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:

B-2

Figure 2.7. Major Arctic rivers, lakes, and lagoons within the NPR-A and nearby areas. Please note that thousands of streams have been left off the map to improve visualization.
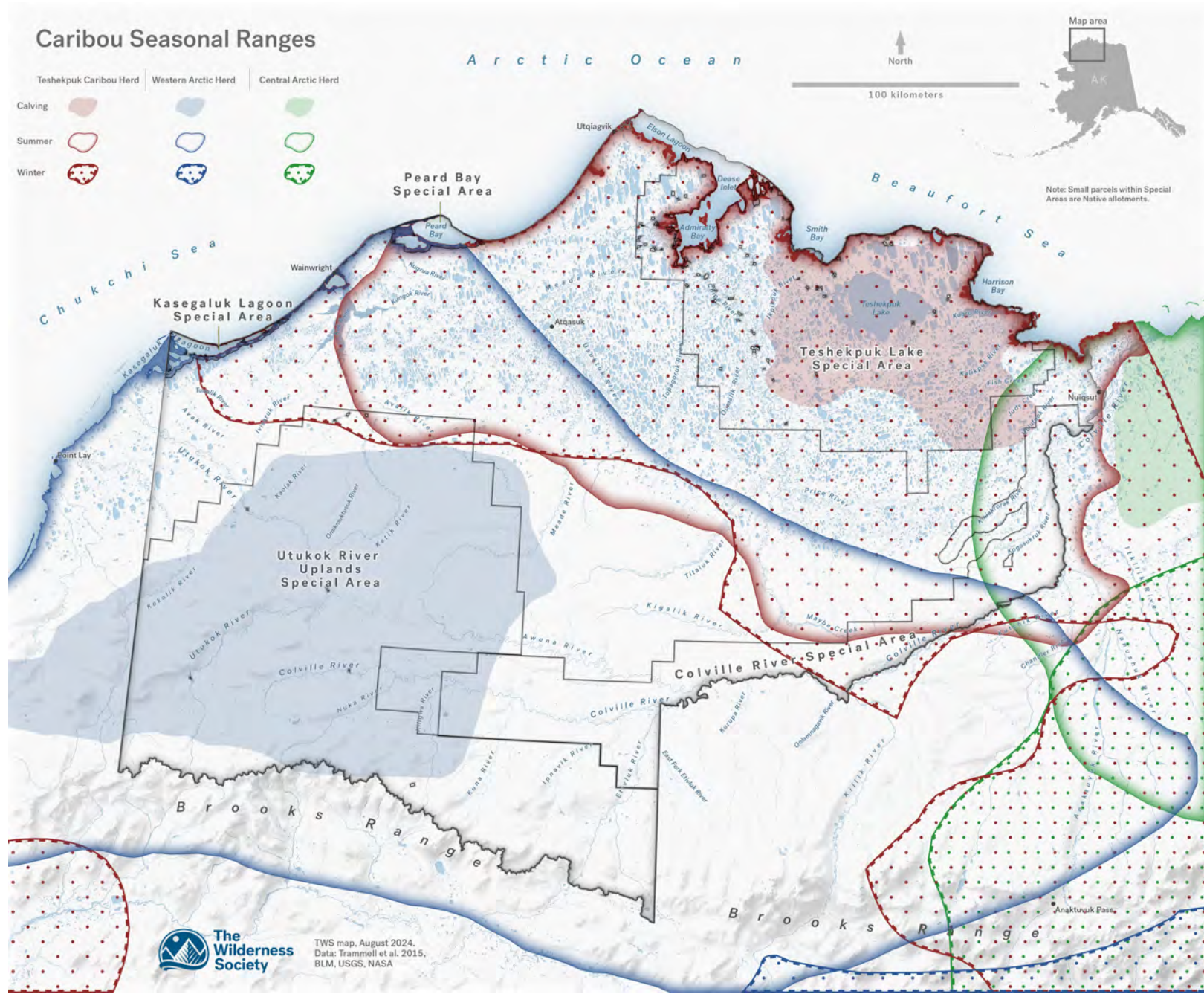
Figure 3a.3. Seasonal ranges of the three caribou herds that use lands within the National Petroleum Reserve – Alaska. Seasonal range data from Trammell et al. (2015). Note that seasonal range boundaries should be considered general approximations as there is annual variability in the specific areas used by caribou. For example, any given year of Western Arctic Herd calving distribution (see Figure 3a.5) differs from the more generalized calving range shown here.
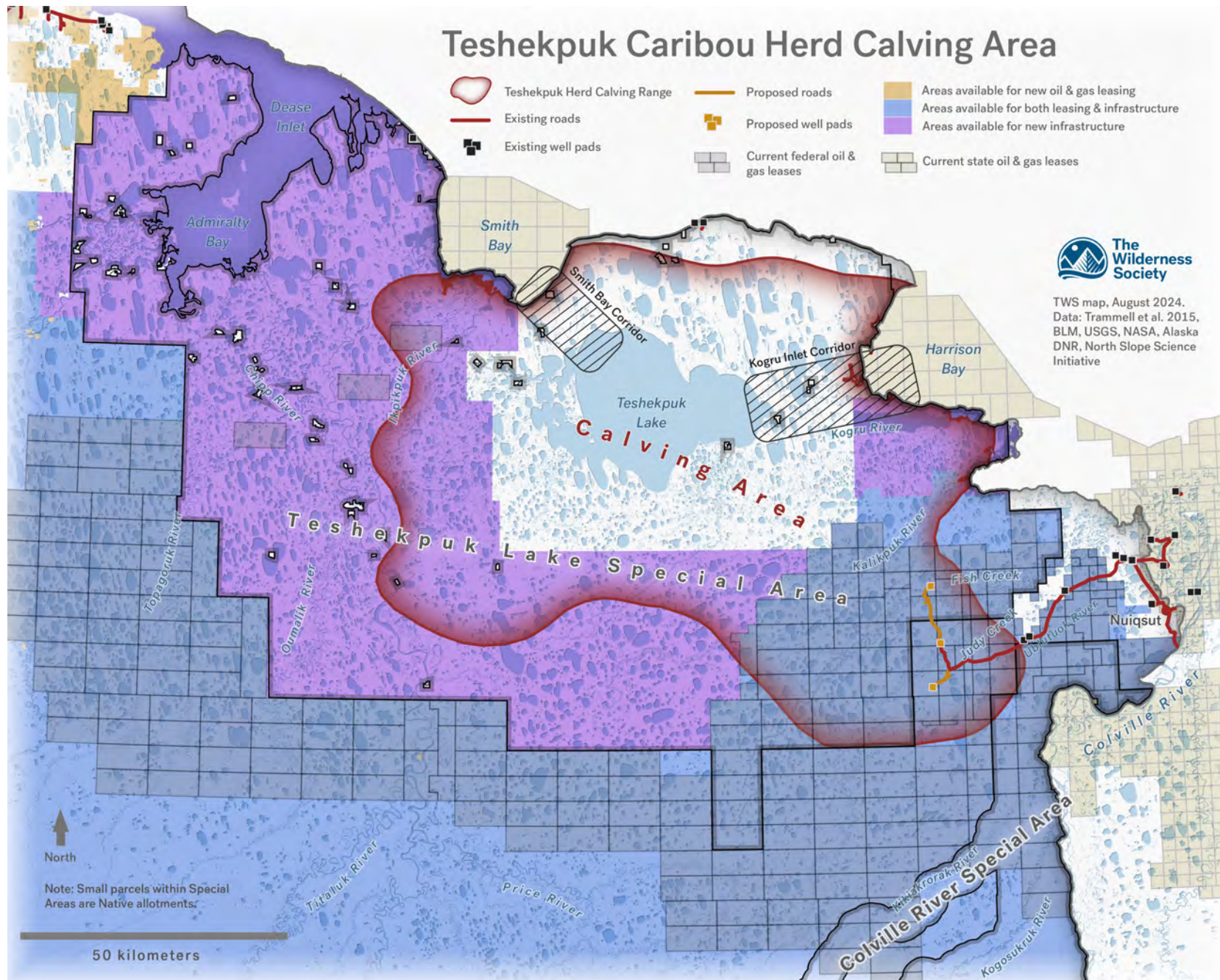
Figure 3a.4. Teshekpuk Caribou Herd primary calving area in relation to existing Special Areas, infrastructure, and oil and gas leases. The Smith Bay and Kogru Inlet movement corridors on either side of Teshekpuk Lake provide narrow regions of connectivity for caribou moving between seasonal areas south and north of the lake. Range data from Trammell et al. (2015) reflect general approximations as specific areas used vary annually.
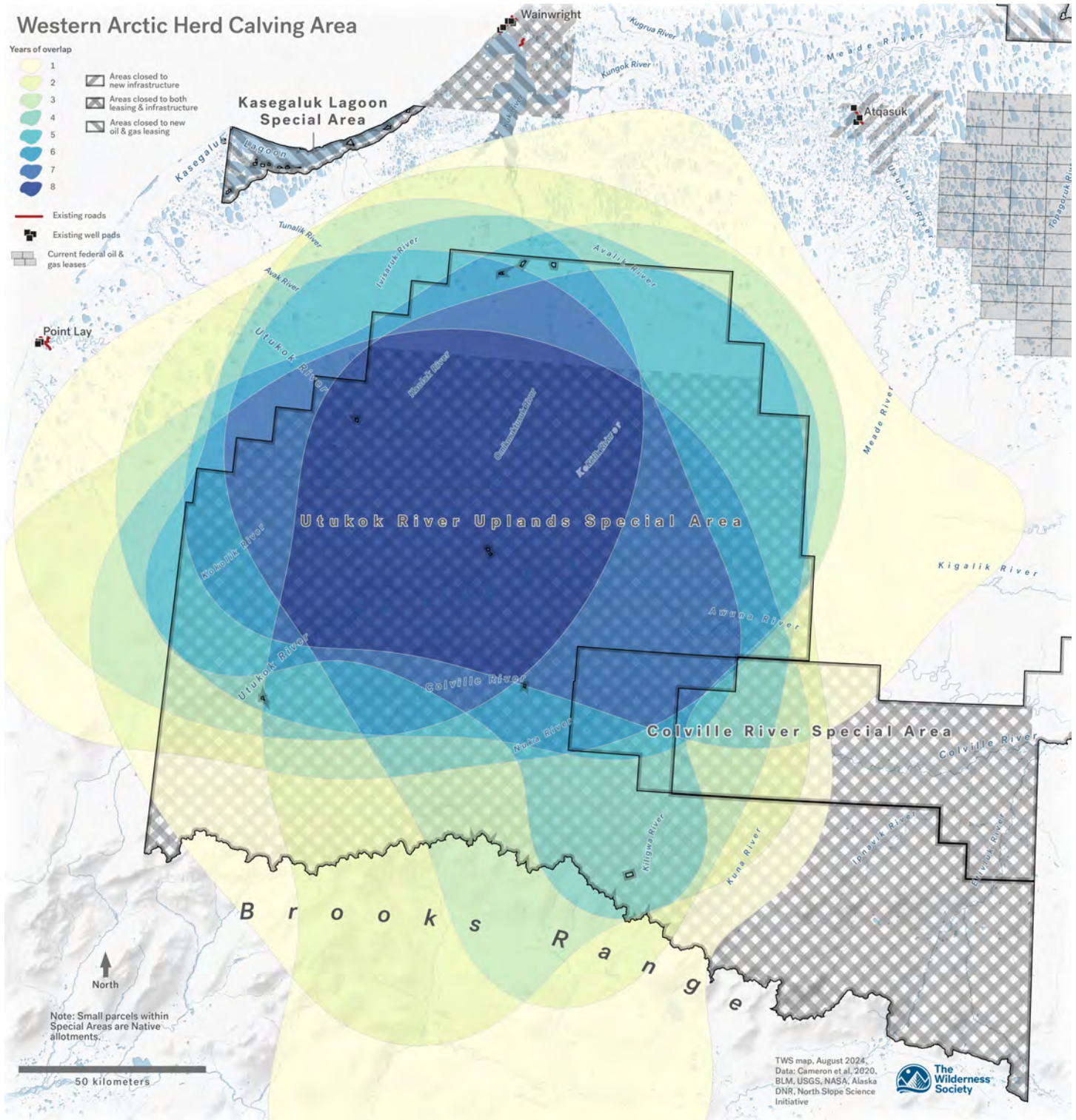
Figure 3a.5. The main Western Arctic Herd calving area lies within the Utukok River Uplands Special Area, though calving also occurs outside the Special Area in some years. The northernmost portion of the Special Area is open to oil and gas leasing and infrastructure, overlapping lands repeatedly used for Western Arctic Herd calving. Calving overlap data are from Cameron et al. (2020) and reflect the number of years of overlap of annual calving areas defined using 95% contours of kernel density estimates for caribou calving locations identified using GPS data.

Figure 3b.2. Estimated channel depth for the Colville River watershed within the Colville River Special Area and the Utukok River Uplands Special Area. Channel segments with higher channel depth segments are represented by darker colors (blues), while areas with lower depth are represented with lighter colors (purple, grey). Light grey rectangles represent oil leases near the Colville River watershed within the NPR-A and gold rectangles represent oil leases on surrounding lands near NPR-A Special Areas (thick black lines).
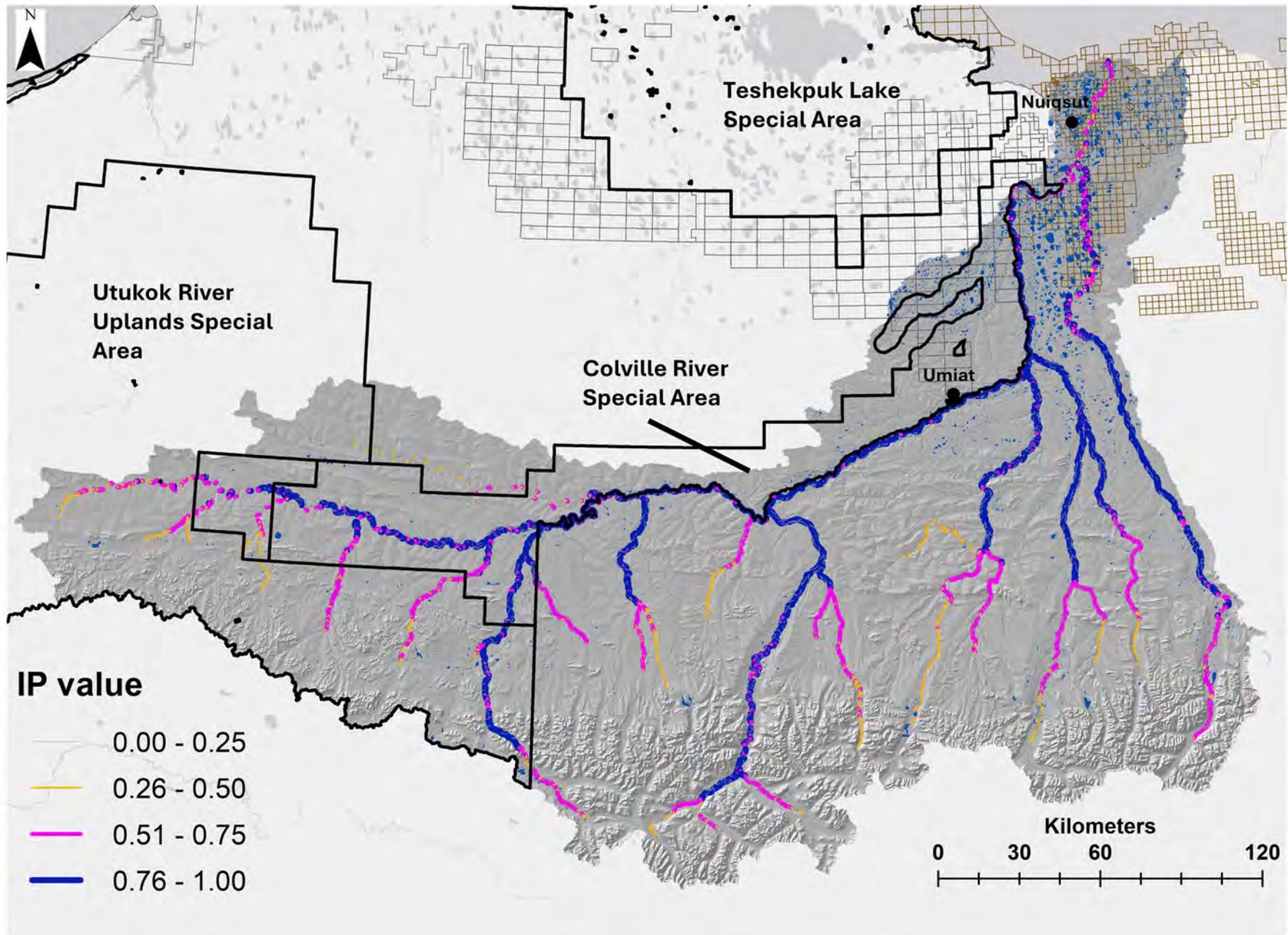
Figure 3b.3. Predicted intrinsic potential (IP) for Broad Whitefish spawning habitat within the Colville River Special Area and the Utukok River Uplands Special Area. Channel segments with low IP values (light grey color), moderate IP values (yellow color), high IP values (pink color), and very high (dark blue color) are shown for the Colville River watershed. Light grey rectangles represent oil leases near the Colville River watershed within the NPR-A and near surrounding lands and overlap with NPR-A Special Areas (thick black lines).
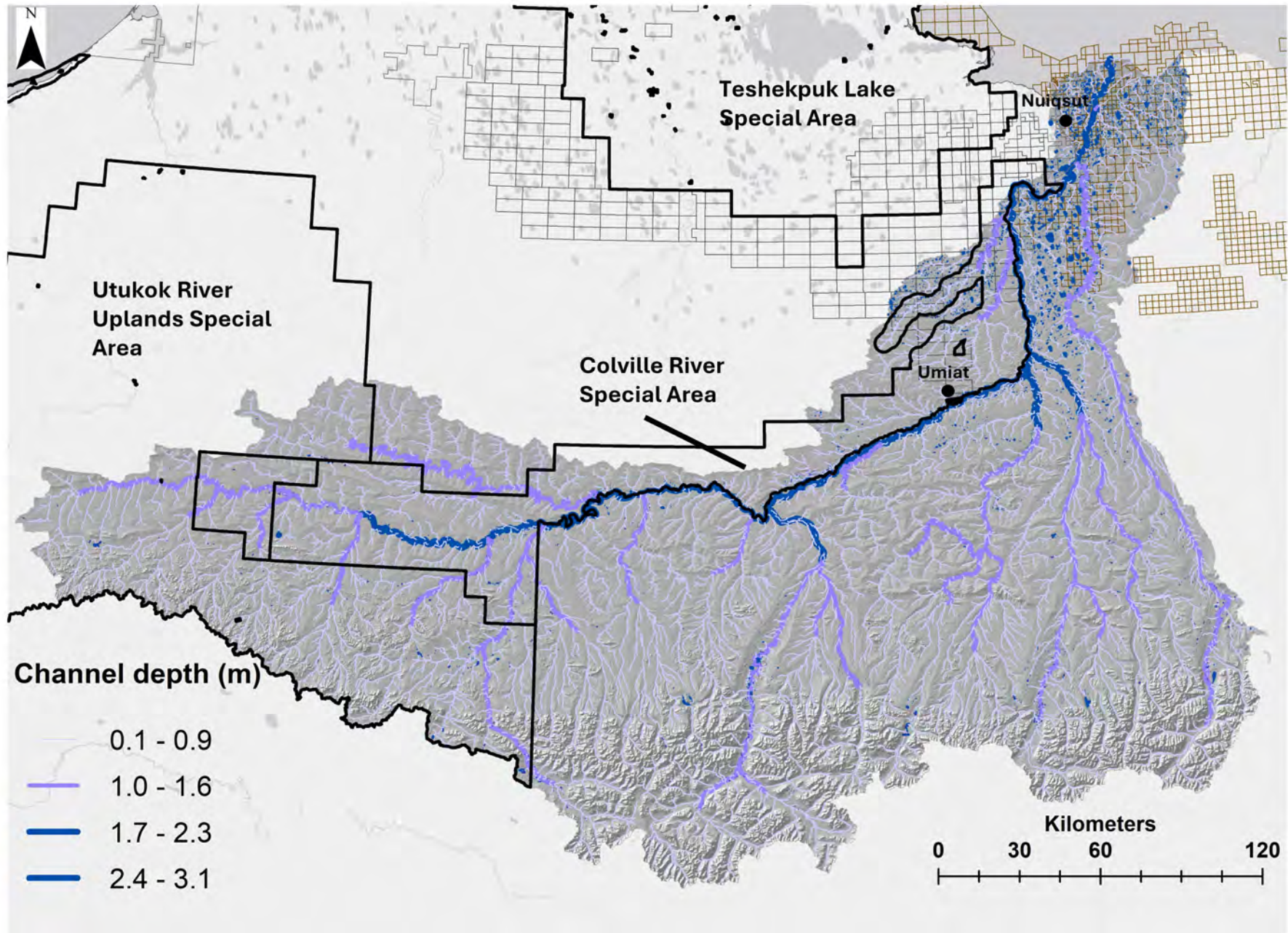
Figure 3b.4. Estimated floodplains and terraces for Colville River watershed within the Colville River Special Area and the Utukok River Uplands Special Area. Floodplains and terraces are in increments of bankfull depths up to 3 km from the river channel centerline. Bankfull depths < 1 represent the active channel (Dark blue – light blue colors), bankfull depths 1—3 represent the active floodplain (turquoise— light green colors), bankfull depths 4 (yellow color) represent floodplains that are occasionally flooded, and bankfull depths > 4 represent terraces (Orange—red colors). Light grey rectangles represent oil leases near the Colville River watershed within the NPR-A and near surrounding lands and overlap with NPR-A Special Areas (thick black lines).
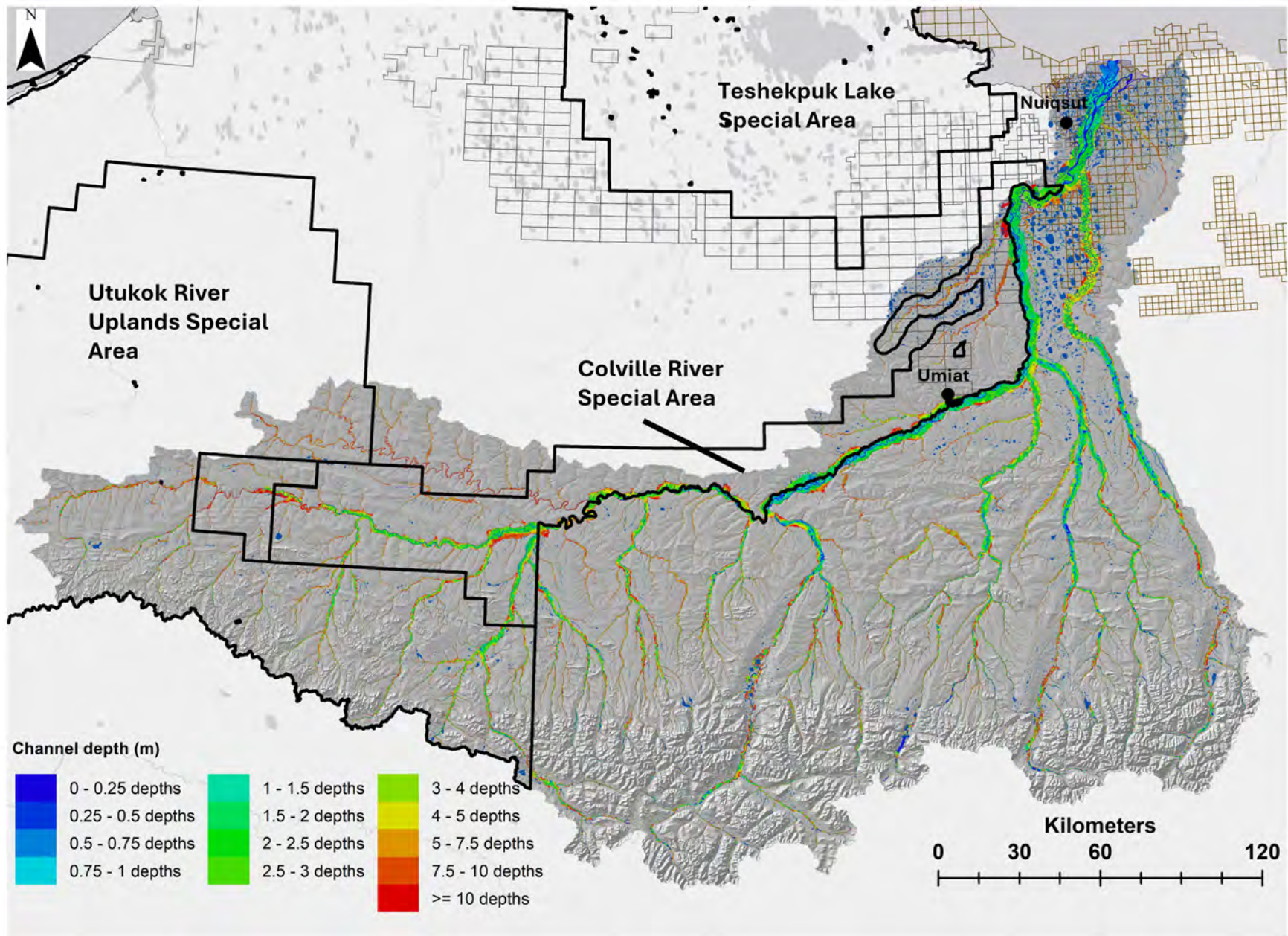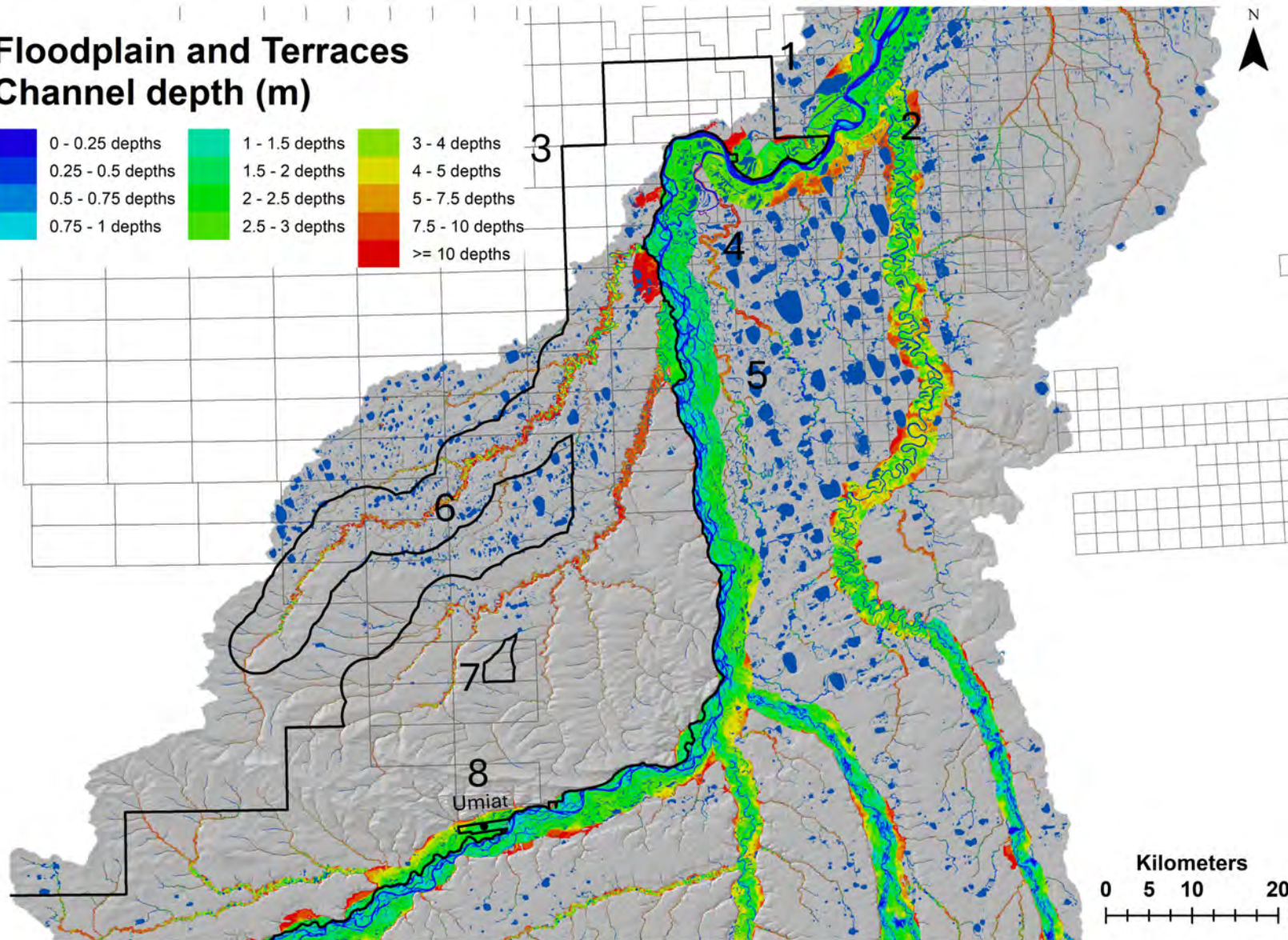
Figure 3b.5. Estimated floodplains and terraces for Colville River watershed within the Colville River Special Area between Umiat and Ocean Point. Floodplains and terraces are in increments of bankfull depths up to 3 km from the river channel centerline. Bankfull depths < 1 represent the active channel (Dark blue – light blue colors), bankfull depths 1—3 represent the active floodplain (turquoise— light green colors), bankfull depths 4 (yellow color) represent floodplains that are occasionally flooded, and bankfull depths > 4 represent terraces (Orange—red colors). Light grey rectangles represent oil leases near the Colville River watershed within the NPR-A and near surrounding lands and overlap with NPR-A Special Areas (thick black lines). Numbers shown on the map represent the general location of oil and gas discoveries in or near the Colville River Special area: 1 = Greater Mooses Tooth, 2 = Pika, 3 = Bear tooth, 4 = Horseshoe, 5 = Bear, 6 = Harrier-1, 7 = Merlin-1, 8 = Umiat.

Figure 3b.6. Predicted intrinsic potential (IP) for Broad Whitefish spawning habitat within the Colville River Special Area. Channel segments with low IP values (light grey color), moderate IP values (yellow color), high IP values (pink color), and very high (dark blue color) are shown for the Colville River watershed. Light grey rectangles represent oil leases near the Colville River watershed within the NPR-A and near surrounding lands and overlap with NPR-A Special Areas (thick black lines). Numbers shown on the map represent the general location of oil and gas discoveries in or near the Colville River Special area: 1 = Greater Mooses Tooth, 2 = Pika, 3 = Bear tooth, 4 = Horseshoe, 5 = Bear, 6 = Harrier-1, 7 = Merlin-1, 8 = Umiat.
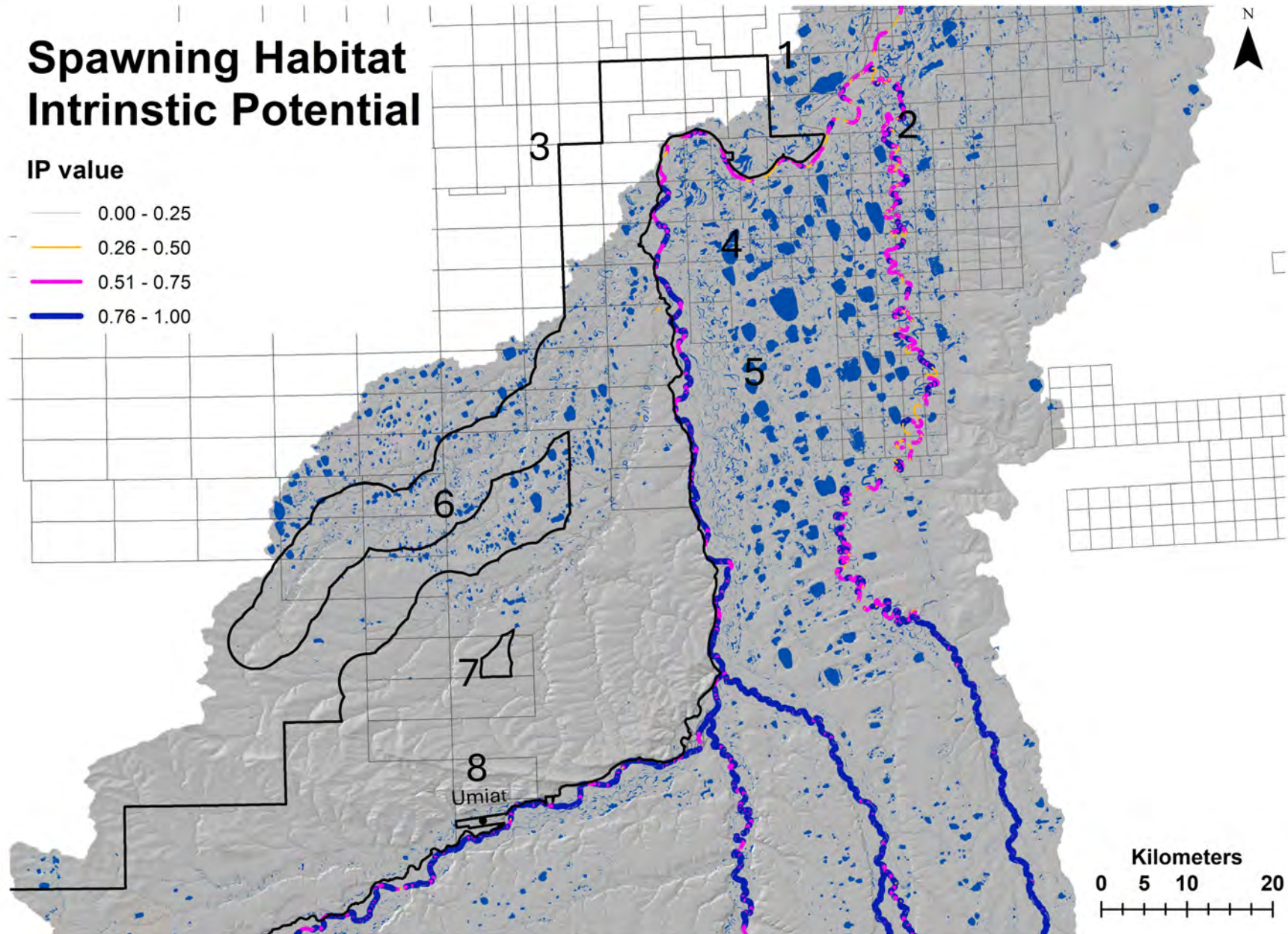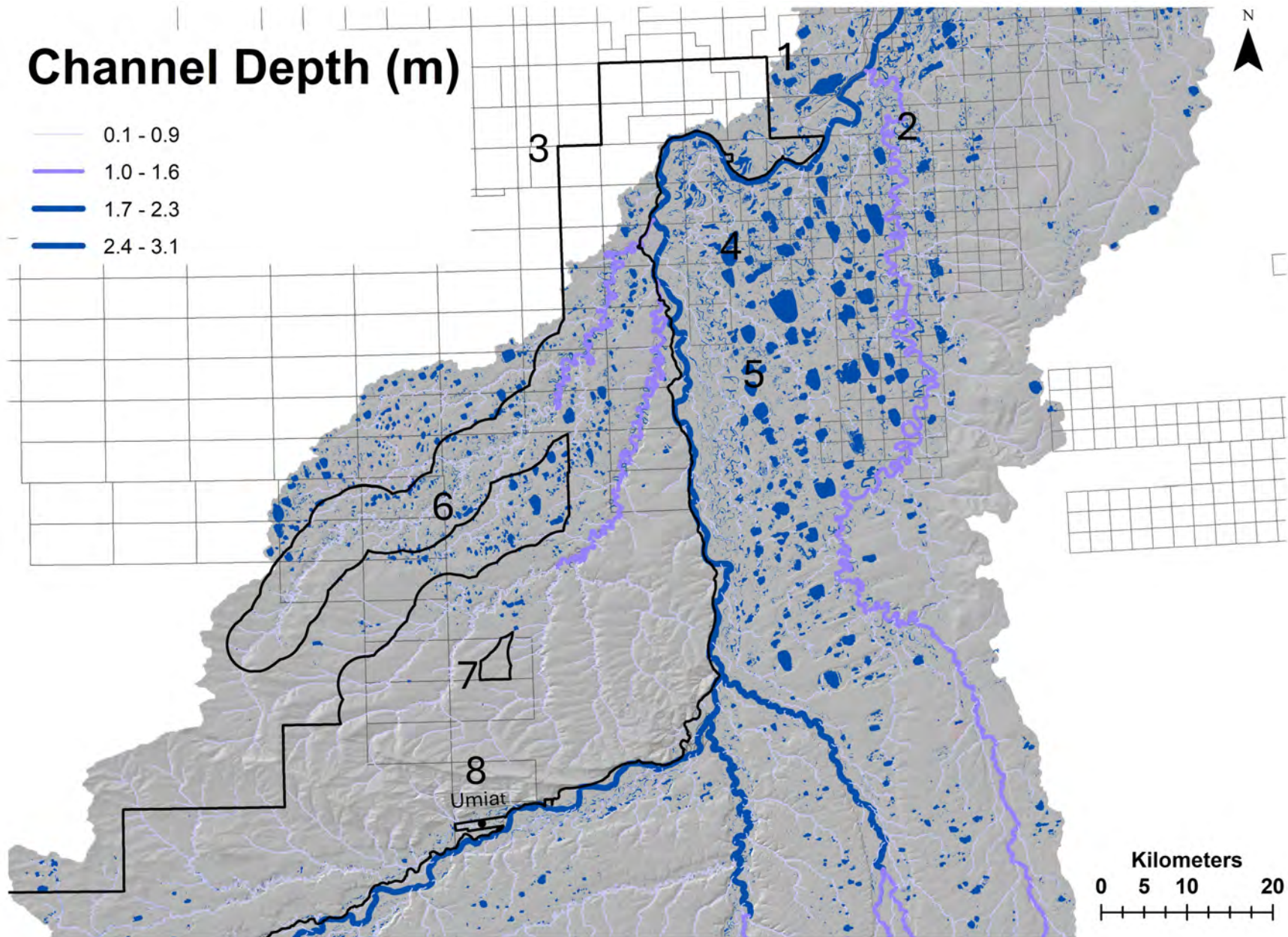
Figure 3b.7. Estimated channel depth for the Colville River watershed within the Colville River Special Area between Umiat and Ocean Point. Channel segments with higher channel depth segments are represented by darker colors (blues), while areas with lower depth are represented with lighter colors (purple, grey). Light grey rectangles represent oil leases near the Colville River watershed within the NPR-A and near surrounding lands and overlap with NPR-A Special Areas (thick black lines). Numbers shown on the map represent the general location of oil and gas discoveries in or near the Colville River Special area: 1 = Greater Mooses Tooth, 2 = Pika, 3 = Bear tooth, 4 = Horseshoe, 5 = Bear, 6 = Harrier-1, 7 = Merlin-1, 8 = Umiat.
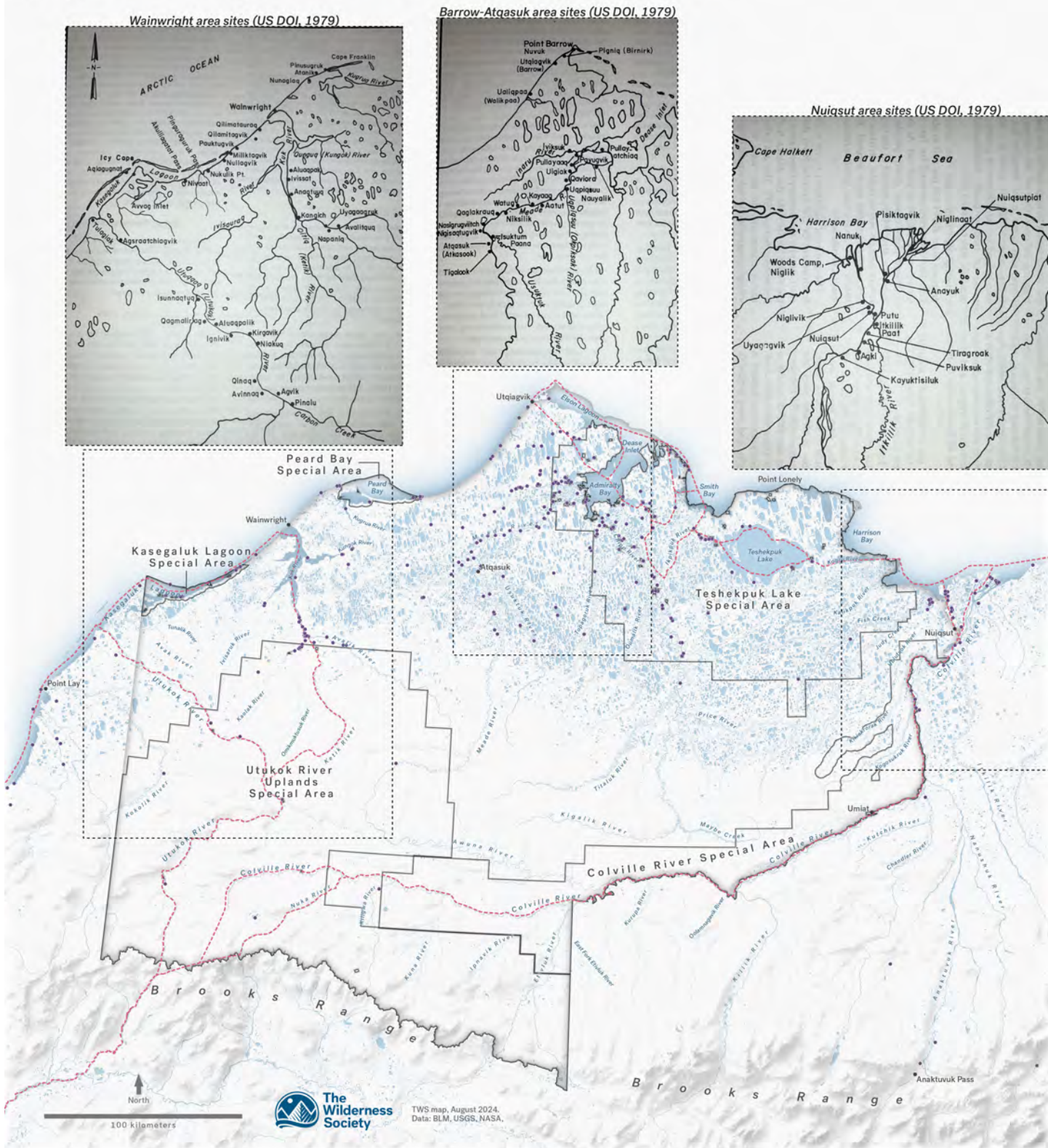
Figure 4.7. Indigenous lifeways, depicting traditional trade routes with historic and recent subsistence camps.