Upcoming Dall Sheep research in Region 2

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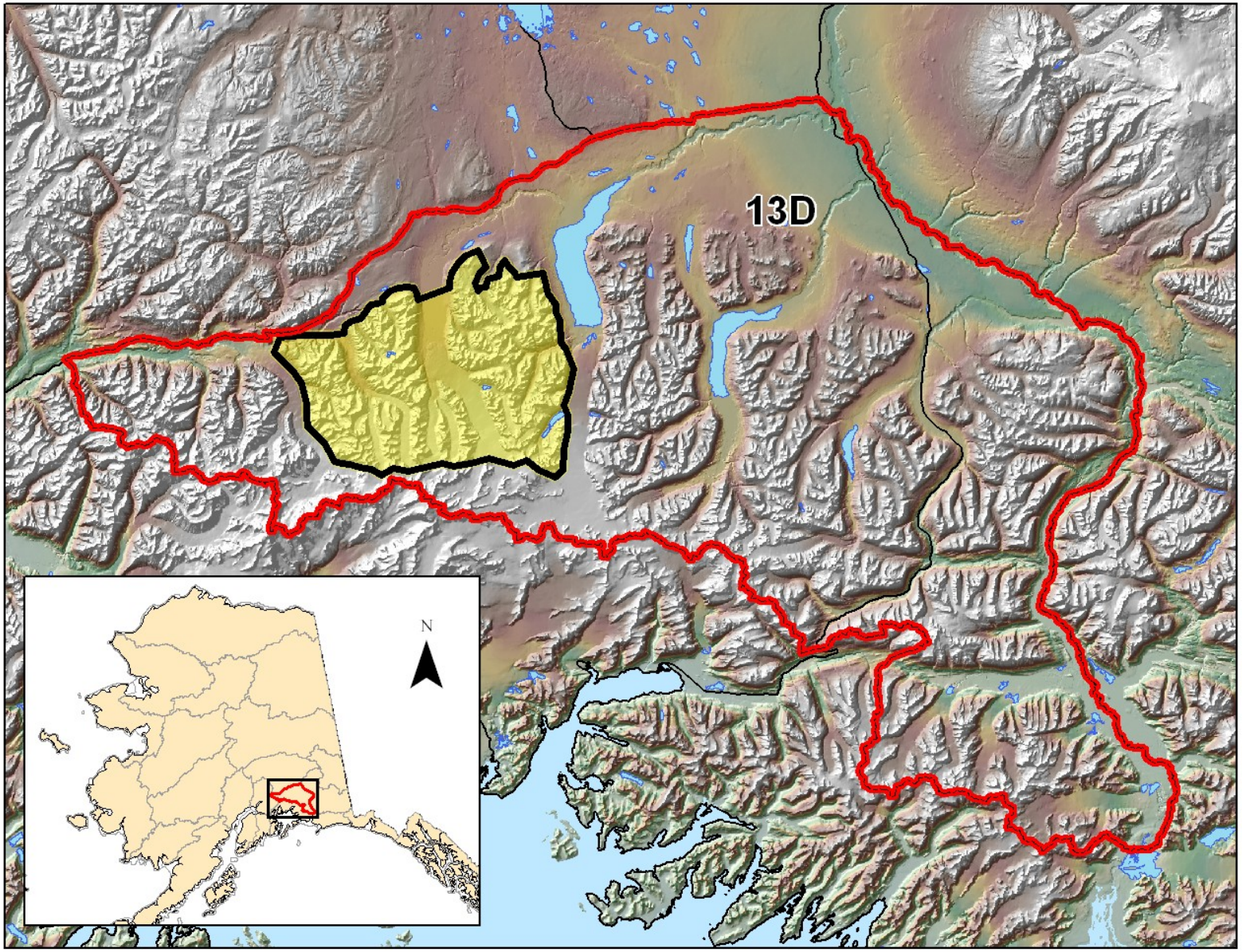
Experience and biography

- BS, Northwestern University, 1991
- MS, University of Wyoming, 1998
- Ph.D., University of Wyoming, 2002
  - Research on denned black bear metabolism
- Director, Kenai Moose Research Center 2003-2008
  - Research on nutritional requirements of pregnancy
- Lifetime outdoorsman, hunter, fisherman

Proposed study area



Project Background

- 13D – Declining sheep populations

Unit-wide estimates

  - ~1580 in 2002
  - ~1280 in 2008

- Count history specific to proposed study area:

Nelchina Gl. to Matanuska Gl.

  - 475 sheep in 1976, 138 in 2008

➢ Declines approximately equal in ram and ewe component

Project Background

- Weather–

  Surveys show that in some years with late, heavy spring snows, many ewes are seen without lambs

- Predation –

  AK range study (S. Arthur) showed that ~90 % of lamb mortality due to predation, primarily coyotes (40%) and eagles (30%). All deaths of adults were caused by predation (wolves = 57%, bears 7%, wolverines 7%)

  Lamb survival to 1 yr = 26%

  Adult survival = 86%

Project Background

- Habitat and nutrition –

  Bighorn sheep very susceptible to mineral deficiencies, results in low pregnancy rates

- Disease -

  Die offs in OR, ID, WA, other states related to pneumonia. Same bacteria have been found in SOME sheep in AK.

- Focus initial research efforts on these four topics – identify cause of decline

Project Background

- Variability in other research (AK range) suggests more than one year of research necessary

- Weather, habitat likely different between interior and Southcentral—

  Coastal influence/warm wet winters/ICINg

- Predation has an effect, but losses to predation could be very different than in interior

  Eagle staging areas, Bears, Coyotes, Wolves

➢ Cannot generalize, must conduct research in these ranges and on these sheep

Project Calendar

•March 15-31, 2009– Radio collar ~40 adult ewe sheep

At capture, assess health and nutritional condition, disease screen, pregnancy check

• May 15-June 15, 2009 – Monitor adult ewes to determine birth rate

Project Calendar

- May 15-June 1, 2009. Radio collar ~30 newborn lambs (expandable collar, releases @ ~1 yr)

  Weigh and measure lambs, collect blood sample, (genetics, health)

- Monitor radiocollared ewes and lambs to 1 year

  determine amount and cause of mortality, and RECRUITMENT

Project Calendar

- Summer, 2009
- Field collections (fecal, browse) to check for disease and to evaluate habitat quality

- Hunting season, 2009
- Request that hunters recover (volunteer basis) liver and lung samples to test for mineral deficiencies and for lungworm/pneumonia

Project Calendar

- Fall and winter, 2009-10. Using radio collared animals to identify winter range, establish temperature and snow depth monitoring sites
  - Measure snow depth from fixed-wing when we monitor radio collared sheep
  - Temperature loggers will record daily temperature ranges –IS ICE FORMING?
  - If funding available (depends on how much flying we have to do during summer ‘09) we will measure snow hardness on sheep winter range

Project Calendar

- 2010 and 2011
  - Repeat work conducted in 2009 as necessary

Additional projects & future

- GPS collars (CO Bighorn Society)
- Validate use of ultrasound to measure % body fat and protein
- Other study areas
  - Kenai (?)
  - Wrangell St. Elias NP (?)
- Predator diet composition