Proposal for a Modification of Shared Boundary between Existing LCC Geographic Areas

Initiating LCC: North Atlantic

Affected LCCs: North Atlantic, Upper Midwest-Great Lakes, Appalachian

Affected States/Provinces: New York, Vermont, Connecticut, Massachusetts, Quebec

Description: Three related minor boundary modifications that results in the shift of the Hudson, Mohawk and Champlain Valleys from Upper Midwest Great Lakes LCC to the North Atlantic LCC and the shift of the Hudson Highlands-trap rock ridge finger east of the Hudson River from the Appalachian LCC to the North Atlantic LCC.

The three related boundary issues and proposed solutions described below would result in a revised boundary between the North Atlantic, Upper Midwest Great Lakes and Appalachian LCCs and improved ecologic homogeneity and partnership efficiency.

Issue # 1: The northwestern part of the North Atlantic LCC – the Adirondack/Tug Hill section - is separated from the rest of the LCC by the Champlain Valley which is currently part of the Upper Mississippi Great Lakes LCC. This non-contiguous part of the North Atlantic LCC is based on the original Atlantic Northern Forest Bird Conservation Region (BCR 14) intended to group the disjunct mountainous forested areas classified as *Atlantic Highlands* in the Omernik Level II Ecoregional Classification. This BCR is the only one in North America that has non-contiguous sections. The grouping of these non-contiguous areas may have made sense from a migratory bird perspective but does not make sense when considering landscape conservation for all terrestrial and aquatic natural resources.

Conservation in Lake Champlain and the Champlain Basin (watershed) is traditionally addressed on a watershed basis considering the headwaters in both the Adirondacks to the west and the Green Mountains to the east. Also, consideration of how to increase connectivity and resiliency in this part of the North Atlantic LCC is focused on maintaining and restoring connectivity between the Adirondacks and Green Mountains across the Champlain Valley. Splitting the Champlain Basin into two LCCs and including the valley and lake in the Upper Midwest Great Lakes LCC will make it challenging to address conservation in this area through LCCs. A number of partners, especially the state of Vermont, have indicated that the boundary does not make sense from their perspective and that they will not be able to participate in the Upper Midwest Great Lakes LCC. They have been withdrawn from the Upper Midwest Great Lakes LCC partner lists.

The proposed solution is to draw a boundary from the northern edge of the Adirondacks across the international border to the Green Mountains in Quebec thereby connecting the non-contiguous Adirondack-Tug Hill portion of the North Atlantic LCC with the rest of the LCC and including Lake Champlain, the Champlain Valley, Champlain Basin and all of Vermont in the North Atlantic LCC. This new northern boundary would cross the outlet of the Richelieu River

from Lake Champlain in Quebec such that Lake Champlain and the Lake Champlain Basin to the south is entirely within the North Atlantic LCC and the Richelieu River and St. Lawrence Valley to the north remain in the Upper Midwest Great Lakes LCC. The proposed boundary connecting the southern boundary of Adirondack-Tug Hill to the North Atlantic LCC is addressed below under issue #3.

Issue #2: The narrow finger of the Appalachian LCC that extends northeast across the Hudson Valley into Connecticut and Massachusetts is based on the Appalachian Mountains Bird Conservation Region (BCR 28) apparently following the Hudson Highlands and trap rock ridges into New England. This finger is considered part of the *Atlantic Highlands* Ecoregion in the Omernik Level II Ecoregional Classification (most of which occurs in the North Atlantic LCC), not an extension of the Appalachian Forests ecoregion. The existing boundary does not make sense ecologically or logistically and actually cuts off the Hudson River and Hudson/Mohawk Valley from the Atlantic Coast. The finger east of the Hudson into New England is not distinct from the surrounding landscapes and is not considered by partners to be part of the Appalachians. The trap rock ridge portion of this finger is more consistent with the trap rock ridges that extend south into the Connecticut portion of the North Atlantic LCC. The States of Connecticut and Massachusetts do not think the existing boundary makes sense - they are not participating the Appalachian LCC.

The solution is to draw a new Appalachian/North Atlantic boundary at the western edge of the Hudson River in New York thereby including the lower Hudson River and valley and all of Connecticut and Massachusetts (and with the Champlain change described above - all of New England) in the North Atlantic LCC.

Issue # 3: The Upper Midwest Great Lakes LCC boundary currently includes the Hudson River and valley north of the Hudson Highlands portion of the Appalachian LCC (described under issue #2 above) and the Mohawk River tributary and valley. These rivers drain into the North Atlantic and the valleys are considered by partners to be distinct from the Great Lakes Plains to the west. From an aquatic perspective, it does not make sense to have the main stem of the Hudson and Mohawk Rivers with their significant diadromous fish populations in a separate LCC from all of the other North Atlantic Rivers. From a wildlife perspective, the Hudson Valley also acts a migratory bird flyway. New York State partners agree that the Hudson and Mohawk (and Champlain) valleys be included in the North Atlantic LCC and that the division between the LCCs be drawn based upon the watershed boundary of the Mohawk that divides the Great Lakes and North Atlantic watersheds.

The solution is to draw a boundary across the Mohawk Valley from the Appalachian LCC north to the Adirondacks/Tug Hill following the Mohawk/Great Lakes watershed divide thereby including the Hudson and Mohawk Rivers and valleys along with Lake Champlain and the Lake Champlain valley in the North Atlantic.

The net effect of these three changes is that the entirety of the Hudson River, Mohawk River, Lake Champlain and their associated valleys are shifted to the North Atlantic LCC; the disjunct Adirondack-Tug Hill portion of the North Atlantic LCC is made continuous with the rest of the LCC and the Hudson Highlands east of the Hudson River extending into New England is incorporated in the surrounding landscape.

Evaluation Questions

Question #1*: How does the proposed boundary modification impact the homogeneity of the aquatic systems in the affected Geographic Areas?*

1) improves aquatic homogeneity

The proposed boundary modifications improve the aquatic homogeneity in four ways: by including the entirety of the Lake Champlain Basin (watershed) in one LCC; by including the entirety of the Hudson and Mohawk Rivers and adjacent valleys in a single LCC; by including all rivers that drain into the North Atlantic in the North Atlantic LCC; and by removing Atlantic draining rivers from the Upper Midwest Great Lakes LCC (consistent with Freshwater Ecoregions)

2) decreases aquatic homogeneity

The proposed boundary modification decreases aquatic homogeneity by separating the watershed of Lake Champlain from the Richelieu River and the St. Lawrence River that drain the lake. The benefits of the improvements in aquatic homogeneity and terrestrial connectivity as well as jurisdictional issues described above outweigh this decrease.

Question #2*: How does the proposed boundary modification impact the homogeneity of the terrestrial systems in the affected Geographic Areas?*

1) improves terrestrial homogeneity

The extension of Appalachian LCC east of the Hudson into New England (eastern Hudson Highlands and trap rock ridges) is part of the *Atlantic Highlands* (also known as the *New England Uplands*) more similar to the surrounding North Atlantic LCC than they are to the majority of the Appalachian LCC both based on geology and dominant forest types.

3) neutral

The addition of the Hudson, Mohawk and Champlain valleys to the North Atlantic LCC increases the diversity of habitat types in the western part of the LCC by adding largely agricultural river valleys to adjacent largely forested mountainous areas. But there are similar agricultural river valleys such as the Connecticut River valley that are already imbedded in the largely forested landscape of the North Atlantic LCC and these valleys which were once largely forested are critical to connectivity of adjacent forests. The Hudson, Mohawk and Champlain valleys are classified as *Mixed Wood Plains* in the Omernik Level II classification and large areas of this same ecoregion type already occur in the northeastern part of the North Atlantic LCC in New England and New Brunswick.

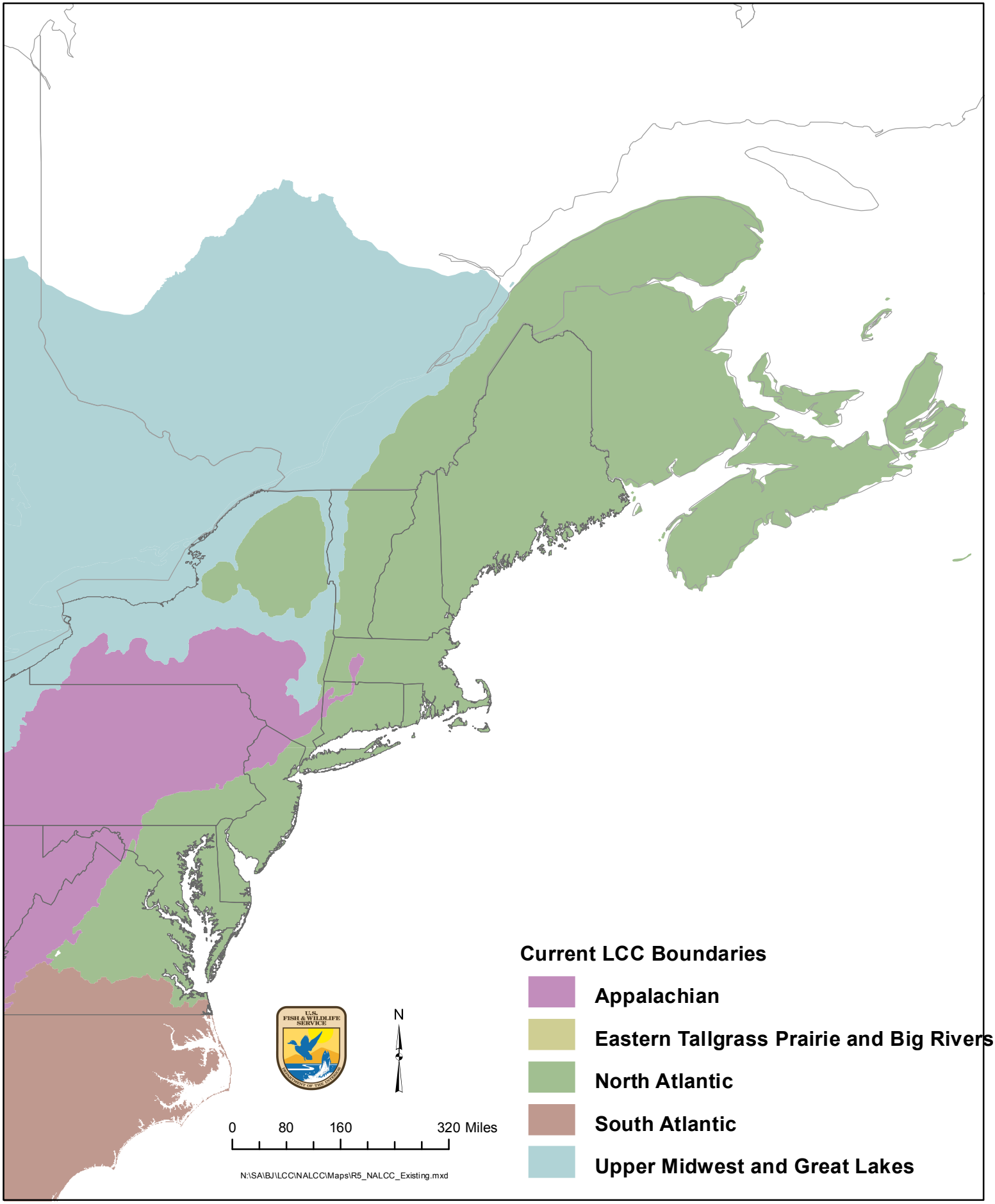
Question #3: *Is consolidation of species-specific traits (e.g. ranges, migration corridors, habitat patches) the primary impetus for the proposed boundary change?*

The proposed modifications are not based primarily on species-specific traits but more on landscape features including broad habitat patterns, migration patterns, contiguity and terrestrial and aquatic connectivity as well as operational efficiencies. The result of these modifications will improve the consolidation of species-specific traits, especially by consolidating the Hudson River diadromous fisheries populations with the other North Atlantic Coast draining rivers.

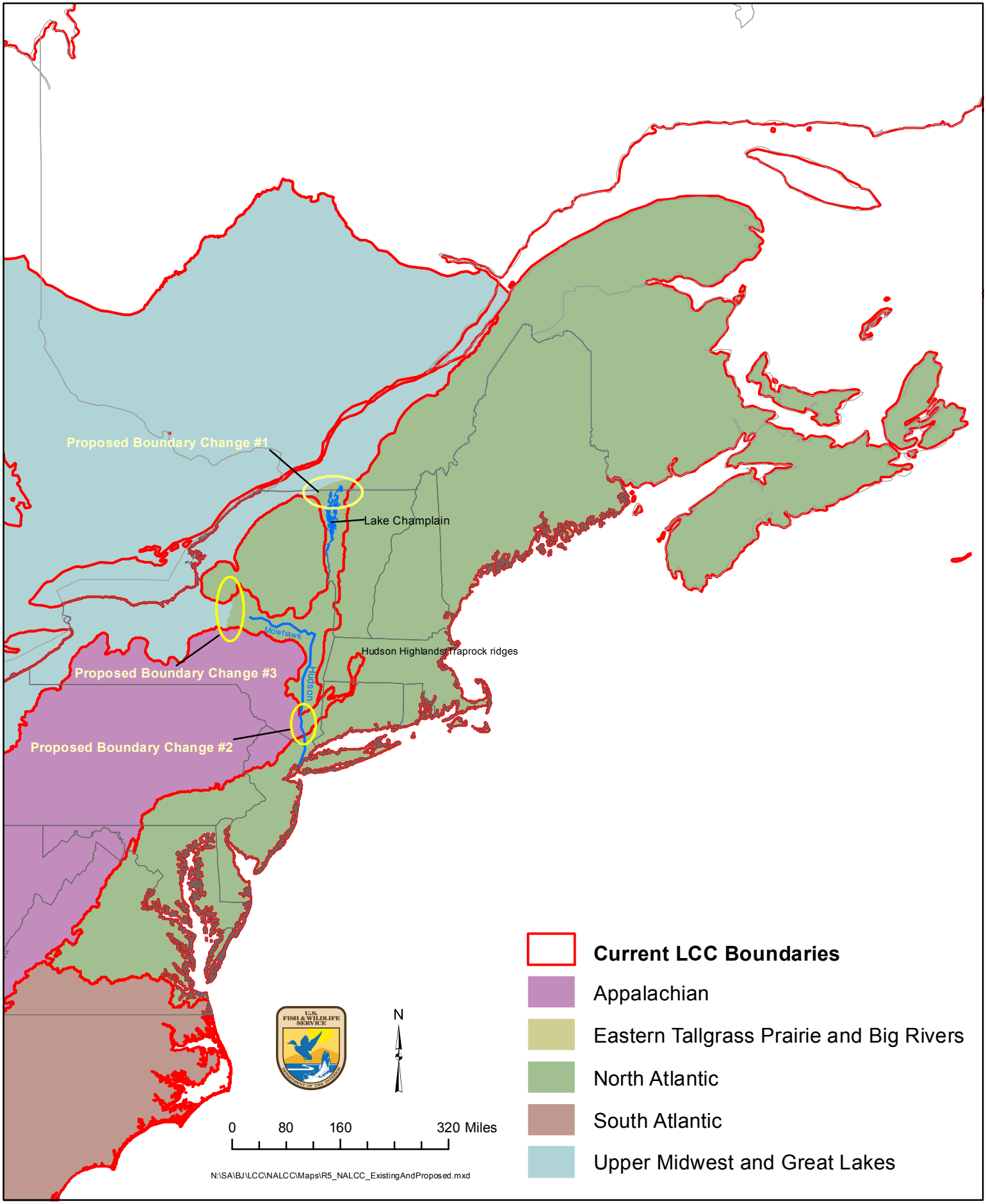
Question #4: *Describe how the modification will impact the operational efficiencies of the established conservation partnerships existing in the region of the proposed boundary modification.*

The proposed modification will greatly increase the operational efficiencies of established conservation partnerships and partner agencies. The entirety of the U.S. portion of the North Atlantic LCC will remain in the Atlantic Coast Joint Venture boundary. The Atlantic Coast and Appalachian Mountain Joint Ventures previously submitted a proposed boundary adjustment to the North American Bird Conservation Initiative (NABCI) that would shift the Hudson Highlands-trap rock ridge finger from the Appalachian Mountain to the Atlantic Coast Joint Venture and from the Appalachian Mountains Bird Conservation Region (BCR 28) to the Atlantic Northern Forest BCR (BCR 14) and New England Mid Atlantic Coast BCR (BCR 30). The proposed LCC boundary change is consistent with those changes; the joint ventures are aware of and support the LCC boundary changes. The proposed modification will increase the operational efficiency of the Atlantic Coastal Fish Habitat Partnership (ACFHP) by including the Atlantic-draining Hudson and Mohawk Rivers in the North Atlantic LCC so that ACFHP does not have to participate in more than one LCC. The proposed modification will increase the operational efficiency of the Atlantic States Marine Fisheries Commissions by including all North Atlantic rivers and estuaries in a single LCC. Including all of the New England States in the North Atlantic LCC will increase the ability of New England partnerships, most notably the New England Governors Initiative to work efficiently with LCCs. The New England Governors are looking to the North Atlantic LCC to facilitate their Protect Wildlife Habitat Initiative as part of their Commission on Land Conservation. Other smaller scale landscape initiatives will also benefit including the Lake Champlain Basin program and Hudson River Estuary Program that will now be in a single LCC. Three states that are currently in two different LCCs will benefit by only having to participate in one LCC.

Existing Landscape Conservation Cooperatives Boundaries
January 2012



Proposed Changes to Landscape Conservation Cooperatives Boundaries
January 2012



Proposed Landscape Conservation Cooperatives Boundaries
January 2012