

Taiga Bean Goose Session

Harvest Assessment for Taiga Bean Geese in the Central Management Unit: 2020

Fred A. Johnson, Gitte H. Jensen, and Henning Heldbjerg

AEWA European Goose Management Platform

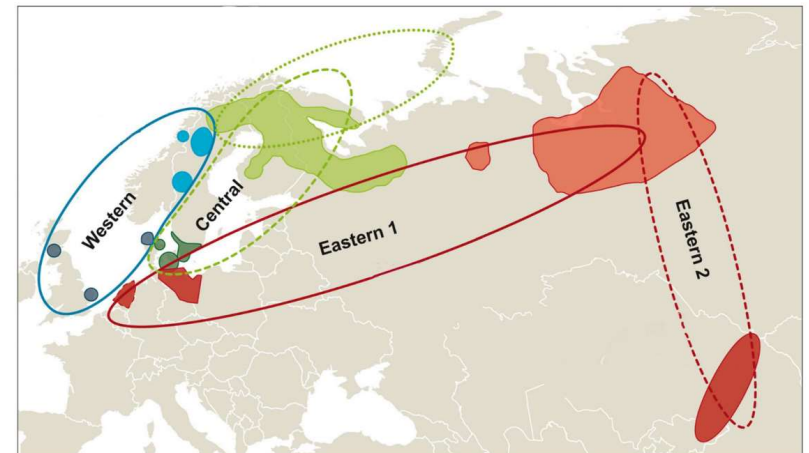
Harvest Assessment for Taiga Bean Geese in the Central Management Unit: 2020
Doc. AEWA/EGMIWG/5.11

15-18 June 2020
EGM IWG5
Online Conference Format



Background

- An interim harvest strategy of a constant harvest rate of 3% adopted in 2017
- Objective: allow limited harvest opportunity to help population recover toward goal of 70,000 at end of winter
- Development of an IPM funded in 2019 by Finnish Wildlife Agency and Natural Resources Institute
- March 2020: IPM developed sufficiently to help guide harvest quotas



AEWA European Goose Management Platform

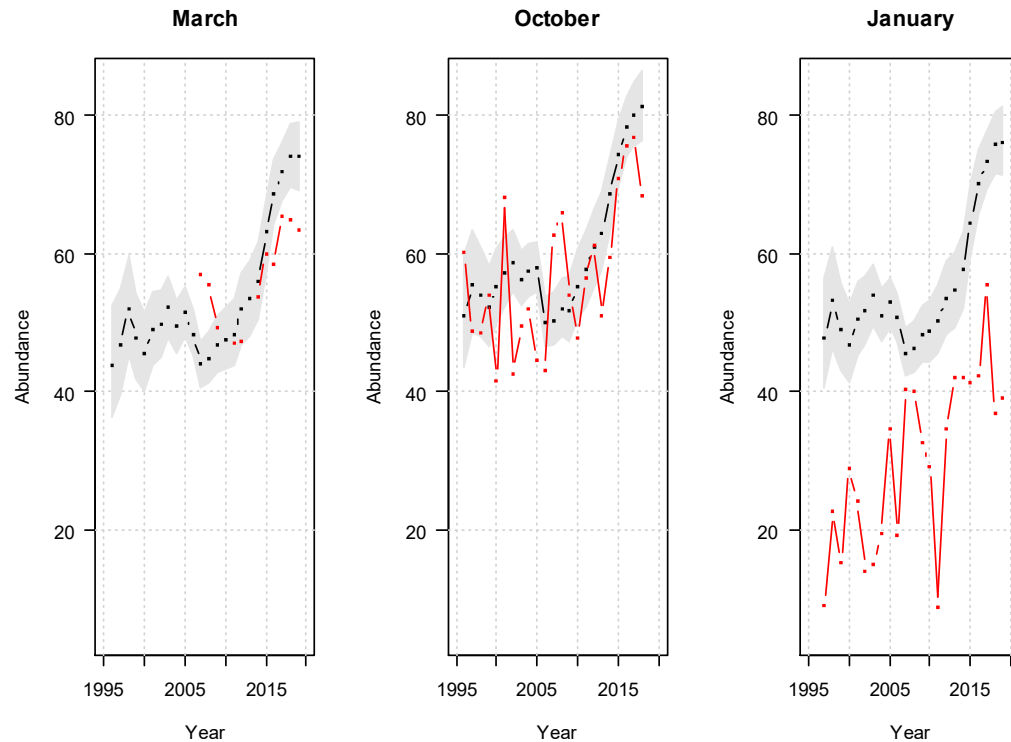
15-18 June 2020
EGM IWG5
Online Conference Format



Harvest Assessment for Taiga Bean Geese in the Central Management Unit: 2020
Doc. AEWA/EGMIWG/5.11

Indicators of population size

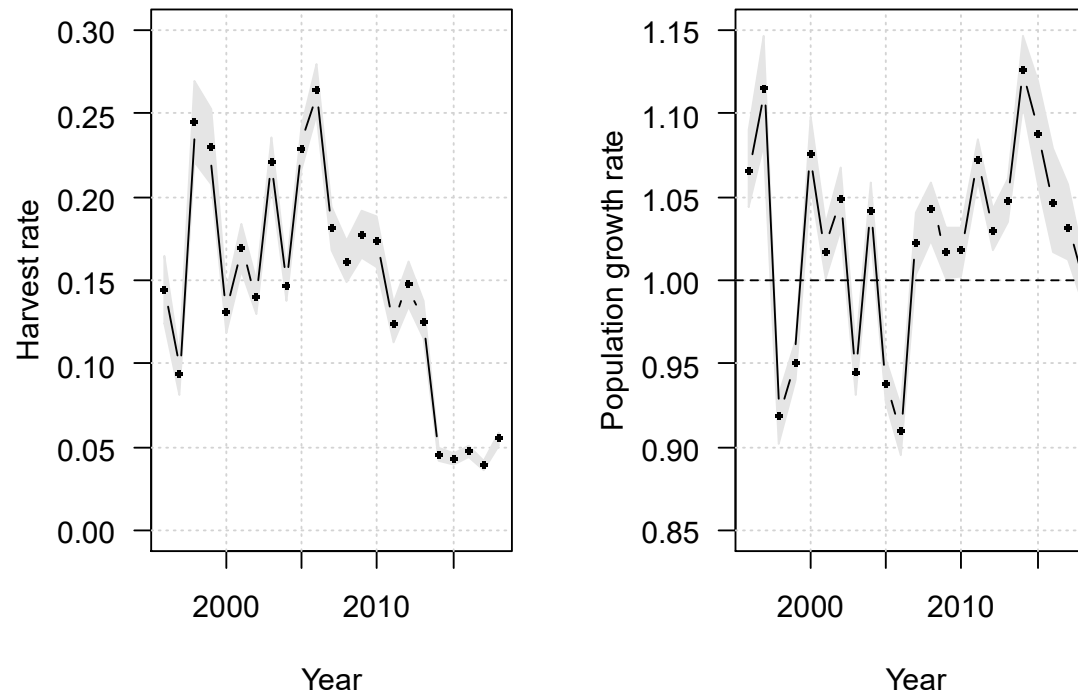
- Good correspondence among counts and IPM estimates in March & October
- January counts biased low by about 44% on average



Population parameters

Parameter	Posterior median	Posterior 95% CI
Natural survival (ψ)	0.909	0.849–0.958
Post-breeding age ratio (γ)	0.465	0.343–0.601
Carrying capacity (breeding) (K)	84,134	77,870–90,659
Form of density dependence (θ)	2.227	1.330–3.442

Harvest and population growth



Future harvest scenarios

- Projected March population size 5 years into the future using:
 - A. Average harvests from 2014–2018 (Finnish moratorium): 3,300 birds
 - B. Average harvests from 2009–2013 (pre-moratorium): 8,900 birds
 - C. A harvest expected to maintain the population around 70,000 at the end of winter: 6,500 birds



©Marko Gola

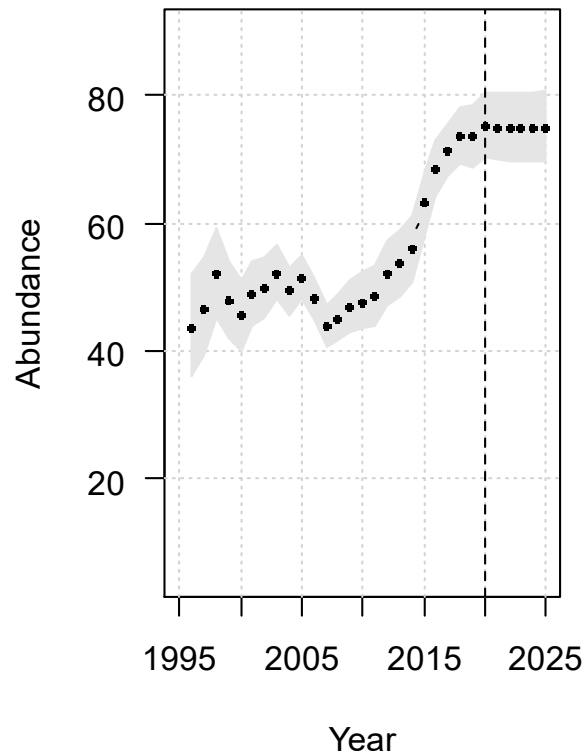
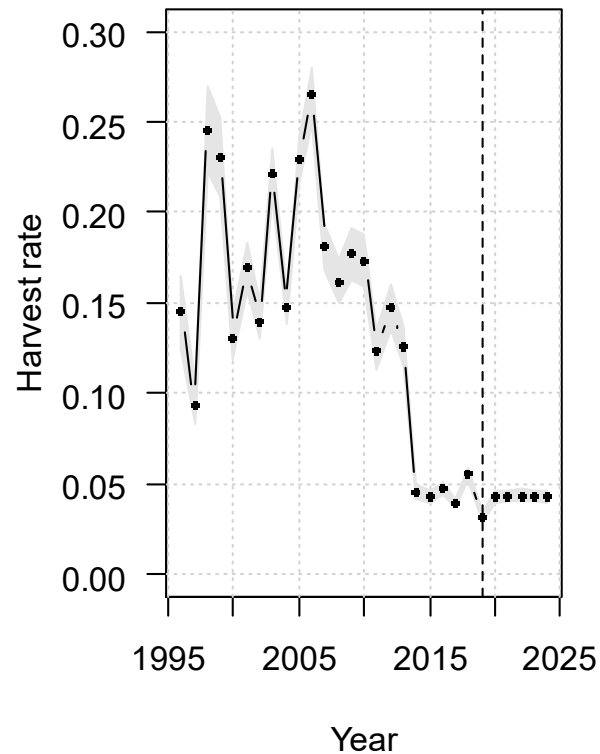
AEWA European Goose Management Platform

15-18 June 2020
EGM IWG5
Online Conference Format



Harvest Assessment for Taiga Bean Geese in the Central Management Unit: 2020
Doc. AEWA/EGMIWG/5.11

Scenario A (3,300 birds)



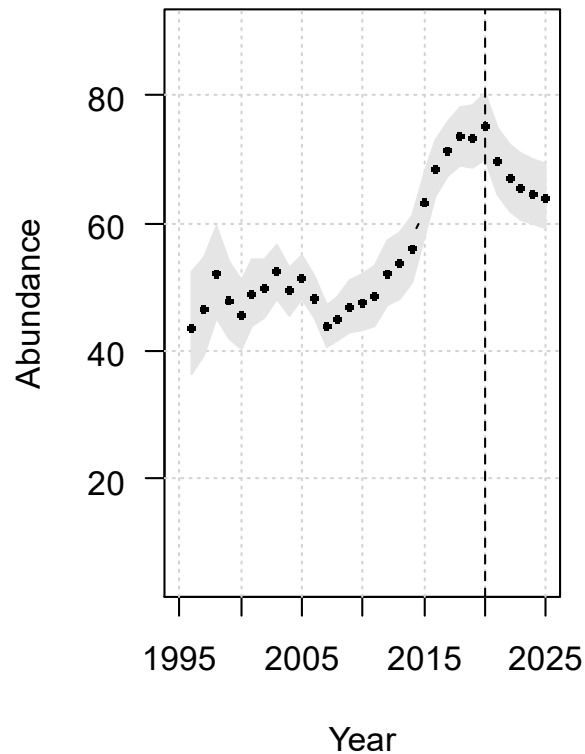
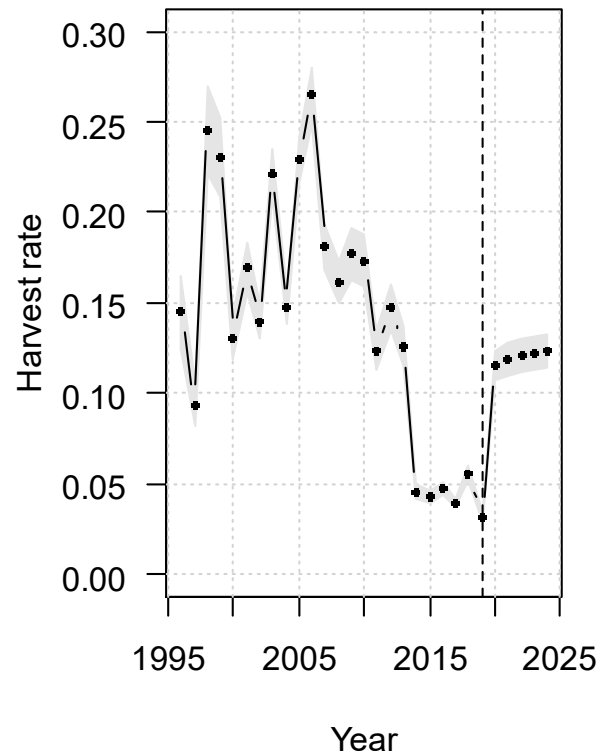
AEWA European Goose Management Platform

15-18 June 2020
EGM IWG5
Online Conference Format



Harvest Assessment for Taiga Bean Geese in the Central Management Unit: 2020
Doc. AEWA/EGMIWG/5.11

Scenario B (8,900 birds)



AEWA European Goose Management Platform

15-18 June 2020

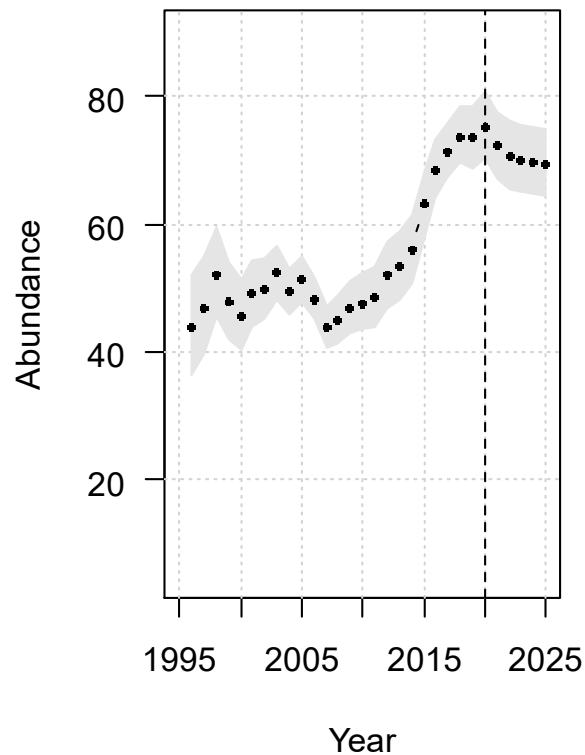
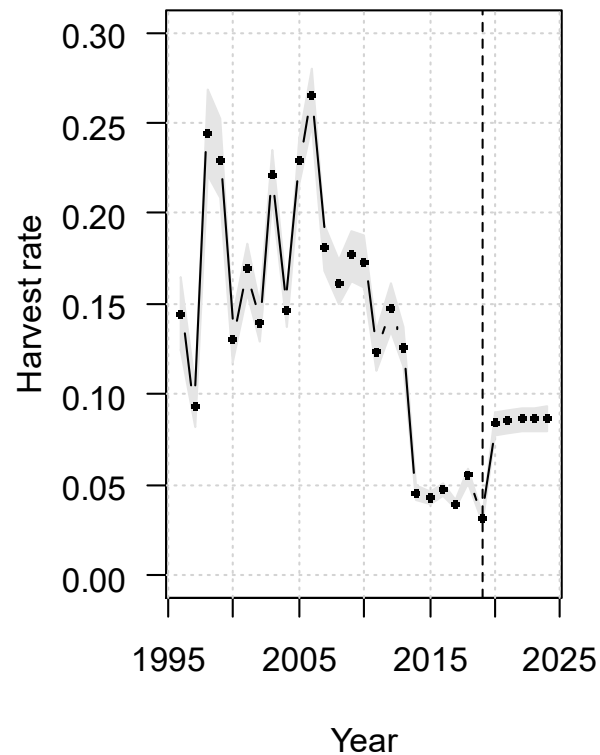
EGM IWG5

Online Conference Format



Harvest Assessment for Taiga Bean Geese in the Central Management Unit: 2020
Doc. AEWA/EGMIWG/5.11

Scenario C (6,500 birds)



Conclusions

- Counts in March and October are consistent with IPM estimates of abundance, while January counts appear to be negatively biased
- Population size has increased concurrently with a sharp decrease in harvest pressure in 2014; March 2020 population estimate is 75,200 (70,200–80,500)
- Harvest rates have exceeded 3% every year since the interim strategy was adopted (mean = 0.042)
- Nonetheless, if the desire is to maintain 70,000 birds at the end of winter, some harvest liberalization may be permissible
 - E.g., a quota of 6,500 (harvest rate ≈ 0.09)
 - Finland: 3,770 Sweden: 1,950 Denmark: 780
 - Finland: 45 Sweden: 2,199 Denmark: 1,130 (last 5-year average)

Going forward

- Challenging to estimate key demographic parameters
 - using a time series of only counts and harvests
 - especially when they include the tundra subspecies to unknown and varying degrees
- Strongly recommend that recent efforts to better identify subspecies in both the counts and harvests be strengthened and continued
- Taiga Bean Goose Task Force recommends maintaining all three seasonal counts at least through 2021
- Additional data would be helpful
 - additional observations of the proportion of young in the autumn
 - survival from a capture-mark-recapture program

Acknowledgements

- IPM development: Samu Mäntyniemi (LUKE)
- Task Force reviews: Mikko Alhainen, Anthony Fox, Jesper Madsen, and Iben Sørensen
- Logistical and financial support:
 - EGMP Secretariat and Data Centre
 - Finnish Wildlife Agency and the Natural Resources Institute

