

GYRCOP: Gyrfalcon Research Coordination Project

Project leader: Annabel J. Slettenhaar (Nord University)

Collaborators: Navinder J. Singh (Swedish University of Agricultural Sciences), Ólafur K. Nielsen (Icelandic Institute of Natural History), Jan Eivind Østnes (Nord University)

Raptors are key ecosystem components due to their role as predators. They typically occur at low densities, have slow population growth, and are highly sensitive to environmental change, particularly specialists such as the gyrfalcon (*Falco rusticolus*) which is listed as Threatened across Scandinavia. Coordinated, standardized international monitoring is therefore essential to improve the understanding of the species' ecology and develop targeted conservation goals. However, such coordination is currently limited. This project aimed to bring together researchers, wildlife managers and fieldworkers across the Nordic region to discuss monitoring protocols and knowledge gaps. To this end, three symposia were organised.

Meeting 1: 30-31 October 2024 in Steinkjer, Norway (host institution: Nord University)

The first meeting was a two-day event. It brought together 18 in-person and 6 online participants, including researchers, wildlife managers and voluntary fieldworkers, primarily from the Nordic countries but also from France and Alaska. On the first day we had a series of presentations on regional gyrfalcon monitoring and ongoing research, while the second day focused on thematic discussions covering various fieldwork methods and data sharing. Key outcomes included sharing standardized terminology for monitoring parameters, the desire for developing a shared international database, and exchanging experiences with adult capture and GPS tagging. An informal group dinner on the first evening further strengthened the new connections made.

Meeting 2: 6 November 2025 in Umeå, Sweden (host institution: SLU)

The Umeå meeting expanded to 24 in-person and 9 online attendees, including researchers, wildlife managers, volunteers, students, and representatives from WWF and BirdLife Sweden. After presentations on current research and monitoring updates, discussions focused on future priorities for gyrfalcon monitoring and conservation. Key themes included improving population size estimates through coordination within and between countries, and recruiting new, younger members to sustain long-term monitoring projects. The meeting concluded with an informal joint dinner in the center of Umeå.

Meeting 3: 16 April 2026 in Garðabær, Iceland (host institution: Icelandic Institute of Natural History)

The final meeting included 17 in-person participants, with an additional 10-15 joining online throughout the day. The group was increasingly international with participants from the Nordic countries, as well as Greenland, Denmark, UAE and the US. The focus was on producing concrete output, particularly assessing population sizes and trends across the Arctic. We agreed to develop a manuscript or report on these trends, and discussed about a framework for a secure platform to share key monitoring data. We also addressed the emerging threats of avian influenza. Representatives from WWF and BirdLife Sweden reported how input from the previous meeting had already helped to secure funding for a pilot study, and their plans to get additional support for the coordination of a longer-term collaboration in the Nordics, for example to support the development of a joint database. The meeting ended with an informal dinner in the old harbour of Reykjavík, and most in-person participants joined a field excursion the day after, to explore the local bird life and geology of the area.

These three meetings have been crucial in reviving Nordic collaboration on gyrfalcon monitoring and research, while the input from other countries provided lots of useful knowledge. The willingness to collaborate has long existed, but the GYRCOP meetings generated renewed momentum and trust, leading to commitment to produce a synthesis of global gyrfalcon population trends and to coordinate a Nordic-wide database for improved data sharing and population assessment. We are grateful for the NKV support that made these meetings possible.

Figure 1: A group photo from meeting 1 in Steinkjer, Norway. From left to right: Annabel Slettenhaar, Børje Cato Moen, Frédéric Barraquand, Kenneth Johansen, Eivind Flittie Kleiven, Navinder Singh, Christian Emilsson, Ulla Falkdalen, Ólafur Nielsen, Berth Ove Lindström, Arve Østlyngen, Karl Otto Jacobsen, Ella Hambesson, Tomas Bergström, Torgeir Nygård, Rolf Terje Krog Lund, Erlend Birkeland Nilsen, Jan Eivind Østnes. Present online: Travis Booms, Kristinn Pétur Magnússon, Agnar Målsnes, Pertti Koskimies, Ingebrigt Kirkvold, Tuomo Ollila



Figure 3: A group photo from meeting 3 in Garðabær, Iceland. From left to right, top row: Navinder Singh, Therese Wåtz, Christian Emilsson, Mia Ericsson, Annabel Slettenhaar, Berth Ove Lindström, Pertti Koskimies, Tomas Bergström, Ólafur Nielsen, Ulla Falkdalen, Einar Þorleifsson. Bottom row: Jan Eivind Østnes, Per Olof Nilsson, Erlend Birkeland Nilsen, Kenneth Johansen.



Figure 4: A group photo from meeting 2 in Umeå, Sweden. From left to right: Stefan Dahlin, Annabel Slettenhaar, Ella Hambesson, Kenneth Johansen, P-O Nilsson, Bertil Stromberg, Therese Wåtz, Christian Emilsson, Jan Eivind Østnes, Arve Østlyngen (above), Tuomo Ollila (below), Ditte Gammelby Svinth, Violeta Onland, Frédéric Barraquand (above), Adrienne Amri (below), Thierry Hoareau, Peter Sunesson, Benjamin Lindberg, Tomas Bergström, Ólafur Nielsen, Ulla Falkdalen, Kristinn Magnusson, Berth-Ove Lindström

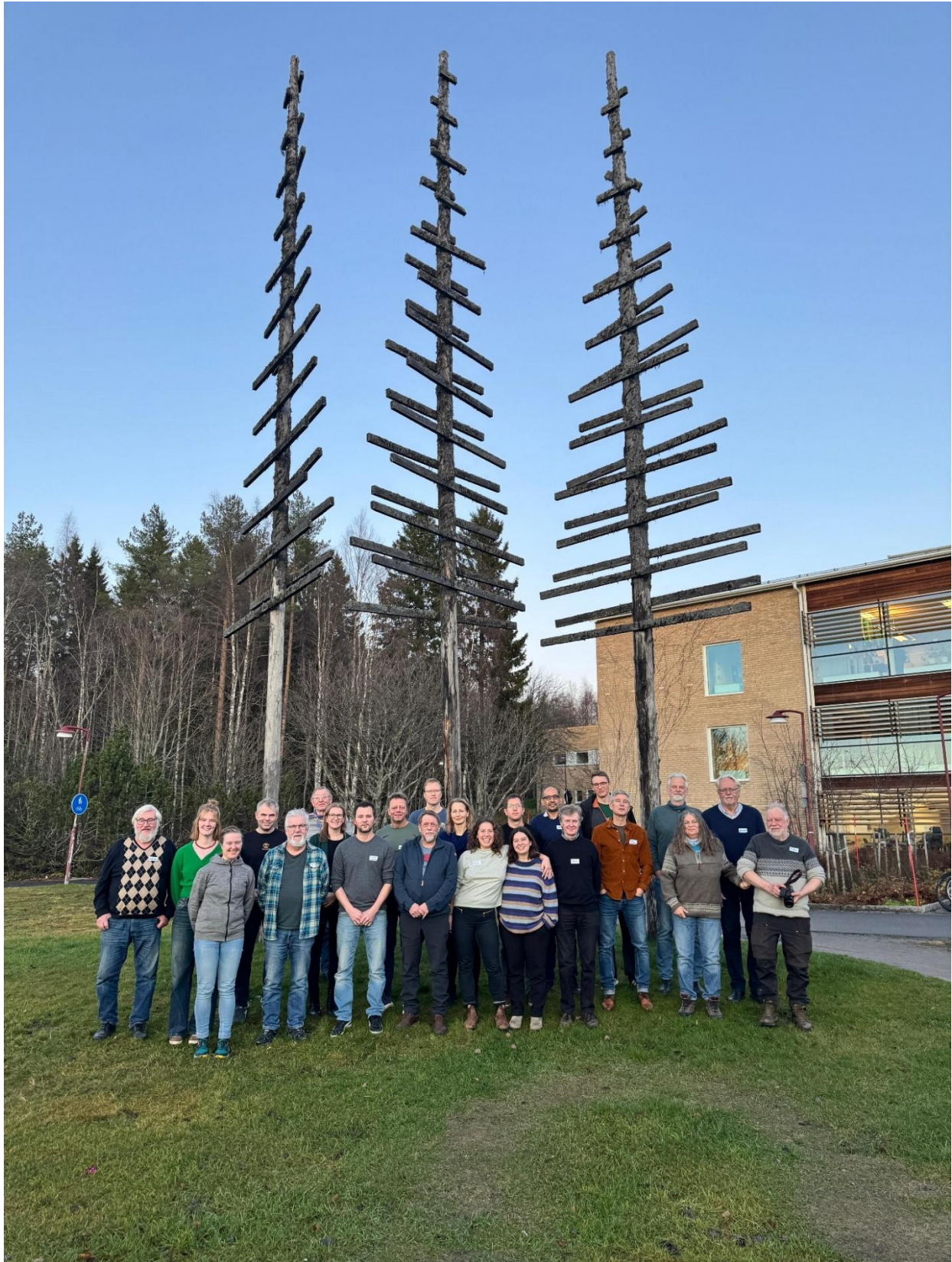


Figure 5: Two pictures from the group excursion in Iceland. Bottom photo by Navinder Singh.



Figure 6: Meeting agenda for the first meeting in Steinkjer in autumn 2024

GYRCOP Steinkjer 2024

Welcome to the first of three GYRCOP meetings! Below you will find the planned schedule for the current Steinkjer edition.

On the first day we will focus on current research, to discuss knowledge gaps and possibilities for collaboration (30 min talk, 30 min discussion). On the second day we will focus on the way forward in the more practical sense. We will discuss field techniques from different perspectives, and talk about how to share and store our valuable datasets (30 min talk, 1 hr discussion).

Day 1: Wednesday 30th of October: Current gyrfalcon research

08:30 – 09:00:	Introduction by Annabel Slettenhaar
09:00 – 10:00:	Gyrfalcons in Alaska by Travis Booms (online)
10:00 – 10:30:	<i>Coffee break</i>
10:30 – 11:30:	Gyrfalcon & ptarmigan genomics by Kristinn Pétur Magnusson (online)
11:30 – 12:30:	Gyrfalcon & ptarmigan population dynamics in Iceland by Frédéric Barraquand
12:30 – 13:30:	<i>Lunch</i>
13:30 – 14:30:	Golden eagles & gyrfalcons in Sweden by Navinder Singh
14:30 – 14:45:	<i>Coffee break</i>
14:45 – 15:05:	Gyrfalcons in Trøndelag: numerical & functional response by Annabel Slettenhaar
15:05 – 15:25:	Gyrfalcons in Finnmark: interactions with ptarmigan and alternative prey by Arve Østlyngen & Eivind Flittie Kleiven
15:25 – 16:00	Discussion last 2 presentations
18:00 - ?:	Communal dinner at local restaurant

Day 2: Thursday 31st of October: Practical sessions

Starting the day with coffee:	08:45 – 09:00
Session 1: Tracking and ringing, by Torgeir Nygård:	09:00 – 10:30
<i>Coffee break:</i>	10:30 – 11:00
Session 2: Population monitoring, by Ólafur Nielsen:	11:00 – 12:30
<i>Lunch:</i>	12:30 – 13:30
Session 3: Data management and sharing, by Erlend Birkeland Nilsen:	13:30 – 15:00
<i>Coffee break:</i>	15:00 – 15:15
Session 4: Diet studies, by Jan Eivind Østnes:	15:15 – 16:30

All presentations and discussions will take place in room O-301 at **Innocamp** in Steinkjer, a meeting room with nice facilities for joining the meeting online through Teams.

Address: Innocamp, Skolegata 22, 7713 Steinkjer



Figure 7: Meeting agenda for the second meeting in Umeå in autumn 2025

GYRCOP Umeå 2025

Welcome everyone to the second GYRCOP meeting! This edition is only one day, so it's a full day with the focus on learning from each other and creating effective strategies for collaboration and conservation management.

Program

08:30 – 08:45	Introduction by Annabel Slettenhaar
08:45 – 09:15	Monitoring gyrfalcon populations in Iceland by Ólafur Nielsen
09:15 – 09:45	Gyrfalcon monitoring in Jämtland by Tomas Bergström
09:45 – 10:00	Tail mount tagging Gyrfalcons in Alaska by Travis Booms (online)
10:00 – 10:15	Coffee break with sandwiches
10:15 – 10:45	Gyrfalcon and Golden eagle interaction Ella Hambesson
10:45 – 11:15	Raptor project and owl project Norrbotten by Berth- Ove Lindström
11:15 – 11:45	Gyrfalcon –ptarmigan interactions throughout Norway by Annabel Slettenhaar
11:45 – 12:00	Gyrfalcon & ptarmigan genomics by Kristinn Pétur Magnusson
12:00 – 12:30	Gyrfalcon genetics by Thierry Hoareau
12:30 – 13:30	Lunch
13:30 – 14:00	Nesting results from Finnmark by Arve Østlyngen and Kenneth Johansen
14:00 – 14:15	Artificial nests in conservation management by Julie Jacobsen Brekkås (online)
14:15 – 14:30	Coffee break with fika
14:30 – 15:00	Therese Watz of WWF and Mia Ericsson of Birdlife Sweden: working with raptors in Sweden, aims and hurdles
15:00 – 16:30	Discussion on practical methods for improving conservation of gyrfalcon populations
18:00 -	Dinner together at local restaurant



All presentations and discussions will take place in the room Årsringen at SLU Umeå. This meeting room has the facilities to join the meeting online through Zoom.

Adress: Skogsmarksgränd 17, 901 83 Umeå



Figure 8: Meeting agenda for the third meeting in Iceland in spring 2026

Speaker	Topic	Start	Lecture given	Minutes
Ólafur K. Nielsen	Welcoming address, practical information	08:00	at site	10
Ólafur K. Nielsen	Iceland gyrfalcon population: recent trends	08:10	at site	40
Kenneth Johansen	Population size and monitoring of the gyrfalcon in Norway	08:50	at site	40
Daniel Bergmann	Photographing gyrfalcons	09:30	at site	30
	Coffee break	10:00		25
Tomas Bergström	Gyrfalcon in Sweden 2000-2025	10:25	at site	40
Perti Koskimies	Population Dynamics, Diet, and Conservation Biology of the Gyrfalcon in Finland	11:05	at site	40
Kurt Burnham	Current Status of the Gyrfalcon in northwest Greenland	11:45	online	15
	Lunch	12:00		60
Travis Booms	Gyrfalcon Population Dynamics in Western Alaska	13:00	online	15
Erlend B. Nilsen	Can we estimate the total population size of gyrfalcons by combining habitat suitability modeling and territory occupancy?	13:15	at site	20
Stepanie Galla	GYRnomics: Investigating the relationship between avian immune genes, microbiome, and pathogens in an Arctic raptor	13:35	online	15
Navinder Singh	Study Design considerations for using sound boxes for Gyrfalcon monitoring	13:50	at site	20
Knud Falk	Experiences from long-term monitoring of Peregrines in Greenland: new opportunities and international collaboration	14:10	online	20
Robin Radcliff	Gyrfalcons as Sentinels of the Arctic	14:30	online	15
	Coffee break	14:45		30
Mia Ericsson, Therese Watz	Practical conservation implications of the Gyrfalcon in Sweden and suggestions for a Nordic Interreg project	15:15	at site	20
Navinder Singh	Where to go from here?	15:35	at site	40
	Finish	16:15		