

Current Brown Bear Research Southeast Alaska



Brown Bear Study Areas

Malaspina Forelands

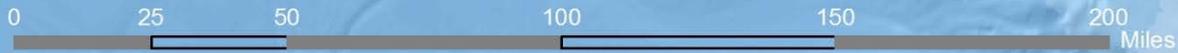
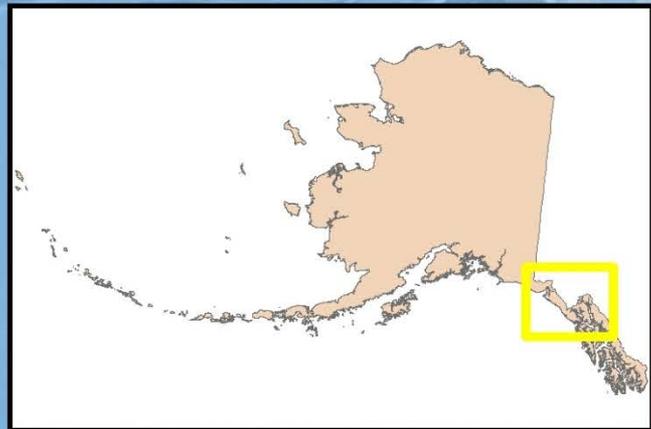
Yakutat

Yakutat Forelands

Berners Bay

Juneau

Sitka

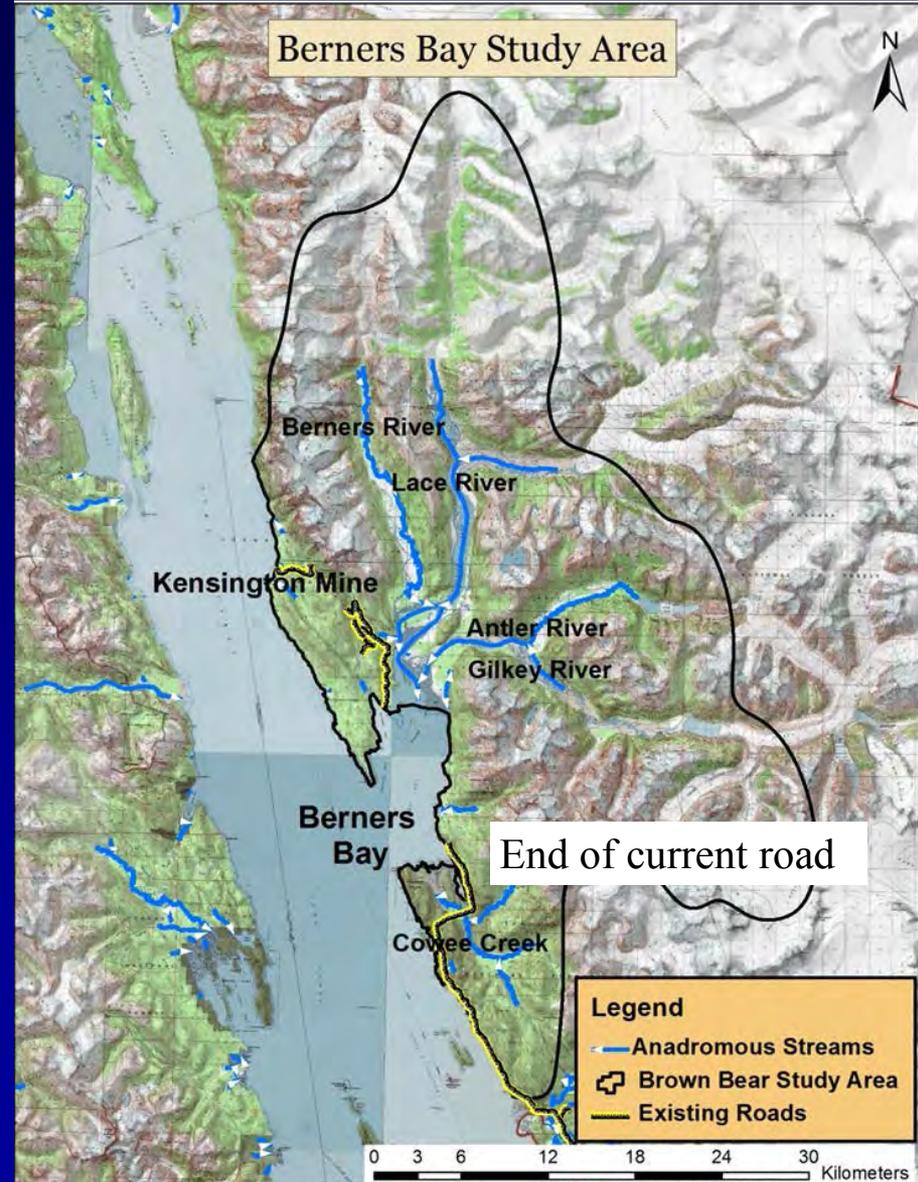


Outline

- Berners Bay Research
 - Objectives
 - Methods
 - Results
 - Spatial Use
 - Habitat Selection
 - Population Ecology
- Yakutat Research



Berners Bay (GMU 1C)



Objectives

- Juneau Access Improvement Project
 - Collect biological information necessary to manage the population after completion
- Spatial Use
- Habitat Selection
- Population Ecology
 - Abundance Estimate
 - Demographics
 - Productivity
 - Survival
 - Mortality



Methods - Capture



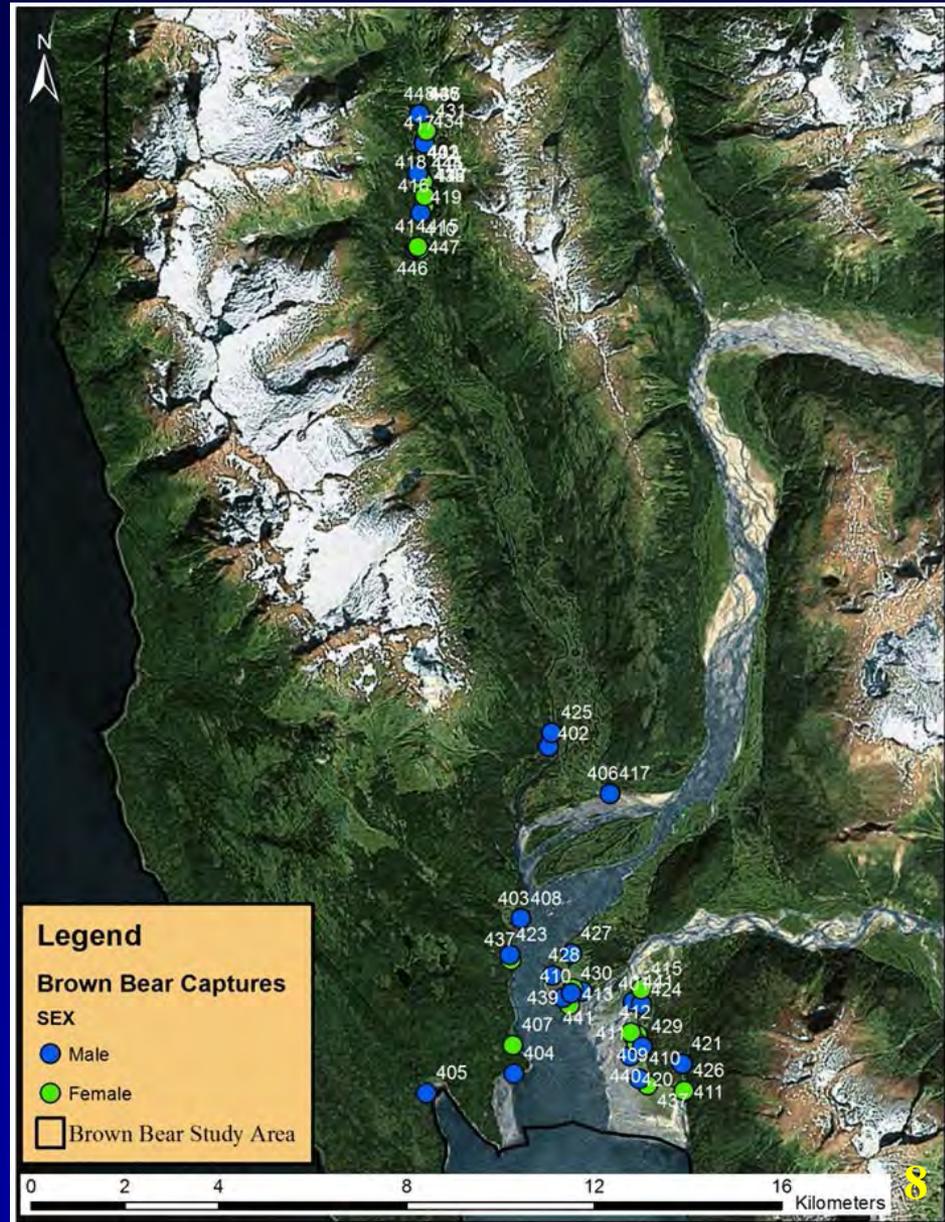
Methods – Population Estimate

- Collect bear hair
 - trail snares
- Collect tissue
 - captured bears
- DNA-based population estimate
 - DNA analysis (nuclear μ -satellites)
 - species ID
 - bear sex
 - individual bear ID
 - Mark-recapture model



Results - Brown Bear Captures

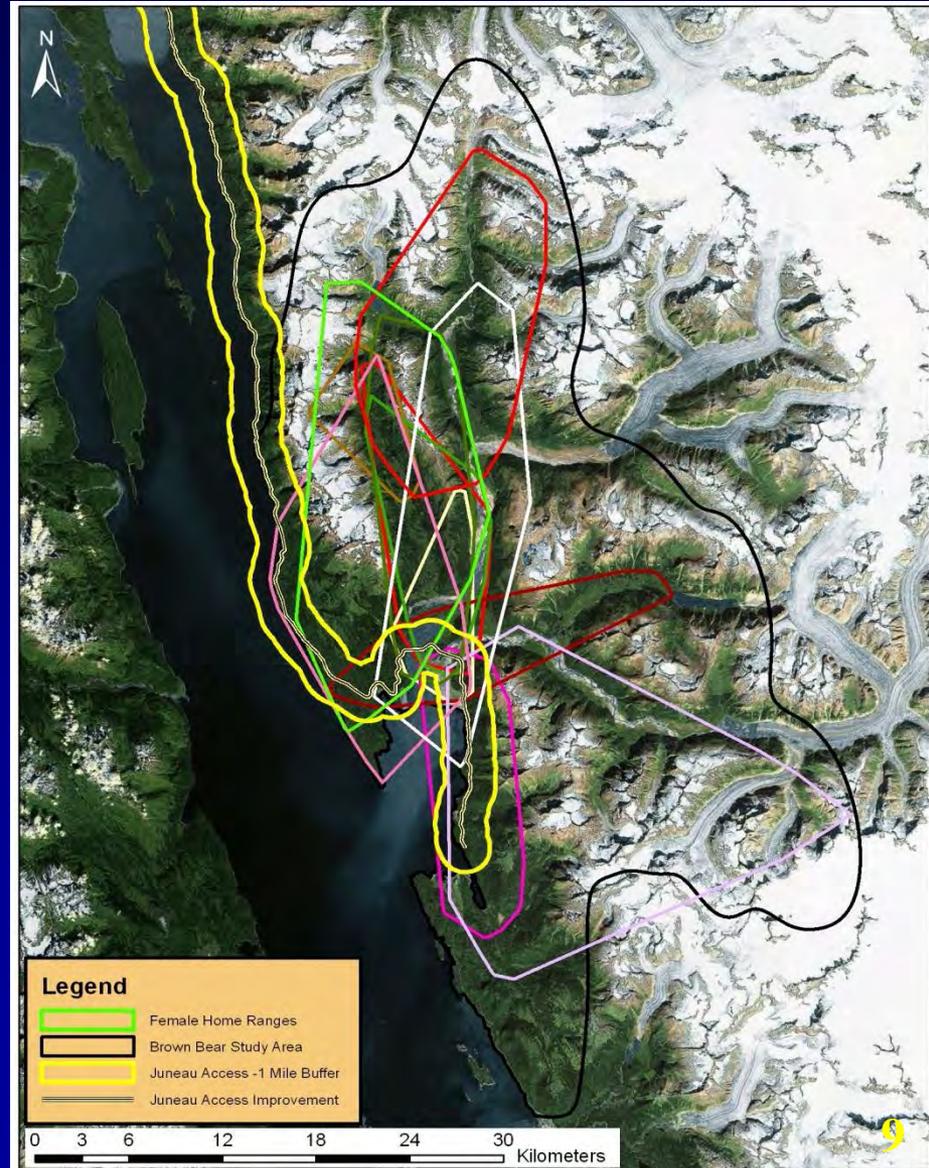
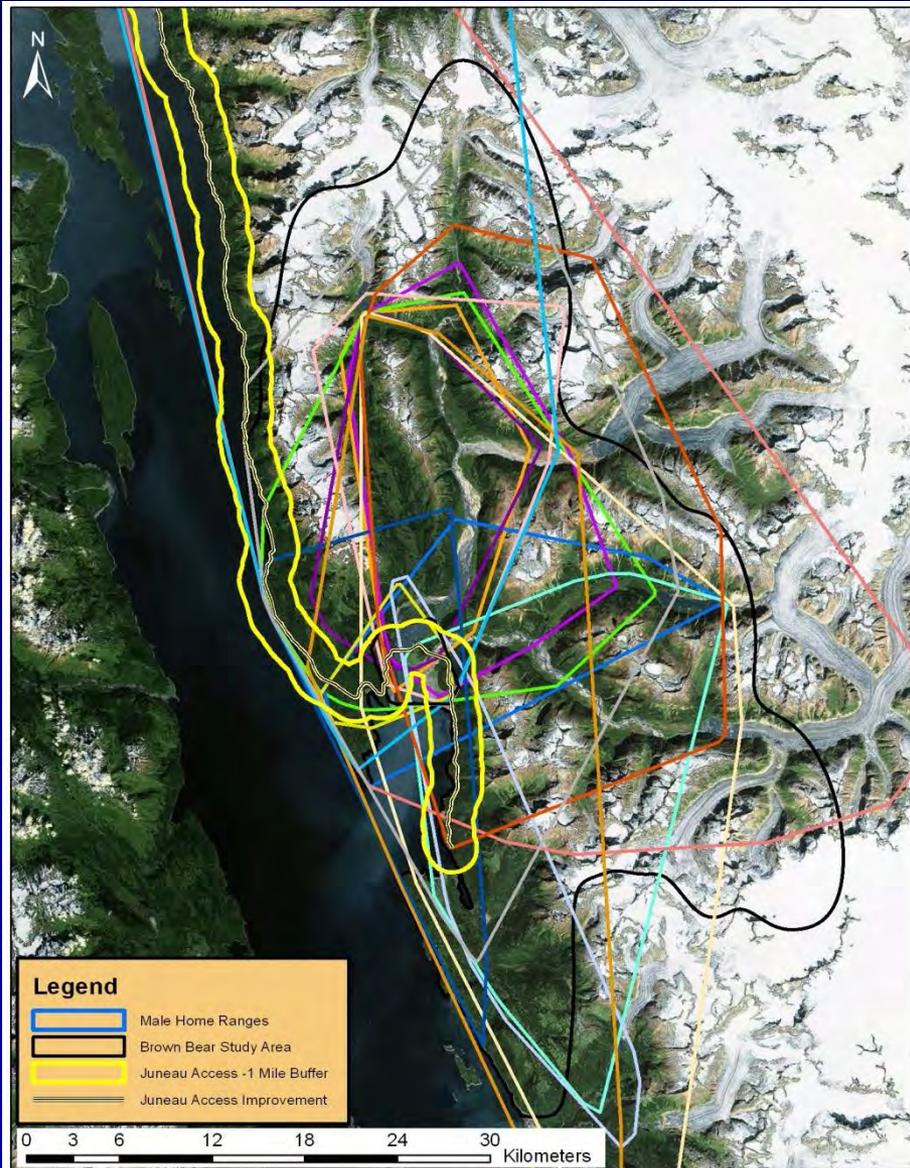
	Individuals Collared	
	Male	Female
Subadult (< 5 yrs)	9	5
Adult (≥ 5 yrs)	14	20
	23	25



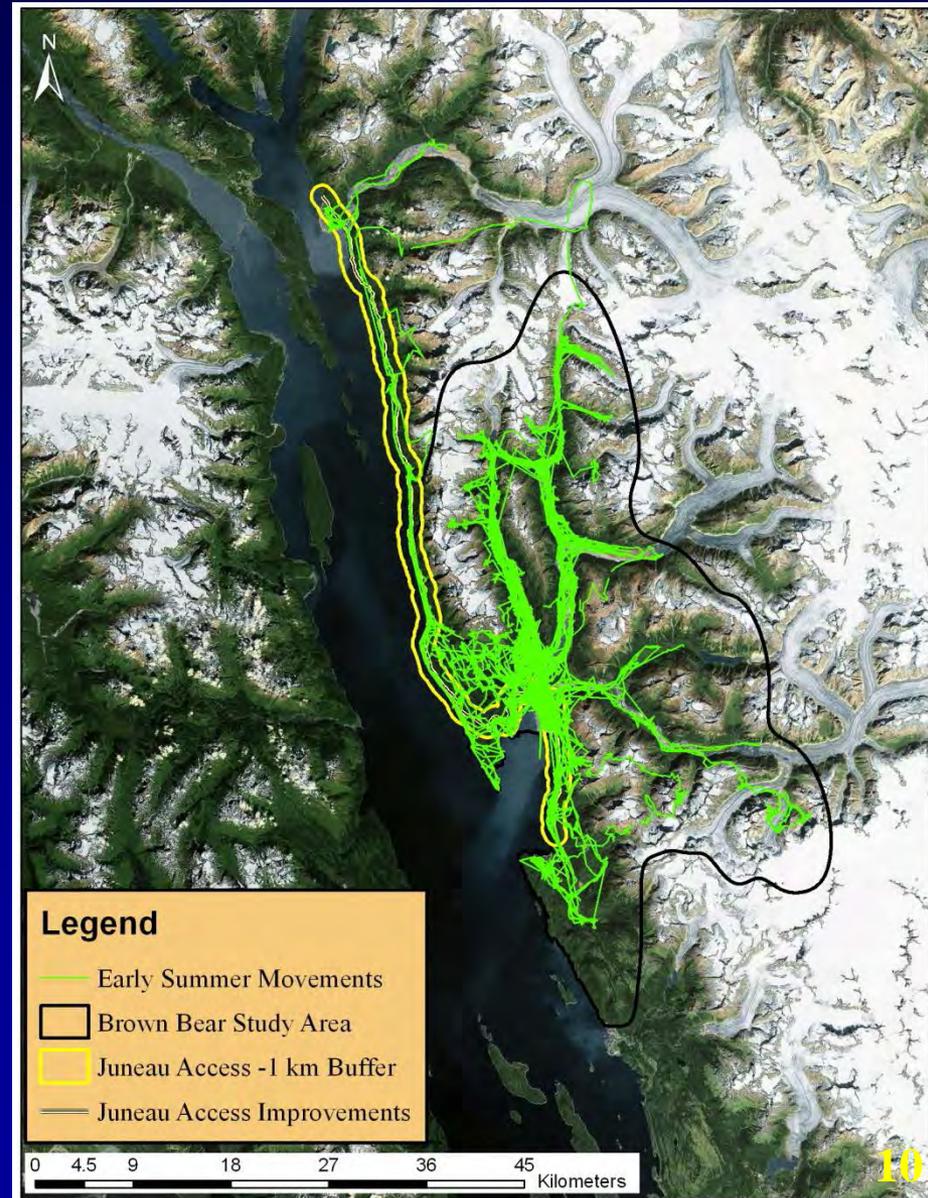
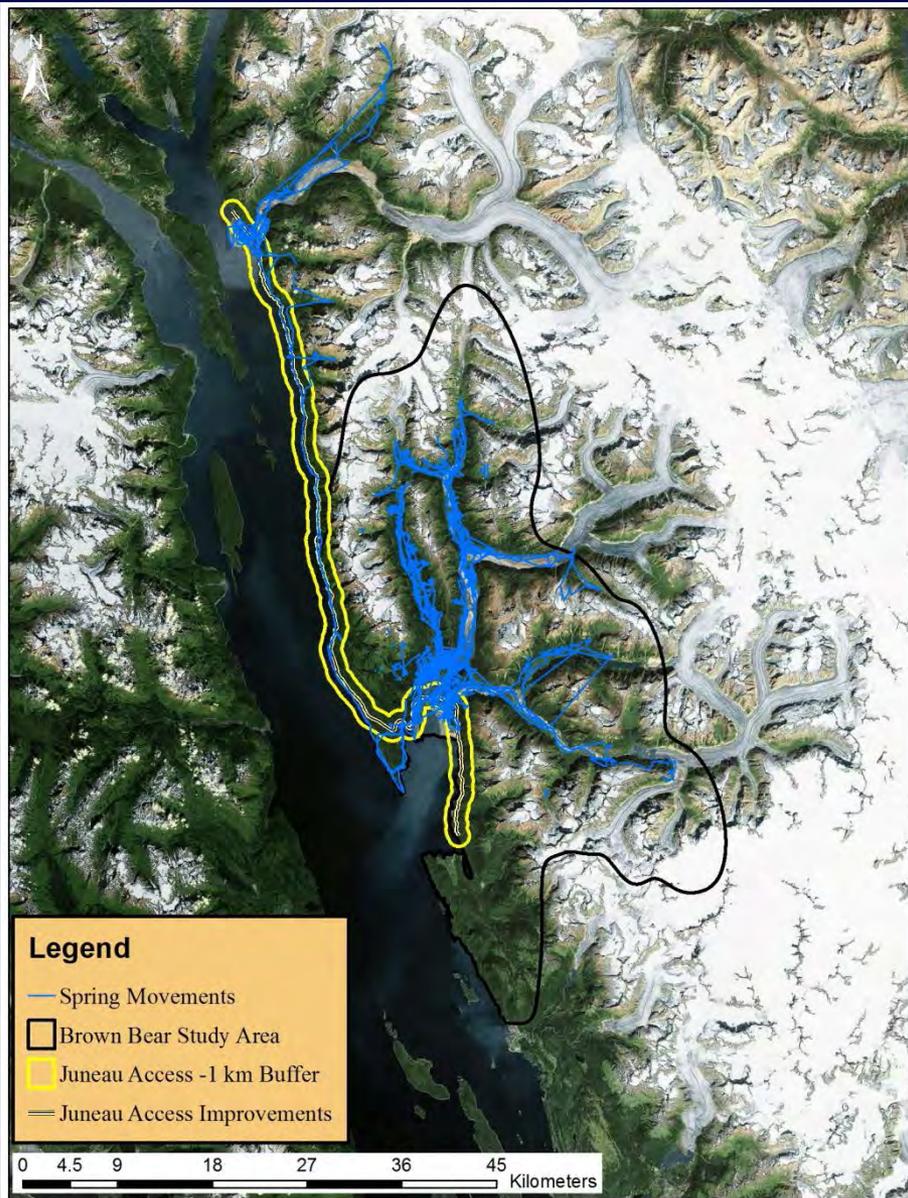
Spatial Use

Male Home Range: 214 mi²

Female Home Range: 57 mi²

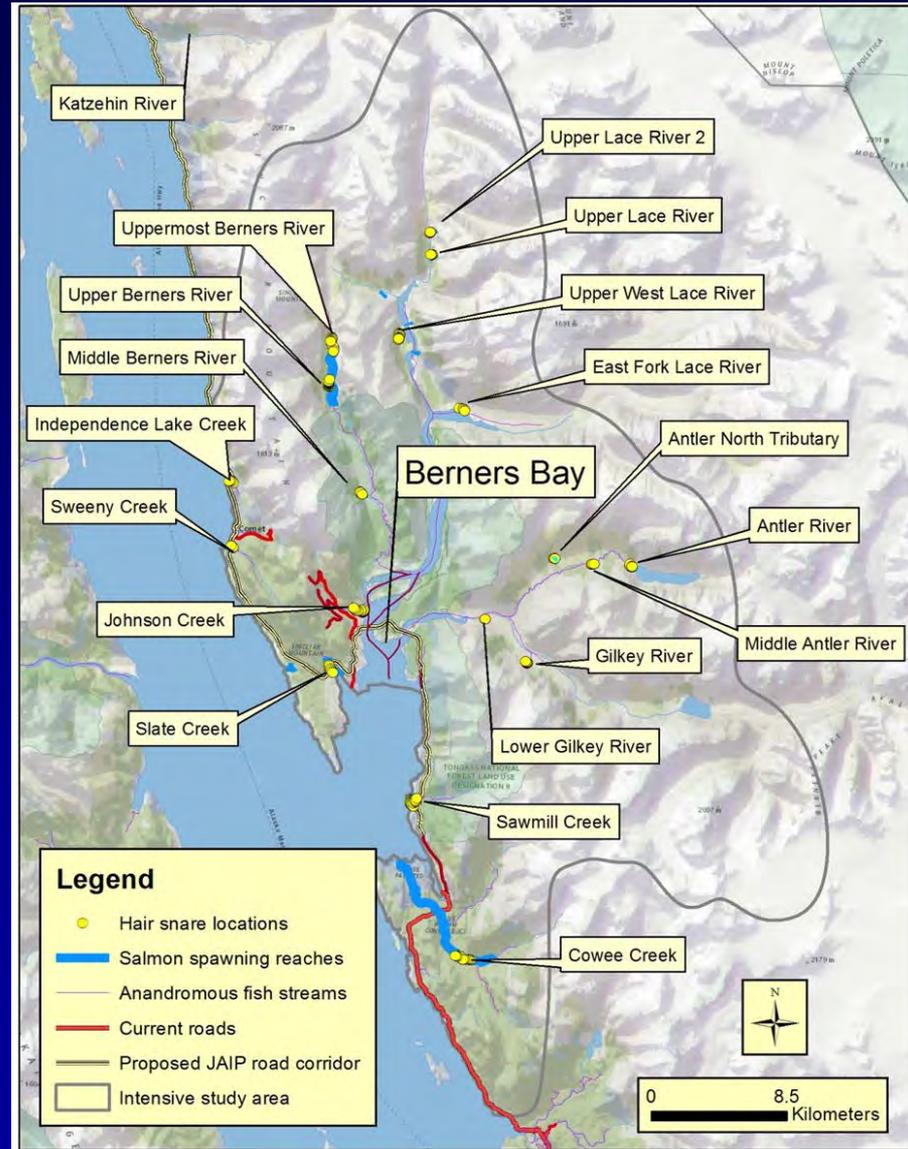


Spatial Use

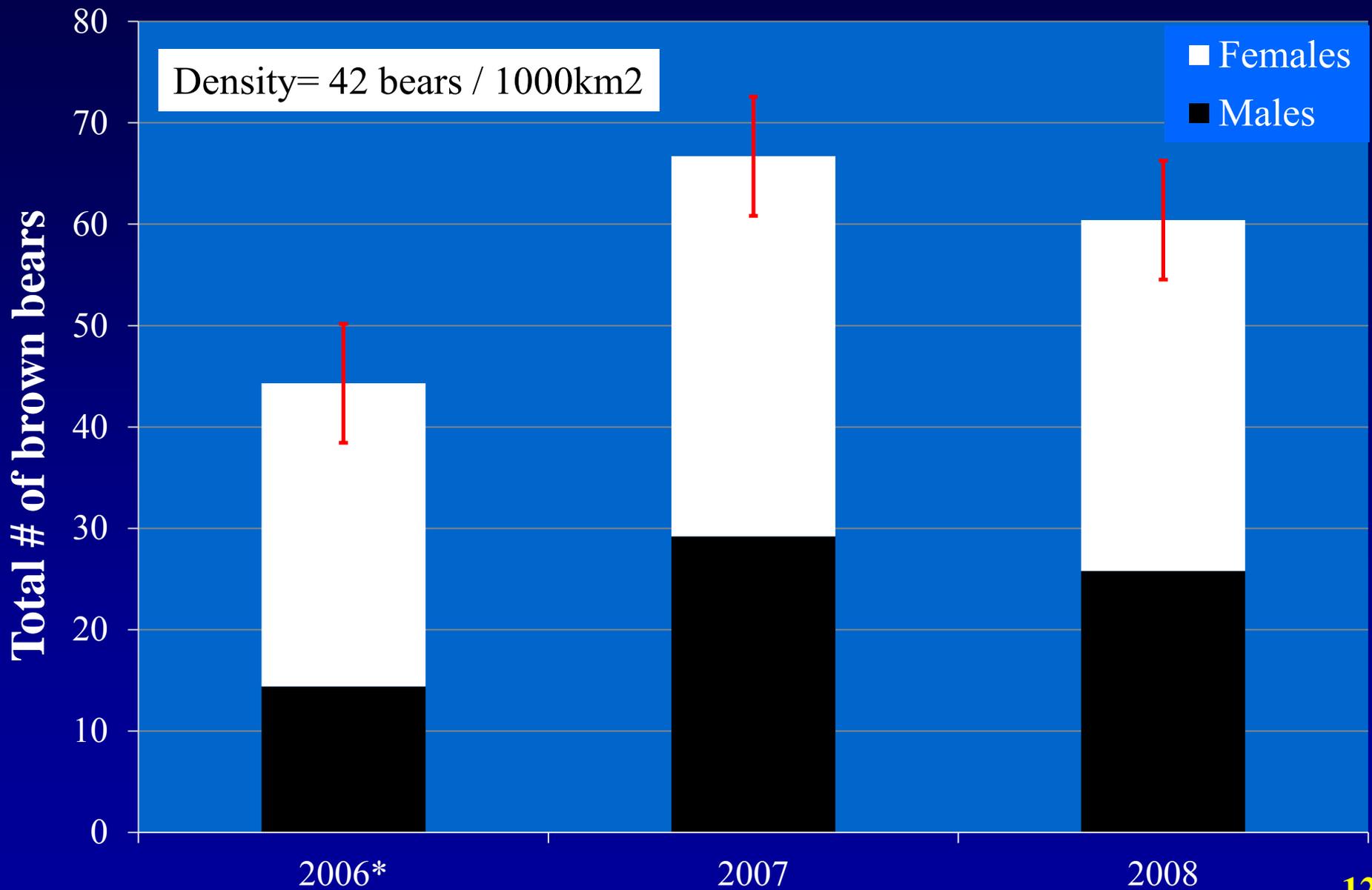


Hair Snaring

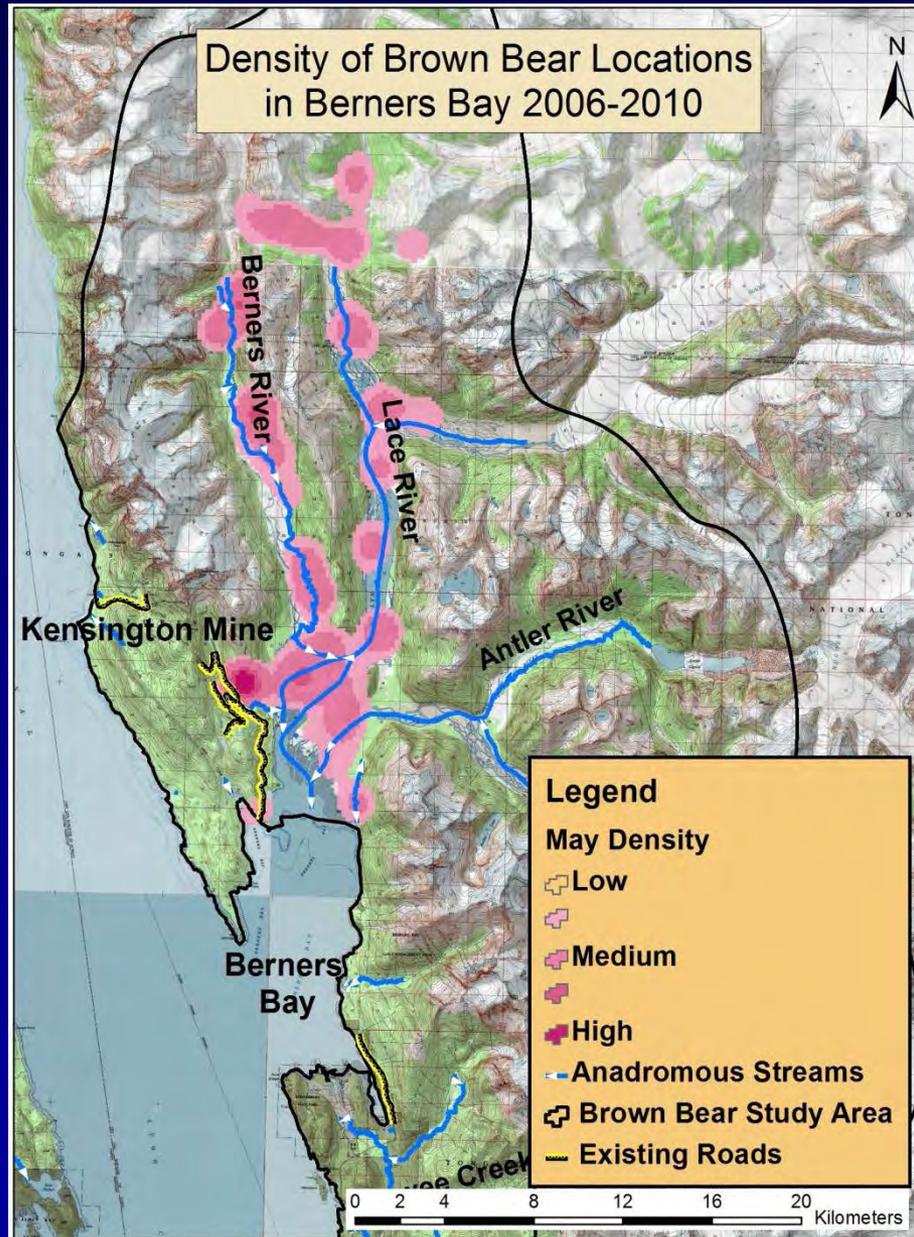
- 375 hair snare locations
- 600 hair samples collected
- 70% success DNA
- black and brown bears id
- 70% marked bears detected



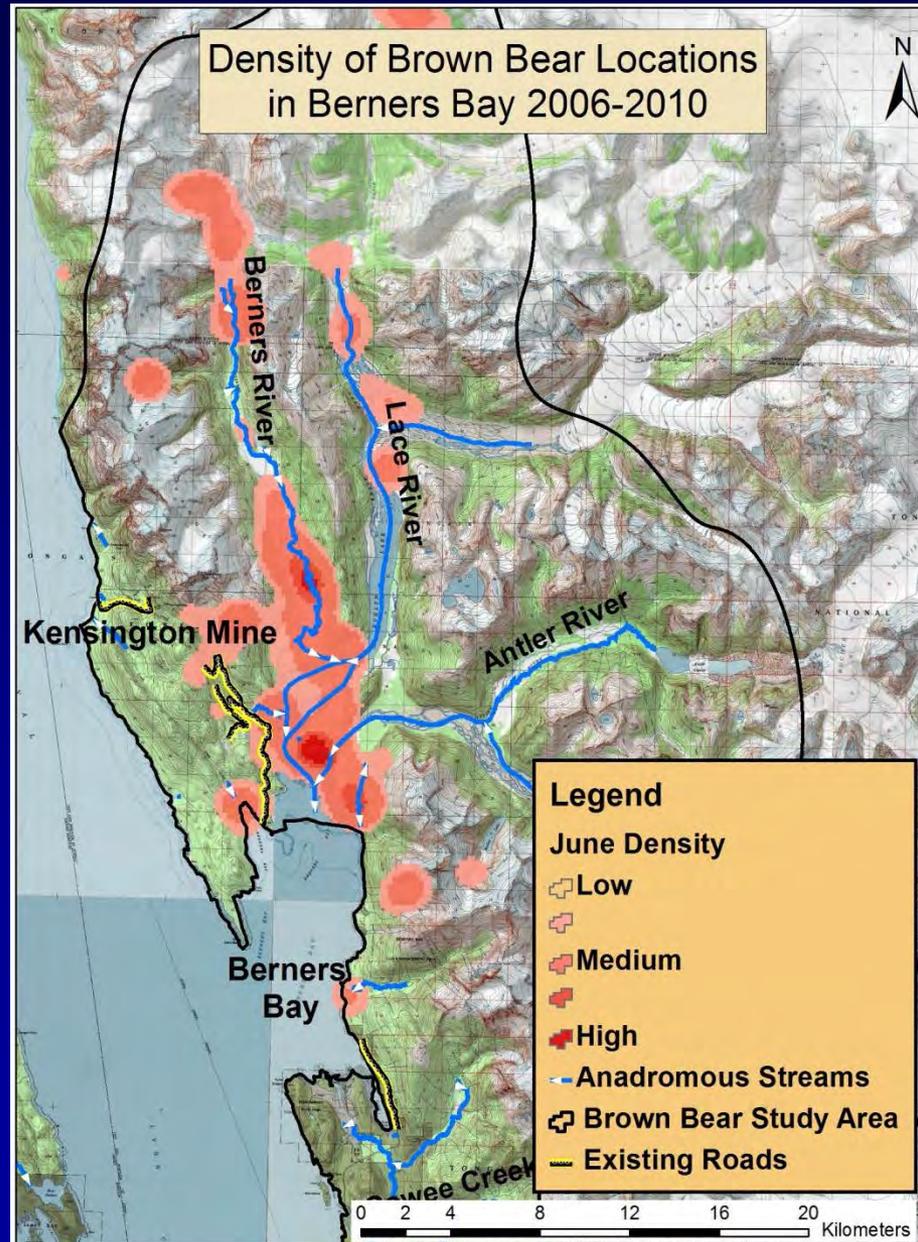
Population Estimate



Brown Bear Locations in May



Brown Bear Locations in June

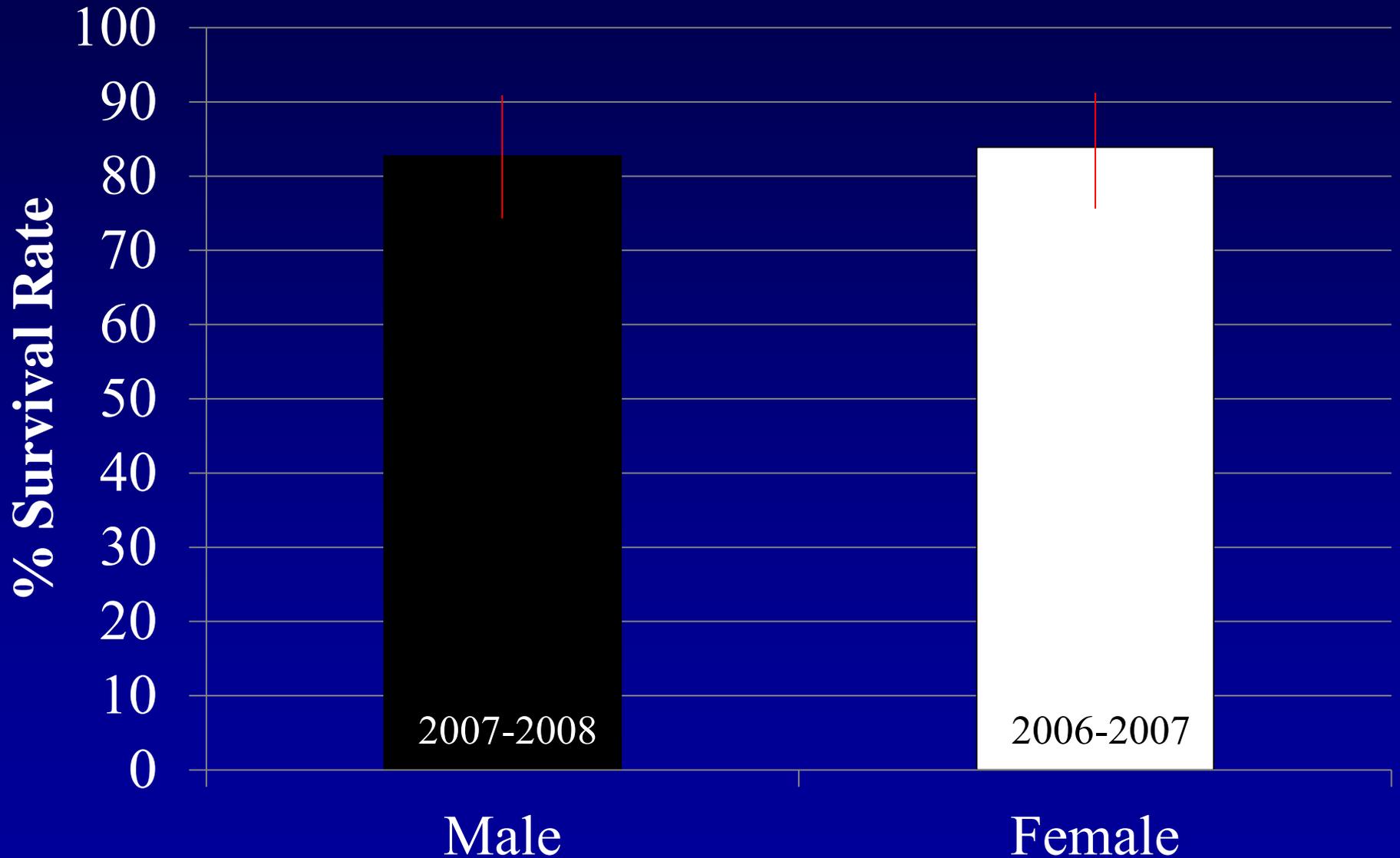


Productivity

- Berners Bay Study
 - Reproductive rate
 - Captured 9 females w/ cubs
 - 40% with cubs
 - Mean litter size 1.8
- Other Coastal Studies
 - Late onset reproduction
 - Female age – 7-8 in some instances
 - Mean interval between litters
 - 3-4 years



Annual Survival



Sources of Mortality

Collared Brown Bears 2006 – 2010 (n=48)

	Male	Female
Harvest	3	2
Natural/ Unknown	0	2
Other Bear	1	2
Research	1	2
	5	8



Management Implications

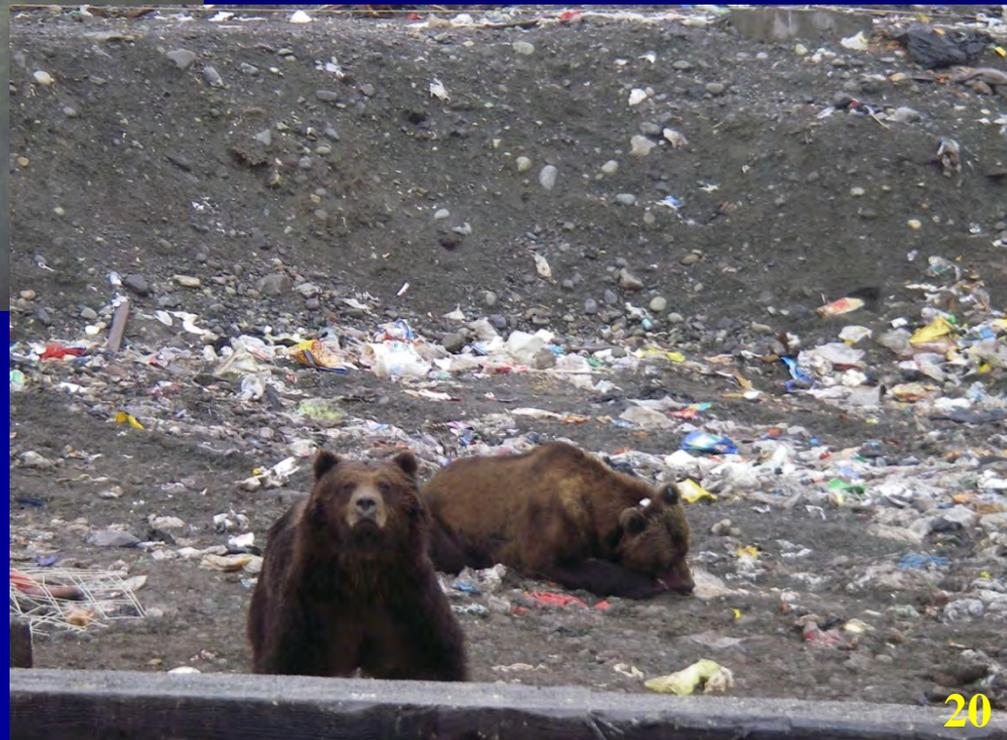
- Low density
- Isolated population
- Population status
 - Reproduction
 - Survival



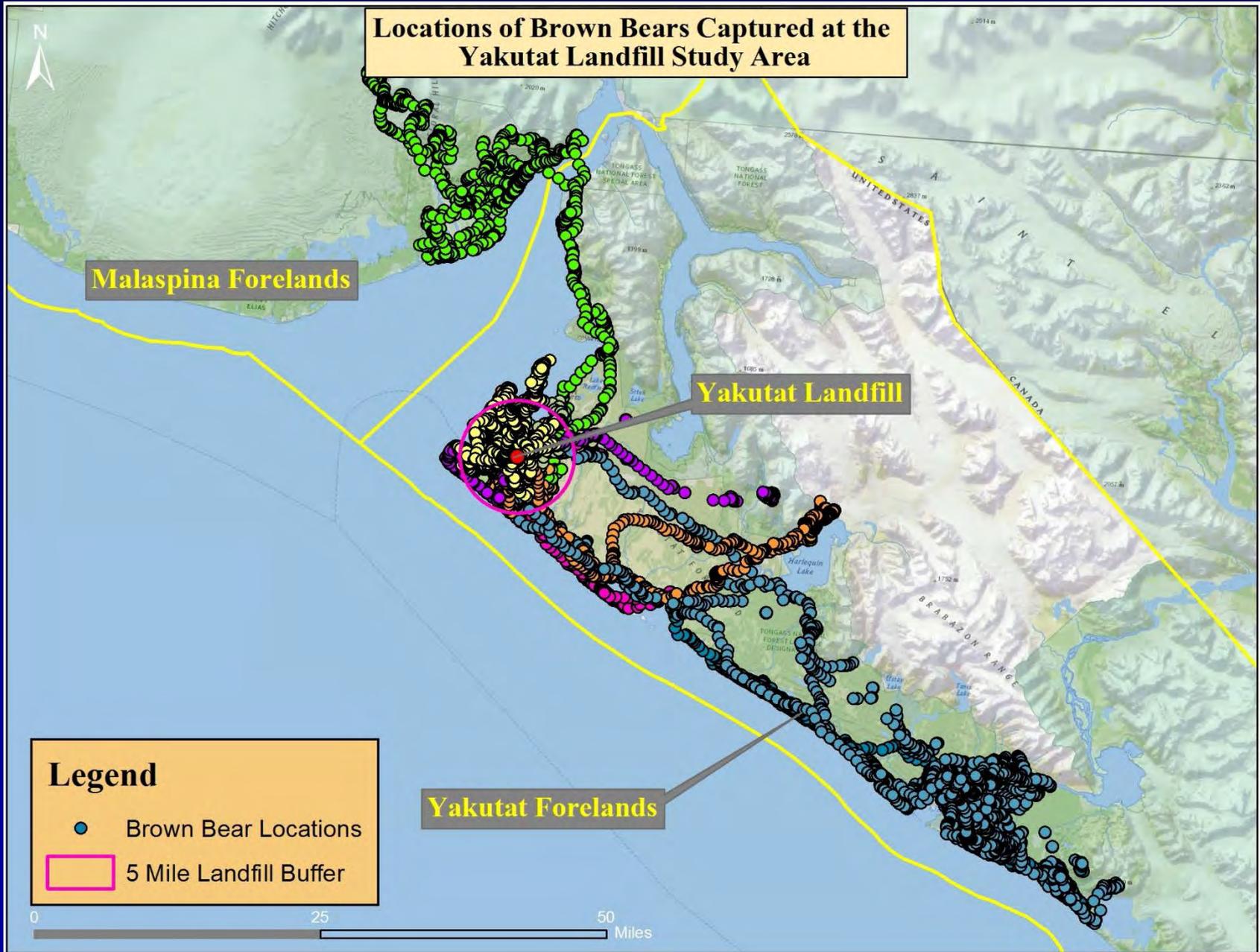
Yakutat (GMU 5A & 5B)



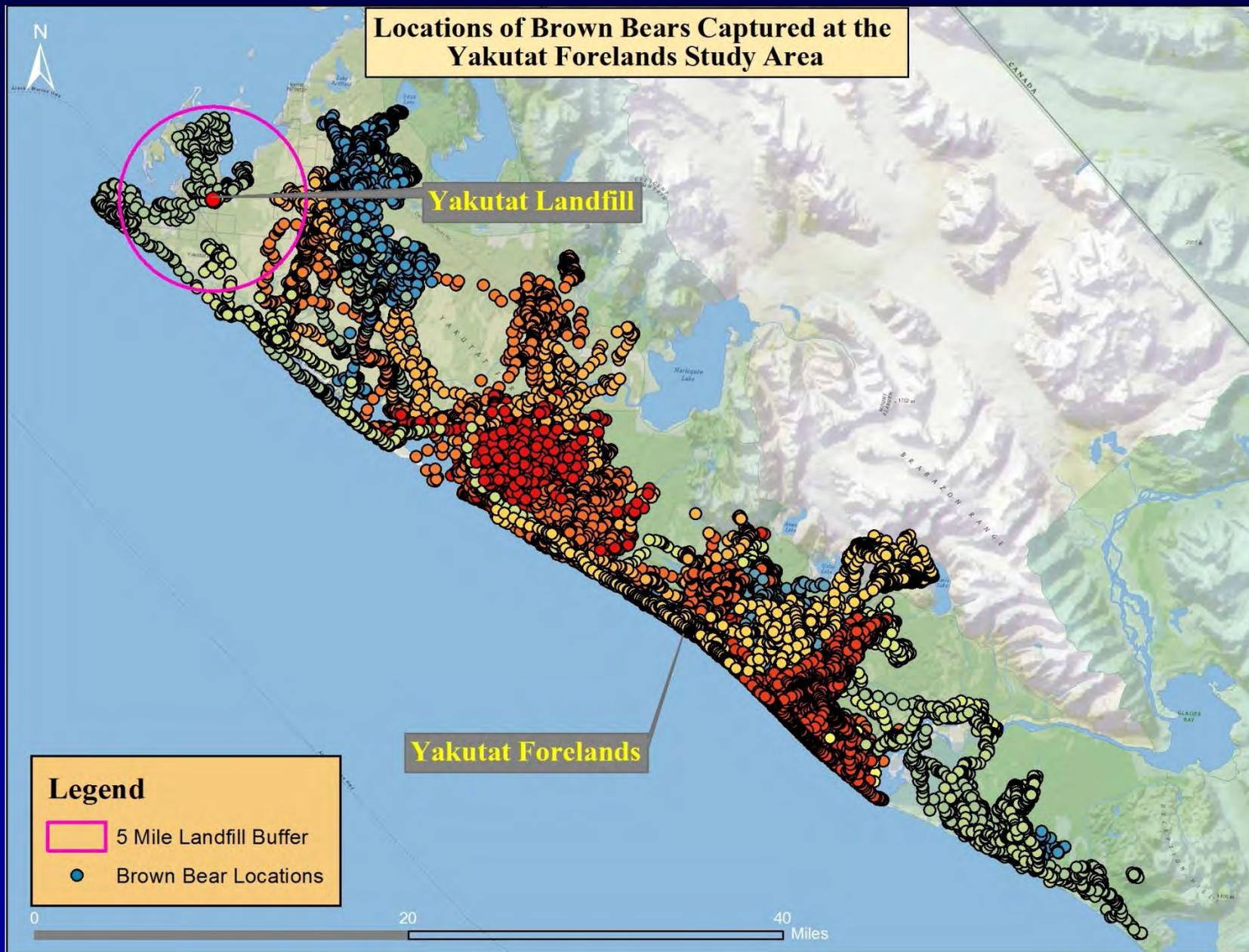
Yakutat Landfill



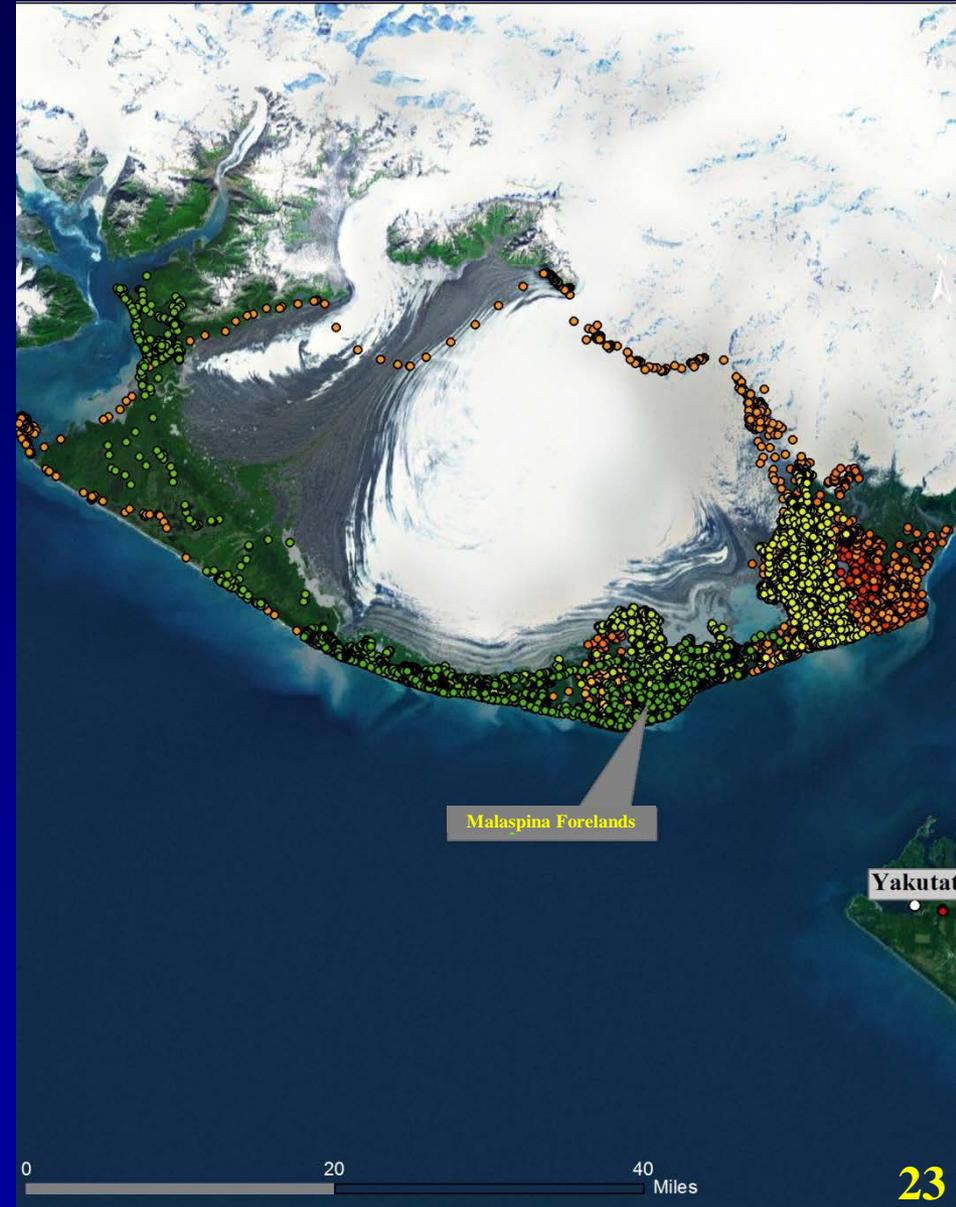
Yakutat Landfill



Yakutat Forelands



Malaspina Glacier Forelands



Mortality of Collared Bears

	Male	Female	Total	Mortality
Yakutat Landfill	11	6	17	12
Yakutat Forelands	17	25	42	3
Malaspina Forelands	10	8	18	2
	38	39	77	17

Continued Work

- Collar Deployment and Retrieval
- Data Analysis
 - Spatial relationships
 - Home range and movements
 - Population demographics
- Habitat Selection
- Harvest Rate Estimation
- Population Estimation
- Assessment of Southeast Genetic Structure