Florida as just a peripheral population of a species that has its center of abundance elsewhere? Loss of these distinctive regional populations would cause a substantial loss of genetic diversity (Wells and Rosenberg, 1999).

In addition to my reservations about an incomplete and selective review of the literature on natural disturbance regimes and the distribution of early successional species before human settlement, I also have reservations about the methods used to classify peripheral species. One problem is that the northeastern states are on the periphery of the continent, so landbirds will tend to be on the periphery of their ranges in this region. This is compensated for to some extent by considering centers of abundance from Breeding Bird Survey data, which is a reasonable approach, but I wonder whether it is sufficient. Is the proportion of peripheral species different for listed and unlisted species? If not, then peripheral distributions my partially be an artifact of the geography of northeastern states. Also, I would be interested in seeing how the Dr. Craig's list of species that are considered peripheral and therefore unimportant for conservation compares with the Partners in Flight (PIF) priority list for bird conservation for the same region (Rosenberg and Wells, 1995). PIF listings take into consideration centers of abundance for particular species and a continental perspective, yet high priority ratings are given to both forest species and early successional species in the Northeast. Why is there a discrepancy? PIF lists are widely used for setting research and conservation priorities, so they should be compared with the author's list of species defined as peripheral. The brief dismissal of cumulative ranking schemes (page 9) does not address this issue sufficiently.

Finally, Dr. Craig needs to explain more explicitly how listing peripheral species has compromised conservation. Is this really a major problem? Two of his prime examples are Black-throated Blue Warbler in Rhode Island and Black Rail (*Laterallus jamaicensis*) in Connecticut (page 4). Have these species really received a lot of attention and diverted lots of funds? My impression is that most of the conservation efforts in these two states are directed at federally endangered and threatened species and forest and wetland birds, the groups Dr. Craig thinks deserve the most protection. Also, Black-throated Blue Warbler is an area-sensitive forest migrant, so efforts to protect it would be compatible with protecting the other forest species that Dr. Craig is concerned about. Similarly, protection of Black Rail habitat would be consistent with protecting a number of tidal marsh species that have declined and which are not on the periphery of their distributions in Connecticut.

It is true that some conservation effort has been diverted to meadow and grassland species in the Northeast. Often this just means consultation with officials and caretakers at airports and military air fields to change mowing regimes. Local conservation groups and Nature Conservancy state chapters have begun to protect bobolink meadows and other grassland habitats, but funds for these efforts are usually raised locally by people who would like to protect particular sites.

Moreover, the best way to raise private funds for saving the habitats of prairie birds may be to introduce people in other regions to local grassland habitats (if there are any left) to engender an appreciation of the beauty and complexity of grassland communities. Also, grassland preserves are typically in farming or residential areas where it is not feasible to protect large blocks of forest. Small grasslands are valuable for a variety of plant and invertebrate species, and medium-sized grasslands (> 25 acres) may be used by grassland birds, so this type of preserve can fit into a heavily developed matrix. This is compatible with preserving large forest blocks elsewhere, so Dr. Craig's criticisms may do nothing more than divide conservationists who have the same goal of protecting biological diversity. Will this accomplish anything useful?

Finally, ecologists have long recognized that a key reason to sustain regional habitat diversity is for environmental education. Certainly, I would prefer to take students in my ecology course to Konza Prairie in Kansas to study grassland ecology, but when this isn't feasible, it is valuable to have sites in the local region (not necessarily sites in the same town, as caricatured with the example in Dr. Craig's introduction) where we can find breeding bobolinks and meadowlarks, and where we can study the pollination ecology of autumn wildflowers. These sites are also valuable for public education. I agree that large, intact blocks of forest should have the highest priority for protection in the Northeast, but that doesn't mean that grasslands and other less widespread habitats should have no standing in regional conservation planning.

LITERATURE CITED

ASKINS, R.A. 2000. Restoring North America's Birds. Lessons from Landscape Ecology. Yale University Press, New Haven, CT. 320 pp.

BULL, J. 1974. Birds of New York State. Doubleday Natural History Press, Garden City, New York, 655 p.

CAIN, S.A., M. NELSON and W. MCLEAN. 1937. *Andropogonetum Hempsteadi*: A Long Island grassland vegetation type. American Midland Naturalist 18: 334−350.

COLES, J.M. and B.J. ORME. 1983. *Homo sapiens* or *Castor fiber*? Antiquity 57: 95−102.

HARPER, R.M. 1911. The Hempstead Plains: A natural prairie on Long Island. Bulletin of the American Geographic Society 43: 351−360.

LITVAITIS, J.A. 1993. Response of early successional vertebrates to historic changes in land use. Conservation Biology 7: 866−873.

MELVIN, S. 1994. Military bases provide habitat for rare grassland birds. Massachusetts Division of Fisheries and Wildlife, Natural Heritage News 4: 3.

NAIMAN, R.J., G. PINAY and J. PASTOR. 1994. Beaver influences on the long-term biogeochemical characteristics of boreal forest drainage networks. Ecology 75: 905−921.

PULLIAM, H. R. 1988. Sources, sinks, and population regulation. American Naturalist 132: 652−661.

REMILLARD, M.M., G.K. GRUENDLING, and D.J. BOGUCKI. 1987. Disturbance by beaver (*Castor canadensis* Kuhl) and increased landscape heterogeneity. Pages 103−122. In Landscape Heterogeneity and Disturbance. (M.G. Turner, Ed.), Springer Verlag, New York.

ROSENBERG, K.V. and J.V. WELLS. 1995. Importance of geographic areas to Neotropical migrant birds in the Northeast. Report to the U.S. Fish and Wildlife Service, Region 5. Cornell Laboratory of Ornithology, Ithaca, NY.

WELLS, J.V. and K.V. ROSENBERG. 1999. Grassland bird conservation in northeastern North America. Studies in Avian Biology 19: 72−80.

WHITNEY, G.G. 1994. From Coastal Wilderness to Fruited Plain. Cambridge University Press, New York.