

# Increasing goose problems in Norwegian airports: the case of Trondheim Airport

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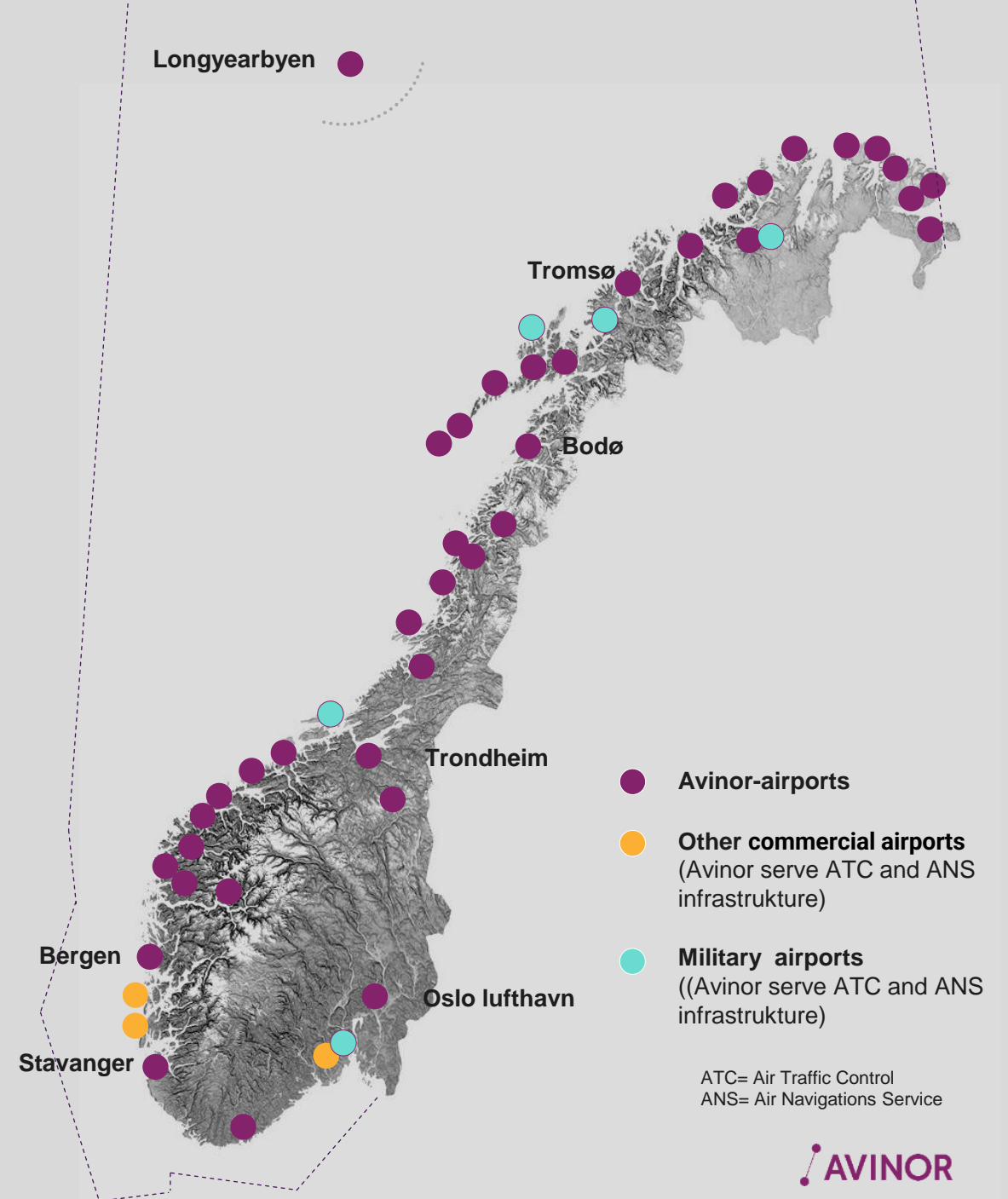


# Avinor

- Avinor is a wholly owned state limited company under the Ministry of Transport
- Responsibility for 43 airports and the air traffic control service for civil and military aviation in Norway
- About 6 billion NOK in income (600 million €)
- 2800 employees
- 22,4 million passengers in 2021
- 563 000 movement of aircrafts in 2021

# The social importance of aviation and Avinor

- Manages and develops complex infrastructure
- The network of airports contributes to Norwegian value creation
- Operation of the airspace through *Avinor Flysikring AS*
- Takes care of socially critical tasks in close collaboration with the actors at the airports



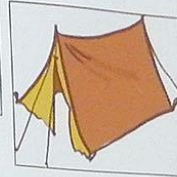
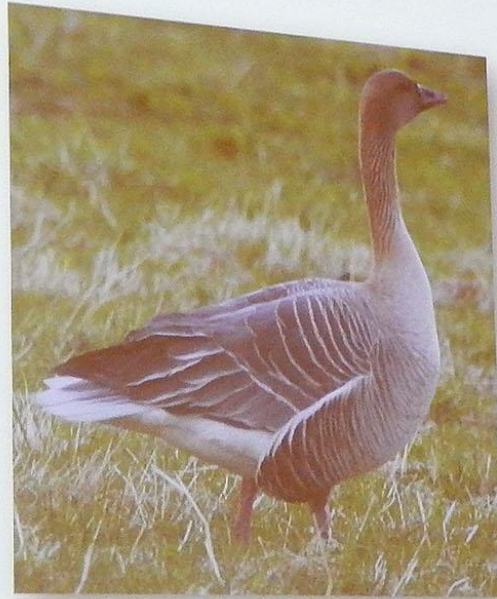
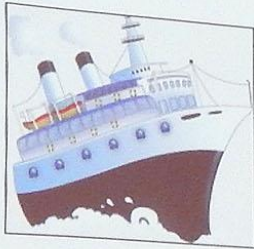


# Dokkadeltaet Nasjonale Våtmarkssenter (DNV) The Dokka Delta National Wetland Centre

- DNV was established in 2008 and is owned by Nordre Land and Søndre Land municipalities.
- DNV is located at an international Ramsar site, the Dokka Delta nature reserve.
- DNV is a nature competence center and a consultancy firm, offering a wide range of environmental service within:
  - nature guidance
  - ecological restoration
  - habitat conservation, maintenance and surveying
  - biological diversity monitoring and mapping/biological diversity surveys
- Provide ornithological services to Avinor



Gjess og ØKOSYSTEMTJENESTER;  
Har både positivt og negativt fortegn!



Google.com

**Nasjonal  
Geese-  
Conference  
Skogn  
14.-15. mai 2019**

**Avinor came in  
contact with  
EGMP at this  
conference.**

## Taiga Bean Goose Røst

### Why are airports attractive?

- Food (gras)
- Rest areas
- "Safe"
- Migratory route
- Attractive areas around the airport



# Greylag Goose

Norwegian breeding population, Greylag Goose: 50 000 +  
Breeds along the Norwegian coast, with a smaller population in inland areas.



# Pink-footed Goose

The Svalbard population, Pink-footed Goose: 100 000 +  
Migrate mainly through the valleys of Eastern Norway.  
Stop-over site in the northern part of Trondheimsfjorden.

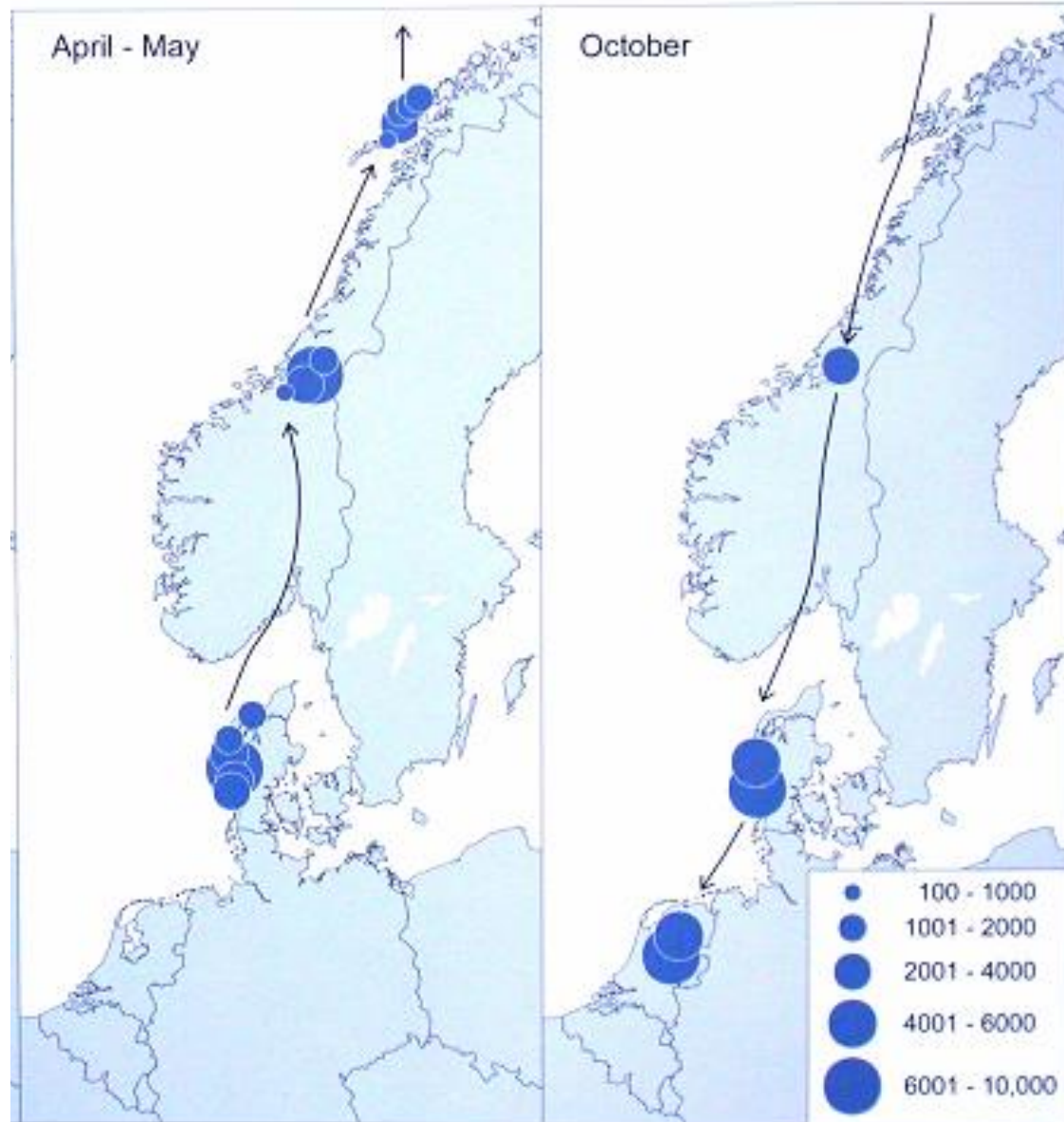


# Migration routes

Greylag Goose (Strann m.fl. 2002)



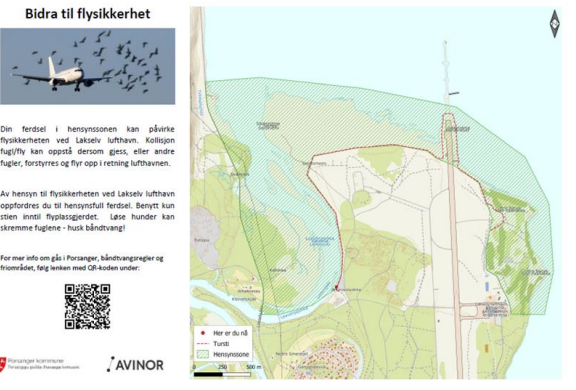
Pink-footed Goose (Madsen m.fl. 1999)





# Lakselv airport


**Bidra til fysikkerhet**



Din ferdsel i hensynssonen kan påvirke fysikkerheten ved Lakselv lufthavn. Kollisjon fugl/ivt kan oppstå dersom gress, eller andre fugler, forstyrres og flyr opp i retning lufthavnen.

Av hensyn til fysikkerheten ved Lakselv lufthavn oppfordres du til hensynsfull ferdsel. Benytt kun stien inn til flyplassgården. Løse hunder kan skremme fuglene - husk båndvang!

For mer info om gå i Foranger, håndvangsregler og frøområdet, følg linken med QR-koden under:



Foranger kommune  
Foranger og Høylandet

AVINOR

## Other airports with geese major challenge

- Svalbard
- Brønnøysund
- Lakselv
- Alta
- Molde



Alta airport



Barnacle Goose and Pink-footed Goose, Adventdalen, Svalbard





## Birdstrike with geese 2018-2022

Aerodrome	Year	Number	Species
Svalbard	2018	1	Barnacle Goose
Bergen	2019	1	Greylag Goose
Tromsø	2020	1	Greylag Goose
Svolvær	2021	1 (2 geese)	Greylag Goose
Kristiansand	2022	1	Greylag Goose
Trondheim	2022	1	Greylag Goose



Birdstrike with goose  
Trondheim airport  
September 5, 2022

October 5, 2021

Bladet (local newspaper):

October 6, 2020

## Rekordstort antall grågjess i Stjørdal i år



Enorme flokker flyr over  
Stjørdal: – Det har aldri  
vært så mange på en gang



# Greylag Goose

Rest near Trondheim airport from mid August until late October.



# Pink-footed Goose

Rest near Trondheim airport from mid of September until start of November.



# Risk analysis Trondheim airport 2020

Consequence	Probability	4	3	2	1
6		Pink-footed Goose			
5		Greylag Goose	Whooper Swan	Canada Goose Grey Heron Heering Gull / Great Black-backed Gull	Common Eider Great Cormorant
4		Common Gull Jackdaw Starling	Ducks Oystercatcher	White-tailed Eagle	
3		Hooded Crow	Curlew		
2			Common Ringed Plover		
1					

1/4-20

Gåsetrekket er kommet godt i gang 😊 Mange store flokker over Værnes i dag

Vi holder vakt



## Migration

- Annual spring and autumn migration
  - These movements cannot be hindered
- Daily movements (between resting and foraging areas)
  - Concentrate on reducing these movements over the airport area



# The season 2021



Situation before 2021

Yellow areas - resting areas

Green areas - feeding areas

Red areas - feeding areas

Conventional monitoring and intimidation is not enough.



# Mini-conference geese 4.-5. mai 2022

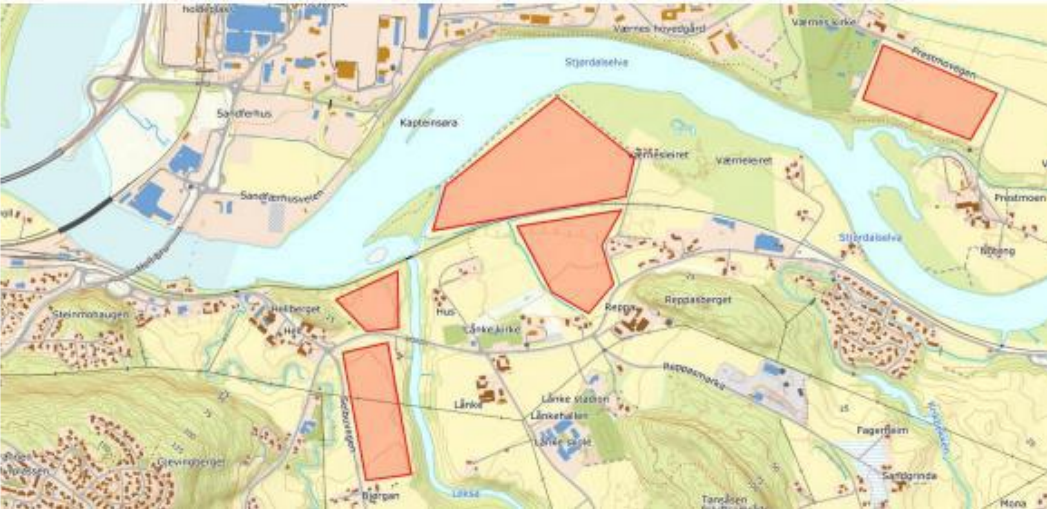


# The season 2022



## North of the airport:

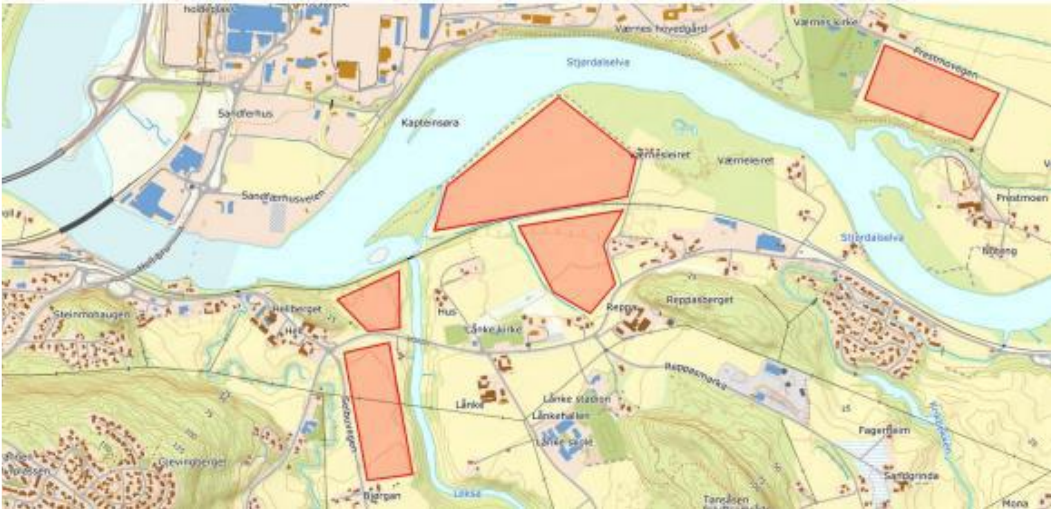
- Cornfields (**green**) should not be plowed in the autumn be hunting free = tranquility and food.
- This year, agreements have been signed on hunting rentals with several landowners.
- In selected areas on the north side of RWY on the sea, the geese should be allowed to rest.



## South of the airport:

- Cornfields (**red**) should be harvested and hunting controlled = no tranquility and no food
- This year, an agreement has been signed on autumn plowing for a couple of areas

# The season 2022



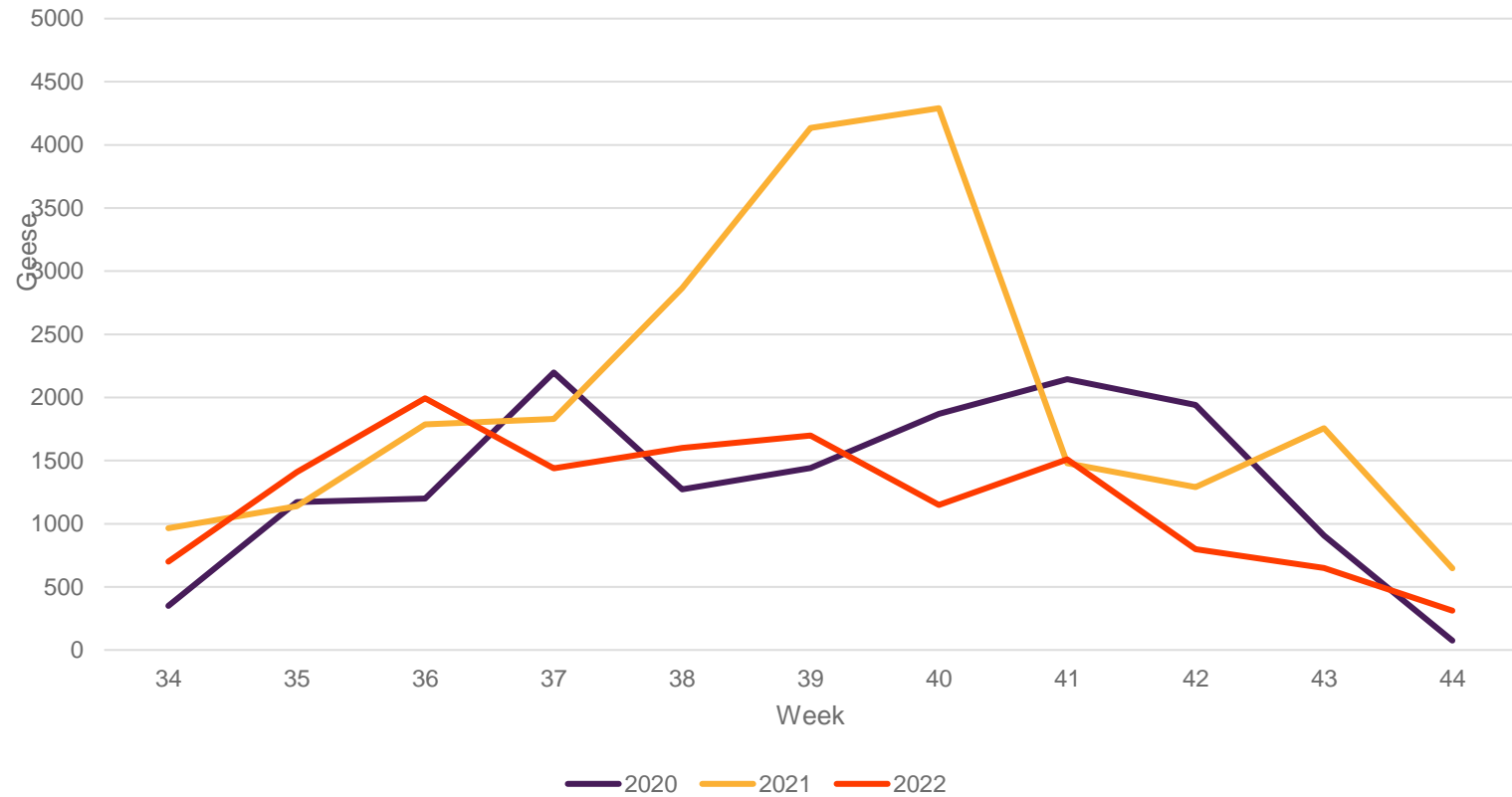
The measures we have carried out at the airport are the following:

- We have entered into an agreement with 7 landowners north of the airport for hunting-free zones in their fields.
- We've paid out a landowner for early fall plowing on the south side of the river.
- In the south, we have performed manual scaring during the day.
- We have hired an ornithologist to count geese from August to November.
- The local ornithologist has reported to the airport how many geese have stayed in the area.

Status:

- There were half as many geese in the area as in 2021.
- Reduction in crossings over RWY – probably a result of reduced feeding areas south of the airport (the most important feeding fields were plowed right after grain harvest)

# Number of geese around Trondheim airport in autumn.



Ukenr.	2020	2021	2022
34	350	965	700
35	1173	1140	1409
36	1200	1788	1995
37	2199	1830	1440
38	1272	2865	1600
39	1441	4135	1700
40	1870	4290	1150
41	2145	1480	1510
42	1940	1291	800
43	907	1757	650
44	75	647	313

(Tom R. Østerås 2022)

# Goose Værnes, measures 2023

Next fall:

- Fields in the south must be plowed as soon as the grain is harvested.
- Expanding area with autumn plowing on the south side - more deals with farmers.
- Expanding areas with hunting agreements in cooperation with municipalities etc.
- Rephrase agreements and also take into account the requirements / needs of the leaseholder.
- At the resting areas in north (Halsøen/Langøra and in Vikanbukta), the birds must be given as much peace as possible.
- Areas in the north (green), these are areas where landowners should not plow until November 1.
- Goose should not be hunted north of the airport.
- Continue monitoring of geese around Trondheim airport.
- A brainstorming meeting with Ove Martin Gundersen from Norwegian Farmers' Union will soon be held
- A meeting is planned in May 2023 together with Avinor's ornithologist, to sum up and discuss plans for the autumn.
- Gps-tagging of geese are planned.
- **Main strategy:** Keep areas in north attractive and make areas in south unattractive, and prevent crossing of RWY.



**Thank you for your attention!**