An Overview of Subsistence Research in Region III

An Oral Report to the Board of Game
Fairbanks, March 2020
RC 4 Tab 1.2

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ADF&G, Subsistence Division
Overview

• Introduction to Region III

• Overview of Subsistence Research: Harvest composition by representative study communities

• A closer look at Subsistence patterns and ongoing research
Introduction to Region III

• 7 Game Management Unit: 12, 19, 20, 21, 24, 25 and 26(B&C)

• Geographic area covers the eastern North Slope, the Yukon River drainage, and extends through the middle Kuskokwim River

• Encompasses 71 communities, including the hub communities of Fairbanks, Fort Yukon, and Galena
Subsistence Research Effort

- Community baseline studies (focus on one year)
  - Harvest and use
  - Mapping
  - Demographics, income, food security

- Targeted Research

- Local and Traditional Knowledge

- Subsistence: more than just harvest
Unit 19

- **14 communities**

- Estimated population in 2018: **1,829** people

- Harvest survey data (comprehensive) collected in **13 communities from 2009-2011**
Harvest Composition Unit 19

Aniak, 2009

- Chinook Salmon: 23%
- Chum Salmon: 20%
- Coho Salmon: 16%
- Sockeye Salmon: 5%
- Burbot: 8%
- Moose: 13%
- All other resources: 15%

McGrath, 2011

- Chinook Salmon: 13%
- Coho Salmon: 9%
- Sheefish: 5%
- All other resources: 29%
- Moose: 45%

- Chum Salmon: 20%
- Coho Salmon: 16%
Unit 25 and 26 (B)(C)

- **Unit 25**: 9 communities; Estimated population in 2018: **3,699** people

- **Unit 26 (B)(C)**: 2 communities; estimated population: **2,420**

- Harvest survey data (comprehensive) collected in 7 community from 1992-2018
Harvest Composition Unit 25 and 26 (B)(C)

Kaktovik, 1992

- Bowhead: 64%
- Arctic Char: 9%
- Caribou: 11%
- All other resources: 16%

Fort Yukon, 2017

- Bowhead: 64%
- Chinook salmon: 26%
- Fall chum salmon: 35%
- Black bear: 4%
- All other resources: 17%
- Moose: 18%
Units 12, 20

- **Unit 12**: 6 communities; 2018 estimated population – 1,613 people

- **Unit 20**: 20 communities; 2018 estimated population – 101,607 people

- Harvest survey data (comprehensive) collected in **15** of the communities outside of the FNSA
Harvest Composition Unit 12 and Unit 20

Tok, 2011

- Moose: 38%
- Caribou: 16%
- Sockeye Salmon: 13%
- All other resources: 27%

Minto, 2011

- Moose: 38%
- Summer Chum: 9%
- Fall Chum: 10%
- Coho Salmon: 11%
- All other resources: 24%
Units 21 and 24

- **Unit 21**: 9 communities; 2018 estimated population – 1,626 people

- **Unit 24**: 9 communities; 2018 estimated population – 1,017 people

- Harvest survey data (comprehensive) collected in 16 community from 1984-2018
Harvest Composition Unit 21 and 24

Anvik, 2011

- Chinook Salmon: 36%
- Moose: 23%
- Summer Chum: 11%
- All other resources: 13%
- Beaver: 5%
- Fall Chum: 6%
- Coho Salmon: 6%

Hughes, 2014

- Summer Chum: 43%
- Moose: 22%
- Least Cisco: 5%
- Humpback: 5%
- Whitefish: 5%
- Caribou: 8%
- All other resources: 12%
Subsistence: Not just harvest

• Mixed cash, subsistence economies

• Sharing and other forms of distribution

• Community Survival
Concentration of Harvest

Rampart, 2014

29% of households took 62% percent of the harvest

Fort Yukon, 2017

11% of households took 70% percent of the harvest
Moose and Big Game Harvest Assessments - Allakaket and Alatna (2011-2017)

- Collaborative research with DWC - in consultation with local village councils

- Background on wolf removal program

- Research Objectives
  1. Characterize subsistence hunting
  2. Explore if/how harvest and hunter effort respond to Intensive Management

- Research Methods
  - Household survey and mapping
  - Ethnographic interviews
  - Biological assessments (DWC)
2011-2017 Moose Harvest Estimates by Community

Number of moose harvested

- Alatna
- Allakaket
- Linear (Total)
- Wolf removal years

<table>
<thead>
<tr>
<th>Year</th>
<th>Alatna</th>
<th>Allakaket</th>
<th>Linear (Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>16.2</td>
<td>11.8</td>
<td>22.0</td>
</tr>
<tr>
<td>2012</td>
<td>18.7</td>
<td>13.8</td>
<td>32.4</td>
</tr>
<tr>
<td>2013</td>
<td>11.8</td>
<td>9.3</td>
<td>21.0</td>
</tr>
<tr>
<td>2014</td>
<td>18.8</td>
<td>15.2</td>
<td>34.0</td>
</tr>
<tr>
<td>2015</td>
<td>18.3</td>
<td>14.0</td>
<td>32.3</td>
</tr>
<tr>
<td>2016</td>
<td>20.7</td>
<td>15.2</td>
<td>35.9</td>
</tr>
<tr>
<td>2017</td>
<td>22.0</td>
<td>16.0</td>
<td>38.0</td>
</tr>
</tbody>
</table>
Measuring Hunting Effort in Allakaket and Alatna

- Catch Per Unit Effort (CPUE)

- Metrics to measure CPUE
  - Estimated number of trips
  - Number of days out hunting
  - Number of hours per day spent hunting
  - Estimated distance traveled in search of moose
  - Total spent on fuel for hunting
  - How many moose were harvested

- Example from Preliminary results

- Challenges
All study years (2011-2017)
We would like to thank the communities of Region III and the Division of Wildlife Conservation for their cooperative efforts in continuing research.

Questions?
Back Pocket Slides
## Sample

<table>
<thead>
<tr>
<th></th>
<th>Allakaket</th>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Final estimate of permanent households</td>
<td>57.0</td>
<td>62.0</td>
<td>56.0</td>
<td>62.0</td>
<td>55.0</td>
<td>62.0</td>
<td>64.0</td>
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<tr>
<td>Percentage of total households surveyed</td>
<td>87.7%</td>
<td>71.0%</td>
<td>83.9%</td>
<td>85.5%</td>
<td>76.4%</td>
<td>77.4%</td>
<td>75.0%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Alatna</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Final estimate of permanent households</td>
<td>10.0</td>
<td>9.0</td>
<td>8.0</td>
<td>5.0</td>
<td>4.0</td>
<td>4.0</td>
<td>7.0</td>
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<tr>
<td>Percentage of total households surveyed</td>
<td>80.0%</td>
<td>55.6%</td>
<td>87.5%</td>
<td>80.0%</td>
<td>50.0%</td>
<td>75.0%</td>
<td>100.0%</td>
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</table>
## CPUE Allakaket and Alatna, combined

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated number of Trips</td>
<td>188</td>
<td>261</td>
<td>222</td>
<td>302</td>
<td>142</td>
<td>282</td>
<td>305</td>
</tr>
<tr>
<td>Collective Miles traveled</td>
<td>10,517.5</td>
<td>16,559.6</td>
<td>13,852</td>
<td>17,874.5</td>
<td>4,394.5</td>
<td>14,787.5</td>
<td>27,429.2</td>
</tr>
<tr>
<td>Miles Traveled per moose</td>
<td>649</td>
<td>885.5</td>
<td>1,173.9</td>
<td>950.8</td>
<td>240.1</td>
<td>714.4</td>
<td>1,246.8</td>
</tr>
<tr>
<td>Collective fuel cost</td>
<td>$17,972</td>
<td>$29,057</td>
<td>$22,886</td>
<td>$36,934</td>
<td>$23,910</td>
<td>$36,449</td>
<td>$46,902</td>
</tr>
<tr>
<td>Fuel cost per moose</td>
<td>$1,109</td>
<td>$1,534</td>
<td>$1,940</td>
<td>$1,965</td>
<td>$1,307</td>
<td>$1,761</td>
<td>$2,132</td>
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</tbody>
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## Hunting Success


<table>
<thead>
<tr>
<th>Study year</th>
<th>Estimated harvest</th>
<th>Hunting households</th>
<th>Success rate</th>
<th>Harvesting</th>
<th>Part of successful group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Number</td>
<td>Percentage</td>
<td>Total</td>
<td>Number</td>
</tr>
<tr>
<td>2011</td>
<td>16.2</td>
<td>37.0</td>
<td>15.0</td>
<td>40.6%</td>
<td>59.1</td>
</tr>
<tr>
<td>2012</td>
<td>18.7</td>
<td>50.9</td>
<td>17.3</td>
<td>34.0%</td>
<td>82.3</td>
</tr>
<tr>
<td>2013</td>
<td>11.8</td>
<td>36.7</td>
<td>11.8</td>
<td>32.0%</td>
<td>68.4</td>
</tr>
<tr>
<td>2014</td>
<td>18.8</td>
<td>47.0</td>
<td>16.5</td>
<td>35.0%</td>
<td>76.4</td>
</tr>
<tr>
<td>2015</td>
<td>18.3</td>
<td>30.1</td>
<td>13.1</td>
<td>43.5%</td>
<td>49.8</td>
</tr>
<tr>
<td>2016</td>
<td>20.7</td>
<td>46.6</td>
<td>20.7</td>
<td>44.5%</td>
<td>69.9</td>
</tr>
<tr>
<td>2017</td>
<td>22.0</td>
<td>45.3</td>
<td>18.0</td>
<td>39.7%</td>
<td>82.3</td>
</tr>
</tbody>
</table>

*Source* ADF&G Division of Subsistence household surveys, 2011–2017.

*Note* In this table, successful hunters and successful households refer to instances where the moose was shot by a member of a household in either Allakaket or Alatna.