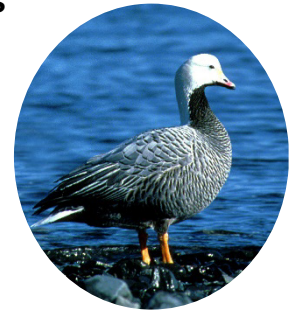




Human Dimensions of Fall-Winter Emperor Goose Harvest Management in Alaska: Harvest Monitoring and Hunters' Perspectives



OBJECTIVES

Emperor goose harvest in Alaska was legally re-authorized in 2017 after a 30-year closure, but goose numbers remain low. Participants in the fall-winter general hunting season include rural, urban, indigenous, non-indigenous, subsistence, and recreational hunters. The objectives of this study were to:

- Characterize participation in the fall-winter emperor goose hunting permit program;
- Compare harvest reporting in the permit program and additional harvest surveys; and
- Document hunters' perspectives about harvest management.

METHODS

Participation in fall-winter emperor goose permit program: A state permit is required to hunt emperor goose in fall-winter, and permit holders are required to report on whether they hunted and if they were successful. We analyzed demographic characteristics of 2017–2019 permit holders (age, gender, and community of residence) and their hunting activity (permits hunted, days hunted, reported harvest).

Harvest reporting: To assess the effectiveness of the permit reporting requirement for quantifying harvest, we compared harvests reported by permit holders with fall-winter harvest data collected in a separate harvest survey conducted annually by the Alaska Migratory Bird Co-Management Council (AMBCC). At the time this study was conducted, data were available for 2017–2019.

Perspectives of hunters: We mailed a survey to all individuals who obtained an emperor goose fall-winter permit in 2017 and 2018 (completed surveys=397, response rate=61%).

RESULTS

In 2017–2019, 1,368 permits were issued to urban Alaska residents (49%), rural Alaska residents (47%), and non-Alaska residents (nonresidents) (4%). Residents of the Kodiak Archipelago accounted for 55% of all permits issued to Alaska residents.

Permit holders reported 422 harvested emperor geese across all hunt areas (years combined, 129–150 birds/year). Urban residents accounted for 55% of this harvest, rural residents 33%, and nonresidents 12%. Sixty-nine percent of harvests reported by urban residents and nonresidents occurred in the Izembek State Game Refuge, Unimak Is. (in Game Management Unit 10), and GMUs 9 and 17. About half (49%) of harvests reported by rural residents occurred in the Kodiak Archipelago.

Table 1. Fall-winter emperor goose harvest data for rural hunters in selected Alaska regions (based on data availability).

Year	Emperor goose permit program			AMBCC harvest survey	
	Issued permits	Hunted permits	Reported harvest	Reported harvest	Estimated harvest ± CIP
Bering Strait Region					
2017	9	3	0	3	126 ± 189%
2018	5	3	0	42	1,823 ± 185%
2019	3	1	0	0	0
Yukon-Kuskokwim Delta Region					
2017	25	2	0	13	473 ± 152%
2018	13	0	0	10	297 ± 197%
2019	24	3	1	13	255 ± 115%
Bristol Bay Region					
2017	37	22	18	6	61 ± 190%
2018	28	18	11	8	101 ± 103%
2019	29	11	9	2	21 ± 190%

CIP: Confidence interval as percentage of the estimated harvest.

Required harvest reporting in the emperor goose permit program intended to quantify all emperor geese taken in the fall-winter season. In contrast, the AMBCC survey was based on a random sampling of communities and households in rural regions. Non-extrapolated (reported) numbers from the AMBCC survey indicated the minimal emperor goose harvest in rural regions—but were often higher than harvests reported in the permit program (Table 1). These data indicated that harvests by rural hunters were underestimated in the permit program. Harvest estimates (extrapolated numbers) from the AMBCC survey for emperor goose tend to have wide confidence intervals.

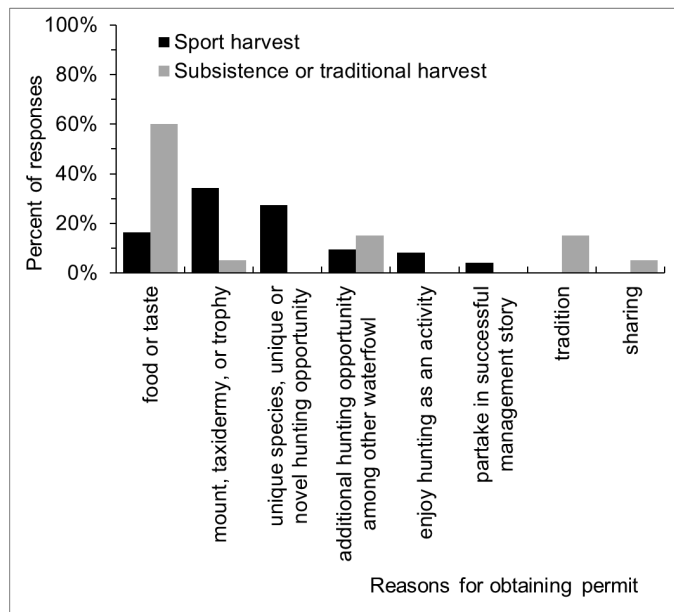


Figure 1. Reasons associated with primary motivation (sport harvest, subsistence or traditional harvest) for obtaining a permit to hunt emperor goose in fall-winter in Alaska, 2017–2018 permit holder survey.

Most nonresidents and Alaska urban residents (94%) identified sport hunting as their primary motivation for obtaining a permit. More than half of rural respondents (61%) also identified sport hunting as their primary motivation. Thirty-five percent of respondents motivated by sport hunting mentioned a taxidermy mount as a reason for obtaining a permit (Figure 1). Fifty-three percent of respondents motivated by subsistence or traditional hunting mentioned food as a reason. Both urban and rural hunters shared a high appreciation for the opportunity to hunt emperor geese and to use this species as a food resource.

About three-fourths of Alaska residents indicated being likely to obtain a fall-winter emperor goose permit in the future. Half of nonresidents reported being unlikely to obtain a permit in the future. These responses may reflect the fact that nonresidents have a low likelihood of obtaining a draw permit.

Across hunt areas, the proportion of respondents dissatisfied with the bag limit of one emperor goose per person in the fall-winter season was relatively low (15%). In general, a small proportion of respondents were dissatisfied with the processes to obtain a permit (4%) and to report harvest (6%). Some dissatisfaction reported by rural residents may result from mismatches between traditional hunting practices and limitations set by fall-winter bird harvest regulations, such as bag and possession limits, and permit requirements. This survey of permit holders may have not fully represented the perspectives of rural hunters regarding emperor goose harvest management.

RECOMMENDATIONS

1. Devise approaches to increase participation of rural hunters in the required fall-winter emperor goose permit and harvest reporting. Conduct outreach and communication about harvest regulations and requirements at specific times and locations to coincide with greater emperor goose harvest opportunity. Considering that the 2017–2019 fall-winter emperor goose harvests were likely well above the amounts reported via the permit program, it is possible that the fall-winter quota of 500 birds is fully utilized.
2. Consider data in addition to the emperor goose fall-winter permit harvest reporting, such as data from the AMBCC harvest survey, to describe the fall-winter take more completely across user groups and geographic areas.
3. Conduct complementary harvest surveys, focusing on certain rural regions, to fill data gaps in both fall-winter and spring-summer harvest monitoring.
4. Update the boundaries of specific emperor goose hunt areas so they better match geographic and socio-cultural contexts. (a) Separate the Cold Bay and Izembek areas (with a high influx of urban hunters) from the Bristol Bay region (where permits are primarily issued to rural hunters). (b) Combine the Cold Bay and Izembek areas into a single management unit.

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