

Wildlife Restoration OPERATING GRANT FINAL PERFORMANCE REPORT

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 115526
Juneau, AK 99811-5526

Alaska Department of Fish and Game Wildlife Restoration Grant

GRANT NUMBER: AKW-19

PROJECT NUMBER: 3.0

PROJECT TITLE: Black bear (*Ursus americanus*) abundance, harvest rate, and diet in the Kenai Peninsula coast and Prince William Sound regions

PERIOD OF PERFORMANCE: July 1, 2019-June 30, 2020

REPORT DUE DATE: September 1, 2020

PRINCIPAL INVESTIGATOR: Sean Farley

COOPERATORS: Dave Saalfeld, Jeff Selinger

I. PROGRESS ON PROJECT OBJECTIVES DURING PERIOD OF PERFORMANCE

OBJECTIVE 1: Develop black bear abundance estimates in PWS and southern Kenai Peninsula with Close Kin Mark Recapture (CKMR), classic mark-recapture statistics, and pedigree reconstruction

ACCOMPLISHMENTS: Biological samples from approximately 250 bears have been collected for this project to date. Nine bears have been captured and provided hair and blood samples for DNA identification and paternity calculations. The remaining bears (ca.240 animals) were collected from harvest sealing.

OBJECTIVE 2: Determine dispersal distances from maternal area by black bears in PWS and southern Kenai Peninsula, and estimate susceptibility to harvest based upon dispersion.

ACCOMPLISHMENTS: There were four bears outfitted with GPS/VHF camera collars in the Port Dick area spring 2019. All collars were recovered during the fall of 2019 and location data have been retrieved from all collars. Figures 1-4 show the raw GPS locations/tracks for bears 203, 204, 206, & 207. Once paternity and maternal relationships have been determined (see Objective 3) dispersal distances can be calculated.

OBJECTIVE 3: Determine levels of genetic diversity and population structuring in PWS and Kenai Peninsula black bears.

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ACCOMPLISHMENTS All biological samples collected for this study (biopsy darts, samples from harvested bears, and blood samples from collared animals) were to be processed 2019-2020. Contracts have been awarded; however, the Covid-19 Pandemic has shuttered the laboratory work. We hope to begin again in spring 2021.

OBJECTIVE 4: Determine the facultative dietary niche breadth and depth of black bears on Kenai Peninsula (south) and PWS using stable isotope analyses of black bear hair, muscle, and bone.

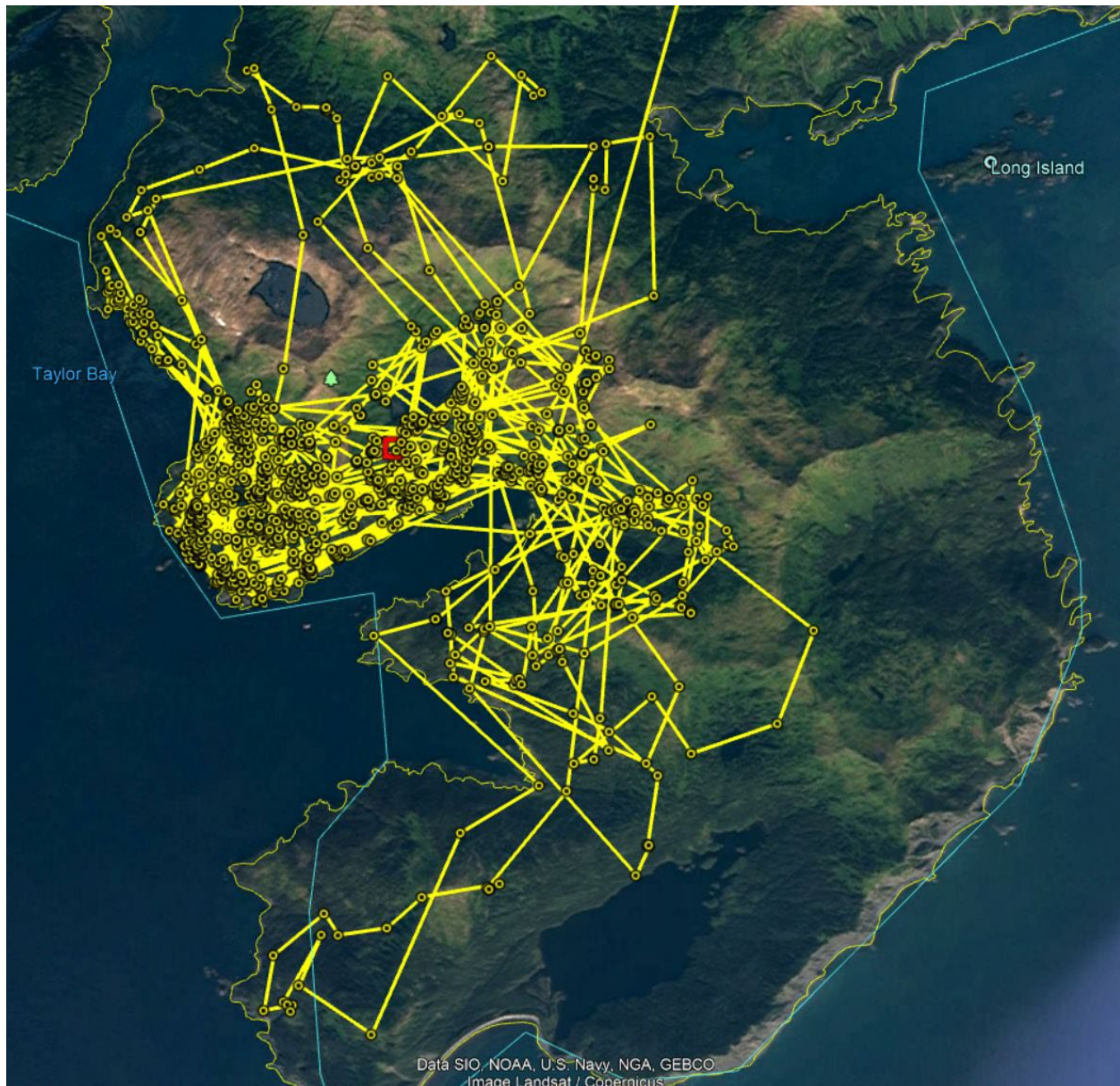
ACCOMPLISHMENTS Contracts were completed with USGS for determining isotope values (C/N/S) of samples collected from bears listed in objective 1. An additional contract has been awarded to USGS for ecological modeling with the isotope data and camera collar information. Table 1 shows the samples collected to date that will span several months to potential lifetime diet estimations.

Body composition determinations have been completed for the captured bears. There have been 5 bears captured and body composition determined for spring 2019 and 5 bears (2 serial sampling events) captured and body composition determined fall 2019.

II. SUMMARY OF WORK COMPLETED ON PROJECT TO DATE.

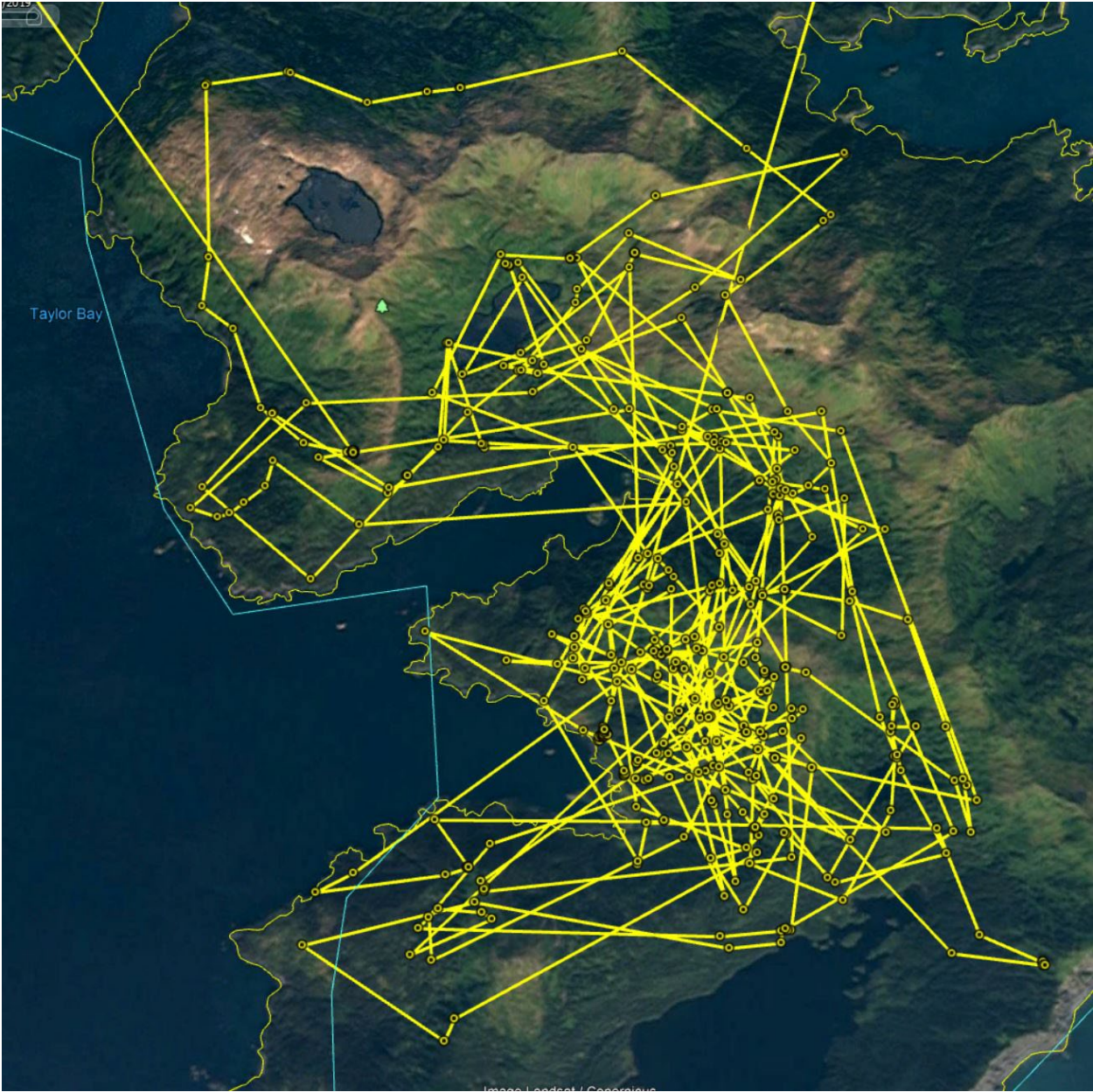
Collars were recovered and fall body compositions determined fall 2019. Body composition determinations have been completed for all captured bears in the project. Samples from harvested bears were cataloged for DNA identification, which is proceeding at a greatly reduced rate. Samples for isotope work have been processed (cleaned, debrided) and prepped for loading into silver boats.

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Bear 203

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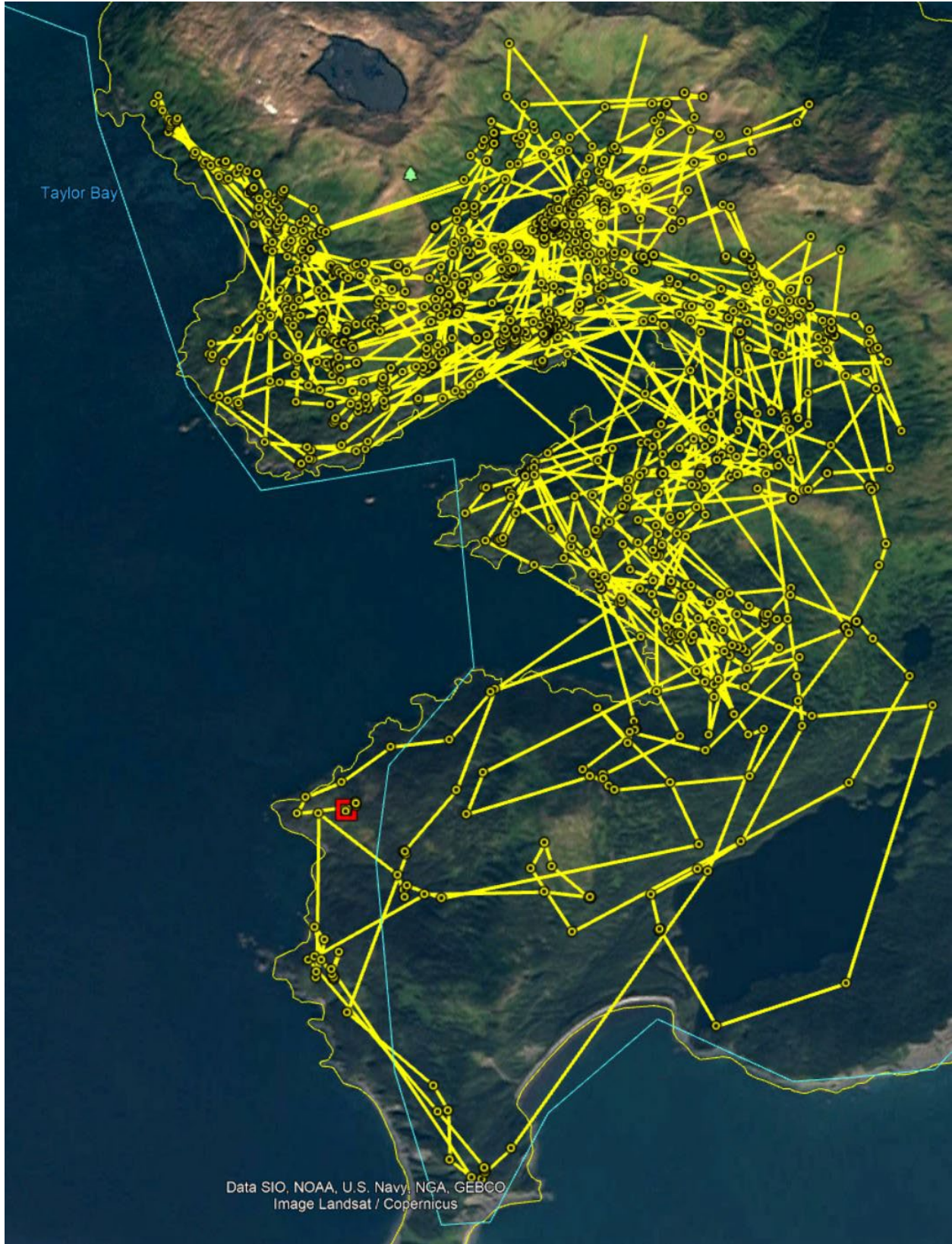
Bear 204

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Bear 206

IPR AKW-19 Black bear (*Ursus americanus*) abundance, harvest rate, and diet in the Kenai Peninsula coast and Prince William Sound regions FY20



Bear 207

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Table 1		
Sample Type	Year Collected	Number of samples
Tissue and Muscle	2011	3
Tissue and Muscle	2018	26
Tissue and Muscle	2019	27
Hide/Hair	1998	2
Hide/Hair	2004	2
Hide/Hair	2008	7
Hide/Hair	2017	11
Hide/Hair	2018	92
Hide/Hair	2019	135
Bone	2018	2
Bone	2019	97
Blood	2018	6
Blood	2019	16

III. SIGNIFICANT DEVELOPMENT REPORTS AND/OR AMENDMENTS.

1. None

IV. PUBLICATIONS

None

V. RECOMMENDATIONS FOR THIS PROJECT Project will continue.

Prepared by: Sean Farley

Date: