

CEES

Centre for Ecological and Evolutionary Synthesis

ANNUAL REPORT
2007



Trichius fasciatus | Photo © Øistein H Holen



CEES IN BRIEF

The Centre for Ecological and Evolutionary Synthesis, CEES, is a Norwegian Centre of Excellence chaired by Professor Nils Christian Stenseth. As of 31. Dec. 2007 CEES consisted of 113 members including students, researchers, technical and administrative personnel. The centre has a core group of 17 employees of which 11 are full-time employees and one is a part-time employee of the Department of Biology, two are employed by the Department of Mathematics, one by the Department of Economy, one by the Institute of Marine Research and one by Dalhousie University, Canada.

From 1. Oct. until 31. Dec. 2007, 2 book chapters and 38 publications in peer reviewed journals were produced by members of CEES. Although most of the results have not been produced within the short activity period of the CEES, they do represent basis for the research that we are to undertake within the centre.

Twenty invited talks or presentations at conferences were presented by members of CEES in various international fora, and CEES hosted 16 talks given by invited international collaborators and fellow scientists. CEES had 12 international and national visitors during the last three months of 2007, and in the same period we employed 25 international scientists from 12 countries.

About 27.3 MNOK of the total 2007 budget of 38.8 MNOK came from the 60 externally funded research projects that the CEES maintained in 2007. Most of them were funded through The Research Council of Norway (RCN), among them several projects under the Functional Genomics Program (FUGE). An important event was the opening of our 454 Sequencer facilities and our national FUGE platform for ultra high throughput sequencing. We are also involved in several EU funded projects and we have some projects funded through private companies, HYDRO being the most important. Finally, we are the chairing node of a Nordic Centre of Excellence, EcoClim, a platform which formed an important prelude for the CEES.

The CEES maintained a high level of visibility during its first months of existence, our activity being covered by media about 30 times. The *Science*-paper published by Stein Are Sæther and colleagues on natural hybridization among two bird species was highlighted in a *Science* Perspective article on the very same day as the official opening of the CEES (5. Oct.). Much media attention all over the world has also resulted from the work on plague chaired by Nils Chr. Stenseth and colleagues; studies demonstrating that occurrence of plague outbreaks are affected by climate.

The CEES contributed profoundly to the biological research environment in Oslo being rated as an "Excellence group" by CHE (Centre for Higher Education Development gGmbH, Germany, www.excellenceranking.org/eusid/EUSID), the only one in Norway and among the 7 best groups in the Nordic countries (4 in Sweden and 2 in Denmark).

Thirty master students were supervised by CEES members in the fall of 2007, and CEES members were involved in the teaching of 5 master courses and 5 bachelor courses. In the fall of 2007 we received 2 new Marie Curie post-doc research fellows. We have also engaged several new Marie Curie PhD students, both short term and full 3 year students.

THE CHAIR'S COMMENTS

Being awarded the status as a national Centre of Excellence represents a great stimulus for further work. However, it is now the work as a centre starts: it is now we have to deliver what we promised in the proposal.

We do hope that the CoE funding will facilitate and indeed help stimulate joint projects involving different parts of the centre. Bringing together the broad spectrum of expertise housed within the centre so as to achieve the expected synergies will not be easy, but if successful very rewarding. Time will show whether we will succeed. So far the internal discussions within the centre has been very promising: the positions which have been announced will each be linked to at least two of the centre's members, and funds will primarily be used to support joint projects.

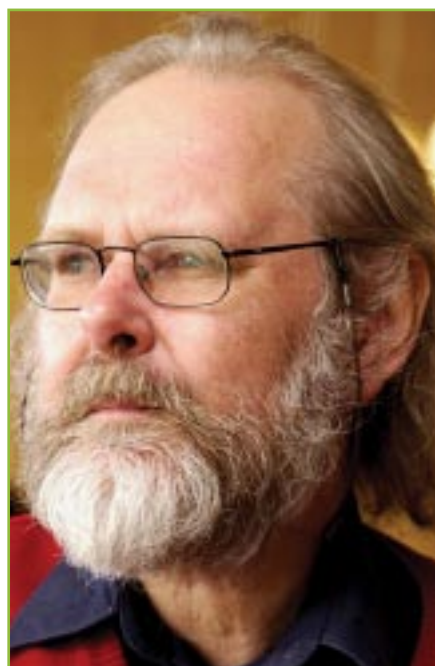
Recruiting new CEES members, as researchers, post-docs and PhD students, will be of great importance in the year to come. Observing the great international interest from young people all over the world who wants to come and work with us, is indeed both promising and stimulating.

If the centre is to function according to the intentions, there must be a good interaction between the centre and the host institution – at all levels. In that respect there are many challenges ahead of us, but I am pleased to observe the great willingness among the various levels of the University to make our centre (as well as other centres of our University) properly facilitated and integrated.

I will, as the chair of the CEES, continue to be an active scientist as I believe it is important that scientific leaders should not stop being scientists – as many so-called professional managers currently are advocating. Being an active scientist will help me making sound decisions that are respected by the staff. Continuing to be an active scientist, will also help the visibility of the centre as such.

Observing the initial development leaves me with great optimism. Part of the optimism rests upon us having been provided good facilities (and space) within the Kristine Bonnevie House of the University of Oslo. Part of the optimism also rests upon the CEES having gotten a good administrative infrastructure. As the chair of the CEES, I am pleased to acknowledge the hard and dedicated work of our administrative staff. A good and professional administrative unit will enable the scientists of the CEES to carry out excellent scientific work.

Professor Nils Christian Stenseth





CEES ACHIEVEMENTS IN 2007

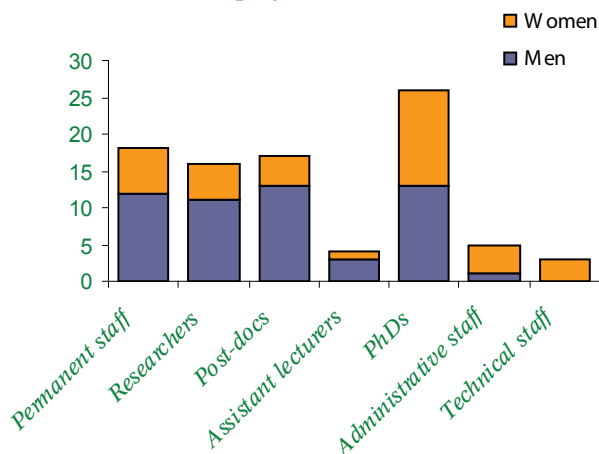
The most important event in 2007 was the kick-off seminar at Sundvolden where CEES members, the Board, the Scientific Advisory Board and some collaborators gathered to set the agenda for our work to come. This meeting marked the start of CEES as a common scientific platform for all of its members. We decided to devote time to organizing ourselves, to find focal areas within our main research themes and to develop announcements for the search for post-doc and PhD candidates that are to work on CEES projects.

Major scientific achievements in 2007 include:

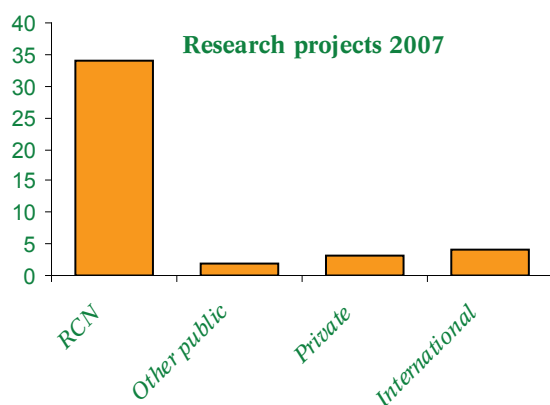
Genetic aspects of speciation. On the day of the official opening of CEES as a CoE, 5. Oct. 2007 (see below), Sæther *et al.* published a paper on sex-chromosome linked species recognition and evolution of reproductive isolation (*Science* **318**, 95-97; and 54-55). Speciation is the formation of reproductive barriers between populations. When two closely related groups of animals meet after some time of isolation (e.g. after isolation in different areas during ice ages) they might blend together into one group again, or be kept apart as two species. The outcome depends on the frequency and success of interbreeding (hybridization). In this study Sæther *et al.* has taken a closer look at hybridization occurring between two bird species in Europe. The study demonstrates that genes involved in both hybridization frequency (female ability to recognize males of their own species) and hybridization success (reduced viability and fertility of the hybrids) are linked to the sex chromosomes. This linkage makes speciation a more likely outcome than previously thought, and may turn out to be a common influence on the origin of species. Although the work published in this paper has not been done within the CEES-CoE, this work represents a cornerstone for work to be carried out within the centre (in *Theme 3*, page 11).

Evolutionary effects of human-altered ecological systems (e.g., harvesting and climate change). At the end of 2007, *Nature* highlighted the paper by Edeline *et al.* published in *PNAS* (**104**, 15799-15804) as one of the most important papers of 2007 (see *Nature* **450**, 1130-1133). Analyzing data

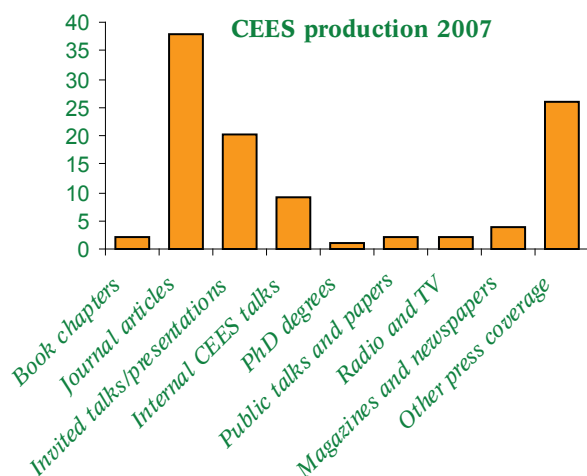
CEES employees Oct.-Dec. 2007



Research projects 2007



CEES production 2007





on half a century of pike (*Esox lucius*) catches from Lake Windermere in UK, Edeline *et al.* document that in periods of heavy fishing pike tends to be smaller and to devote less energy to reproduction. While natural predators normally prefer the smallest fish, humans value the largest. Hence, fishermen apply a selective pressure opposing the natural selective force. These findings suggest that fisheries managers should include the evolutionary effects of fishing in their estimates. Although the work published in this paper has not been done within the CEES-CoE, this work represents a cornerstone in of work to be carried out within the centre (in *Theme 2*, page 10). This study also represents one of several examples of phenotypic traits appearing to have higher capacity to evolve than previously assumed. However, different types of organisms and traits differ tremendously in their evolvability, and many traits appear inexplicably conservative or maladaptive. There is a need to develop theoretical models and empirical model systems to better understand and predict why some traits evolve readily and others do not. In particular we are presently focusing on the study of the evolutionary effects of human-altered ecological systems (e.g., harvesting and climate change). We aim at providing insights into how harvesting-induced selective pressure interacts with natural selection.

Climate change and bird migration. At the end of 2007 we published a Special Feature collection of papers on bird migration and climate change in *Climate Research* (35, 1-180), papers following up our 2006 *Science* paper on the issue (*Science* 312, 1959-1961). This represents work done within the *EcoClim Nordic Centre of Excellence*, a stepping-stone towards our current CoE. Several bird species have advanced the timing of their spring migration in response to recent climate change. European short-distance migrants, wintering in temperate areas, have been assumed to be more affected by change in the European climate than long-distance migrants wintering in the tropics. However, in a recent paper (*Science* 312, 1959-1961) we showed that long-distance migrants have advanced their spring arrival in Scandinavia more than short-distance migrants, and also pass through the Mediterranean region earlier. We argue that this may reflect a climate-driven evolutionary change in the timing of spring migration. These issues will be followed up by using our model systems of hole-nesting passerine birds (flycatchers and tits), in addition to existing time series.



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1. SCIENTIFIC ACTIVITY

1.1. Introduction: Focusing on the synthesis of ecology and evolution

The research groups funded via the CoE-program are expected to become internationally influential within their fields. We believe that within the CEES we will gather a team of highly qualified faculty members, who have not worked extensively together in the past, but who are eager to focus on common goals.

Ecological and evolutionary processes are inescapably intertwined, however research in ecology and evolutionary biology follow different traditions. As a team we will strive to synthesize ecology and evolution – becoming a leading institution in this field. If successful, we will within 10 years vitalize biology at the UiO, and thereby considerably strengthen interdisciplinary science in Norway. Altogether we aim at becoming an important player in the international scientific arena, not least within the European science funding system. The CEES comprises a broad spectrum of expertise in ecology, evolutionary biology, molecular biology, bioinformatics, methodological and computational statistics and we are working on a wide range of well-established biological research systems, covering the terrestrial, limnic and marine world. Within the time frame of the CoE we aim at contributing significantly to the integration of biological sciences **and thus to an improved understanding of how the living world responds and adapts to environmental changes.**

We will make an effort to:

- Use our strong foundation in ecology and statistical methodology to extend our research into the interface between ecology and evolutionary biology.
- Use the broad spectre of biological systems available to the group as a basis for developing and testing general hypotheses at the interface between ecology and evolution.
- Implement a new research structure based on *Themes* and *Colloquia*.
- Extend our collaborative network with current and new partners.
- Provide a basis for new interdisciplinary work at the UiO.
- Contribute to a more equalized gender balance in high rank academic positions at the UiO.
- Provide international, interdisciplinary training for a new generation of students and post-docs.



1.2. Organisation of the research

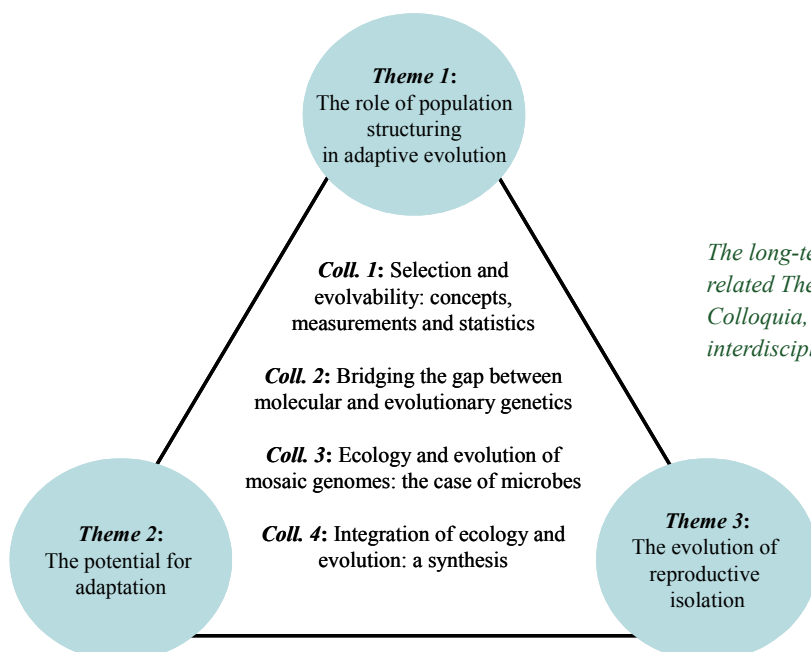
As a team we will target numerous obstacles for an ecological and evolutionary synthesis using old and new data from the field and the lab. Through the CoE we will for the next 10 years counter the trend towards fragmentation of sciences by having several interacting research foci. These will be organized around three mutually dependent *Themes*:

- 1) The role of population structuring in adaptive evolution.
- 2) The potential for adaptation.
- 3) The evolution of reproductive isolation.

Within each research *Theme*, there is a demand for integration of ecological realism into evolutionary theory, and for evolutionary thinking into ecological modelling. In order to face problems of integrative work, such as conceptual and semantic confusion, and to promote communication across

the limiting assumptions of the various research fields, we will assign targeted projects in the form of four three-year long multidisciplinary *Colloquia*. Here we will bring together staff and visiting scientists with experience from a wide range of biological and methodological systems. Each *Colloquium* will make an excellent setting for inviting highly qualified scientists to collaborate and thus contribute to the overall objective of the centre. The topics of the *Colloquia* will be:

- 1) Selection and evolvability: Concepts, measurements and statistical modelling.
- 2) Bridging the gap between molecular genetics and evolutionary genetics.
- 3) Ecology and evolution of mosaic genomes: The case of microbes.
- 4) Integration of ecology and evolution: A synthesis.



The long-term research activities focus on three inter-related Themes which are reinforced through four Colloquia, each lasting for 3 years, providing arenas for interdisciplinary synergetic work.

1. SCIENTIFIC ACTIVITY

1.3. Themes and Colloquia

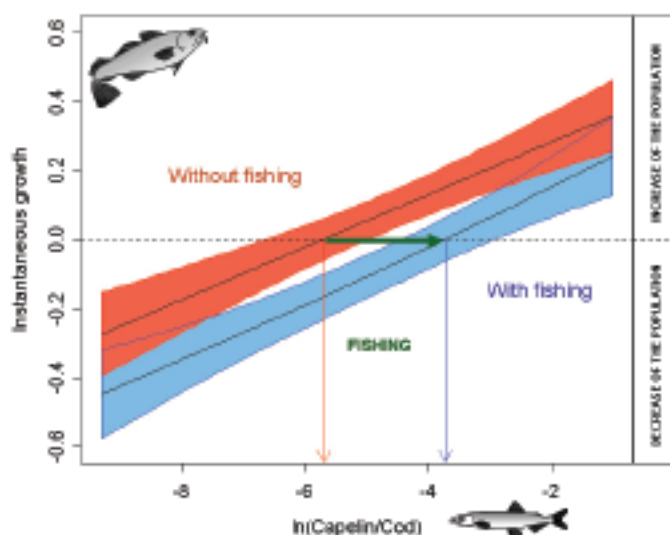
1.3.1. Theme 1: The role of population structuring in adaptive evolution

Theme leaders: *H.M. Lampe & L.A. Vøllestad.*

Collaborators include: M. Achtman, E. Carniel, T.O. Haugen, K. S. Jakobsen, C. Nesbø, G. Ottersen, T. Slagsvold, N.C. Stenseth.

All species are structured into subgroups or sub populations by more or less obvious boundaries. Physical barriers may directly prevent gene flow through habitat fragmentation, whereas temporal or behavioural differences concerning dispersal and/or reproduction may indirectly have the same effect. To better understand how gene flow prevents or facilitates local adaptations, and how local adaptations may prevent gene flow, detailed knowledge about the interaction between organisms and their environment is needed; what are the traits under selection and what are the selection pressures?

For the first period of the CoE we have chosen to focus on **gene flow and the early stages of diversification.**



1.3.2. Theme 2: The potential for adaptation

Theme leaders: *T. Slagsvold & G. Storvik.*

Collaborators include: T. F. Hansen, T.O. Haugen, N. Jonzén, H. M. Lampe, A. Mysterud, G. Ottersen, L.A. Vøllestad.

One of the great discoveries within population genetics over the last decades is that most phenotypic traits appear to have higher capacity to evolve than previously assumed. However, different types of organisms and traits differ tremendously in their evolvability, and many traits appear inexplicably conservative or maladaptive. There is a need to develop theoretical models and empirical model systems to better understand and predict why some traits evolve readily and others do not.

Although evolvability is initially determined by the amount of genetic variation that selection can act upon, it is becoming increasingly clear that only parts of this variation may be useful for adaptation. Formal analytical models have been developed to describe how genetic architecture (patterns of pleiotropy and epistasis) affect evolutionary capacity by structuring character variability. This has led to new hypotheses about the links between genetic architecture and evolvability, and identified novel genetic parameters in need of empirical estimation. Further work with theoretical models will be to investigate these hypotheses and parameters in explicit gene-regulatory networks, and develop methods for their estimation.

For the first period of the CoE we have chosen to focus on **the evolutionary effects of human-altered ecological systems (e.g., harvesting and climate change).**

When Cod is fished it requires 24 Capelins for each Cod to maintain the Cod population stable while it was only 3 without fishing.



1.3.3. Theme 3: The evolution of reproductive isolation

Theme leaders: **A.K. Brysting & G.-P. Sætre.**

Collaborators include: T.O. Haugen, D.O. Hessen, H.M. Lampe, C. Nesbø, T. Slagsvold, G. O. Storvik, L.A. Vøllestad.

The development of reproductive isolation (speciation) is a key event in evolution, and hence for the origin and maintenance of the tremendous diversity of life on earth. For sexually reproducing organisms there is general agreement that reproductive isolation is a necessity for divergence. Nevertheless, the mechanisms involved in the formation of reproductive barriers are poorly understood. For organisms where reproduction and recombination do not necessarily coincide, controversies on basic properties (such as species concepts) remain unresolved.

For the first period of the CoE we have chosen to focus on **genetic aspects of reproductive isolation.**

1.3.4. Colloquium 1: Selection and evolvability: Concepts, measurements and statistical modelling.

Colloquium leaders: **T.F. Hansen & T. Schweder** together with two appointed Kristine Bonnevie Professors.

Collaborators include: D. Houle, H. Kishino, N.L. Hjørt and G.P. Wagner.

The overall goals of this *Colloquium* are to resolve misunderstandings, clarify the meaning of fundamental parameters and measurement procedures, and to establish models that are operational in the sense that they can be fitted to data from experiments and field work.

In 2007 the colloquium has planned its activities, and has also decided to call David Houle and Hirohisa Kishino as Kristine Bonnevie professors. The work of *Colloquium 1* will start in the spring of 2008.

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RESEARCH HIGHLIGHTS

Pikes and planning

Proc. Natl Acad. Sci. USA **104**, 15799–15804 (2007)

Fisheries management uses population models that assume fishing does not cause rapid evolutionary change. Nils Stenseth of the University of Oslo and his colleagues found evidence against this premise.

The team analysed data on half a century of pike (*Esox lucius*, pictured) catches from Lake Windermere in England's Lake District. The records included each pike's age, which can be counted from rings that form in bones around the gills.

Predators normally prefer the smallest fish, whereas humans prize the largest. So fishermen apply an opposing selective pressure from the rest of nature. During periods when fishing was heavy, it became the dominant pressure, and pike tended to be smaller and to devote less energy to reproduction. The findings suggest that fisheries managers should include the evolutionary effects of fishing in their estimates.



LUTRA/NHPA
A. COOPER/CORBIS

1. SCIENTIFIC ACTIVITY

1.4. Getting started

1.4.1. The official opening of CEES

On 24. Sept., the University of Oslo (UiO) organised an official opening for all the new CoE's that were to be established at the University. At that event, the CEES was briefly presented. The contract was signed by Anders Hanneborg (The Research Council of Norway, RCN) and Terje Mørland (UiO) and we received the official CoE plate from (RCN).

The official opening of the Centre for Ecological and Evolutionary Synthesis took place at the Department of Biology, University of Oslo on 5. Oct. 2007. An opening lecture was given by Douglas J. Futuyma (Distinguished Professor, Department of Ecology and Evolution, State University of New York, Stony Brook, NY, USA) on the topic of "Some Problems in Evolutionary Ecology, and Why They Matter". Arvid Hallén (RCN) also gave a short introduction to the Centre-of-Excellence program in Norway.

1.4.2. The kick-off seminar

The real start for our scientific work as a centre was set at the CEES kick-off meeting which took place at Hotel Sundvolden 1-3. Dec. 2007. It was a meeting involving all of the CEES core members, some of the CEES post-docs, some of our international collaborators, as well as the Board and the Scientific Advisory Board. Members from all of the *Themes* presented some of their previous work and their future plans. *Colloquium* 1 and 2 also gave brief presentations about their goals and aims. Participants of the seminar gave their feedback to the presentations, and in particular the SAB gave constructive inputs on how to establish our new platform. We were advised to focus on one or a few questions to start with, as has now been implemented for each *Theme*. We also received advice on trying to enforce the competence in molecular biology at the centre. The importance of the recruitment process was highlighted, the SAB in particular emphasised the post-doc positions as essential for gluing the future research together.



Photo © Erik Ropstad



1.4.3. Launching the Ultra-high Throughput Sequencing Platform

On 30. Nov. 2007 we officially opened the Roche 454 FLX genome sequencer unit as a joint effort with The Norwegian School of Veterinary Science and The Norwegian University of Life Sciences. This unit will constitute the core of a FUGE national platform for ultra-high throughput sequencing. Sabine Muench-Garthoff and Marcus Droege (Roche Diagnostics GmbH) gave an introduction to the technology behind the genome sequencer machine and also described some of its applications. Kjetill S. Jakobsen introduced the FUGE platform, and a key-note lecture on "Tackling long-standing biological questions using the Roche FLX platform" was given by Tom Gilbert (Dept. of Biology, University of Copenhagen).

As pointed out during the official opening, the advent of 'high-throughput sequencing by synthesis' platforms, such as the Roche FLX, present great advantages with regards to the tackling of many traditional biological questions. Although only commercially released in 2006, a number of high impact papers have already been published that are based on this technology, challenging a range of questions, from the nature of neandertal-human coexistence, to the composition, diversity and spread of microbial communities that are otherwise unanalysable, to the evolution of eusociality.



2. EDUCATION

2.1. Research training

Besides research the centre focuses primarily on graduate training. Our permanent scientific staff is involved with teaching at all levels, and we are interested in contributing to educate excellent candidates for future positions also at the basic level. Rather than building our own educational program at bachelor and master level, we are involved in the basic education of our host Departments, i.e. the Department of Biology, Mathematics and Economics. In the fall of 2007 we contributed by teaching on 5 Bachelor courses and 5 Master courses. Thirty master students were supervised by CEES members.

2.1.1. Graduate school

A main goal of the CEES is to offer a professional and interdisciplinary training program. The graduate training program of CEES is organized within a *Graduate school* (a status which CEES has been awarded by the UiO). We receive an annual funding (NOK 50 000) that partly finances the costs that we have for our annual conference for master and PhD students. The broad spectrum of experience and skill at the CoE allows us to offer a unique interdisciplinary PhD training program where the students will benefit from a stimulating international environment. Students will work in research teams, supervised by two core members, and follow an Individual Personal Career Development Plan.

*PhD/Master seminar,
Holmen fjordhotell Sept. 2007*





3. SCIENTIFIC OUTREACH

2.1.2. Marie Curie Early Stage Training (MC-EST)

The newly established *Marie Curie Early Stage Training* site on *Ecological and Evolutionary Response to Climate Variation* (CEES-MCO) is also an important part of our research education program. In 2007 we had 4 fulltime PhD students and 4 short time PhD students engaged at CEES through this program. Most of the candidates have been very successful during their stay at the centre, and several of them have already published articles based on the research done at CEES (see appendix). The program has also promoted international cooperation among our scientists and the home institutions of our visiting PhD students.

2.1.3. Journal clubs

Our journal clubs are platforms “for inspiration and for talking about the science we may not deal with directly in our own daily research, but which may have implications for and may stimulate our own research in new and exciting directions; for learning interactively – what is good science; and also a fun session to have the opportunity to behave like nerds and not feel guilty about it!”. The discussion is free form, but it tends to be stimulated by either 1) questions regarding methodology and theory behind the paper or 2) extensions and applications of the work described in the chosen paper. Students are especially encouraged to join the journal clubs that typically are attended by 5-10 people, representing all levels at CEES; professors, post-docs, PhDs, and students. We currently have two journal clubs, the Thursday Lunch Club for discussing recent papers from evolutionary ecology and The Behavioural Ecology Forum for discussing recent papers from behavioural ecology.

2.1.4 Excellence group ranking by Centre for Higher Education Development

The biological research environment in Oslo was, as the only one in Norway, rated as an “Excellence group” by CHE, Centre for Higher Education Development, gGmbH (Germany) (www.excellenceranking.org/eusid/EUSID). According to the report, the CEES and our Marie Curie Early Stage Training site in Ecological and Evolutionary Responses to Climatic Variation contributed profoundly to this high ranking.

CEES will work for an increased awareness of science in the general population. Communication of scientific findings, our own (reported in the primary literature) or by others, to a broad public audience will be prioritized. Yearly we arrange two popular science events, Darwin Day and Kristine Bonnevie lectures on Evolutionary Biology, both drawing full houses of academics and laymen.

Several core members commonly appear in the mass media, Dag O. Hessen is the most prominent one in this respect. In 1998 he received RCN’s prize for excellence in communication of science. Hessen is responsible for coordinating the Public Relation of the CoE.

On 11. Dec. Dag O. Hessen delivered a lecture on the ethics of climate change at The Nobel Science Seminar in Oslo. Among several prominent persons in the audience were the 2007 Nobel Peace Prize laureates Al Gore and Rajendra K. Pachauri.

4. MANAGEMENT AND ADMINISTRATION

4.2. Administrative support

The CEES is established as a National Centre of Excellence, CoE, by The Research Council of Norway (RCN). It is owned by the University of Oslo (UiO) and hosted by the Department of Biology under the Faculty of Mathematics and Natural Sciences. RCN and UiO are our main financial contributors and the final reporting entities. They define the guidelines under which we are to operate. The Department of Biology is responsible for our work and for all administrative support (except for the administrative leader).

4.1. Daily leadership

The centre is on a daily basis run by the Chair, Professor Nils Christian Stenseth, the Deputy Chair, Researcher Eli K. Rueness, and the Head of Administration, Katinka E. Grønli. These three constitute the leading group and make running decisions on practical matters, financial transactions, research activities within the frame of the budget and the research plan. Regarding scientific progress within the centre, the Deputy Chair and the Chair interact closely on a daily basis.

The CEES core, the fraction of our staff that has committed themselves to allocate most of their research time to the centre during the whole period of the CoE, meets monthly. This group serves as an advisory council for the leading group, participating in important decisions related to scientific progress, recruitment of personnel, reporting and financial issues. The core group has in addition to the leading group consisted of the following persons in 2007: Associate Professor Anne K. Brysting, Professor Thomas F. Hansen, Professor Dag O. Hessen, Professor Nils Lid Hjort, Professor Kjetill S. Jakobsen, Professor Helene M. Lampe, Professor Atle Mysterud, Researcher Camilla L. Nesbø, Senior Scientist Geir Ottersen, Professor Tore Schweder, Professor Tore Slagsvold, Professor Geir O. Storvik, Professor Glenn-Peter Sætre, Researcher Hildegunn Viljugrein, Professor L. Asbjørn Vøllestad.

Within the core group we find the *Theme* and *Colloquia* leaders. These have the responsibility for the daily scientific work and progress within their respective *Themes/Colloquia*. They rank applicants for funds, report on progress, and chair scientific meetings where their work is presented and discussed.

The CEES administration is lead by Katinka E. Grønli. She is a member of the leading group and the right hand of Nils Christian Stenseth. The administration prepares general correspondence, budget, accounting figures and reports. It is in charge of the daily routines involved with handling the CEES personnel and assists in general communication, the development of proposals for external funding and in running the CEES website.

The Department of Biology, our host, has allocated two fulltime Senior Executive Officers in research administration to the centre. In 2007 Gry Gundersen and Maren S. R. Onsrud were holding these positions. They assist in doing full budgets for new applications according to the UiO standard, making contracts between UiO and external partners in running projects, in developing proposals and on the reporting of existing projects. They assist the Head of administration at the Department of Biology in reporting scientific activity and they assist Katinka Grønli in all matters related to the administrative support functions to be found within the centre.

CEES has employed one person, Higher Executive Officer Anne Margrete Holst, dedicated to deal with non-scientific matters for guest researchers and students. She helps with travel arrangements and reimbursements procedures, with housing and with general bureaucracy matters. This service will from 2009 be provided by the Department of Biology as part of the services given to the centre.

From December 2007 Higher Executive Officer Tore Wallem has been in charge of developing new web pages for CEES and for the implementation of a project concerning ethics in science developed by the University of Oslo.

First line services are mainly run by our host, the Department of Biology; this means telephones, mail, reception, accessories and services for purchases of normal running equipment.

All financial transactions are jointly authorised by Nils Christian Stenseth and Katinka Grønli. The resolutions are executed by the economy section at the Department of Biology, and as our host they also provide help with budgets and accounting analysis, reports etc.



4.3. The Board

General IT support is provided by the Department of Molecular Biosciences. University Center for Information Technology (USIT) has provided help and support in establishing new CEES web-pages (www.cees.uio.no) and profile. This work is to be finished in 2008. The new CEES logo has been done by Joakim Grønli.

All administrative support required for the students (from Bachelor to PhD level) is provided by the Department where the students are enrolled. For most of our students that is the Department of Biology. An exception is the running of our MC-EST, which is supported administratively by Gry Gundersen.

First-line personnel support is provided by Katinka Grønli and Gry Gundersen, but professional handling of personnel matters (contracts, payment routines etc.), is provided by The Faculty of Mathematics and Natural Sciences administration. Bente Schjoldager is allocated to be responsible for all CEES-matters.

A secure archive system is provided by The Faculty.

The CEES-Board is an administrative board that will meet approximately twice a year to focus on strategic and control functions as well as approving budgets, accounts and annual reports. The Board shall also ensure that the activity of the centre fall within the lines set by the research plan. They shall assist in developing the research plan and if necessary make adjustments. The Board shall also give advice on the announcement of positions within the CoE. The Board is appointed by and reports to the Board of the Department of Biology. It consists of up to 6 members, which are appointed for a period of three years, with a possibility for prolongation. The CEES Chair, Deputy Chair and Head of Administration attend the Board meetings and also functions as secretaries for the Board.

In 2007 two Board meetings were held. The first was held on 28. Sept., just prior to the CEES opening. Here the Board mandate was approved and the board settled. The second meeting took place during the kick-off seminar 1. Dec. In this meeting the Board focused on budgets and the announcement of positions. For 2008 2-3 Board meetings are planned.

In 2007, the CEES-Board has consisted of:

Comments by the Board chair: Reidun Sirevåg

The Board has had two meetings and worked towards obtaining an overview of the CEES budget and the quite complicated finance reporting system that is required. The budget was approved in the meeting on 11. March 2008. With regard to the posts covering travel and running expenses for laboratory work and field work, there is a large degree of freedom since these posts are not specified in detail. The Chair necessarily will have to be involved in the decisions on how to allocate funds.

The Board has also discussed in some detail the formal relationship between CEES and its mother department, Department of Biology and between CEES and the Faculty of Mathematics and Natural Sciences. Some issues regarding allocation of funds for doctoral research fellows have been controversial, but are in the process of being resolved. It will be important to establish clear rules regarding decision making and responsibility in such matters. Furthermore, the Board has discussed the very important issue of how to handle the applications for the advertised positions as doctoral research fellows and post-doctoral research fellows. An important task is to select the best applicants and at the same time ensure collaboration between the various CEES themes.

Chair

- Reidun Sirevåg (microbiologist, University of Oslo, and General secretary of the Norwegian Academy of Science and Letters)

Members

- Sven-Axel Bengtson (ecologist, Lund University, Sweden)
- Rolf A. Ims (ecologist, University of Tromsø)
- Bernt Øksendal (mathematician, Centre of Mathematics for Applications, a CoE of the University of Oslo)
- Trond Schumacher (Chair of Department of Biology, University of Oslo)
- Birger Kruse (Faculty Director of the Faculty of Mathematics and Natural Sciences, University of Oslo)

4. MANAGEMENT AND ADMINISTRATION

4.4. Scientific Advisory Board

The CEES Scientific Advisory Board, SAB, has been called by the Board of the CEES. The main subject for the SAB is to critically investigate and compare our research plan with our actual work and progress and to guide and advice if changes or additions should be implemented in the plan. They should know our work, but at the same time be courageous in challenging our scientific missions and disposals. Hence, the SAB is composed of experts at the forefront of international research activities within the fields covered by the CEES, willing and capable of challenging us in our work.

The members of the SAB meet with the CEES once a year prior to the annual reporting to The Research Council of Norway (RCN). They will play an important role prior to the midway evaluation process incorporated by the RCN.

In 2007 the SAB had one meeting with CEES which took place during the kick-off seminar on the 1. Dec. Here the SAB focused on its mandate and on giving general advice related to our research plan, and on how to get started. For 2008 we have planned one SAB meeting to be held on 2. Sept.

In 2007, the Scientific Advisory Board consisted of:

Chair

- Professor **Rita R. Colwell** (microbiologist, Univ. of Maryland, US)

Members

- Professor **David R. Brillinger** (statistician, Univ. of California, Berkeley, US)
- Professor **Edward J. Feil** (microbiologist, Univ. of Bath, UK)
- Professor **Barbara Mable** (evolutionary biologist, Univ. of Glasgow, UK)
- Professor **Anne Magurran** (behavioural ecologist, Univ. of St. Andrews, UK)
- Professor **Gordon H. Orians** (evolutionary biologist, Univ. of Washington, Seattle, US)

Comments by the Scientific Advisory Board chair: Rita R. Colwell

The launching of CEES marks an important event for the University of Oslo and for Norway. The complex issues of environmental change occurring globally and fundamental aspects of evolution will be addressed by outstanding scientists working in a coordinated framework. It is now recognized that the problems global society faces can only be solved by concerted, interdisciplinary and international effort. CEES represents an excellent centre for collaboration in research, education, and public outreach. Designed to investigate effectively and productively those issues arising from the complexity of natural systems, CEES scientists have already made significant contributions to the scientific literature in stringently peer-reviewed journals and have made many successful communications of these important findings to the general public.

In the years ahead, the challenges will be even more complicated and, therefore, more critical to address. CEES is moving rapidly to complement present research strengths with increased capability in interdisciplinary research and education. At its initial meeting in Oslo in 2007, the SAB provided advice and guidance for addressing areas it believes will benefit from increased investment of resources, notably in closing gaps in the current strategic plan. Clearly, the SAB was very pleased with the excellent progress already made with establishment of CEES and in setting the agenda for research, education, and public communication. SAB believes the future of CEES, unquestionably, will be exciting and highly productive.





4.5. Experimental facilities

4.5.1. DNA and sequencing labs

The CEES lab has an infrastructure consisting of pre-PCR labs, separate PCR facilities, post PCR and DNA sequencing labs. In addition there is a dedicated lab for class 2 security research. The lab is fully equipped for DNA and RNA extraction for all type of animal and plant tissues, including blood, faeces and ancient DNA, and we have recently acquired a Biomek 2000 automated workstation for DNA/RNA extraction. The lab enables efficient generation and use of the entire spectrum of the various types of molecular genetic markers in studies of evolution biology, speciation and hybridization, phylogeography, invasion biology, conservation biology, behavioural ecology etc. The lab has all basic instrumentation for a modern molecular biology laboratory including equipment for gene cloning and work with genomic libraries. In addition the lab has four real-time (Roche) instruments (in collaboration with the Department of Molecular Biosciences), a Nanodrop (spectrophotometer for μ l volumes) and an Agilent Bioanalyzer for chip-based analysis of DNA, RNA and protein. We are in the process of acquiring an additional robotic workstation for post PCR work.

At CEES we have two ABI 3730 capillary electrophoresis sequencers, each currently equipped with 48 capillaries. The

ABI instruments provide DNA sequencing and genotyping. This is a service lab for CEES, The Department of Biology and users at the Faculty of Mathematics and Natural Sciences. For more information see www.bio.uio.no/ABI-lab.



Photo © Eli K Rueness

4.5.2. The FUGE Ultra-high throughput sequencing platform (UTSP)

We have established an infrastructure for state-of-the-art genome and high throughput sequencing which includes a Roche 454 FLX pyrosequencing instrument and the needed laboratory equipment for generating 454 solid phase genome/transcriptome libraries. In addition we have invested in bioinformatics hardware and infrastructure needed to perform the *in silico* analyses of 454 sequence data. The instrument is currently capable of producing 400 000 individual sequences of an average length of at least 250 basepairs (eg. more than totally 100 mill. basepairs) in one run (7.5 hours). The instrument will be upgraded during 2008 to generate 1.2 mill individual sequences of an average length of at least 400 bp. Application of the platform include complete *de novo* genome sequencing of bacterial and small eukaryotic genomes, resequencing (human and other large genomes), in depth sequencing, BAC sequencing, transcriptomics, metagenomics, ancient DNA and more. The upgrade will enable the platform to tackle de novo sequencing of more complex eukaryotic genomes. The UTSP platform is supported by the FUGE program. For more information see www.cees.uio.no/research/facilities/roche454.

4.5.3. The Eco-Flux lab

The CEES has installed new lab facilities consisting of flow-through analyzer for total and dissolved nutrients (N and P) as well as a Shimadzu analyzer for total organic carbon and total organic nitrogen. CEES also has a FACS Calibur Flow Cytometer for estimating cell numbers and DNA-quantification, as well as facilities for running chemostats under various light and temperature regimes.



Photo © Trine Holm

4. MANAGEMENT AND ADMINISTRATION

4.6. Facilities provided to CEES members by external parties

4.6.1. The Alpine Research Center at Finse

The Alpine Research Center Finse (formerly the High Mountain Ecological Research Station) is open to all professionals and students wishing to gain insight into the biological and geological patterns and processes in the alpine zone. It is situated in the north-west corner of Hardangervidda, and lies on the largest alpine plateau of Northern Europe. The center is owned and operated by the Universities of Bergen and Oslo.

4.6.2 The biological research station at Drøbak and the University of Oslo research vessels

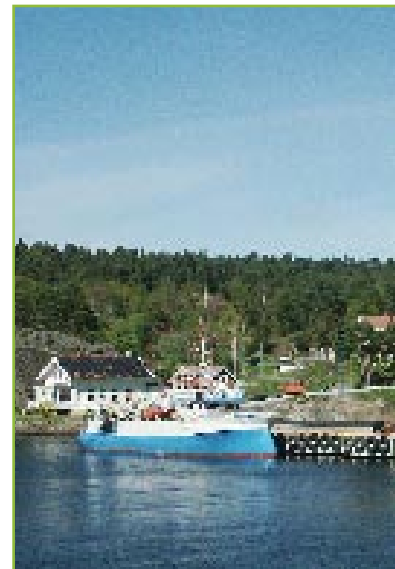
The University of Oslo offers a marine-biological research station at Drøbak. The conference and teaching centre “Tollboden” is from 1860. It has conference facilities, laboratory and beds for 22 people. The research station “Biologen” is from 1894. It has laboratory facilities, salt and fresh water aquaries, and 8 beds for researchers/students.

The research vessels, Trygve Braarud and Bjørn Føyn, are used both for research and teaching. They serve different Departments within the University of Oslo as well as state-owned and private institutions involved in monitoring of the Oslo fjord. The research vessels are based at Sollerud, Lysaker.

4.6.3. The Flødevigen Research Station

Institute of Marine Research, Flødevigen, was founded in 1882, which makes it one of the oldest marine research stations in Europe. Flødevigen is situated by the seaside near Arendal, on the Norwegian Skagerrak coast. Historically, the station was involved in hatching and release of young cod and lobster, in order to strengthen the local populations of these important commercial species. Today, the station is involved in a variety of marine biological research activities, and has facilities for conducting both field-based and experimental work. Facilities for doing field-based research include the G. M. Dannevig research vessel and three smaller boats for sampling in near shore areas. Facilities for doing laboratory-based research include a sea water system, about 30 indoor tanks (500-200 liters), two larger outdoor pools and several laboratories (fish sampling lab, age-determination lab, population genetics lab, marine chemistry lab and phytoplankton lab).

Finse | Photo © Erika Leslie





4.6.4. The Landscape Ecology Field Station of Evenstad

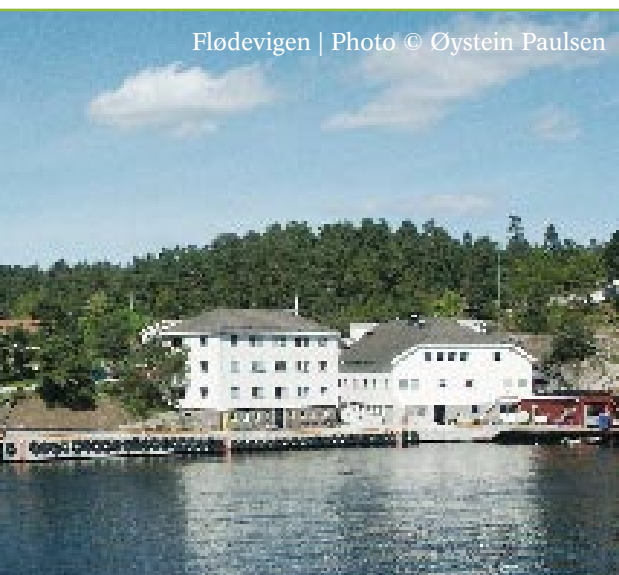
The experimental area at Evenstad research station, Hedmark-Østerdalen, has since 1989 been used to perform experiments on root voles (*Microtus oeconomus*) and field voles (*Microtus agrestis*). The area has been committed to perform experimental studies regarding landscape ecology and studies that focus on different demographical processes of populations inhabiting fragmented habitats. The experimental area contains 7 large enclosures (100m x 50m each), and in addition several smaller enclosures. Steel sheet fences inhibit the movement of voles between enclosures and a 1.5 meter chicken wire fence equipped with an electric wire inhibit the entrance of mammalian predators.

4.6.5. The Phytotron

The Phytotron offers advanced facilities for plant research under controlled climate. It is used for research projects and teaching activities, and can simulate all kinds of climate types from tropical to arctic. In addition the phytotron provides facilities for simulating different air and soil pollutions, as well as different light and nutrient conditions. The facility offers 900 m² of area for plant breeding within greenhouses and controlled climate chambers. It also offers teaching facilities and laboratories. It mainly serves the Department of Biology and the Department of Molecular Biosciences, but also has other universities, research institutions and private industry as its customers.

4.6.6. The Aquarium and Animal Division

The Department for Molecular Biosciences offers facilities for breeding and storage of animals for research and teaching purposes. They offer aquarium facilities for both salt and freshwater fish as well as facilities for handling terrestrial animals, insects, birds and mammals.



Flødevigen | Photo © Øystein Paulsen



Drøbak | Photo © Hans Erik Karlsen

5. FINANCES

5.1. Accounting principles

The economy of the CEES has a complex structure, and it is difficult to assess all aspects of it through the University accounting system. Here, we briefly present the parts and how we have made solutions for managing them.

Funding is derived primarily from RCN (approximately 10 million per year to the CEES), UiO (2 million per year plus a number of positions) and funding through other sources defined as own funding. Our own funding can be divided into EU-funding and other international funding (including Nordic), funding from other RCN projects, other national funding from state owned parties and private funding.

Expenditures are divided into salary costs, indirect costs, equipment, travel and representation, R&D services and other expenses (mainly running expenses to laboratory and fieldwork).

In addition to revenues and expenditures that are accounted for, we also have non accounted revenues and expenditures mainly defined as the effort of personnel working within CEES, but that receive their salaries from other parties. The value of these services is calculated for by using the official UiO budgeting procedures.

In this report we present accounting figures for 2007 and budget for 2008.



Photo © Lars Erik Johannessen

5.2. Revenues and expenditures 2007

	Total funding		Accounted revenues 2007		Non accounted revenues 2008		
RCN-CoE		2 912		2 912			
UiO		8 582		1 000			7 582
RCN – CEES related projects		24 469		24 469			
Other public funding, national		628		628			
International funding		748		748			
Private funding		1 421		1 421			
Total revenues		38 760		31 178			7 582
Accounted expenses 2007							
	Total	RCN-CoE	UiO	RCN - CEES related proj.	Other public fund. national	Intern. funding	Private
Salary expenses	6 413	621	157	4 335		1 135	165
Indirect costs	1 303	87		1 048		125	43
R&D services	4 411		120	4 123		163	5
Equipment	7 103			7 103			
Running costs	2 720		304	2 202		93	121
Travel and representation	54	50	4				
Total	22 004	758	585	18 811	0	1 516	334
Non-accounted expenses 2007							
Salary expenses	4 743		4 743				
Indirect costs	2 839		2 839				
Total	7 582		7 582				
Balance 2007							
Total revenues	38 760	2 912	8 582	24 469	628	748	1 421
Total expenses	29 586	758	8 167	18 811	0	1 516	
Balance 2007	9 174	2 154	415	5 658	628	-766	1 087

All numbers are given in NOK 1000

5. FINANCES

5.3. Budget 2008

		Total funding 2008	Revenues transferred from 2007		Budgeted revenues 2008	Budgeted non accounted revenues 2008	
RCN-CoE		11 661	2 154		9 507		
UiO		36 014	415		5 836	29 764	
RCN – CEES related projects		55 809	5 658		50 151		
Other public funding, national		752	628		125		
International funding		4 688	-766		5 454		
Private funding		2 070	1 087		983		
Total revenues		110 994	9 174		72 056	29 764	
Budget 2008, accounted expenses							
	Total	RCN- CoE	UiO	RCN - CEES related proj.	Other public fund. national	Intern. funding	Private funding
Salary expenses	32 665	5 698	3 533	19 020	355	3 126	933
Indirect costs	6 676	798	558	4 507	142	364	307
R&D services	14 608			14 608			
Equipment	1 051	500		551			
Running costs	15 899	2 800	1 350	10 314	217	716	502
Travel and representation	1 850	1 550	300				
Total expenses	72 749	11 346	5 741	49 000	714	4 206	1 742
Budget 2008, non-accounted expenses							
Salary expenses	18 537		18 537				
Indirect costs	11 227		11 227				
Total non-accounted expenses	29 764		29 764				
Balance 2008							
Total revenues	110 994	11 661	36 014	55 809	752	4 688	2 070
Total expenses	102 513	11 346	35 505	49 000	714	4 206	1 742
Balance 2008	8 481	315	509	6 809	38	482	328

All numbers are given in NOK 1000

6. APPENDICES

6.1. CEES-members

6.1.1. Permanent scientific staff

Name	Nationality	Position	Period	Funding	CEES share(%)
Hansen, Thomas F	Norway	Professor	Oct. 2007 -	UiO, Bio	75
Hessen, Dag O	Norway	Professor	Oct. 2007 -	UiO, Bio	75
Hjort, Nils L	Norway	Professor	Oct. 2007 -	UiO, Math	25
Jakobsen, Kjetill S	Norway	Professor	Oct. 2007 -	UiO, Bio	75
Lampe, Helene M	Norway	Professor	Oct. 2007 -	UiO, Bio	75
Mysterud, Atle	Norway	Professor	Oct. 2007 -	UiO, Bio	75
Nesbø, Camilla L	Norway	Researcher	Oct. 2007 -	Dalhousie Univ	10
Ottersen, Geir	Norway	Senior Scientist	Oct. 2007 -	IMR	25
Schweder, Tore	Norway	Professor	Oct. 2007 -	UiO, Econ	65
Slagsvold, Tore	Norway	Professor	Oct. 2007 -	UiO, Bio	75
Stenseth Nils Christian	Norway	Prof, CEES-Chair	Oct. 2007 -	RCN, CoE	100
Storvik, Geir	Norway	Professor	Oct. 2007 -	UiO, Math	37.5
Sætre, Glenn-Peter	Norway	Professor	Oct. 2007 -	UiO, Bio	75
Vøllestad, L. Asbjørn	Norway	Professor	Oct. 2007 -	UiO, Bio	75
Bryting, Anne K.	Norway	Assoc Professor	Oct. 2007 -	UiO, Bio	75
Rueness, Eli Knispel	Norway	Researcher-Dep Chair	Oct. 2007 - Sept. 2012	RCN, CoE	100
Van Donk, Ellen	Netherlands	Assoc Professor II	Oct. 2007 -	UiO, Bio	20
Viljugrein, Hildegunn	Norway	Researcher	Oct. 2007 -	Vet.inst.	20

6.1.2. Researchers

Name	Nationality	Position	Period	Funding	CEES share(%)
Durant, Joel Marcel	France	Researcher	Oct. 2007 - Apr. 2008	RCN	100
Ergon, Torbjørn	Norway	Researcher	Oct. 2007 - Dec. 2007	Ecoclim	100
Espelund, Mari	Norway	Researcher	Oct. 2007 - Aug. 2008	RCN	100
Gabrielsen, Tove M	Norway	Researcher	Oct. 2007 - Mar. 2008	RCN	100
Hjermann, Dag Øystein	Norway	Researcher	Oct. 2007 - Jan. 2008	VISTA/RCN/UiO	100
Johannessen, Lars Erik	Norway	Researcher	Oct. 2007 - Jun. 2008	RCN	100
Jorde, Per Erik	Norway	Researcher	Oct. 2007 - Dec. 2009	RCN/IMR	100
Knutsen, Halvor	Norway	Researcher	Oct. 2007 - Dec. 2008	RCN/IMR	100
Labra, Antonieta	Chile	Researcher	Oct. 2007 -		100
Liow, Lee Hsiang	Singapore	Researcher	Oct. 2007 - Dec. 2008	UiO	100
Loe, Leif Egil	Norway	Researcher	Oct. 2007 - Dec. 2011	RCN	100
Milner, Jos	UK	Researcher	Oct. 2007 - Dec. 2008	HiHM	20
Olsen, Esben Moland	Norway	Senior scientist	Oct. 2007 - Dec. 2008	IMR	5
Stige, Leif Christian	Norway	Researcher	Oct. 2007 - Mar. 2010	RCN	100
Sæther, Stein Are	Norway	Researcher	Oct. 2007 - Jun. 2008	UiO, Bio	100
Vik, Jon Olav	Norway	Researcher	Oct. 2007 - Feb. 2008	UiO	100
Korslund, Lars	Norway	Assist lecturer	Oct. 2007 - Dec. 2009	RCN	100
Rivrud, Inger Maren	Norway	Assist lecturer	Oct. 2007 - Aug. 2008	UiO	100
Veiberg, Vebjørn	Norway	Assist lecturer	Oct. 2007 - Jan. 2008	UiO, Bio	100
Voie, Kjetil Lysne	Norway	Assist lecturer	Oct. 2007 - May 2008	UiO, Bio	100

6. APPENDICES

6.1.3. Post-docs

Name	Nationality	Position	Period	Funding	CEES share(%)
Auterives, Chrystelle	France	Post-doc res fellow	Oct. 2007 - Sept. 2008	RCN	100
Barson, Nicola Jane	UK	Post-doc res fellow	Oct. 2007 - Oct. 2009	RCN	100
Borge, Thomas	Norway	Post-doc res fellow	Oct. 2007 - May 2009	UiO, Bio	100
de Ayala, Rosa Mary	Spain	Post-doc res fellow	Oct. 2007 - Jun. 2008	RCN	100
Dingsør, Gjert	Norway	Post-doc res fellow	Oct. 2007 - Dec. 2007	RCN	100
Durif-Latour, Caroline M	France	Post-doc res fellow	Nov. 2004 - Jan. 2008	RCN	100
Edeline, Eric	France	Post-doc res fellow	Oct. 2007 - Apr. 2008	RCN	100
Gundersen, Hege	Norway	Post-doc res fellow	Oct. 2007 - Dec. 2007	RCN	50
Guillot, Gilles	France	Post-doc res fellow	Oct. 2007 - May 2010	RCN	100
Hansen, Bo Terning	Norway	Post-doc res fellow	Oct. 2007 - Dec. 2008	RCN	100
Holen, Øistein Haugsten	Norway	Post-doc res fellow	Oct. 2007 - Dec. 2008	RCN	100
LeRouzic, Arnaud P S	France	Post-doc res fellow	Oct. 2007 - Aug. 2010	UiO, Bio	100
Llope, Marcos	Spain	MC ¹ Post-doc	Oct. 2007 - Mar. 2009	EU/MC	100
Marcussen, Thomas	Norway	Post-doc res fellow	Oct. 2007 - Jan. 2009	RCN	100
Nederbragt, Alexander	Netherlands	Post-doc res fellow	Oct. 2007 - Dec. 2008	GENPOINT	100
Nævdal, Eric	Norway	Post-doc res fellow	Oct. 2007 - Nov. 2009	UiO, Econ	5
Patil, Wishwanath	India	Post-doc res fellow	Oct. 2007 - Dec. 2008	UMB	100
Østbye, Kjartan	Norway	Post-doc res fellow	Oct. 2007 - Feb. 2009	RCN	100

6.1.4. PhD-students

Name	Nationality	Position	Period	Funding	CEES share (%)
Atichem, Anagaw M	Ethiopia	Research fellow	Oct. 2007 -	NUFU	100
Ben Ari, Tamara M	France	MC-EST ² Res fellow	Oct. 2007 - Jan. 2010	EU/MC-EST	100
Eikeset, Anne Maria	Norway	Research fellow	Oct. 2007 - Mar. 2009	RCN	100
Eriksen, Ane	Norway	Research fellow	Oct. 2007 - Sept. 2010	UiO, Bio	100
Espeland, Sigurd	Norway	Research fellow	Oct. 2007 - Dec. 2007	RCN	100
Griffin, Donald	USA	MC-EST Res fellow	Oct. 2007 - Dec. 2007	EU/MC-EST	100
Heier, Lise	Norway	Research fellow	Oct. 2007 - Sept. 2010	UiO, Bio	100
Holmen, Johannes	Norway	Research fellow	Oct. 2007 - July 2008		100
Junge, Claudia	Germany	MC-EST Res fellow	Oct. 2007 - Aug. 2010	EU/MC-EST	100
Jørgensen, Marte	Norway	Research fellow	Oct. 2007 - Mar. 2010	UiO, Bio	100
Kausrud, Kyrre	Norway	Research fellow	Oct. 2007 - Aug. 2009	Skogforsk/RCN	100
Knudsen, Endre	Norway	Research fellow	Oct. 2007 - Jan. 2009	UiO, Bio	100
Minge, Marianne Aa	Norway	Research fellow	Oct. 2007 - May 2009	UiO, Bio	100
Moe, Therese F	Norway	Research fellow	Oct. 2007 - Aug. 2010	UiO, Bio	100
Moland, Even	Norway	Research fellow	Oct. 2007 - Apr. 2009	RCN	100
Rouyer, Tristan A	France	MC-EST Res fellow	Oct. 2007 - Sept. 2008	EU/MC-EST	100
Sabarro, Philippe S	France	MC-EST Res fellow	Oct. 2007 - Jan. 2010	EU/MC-EST	100
Sadykov, Alexander	Russia	MC-EST Res fellow	Oct. 2007 - Aug. 2009	EU/MC-EST	100
Sadykova, Dinara	Russia	Research fellow	Oct. 2007 - Aug. 2008	RCN	100
Serbezo, Dimitar	Bulgaria	Research fellow	Oct. 2007 - Aug. 2008	RCN/UiO-Bio	100
Siddiqui, Huma	Norway	Research fellow	Oct. 2007 - Aug. 2008	GENPOINT	100
Skog, Anna	Norway	Research fellow	Oct. 2007 - Dec. 2007	UiO	50
Stüken, Anke C	Germany	MC-EST Res fellow	Oct. 2007 - Mar. 2008	EU/MC-EST	100
Svenningsen, Thomas O	Norway	Research fellow	Oct. 2007 - Jan. 2010	UiO, Bio	100
Trosvik, Pål	Norway	Research fellow	Oct. 2007 - Jun. 2008	Matforsk AS	100
Yashchenko, Varvara	Russia	MC-EST Res fellow	Oct. 2007 - Apr. 2008	EU/MC-EST	100

1 Marie Curie Individual fellowship

2 Marie Curie Early Stage Research Training Site

6.1.5. Administrative and technical support staff

Name	Nationality	Position	Period	Funding	CEES share (%)
Holst, Anne Margrete	Norway	Higher executive officer	Oct. 2007 - Dec. 2008	UiO, CEES	80
Gundersen, Gry	Norway	Senior exec. officer	Oct. 2007 - Sept. 2011	UiO, Bio	100
Grønli, Katinka E.	Norway	Head of Administration	Oct. 2007 - Sept. 2012	RCN, CoE	100
Neerli, Emelita	Norway	Chief research techn.	Oct. 2007 -	UiO, Bio	50
Onsrud, Maren	Norway	Senior exec. officer	Oct. 2007 - Dec. 2007	UiO, Bio	100
Steen, Nanna W.	Norway	Principal engineer	Oct. 2007 -	UiO, Bio	100
Tooming-Klunderud, Ave	Norway	Principal engineer	Oct. 2007 - Dec. 2007	UiO, Bio/RCN	100
Wallem, Tore	Norway	Higher executive officer	Dec. 2007 - May 2008	UiO, CEES	100

6.2. Associated research projects and other services

6.2.1. Other research projects

RCN-projects

Name	Project leader	Funding	Start	End
National resources for genomics, functional genomics and health research in Atlantic salmon and Atlantic cod	Grimholt, Unni	RCN	2007	2010
Spatial economic analysis in wildlife management	Gundersen, Hege	RCN	2005	2007
Long term consequences of interspecific cross-fostering in the wild	Hansen, Bo Terning	RCN	2005	2008
Statistical tools for studying genetic architecture	Hansen, Thomas F.	RCN	2007	2009
Can nuisance growth of the aquatic macrophyte <i>Juncus bulbosus</i> be related to elevated nitrogen deposition as well as hydropower regulations?	Hessen, Dag O; Andersen, Tom	RCN/NIVA	2007	2010
Biogeochemistry in Northern Watersheds, a Reactor in Global Change	Hessen, Dag O.	RCN	2005	2008
Evolution of chloroplast replacements	Jakobsen, Kjetill S.	RCN	2004	2007
Evolution of chloroplasts: addressing the genomic processes behind acquisition of secondary and tertiary organelles	Jakobsen, Kjetill S.	RCN	2005	2008
Tools for Microbial Nucleic Acid Sample Preparation for Diagnostic and Genomic Analyses	Jakobsen, Kjetill S.	Genpoint/RCN	2005	2008
Algal toxins & polyunsaturated fatty acids: a polyketide genomic approach to safe and efficient utilisation of microalgae in bioproduction	Jakobsen, Kjetill S.	RCN	2006	2008
Allopolyploid evolution in plants: patterns and processes within the genus <i>Viola</i>	Jakobsen, Kjetill S.	RCN	2006	2008
Processes in the life history and dynamics of managed ungulate populations	Mysterud, Atle	RCN	2004	2009
Ecological effects of sheep grazing and the economy of sustainable husbandry in alpine habitats	Mysterud, Atle	RCN	2005	2007
Natural and farmed habitat as a basis for production of red deer in Norway	Mysterud, Atle	RCN	2007	2011

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RCN-projects (cont.)

Name	Project leader	Funding	Start	End
Integrated statistical analysis based on likelihood and confidence: applications to the hare-lynx cycles and the status of bowhead whales	Schweder, Tore	RCN	2005	2008
Hybridization in birds as studied by cross-fostering in the wild	Slagsvold, Tore	RCN	2004	2008
Economically and ecologically sustainable fisheries management: optimising fish harvest while conserving seabird diversity	Stenseth, Nils Chr.	RCN	2005	2007
Long-term Effects of Oil accidents on the pelagic ecosystem of the Norwegian and Barents Seas	Stenseth, Nils Chr.	RCN	2006	2008
Möbius 2000/NCS-Price/NFR-Aurora	Stenseth, Nils Chr.	RCN	2000	2008
ErNoclima - Collaborative network - French-Norwegian Climate-Ecology	Stenseth, Nils Chr.	RCN	2004	2007
Patterns and mechanisms for population substructuring in deep-sea fishes. Dynamics and genetics of oceanic-coastal cod population complexes	Stenseth, Nils Chr.	RCN/MRI	2005	2007
Spatiotemporal dynamics of introduced bark beetles: resource competition, invasion risk and management	Stenseth, Nils Chr.	RCN/	2006	2009
MPAs in coastal Skagerrak: a model system for understanding lobster demography and successful introduction of MPAs in temperate waters	Stenseth, Nils Chr.	RCN	2006	2008
Functional genomics of phenotype plasticity of cod: a national consortium - GENOFISK	Stenseth, Nils Chr.	RCN	2007	2009
Linking physics and biology - Structuring of cod populations in the North Sea/Skagerrak water-system	Stenseth, Nils Chr.	RCN	2007	2009
The possible role of zooplankton in modulating ecosystem effects of acute oil spills in the Norwegian and Barents Seas	Stenseth, Nils Chr.	RCN	2007	2010
Ultra High throughput sequencing national platform	Stenseth, Nils Chr.	RCN	2007	2009
Unravelling population connectivity for sustainable fisheries in the Deep Sea (EuroDEEP)	Stenseth, Nils Chr.	RCN	2007	2010
Signal evolution: adaptation and constraint	Sætre, Glenn-Peter	RCN	2006	2008
Magnetoreception and magnetic compass orientation in the long distance migration of the European eel	Vøllestad, L. Asbjørn	RCN	2004	2007
Integrated ecological and genetic approach to infer the spatio-temporal population-structure dynamics in small salmoid populations	Vøllestad, L. Asbjørn	RCN	2004	2007
Fishery- Induced Changes in Vital Components of a Large Pike Population	Vøllestad, L. Asbjørn	RCN	2006	2008
Sticklebacks (<i>Gasterosteus aculeatus</i> L.) on the Norwegian coast: fresh water colonisation, divergence rates and adaptive speciation	Vøllestad, L. Asbjørn	RCN	2006	2008
The early stages of adaptive divergence: the speed of evolution	Vøllestad, L. Asbjørn	RCN	2007	2009



Public sector based projects

Name	Project leader	Funding	Start	End
Sustainable use of husbandry: Ecological effects of sheep grazing in alpine habitats	Mysterud, Atle	Minicipalities and STATSKOG	2000	2009
Tests of measures for controlling population density in minnow <i>Phoxinus phoxinus</i>	Poleo, Antonio	NIVA	2006	2008

Projects funded by Private industry

Name	Project leader	Funding	Start	End
Population dynamics and management of Norwegian Arctic Cod	Stenseth, Nils Chr.	HYDRO	2004	2007
Effects of oil spills in the water column. Economic consequences for the fisheries	Stenseth, Nils Chr.	HYDRO	2007	2007
Risk assessment of fish stocks under oil exploration	Stenseth, Nils Chr.	Det Norske Veritas AS	2007	2007

International projects

Name	Project leader	Funding	Start	End
Management of Indigenous Vegetation for the Rehabilitation of Degraded Rangelands in the Arid Zones of Africa	Stenseth, Nils Chr.	UNOPS ¹	2002	2007
Ecological and Evolutionary Response to Climatic Variation - Marie Curie Early Stage Research Training in Oslo (CEES-MCO)	Stenseth, Nils Chr.	EU-Marie Curie-EST	2006	2010
Plankton Dynamics and Global Change: the North Sea Regime Shift	Stenseth, Nils Chr.	EU-Marie Curie-Intra European Fellowship	2007	2009
Fisheries-induced Evolution	Stenseth, Nils Chr.	EU-IAASA Østerrike	2007	2010

¹ United Nations Office for Project Services

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6.2.2. Education and teaching

Course name	Teaching services provided by:
BIO 1000: Introduction to biology	Vøllestad, L. Asbjørn
BIO 1200: Biodiversity	Brysting, Anne K. Eriksen, Ane Sætre, Glenn-Peter
BIO 2110: Experimental Ecology	Brysting, Anne K. Eriksen, Ane Slagsvold, Tore Østbye, Kjartan
ECON 2130: Statistics 1	Schweder, Tore
BIO 3081: Animal Behaviour 1	Eriksen, Ane Slagsvold, Tore
BIO 4140: Life history and climate	Ergon, Torbjørn Hessen, Dag O. Mysterud, Atle Vøllestad, L. Asbjørn
BIO4200: Molecular evolution	Orr, Russel Sætre, Glenn-Peter Voje, Kjetil Lysne
BIO 4210/9210: Classification and phylogeny	Brysting, Anne K. Jørgensen, Marte
BIO 4220: Natural selection and adaptive evolution	Hansen, Thomas F. Holen, Øistein H. Svennungsen, Thomas O. Sætre, Glenn-Peter
BIO 4310: Limnology I	Hessen, Dag O.

CEES members supervised 30 master students in the last three months of 2007. No master students finished their degree in this period.



6.3. CEES events in 2007

6.3.1. Scientific events

Opening of CEES, Douglas Futuyma. *Some problems in evolutionary ecology, and why they matter*. 5. Oct. 2007

CEES-CoE kick-off meeting. Sundvolden, 1-3. Dec. 2007

Opening of the Ultra high Throughput Sequencing platform, Tom Gilbert. *Tackling long-standing biological questions using the Roche FLX platform*. 30. Nov.

6.3.2. Seminars with invited speakers

Robert Burn and Fiona Underwood. *Bayesian statistics for ecology, conservation and natural resource management*. 4. Oct. 2007

Arie Van Noordwijk. *Source-sink population dynamics, dispersal and inbreeding: Blue tits and great tits on the island Vlieland*. 15. Oct. 2007

Gro Amdam. *The making of a social insect – the regulatory architectures of social design*. 19. Oct. 2007

Leigh Van Valen. *Human history as a selective process*. 25. Oct. 2007

Leigh Van Valen. *The Red Queen's hypothesis and absolute fitness*. 26. Oct. 2007

Leigh Van Valen. *Ovarian excess and the evolution of menopause*. 26. Oct. 2007

Claire Armstrong. *Habitat-fisheries interactions and bioeconomic analysis*. 5. Nov. 2007

Sigurd Einum. *Population consequences of spatial breeding distributions*. 9. Nov. 2007

Joachim Hermisson. *Soft selective sweeps: New patterns for the molecular footprint of positive selection*. 16. Nov. 2007

Johanna Mappes. *Opposing selection pressures on insect coloration*. 23. Nov. 2007

Gordon Orians. *Cumulative effects of industrial activities of Alaska's arctic slope*. 6. Dec. 2007

Paul Grini. *Genetic dissection of parent of origin effects in seed development*. 7. Dec. 2007

Thomas Quinn. *Predation by bears on salmon: ecology, behavior and evolution*. 11. Dec. 2007

Phil Williamson. *Where was cod in the ice age?* 14. Dec. 2007

6.3.3. Public events

Dag O. Hessen. *The ethics of climate change*. The Nobel Science Seminar, Oslo. 11. Dec. 2007

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6.4. Guests of CEES in 2007

6.4.1. Longer research visits (>1 month)

Name	Nationality	Home institution	Period
Atichem, Anagaw Meshesha	Ethiopia	Gondar College of Medical Sciences, Ethiopia	Oct. 2007 - Dec. 2007
Griffin, Donald ¹	USA	Florida State University, USA	Oct. 2007 - Dec. 2007
Le Bohec, Celine	France	Université Louis Pasteur, France	Oct. 2007 - Dec. 2007
Orians, Gordon	USA	University of Washington, USA	Nov. 2007 - Dec. 2007
Stüken, Anke ¹	Germany	Brandenburgische Technische Universität Cottbus, Germany	Oct. 2007 - Dec. 2007
Rouyer, Tristan ¹	France	Institut français de recherche pour l'exploitation de la mer, France	Oct. 2007 - Dec. 2007
Yashchenko, Varvara ¹	Russia	Sankt-Peterburgskij Gosudarstvennyj Universitet, Russia	Oct. 2007 - Dec. 2007

1) These are MC-EST Short term Research Fellows (see PhD-students under CEES members)

6.4.2. Short term guests (>1 week <1 month)

Name	Nationality	Home institution	Period
Bsor, Tamar	Israel	Oceanographic and Limnological Research, Israel	Oct. 2007 - Oct. 2007
Leder, Erica	Finland	University of Turku, Finland	Dec. 2007 - Dec. 2007
Skaug, Hans Julius	Norway	University of Bergen, Norway	Oct. 2007 - Oct. 2007
Weider, Lawrence	USA	University of Oklahoma, USA	Dec. 2007 - Dec. 2007
Winfield, Ian	UK	Centre for Ecology and Hydrology, UK	Dec. 2007 - Dec. 2007

6.5. Product lists

6.5.1. Books and book chapters

Aiken, S. G.; Dallwitz, M. J.; Consaul, L. L.; McJannet, C. L.; Boles, R. L.; Argus, G. W.; Gillett, J. M.; Scott, P. J.; Elven, R.; LeBlanc, M. C.; **Brysting, A. K.**; et al. *Flora of the Canadian Arctic Archipelago: Descriptions, Illustrations, Identification, and Information Retrieval*. Ottawa: National Research Council of Canada 2007. ISBN 978-0-660-19727-2

Hessen, D. O. *Frihet, rasjonalitet og materialisme*. In the book *Frihet*, Universitetsforlaget 2007. ISBN 978-82-15-01202-5. pp. 32-48

6.5.2. Publications in peer reviewed journals

Edeline, E.; Carlson, S.; **Stige, L. C.**; Winfield, I. J.; Fletcher, J. M.; James, J. B.; **Haugen, T.**; **Vøllestad, L. A.**; **Stenseth, N. C.** *Trait changes in a harvested population are driven by a dynamic tug-of-war between natural and harvest selection*. Proceedings of the National Academy of Science of the United States of America. 2007; 104(40): 15799-15804

Jonzén, N.; **Ergon, T.**; Lindén, A.; **Stenseth, N. C.** *Bird Migration and Climate Change – Introduction*. Climate Research. 2007; 35(1-2): 1-3

Jonzén, N.; **Ergon, T.**; Lindén, A.; **Stenseth, N. C.** *Bird migration and climate change: the general picture and beyond*. Climate Research. 2007; 35(1-2): 177-180

Saino, N.; Rubolini, D.; Jonzén, N.; **Ergon, T.**; Montemaggiore, A.; **Stenseth, N. C.**; Spina, F. *Temperature and rainfall anomalies in Africa predict timing of spring migration in trans-Saharan migratory birds*. Climate Research (CR). 2007; 35(1-2): 123-134

Gundersen, H.; Solberg, E. J.; Wabakken, P.; Storaas, T.; Zimmermann, B.; Andreassen, H. P. *Three approaches to estimate wolf *Canis lupus* predation rates on moose *Alces alces* populations*. European Journal of Wildlife Research. 2007 (Online)

Hansen, B. T. *Social induction of malleability in ducklings. A commentary*. European Journal of Developmental Science. 2007; 1(3): 243-246

Hansen, T. F.; Pélabon, C.; Armbruster, W. S. *Comparing variational properties of homologous floral and vegetative characters in *Dalechampia scandens*: Testing the Berg hypothesis*. Evolutionary Biology. 2007; 34: 86-98

Tomaiuolo, M.; **Hansen, T. F.**; Levitan, D. R. *A theoretical investigation of sympatric evolution of temporal reproductive isolation as illustrated by marine broadcast spawners*. Evolution. 2007; 61(11): 2584-2595

Haugen, T.; Winfield, I. J.; **Vøllestad, L. A.**; Fletcher, J. M.; James, J. B.; **Stenseth, N. C.** *Density dependence and density independence in the demography and dispersal of pike over four decades*. Ecological Monographs. 2007; 77: 483-502

Hessen, D. O.; Bakkestuen, V.; Walseng, B. *Energy input and zooplankton species richness*. Ecography. 2007; 30: 749-758

Hessen, D. O.; Jensen, T. C.; Kyle, M.; Elser, J. J. *RNA responses to N- and P-limitation; reciprocal regulation of stoichiometry and growth rate in *Brachionus**. Functional Ecology. 2007; 21: 956-962

Bryhn, A.; **Hessen, D. O.**; Blenckner, T. *Predicting particulate pools of nitrogen, phosphorus and organic carbon in lakes*. Aquatic Sciences. 2007; 69(4): 484-494

Lindholm, M.; **Hessen, D. O.** *Zooplankton succession on seasonal floodplains: surfing on a wave of food*. Hydrobiologia. 2007; 592: 956-104

Lindholm, M.; **Hessen, D. O.** *Competition and niche partitioning in a floodplain ecosystem: a cladoceran community squeezed between fish and invertebrate predation*. African Zoology. 2007; 42(2): 158-164

Lindholm, M.; **Hessen, D. O.**; Mosepele, K.; Wolski, P. *Food webs and energy fluxes on a seasonal floodplain: The influence of flood size*. Wetlands (Wilmington, N.C.). 2007; 27: 775-784

Holen, Ø. H.; Johnstone, R. A. *Parental investment with a superior alien in the brood*. Journal of Evolutionary Biology. 2007; 20: 2165-2172

Jorde, P. E.; Ryman, N. *Unbiased estimator for genetic drift and effective population size*. Genetics. 2007; 177: 927-935

Østbye, T.-K. K.; Wetten, O. F.; **Klunderud, A. T.**; **Jakobsen, K. S.**; Yafe, A.; Etzioni, S.; Moen, T.; Andersen, Ø. *Myostatin (MSTN) gene duplications in Atlantic salmon (*Salmo salar*): Evidence for different selective pressure on teleost MSTN-1 and -2*. Gene. 2007; 403(1-2): 159-169

Knudsen, E.; Lindén, A.; **Ergon, T.**; Jonzén, N.; **Vik, J. O.**; Knape, J.; Røer, J. E.; **Stenseth, N. C.** *Characterizing bird migration phenology using data from standardized monitoring at bird observatories*. Climate Research. 2007; 35(1-2): 59-77

Labra, A.; Sufán-Catalán, J.; Solis, R. S.; Penna, M. *Hissing sounds by the lizard *Pristidactylus volcanensis**. Copeia. 2007; 4: 1019-1023

Lampe, H. M.; Larsen O. N.; Pedersen, S. B.; Dabelsteen, T. *Song degradation in the hole-nesting pied flycatcher *Ficedula hypoleuca*: Implications for polyterritorial behaviour in contrasting habitat-types*. Behaviour. 2007; 144(110): 1161-1178

Le Rouzic, A.; Boutin, T. S.; Capy, P. *Long-term evolution of transposable elements*. Proceedings of the National Academy of Sciences of the United States of America. 2007; 104(49): 19375-19380

Le Rouzic, A.; Siegel, P. B.; Carlborg, O. *Phenotypic evolution from genetic polymorphisms in a radial network architecture*. BioMed Central Biology. 2007; 5(50)

Liow, L. H.; **Stenseth, N. C.** *The rise and fall of species: implications for macroevolutionary and macroecological studies*. Proceedings of the Royal Society of London. Biological Sciences. 2007; 274(1626): 2745-2752

Mysterud, A.; Iversen, C.; Austrheim, G. *Effects of season, density and weather on use of an altitudinal gradient by sheep*. Applied Animal Behaviour Science. 2007; 108: 104-113

Ratikainen, I.; Panzacchi, M.; **Mysterud, A.**; et al. *Use of winter habitat by roe deer at a northern latitude where Eurasian lynx are present*. Journal of Zoology. 2007; 273(2): 192-199.

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Rounge, T. B.; Rohrlack, T.; Klunderud, A. T.; Kristensen, T.; Jakobsen, K. S. *Comparison of cyanopeptolin genes in Planktothrix, Microcystis, and Anabaena strains: Evidence for independent evolution within each genus.* Applied and Environmental Microbiology. 2007; 73(22): 7322-7330

Slagsvold, T.; Sonnerud, G. A. *Prey size and ingestion rate in raptors: importance for sex roles and reversed sexual size dimorphism.* Journal of Avian Biology. 2007; 38: 650-661

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Stige, L. C.; Lajus, D.; Shoshina, E. V.; Lein, T. E. *Macro-alga population shows low but significant heterogeneity in developmental instability with no detectable association with individual fitness.* Biological Journal of the Linnean Society. 2007; 92(2): 277-286

Sæther, S. A.; Sætre, G.-P.; Borge, T.; Wiley, C.; Svedin, N.; Andersson, G.; Veen, T.; Haavie, J.; Servedio, M. R.; Bures, S.; et al. *Sex chromosome-linked species recognition and evolution of reproductive isolation in flycatchers.* Science. 2007; 318(5847): 95-97

Rudi, K.; Zimonja, M.; Trosvik, P.; et al. *Use of multivariate statistics for 16S rRNA gene analysis of microbial communities.* International Journal of Food Microbiology. 2007; 120(1-2): 95-99

Skanseng, B.; Trosvik, P.; Zimonja, M.; et al. *Co-infection dynamics of a major food-borne zoonotic pathogen in chicken.* PLoS Pathogens. 2007; 3(11): 1790-1797

Veiberg, V.; Loe, L. E.; Mysterud, A.; Solberg, E. J.; Langvatn, R.; Stenseth, N. C. *The ecology and evolution of tooth wear in red deer and moose.* Oikos. 2007; 116(11): 1805-1818

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Pecinkova, M.; Vøllestad, L. A.; Koubkova, B.; Huml, J.; Jurajda, P.; Gelnar, M. *The relationship between developmental instability of gudgeon Gobio gobio and abundance or morphology of its ectoparasite Paradiplozoon homoiion (Monogenea).* Journal of Fish Biology. 2007; 71: 1358-1370

6.5.3. Theses defence

Scheen, Anne Cathrine. *Molecular phylogenetic and transcriptomic approaches to the evolution and classification of subfamily Lamiioideae (Lamiaceae).* Dec. 18 2007

6.5.4. Invited talks and external meeting contributions by CEES members

Bachmann, Lutz; Borge, Thomas; Bjørnstad, Gro; Wiig, Øystein. *Genetic variation in Holocene Spitsbergen stock of bowhead whales.* 17th Biennial Conference on the Biology of Marine Mammals, Nov. 29 - Dec. 3 2007

Durant, Joel Marcel. *Match-mismatch, trophic interactions and climate change.* PICES XVI annual meeting, Victoria, BC, Oct. 28 - Nov. 3 2007

Hessen, Dag O. *Beyond apocalypse.* Arne Næss Chair symposium, Oslo Oct. 8 2007

Hessen, Dag O. *Carl von Linné – om gleder i naturen.* Pensjonistuniversitet, Oslo, Oct. 11 2007

Hessen, Dag O. *Global change, CO₂ and stoichiometry in freshwater ecosystems.* Amsterdam Clomaqs symposium, Oct. 30 2007

Hessen, Dag O. *Fate and flux of excess carbon in organisms and ecosystems.* Jyväskylä, Finland, guest lecture, Nov. 9 2007

Hessen, Dag O. *Etikk og genetikk.* Tekna, Oslo, Nov. 13 2007

Hessen, Dag O. *Har Biologisk mangfold samfunnsmessig nytteverdi?* Naturviterforum, Sundvolden, Nov. 14 2007

Hessen, Dag O. *The ethics of climate change.* The Nobel Science Seminar, Oslo, Dec. 11 2007

Lampe, Helene M. *Local recruits in a bird population have average fathers.* København University, Nov. 14 2007

Nævdal, Eric. *Genetic Variability, Economic Behavior and the Formation of Social Norms: The Case of European Alcohol Consumption.* Staff seminar at Institut für Weltwirtschaft, Nov. 8 2007

Nævdal, Eric. *Threshold effects in the economic management of climate change.* ISOS Lecture Series "Future Ocean", Nov. 7 2007

Ottersen, Geir. *A temperature atlas for the Norwegian Sea.* Norwegian GLOBEC meeting, Brakanes Hotel, Ulvik, Nov. 21 2007

Stenseth, Nils Christian. *Om å skrive søknader som får tilslag.* Training course in Project Management at the University of Oslo.

Stenseth, Nils Christian. *Plague and Climate variation and change: a worldwide overview with a bias towards Central Asia.* Washington, National Academy of Science, 2007

Storvik, Geir Olve. *Modelling Pollock egg counts from the western Gulf of Alaska by a zero-inflated Bayesian hierarchical space-time model.* NCSE seminar ved CREEM, Scotland, St. Andrews. 2007

Storvik, Geir Olve. *Posterior and Prior Predictive p-values in Bayesian Hierarchical models.* Statistics Seminars, University of St. Andrews, 2007

Storvik, Geir Olve. *The DNA database search controversy revisited: Bridging the Bayesian - Frequentist gap.* New faces seminar, University of St. Andrews. 2007

Vøllestad, L. Asbjørn. *Eel in Norway.* Fisheries Research Services, Pitlochry, Scotland, Dec. 19 2007

Vøllestad, L. Asbjørn. *Grayling in Lesja: a natural experiment.* Department of Biology, University of Oslo, Nov. 27 2007.

6.5.5. Internal CEES talks

Vik, Jon Olav. *Events along lynx tracks: "Survival analysis" of hare kills vs. snow conditions.* Oct. 12 2007.

Barson, Nicola. *The genetic architecture of male colour differences between a sympatric Lake Malawi cichlid species pair.* Oct. 19 2007.

Sætre, Glenn-Peter. *On the genetics of speciation.* Oct. 26 2007.

Lampe, Helene. *Local recruits in a bird population have average fathers.* Nov. 2 2007.

Liow, Lee Hsiang. *The benefits of being small: a comparative study based on fossil mammals of the Old World.* Nov. 9 2007.

Durant, Joël Marcel. *Competitive exclusion in tits.* Nov. 16 2007.

Håvard Kauserud. *Mushroom fruiting and climate change.* Nov. 23 2007.

Hansen, Bo Tarning. *Genetic species recognition? No, imprinting rules! Learned species recognition lasts for life in tits.* Dec. 7 2007.

Stige, Leif Chr. *Thousand-year-long Chinese time series reveals climatic forcing of decadal locust dynamics.* Dec. 14 2007.

6.5.6. Popular papers

Marcussen, Thomas. *Lifjøl er død - leve engfjøl! en kritisk morfologisk gjennomgang av komplekset i Norge.* Blyttia, Journal of the Norwegian Botanical Society. 2007; 65(3): 195-207

6.5.7. Press coverage

Nordforsk magasin (Oct. 2007). **Nils Christian Stenseth.** *Den blå utfordringen*

Uniforum nett no (Oct. 3 2007). **Leif Christian Stige, Nils Christian Stenseth.** *Kaldt og vått klima auker grashoppbestanden i Kina*

forskning.no (Oct. 3 2007). **Nils Christian Stenseth.** *Biologer som sprer seg*

Telegraph.co.uk (Oct. 4 2007). **Stein Are Sæther.** *Female flycatcher's heart belongs to daddy*

spektrumdirekt.de (Oct. 5 2007). **Stein Are Sæther.** *Traummann Vater*

Villmarksliv.no (Oct. 5 2007). **Hege Gundersen.** *Lydtaktikk på jakt*

Science Perspectives (Oct. 5 2007). **Stein Are Sæther.** *Feathers, Females, and Fathers*

Uppsala Nya Tidning (Oct. 5 2007). **Stein Are Sæther.**

bionieuws.nl (Oct. 6 2007). **Stein Are Sæther.** *Soort bij sort dankzij sekschromosoom*

nzz.ch (Oct. 10 2007). **Stein Are Sæther.** *Der Partner muss dem Vater ähneln*

forskning.no (Oct. 11 2007). **Nils Christian Stenseth.** *Etter regn kommer sol*

Uniforum nett no (Oct. 12 2007). **Stein Are Sæther, Glenn-Peter Sætre, Thomas Borge.** *Fant gen for artsdannelse*

innovations-report.de (Oct. 17. 2007). **Stein Are Sæther.** *Repelling clingy exes helps snipe save sperm*

forskning.no (Oct. 20 2007). **Glenn-Peter Sætre, Stein Are Sæther.** *My heart belongs to daddy*

A-magasinet (Nov. 2 2007). **Glenn-Peter Sætre.** *Mitt funn*

Faculty of 1000 (Nov. 6 2007). **Stein Are Sæther, Glenn-Peter Sætre.** *Their science article recommended as a "must read".*

Havforskningsinstituttet.no (Nov. 14 2007). **Geir Ottersen.** *Hvor var torsken under istiden?*

Klassekampen (Nov. 16 2007). Interview with **Geir Ottersen.** *Torsk blir russisk.*

Miljöforskning (Nov. 22 2007). **Nils Christian Stenseth.** *Mer fågel eller fisk på varmare klot?*

NRK Schrödingers katt (online) (Nov. 25 2007). **Nils Christian Stenseth.** *Klimaendringer kan gi ny pestbølge*

Forskerforum (Nov. 2007). **Bo Tarning Hansen.** *Kort og godt*

Fri tanke (Nov./Dec. 2007). **Dag O. Hessen.** *Frihetens ansvar på en varmere klode*

Apollon (Dec. 6 2007). **Kjetill S. Jakobsen, Nils Christian Stenseth.** *Vidundermaskinen Rex Rodney*

forskning.no (Dec. 11 2007). **Kamran Shalchian-Tabrizi, Kjetill S. Jakobsen.** *Livets tre har mistet en gren*

Apollon (Dec. 12 2007). **Marianne Minge, Kamran Shalchian-Tabrizi.** *Livets tre har mistet en gren*

Østlendingen (Dec. 12 2007). **Hege Gundersen.** *Fire elger tog-drept på én natt*

6.5.8. Radio

NRK Verdt å vite (Nov. 2007). **Stenseth, Nils Chr.** *Svartedauen i Kina*

NRK Østlandssendingen. (Dec. 13. 2007). **Gundersen, Hege; Turkerud, Kalle.** *Interview on the topic of vehicle collisions with moose.*

6.5.9. Magazines and newspaper articles

Nordforsk magasin (Oct. 2007). **Nils Christian Stenseth, Dag Øystein Hjermann, Anne Maria Eikeset.** *Konsekvenser av et varmere hav*

Morgenbladet (Oct. 26 2007). **Dag O. Hessen.** *Alt er ikke mulig*

Aftenposten (Nov. 22 2007). **Dag O. Hessen.** *Hvem eier naturen*

Dagbladet (Dec. 28 2007). **Dag O. Hessen.** *Slik kan DU redde kloten*

CEES

Dept. of Biology, P.O. Box 1066 Blindern
NO-0316 Oslo, Norway

Phone: +47 22 85 44 00
Fax: +47 22 85 40 01

cees-post@bio.uio.no
www.cees.uio.no