



Conference on
Wind energy and
Wildlife impacts

Programme



May 2-5 2011, Trondheim, Norway

www.cww2011.nina.no

Welcome message

Dear friends and colleagues,

On behalf of the organizing committee for the Conference on Wind energy and Wildlife impacts 2011, I am pleased to welcome all of you to Norway and Trondheim. The need for more renewable energy world-wide has made this planet more united. The fact that we face several common challenges regarding ecological impacts of energy generation from renewable sources like wind, has created a new arena for fruitful international cooperation, not only among scientists, but also among environmentalists, politicians and other decision-makers. Our common goal is a firm knowledge-base on the impacts on wildlife, as well as innovative and efficient mitigation measures. By attending the CWW2011, you have become a part of the challenging process of trying to reconcile wind energy generation and the sustainable use of the environment.



This year NINA and CEDREN are completing a research project (BirdWind) on bird impacts at the largest wind farm in coastal Norway (Smøla). Although a major part of the work focused on wind-turbine induced mortality on birds, and in particular the white-tailed eagle, much research on tools and methodological development has also been carried out. As a result, more than one and a half years ago we decided to invite colleagues from all over the world to share experiences on how wind-power plants may affect wildlife. We are overwhelmed by the response – 300 participants from more than 30 countries are the best reward for our efforts in preparing the congress.

In addition to an exciting scientific program, we hope you will enjoy an early Norwegian spring, and have a fruitful stay in Trondheim. To those of you going to participate in the post-congress excursions, have a nice trip to the coast of Central Norway – the home of the white-tailed eagle!

Kjetil Bevanger

Congress Chairman

Conference organizer

The Norwegian Institute for Nature Research (NINA) is Norway's leading institution for applied ecological research. The institute employs a staff of approximately 190 and directs well-equipped laboratories and facilities at seven locations in Norway. NINA offers broad-based ecological expertise covering the genetic, population, species, ecosystem and landscape level, in terrestrial, freshwater, and coastal marine environments.

Centre for Environmental Design of Renewable Energy (CEDREN) is one of the eight Norwegian Centres for Environment-friendly Energy Research (CEER) established to obtain a substantial increase in the research and development in the fields of renewable energy in Norway. NINA is one of the main R&D partners in CEDREN, and the centre project BirdWind form a essential scientific basis for the CWW 2011 conference.



Detailed Scientific Programme

Unless stated otherwise, all scientific activities will take place in the conference auditorium
“Olav Tryggvason”

Monday 2nd of May 2011		
13:00 - 18:00	Registration	– Conference area, 1st floor –
18:00 - 19:30	Ice-breaker	– Conference foyer, 1st floor -
Tuesday 3rd of May 2011		
08:00 - 09:00	Registration and coffee start	– Conference area and foyer –
09:00 - 10:30	Opening and plenary session [Convenor: Dr. Kjetil Bevanger]	
09:00 - 09:10	Kjetil Bevanger (NINA, Norway)	Opening
09:10 - 09:20	Norunn S. Myklebust (NINA, Norway)	Welcoming speech
09:20 - 09:35	Bjørn Iuell (Statkraft AS, Norway)	The right climate for environmentally-friendly wind energy
09:35 - 09:50	Kjetil Bevanger (NINA, Norway)	Wind energy and wildlife impacts: lessons learned from Smøla
09:50 - 10:05	Micheal O'Briain (EU DG Environment)	EU guidelines on wind energy and nature conservation
10:05 - 10:20	Rowena Langston (RSPB, United Kingdom)	Birds and Wind Energy
10:20 - 10:35	Mark Desholm (NERI, Denmark)	Studying wildlife and wind power - pros and cons of methodologies
10:35 - 11:00	Coffee break	– Conference foyer –
11:00 - 12:30	Session 1: EIAs and site selection [Convenor: Prof. Dr. Johann Köppel]	
11:00 - 11:15	Jens Lüdeke (Germany)	Proposing an approach for the Assessment of Environmental Impacts of Offshore Wind Farms in Europe
11:15 - 11:30	Jason Jones (Canada)	Modeling habitat distributions of bats using GIS: wind energy and Indiana bats
11:30 - 11:45	Ernst Retief (South Africa)	The development of an Avian Wind Sensitivity Map for South Africa
11:45 - 12:00	Thomas Dahlgren (Norway)	Methods Development for Cost-Effective Marine Environmental Monitoring at Offshore Wind Farms in Norwegian Waters
12:00 - 12:30	Questions & Answers Session	
12:30 - 13:30	Lunch break	– Restaurant Cicignon, ground floor –
13:30 - 15:00	Session 2: Pre- and post-construction monitoring [Convenor: Prof. Dr. Johann Köppel]	
13:30 - 13:45	Elzbieta Kret (Greece)	Assessing the impact on birds of prey of nine established wind farms in Thrace, NE Greece
13:45 - 14:00	Simon Pickering (United Kingdom)	Pre- and post construction monitoring and stake holder involvement of on-shore turbines adjacent to Severn Estuary Ramsar site.
14:00 - 14:15	Thoralf Hoth (Germany)	Impacts on demersal fish communities in the North Sea based upon data from the first German offshore wind farm
14:15 - 14:30	Karen Krijgsveld (Netherlands)	Flight patterns of birds in an offshore wind farm in the Netherlands
14:30 - 15:00	Questions & Answers Session	
15:00 - 16:00	Poster break	– Kristiansten Hall 1st floor; vis-à-vis the auditorium –
16:00 - 17:30	Session 3: Fatality studies [Convenor: Dr. Edward Arnett]	
16:00 - 16:15	Shawn Smallwood (United States)	Comparing Avian and Bat Fatality Rate Estimates among North American Wind Energy Projects
16:15 - 16:30	Manuela Huso (United States)	Expanding fatality estimates from the search plot to the entire site
16:30 - 16:45	Regina Bispo (Portugal)	A Web based application to estimate wildlife fatality: from the bias correction factors to the corrected fatality estimates.
16:45 - 17:00	Alvaro Camina (Spain)	The effect of wind farms on vultures in northern Spain: fatalities behaviour and correction measures
17:00 - 17:30	Questions & Answers Session	
19:30 - 21:30	Evening workshop on estimating fatality at wind-power plants [Chairs: Dr. Manuela Huso & Dr. Regina Bispo]	
19:00 - 22:30	Evening activity: Beaver-watching	– Meet up at the hotel entrance –

Wednesday 4th of May 2011

08:30 - 09:00	Coffee start	– Conference foyer –
09:00 - 09:20	Keynote speaker: Thomas Kunz (United States)	Aeroecology: An Emerging Frontier
09:20 - 10:30	Session 4: Species-specific vulnerabilities and population effects [Convenor: Dr. Rowena Langston]	
09:20 - 09:35	Saiko Shiraki (Japan)	The effects of wind turbines on White-tailed eagles (<i>Haliaeetus albicilla</i>) in Hokkaido, Japan
09:35 - 09:50	Jens Rydell (Sweden)	Effect of wind turbine mortality on noctule bats in Sweden: predictions from a simple population model
09:50 - 10:05	Hans Chr. Pedersen (Norway)	Mortality of radio collared willow ptarmigan in Smøla wind-power plant
10:05 - 10:30	Questions & Answers Session	
10:30 - 11:00	Coffee break	– Conference foyer –
11:00 - 12:30	Session 5: Behavioural and spatial responses [Convenor: Dr. Edward Arnett]	
11:00 - 11:15	Marc Reichenbach (Germany)	Windturbines and meadow birds in Germany – results of a 7 years BACI-study and a literature review
11:15 - 11:30	Francisco Álvares (Portugal)	Assessing ecological responses of wolves to wind power plants in Portugal: methodological constraints and conservation implications
11:30 - 11:45	Miriam Brandt (Germany)	Displacement effects of pile driving during offshore windfarm construction on harbour porpoises (<i>Phocoena phocoena</i>)
11:45 - 12:00	Jay Pruett (United States)	Wind Energy's Subtle Effect - Habitat Fragmentation
12:00 - 12:30	Questions & Answers Session	
12:30 - 13:30	Lunch break	– Restaurant Cicignon, ground floor –
13:30 - 15:00	Session 6: Collision risk modelling [Convenor: Dr. Shawn Smallwood]	
13:30 - 13:45	Roel May (Norway)	Collision risk in white-tailed eagles – Avoiding risky modelling
13:45 - 14:00	Oliver Behr (Germany)	Using acoustic monitoring to measure and mitigate the risk of bat-collisions at wind turbines in central Europe
14:00 - 14:15	Cindy Hull (Australia)	Behaviour and turbine avoidance rates of eagles at two wind farms in Tasmania, Australia
14:15 - 14:30	María Mateos (Spain)	Modelling seabird collision risk with off-shore wind farms
14:30 - 15:00	Questions & Answers Session	
15:00 - 16:00	Poster break	– Kristiansten Hall 1st floor; vis-à-vis the auditorium –
16:00 - 17:30	Session 7: Methods and statistics [Convenor: Dr. Mark Desholm]	
16:00 - 16:15	Niall Burton (United Kingdom)	Evaluating the statistical power of detecting changes in the abundance of seabirds at sea
16:15 - 16:30	Blanca Pérez Lapeña (Netherlands)	Statistical power in testing marine fauna displacement due to an offshore wind farm
16:30 - 16:45	Fiona Mathews (United Kingdom)	The effectiveness of search dogs compared with humans in searching difficult terrain at turbine sites for bat fatalities
16:45 - 17:00	Espen Lie Dahl (Norway)	Using DNA analysis to assess territory structure, mortality and partner shifts in a population of white-tailed eagle breeding inside and close to the Smøla wind-power plant
17:00 - 17:30	Questions & Answers Session	
19:30 - 21:00	Evening workshop on large terrestrial mammals and wind power [Chairs: Dr. Jan-Olof Helldin & Francisco Álvares]	
19:00 - 22:30	Evening activity: Beaver-watching	– Meet up at the hotel entrance –

Thursday 5th of May 2011

08:30 - 09:00	Coffee start	– Conference foyer –
09:00 - 09:20	Keynote speaker: Elisabeth Masden (United Kingdom)	The challenge of cumulative impacts
09:20 - 10:05	Session 8: Cumulative effects [Convenor: Dr. Roel May]	
09:20 - 09:35	Ian Smales (Australia)	Linking turbine collision risks with population models to assess cumulative impacts of multiple wind farms on threatened birds
09:35 - 09:50	Mark Collier (Netherlands)	Cumulative effects of wind farms in the Dutch North Sea on bird populations
09:50 - 10:05	Questions & Answers Session	
10:05 - 10:30	Coffee break	– Conference foyer –
10:30 - 12:00	Session 9: Tools and technology [Convenor: Dr. Mark Desholm]	
10:30 - 10:45	Janine Aschwanden (Switzerland)	Which radar systems are suitable to study what kind of question? – An overview
10:45 - 11:00	Caleb Gordon (United States)	new technologies for offshore wildlife risk studies
11:00 - 11:15	Bertrand Delprat (France)	ID Stat: innovative technology for assessing wildlife collisions with wind turbines
11:15 - 11:30	Timothy Coppack (Germany)	Automated in situ monitoring of migratory birds at Germany's first offshore wind farm
11:30 - 12:00	Questions & Answers Session	
12:00 - 13:00	Lunch break	– Restaurant Cicignon, ground floor –
13:00 - 14:30	Session 10: Mitigation and compensation [Convenor: Dr. Andrew Gill]	
13:00 - 13:15	Scott Cole (Sweden)	Ex Post Compensation for White-Tailed Eagle (<i>Haliaeetus albicilla</i>) Impacts at the Smøla Wind Farm: An Application of Equivalency Analysis
13:15 - 13:30	Ansgar Diederichs (Germany)	Testing the effects of an acoustic harassment device on the behaviour of harbour porpoises (<i>Phocoena phocoena</i>)
13:30 - 13:45	Anabela Paula (Portugal)	Managing habitat for prey recovery – an off-site mitigation tool for wind farms' impacts on top avian predators
13:45 - 14:00	Antonio-Román Muñoz Gallego (Spain)	Raptor mortality in wind farms of southern Spain: mitigation measures on a major migration bottleneck area
14:00 - 14:30	Questions & Answers Session	
14:30 - 15:30	Poster break	– Kristiansten Hall 1st floor, vis-à-vis the auditorium –
15:30 - 16:30	Session 11: Future challenges: onshore and offshore [Convenor: Dr. Roel May]	
15:30 - 15:45	David Bourke (Ireland)	Developing wind energy in Ireland – consequences for our biodiversity and ecosystem services
15:45 - 16:00	Jan Kube (Switzerland)	Options for mitigation of bird collisions at offshore wind farms: a European perspective
16:00 - 16:15	Andrew Gill (United Kingdom)	Field scale experiments to assess the effects of Offshore Wind Farms on marine organisms
16:15 - 16:35	Questions & Answers Session	
16:40 - 18:00	Final panel debate and closure [Convenor: Dr. Roel May]	
19:30 - 23:00	Banquet	– Conference auditorium "Olav Tryggvason" –

Practical information

Meals

All coffee breaks and lunches during the conference are included in the registration fee. Coffee breaks, with coffee, tea, water, fruit and cake, are held at the conference area on the first floor. The lunch buffet is served at Restaurant Cicignon on the ground floor of the venue hotel. The banquet on Thursday 5th of May is only accessible to those with a valid name label (separate registration 100 EUR). The banquet will be in the conference auditorium "Olav Tryggvason". Please indicate at the registration table if you have any dietary requirements (e.g. vegetarian, gluten-free).

Trondheim offers many types of cuisine, from traditional Norwegian food, fish to international dishes. Information about dining places in Trondheim can be found at the registration table in the venue hotel and on www.trondheim.com.

Internet / wireless

The venue hotel has one computer placed in the conference area which may be used for internet or checking emails. This is free of charge. Participants staying at the venue hotel use their room number and name to get internet access. All conference attendees have free access to wireless internet at the hotel. A new internet code is announced every morning.

Ice-breaker

All participants that arrive on Monday 2nd of May and who are registered for ice-breaker are welcome between 18:00 – 19:30 in the Conference foyer on the first floor. Conference Chairman Dr. Kjetil Bevanger will welcome all and there will be served drinks and some snacks.

BirdWind – The Movie

A short multimedia show will be on a screen in the foyer in the coffee breaks, presenting the BirdWind project (Pre- and post-construction studies of conflicts between birds and wind turbines in coastal-Norway). Movieclips, slides and images will present the windfarm at Smøla and the different sub-projects within BirdWind, such as radar monitoring, satellite telemetry and population monitoring, including their main findings. The video will be a nice introduction to the research carried out on birds and wind turbines by NINA the last years.

Beaver safari

An evening tour of some of the beaver sites around Trondheim. Beavers are active in full daylight from about 20:00, and many groups locally are habituated to humans. Beaver structures and activities such as dams, lodges, and felled trees will be visited and (weather permitting), good views of beavers (and other wildlife) are very likely. We will leave from the conference hotel by bus at 19:00 and return about 22:30. Please bring clothes and good shoes for outdoors excursions. The excursion is free of charge, but registration is required.

Banquet

The banquet takes place in the Conference auditorium on Thursday 5th of May 19:30 – 23:00. Research Director Inga Elise Bruteig (NINA) will be toastmaster during the banquet, and there will be a short concert by the Frode Fjellheim Band during the banquet.





Excursions/fieldtrips

Smøla wind-power plant (Friday 6th of May)

Participants will leave the hotel in Trondheim after an early breakfast and travel by bus and ferry out to the island of Smøla. The bus departs from the hotel in Trondheim at 07:30. When we arrive at Smøla we will head to the wind-power plant. Here we will learn about the on-going research by NINA, and have a look at the research facilities, such as the mobile bird-radar and the automated camera-systems. Statkraft, the owner of the wind-power plant will brief us on the technical issues related to the wind-power plant. Lunch will be served while at Smøla. Early May is the peak time for flight activity of white-tailed eagles in the area, and hopefully we will see eagles soaring among the turbines.

The participants returning to Trondheim will take the bus departing from Smøla Friday afternoon, arriving in Trondheim around 21:00.

Those participants joining the Runde seabird fieldtrip will continue from Smøla by bus, while those joining the white-tailed eagle photo safari at Smøla will check in at a guesthouse at Smøla. The following tours are possible extensions to the Smøla wind-power plant excursion. The following tours' prices include both the actual excursion and the Smøla wind-power plant tour.

White-tailed eagle photo safari (Friday 6th – Saturday 7th of May)

The municipality of Smøla consists of one large island surrounded by thousands of skerries and small islands. This area is one of the best areas worldwide to observe the magnificent white-tailed eagle. On this trip, expert guides will take you by boat to the archipelago surrounding Smøla. When an eagle is spotted, the guides will throw out fish, and then excellent photo opportunities will happen when the eagles stoop down to grab it from the water. Breathtaking! The guides will take the participants out Friday evening and optionally again Saturday morning to provide the best possible light for photography. On Friday night a dinner will be served at a local restaurant. Early May is also peak-time for migration in this part of Norway, so a large variety of birds, including arctic migrants, can be expected.

After a lunch at the guesthouse on Saturday, the participants will return to Trondheim with the express boat leaving from Smøla 15:10 arriving in Trondheim 18:10.

Runde seabird cliff and Norwegian mountains (Friday 6th – Sunday 8th of May)

Runde has the largest seabird cliffs in southern Norway. Thousands of puffins, shags, guillemots, kittiwakes, gannets, great skuas and other seabirds, all situated in a dramatic landscape will ensure a fantastic bird-watching experience. Along with these seabirds white-tailed eagles and peregrines will be patrolling the cliffs.

This fieldtrip will also be a great opportunity to see the world-famous Norwegian fjords and mountains. En-route from Smøla to Runde we will take the Atlantic Road, this nine kilometre stretch of road that zigzags across low bridges on the outermost skerries. The road is elected "Norway's construction of the century" and is also chosen as the world's best road trip of the British newspaper The Guardian.

Arriving at Runde late Friday night, after stopping for dinner en-route, we will check in at a local environmental centre with great accommodation facilities. After breakfast Saturday morning we will head up to the bird cliffs to watch the seabird spectacle guided by a local expert. We will spend the whole day at the bird cliffs before we head down to environmental centre to check out from our rooms and return with the bus to Trondheim. En-route from Runde to Trondheim we will stop for dinner, the bus will drive through some spectacular scenery with deep fjords surrounded by steep mountains, including the "Trollveggen", a 1,000 meter high vertical cliff which is regarded as one of the most challenging climbs in the world. In the late evening the bus will pass over the mountains of Dovrefjell. We will arrive in Trondheim early Sunday morning. Even though part the return journey is by night, there is enough light at these latitudes to get a good view of the scenery.





Exhibitors



DeTect, Inc. specializes in remote sensing technologies and systems for aviation safety, security surveillance, environmental management, weather detection and wind measurement supporting projects worldwide. DeTect is the world leader in development, deployment and support of bird radar systems for aircraft bird strike avoidance, avian risk assessment and migratory research with over 60 systems worldwide.



GP WIND is a project which facilitates deployment of wind energy across Europe and achievement of 2020 targets for renewable energy generation. The project aims to increase the consenting rate and to reduce the processing period for on- and offshore wind projects which are sensitive to environmental and community concerns. GP WIND is supported by the Intelligent Energy Europe program.



DTBird® is a self-working system developed to reduce bird mortality in operating wind farms by detecting flying birds and taking programmed actions linked to real-time bird detection. Bird detection is based in artificial vision, a technology used in military applications. DTBird® is a trademark of Liquen; a leading Spanish environmental consulting firm specialized in renewable energies.



Followit is Sweden's leading specialist in mobile positioning of shipments, vehicles, animals, people, and valuable property. Since 1974 Followit has produced telemetric equipment for wildlife animal research, as well as for reindeer. The combination of animal friendly design, GPS-units, GSM download and other technological advanced options, gives a wide range of usage for wildlife research.

Sponsors



Mester Grønn AS offers fresh flowers and plants through a self service concept. Mester Grønn AS has more than 1,000 employees and nearly 100 stores all over Norway. Mester Grønn has membership of the Ethical Trading Initiative (ETI), sells Fairtrade roses and the company goal is that all their products will be manufactured in accordance with ethical, human, environmental and international standards.



Robin is an independent European company that owns the rights to all TNO bird radar intellectual property, hardware and software. This means we have unique access to the world's most advanced bird radar technology – purpose-designed for tracking and identifying birds since the 1970s. Wind farm operators use Robin bird detection systems both for environmental assessments and during operation.

Sponsors



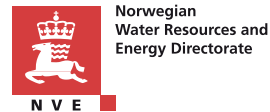
Statkraft is Europe's leader in renewable energy. The group develops and generates hydropower, wind power, gas power and district heating, and is a major player on the European energy exchanges. Statkraft has more than 3 200 employees in more than 20 countries.



The Research Council is the chief allocating agency for research funding in Norway and provides key research-policy input to the Government. Through its efforts as an advisory body on research strategy issues, a research funding agency and initiator of meeting places and networks, the Research Council seeks to meet and constantly refine the objectives for Norwegian research policy.



Energy Norway is a non-profit industry organization representing about 270 companies involved in the production, distribution and trading of electricity in Norway. Energy Norway's members each year produce nearly 130 TWh, which is some 99 per cent of all power production in Norway. The members of Energy Norway have some 15 000 employees.



The Norwegian Water Resources and Energy Directorate (NVE) is a directorate under the Ministry of Petroleum and Energy. NVE's mandate is to ensure an integrated and environmentally sound management of the country's water resources including flood contingency planning, maintaining national power supplies, and promoting efficient energy markets and cost-effective energy systems.



NORWEGIAN DIRECTORATE
FOR NATURE MANAGEMENT

The Norwegian Directorate for Nature Management (DN) serve as an executive and advisory body for the Ministry of the Environment, and the main areas of responsibility are outdoor recreation and the conservation and sustainable use of biodiversity. DN is responsible for implementing the Government's environmental policy, and for identifying, preventing and dealing with environmental problems.



SØR-TRØNDELAG FYLKESKOMMUNE

Sør-Trøndelag County Authority is responsible for tasks that are too large or too complex for the municipalities to manage alone. Sør-Trøndelag County Authority develops and promotes the region through local and international partnerships. The Council is responsible for regional planning and has environmental responsibilities. The Council promotes the cultural life of the region.