Susitna–Watana Hydroelectric Project Wildlife Data-gap Analysis

Pre-PAD Data-gap Analysis Meeting
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Background

- ABR is one of four term contractors selected by AEA in December 2010 for Railbelt Large Hydro work
- Wildlife data-gaps analysis contract awarded in late January
- Work commenced in February; all historical SHP references received by end of March
- Literature review completed by June
- Draft report completed mid-August

Approach

- Information review:
  - Historical APA documents from original terrestrial environmental studies program for Susitna Hydro Project (SHP) from scans of ARLIS documents & AEA microfiche
  - Review recent resource literature
  - Resource agency contacts
- Compiled annotated literature database using *EndNote* software
- Synthesis & data-gap analysis report based on database annotations

Historical Studies

- SHP studies (managed by TES & Harza–Ebasco)
  - Big game studies by ADFG
  - Furbearers by ACWRU (UAF)
  - Birds & small mammals by UA Museum
  - Vegetation, wetlands, wildlife habitat evaluation (UAF AFES, USFWS, Kreig & Associates, TES)
  - Impact assessment & mitigation planning (LGL)
- Other historical study efforts in 1980s
  - Susitna River Basin Study & Susitna Area Plan (Fish & Wildlife Element map atlas)
  - Alaska Habitat Management Guides project

Recent Studies

- Advances in technology (GIS, satellite & GPS telemetry), sampling methods, spatial & statistical analyses
- Recent data & literature from resource agencies
  - ADFG management reports & technical reports
  - Telemetry datasets
  - USFWS survey reports (*e.g.*, raptors, waterfowl)
  - New survey & estimation techniques
- Changes in conservation status
  - No ESA-listed terrestrial species
  - 56 species of conservation & management concern (55 birds, 1 mammal)

Susitna River Basin

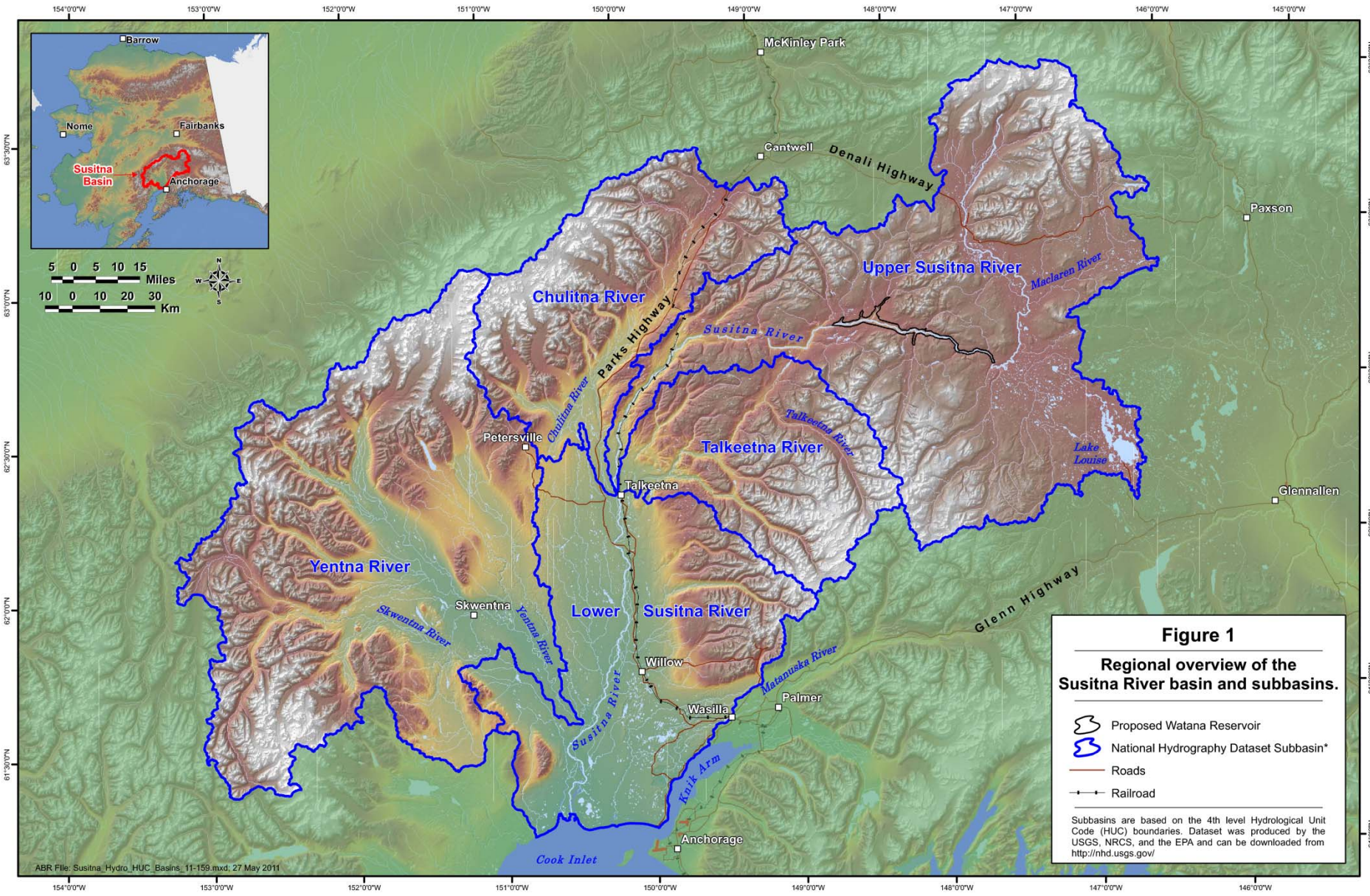


Figure 1

Regional overview of the Susitna River basin and subbasins.

Proposed Watana Reservoir

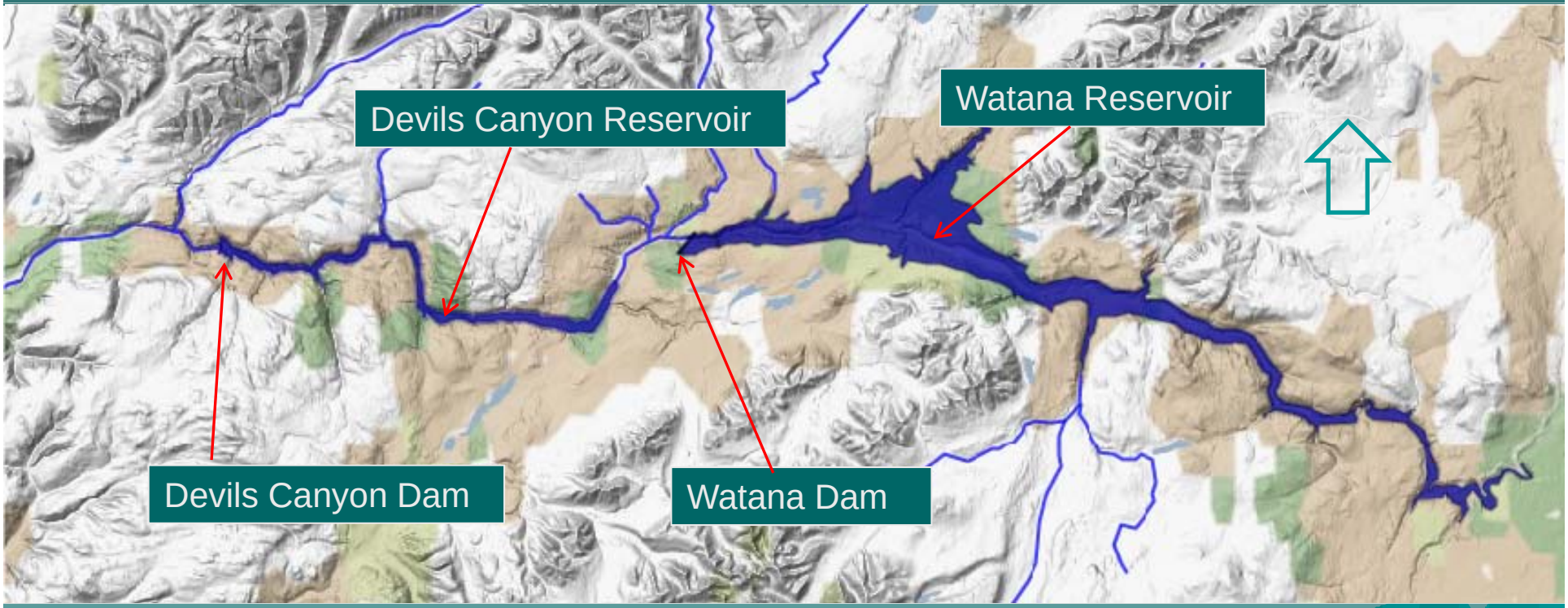
National Hydrography Dataset Subbasin*

Roads

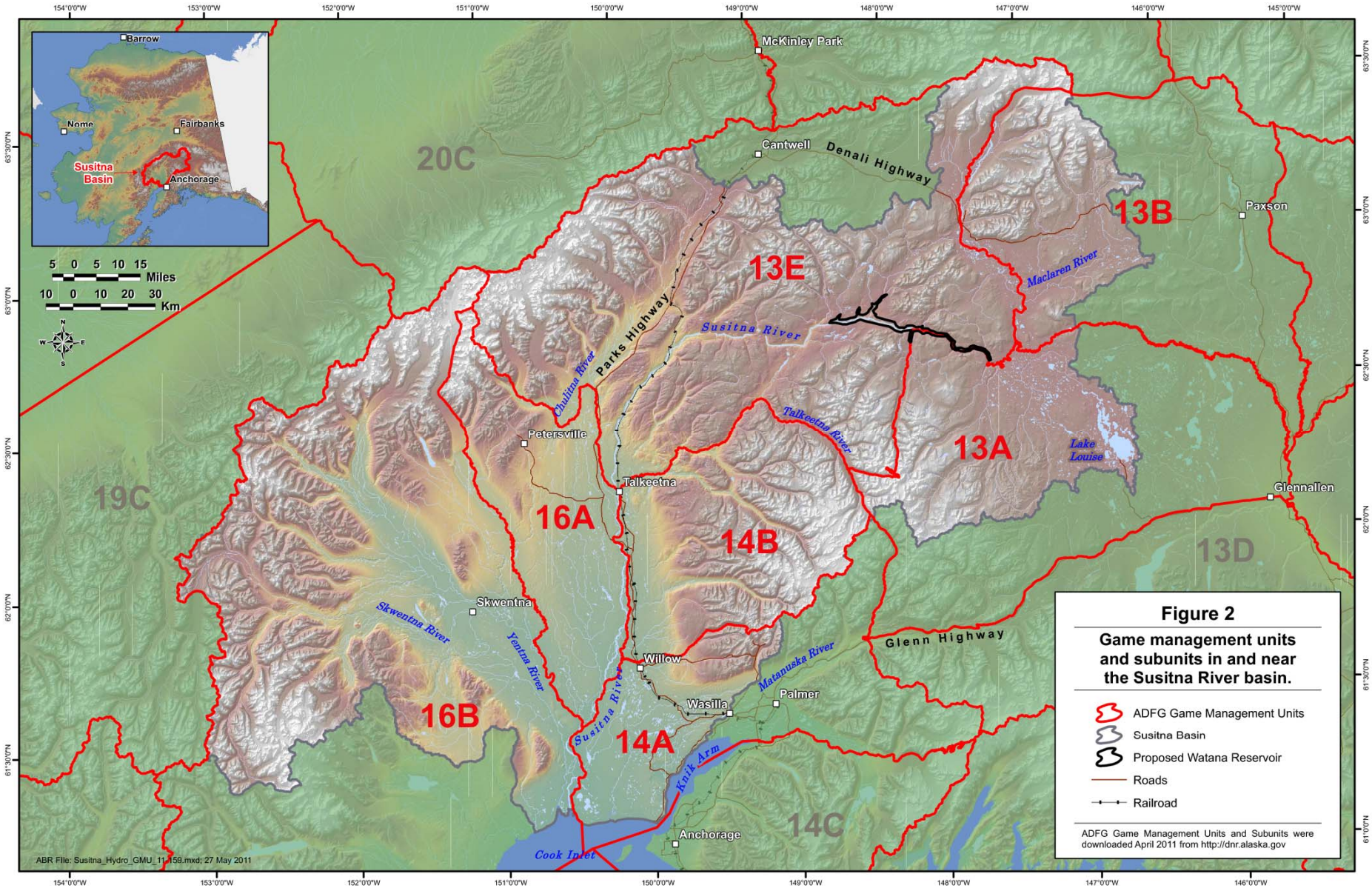
Railroad

Subbasins are based on the 4th level Hydrological Unit Code (HUC) boundaries. Dataset was produced by the USGS, NRCS, and the EPA and can be downloaded from http://nhd.usgs.gov/

Original Susitna Hydro Project (SHP)



Game Management Units / Subunits



Vegetation / Land-cover Mapping

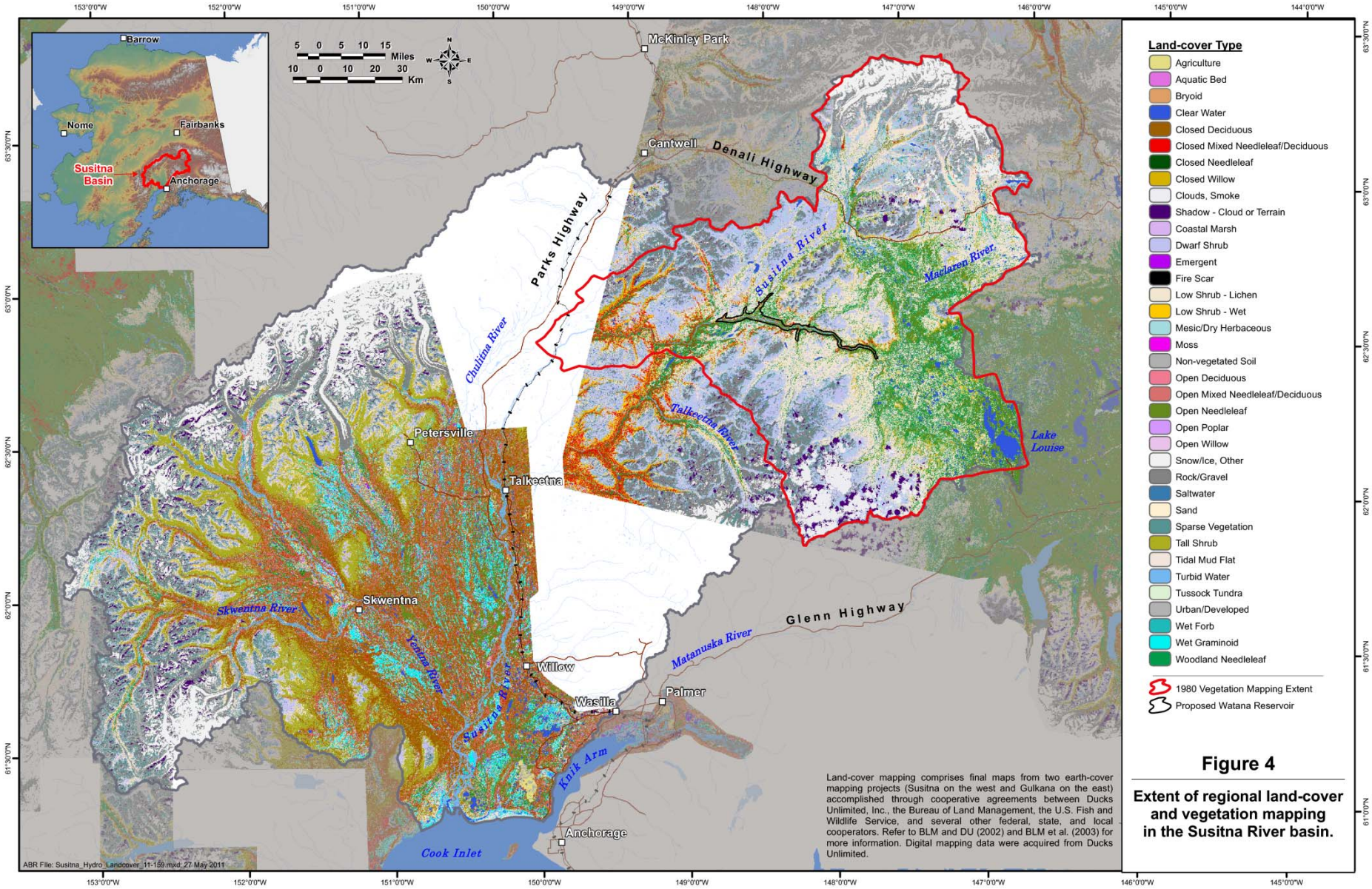
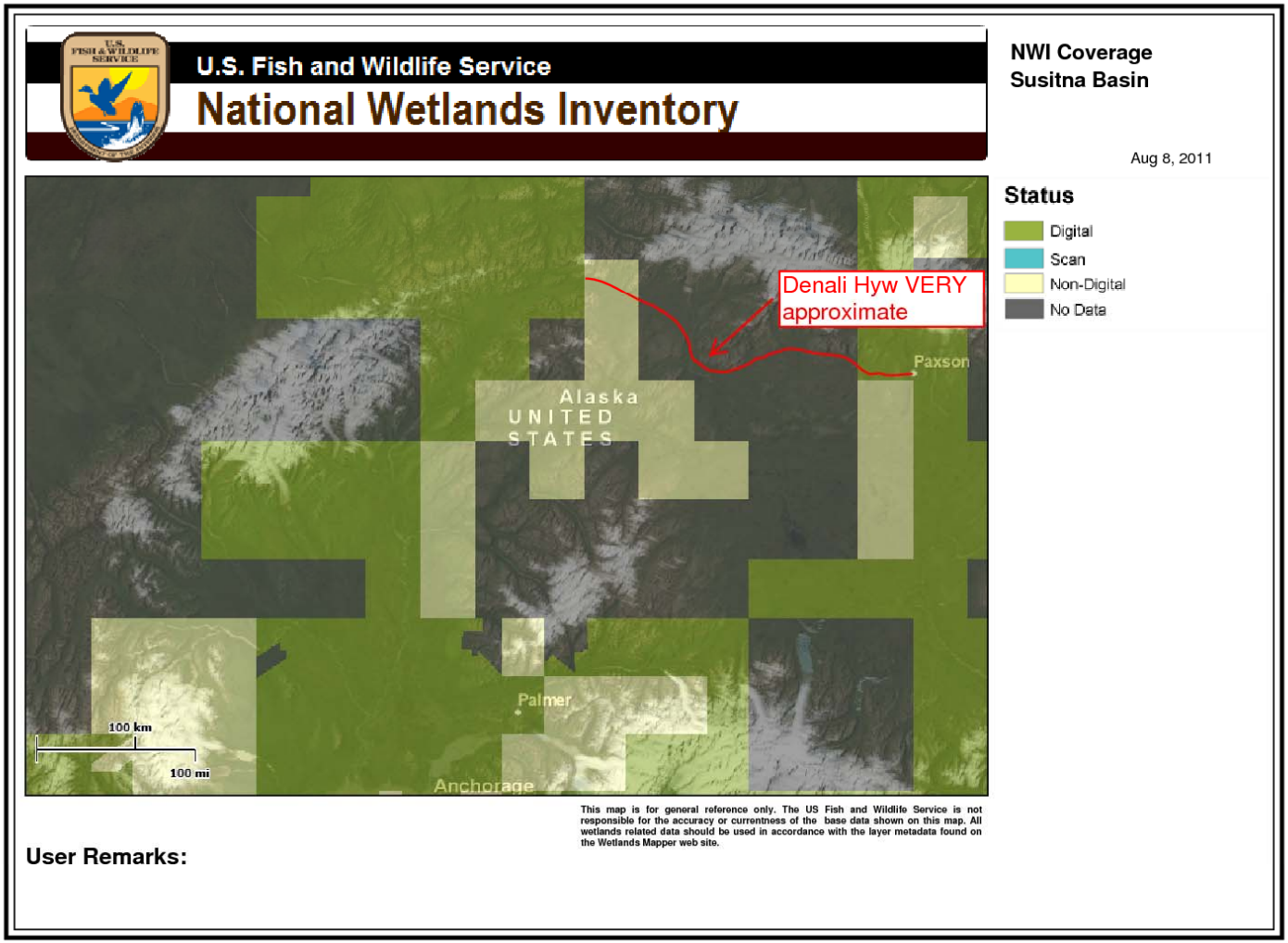


Figure 4

Extent of regional land-cover and vegetation mapping in the Susitna River basin.

NWI Wetlands Mapping



Potential Information Needs – I

- Mammals:
  - Current surveys & population estimates using newer methods (moose, bears, furbearers)
  - Spatial analyses of existing ADFG telemetry datasets (moose, caribou, bears, wolf)
  - Evaluate caribou subherds & movements
  - Evaluate/update moose carrying-capacity model & habitat compensation options
  - Assess current condition & use of sheep licks
  - Downstream surveys of floodplain herbivores & furbearers, especially beaver colonies
  - Small mammal survey in impoundment zone
  - Compilation of ADFG harvest statistics

Potential Information Needs – II

- Birds:
  - Current nesting status of raptors, especially eagles
  - Waterbird breeding data (brood surveys)
  - Waterbird migration data (spring & fall surveys)
  - Breeding landbird & shorebird densities, using ground-based point-counts with distance sampling
  - Evaluation of breeding status for species of conservation & management concern
- Amphibians:
  - Wood frog breeding surveys

Potential Information Needs – III

- Vegetation & Wetlands:
  - Vegetation (AVC Level IV) geodatabase
  - Wetlands mapping in sufficient detail to support 404(b)(1) analysis & assess functions/values
  - Mapped area needs to cover all access/transmission line corridors
  - Recovery of historical mapping products & documentation to expedite mapping efforts
- Wildlife habitats:
  - Spatially explicit habitat evaluations using GIS database for habitat map, incorporating habitat-use data from historical & recent studies
  - Updated browse inventory in Watana impoundment zone
  - Riparian habitat evaluation downstream (based on hydrological modeling); reexamine historical plots

Questions?