Brown Bear Population Estimates in Unit 4
Presentation Outline

• Background

• Objectives

• Methods

• Results
  – Population Estimates
  – Population Density

• Summary
Background

Unit 4 Brown Bear Human-caused Mortality

# Brown bears sealed / year

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Objectives

• Estimate brown bear population size on northern Admiralty and Northeast Chichagof islands

• Derive brown bear population densities for Admiralty and Chichagof islands

• Obtain information on brown bear population demographics
Unit 4 Islands and Study Areas

Northeast Chichagof study area

Admiralty Island study area

Chichagof Island: 5635 km²

Admiralty Island: 4309 km²

4610 km²

Legend
- N Admiralty Study Area
- NE Chichagof Study Area
Methods

• Replicated Capture-Mark-Resight (CMR)
  – Primarily searched habitats above timberline

• Admiralty Island study area- 344 km²
  1986-87 and 1993

• NE Chichagof Island study area- 1112 km²
  1992 and 2002
Methods

Density = bears/1000km²

Population = N

Replicated

Capture-Mark-Resight

Late June – early July
Population Estimate

• The current estimates are based on ADF&G mark/recapture research conducted on northern Admiralty and Northeast Chichagof islands and extrapolated to the rest of Unit 4 based on a combination of factors including:

  • biologists’ personal knowledge of habitat characteristics,
  • the predictions of a brown bear habitat capability model,
  • anecdotal reports of field sightings by hunters, and other outdoors persons, and harvest data.
Unit 4 Population Estimates

Legend
- N Admiralty Study Area
- NE Chichagof Study Area

Chichagof Island
- 1550
- 1045

Admiralty Island
- 1560

Juneau

Sitka

Baranof Island
Northeast Chichagof Population Estimate

1992 Study
• 69 collared (17%)
• @ high elevation
• 6 replicate surveys
• 257 total bears

2002 Study
• 44 collared (10%)
• 23 @ low elevation; 21 @ high elevation
• 9 replicate surveys
• 458 total bears
Brown Bear Population and Density

# Brown bears

Density (N/1000 km²)

- **Chichagof**
- **Admiralty**
- **Baranof**

2002 Chichagof
NE Chichagof Issue

• 2002 NE Chichagof estimate
  – Obtained after completion of the Brown Bear Management Strategy
  – Is higher and more precise that the 1992 estimate
  – Applied to NE Chichagof, but not the entire island
    • Differing habitat capabilities
    • Higher salmon stream density (27%) than remainder of Chichagof
NE Chichagof Habitat and Salmon
Summary

• Harvest has steadily increased over past 5 decades

• Population estimates: Admiralty, Baranof, Chichagof

• Density estimates: Admiralty, Baranof, Chichagof
  – Ranged from 227 – 362 bears / 1000 km²

• 2002 Northeast Chichagof estimate – less bias, more precise, increased brown bear abundance

• Dept has successfully managed brown bear harvest for high population levels, providing for all uses and users