

APPENDIX E

Birds Technical Appendix

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INTRODUCTION

The analysis of effects on bird habitat relied on the LANDFIRE database (LANDFIRE 2022), which classifies vegetation (existing vegetation) based on a combination of the Ecological Systems of the United States (Comer et al. 2003) and the U.S. National Vegetation Classification (2022). It provides standardized landcover classification across the United States in support of numerous ecological management practices.

The LANDFIRE database for Alaska includes 131 individual landcover classes that were combined into high-value habitats, as listed in Table E-1.

Vegetation and wetlands may be considered higher value for a variety of reasons, including for providing preferred avian and wildlife habitat, supporting subsistence or threatened and endangered species, and providing direct surface water connection to traditional navigable waters. High-value bird habitats are those habitats known to be frequently used for nesting or foraging or hunting during the breeding season, as stopover habitat during migration, or in winter by resident species. High-value bird habitats include all high-functioning wetlands, tussock tundra, shrub tundra, mixed hardwood and deciduous forests, coastal habitats, and floodplains (Alaska Shorebird Group 2019; Handel et al. 2021; Kushlan et al. 2002).

Migratory birds occupy every habitat type in the five planning areas: riparian, wetland, forest, shrub, and alpine tundra areas. High-value special status species bird habitats are defined as those known to be frequently used for nesting or foraging, hunting during the breeding season, as stopover habitat during migration, or in winter by resident species (Table E-2). High-value status species bird habitats were grouped by bird guild (seabirds, raptors, shorebirds, waterbirds, and landbirds) (Figures E-1 through E-25) and ranked as follows.

- Seabirds are commonly found in coastal areas; in alpine and Arctic tundra; in tundra; and in high-elevation, low-vegetation habitat.
- Raptors frequently use open country, rocky outcrops, cliffs and steep slopes, and old-growth forest habitat.
- Breeding shorebirds in forested regions are generally adapted to use open scrub forests, forest openings in the lowlands (e.g., scrub bogs, graminoid-dominated wetlands), lacustrine waterbodies, gravelly river bar and coastal habitats, and dwarf-scrub habitats in upland and alpine areas. Breeding shorebirds in tundra areas are found in all tundra habitat types. Migratory shorebirds also rely heavily on sparsely vegetated coastal beaches and floodplains.
- Most waterbirds frequent rivers, river outlets, and coastal freshwater or brackish wetlands during migration because these areas are rich in food and are the first areas to become ice-free in spring. Waterbirds breed in a variety of aquatic habitats.
- Landbirds are the largest and most ecologically diverse group of birds in Alaska. It is difficult to assign high-quality habitat to this diverse species assemblage that is adapted to many different habitats. However, key coastal forest habitats include low-elevation, medium-sized and large conifer forests of uneven age structure. Critical interior forest habitat includes mature forests of upland and riparian white spruce and mixed white spruce and variable deciduous species.

Table E-1. LANDFIRE Vegetation Classes and High-Value Bird Habitat Designation

LANDFIRE Habitat Type (existing vegetation type)	High-Value Bird Habitat?
Alaska Arctic Coastal Sedge-Dwarf-Shrubland	Yes
Alaska Arctic Floodplain Forest	Yes
Alaska Arctic Floodplain Shrubland	Yes
Alaska Arctic Large River Floodplain Forest	Yes
Alaska Arctic Large River Floodplain Shrubland	Yes
Alaska Arctic Mesic Alder Shrubland	Yes
Alaska Arctic Tidal Flat	Yes
Alaska Sub-boreal and Maritime Alpine Mesic Herbaceous Meadow	Yes
Alaska Sub-boreal Hardwood-White-Lutz Spruce Forest and Woodland	Yes
Alaska Sub-boreal White-Lutz Spruce-Hardwood Forest and Woodland	Yes
Alaskan Pacific Acidic Sedge Peatland	Yes
Alaskan Pacific Acidic Shrub Peatland	Yes
Alaskan Pacific Floodplain Conifer Forest	Yes
Alaskan Pacific Floodplain Deciduous Forest	Yes
Alaskan Pacific Floodplain Mixed Forest	Yes
Alaskan Pacific Floodplain Shrubland (Conifer Forest)	Yes
Alaskan Pacific Floodplain Shrubland (Deciduous Forest)	Yes
Alaskan Pacific Floodplain Shrubland (Mixed Forest)	Yes
Alaskan Pacific Maritime Alpine Floodplain Shrubland	Yes
Alaskan Pacific Maritime Coastal Meadow and Slough-Levee	Yes
Alaskan Pacific Maritime Mesic Herbaceous Meadow	Yes
Alaskan Pacific Maritime Mountain Hemlock-Shore Pine Peatland	Yes
Alaskan Pacific Maritime Western Hemlock Forest	Yes
Alaskan Pacific Mesic Western Hemlock-Yellow-cedar Forest	Yes
Alaskan Pacific Sitka Spruce Forest and Beach Ridge	Yes
Alaskan Pacific Wet Low Shrubland & Floodplain Wetland	Yes
Alaskan Pacific-Aleutian Fen and Wet Meadow	Yes
Alaskan Pacific-Aleutian Rocky Coastline and Sea Cliff	Yes
North American Arctic Dwarf-shrub-Sphagnum Peatland	Yes
North American Arctic Freshwater Marsh	Yes
North American Arctic Lichen Tundra	Yes
North American Arctic Mesic Herbaceous Meadow	Yes
North American Arctic Polygonal Ground Shrub-Tussock Tundra	Yes
North American Arctic Polygonal Ground Tussock Tundra	Yes
North American Arctic Wet Sedge Tundra and Polygonal Ground	Yes
North American Arctic Wet Sedge-Sphagnum Peatland	Yes
North American Arctic-Subarctic Coastal Dune & Beach	Yes
North American Arctic-Subarctic Shrub-Tussock Tundra	Yes
North American Arctic-Subarctic Tidal Salt and Brackish Marsh	Yes

LANDFIRE Habitat Type (existing vegetation type)	High-Value Bird Habitat?
North American Arctic-Subarctic Tussock Tundra	Yes
North Pacific Hypermaritime Western Red-cedar-Western Hemlock Forest	Yes
Temperate Pacific Freshwater Emergent Marsh	Yes
Temperate Pacific Intertidal Flat	Yes
Temperate Pacific Tidal Salt and Brackish Marsh	Yes
Western North American Boreal Freshwater Emergent Marsh	Yes
Western North American Boreal Herbaceous Floodplain	Yes
Western North American Boreal Herbaceous Rich and Alkaline Fen	Yes
Western North American Boreal Lowland Large River Floodplain Conifer Forest	Yes
Western North American Boreal Lowland Large River Floodplain Deciduous Forest	Yes
Western North American Boreal Lowland Large River Floodplain Mixed Forest	Yes
Western North American Boreal Lowland Large River Floodplain Shrubland (Conifer Forest)	Yes
Western North American Boreal Lowland Large River Floodplain Shrubland (Deciduous Forest)	Yes
Western North American Boreal Lowland Large River Floodplain Shrubland (Mixed Forest)	Yes
Western North American Boreal Lowland Large River Floodplain Sparse Vegetation	Yes
Western North American Boreal Mesic Bluejoint-Forb Meadow	Yes
Western North American Boreal Mesic Hardwood-White Spruce Forest	Yes
Western North American Boreal Mesic White Spruce Forest	Yes
Western North American Boreal Mesic White Spruce-Hardwood Forest	Yes
Western North American Boreal Montane Floodplain Conifer Forest	Yes
Western North American Boreal Montane Floodplain Deciduous Forest	Yes
Western North American Boreal Montane Floodplain Mixed Forest	Yes
Western North American Boreal Montane Floodplain Shrubland (Conifer Forest)	Yes
Western North American Boreal Montane Floodplain Shrubland (Deciduous Forest)	Yes
Western North American Boreal Montane Floodplain Shrubland (Mixed Forest)	Yes
Western North American Boreal Riparian Stringer Conifer Forest	Yes
Western North American Boreal Riparian Stringer Deciduous Forest	Yes
Western North American Boreal Riparian Stringer Mixed Forest	Yes
Western North American Boreal Riparian Stringer Shrubland (Conifer Forest)	Yes
Western North American Boreal Riparian Stringer Shrubland (Deciduous Forest)	Yes
Western North American Boreal Riparian Stringer Shrubland (Mixed Forest)	Yes
Western North American Boreal Shrub Floodplain	Yes
Western North American Boreal Shrub-Sedge Rich and Alkaline Fen	Yes
Western North American Boreal Treeline White Spruce Woodland	Yes
Western North American Boreal Treeline White Spruce-Hardwood Woodland	Yes
Western North American Boreal Wet Meadow	Yes
Agriculture-Cultivated Crops and Irrigated Agriculture	No
Agriculture-Pasture and Hay	No
Alaska Arctic Large River Floodplain Sparse Vegetation	No
Alaska Arctic Permafrost Plateau Dwarf-Shrub Lichen Tundra	No

LANDFIRE Habitat Type (existing vegetation type)	High-Value Bird Habitat?
Alaska Sub-boreal Mesic Subalpine Alder Shrubland	No
Alaska Sub-boreal Mountain Hemlock-White Spruce Forest	No
Alaska Sub-boreal White-Lutz Spruce Forest and Woodland	No
Alaskan Pacific Alpine-Subalpine Dwarf-shrubland & Heath	No
Alaskan Pacific Floodplain Sparse Vegetation	No
Alaskan Pacific Maritime Avalanche Slope Shrubland	No
Alaskan Pacific Mountain Hemlock Forest and Subalpine Woodland	No
Alaskan Pacific Poorly Drained Conifer Woodland	No
Alaskan Pacific-Aleutian Alder-Salmonberry-Copperbush Shrubland	No
Alaskan Pacific-Aleutian Coastal Dune Beach and Beach Meadow	No
Aleutian Ericaceous Dwarf-shrubland Heath and Fell-field	No
Aleutian Mesic Herbaceous Meadow	No
Aleutian Mesic-Wet Willow Shrubland	No
Aleutian Volcanic Rock and Talus	No
Developed-High Intensity	No
Developed-Low Intensity	No
Developed-Medium Intensity	No
Developed-Open Space	No
Developed-Roads	No
North American Arctic Bedrock and Talus	No
North American Arctic Dryas Tundra	No
North American Arctic Dwarf-Shrub Lichen Tundra	No
North American Arctic Mesic Sedge-Willow Tundra	No
North American Arctic Mesic-Wet Low Willow Shrubland	No
North American Arctic Scrub Birch-Ericaceous Shrubland	No
North American Arctic Sparse Tundra	No
North American Arctic-Subarctic Coastal Dune & Beach Meadow	No
North American Glacial Outwash	No
North American Glacier and Ice Field	No
North Pacific Alpine and Subalpine Bedrock and Scree	No
North Pacific Montane Massive Bedrock-Cliff and Talus	No
North Pacific Shrub Swamp	No
Open Water	No
Quarries-Strip Mines-Gravel Pits-Well and Wind Pads	No
Western North American Boreal Alpine Dwarf-shrubland	No
Western North American Boreal Alpine Mesic Herbaceous Meadow	No
Western North American Boreal Black Spruce Bog and Dwarf-Tree Peatland	No
Western North American Boreal Black Spruce-Tamarack Fen	No
Western North American Boreal Cliff Scree and Rock	No
Western North American Boreal Dry Aspen-Steppe Bluff	No

LANDFIRE Habitat Type (existing vegetation type)	High-Value Bird Habitat?
Western North American Boreal Dry Grassland	No
Western North American Boreal Mesic Birch-Aspen Forest	No
Western North American Boreal Mesic Scrub Birch-Willow Shrubland	No
Western North American Boreal Mesic-Wet Black Spruce Forest and Woodland	No
Western North American Boreal Mesic-Wet Black Spruce-Hardwood Forest and Woodland	No
Western North American Boreal Montane Floodplain Sparse Vegetation	No
Western North American Boreal Montane-Alpine Talus and Bedrock	No
Western North American Boreal Shrub Swamp	No
Western North American Boreal Shrub-Sedge Bog & Acidic Fen	No
Western North American Boreal Spruce-Lichen Woodland	No
Western North American Boreal Treeline Hardwood-White Spruce Woodland	No
Western North American Boreal Wet Black Spruce-Tussock Woodland	No

Source: U.S. Department of the Interior et al. (2013).

Table E-2. High-Value Bird Habitat by BLM Special Status Species Bird Guild (1 = high-value habitat)

Vegetation Type	High-Value Habitat for Seabirds?	High-Value Habitat for Raptors?	High-Value Habitat for Shorebirds?	High-Value Habitat for Waterbirds?	High-Value Habitat for Landbirds?
Agriculture-Cultivated Crops and Irrigated Agriculture	No	Yes	No	No	Yes
Agriculture-Pasture and Hay	No	Yes	No	No	Yes
Alaska Sub-boreal Mountain Hemlock-White Spruce Forest	No	No	No	No	Yes
Alaska Sub-boreal White-Lutz Spruce Forest and Woodland	No	No	No	No	Yes
Alaskan Pacific Mountain Hemlock Forest and Subalpine Woodland	No	No	No	No	Yes
Alaskan Pacific Poorly Drained Conifer Woodland	No	No	No	No	Yes
Western North American Boreal Black Spruce Bog and Dwarf-Tree Peatland	No	No	No	No	Yes
Western North American Boreal Black Spruce-Tamarack Fen	No	No	No	No	Yes
Western North American Boreal Mesic-Wet Black Spruce Forest and Woodland	No	No	No	No	Yes
Western North American Boreal Spruce-Lichen Woodland	No	No	No	No	Yes
Western North American Boreal Wet Black Spruce-Tussock Woodland	No	No	No	No	Yes
Western North American Boreal Mesic-Wet Black Spruce-Hardwood Forest and Woodland	No	No	No	No	Yes
Developed-High Intensity	No	No	No	No	No
Developed-Low Intensity	No	No	No	No	No
Developed-Medium Intensity	No	No	No	No	No

Vegetation Type	High-Value Habitat for Seabirds?	High-Value Habitat for Raptors?	High-Value Habitat for Shorebirds?	High-Value Habitat for Waterbirds?	High-Value Habitat for Landbirds?
Developed-Open Space	No	No	No	No	No
Developed-Roads	No	No	No	No	1
Alaskan Pacific-Aleutian Coastal Dune Beach and Beach Meadow	Yes	Yes	Yes	Yes	No
Aleutian Mesic Herbaceous Meadow	Yes	Yes	Yes	Yes	No
North American Arctic-Subarctic Coastal Dune & Beach Meadow	Yes	Yes	Yes	Yes	No
Western North American Boreal Alpine Mesic Herbaceous Meadow	No	Yes	Yes	No	No
Western North American Boreal Dry Grassland	No	Yes	Yes	No	Yes
Western North American Boreal Mesic Birch-Aspen Forest	No	No	No	No	No
Western North American Boreal Treeline Hardwood-White Spruce Woodland	No	No	No	No	Yes
Fill-NoData	No	No	No	No	No
Open Water	Yes	No	No	Yes	Yes
Quarries-Strip Mines-Gravel Pits-Well and Wind Pads	No	No	No	No	Yes
Alaska Arctic Permafrost Plateau Dwarf-Shrub Lichen Tundra	No	Yes	Yes	No	No
Alaska Sub-boreal Mesic Subalpine Alder Shrubland	No	Yes	Yes	No	No
Alaskan Pacific Alpine-Subalpine Dwarf-shrubland & Heath	No	Yes	Yes	No	Yes
Alaskan Pacific Maritime Avalanche Slope Shrubland	Yes	No	No	No	No
Alaskan Pacific-Aleutian Alder-Salmonberry-Copperbush Shrubland	No	No	No	No	Yes
Aleutian Ericaceous Dwarf-shrubland Heath and Fell-field	Yes	No	Yes	No	No
Aleutian Mesic-Wet Willow Shrubland	No	No	Yes	No	No
North American Arctic Dryas Tundra	Yes	Yes	Yes	No	No
North American Arctic Dwarf-Shrub Lichen Tundra	Yes	Yes	Yes	Yes	No
North American Arctic Mesic Sedge-Willow Tundra	Yes	Yes	Yes	Yes	No
North American Arctic Mesic-Wet Low Willow Shrubland	Yes	Yes	Yes	Yes	No
North American Arctic Scrub Birch-Ericaceous Shrubland	No	Yes	Yes	No	No
North American Arctic Sparse Tundra	Yes	Yes	Yes	No	No
Western North American Boreal Alpine Dwarf-shrubland	Yes	Yes	Yes	No	No
Western North American Boreal Dry Aspen-Steppe Bluff	No	Yes	No	No	Yes

Vegetation Type	High-Value Habitat for Seabirds?	High-Value Habitat for Raptors?	High-Value Habitat for Shorebirds?	High-Value Habitat for Waterbirds?	High-Value Habitat for Landbirds?
Western North American Boreal Mesic Scrub Birch-Willow Shrubland	No	No	No	No	No
Western North American Boreal Shrub Swamp	Yes	No	No	No	Yes
Western North American Boreal Shrub-Sedge Bog & Acidic Fen	No	No	No	No	Yes
North Pacific Shrub Swamp	Yes	No	No	No	Yes
North American Glacier and Ice Field	Yes	No	No	No	No
Aleutian Volcanic Rock and Talus	Yes	No	No	No	No
North American Arctic Bedrock and Talus	Yes	Yes	No	No	No
Western North American Boreal Montane-Alpine Talus and Bedrock	Yes	Yes	No	No	No
Western North American Boreal Cliff Scree and Rock	Yes	Yes	No	No	No
Western North American Boreal Montane Floodplain Sparse Vegetation	Yes	Yes	No	No	Yes
Alaskan Pacific Floodplain Sparse Vegetation	Yes	Yes	No	No	Yes
Alaska Arctic Large River Floodplain Sparse Vegetation	Yes	No	No	No	No
North Pacific Montane Massive Bedrock-Cliff and Talus	Yes	Yes	No	No	No
North Pacific Alpine and Subalpine Bedrock and Scree	Yes	Yes	No	No	No
North American Glacial Outwash	Yes	No	No	No	No
Alaskan Pacific Maritime Mountain Hemlock-Shore Pine Peatland	No	No	No	No	Yes
Alaskan Pacific Maritime Western Hemlock Forest	No	No	No	No	Yes
Alaskan Pacific Mesic Western Hemlock-Yellow-cedar Forest	No	No	No	No	Yes
Alaskan Pacific Sitka Spruce Forest and Beach Ridge	No	No	No	No	Yes
Western North American Boreal Mesic White Spruce Forest	No	No	No	No	Yes
Western North American Boreal Treeline White Spruce Woodland	No	No	No	No	Yes
North Pacific Hypermaritime Western Red-cedar-Western Hemlock Forest	No	No	No	No	Yes
Western North American Boreal Treeline White Spruce-Hardwood Woodland	No	No	No	No	Yes
Western North American Boreal Mesic Hardwood-White Spruce Forest	No	No	No	No	Yes
Western North American Boreal Mesic White Spruce-Hardwood Forest	No	No	No	No	Yes
Alaska Sub-boreal Hardwood-White-Lutz Spruce Forest and Woodland	No	No	No	No	Yes
Alaska Sub-boreal White-Lutz Spruce-Hardwood Forest and Woodland	No	No	No	No	Yes

Vegetation Type	High-Value Habitat for Seabirds?	High-Value Habitat for Raptors?	High-Value Habitat for Shorebirds?	High-Value Habitat for Waterbirds?	High-Value Habitat for Landbirds?
Alaska Sub-boreal and Maritime Alpine Mesic Herbaceous Meadow	Yes	Yes	Yes	No	No
Alaskan Pacific Maritime Coastal Meadow and Slough-Levee	Yes	Yes	Yes	Yes	Yes
Alaskan Pacific Maritime Mesic Herbaceous Meadow	Yes	Yes	Yes	Yes	Yes
North American Arctic Lichen Tundra	Yes	Yes	Yes	No	No
North American Arctic Mesic Herbaceous Meadow	Yes	Yes	Yes	Yes	No
North American Arctic-Subarctic Tussock Tundra	No	Yes	Yes	Yes	No
North American Arctic Polygonal Ground Tussock Tundra	No	Yes	Yes	Yes	No
Alaskan Pacific-Aleutian Fen and Wet Meadow	Yes	Yes	Yes	Yes	No
North American Arctic Freshwater Marsh	Yes	Yes	Yes	Yes	No
North American Arctic Wet Sedge Tundra and Polygonal Ground	Yes	Yes	Yes	Yes	No
North American Arctic-Subarctic Tidal Salt and Brackish Marsh	Yes	Yes	Yes	Yes	No
Western North American Boreal Freshwater Emergent Marsh	Yes	Yes	Yes	Yes	Yes
Western North American Boreal Mesic Bluejoint-Forb Meadow	Yes	Yes	Yes	No	Yes
Western North American Boreal Wet Meadow	Yes	Yes	Yes	No	Yes
Alaskan Pacific Acidic Sedge Peatland	No	Yes	Yes	No	Yes
North American Arctic Wet Sedge-Sphagnum Peatland	No	Yes	Yes	No	Yes
Western North American Boreal Herbaceous Floodplain	Yes	Yes	Yes	No	Yes
Western North American Boreal Herbaceous Rich and Alkaline Fen	Yes	Yes	Yes	No	Yes
Temperate Pacific Freshwater Emergent Marsh	Yes	Yes	Yes	No	Yes
Temperate Pacific Tidal Salt and Brackish Marsh	Yes	Yes	Yes	1	Yes
Alaskan Pacific Acidic Shrub Peatland	No	Yes	Yes	No	Yes
Alaskan Pacific Maritime Alpine Floodplain Shrubland	No	Yes	Yes	No	Yes
Alaskan Pacific Wet Low Shrubland & Floodplain Wetland	No	Yes	Yes	No	Yes
North American Arctic Dwarf-shrub-Sphagnum Peatland	No	Yes	Yes	No	Yes
Western North American Boreal Shrub Floodplain	No	Yes	Yes	No	Yes
Western North American Boreal Shrub-Sedge Rich and Alkaline Fen	No	Yes	Yes	No	Yes
Alaska Arctic Floodplain Shrubland	Yes	Yes	Yes	No	No
Alaska Arctic Large River Floodplain Shrubland	Yes	Yes	Yes	No	No
Alaskan Pacific Floodplain Shrubland (Conifer Forest)	No	No	No	No	Yes

Vegetation Type	High-Value Habitat for Seabirds?	High-Value Habitat for Raptors?	High-Value Habitat for Shorebirds?	High-Value Habitat for Waterbirds?	High-Value Habitat for Landbirds?
Western North American Boreal Lowland Large River Floodplain Shrubland (Conifer Forest)	No	No	No	No	Yes
Western North American Boreal Montane Floodplain Shrubland (Conifer Forest)	No	No	Yes	No	Yes
Western North American Boreal Riparian Stringer Shrubland (Conifer Forest)	No	No	Yes	No	Yes
Alaskan Pacific Floodplain Shrubland (Deciduous Forest)	No	No	Yes	No	Yes
Alaskan Pacific Floodplain Shrubland (Mixed Forest)	No	No	Yes	No	Yes
Western North American Boreal Lowland Large River Floodplain Shrubland (Deciduous Forest)	No	Yes	No	No	Yes
Western North American Boreal Lowland Large River Floodplain Shrubland (Mixed Forest)	No	Yes	No	No	Yes
Western North American Boreal Montane Floodplain Shrubland (Deciduous Forest)	No	Yes	No	No	No
Western North American Boreal Montane Floodplain Shrubland (Mixed Forest)	No	Yes	No	No	No
Western North American Boreal Riparian Stringer Shrubland (Deciduous Forest)	No	No	No	No	Yes
Western North American Boreal Riparian Stringer Shrubland (Mixed Forest)	No	No	No	No	Yes
Alaska Arctic Floodplain Forest	No	Yes	Yes	No	No
Alaska Arctic Large River Floodplain Forest	No	Yes	Yes	No	No
Alaskan Pacific Floodplain Conifer Forest	No	No	No	No	Yes
Western North American Boreal Lowland Large River Floodplain Conifer Forest	No	No	No	No	Yes
Western North American Boreal Montane Floodplain Conifer Forest	No	No	No	No	Yes
Western North American Boreal Riparian Stringer Conifer Forest	No	No	No	No	Yes
Alaskan Pacific Floodplain Deciduous Forest	No	No	No	No	Yes
Alaskan Pacific Floodplain Mixed Forest	No	No	No	No	Yes
Western North American Boreal Lowland Large River Floodplain Deciduous Forest	No	No	No	No	Yes
Western North American Boreal Lowland Large River Floodplain Mixed Forest	No	No	No	No	Yes
Western North American Boreal Montane Floodplain Deciduous Forest	No	No	No	No	Yes
Western North American Boreal Montane Floodplain Mixed Forest	No	No	No	No	Yes
Western North American Boreal Riparian Stringer Deciduous Forest	No	No	No	No	Yes
Western North American Boreal Riparian Stringer Mixed Forest	No	No	No	No	Yes
Alaska Arctic Coastal Sedge-Dwarf-Shrubland	Yes	Yes	Yes	Yes	No
Alaska Arctic Mesic Alder Shrubland	No	Yes	No	No	No

Vegetation Type	High-Value Habitat for Seabirds?	High-Value Habitat for Raptors?	High-Value Habitat for Shorebirds?	High-Value Habitat for Waterbirds?	High-Value Habitat for Landbirds?
North American Arctic Polygonal Ground Shrub-Tussock Tundra	No	Yes	Yes	Yes	No
North American Arctic-Subarctic Shrub-Tussock Tundra	No	Yes	Yes	Yes	No
Alaska Arctic Tidal Flat	Yes	Yes	Yes	Yes	No
Alaskan Pacific-Aleutian Rocky Coastline and Sea Cliff	Yes	Yes	No	No	No
North American Arctic-Subarctic Coastal Dune & Beach	Yes	Yes	Yes	Yes	No
Western North American Boreal Lowland Large River Floodplain Sparse Vegetation	Yes	Yes	Yes	No	No
Temperate Pacific Intertidal Flat	Yes	Yes	Yes	Yes	No

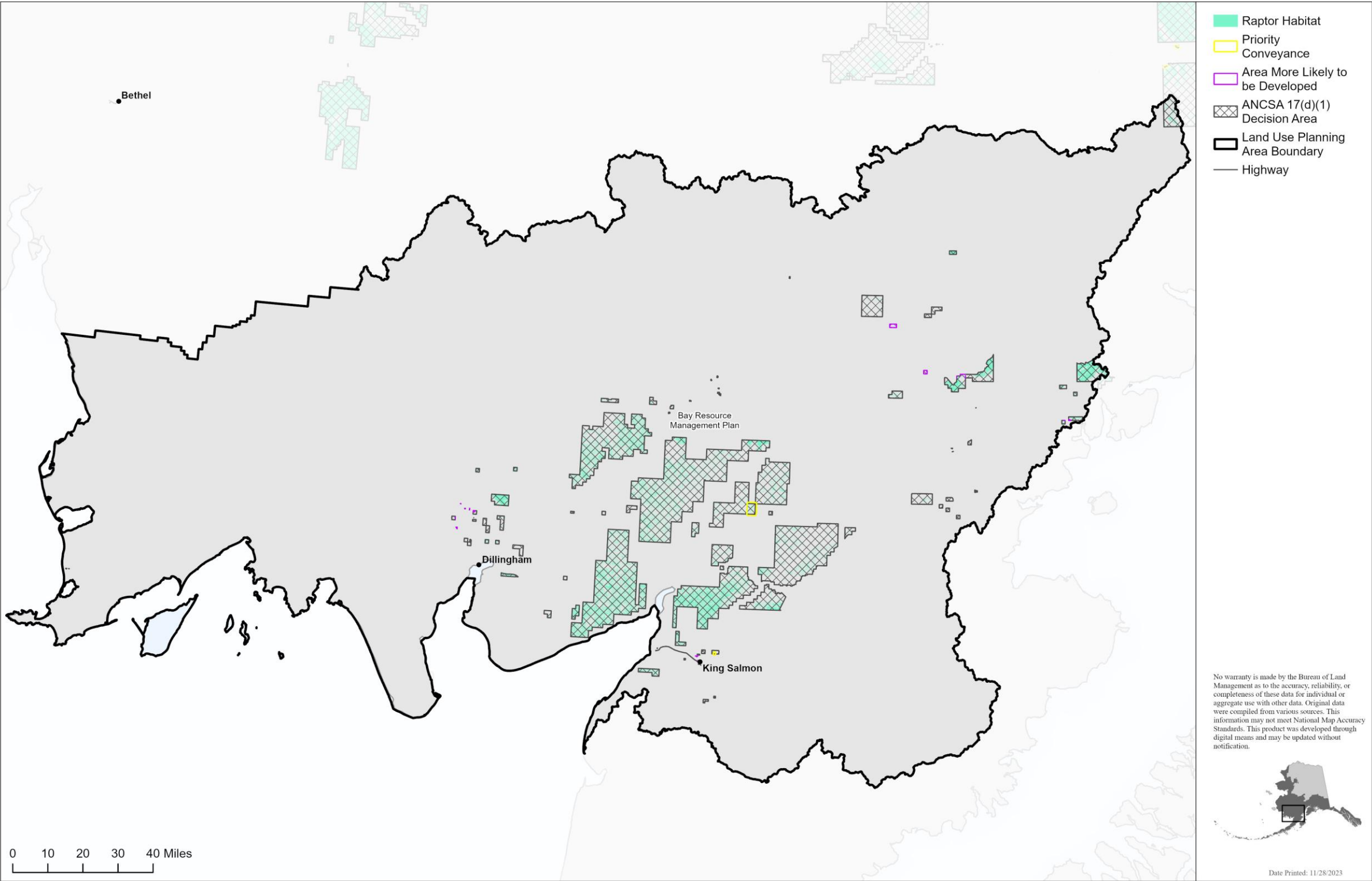


Figure E-1. Raptor habitat in the Bay planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

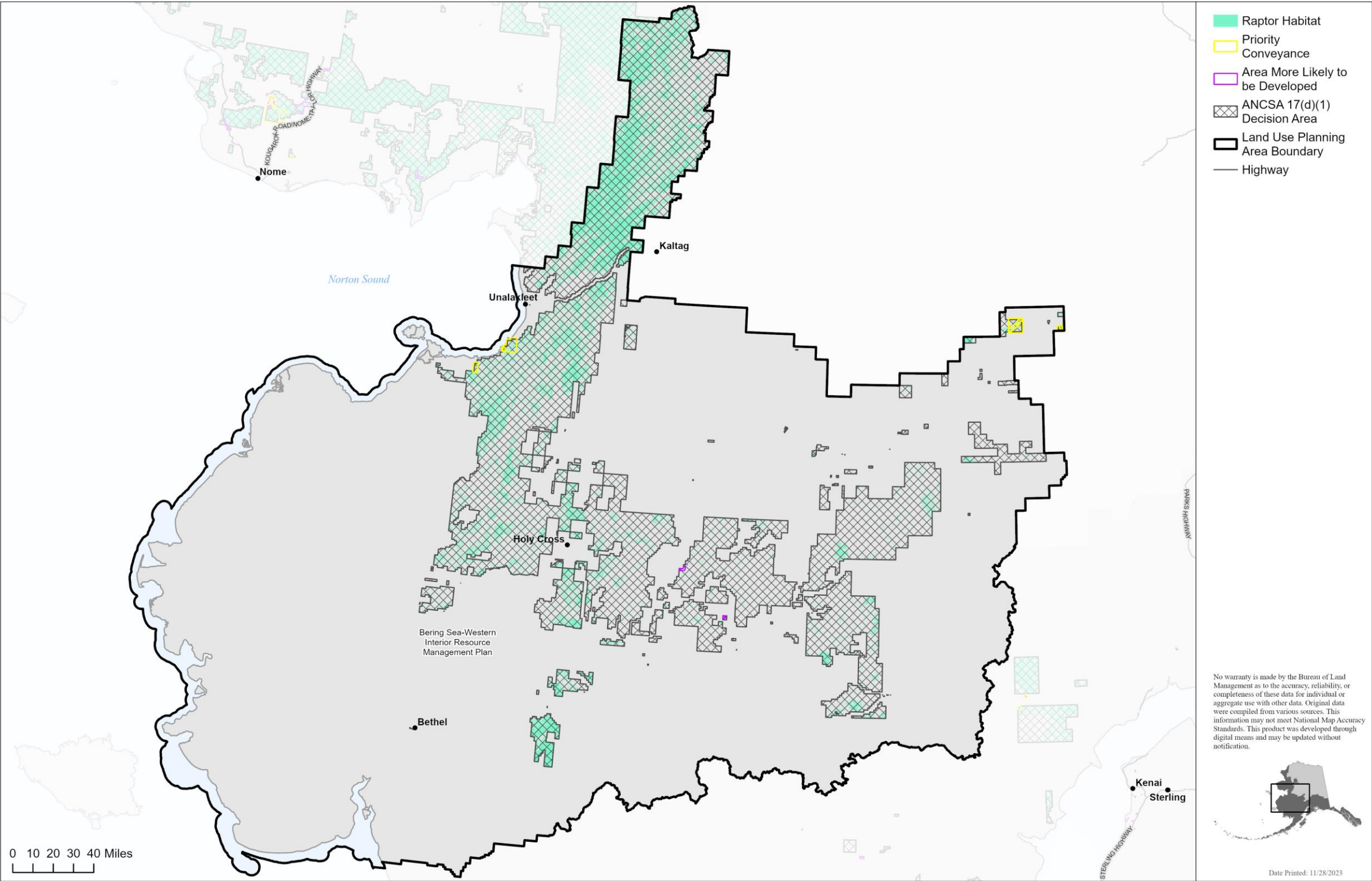


Figure E-2. Raptor habitat in the Bering Sea-Western Interior planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

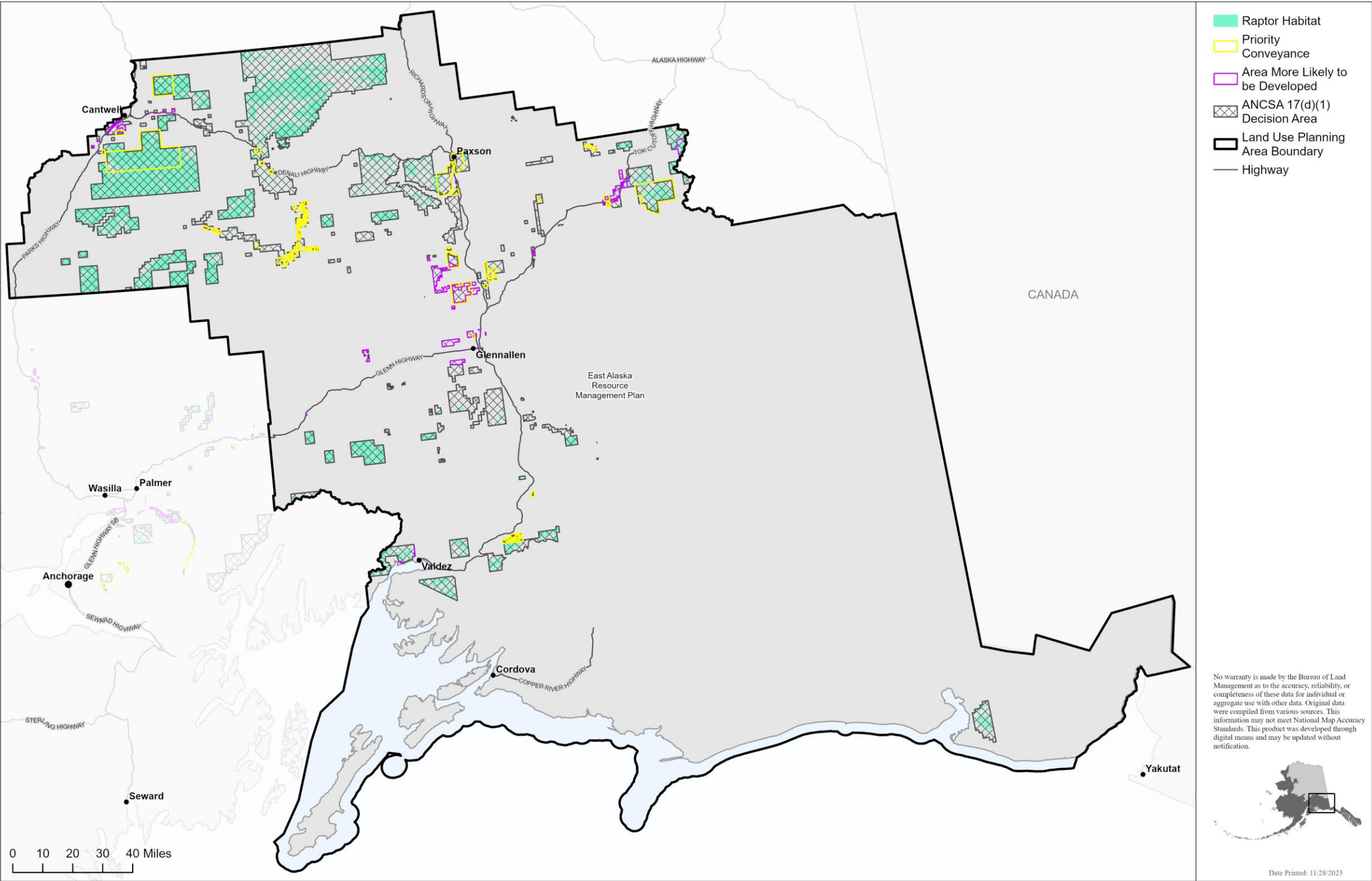


Figure E-3. Raptor habitat in the East Alaska planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

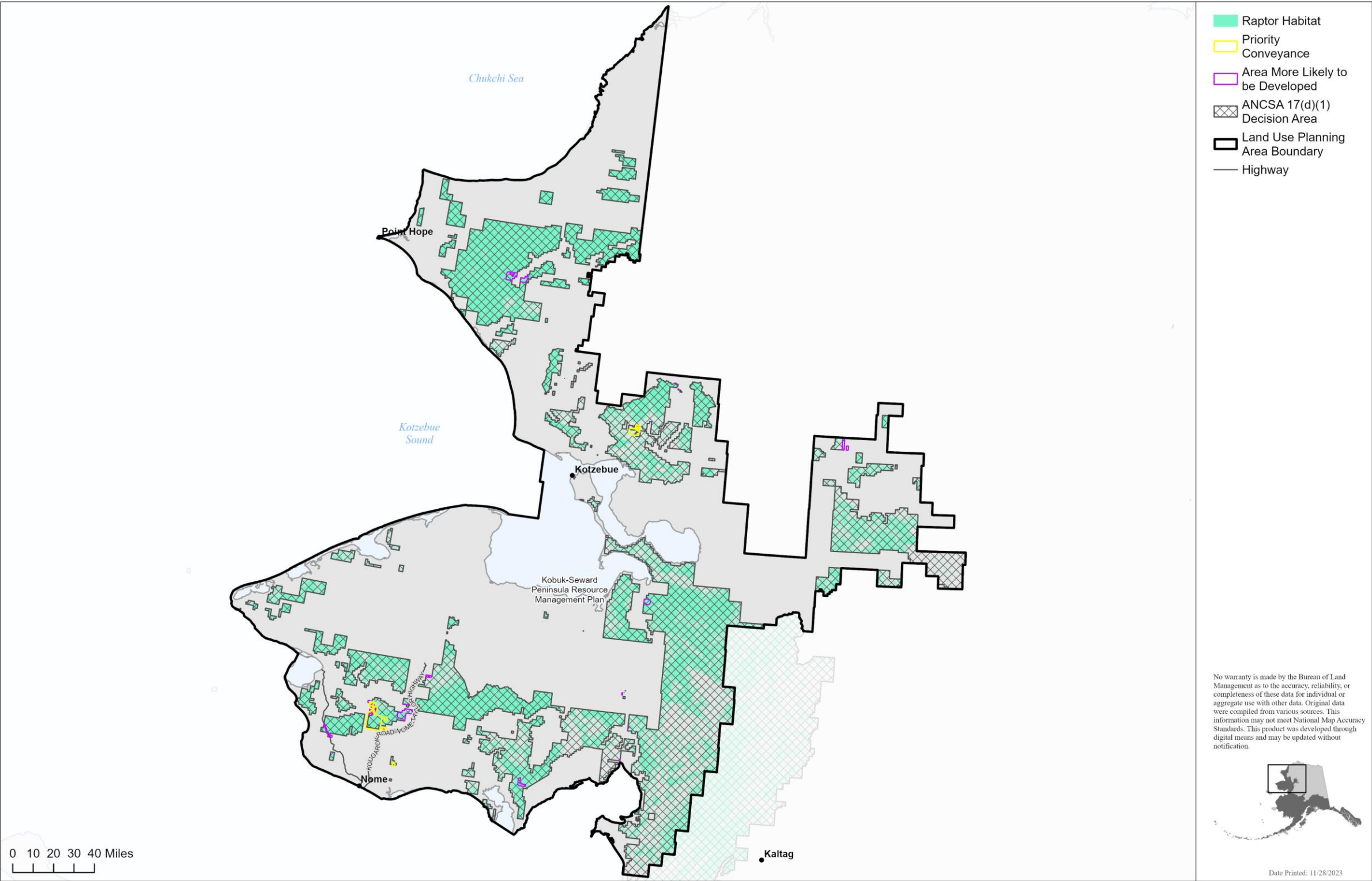


Figure E-4. Raptor habitat in the Kobuk-Seward Peninsula planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

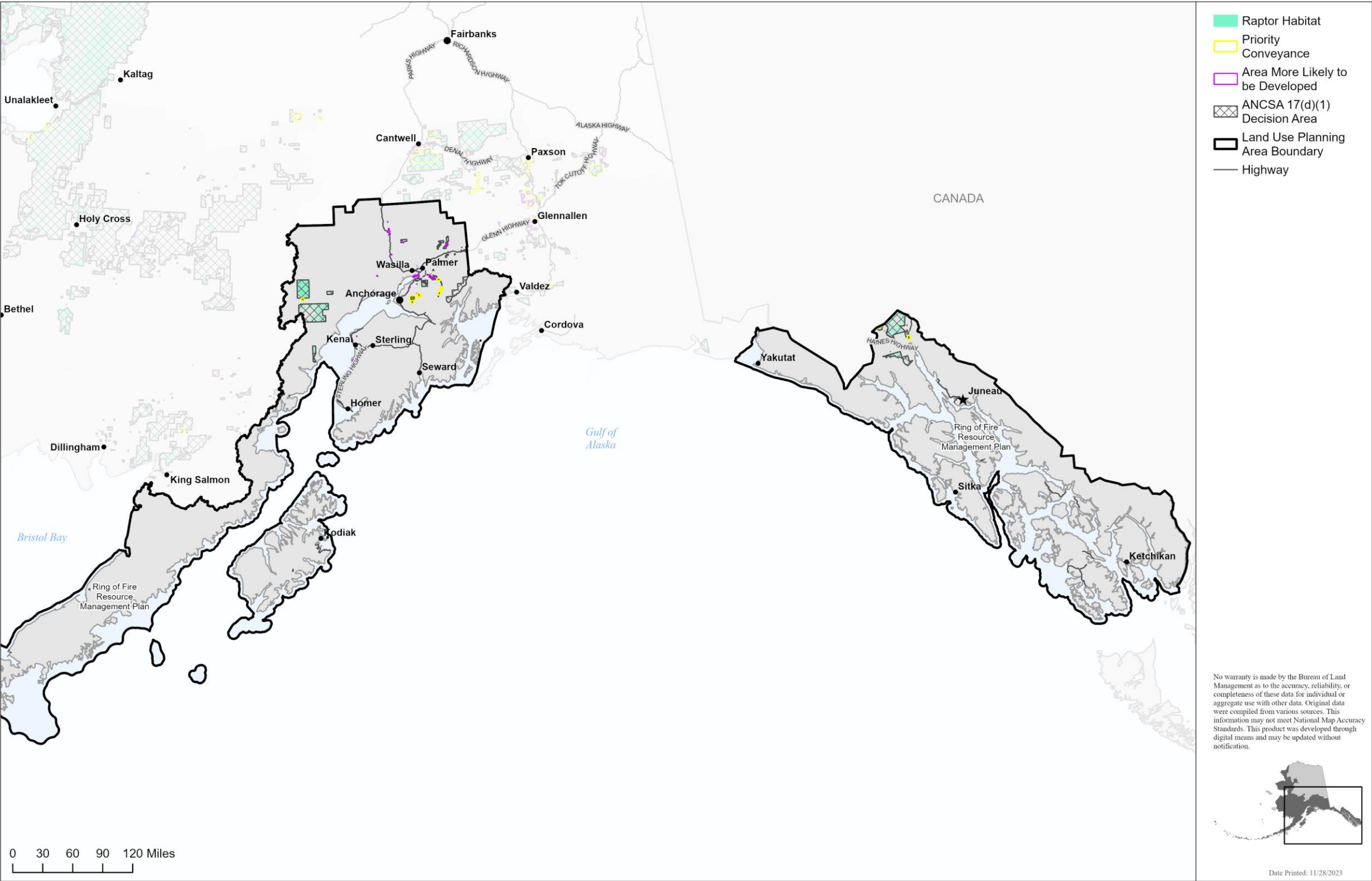


Figure E-5. Raptor habitat in the Ring of Fire planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

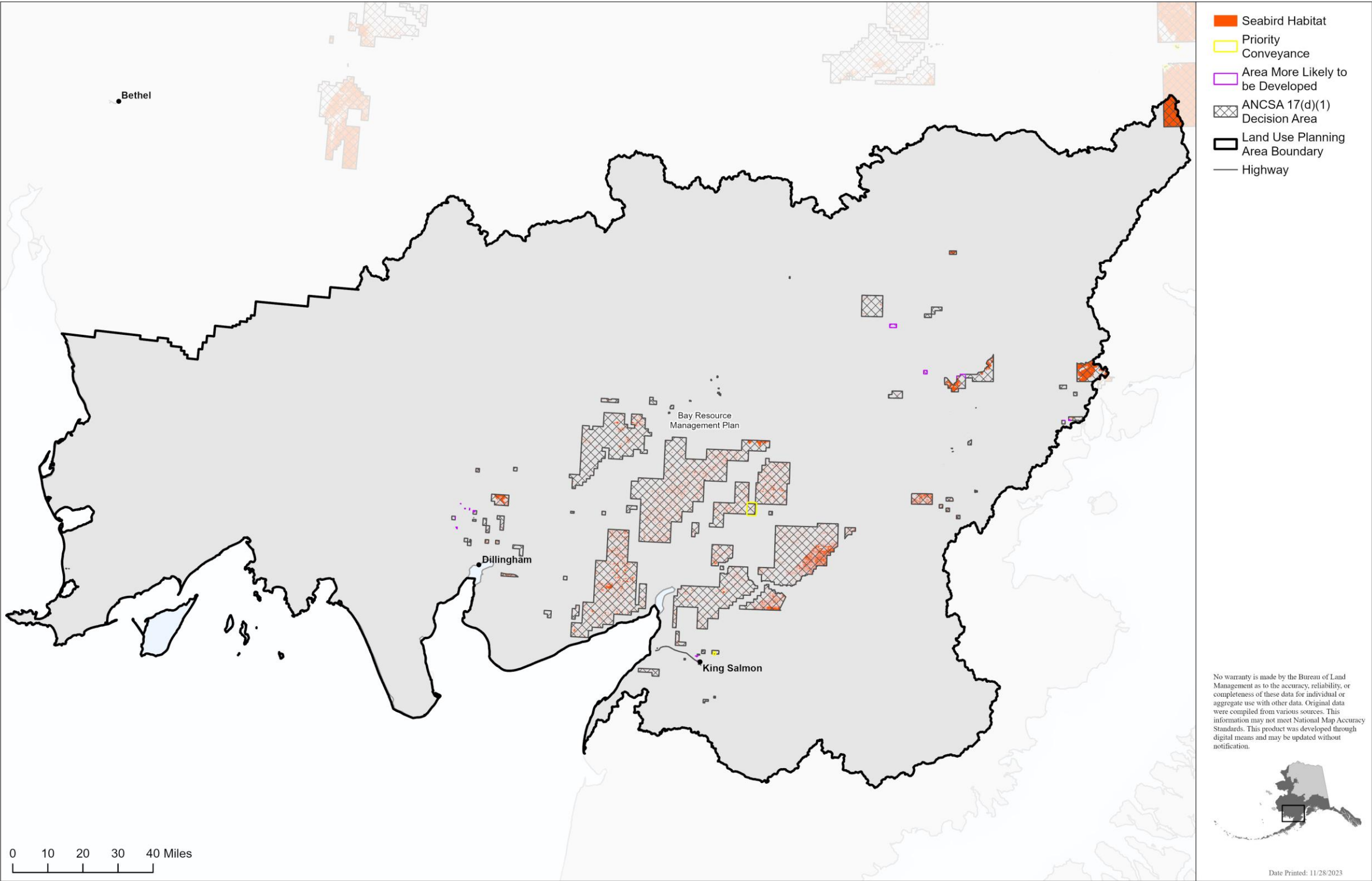


Figure E-6. Seabird habitat in the Bay planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

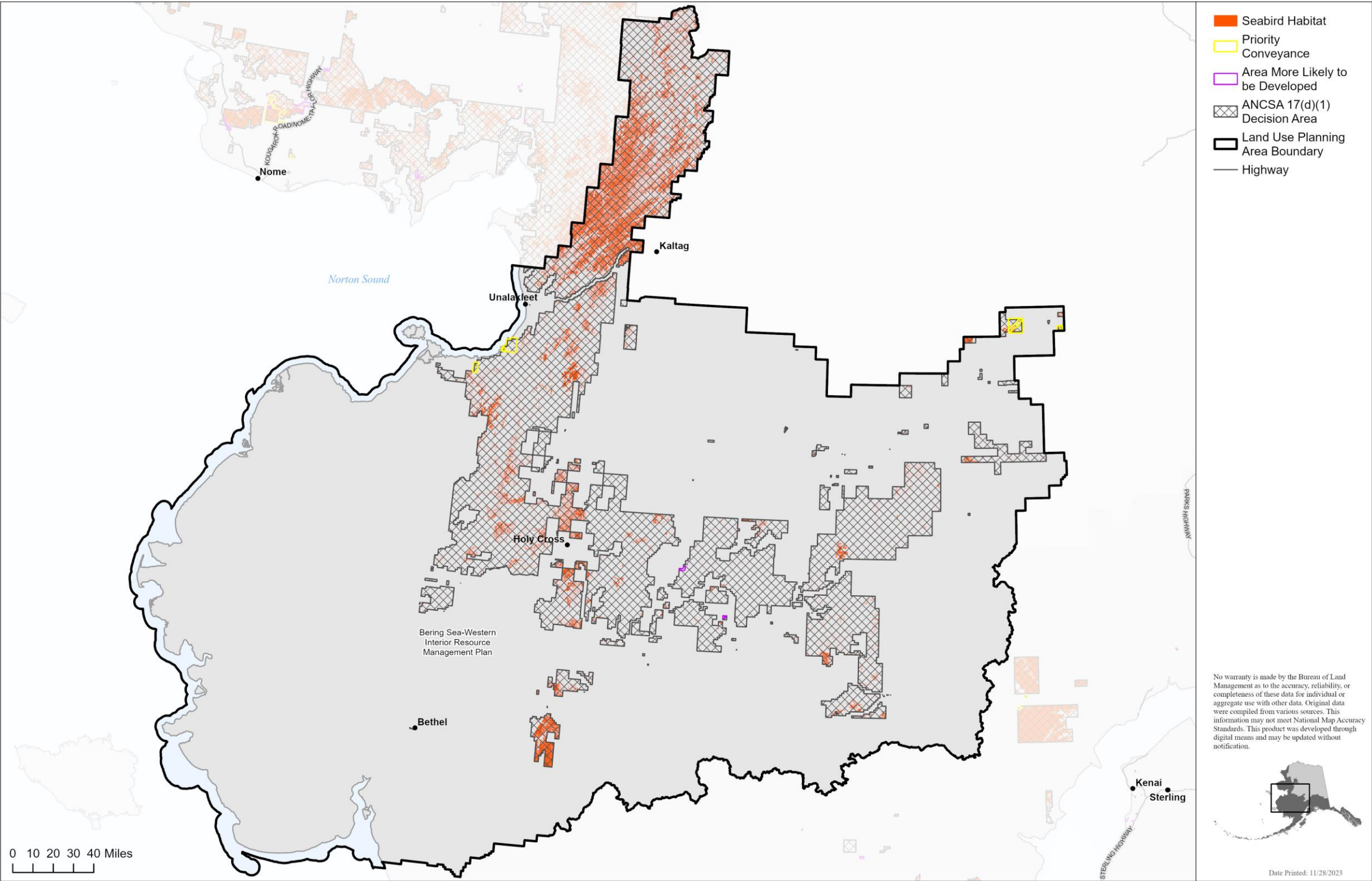


Figure E-7. Seabird habitat in the Bering Sea-Western Interior planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

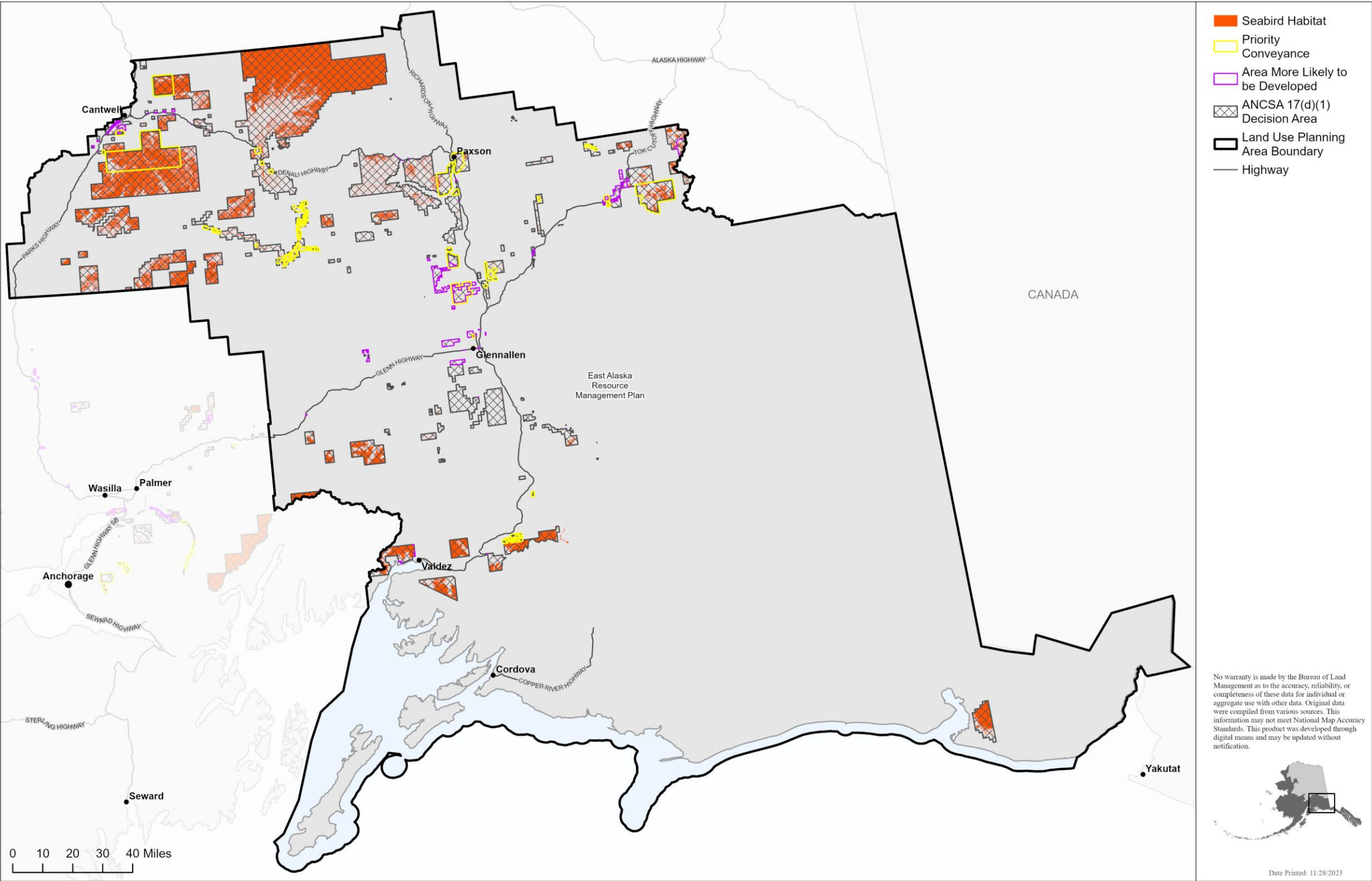


Figure E-8. Seabird habitat in the East Alaska planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

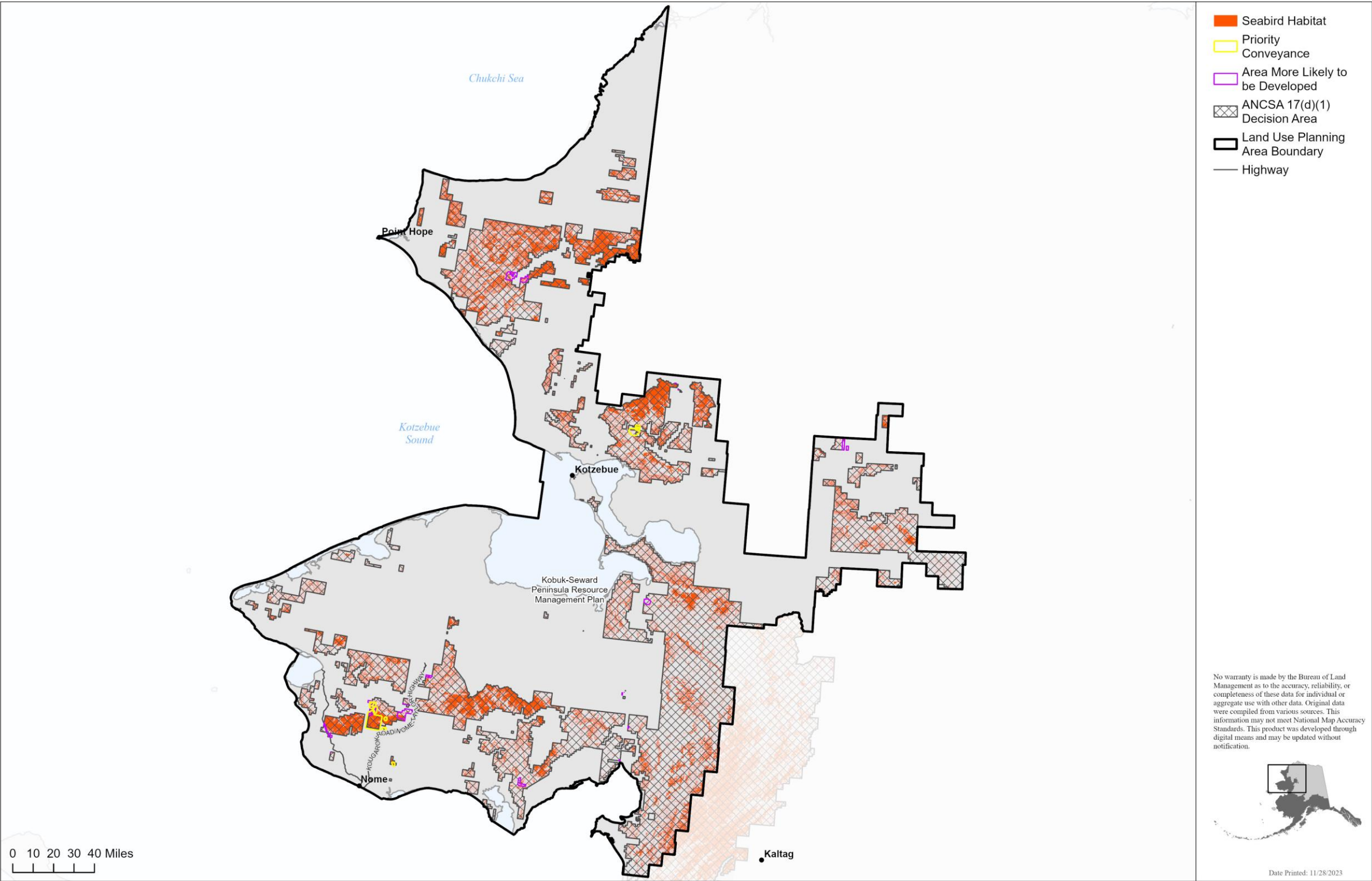


Figure E-9. Seabird habitat in the Kobuk-Seward Peninsula planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

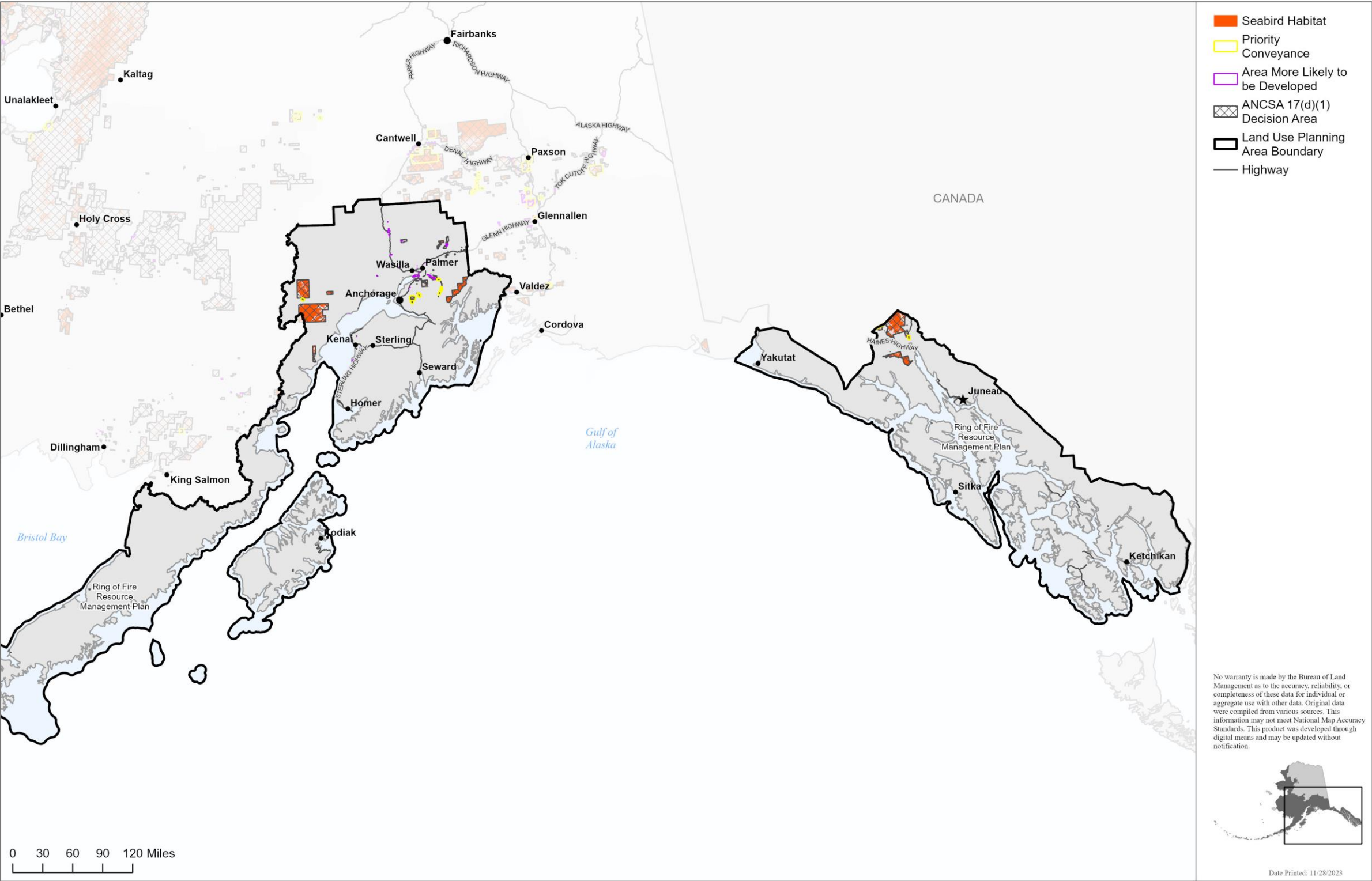


Figure E-10. Seabird habitat in the Ring of Fire planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

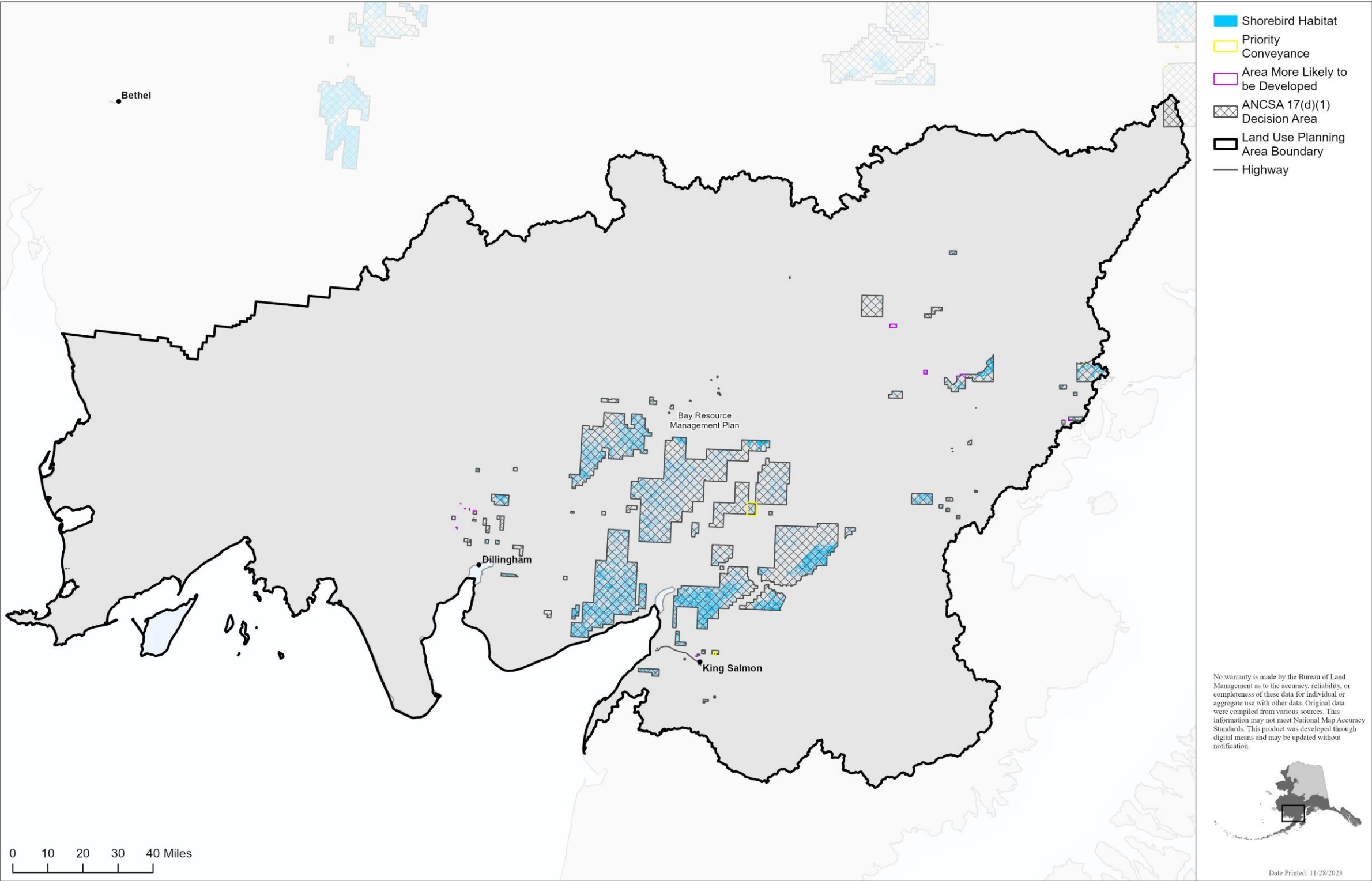


Figure E-11. Shorebird habitat in the Bay planning area with ANCSA 17(d) (1) withdrawals, priority conveyances, and areas more likely to be developed.

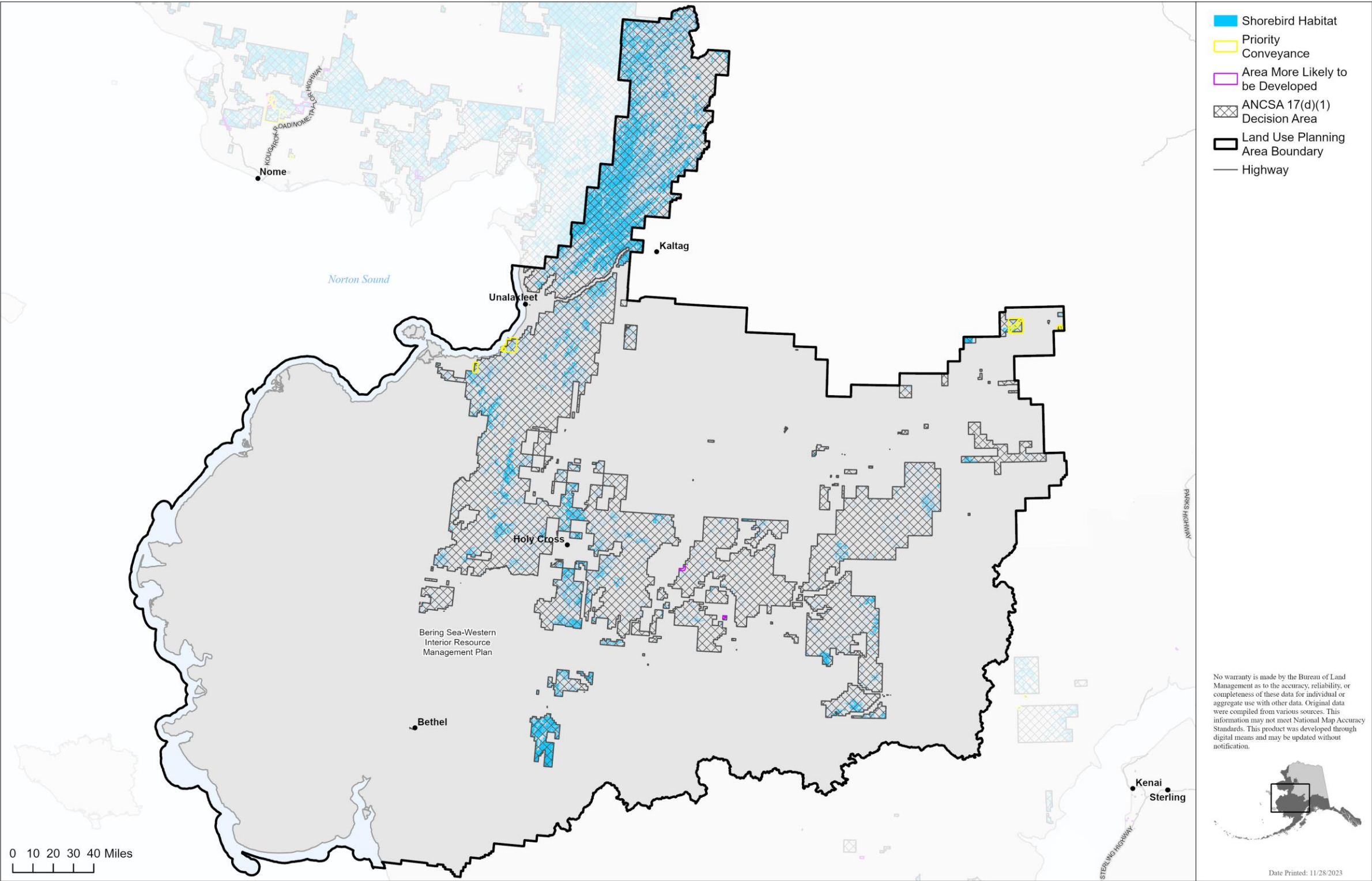


Figure E-12. Shorebird habitat in the Bering Sea-Western Interior planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

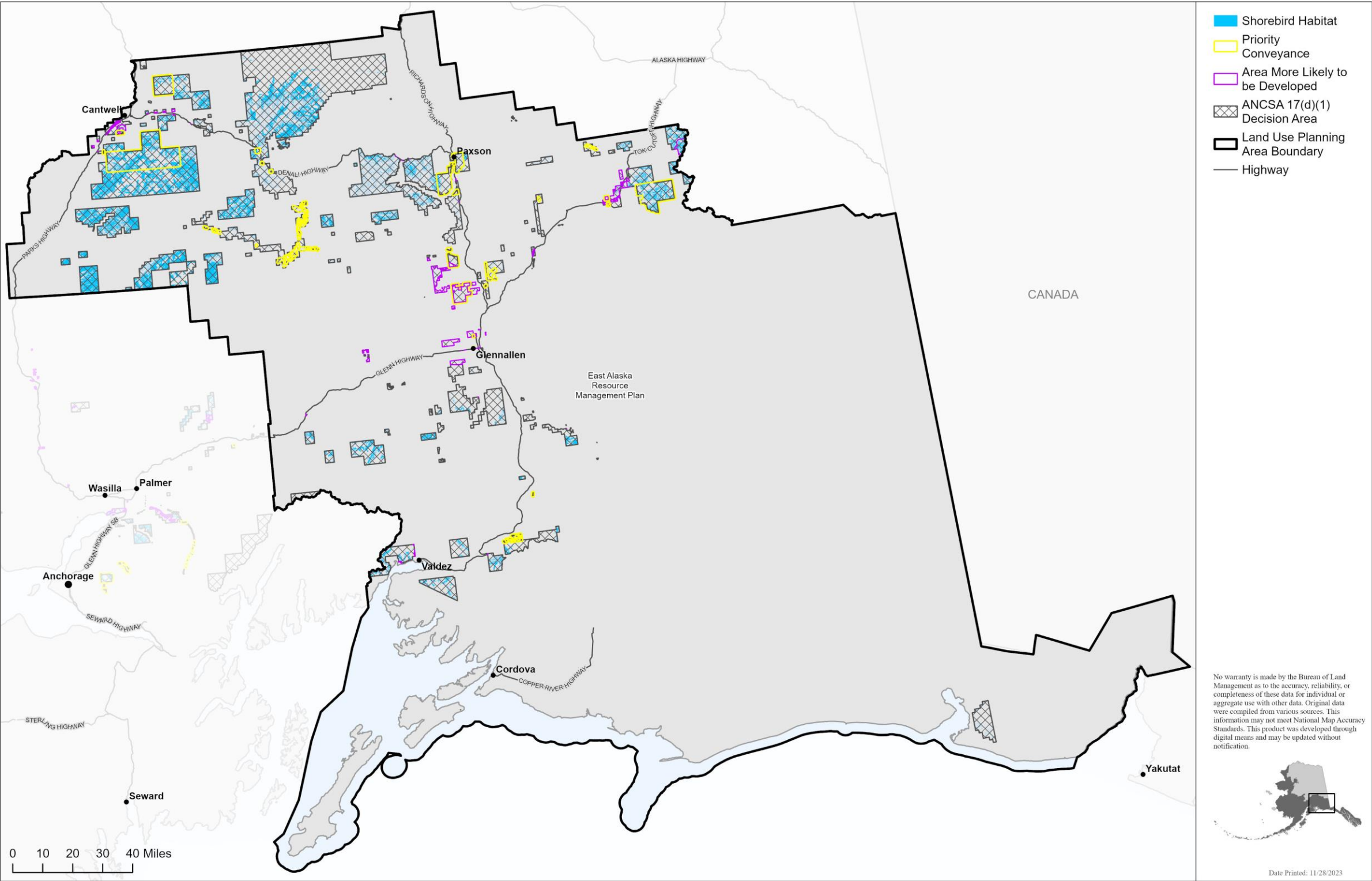


Figure E-13. Shorebird habitat in the East Alaska planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

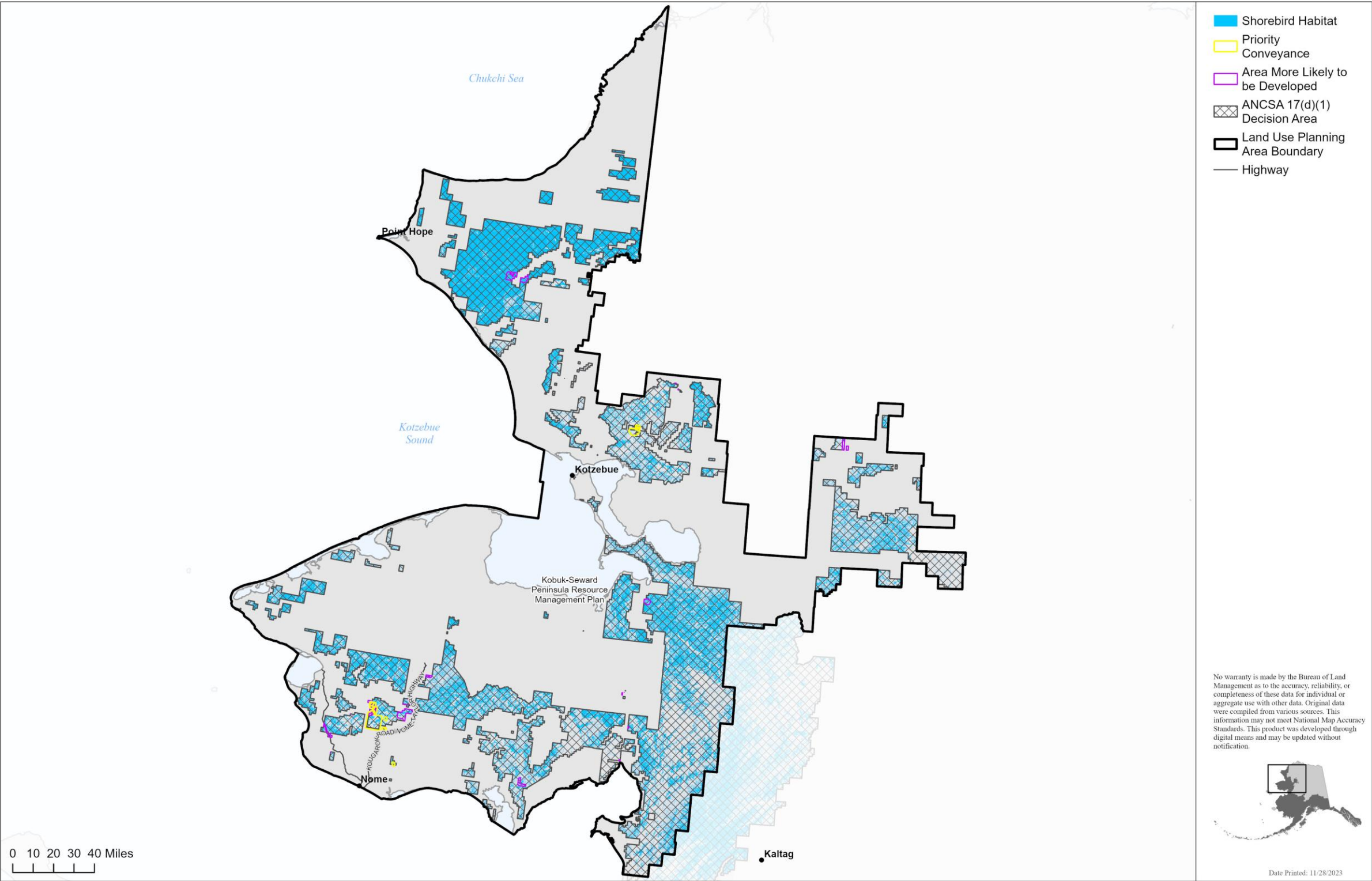


Figure E-14. Shorebird habitat in the Kobuk-Seward Peninsula planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

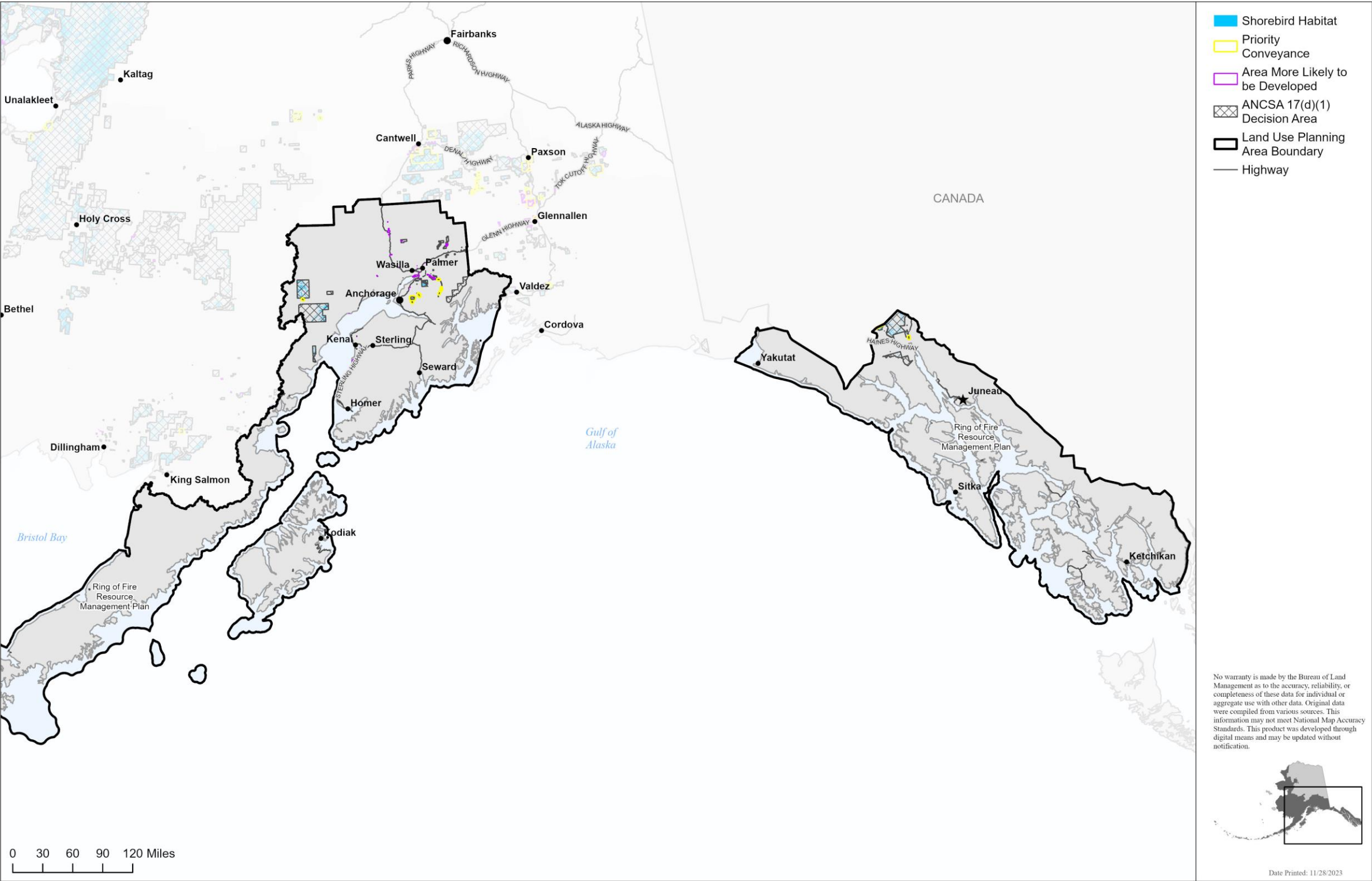


Figure E-15. Shorebird habitat in the Ring of Fire planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

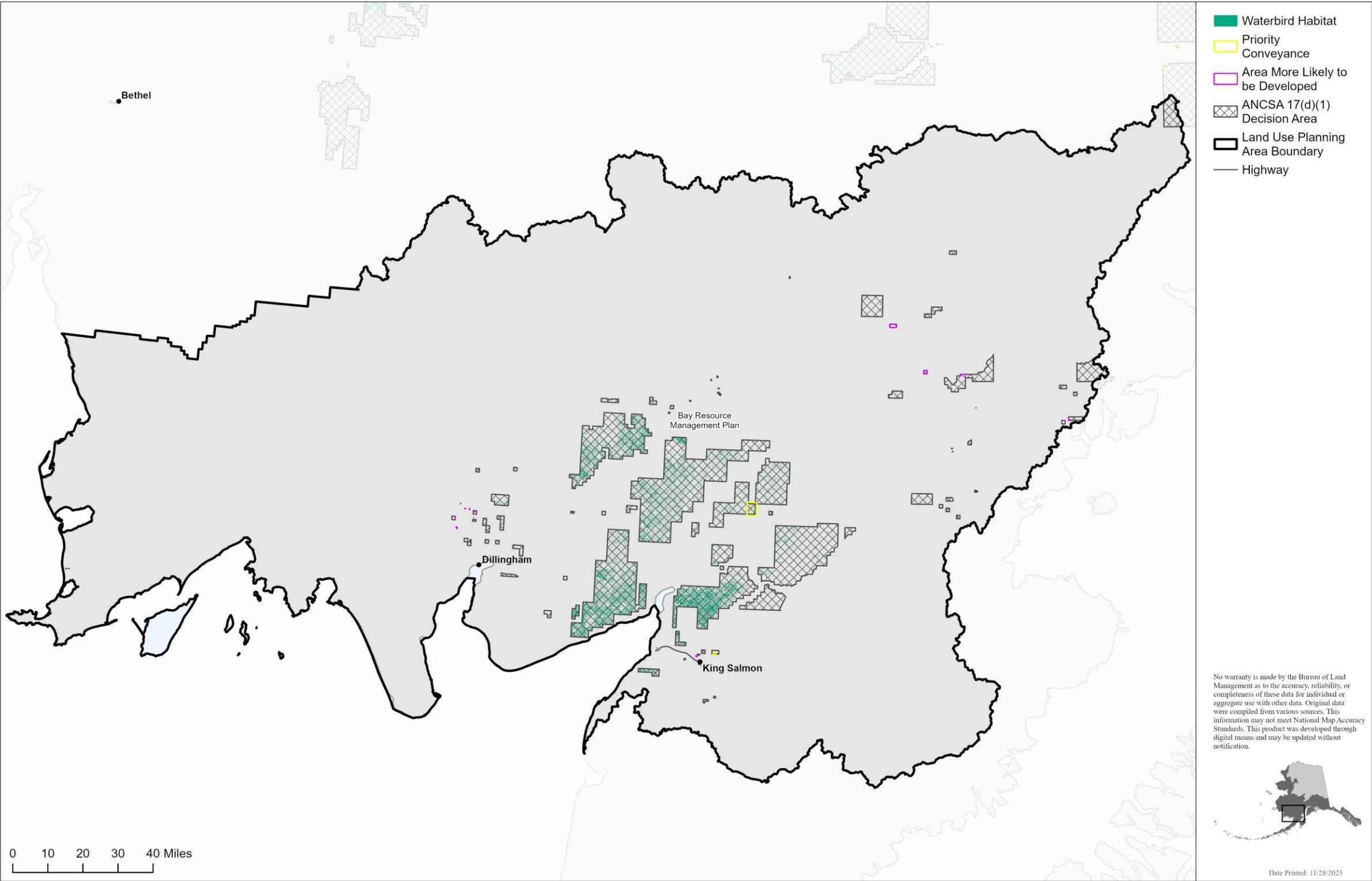


Figure E-16. Waterbird habitat in the Bay planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

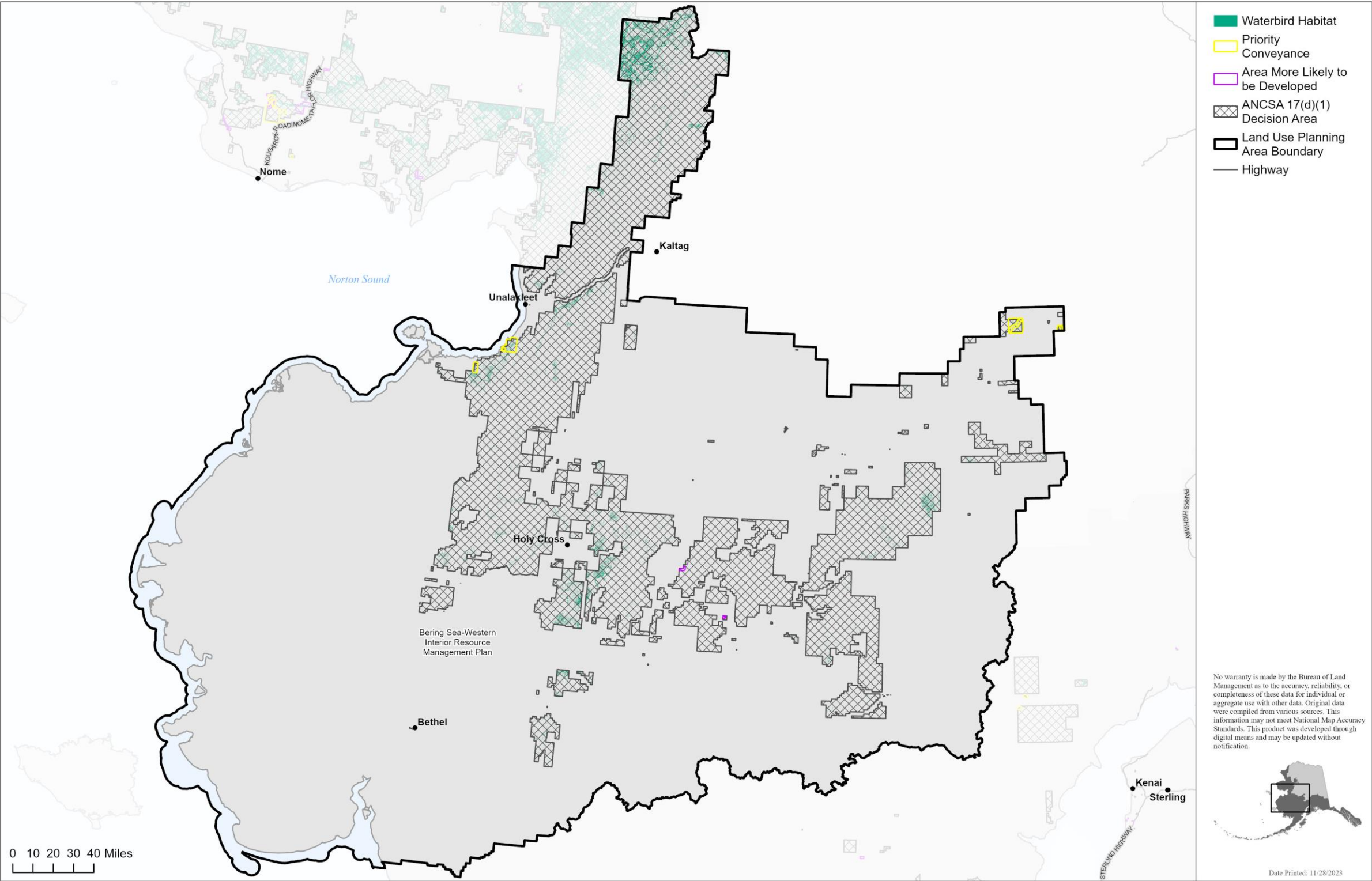


Figure E-17. Waterbird habitat in the Bering Sea-Western Interior planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

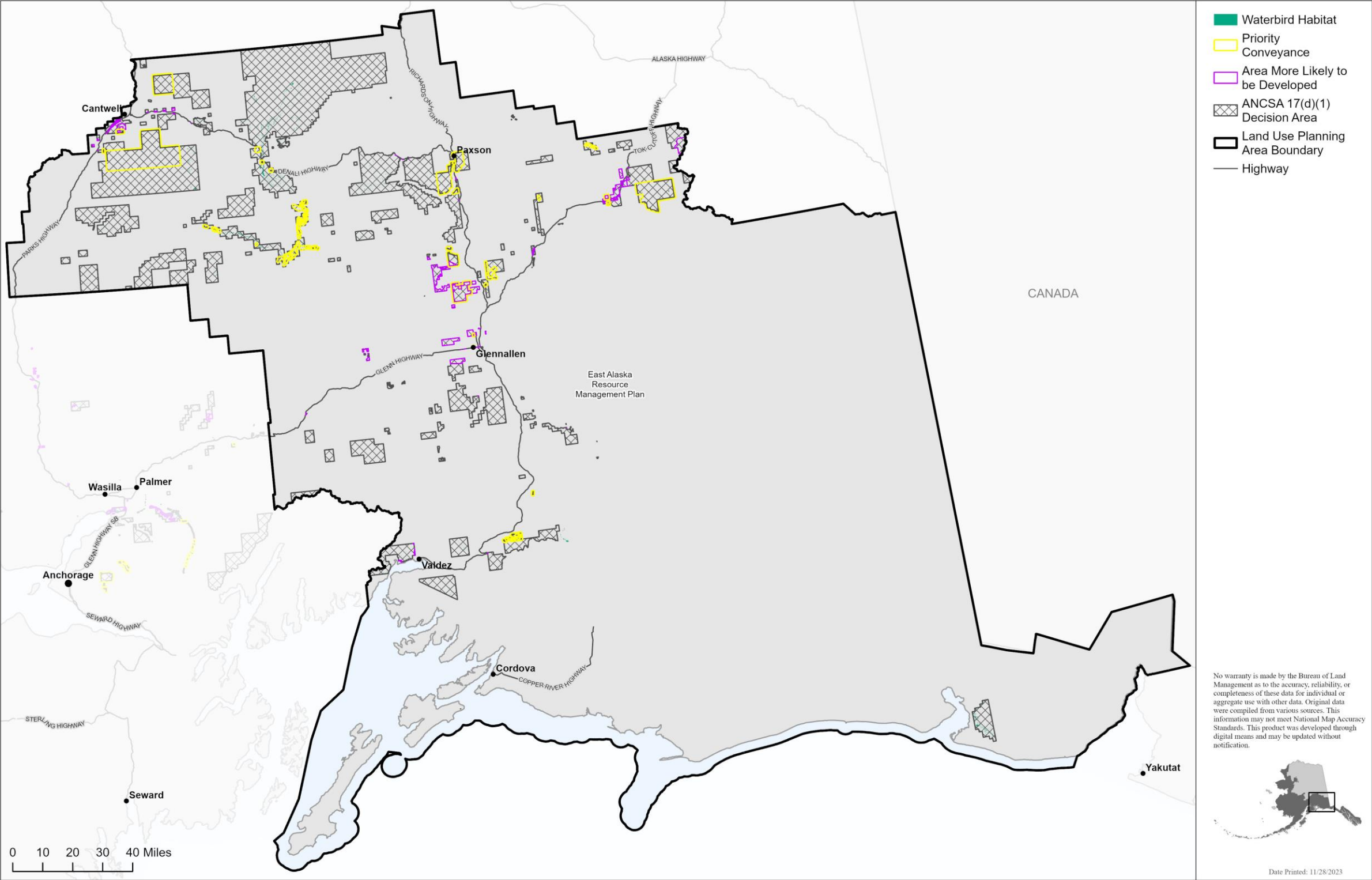


Figure E-18. Waterbird habitat in the East Alaska planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

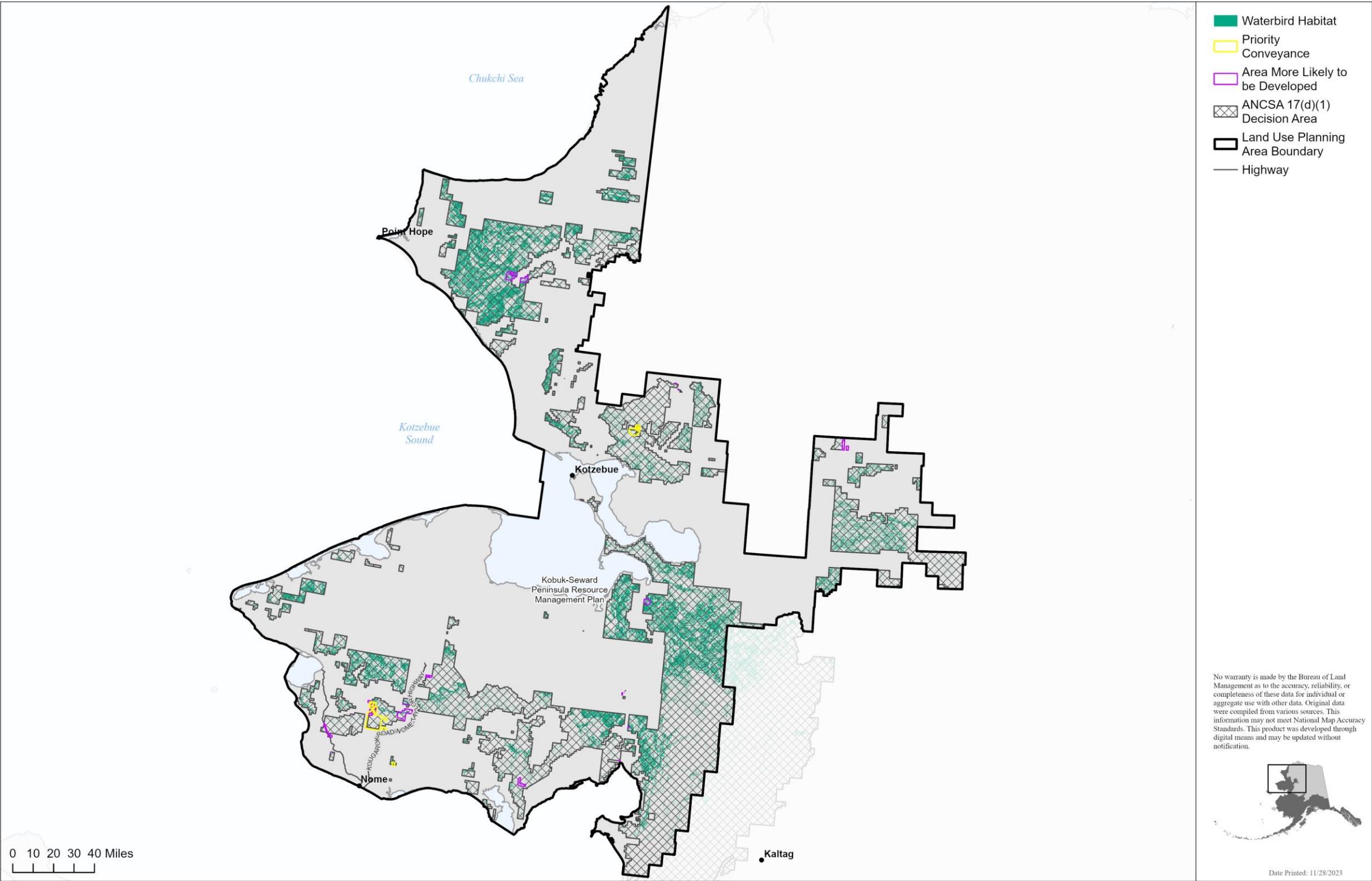


Figure E-19. Waterbird habitat in the Kobuk-Seward Peninsula planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

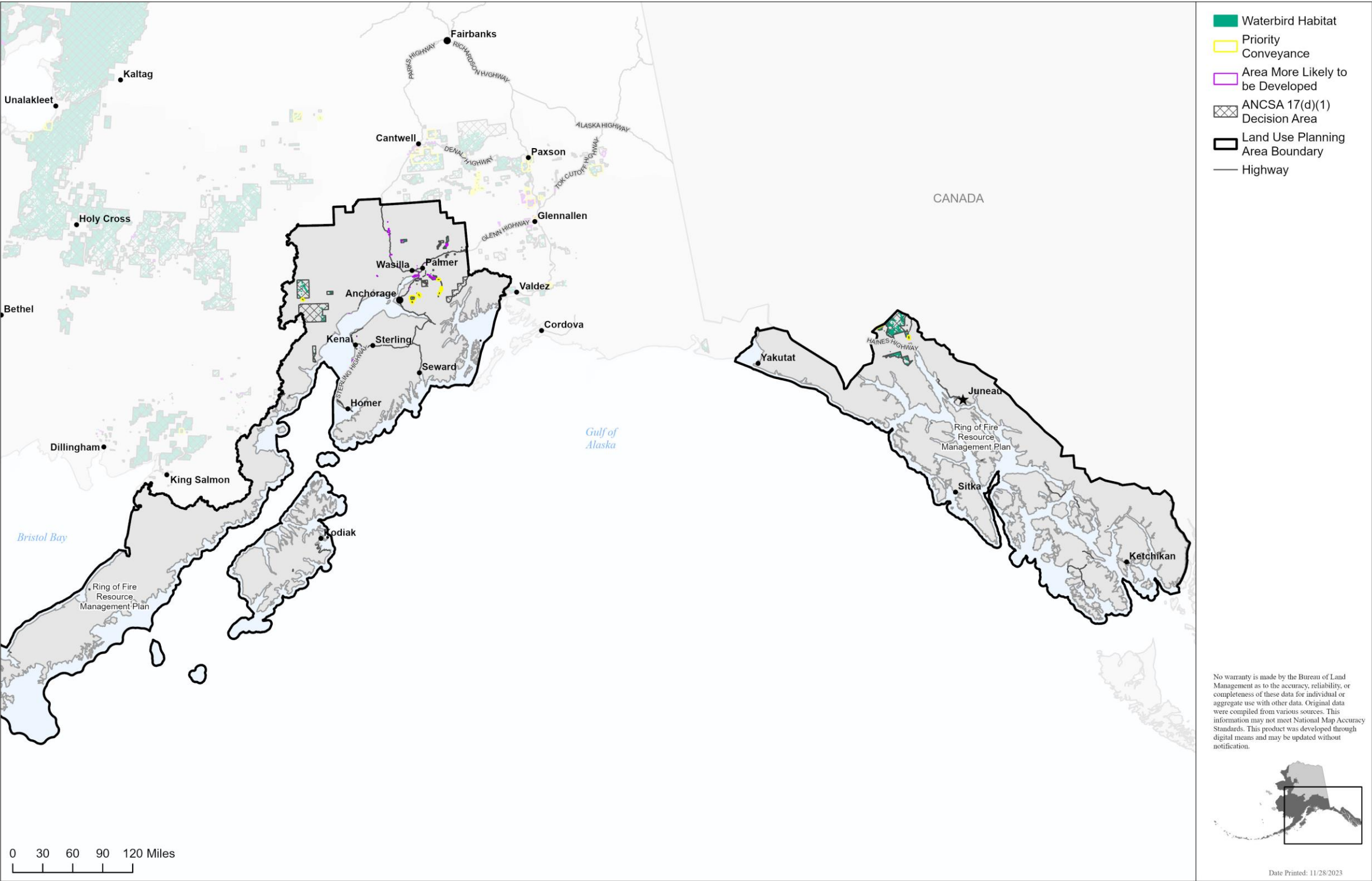


Figure E-20. Waterbird habitat in the Ring of Fire planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

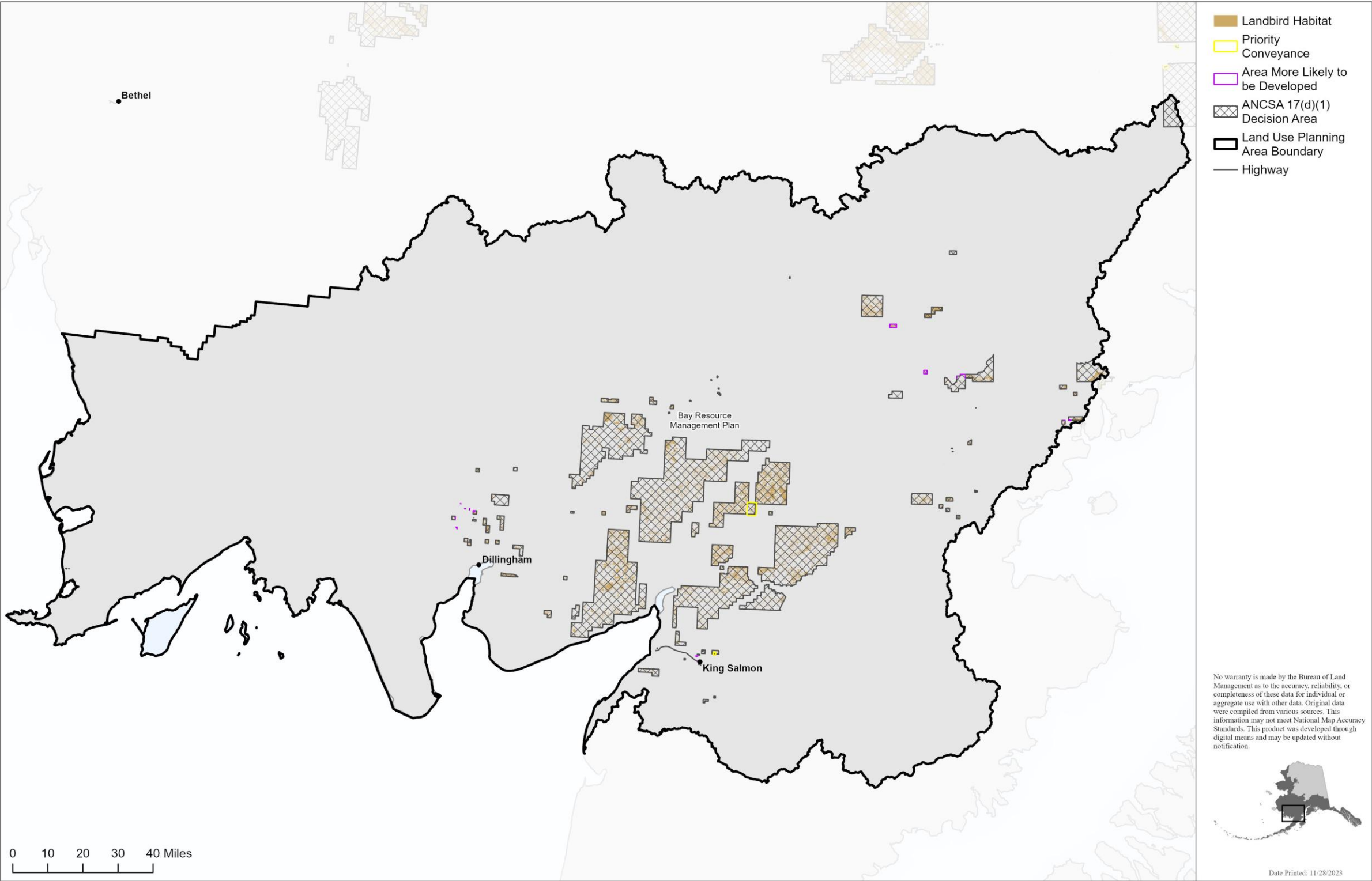


Figure E-21. Landbird habitat in the Bay planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

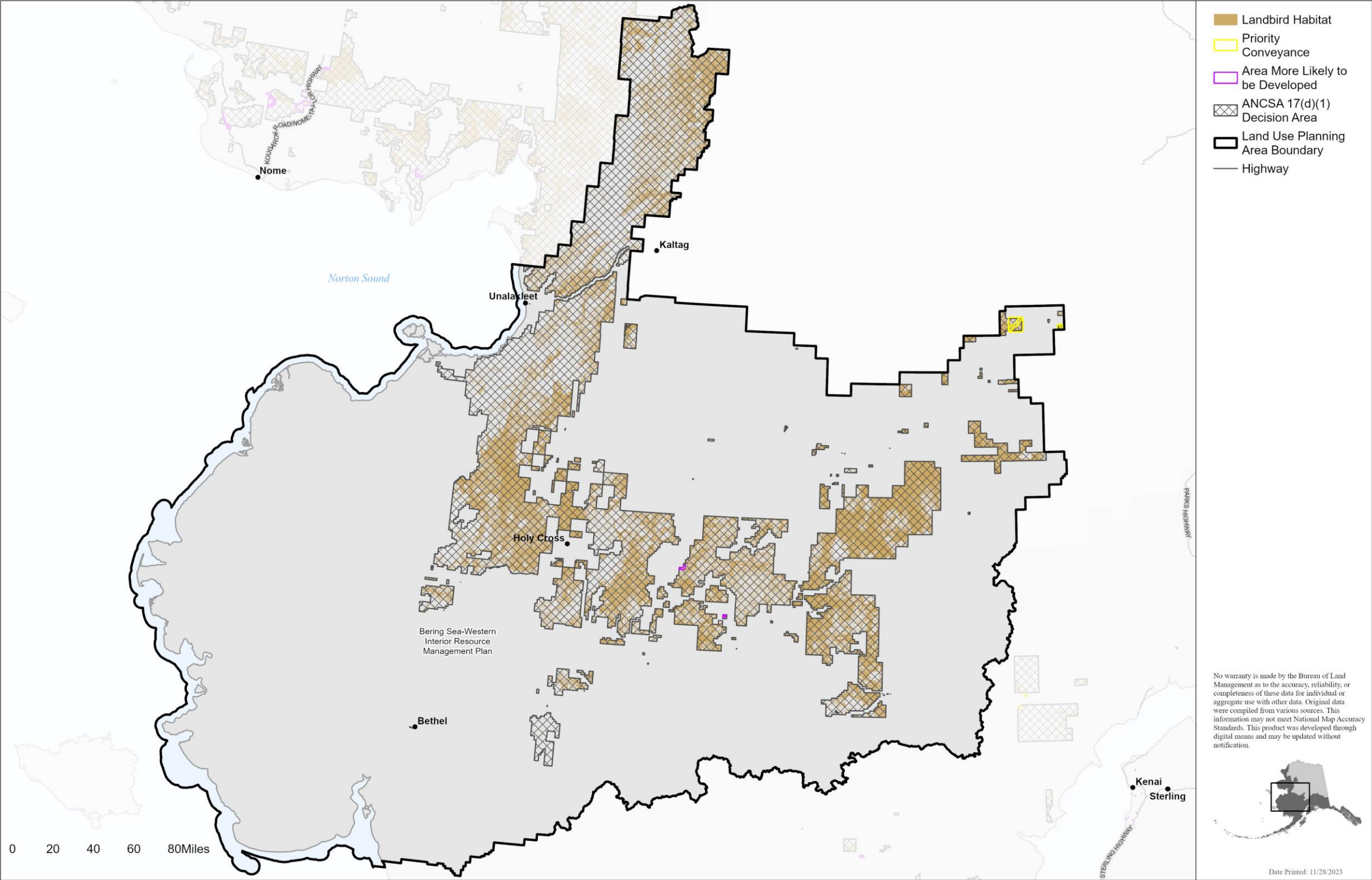


Figure E-22. Landbird habitat in the Bering Sea-Western Interior planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

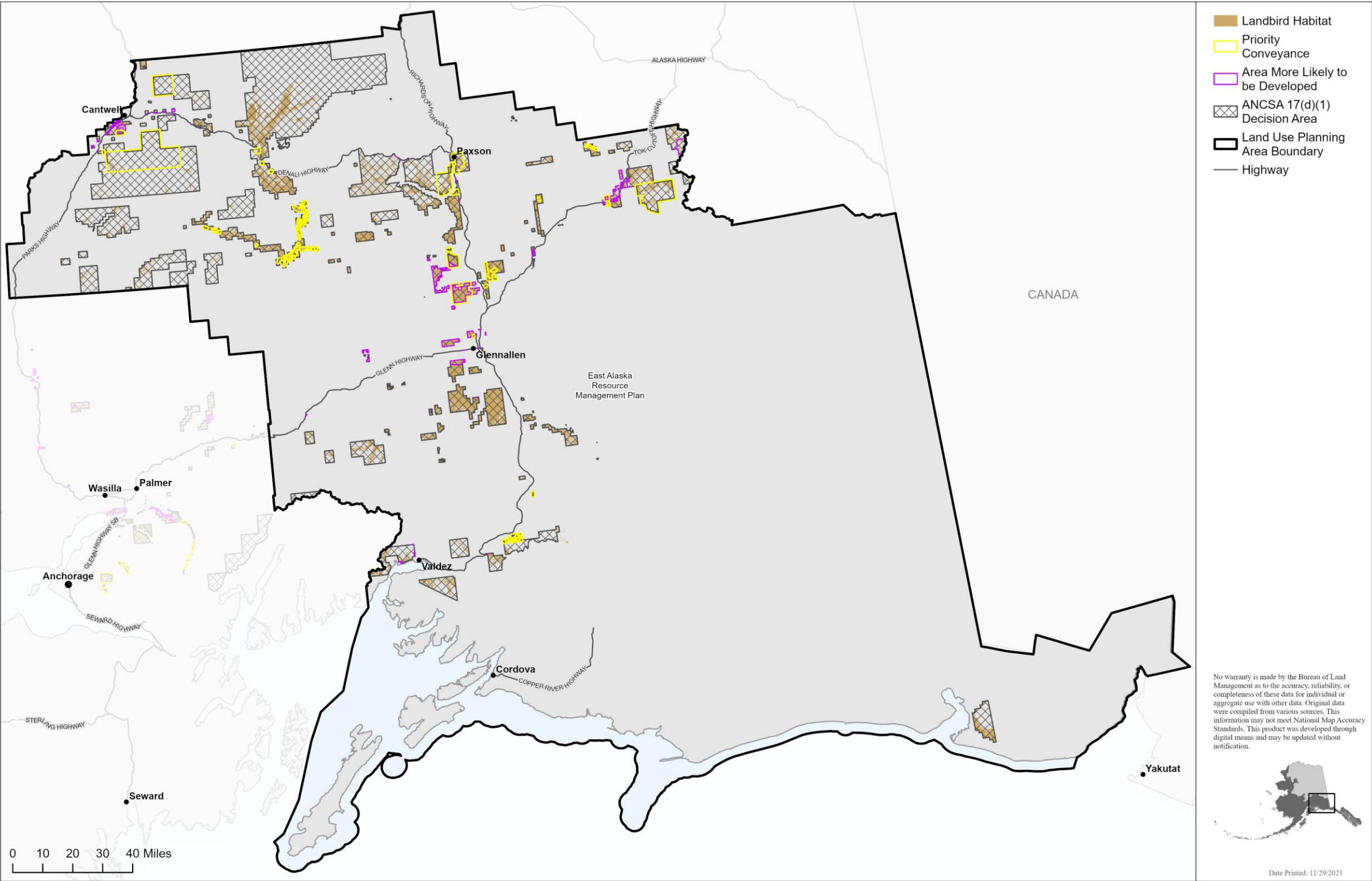


Figure E-23. Landbird habitat in the East Alaska planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

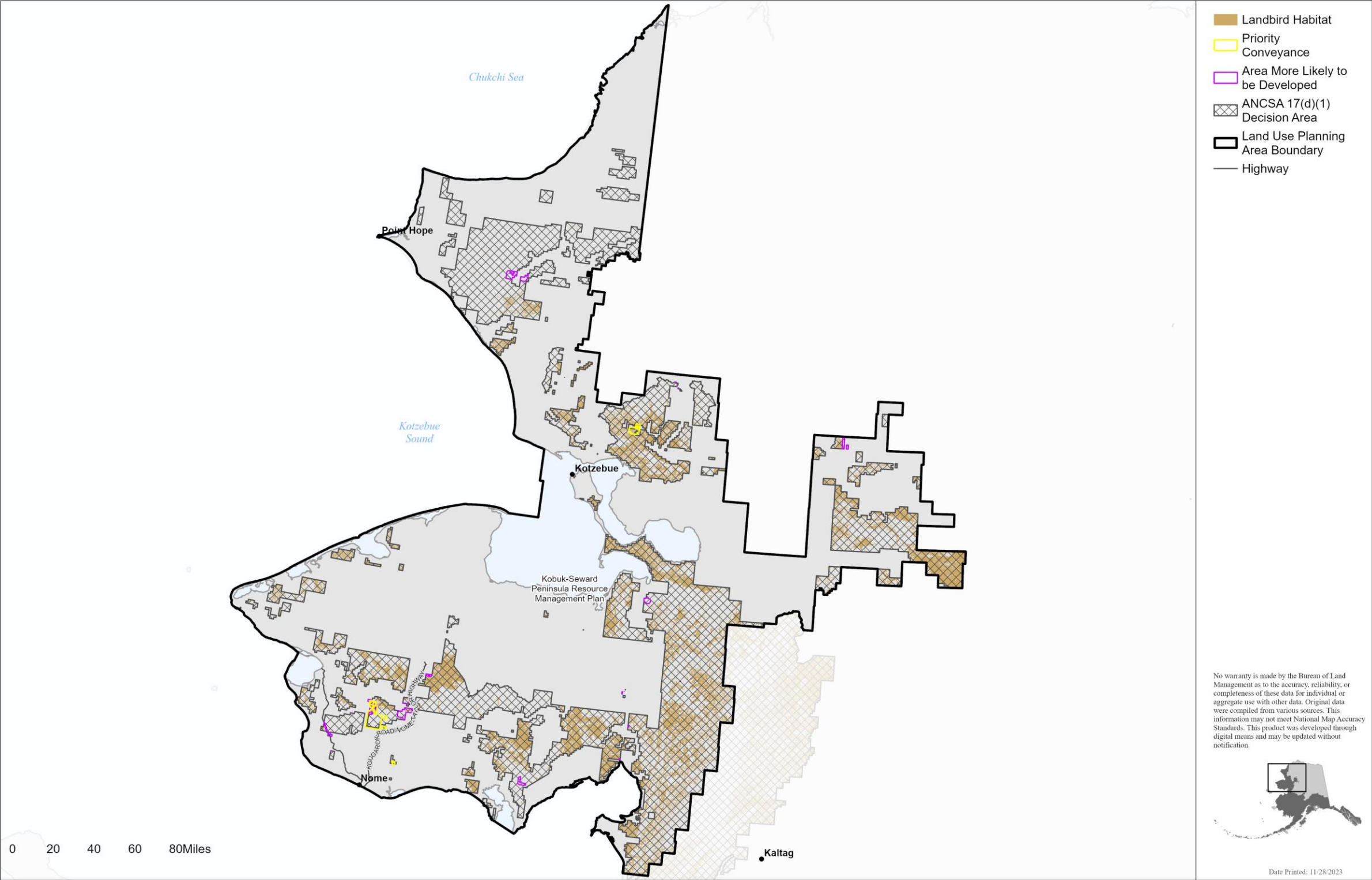


Figure E-24. Landbird habitat in the Kobuk-Seward Peninsula planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

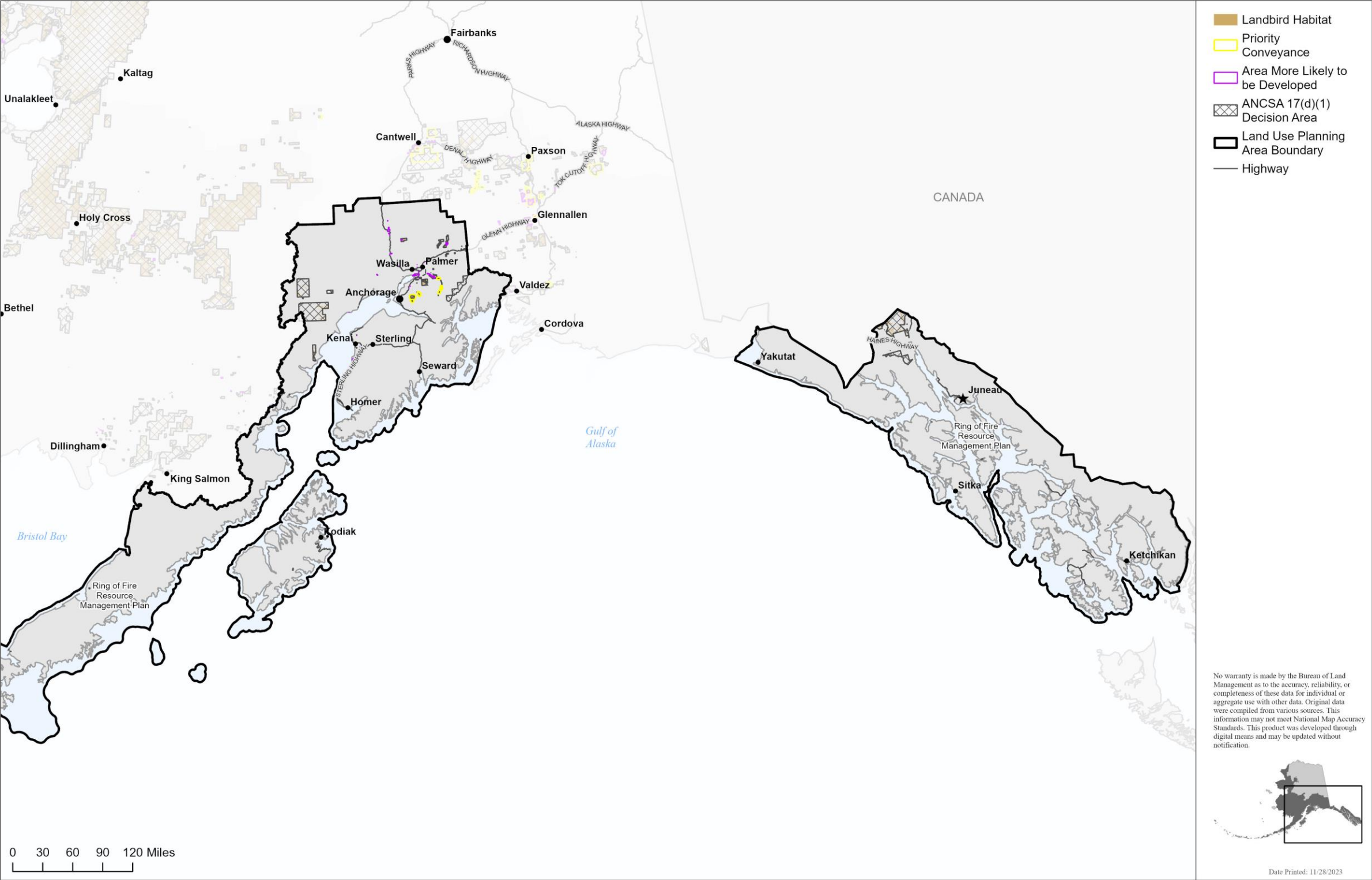


Figure E-25. Landbird habitat in the Ring of Fire planning area with ANCSA 17(d)(1) withdrawals, priority conveyances, and areas more likely to be developed.

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