

# APPENDIX B

Figures for:  
Assessment of ecological and  
cultural values within the  
National Petroleum Reserve –  
Alaska

## Appendix B: High resolution maps

*Figures included in this appendix:*

### File B-1

**Figure 2.1.** Land ownership within and surrounding the NPR-A.

**Figure 2.2.** Map of Arctic Iñupiat communities and outposts, tribal lands, Native allotments, and subsistence camps and cabins within and surrounding the NPR-A.

**Figure 2.3.** Existing development and current federal oil and gas leases within the NPR-A and state leases on surrounding lands and waters.

**Figure 2.4.** Generalized geology within the NPR-A and surrounding lands and waters.

**Figure 2.5.** Ecological landscapes within the NPR-A and surrounding lands and waters.

**Figure 2.6.** Land cover types within the NPR-A and nearby areas.

### File B-2

**Figure 2.7.** Major Arctic rivers, lakes, and lagoons within the NPR-A and nearby areas.

**Figure 3a.3.** Seasonal ranges of the three caribou herds that use lands within the National Petroleum Reserve – Alaska.

**Figure 3a.4.** Teshekpuk Caribou Herd primary calving area.

**Figure 3a.5.** Western Arctic Herd calving area.

**Figure 3b.2.** Estimated channel depth for the Colville River watershed.

**Figure 3b.3.** Predicted intrinsic potential (IP) for Broad Whitefish spawning habitat within the Colville River Special Area and the Utukok River Uplands Special Area.

**Figure 3b.4.** Estimated floodplains and terraces for Colville River watershed within the Colville River Special Area and the Utukok River Uplands Special Area.

**Figure 3b.5.** Estimated floodplains and terraces for Colville River watershed within the Colville River Special Area between Umiat and Ocean Point.

**Figure 3b.6.** Predicted IP for Broad Whitefish spawning habitat within the Colville River Special Area.

**Figure 3b.7.** Estimated channel depth for the Colville River watershed within the Colville River Special Area between Umiat and Ocean Point.

**Figure 4.7.** Indigenous lifeways, depicting traditional trade routes with historic and recent subsistence camps.

### File B-3

**Figure 5a.1.** Intact lands within the NPR-A.

**Figure 5a.2.** Intact lands based on combined assessment of the human footprint and mammal intactness.

**Figure 5b.1.** Wildness across the North Slope of Alaska.

**Figure 5b.2.** Wildness within the National Petroleum Reserve – Alaska.

**Figure 5c.1.** Top 20% highest soil carbon locations down to 30-cm depth.

**Figure 5c.2.** Top 10% global areas for soil carbon down to 200-cm depth.

**Figure 5d.1.** Terrestrial ecosystem representation across the North Slope of Alaska.

**Figure 5d.2.** Terrestrial ecosystem representation within the National Petroleum Reserve – Alaska.

**B-3**

# Human Modification

Very low human modification (<0.001)

Map area enlarged below

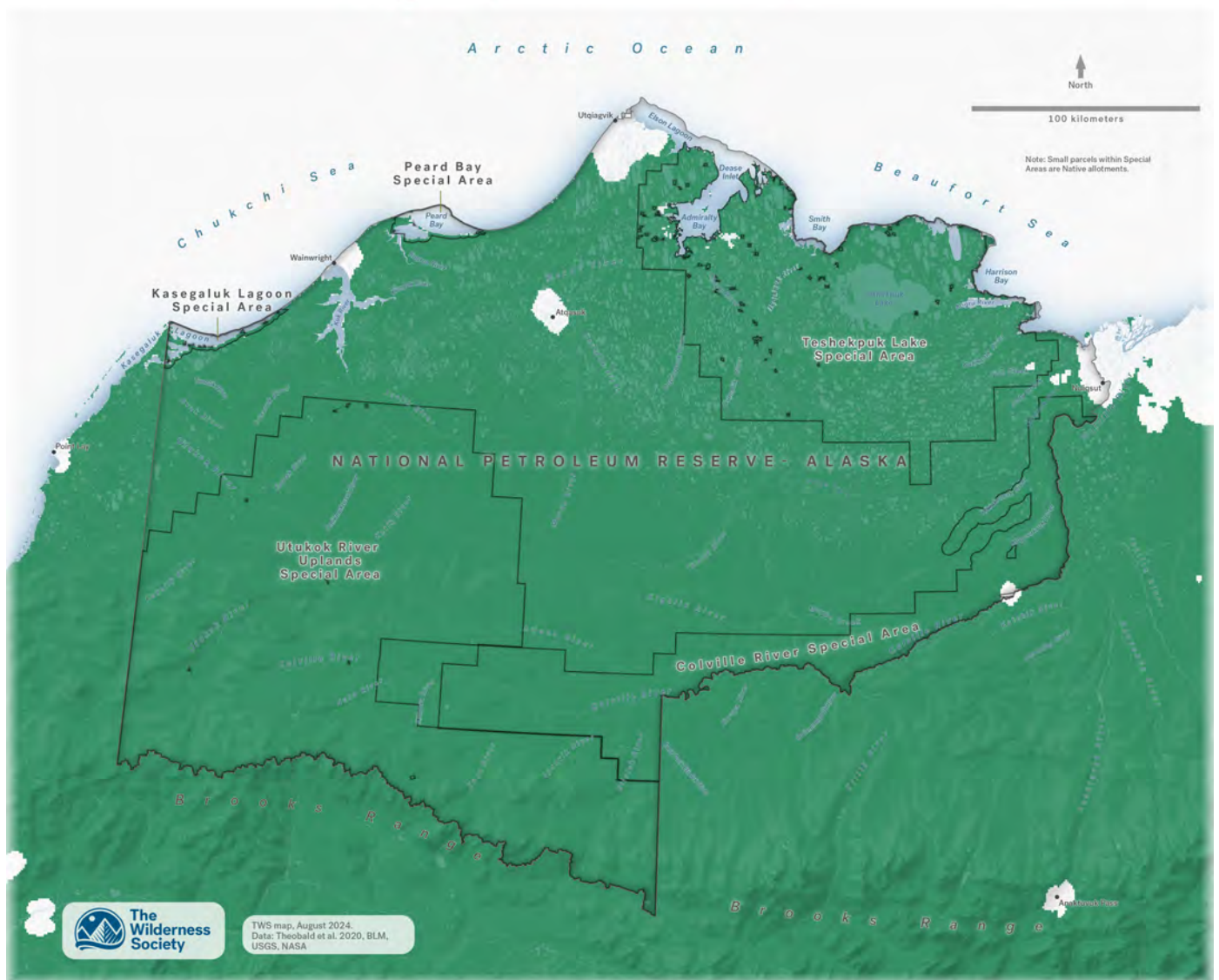
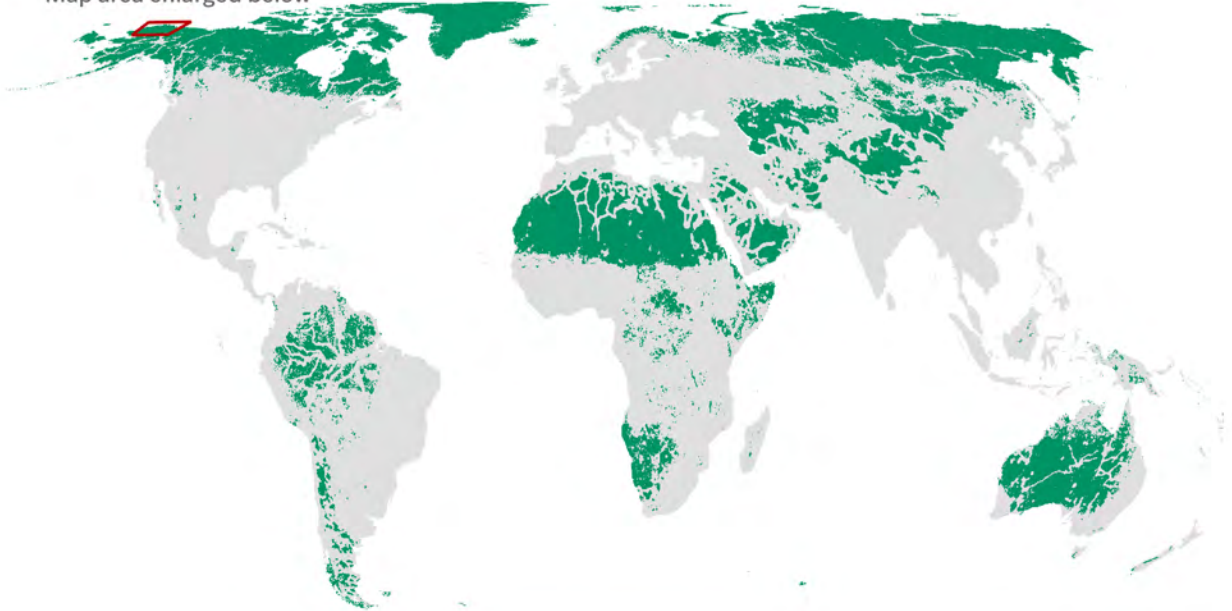
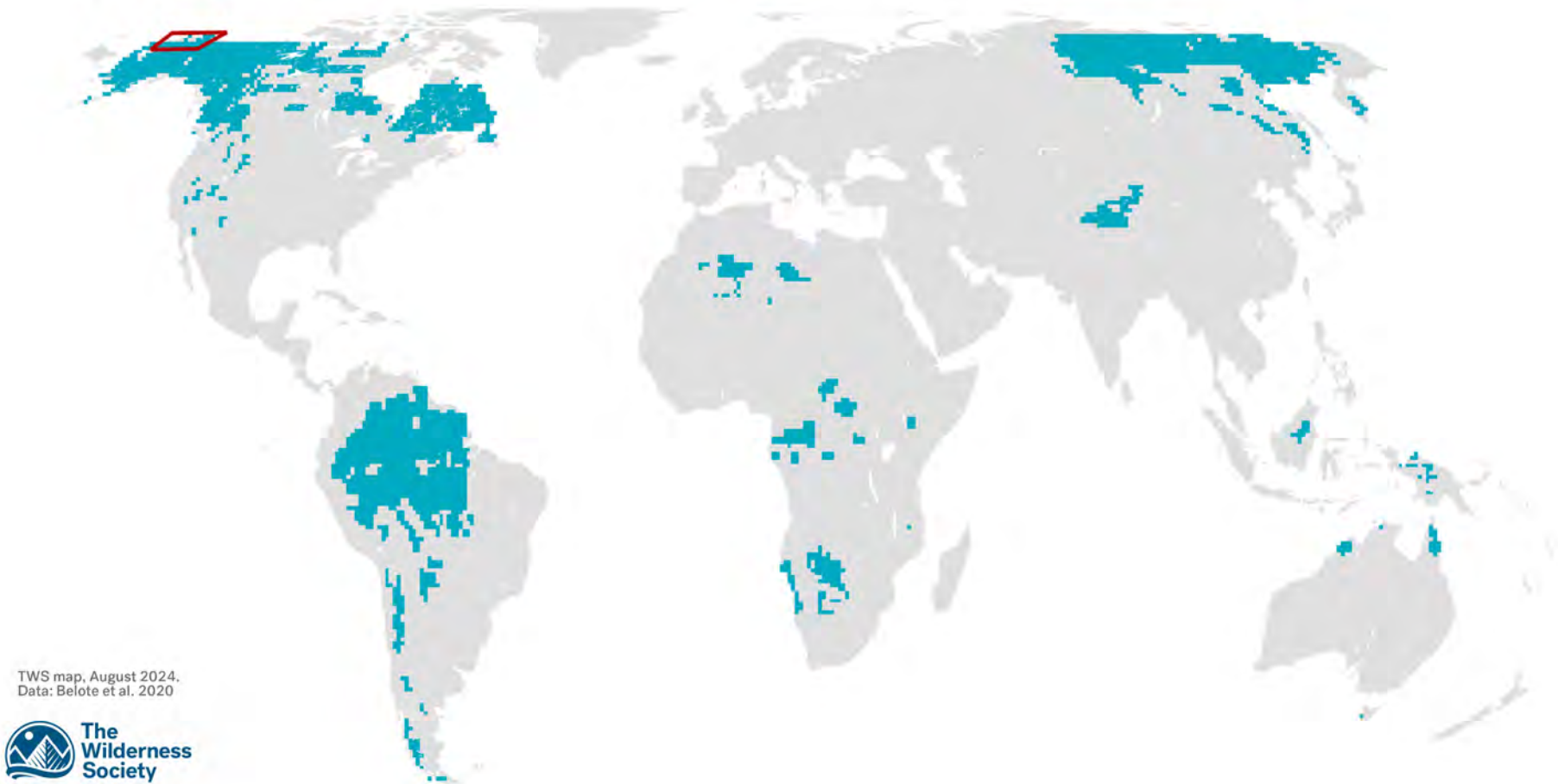


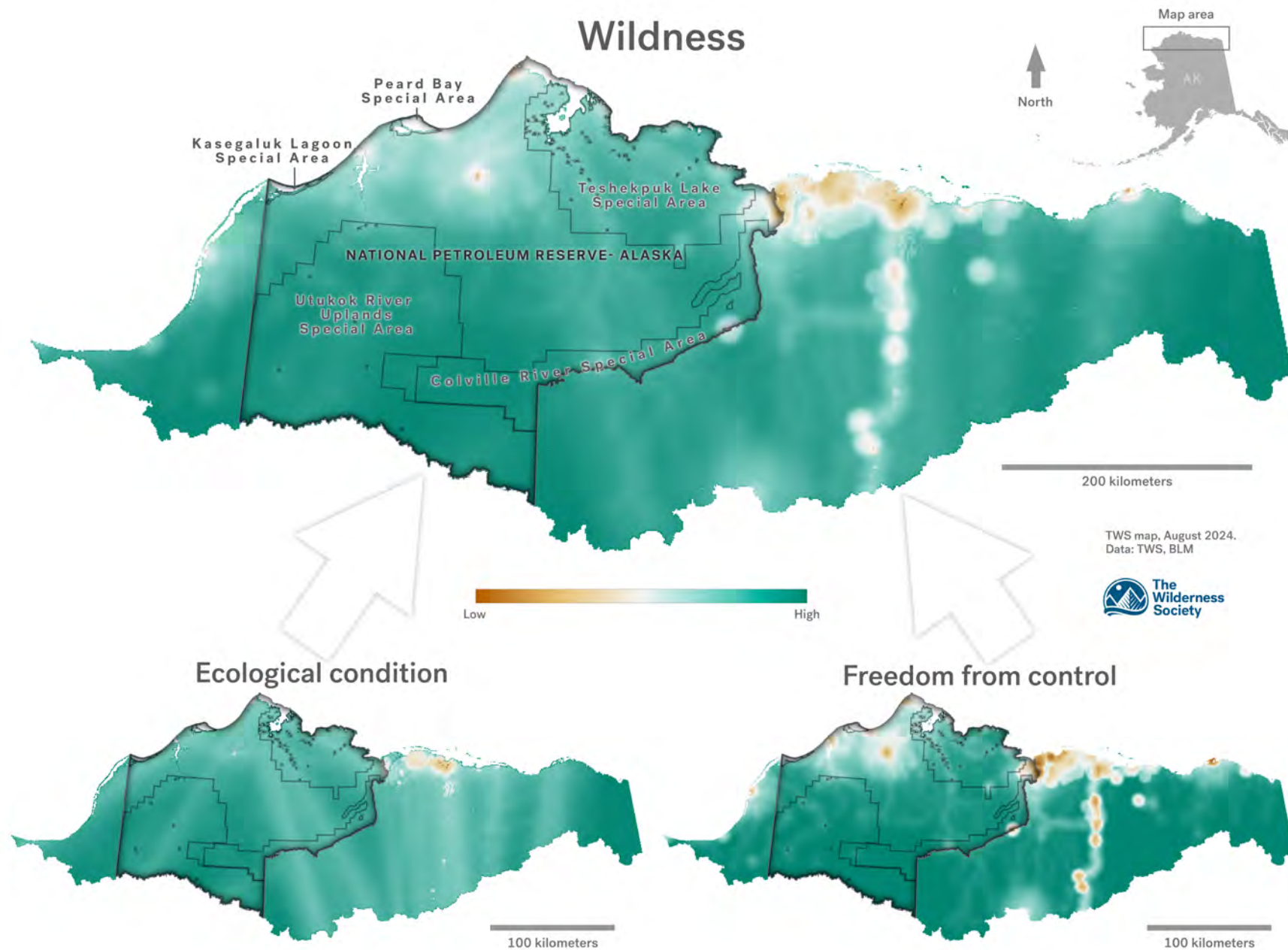
Figure 5a.1. Maps of intact lands based on Theobald et al. (2020) global human modification within the NPR-A.

# Bivariate Intactness

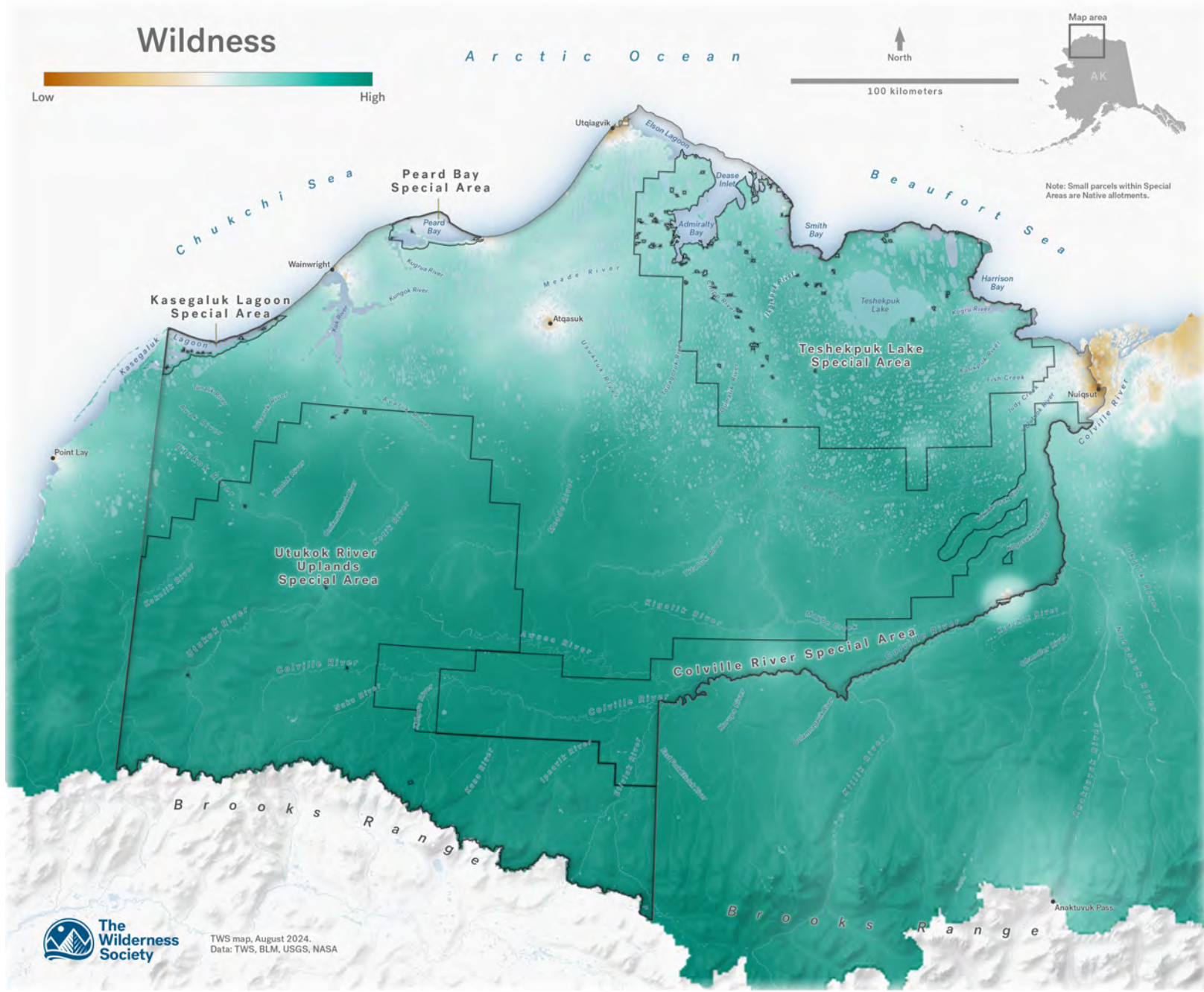
■ Low human footprint & high mammal intactness



**Figure 5a.2.** Map of intact lands based on combined assessment of the human footprint and mammal intactness, with green areas characterized by low human footprint and high mammal intactness (Belote et al. 2020).



**Figure 5b.1.** Wildness across the North Slope of Alaska, defined here as areas north of the crest of the Brooks Range mountains. Wildness was a composite metric reflecting both ecological condition and freedom from control (see text for details). Note that wildness is a relative metric so many of the areas indicated here to have moderate wildness with respect to the North Slope may still rank highly for wildness if compared with other areas in the contiguous United States or elsewhere.

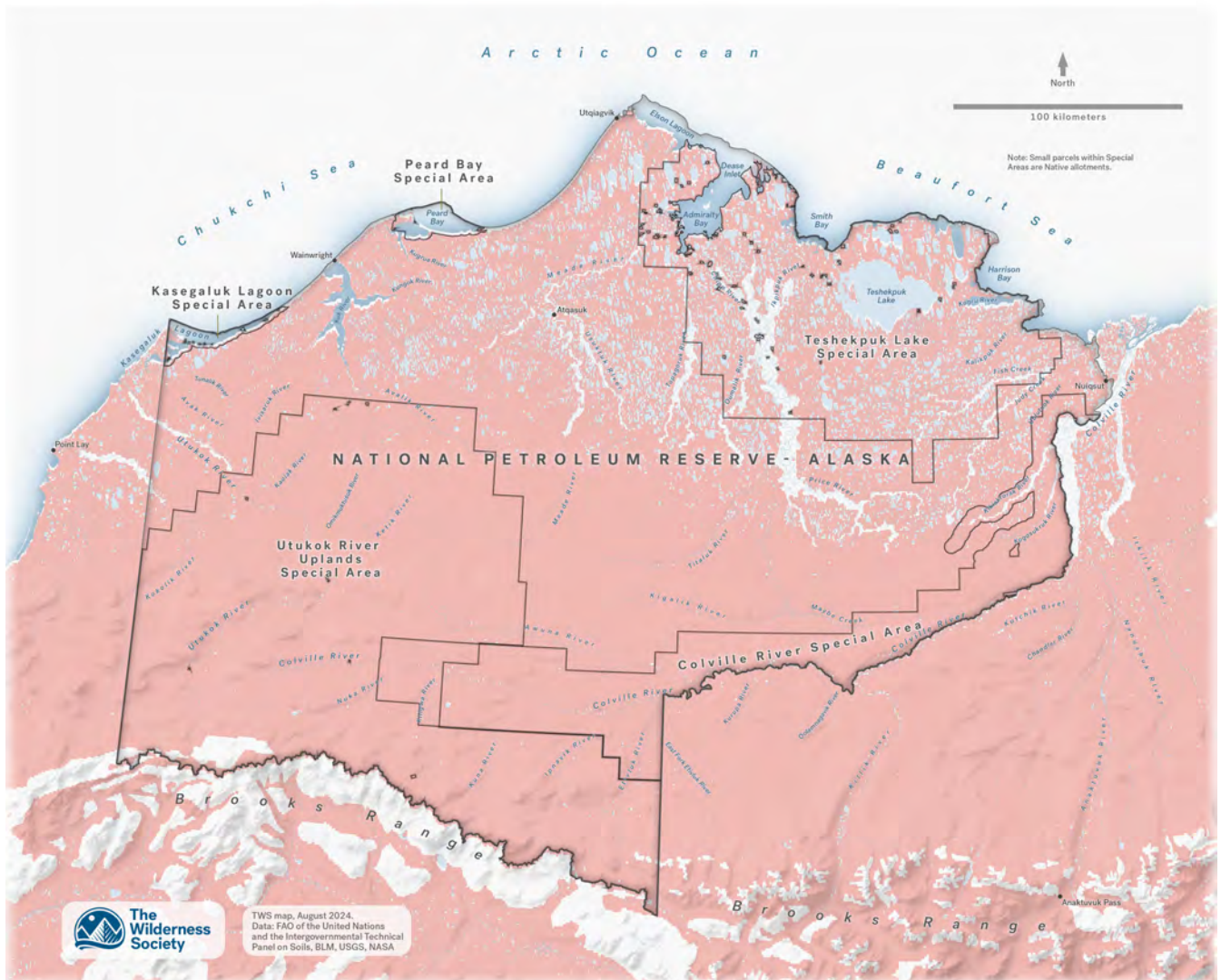
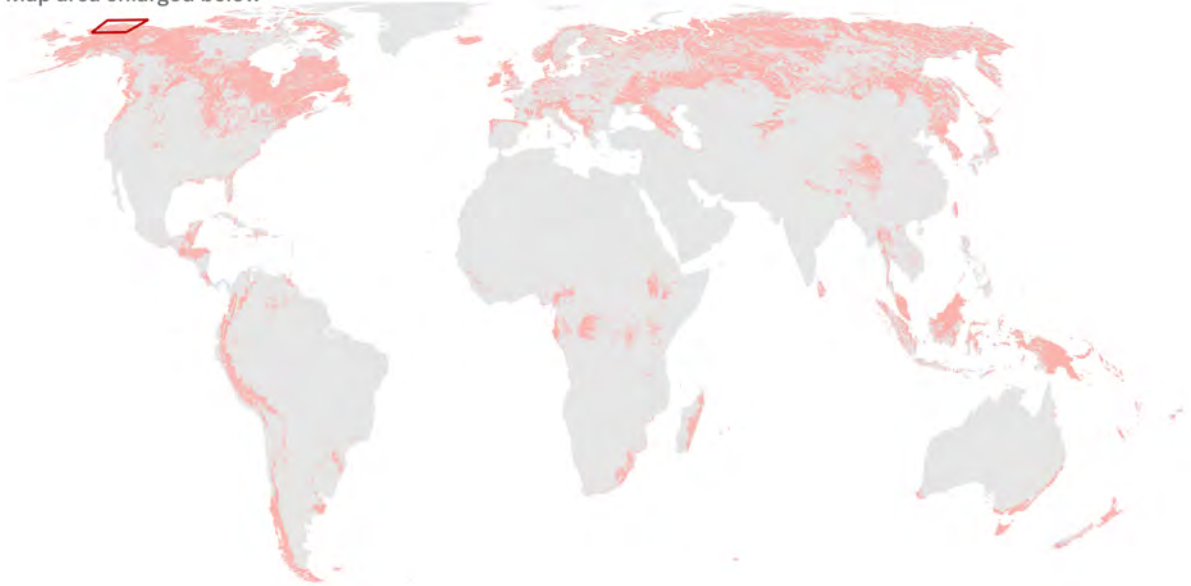


**Figure 5b.2.** Wildness within the National Petroleum Reserve – Alaska. Wildness is clearly reduced around development areas in the northeastern NPR-A and Umiat, and to a lesser degree around communities. Wildness is a relative metric so many of the areas indicated here to have moderate wildness with respect to the North Slope may still rank highly for wildness if compared with other areas in the contiguous United States or elsewhere.

# Soil carbon – 30 cm

Top 20% globally

Map area enlarged below



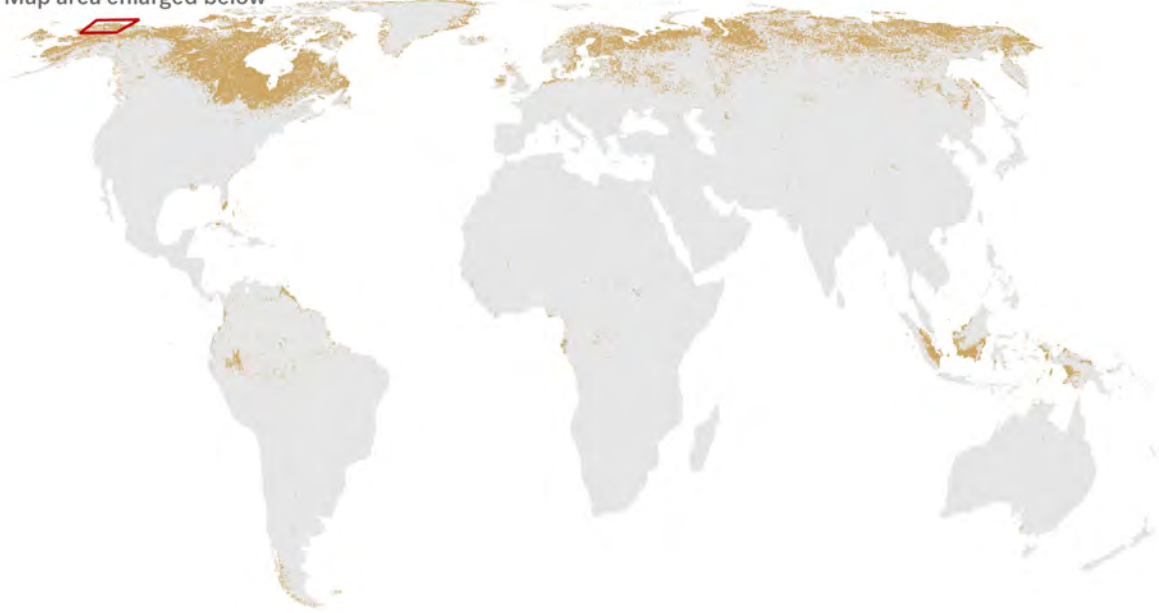
**Figure 5c.1.** Top 20% highest soil carbon locations down to 30-cm depth on Earth based on the Food and Agriculture Organization of the United Nation and the Intergovernmental Technical Panel on Soils. Permafrost soils located in high latitudes store large amounts of carbon, which is often very old.



# Soil carbon – 200 cm

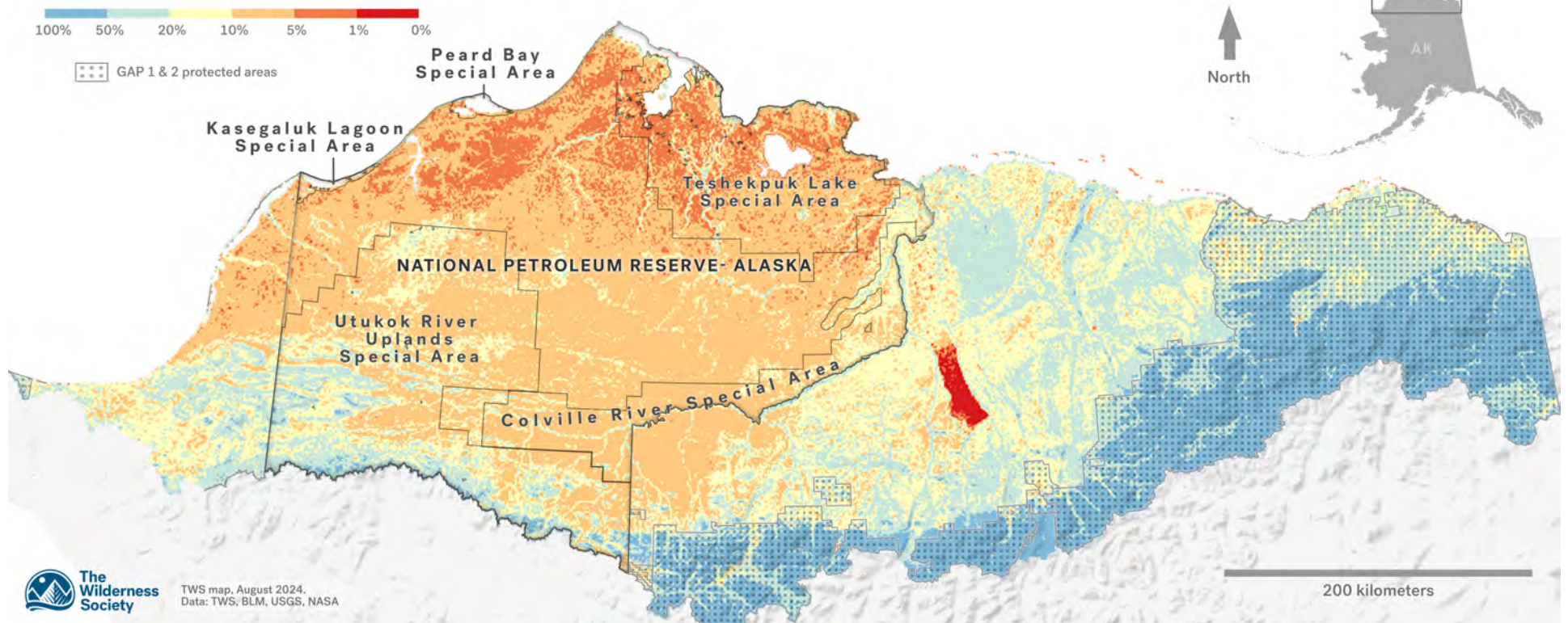
■ Top 10% globally

Map area enlarged below

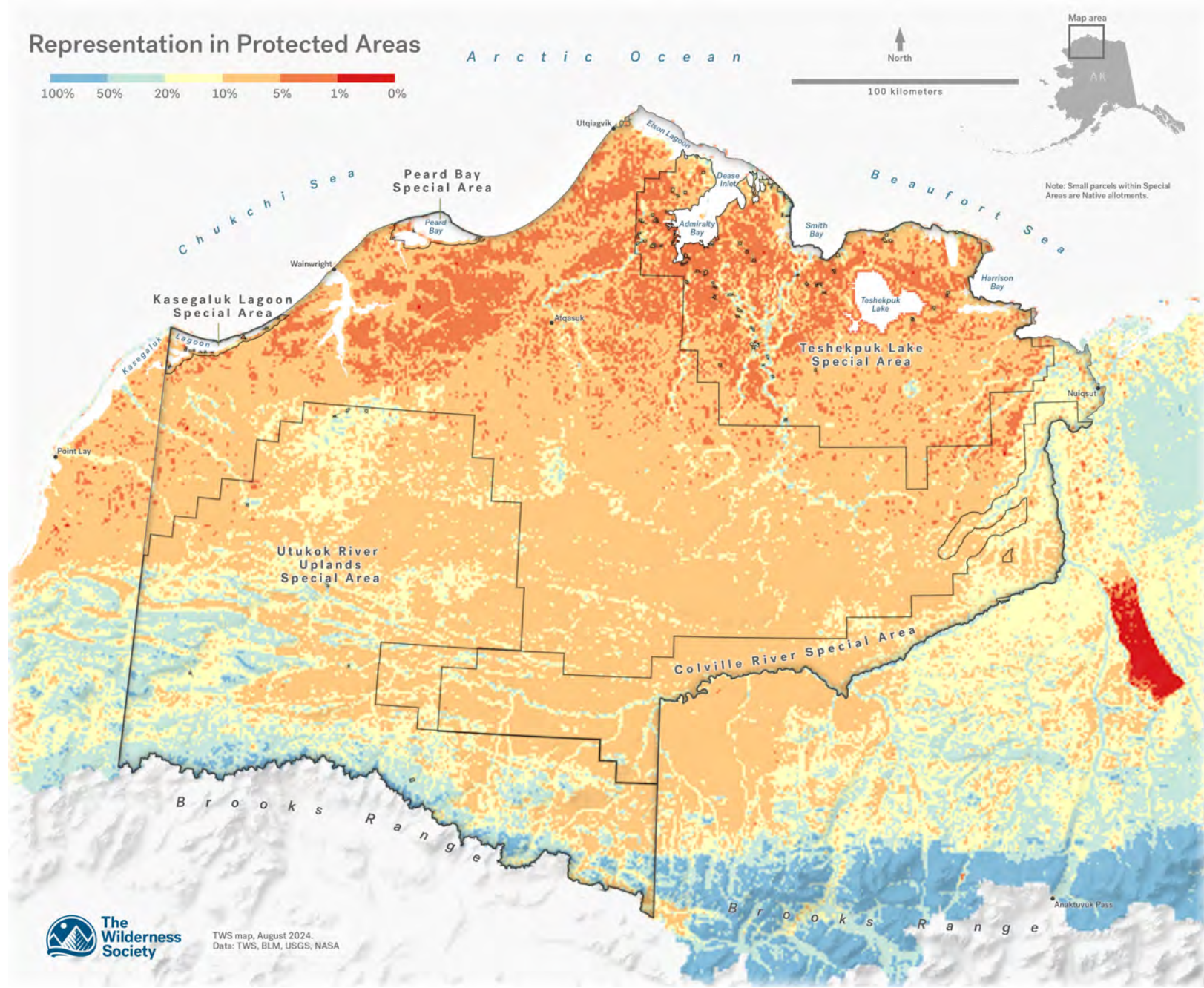


**Figure 5c.2.** Top 10% global areas for soil carbon down to 200-cm depth from [Hengl and Wheeler \(2018\)](#). Permafrost soils located in high latitudes store large amounts of carbon, which is often very old.

## Representation in Protected Areas — North Slope



**Figure 5d.1.** Terrestrial ecosystem representation across the North Slope of Alaska, defined here as areas north of the crest of the Brooks Range mountains. Higher representation scores indicate terrestrial ecosystem types that are well-represented in the current GAP 1 & 2 protected areas on the North Slope while those with lower scores are underrepresented in the existing protected area network on the North Slope.



**Figure 5d.2.** Terrestrial ecosystem representation within the National Petroleum Reserve – Alaska. Higher representation scores indicate terrestrial ecosystem types that are well-represented in the current GAP 1 & 2 protected areas on the North Slope while those with lower scores are underrepresented in the existing protected area network on the North Slope.