

Fra toppen!

En spesiell sommer

En sommer utenom det vanlige er over. Enten vi var i nærheten, i utlandet, eller hjemme, enten vi kjente noen som ble rammet eller ikke, så ble vi alle på en eller annen måte berørt av de uhyrlige hendelsene i Oslo og på Utøya 22. juli. Nå ved semesterstart går våre tanker til alle de ungdommene som fikk sine planer og visjoner for fremtiden brått skutt i stykker, og til deres pårørende og etterlatte.

Samtidig begynner mer hverdagslige tanker og oppgaver å oppta oss mer og mer. Vi står foran et stort studentopptak, der neste uke blir preget av velkomstsereoni og mottaksmøter i de ulike programmene med alle de nye studentene. Våre studenter møter den helt nye versjonen av bachelorprogrammet i biologi, der bl.a. ex. phil. er flyttet til vårsemesteret i det første studieåret. Dette vil helt sikkert by på utfordringer og gi oss nyttige erfaringer.

Også masteropptaket ser ut til å havne på et hyggelig nivå denne gangen. Vi går altså en spennende tid i møte, og jeg regner med at alle, som vanlig, bidrar til at våre nye studenter blir tatt i mot på en god og inkluderende måte. Et godt læringsmiljø styrker læringsutbyttet samtidig som det vil hindre unødig frafall. Vi skal vise at vi ikke bare er landets største, men også landets beste biologimiljø!

Hilsen Anders



Ukens bilde



Grindhval i Byfjorden

Fotograf: **Anders Goksøyr**

Den 17. juli svømte en flokk med grindhval (*Globicephala melas*) inn i Byfjorden ved Bergen. Nærmere 100 dyr koste seg med å studere liv og røre rundt Nordnes og Vågen, men de oppdaget etter hvert at maten i Byfjorden er underlagt [kostholdsråd](#), og kom seg derfor videre til renere farvann.

You are invited to submit photos (electronically!) for "Ukens bilde". Please include a very short description and credit information. Picture can be of researchers / students in action, technology, organisms, field sites ... Please send your pictures to bio.info@bio.uib.no

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Siste nytt fra BIO

Bioforskere medforfattere på Nature artikkel; Rapport fra ForBio sommerskole på Espegrend; Toktsøknader 2012; Søknad om tilgang til felleslabor og ILAB høst 2011

Nilsen og Lanzén har bidratt på Nature-artikkel om torskegenomet

Bioforskere har bidratt med å sekvensere torskegenomet. Resultatet ble denne uken publisert i Nature. Sekvensen viser blant annet at torsken har et uvanlig immunsystem. [Les hele artikkelen](#)

ForBio course on Scandinavian macroalgae (29.7.-8.8.2011)

At the marine biological station Espesgrend (UiB) the first week of August was dedicated to the great diversity of algae that can be found on our coastline. Red, green, brown, thin as a sheet of paper or thick and fleshy, bubbly or densely branched like small bushes, in sizes between a few millimeters and several meters: algae are amazingly colorful and variable in shape, which makes them esthetically engaging study objects.

But this was only a pleasant side effect for the 13 participants (9 students and 4 teachers) of the PhD-level course on taxonomy and systematics of Scandinavian macroalgae led by Kjersti Sjøtun (BIO, UIB) and financed by the Norwegian-Swedish Research School in Biosystematics (ForBio). A small group, but a very intensive learning environment - even for the teachers. "I learned a lot about red algae during my stay at Espesgrend; I was really impressed: there are so many species here that we can't find in Denmark", said Poul Møller Pedersen, retired algologist from University of Copenhagen



Course participants (photo: Christiane Todt)



Rødtunge
(*Halarachnion ligulatum*)
(photo: Kjersti Sjøtun)



Rock pool sampling (photo: Kjersti Sjøtun)



Herbarium work (photo: Christiane Todt)

with special expertise on arctic brown algae. Stein Fredriksen and Jan Rueness (University of Oslo) completed the passionate team of teachers. On the "student" side, researchers from Institute of Marine Research, Rådgivende Biologer, Runde Miljøsentor, SALT Lofoten, and Høgskolen i Finnmark shared lab benches with three Swedish PhD students and a master student from Oslo. One thing we clearly can see from these numbers: this research field sorely needs Norwegian students! During the course at Espesgrend, 110 species of algae have been identified

and catalogued, found in the Bergen fjords just outside our marine station. This kind of species diversity is hard to find anywhere else in Scandinavia and this makes Bergen and UiB a prime place to study marine macroalgae. So, new master students of 2011: go algae!

Christiane Todt, ForBio

BIO-info

Nyheter fra Institutt for biologi

Toktsøknader 2012

Frist for å søke tokt i 2012 er 1 september. Informasjon og innloggingslenke finner du [her](#)

Søknad om plass på forskningsinstallasjoner ved BIO og innenfor driftsavtalen UiB/LAB

Høstsemesteret 2011: Søknadene må være de respektive ansvarlige i hende innen 20. august. (Søknadsfrist vårsemesteret 24. januar). Søknadsskjema med instruksjoner kan lastes ned [herfra](#).

Alle som arbeider med forsøksdyr skal ha godkjent kurs i forsøksdyrlære, dette gjelder også masterstudenter. Planlagte kurs for forskere, teknikere og masterstudenter finner du [her](#).

Søknader til forsøksdyrutvalget om tillatelse til å utføre forsøk med dyr, bør være innsendt senest 3 måneder før forsøkstart.

Frank Midtøy
Ansvarshavende for forsøk med dyr

Undervisningsnytt

Brosjyre fra IT-avdelingen med informasjon til forelesere, Opptakstall H-2011,

Brosjyre med informasjon til forelesere på UiB

IT-avdelingen har utarbeidet en brosjyre med viktig informasjon til alle som skal forelese i undervisningsrom ved UiB. Alle undervisere får et eksemplar i posthyllen sin. Informasjonen finnes også elektronisk [her](#).

Opptakstall høsten 2011– Masterprogram ved BIO

Program		Antall studenter
Biologi	Biodiversitet, evolusjon og økologi	6
Biologi	Mikrobiologi	2
Biologi	Geobiologi	1
Marinbiologi	Akvatisk økologi	4
Marinbiologi	Marin biodiversitet	4
Marinbiologi	Fiskebiologi	1
Marinbiologi	Ikke valgt studieretning	1
Fiskeribiologi og forvaltning		4
Havbruksbiologi		8
Ernæring - akvatiske organismer i oppdrett		5
		36

De nye masterstudentene blir tatt i mot på instituttet torsdag 18. august, kl. 10.

Tallene kan fremdeles endre seg noe fram til neste uke. Omtrent halvparten av våre nye masterstudenter har bakgrunn fra bachelorgrad på BIO, og halvparten har sin bachelorutdanning fra andre institusjoner i inn- og utland.

Opptakstall – Bachelorprogram og profesjonsstudium

Fakultet/studieprogram	Studie- plasser	Ant. tilbud gitt	Ja- svar 2011	Poenggrenser
Datateknologi	50	98	75	Alle Alle
Datavitenskap	20	19	16	Alle Alle
Adjuntutdanning i matematikk og naturfag	10	9	8	Alle Alle
Lektorutdanning i naturvitenskap eller matematikk	20	44	27	Alle Alle

Biologi	85	131	93	Alle	Alle
Fiskehelse	10	18	16	42,0	49,7
Fysikk	45	58	44	Alle	Alle
Geovitenskap, retning geofysikk	20	38	25	Alle	Alle
Geovitenskap, retning geologi	65	90	80	43,4	44,2
Havbruksbiologi	15	22	16	Alle	Alle
Informatikk - matematikk - økonomi	20	16	15	Alle	Alle
Kjemi	40	23	19	Alle	Alle
Matematiske fag	45	46	35	Alle	Alle
Meteorologi og oseanografi	30	58	34	Alle	Alle
Miljø- og ressursfag, naturvit. retning	15	16	10	Alle	Alle
Molekylærbiologi	40	84	63	Alle	Alle
Naturvitenskapelige fag, årsstudium	75	121	94	Alle	Alle
Miljø- og ressursfag, samf.vit. retning	9	25	21	44,2	46,3
Nanoteknologi	20	32	17	52,6	52,7
Petroleums- og prosessteknologi	50	82	56	44,7	48,0
	684	1030	764		

BIOs programmer er markert med gult.

Bachelorprogrammene i biologi og havbruksbiologi vil, iflg ja-svarene, få omtrent samme antall studenter som høsten 2010. Fiskehelse hadde svært god søkning i år, og det er satt poenggrense for opptak. Av de 18 tilbud som ble sendt har hele 16 søkere takket ja. Miljø- og ressursfag har ikke fylt opp plassene på den naturvitenskapelige retningen, men har stor framgang i den samfunnsvitenskapelige studieretningen. En oversikt over tilbud og opptak fra 2009-2011 for MN-fakultetet finnes [her](#).

Siste nytt fra verden rundt oss

EUs nye rammeprogram; Ledig stilling som adm.dir UNIS; Viktig info fra IT-avdelingen; Peter M. Haugan ny viseformann i IOC; Høringssaker; Postdoc IFREM; Plankton Ecologist PML; 4 ledige stillinger som førsteamanuensis ved Senter for klimadynamikk;

Nytt rammeprogram i EU: Horisont 2020



EUs nye rammeprogram har fått navn og vil på norsk trolig bli kalt Horisont 2020.

På engelsk heter programmet "Horizon 2020 - the Framework Programme for Research and Innovation".

Det nye rammeprogrammet trer i kraft fra januar 2014.

Programmet vil få tre særprogrammer som skal omhandle henholdsvis samfunnsutfordringer, nøkkelteknologier og forskningskvalitet. Innovasjon vil bli enda sterkere vektlagt enn i det nåværende sjuende rammeprogrammet (FP7), samtidig som forskningens rolle for å bidra til løsning av de europeiske og globale samfunnsutfordringene vil bli tydeliggjort. Europakommisjonen har i sitt langtidsbudsjett satt av 80 milliarder euro til forskning og innovasjon for 2014-20. [Les mer](#)

Ledig stilling som adm.direktør - Universitetssenteret på Svalbard (UNIS)

Universitetssenteret på Svalbard AS (UNIS) søker direktør med høy faglig og administrativ kompetanse til å lede institusjonens samlede virksomhet. Det søkes etter en person som kan stimulere til fremragende faglige resultater, og som kan bidra til å utvikle en organisasjon som kan skaffe ressurser i internasjonal konkurranse, tilby attraktive studier og rekruttere talentfulle studenter og et høyt kompetent personale. [Les mer](#)

Nedetid og forstyrrelser på telefonisystemet / Downtime and instability on the phone systems

IT-avdelingen ved Universitetet i Bergen skal oppgradere alle systemer for fasttelefoni i august og september 2011, og de har i den forbindelse sendt ut følgende informasjon:

I forkant av helgen 19-21 august vil følgende systemer oppgraderes:

- Telmax, programvaren for administrasjon av telefonsentralen
- Solidus, Programvaren som håndterer inngående telefonsamtaler til BRITA.

I alle fall i 14 dager etter oppgraderingen av Telmax vil det ikke være mulig å flytte/endre fasttelefoner ved UiB. For BRITAs del må det forventes at køhåndtering og samtalehåndtering på inngående henvendelser kan være ustabil mandag 22 august.

I løpet av uken 22-26 august vil Jussformidlingen og Studieadministrativ avdeling skifte plattform for håndtering av inngående telefon til Solidus, den samme som BRITA bruker. Uken etter skifter studieveiledertjenesten på HF. Det må forventes at køhåndtering og samtalehåndtering på telefonekspedieringen her er ustabil, også fordi brukerne vil være under opplæring på systemene.

Helgen 2-4 september skiftes selve telefonsentralen ut. Ingen fasttelefoner ved UiB vil fungere denne helgen. Noe ustabilitet må forventes i den påfølgende uken. Merk at ingen viderekoblinger til mobiltelefon, talepostkasse eller annet heller vil fungere denne helgen slik at de som er avhengig av å være kontaktbar må oppgi sine mobiltelefonnummer.

Helgen 23-25 september endrer vi teknologi for eksternt telefonforbindelse. UiBs telefoniforbindelse med omverden vil være nede deler av den helgen og kan være ustabil i etterkant. Denne helgen vil ikke viderekobling til mobil fungere og UiB vil ikke kunne motta eksterne telefonsamtaler men intern samtale inklusive viderekobling til talepostkasse vil fungere.

Vi håper alle deler av arbeidet med ny telefonsentral skal være ferdig til oktober og ber om tålmodighet og forståelse fra brukerne i oppgraderingsperioden. Fra 2012 vil tjenestespekteret og funksjonalitet for UiBs kommunikasjonsløsninger være vesentlig utvidet og forbedret.

- IT-avdelingen

The UiB IT Dept will be upgrading all landline phone systems in August and September 2011. They have sent out the following information:

Prior to the weekend of 19-21 August these systems will be upgraded:

- Telmax, the phone exchange administration software
- Solidus, the call centre software used by BRITA, the IT user support.

For at least 14 days after the Telmax upgrade moving or changing landline phones at UiB will not be possible. Queue and connection handling when calling BRITA may be unstable on Monday 22 August.

During the week 22-26 August Jussformidlingen and the Division of Student Affairs will change their system for handling incoming calls to Solidus, the same software used by BRITA. The week after the Information centre at the Faculty of Humanities will follow. Queue and connection handling in these departments must be expected to have irregularities, also because the staff there will be learning to use the new systems.

The weekend 2-4 September the main telephone exchange will be replaced. No landlines at UiB will function that weekend and some instability must be expected the following week. Note that no redirects to mobile phones or voicemail will work this weekend so that people who need to be contactable must give out their mobile phone numbers.

The weekend 23-25 September we will change the technology used for external landlines. UiB will not be able to receive or call outside our own system that weekend and again some instability must be expected the following week. While the change happens, call transfer to mobile phones will again not function. Only internal calls will be available.

We hope that all work with the new phone exchange will be done by October and ask for patience and understanding from our users during the transition period. From 2012 the UiB communication solutions will be significantly more functional and have a better service spectre.

Regards,

The IT Department

Prestisjetung FN-verv til UiB-professor

Peter M. Haugan ved Geofysisk Institutt, vil jobbe for bærekraftig forvaltning av verdenshavene som ny viseformann i UNESCO-utvalg. Haugan er oppnevnt til det prestisjetunge vervet som viseformann i UNESCOs Intergovernmental Oceanographic Commission (IOC). [Les mer](#)

Høringssaker kommet til Institutt for biologi

BIO mottar fra tid til annen saker til høring. Vi vil legge ut disse gjennom BIO-INFO. Hvis du ser saker her du ønsker å uttale deg om som vitenskapelig ansatt på BIO, ta kontakt med forskningskoordinator [Anne Fjellbirkeland](#).

Real Time Closures i Nordsjøen og Skagerrak - Fiskeridirektoratet

Fra fiskeridirektoratet: høringssak "Real Time Closures i Nordsjøen og Skagerrak", med forfall 26. august 2011. [Les mer](#)

Forslag til ny forskrift om jakt- og fangsttider samt sanking av egg og dun for perioden 1. april 2012 - 31. mars 2017 - Direktoratet for naturforvaltning

Fra Direktoratet for naturforvaltning: forslag til ny forskrift om jakt- og fangsttider samt sanking av egg og dun for perioden 1.04.12-31.03.17. Jakttidene er et viktig virkemiddel i forvaltningen av viltressursene og endringene foreslås på grunnlag av endrede bestandsforhold og bedre biologisk kunnskap om de enkelte viltarter. Saken sendes til orientering og for eventuell uttalelse direkte til Direktoratet for naturforvaltning med kopi til universitetsdirektøren. Høringsfristen er 15.10.11. [Les mer](#)

Ledige stillinger for biologer

Plankton Ecologist

PML is looking to appoint a highly experienced Plankton Ecologist to maintain and strengthen our capability in this area. We are looking for an experienced, enthusiastic and self motivated plankton ecologist, with the ability and experience to lead PML's existing team in delivering current research projects (including the iconic plankton work at the [Western Channel Observatory](#), and developing new research. [More info](#)

Post-doctoral positions - Ifremer

Ifremer offers post-doctoral positions to young French or foreigners scientists who have completed their Ph D and are motivated by development and innovation in various fields of Marine Sciences : technology and ecotechnology, aquaculture, fisheries, environment, risks analysis, physics of oceans, etc. To apply for this position, please send a letter of intent and a CV to Dr.Catherine Dreanno (Catherine.dreanno@ifremer.fr) or visit [the web site](#) before September 12th 2011.

The University of Bergen (UiB) wishes to appoint up to four associate professors at the newly established Centre for Climate Dynamics.

The Centre for Climate Dynamics will be a strong international competence centre for the understanding of climate change, modelling of climate changes, and reliable information about possible future situations regionally and globally. Partners in the centre are the University of Bergen, Uni Research AS, Institute of Marine Research, and the Nansen Environmental and Remote Sensing Centre and is closely associated with the [Bjerknes Centre for Climate Research](#). [More info](#)

Forskning: utlysninger, nye satsinger og prosjekter

Forskningsrådet; EU; Tibet-Norway Research program; Research Fellowships Canon Foundation; The Dekeyser&Friends Foundation Fellowships for young scientists; Last Mesoqua TA calls; Nye penger til bilateralt samarbeid gjennom EØS ordningen; More funding for near ERC winners; RCN launches two new calls within the INDNOR and NORGLOBAL programmes

Forskningsrådets utlysninger med frist 31 august

Minner om at det er flere sentrale programmer som har frist 31 august, bla Norklima, Havkyst og Havbruk. Se oversikten [her](#)

Merk at forskere som tar ledende roller i prosjekter i Miljø- og klimaprogrammet i EUs 7. ramme-program kan søke **NORKLIMA-programmet** om opp til en million kroner. [Les mer](#)

Vi ønsker at dere sender et **søknadsutkast**, inkludert budsjett, til post@bio.uib.no innen **mandag 22 august**. Alle søknader skal være godkjent av gruppeleder. Gruppelederne sender **mail til Anders Goksøyr** med cc til Anne Fjellbirkeland der de gir en oversikt over søkere fra gruppen og hvilke program det søkes fra.

Information and links to the newly launched EU calls

On July 20th the European Commission has launched most of its 2012 calls for proposals. The **total budget available is around 7 billion €**, the highest amount ever since the implementation of the framework programs! Calls include the thematic areas Health, Nanotechnology, ICT, Environment, Food and Agriculture, Transport, Security, Social sciences, Space and Energy. New calls were also issued in the ERC and Marie Curie programs and in the Capacities program with the popular European infrastructure and Science in society schemes. Links to all work programs are provided in FAs [August issue of FundeFinder](#). This **excellent newsletter** also contains a lot of useful information and practicals around EU applications and is **obligatory literature** for everyone planning to apply.

You can also read more about the new calls on the RCN homepage. [Les mer](#)

Tibet – Norway Research Program 2012 – 2013: Funding for New Research Projects.

As a part of the program period 2011 – 2014, we invite researchers at our cooperating institutions in Norway and the Tibet Autonomous Region to apply to the Network's Research Program for long-term research projects (two years), starting in 2012.

Three prioritised research program areas are singled out:

- Environment and Ecology.
- Culture, Language and Society.
- Medicine, Health and Nutrition.

APPLICATION DEADLINE: 1 OCTOBER 2011. [Read more](#)

Research Fellowships Canon Foundation

The Canon Foundation in Europe grants up to 15 **Research Fellowships** annually to highly qualified European and Japanese researchers.

Candidates should hold a doctorate or at least a Master's degree. They are eligible during the ten-year period following the successful completion of their Ph.D or MA degree. Extensions to the ten-year rule are possible in principle in case of exceptional circumstances which should be explained in the application and supporting documents are required. Non-nationals have to have a permanent citizenship in either Europe or Japan.

The European Fellowship holders pursue a period of research in **Japan** whereas the Japanese Fellows do their research at host institutions in **Europe**. The Fellowships are awarded for periods of a minimum three months and maximum of one year. Applications for Research Fellowships **in all fields of research** are welcome.

The aim of the Foundation is to contribute to international understanding, in particular between Europe and Japan.

The deadline for the year 2012 is **15 September** 2011. [Read more](#)

The Dekeyser&Friends Foundation Fellowships for young scientists

The Dekeyser&Friends Foundation offers unique and fully funded Fellowships for the [Engage in Conservation Project](#) with world renowned primatologist and conservationist Dr. Jane Goodall PhD, DBE, Founder of the Jane Goodall Institute and UN Messenger of Peace in Hamburg, Germany. The Fellows of the Engage in Conservation Project will spend two months from January to March 2012 in Hamburg to learn hands-on how to take action for biodiversity from their mentor Dr. Jane Goodall and other experts. All project costs, including travel costs to the project in Hamburg, will be covered by Dekeyser&Friends. After returning home, the Fellows will continue to be coached and supported by Dekeyser&Friends for ten months while implementing their own biodiversity projects in their home countries. **We invite applications from young people between 18 and 28 worldwide**

LAST CALL for MESOAQUA TA activities from January to July 2012

The MESOAQUA network offers European and non-European researchers Transnational Access to a range of mesocosm facilities in contrasting pelagic environments located throughout Europe - with NEW opportunities for participation in the TA program of MESOAQUA!

This LAST CALL is now open to apply for TA activities from January to July 2012.

The application **DEADLINE is 30 SEPTEMBER 2011, 12:00 CET**.

See further information on the mesocosm facilities and the web-based application process at:

<http://mesoaqua.eu>

Please feel free to circulate the [MESOAQUA TA flyer](#) and contact the MESOAQUA Project Office for questions: post@mesoaqua.eu

290 millioner til norsk-polsk forskning gjennom EØS ordningen (EEA grants)

Miljø og klima, helse, likestilling, polar- og samfunnsvitenskapelig forskning er prioritert når det nå er inngått en ny avtale om forskningssamarbeid med Polen. Norges forskningsråd er programpartner.

[Les mer](#)

Forskningssamarbeid har vært en viktig brikke i den såkalte EØS-finansieringsordningen, der Norge, Island og Liechtenstein bidrar med utjevningstilskudd til 15 medlemsland i EU. I den nye programperioden, som strekker seg fram til 2014, vil forskning få en enda mer sentral plass i avtalene med mottakerlandene. Av de totalt åtte avtalene om bruk av Norges bidrag til økonomisk utjevning innenfor EØS-området, er forskning så langt inkludert i avtalene med Polen, Tsjekkia, Estland og Latvia. Forskning inngår ikke i avtalene med Bulgaria, Slovenia, Slovakia og Litauen

Norges forskningsråd er norsk programpartner for bilateralt forskningssamarbeid. [Mer info om EEA grants – Norway grants](#)

Funding for more near-winners



Norwegian researchers whose applications for European Research Council (ERC) grants do not win funding purely for reasons of budgetary constraints may now seek funding from the Research Council.

[Read more](#)

BIO-info

Nyheter fra Institutt for biologi

The INDNOR and NORGLOBAL programmes at the Research Council launch two joint calls:

Women and Gender Research and GLOBMEK - Globalisation of the Environment, Energy and Climate Research

The deadline is 12 October 2011 and the calls should contribute to strengthen the research cooperation between Norwegian institutions and corresponding institutions in the South.

For more information about the calls, please see the call texts [here](#), as well as the links to the [NORGLOBAL](#) and [INDNOR](#) programme pages.

The Research Council especially invites new research groups in these fields to engage and apply for funding.

Kurs, møter, seminar og arrangement

Mer info om kurs, møter, seminar og arrangement etc finner du [her](#).

Åpning av det akademiske året, Fisk/havbruk og kysten, møte i regi av Forskningsrådet i Bergen; Kveldskurs i akademisk engelsk; Seminar om forskningsetikk; Forskerskole ForBio; International symposium and PhD course *Causation and Complexity in Biology and Beyond

Åpning av det akademiske året

Tirsdag 16. august blir det akademiske året offisielt åpnet med høytidelig seremoni på Muséplass.

Alle ansatte inviteres til å delta på seremonien, som vil innledes med en markering i forbindelse med terrorhandlingene 22. juli 2011.

Vær med på å skape en flott og verdig åpning av det akademiske året!

Se [programmet](#) for velkomstseremonien:

Arrangementet starter kl **13.00**

Vel møtt!

Rektor Sigmund Grønmo og universitetsdirektør Kari Tove Elvbakken

Fisk/havbruk og kysten (det marine miljø): Prosjektfinansiering og prosjektutvikling –

foreløpig invitasjon:

I samarbeid med Innovasjon Norge/Hordaland, Regionale forskningsfond/Vestlandet og Møteplass marin inviterer vi til informasjonsmøte med fokus på sektorene fisk/havbruk og kysten (det marine miljø).

Tid: 25. august 2011, kl 10.00 ? (vi kommer tilbake med endelig klokkeslett)

Sted: Statens hus, 11. etasje

Kveldskurs i akademisk engelsk for vitenskapelig ansatte ved UiB

Målgruppe: Stipendiater, postdoktorer og andre vitenskapelig ansatte med relativt god engelskkompetanse, som er vant til å lese engelsk tekst og har fagterminologien på engelsk inne.

Søknadsfrist: 12 august. [Mer info](#)

Seminar om forskningsetikk

Redelighetsutvalget ved UiB arrangerer seminar om forskningsetikk på Solstrand 7. og 8. september 2011. [Les mer](#)

The research school in biosystematics - ForBio - invites to the course "Introduction to

BIO-info

Nyheter fra Institutt for biologi

Bioinformatics for Biosystematics".

Basic programming skills are becoming essential for handling large datasets and performing complex analyses in biosystematics. This course aims to provide the students with tools to solve practical problems often encountered in biosystematic research. The students will be introduced to the GNU/Linux environment and programming using Bash and Perl.

Information on registration can be found [here](#)

Registration deadline is August 31, but please see important registration information [here](#)

The course is arranged by the Research school in biosystematics - ForBio. There is no course fee, and PhD students/postdocs registered at Swedish or Norwegian universities can become ForBio members and will then have travel accommodation costs covered. For information about ForBio and membership etc can be found [here](#)

International symposium and PhD course *Causation and Complexity in Biology and Beyond

Registration is now open for the international symposium *Causation and Complexity in Biology and Beyond *that will be held at UMB, Ås 18-20 October 2011. Invited speakers are John Dupré and Stephen Mumford. For program and abstracts, read [here](#)

The symposium is also part of a ***5 day PhD course***. The first day Frode Kjosavik, Terje Kvilhaug and Rani Lill Anjum will introduce central topics of the symposium, such as causation, dispositions, philosophy of biology, reductionism, emergence and holism. The next three days will coincide with the symposium. The final day will be lectures and discussion sessions, led and introduced by John Dupré and Stephen Mumford. More information about the PhD course is found [here](#)

People and Nature in Mountains conference!

Trondheim: 21st to 23rd September 2011. Abstract submission for posters remains open until 1st September. [Les mer](#)

Arctic Frontiers 2012 - Energies of the High North – call for papers

Arctic Frontiers (AFT) holds its 6th annual conference in Tromsø from 22-27 January 2012, Norway, with the title "Energies of the High North". Arctic Frontiers 2012 will discuss the global energy outlook, and assess the potential of traditional and renewable energy resources in the North. [Read more](#)

Vestlandets Fellesstand - Aqua Nor 2011 16-19 august

Invitasjon til offisiell åpning av Vestlandets Fellesstand D-329, tirsdag 16. august kl 1300, [Les mer](#). Aqua Nor arrangeres annethvert år i Trondheim. De siste årene har messen samlet 15-20.000 besøkende fra mer enn 50 nasjoner. [Les mer](#)

SPE Arctic & Extreme Environments Conference & Exhibition

[Registration has now opened](#) for the **SPE Arctic and Extreme Environments Conference & Exhibition**. The event will take place at the All-Russia Exhibition Center in Moscow, Russia on **18-20 October 2011** and is themed "**Extreme Challenges for Exploration and Production.**"

The 2011 SPE Arctic & Extreme Environments Conference & Exhibition will provide visitors with an exclusive opportunity to discuss, debate and discover the future of the Arctic region.

The [conference agenda](#) will showcase dynamic speakers from an array of global companies who will discuss the critical importance of the Arctic and surrounding regions and provide short and long term visions for the future.

Nye artikler

***A full listing of BIO's ISI publications can be found on BIO's internal web pages. Click here for an [alphabetic listing for 2010](#). Click here for a [listing sorted by date](#) in ISI (most recent at the top).

Lanzén; Nilsen; Dahle; Jensen; Øvreås; Norland; Bergh; Ebbesson; Nilsen; Helvik; Stefansson; Ekman; Blaaid; Gomez-Requeni, de Vareilles; Jordal; Rønnestad; Moberg; Braithwaite; Salvanes; Willis; Vollset; Folkvord; Lekang; Todt; Geffen; Høye; Haugland; Birkeland; Paus; Berge; Vollset; Jørgensen; Bengtsson; Urlich; Imsland; Gunnarsson; Berland; Bristow; Zimmermann; Heino

Bastiaan Star, Alexander J. Nederbragt, Sissel Jentoft, Unni Grimholt, Martin Malmstrøm, Tone F. Gregers, Trine B. Rounge, Jonas Paulsen, Monica H. Solbakken, Animesh Sharma, Ola F. Wetten, **Anders Lanzén**, Roger Winer, James Knight, Jan-Hinnerk Vogel, Bronwen Aken, Øivind Andersen, Karin Lagesen, Ave Tooming-Klunderud, Rolf B. Edvardsen, Kirubakaran G. Tina, Mari Espelund, Chirag Nepal, Christopher Previti, Bård Ove Karlsen, Truls Moum, Morten Skage, Paul R. Berg, Tor Gjøn, Heiner Kuhl, Jim Thorsen, Ketil Malde, Richard Reinhardt, Lei Du, Steinar D. Johansen, Steve Searle, Sigbjørn Lien, **Frank Nilsen**, Inge Jonassen, Stig W. Omholt, Nils Chr. Stenseth & Kjetill S. Jakobsen. The genome sequence of Atlantic cod reveals a unique immune system. Published online 10 August 2011. doi:10.1038/nature10342

Abstract: Atlantic cod (*Gadus morhua*) is a large, cold-adapted teleost that sustains long-standing commercial fisheries and incipient aquaculture. Here we present the genome sequence of Atlantic cod, showing evidence for complex thermal adaptations in its haemoglobin gene cluster and an unusual immune architecture compared to other sequenced vertebrates. The genome assembly was obtained exclusively by 454 sequencing of shotgun and paired-end libraries, and automated annotation identified 22,154 genes. The major histocompatibility complex (MHC) II is a conserved feature of the adaptive immune system of jawed vertebrates, but we show that Atlantic cod has lost the genes for MHC II, CD4 and invariant chain (Ii) that are essential for the function of this pathway. Nevertheless, Atlantic cod is not exceptionally susceptible to disease under natural conditions. We find a highly expanded number of MHC I genes and a unique composition of its Toll-like receptor (TLR) families. This indicates how the Atlantic cod immune system has evolved compensatory mechanisms in both adaptive and innate immunity in the absence of MHC II. These observations affect fundamental assumptions about the evolution of the adaptive immune system and its components in vertebrates.

Dahle, H. Hannisdal, B. Steinsbu, B. O. Ommedal, H. Einen, J. **Jensen, S.** Larsen, **O. Ovreas, L. Norland, S.** *Extremophiles*, 2011. **15**(4): p. 509-516.

Abstract: Quantitative characterization of the mode and rate of phenotypic evolution is rarely applied to prokaryotes. Here, we present an analysis of temperature optimum (T (opt)) evolution in the thermophilic family Thermotogaceae, which has a large number of cultured representatives. We use log-rate-interval analysis to show that T (opt) evolution in Thermotogaceae is consistent with a Brownian motion (BM) evolutionary model. The properties of the BM model are used to establish confidence intervals on the unknown phenotypic trait value of an uncultured organism, given its distance to a close relative with known trait value. Cross-validation by bootstrapping indicates that the predictions are robust.

Dhanasiri, A.K.S., Kiron, V. Fernandes, J. M. O. **Bergh, O.** Powell, M. D. *Novel application of nitrifying bacterial consortia to ease ammonia toxicity in ornamental fish transport units: trials with zebrafish.* *Journal of Applied Microbiology*, 2011. **111**(2): p. 278-292.

Abstract: Aims: To evaluate whether two commercial nitrifying bacterial consortia can function as biocontrol agents in ornamental fish transporting systems. Methods and Results: The consortia were applied in a simulated set-up using zebrafish as the model organism in three trials. The efficacy of the bacterial consortia in controlling the ammonia level was validated by measuring water quality parameters such as total ammonia, nitrate and pH of the transport water. The bacterial community structure in the transport unit was studied using denaturing gradient gel electrophoresis. The consortia tested improved the nitrifying activity that in turn facilitated the reduction of ammonia that had

accumulated during the transport. Bacterial profiles revealed the presence of both ammonia-oxidizing and nitrite-oxidizing bacteria in the transport bags. Conclusions: The application of the consortia during the transportation of zebrafish could profoundly improve the water quality by curbing ammonia accumulation. Significance and Impact of the Study: The potential of applying nitrifying bacteria as a bioremediation practice during the transport of ornamental fish has been demonstrated and this innovative approach contributes to the amelioration of current fish welfare in ornamental fish trade.

Ebbesson LOE, Nilsen TO, Helvik JV, Tronci V, Stefansson SO (2011) Corticotropin-Releasing Factor Neurogenesis during Midlife Development in Salmon: Genetic, Environmental and Thyroid Hormone Regulation. *Journal of Neuroendocrinology* 23:733-741

Abstract: Salmon parr-smolt transformation (smoltification) is a mid-life transitional stage between life in freshwater and seawater that entails a wide range of neural, endocrine and physiological modifications. In salmon, the neuroendocrine corticotropin-releasing factor (CRF) system regulates pituitary adrenocorticotrophic hormone and thyrotrophin release. Four experimental groups of Atlantic salmon, *Salmo salar*, were used to investigate CRF neurogenesis and its regulation during smoltification. We compared: (i) developmental stages (parr and early-smolt) in anadromous controls; (ii) a developmentally arrested model: anadromous reared under continuous light (LL) with anadromous controls; (iii) a natural hypoendocrine/incomplete smolt development salmon model (landlocked) with anadromous controls; and (iv) landlocked treated with thyroxine to anadromous control smolt levels. CRF neurogenesis between groups was studied with bromodeoxyuridine (BrdU) incorporation followed by double-labelling CRF and BrdU immunohistochemistry. The rate of CRF neurogenesis in the preoptic area (POA) increased from parr to early-smolts in anadromous salmon. By contrast, neurogenesis was inhibited in the LL group and reduced in the landlocked salmon. The administration of thyroxine in landlocked salmon to match anadromous levels increased the rate of CRF neurogenesis to anadromous levels. In conclusion, newly-formed CRF cells in the POA during smoltification are associated with increased retinal innervation to the POA and endocrine responsiveness to increased photoperiod. Both genetic and environmental factors influence the degree of salmon brain development. Thyroid hormones increase CRF neurogenesis during this critical period of development in salmon. We hypothesise that a positive-feedback of thyroid hormones on CRF neurogenesis may be an important event in reaching the developmental climax during critical periods.

Ekman S, Blaaid R (2011) The Devil in the Details: Interactions between the Branch-Length Prior and Likelihood Model Affect Node Support and Branch Lengths in the Phylogeny of the Psoraceae. *Systematic Biology* 60:541-561

Abstract: In popular use of Bayesian phylogenetics, a default branch-length prior is almost universally applied without knowing how a different prior would have affected the outcome. We performed Bayesian and maximum likelihood (ML) inference of phylogeny based on empirical nucleotide sequence data from a family of lichenized ascomycetes, the Psoraceae, the morphological delimitation of which has been controversial. We specifically assessed the influence of the combination of Bayesian branch-length prior and likelihood model on the properties of the Markov chain Monte Carlo tree sample, including node support, branch lengths, and taxon stability. Data included two regions of the mitochondrial ribosomal RNA gene, the internal transcribed spacer region of the nuclear ribosomal RNA gene, and the protein-coding largest subunit of RNA polymerase II. Data partitioning was performed using Bayes' factors, whereas the best-fitting model of each partition was selected using the Bayesian information criterion (BIC). Given the data and model, short Bayesian branch-length priors generate higher numbers of strongly supported nodes as well as short and topologically similar trees sampled from parts of tree space that are largely unexplored by the ML bootstrap. Long branch-length priors generate fewer strongly supported nodes and longer and more dissimilar trees that are sampled mostly from inside the range of tree space sampled by the ML bootstrap. Priors near the ML distribution of branch lengths generate the best marginal likelihood and the highest frequency of "rogue" (unstable) taxa. The branch-length prior was shown to interact with the likelihood model. Trees inferred under complex partitioned models are more affected by the stretching effect of the branch-length prior. Fewer nodes are strongly supported under a complex model given the same branch-length prior. Irrespective of model, internal branches make up a larger proportion of total tree length under the shortest branch-length priors compared with longer priors. Relative effects on branch lengths caused

by the branch-length prior can be problematic to downstream phylogenetic comparative methods making use of the branch lengths. Furthermore, given the same branch-length prior, trees are on average more dissimilar under a simple unpartitioned model compared with a more complex partitioned models. The distribution of ML branch lengths was shown to better fit a gamma or Pareto distribution than an exponential one. Model adequacy tests indicate that the best-fitting model selected by the BIC is insufficient for describing data patterns in 5 of 8 partitions. More general substitution models are required to explain the data in three of these partitions, one of which also requires nonstationarity. The two mitochondrial ribosomal RNA gene partitions need heterotachous models. We found no significant correlations between, on the one hand, the amount of ambiguous data or the smallest branch-length distance to another taxon and, on the other hand, the topological stability of individual taxa. Integrating over several exponentially distributed means under the best-fitting model, node support for the family Psoraceae, including *Psora*, *Protoblastenia*, and the *Micarea sylvicola* group, is approximately 0.96. Support for the genus *Psora* is distinctly lower, but we found no evidence to contradict the current classification.

Gomez-Requeni P, de Vareilles M, Kousoulaki K, Jordal AEO, Conceicao LEC, Ronnestad I (2011) Whole body proteome response to a dietary lysine imbalance in zebrafish *Danio rerio*. *Comparative Biochemistry and Physiology D-Genomics & Proteomics* 6:178-186

Abstract: Lysine (Lys) is an indispensable amino acid (AA) and is generally the first limiting AA in most vegetable proteins used in fish feeds. Lys availability may thus limit protein synthesis and accretion, and growth of fish. Metabolic effects of dietary Lys imbalance were examined by 2D-proteomics using zebrafish as model. The Control diet (Lys: 2.47g kg⁻¹) was based on zebrafish carcass AA profiles previously obtained. Two other experimental diets were deficient in Lys [Lys(-); 1.34 g kg⁻¹] and Lys added in excess [Lys(+); 4.63 g kg⁻¹]. Fish growth was monitored from 33 to 49 days post-fertilization and the whole body proteome screened by means of two-dimension gel electrophoresis and mass spectrometry. Growth rate was negatively affected in group Lys(-). Comparative proteomic analysis showed 45 spots differentially expressed among groups. Twenty-nine of these proteins were identified revealing proteins involved in muscle growth, energy and lipid metabolism, eye lens differentiation, chaperone activity and apoptosis. Lys deficiency is accompanied by a down-regulation of muscle proteins and up-regulation of proteins affected by fasting, energy deficit, growth arrest and apoptosis. Excess Lys was accompanied by an up-regulation of proteins related to glycolysis, steroidogenesis and sexual maturation.

Moberg O, Braithwaite VA, Jensen KH, Salvanes AGV (2011) Effects of habitat enrichment and food availability on the foraging behaviour of juvenile Atlantic Cod (*Gadus morhua* L). *Environmental Biology of Fishes* 91:449-457

Abstract: The environment can play an important role in shaping how an animal behaves, and how well the animal performs in a particular environment can be influenced by early experiences. The tradition of releasing captive-reared juveniles into the wild in an effort to strengthen wild fish populations has often had little success owing to high post-release mortality. Fish reared under standard hatchery conditions are provided with fewer stimuli and they receive excess quantities of pellet food that are easy to handle and consume. Captive reared fish therefore appear to be understimulated and overfed. Several studies have demonstrated that simple structural enrichment in the rearing facilities promotes flexible behaviour compared to fish reared in plain, standard hatchery tanks. Less attention has been given to the effects of the diet. Here we use a cross-factored design to test the relative role of food ration and spatial enrichment on foraging behaviour. Our results show that fish from enriched environments, regardless of previous food-ration size, were more reluctant to start feeding on the first day in a novel arena. On day two and three, however, fish with prior experience of a low food ration showed greater foraging activity and efficiency than fish fed on full rations. On the second and third day, prior experience with enrichment was less important. We discuss how early feeding experience in combination with structural enrichment may contribute in producing fish that are better suited for release into the wild.

Catalan IA, **Vollset KW**, Morales-Nin B, **Folkvord A** (2011) The effect of temperature gradients and stomach fullness on the vertical distribution of larval herring in experimental columns. *Journal of Experimental Marine Biology and Ecology* 404:26-32

Abstract: Larval vertical distribution can be a result of various interacting extrinsic and intrinsic factors. Here, we explore potential interactions between thermal stratification and stomach fullness in the behavioural response of larval Atlantic herring (*Clupea harengus*). We use a factorial design based on an experimental columns system to observe larval herring at four different ages (17, 31, 38 and 45 days post hatch [dph]), in isothermal and stratified water and with two prior feeding conditions (fed and unfed). Light was applied above or below the columns to attract the larvae. While the light direction was alternated, the larvae were observed in the columns. Older larvae were more likely to be observed in the lower part of the column, and all larvae were more likely to be observed in the lower part of the column when there was no thermocline and light was directed from above. However, when light was directed from below, there was no such effect. Prior feeding conditions had no effect on the distribution. We discuss our results in light of field observations of vertical migration.

Jeffers ES, Bonsall MB, Brooks SJ, Willis KJ (2011) Abrupt environmental changes drive shifts in tree-grass interaction outcomes. *Journal of Ecology* 99:1063-1070

Abstract: 1. Plant-plant interactions are known to vary with changing environmental conditions; however, we have little empirical knowledge of the impact of abrupt environmental changes on millennial scale plant-plant interaction outcomes for long-lived plant species. Here, we used palaeoecological data (13-7.6 k years BP) and a novel statistical modelling approach to determine the impact of multiple environmental drivers on predicted tree-grass population interaction outcomes from our study site in eastern England. 2. Changes from high to low herbivore density shortly preceded changes to low fire levels and a shift to warmer summers. These transitions occurred during a period of increasing nitrogen (N) availability. Shortly thereafter, there was a shift in landscape dominance from grasses to oaks and then a change to decreasing N availability. 3. Model predictions of tree-grass interaction outcomes varied over time with respect to all environmental changes. During the time of high disturbances and cool summers, grasses were predicted to out-compete oaks. After climate warming and the loss of regular disturbances, the predicted outcome was stable coexistence. However, changes in the N cycle corresponded with different predicted outcomes: unstable competition under increasing N availability and facilitation of oaks by grasses when N availability was declining. 4. Akaike Information Criterion weights indicate that climate warming and fewer fires were consistent with the best-fitting model of oak-grass interactions for the entire time series (i.e. competitive exclusion to stable coexistence). However, reconciling the conflicting model predictions with the observed population dynamics suggests that a temporary period of unstable competition preceded the predicted shift to stable coexistence. This dynamic behaviour is consistent with known patterns of shifts between alternative stable states. 5. Synthesis. We show that abrupt changes in environmental conditions over time lead to similarly abrupt changes in tree-grass interaction outcomes, which were shown to vary in contrasting directions with respect to resource versus non-resource variables. The approach described here allows plant ecologists to test hypotheses of plant-plant interactions over successional time scales for long-lived species and thus can lead to new knowledge about the structural role of these interactions in community dynamics.

Kommedal O, Lekang K, Langeland N, Wiker HG (2011) Characterization of polybacterial clinical samples using a set of group-specific broad-range primers targeting the 16S rRNA gene followed by DNA sequencing and RipSeq analysis. *Journal of Medical Microbiology* 60:927-936

Abstract: The standard use of a single universal broad-range PCR in direct 16S rDNA sequencing from polybacterial samples leaves the minor constituents at risk of remaining undetected because all bacterial DNA will be competing for the same reagents. In this article we introduce a set of three broad-range group-specific 16S rDNA PCRs that together cover the clinically relevant bacteria and apply them in the investigation of 25 polybacterial clinical samples. Mixed DNA chromatograms from samples containing more than one species per primer group were analysed using RipSeq Mixed (iSentio, Norway), a web-based application for the interpretation of chromatograms containing up to three different species. The group-specific PCRs reduced complexity in the resulting DNA chromatograms and made the assay more sensitive in situations with unequal species concentrations. Together this allowed for identification of a significantly higher number of bacterial species than did standard direct sequencing with a single universal primer pair and RipSeq analysis (95 vs 51). The method could improve microbiological diagnostics for important groups of patients and can be

established in any laboratory with experience in direct 16S rDNA sequencing.

Krylova EM, Gebruk AV, Portnova DA, **Todt C**, Hafliðason H (2011) New species of the genus *Isorropodon* (Bivalvia: Vesicomidae: Pliocardiinae) from cold methane seeps at Nyegga (Norwegian Sea, Voring Plateau, Storrega Slide). *Journal of the Marine Biological Association of the United Kingdom* 91:1135-1144

Abstract: A new species of vesicomid bivalve (*Isorropodon nyeggaensis* sp. nov.) is described based on shell morphology, from the Nyegga cold methane seep area on the Norwegian continental margin. This is the first description of vesicomids from the Norwegian Sea and the northernmost record of recent representatives of the family Vesicomidae. A dispersion of the genus into the Norwegian Sea basin from the north-eastern Atlantic is suggested. A brief description of other macrofauna from methane seep sites at Nyegga is also given.

Geffen AJ, Hoie, H. Folkvord, A. Hufthammer, A. K. Andersson, C. Ninnemann, U. Pedersen, R. B. Nedreaas, K (2011) High-latitude climate variability and its effect on fisheries resources as revealed by fossil cod otoliths. *Ices Journal of Marine Science* 68:1081-1089

Abstract: Cod (*Gadus morhua*) otoliths from archaeological sites in northern Norway were analysed to reconstruct the temperature regime and determine the age structure, growth, and population identity of the fish harvested. Otoliths were selected from late- and post-medieval sites (700-300 years ago) to evaluate historical changes in the geographic region that matches the present-day stocks of Northeast Arctic cod (NEAC) and Norwegian coastal cod (NCC). Seasonal temperature cycles were reconstructed from stable isotope ($\delta(18)O$) measurements along transects representing fish ages 1.5-3 years old. Reconstructions of the size, age, and growth characteristics of individual fish were based on otolith growth increments. The geographical source and stock identity of the individuals were estimated based on otolith elemental composition and otolith growth features. Both NCC and NEAC fish were represented at Masoy and Vanna. The results indicate that fishing at Vanna exploited NEAC during their spawning migration, compared with fishing at Masoy, which was restricted to more coastal fish. Fish growth patterns appeared to be affected by changes in the temperature regimes as estimated from otolith $\delta(18)O$ and back-calculated fish length-at-age, with evident differences between pre- and post-1600 periods.

Ogino H, Ishino, S. Mayanagi, K. **Haugland, G. T. Birkeland, N. K.** Yamagishi, A. Ishino, Y. (2011) The GINS complex from the thermophilic archaeon, *Thermoplasma acidophilum* may function as a homotetramer in DNA replication. *Extremophiles* 15:529-539

Abstract: The eukaryotic GINS heterotetramer, consisting of Sld5, Psf1, Psf2, and Psf3, participates in "CMG complex" formation with mini-chromosome maintenance (MCM) and Cdc45 as a key component of a replicative helicase. There are only two homologs of the GINS proteins in Archaea, and these proteins, Gins51 and Gins23, form a heterotetrameric GINS with a 2:2 molar ratio. The *Pyrococcus furiosus* GINS stimulates the ATPase and helicase activities of its cognate MCM, whereas the *Sulfolobus solfataricus* GINS does not affect those activities of its cognate MCM, although the proteins bind each other. Intriguingly, *Thermoplasma acidophilum*, as well as many euryarchaea, have only one gene encoding the sequence homologous to that of archaeal Gins protein (Gins51) on the genome. In this study, we investigated the biochemical properties of the gene product (TaGins51). A gel filtration and electron microscopy revealed that TaGins51 forms a homotetramer. A physical interaction between TaGins51 and TaMcm was detected by a surface plasmon resonance analysis. Unexpectedly, TaGins51 inhibited the ATPase activity, but did not affect the helicase activity of its cognate MCM. These results suggest that another factor is required to form a stable helicase complex with MCM and GINS at the replication fork in *T. acidophilum* cells.

Paus A, Velle G, Berge J (2011) The Lateglacial and early Holocene vegetation and environment in the Dovre mountains, central Norway, as signalled in two Lateglacial nunatak lakes. *Quaternary Science Reviews* 30:1780-1796

Abstract: By using heavy coring equipment in two high-altitudinal lakes (1253 and 1316 m a.s.l.) at Dovre, Central Norway, 1-1.5 m of unsorted coarsely minerogenic sediments were retrieved below the Holocene organic sediments. The minerogenic sequence contained well-preserved pollen and chironomid remains, revealing new and detailed palaeoenvironmental knowledge of the mountains in Central Norway during the last 5-6000 years of the Lateglacial (LG) period. However, the LG chronology is based on biostratigraphical correlations and not on (^{14}C) -dates, due to low organic content in the minerogenic sediments. The emerging LG nunataks, probably indicating a thin and multi-domed Scandinavian ice-sheet, was rapidly inhabited by immigrating species which could explain the present centric distributions of certain arctic-alpine plants. The LG vegetation development included a pre-interstadial dominated by mineral-soil pioneers, an interstadial dominated by shrubs and dwarf-shrubs, and the Younger Dryas cold period with recurring dominance of pioneers. Pollen and stomata of *Pinus* and *Picea* indicate their local LG presence at Dovre. LG climate oscillations are indicated by pollen stratigraphy and for the later part of LG also by chironomids. These oscillations could correspond to Heinrich event 1, GI-1d, GI-1b, and the Younger Dryas cold events. The LG interstadial reached July mean temperatures of more than 7-8 degrees C, similar to the present. Chironomids colonized the lake already during the onset of the interstadial, albeit at very low richness and abundances. Starting from YD. there are sufficient chironomid head capsules to perform a temperature reconstruction. The Holocene warming of about 2 degrees C initiated a vegetation closure from snow beds and dwarf-shrub tundra to shrubs and forests. Birch-forests established about 10 ka cal BP, slightly earlier than pine forests. Alms expanded ca 9.2 ka cal BP and a thinning of the local forests occurred from ca 7 ka cal BP. Two short-lasting climate deteriorations found in the pollen record and the chironomid record may represent the Preboreal Oscillation and the 8.2 event. The Holocene Thermal Maximum is indicated around ca 7.8-7.3 ka cal BP showing a chironomid-inferred July mean of at least 11 degrees C. This is ca 3 degrees C warmer than today.

Seddon AWR, Froyd CA, Leng MJ, Milne GA, **Willis KJ** (2011) Ecosystem Resilience and Threshold Response in the Galapagos Coastal Zone. *Plos One* 6

Abstract: Background: The Intergovernmental Panel on Climate Change (IPCC) provides a conservative estimate on rates of sea-level rise of 3.8 mm yr⁻¹ at the end of the 21(st) century, which may have a detrimental effect on ecologically important mangrove ecosystems. Understanding factors influencing the long-term resilience of these communities is critical but poorly understood. We investigate ecological resilience in a coastal mangrove community from the Galapagos Islands over the last 2700 years using three research questions: What are the 'fast and slow' processes operating in the coastal zone? Is there evidence for a threshold response? How can the past inform us about the resilience of the modern system?

Methodology/Principal Findings: Palaeoecological methods (AMS radiocarbon dating, stable carbon isotopes ($\delta(^{13}\text{C})$)) were used to reconstruct sedimentation rates and ecological change over the past 2,700 years at Diablas lagoon, Isabela, Galapagos. Bulk geochemical analysis was also used to determine local environmental changes, and salinity was reconstructed using a diatom transfer function. Changes in relative sea level (RSL) were estimated using a glacio-isostatic adjustment model. Non-linear behaviour was observed in the Diablas mangrove ecosystem as it responded to increased salinities following exposure to tidal inundations. A negative feedback was observed which enabled the mangrove canopy to accrete vertically, but disturbances may have opened up the canopy and contributed to an erosion of resilience over time. A combination of drier climatic conditions and a slight fall in RSL then resulted in a threshold response, from a mangrove community to a microbial mat.

Conclusions/Significance: Palaeoecological records can provide important information on the nature of non-linear behaviour by identifying thresholds within ecological systems, and in outlining responses to 'fast' and 'slow' environmental change between alternative stable states. This study highlights the need to incorporate a long-term ecological perspective when designing strategies for maximizing coastal resilience.

Vollset KW, Bailey KM (2011) Interplay of individual interactions and turbidity affects the functional response of three-spined sticklebacks *Gasterosteus aculeatus*. *Journal of Fish Biology* 78:1954-1964

Abstract: The effects of turbidity, size and the presence of conspecifics on the functional response, feeding latency and activity in the three-spined stickleback *Gasterosteus aculeatus* were examined. A significant interaction between standard length and presence of conspecifics demonstrated an increase in attack rates of larger individuals in the presence of conspecifics. Attack rate was also higher in turbid water. Feeding latency decreased with prey concentration and presence of conspecifics, but was not affected by turbidity. Activity level did not change with prey levels, but increased with turbidity. These results can help to better understand how individual flexibility in the functional response can affect prey mortality according to environmental perturbation and social interaction at the level of the predator.

Lanzén, A.; Jørgensen, S. L.; Bengtsson, M. M.; Jonassen, I.; Øvreås, L. & Urich, T. (2011), 'Exploring the composition and diversity of microbial communities at the Jan Mayen hydrothermal vent field using RNA and DNA.', *FEMS Microbiol Ecol*.

Abstract: DNA sequencing technology has proven very valuable for analysing the microbiota of poorly accessible ecosystems such as hydrothermal vents. Using a combination of amplicon- and shotgun sequencing of small-subunit ribosomal RNA and its gene, we examined the composition and diversity of microbial communities from the recently discovered Jan Mayen vent field, located on Mohn's Ridge in the Norwegian-Greenland Sea. The communities were dominated by the Epsilonproteobacterial genera *Sulfurimonas* and *Sulfurovum*. These are mesophiles involved in sulphur metabolism and typically found in vent fluid mixing zones. Composition and diversity predictions differed systematically between extracted DNA and RNA samples as well as between amplicon- and shotgun sequencing. These differences were more substantial than those between two biological replicates. Amplicon vs. shotgun sequencing differences could be explained to a large extent by bias introduced during PCR, caused by preferential primer-template annealing, while DNA vs. RNA differences were thought to be caused by differences between the activity levels of taxa. Further, predicted diversity from RNA samples was consistently lower than from DNA. In summary, this study illustrates how different methods can provide complementary ecological insights.

Albert Kjartansson Imsland, Snorri Gunnarsson. Growth and maturation in Arctic charr (*Salvelinus alpinus*) in response to different feed rations. *Aquaculture* 318 (2011) 407–411

Abstract: Groups of Arctic charr (*Salvelinus alpinus*) were reared in duplicate tanks supplied with freshwater, and subjected to two different ration levels, 100% (full ration) and 50% (half ration) in two six week periods during autumn (Sept.–Nov.) and winter (Dec.–Feb.). In between the restricted ration periods and from February onwards, all fish were fed full ration. After the first and second 42 day restricted feed periods, the 50% had lower mean weight than the 100% group in both sexes, but this size difference diminished as the trial progressed, and full final size compensation was seen for both males and females in the 50% group. Specific growth rates for both sexes were higher in the 100% group during the two reduced feeding periods, whereas growth was higher in the 50% group in the subsequent periods after feed restriction. No differences in growth were seen from May onwards. Feed conversion efficiency was higher in the 50% group during, and after, feed restriction, and daily feeding rate (F%) was higher in the 50% group in the periods subsequent to feeding restriction. In the following summer and autumn signs of lower maturation were seen for females in the feed restricted group. No differences were found in fillet water- and fat content in the experimental groups. The present findings indicate that intermittent feeding during autumn and winter could be a cost-effective strategy for Arctic charr farmers.

J. LÜTZEN, B. BERLAND, & G.A.BRISTOW Morphology of an endosymbiotic bivalve, *Entovalva nhatrangensis* (Bristow, Berland, Schander & Vo, 2010) (Galeommatoidae). 2011. *Molluscan Research* 31:114–124,

Abstract We describe the morphology of *Entovalva nhatrangensis* Bristow, Berland, Schander & Vo, 2010, an endosymbiotic bivalve living in the oesophagus of *Holothuria spinifera* and *H. leucospilota* in Vietnam. The delicate shells are entirely internalized. The body is very small compared to the foot, which is dorso-ventrally flattened and contains the digestive diverticula and the fertile parts of the gonads. Even though the gills are small, they probably serve in collecting suspended matter, and in

addition, the species clearly feeds on benthic diatoms, which it probably sorts out from the contents of the host's gut. The species is a protandric hermaphrodite. Most males have a total length of 1.5–3.0 mm and above that size start changing sex to become females, which may attain a total length of nearly nine mm. Sperm is transferred in spermatophores with a solid wall produced by glands within the male siphon. One to three spermatophores are placed on the gills of females and the ova become fertilized as they pass from the genital pores to the siphon, where they are brooded until released as D-larvae.

Zimmermann, F., Steinshamn, S.I., and **Heino, M.** (2011). "Optimal harvest feedback rule accounting for the fishing-up effect and size-dependent pricing." *Natural Resource Modeling* 24(3): 365-382. doi: 10.1111/j.1939-7445.2011.00095.x

Abstract: Fishing leads to truncation of a population's age and size structure. However, large-sized fish are usually more valuable per unit weight than small ones. Nevertheless, these size-related factors have mostly been ignored in bioeconomic modeling. Here, we present a simple extension to the Gordon–Schaefer model that accounts for variations in mean individual catch weight, and derive the feedback rule for optimal harvest in this setting. As the Gordon–Schaefer model has no population structure, size effects have to be accounted for indirectly. Here we assume a simple negative relationship between fishing effort and mean individual weight, and a positive relationship between mean catch weight and price. The aim is to emulate alterations of size structure in fish populations due to fishing and the influence of size on price per weight unit and eventually, net revenues. This demonstrates, on a general level, how such size-dependent effects change the patterns of optimal harvest paths and sustainable revenue in single fish stocks. The model shows clear shifts toward lower levels of optimal effort and yield compared to classical models without size effects. This suggests that ignoring body size could lead to misleading assumptions and policies, potentially causing rent dissipation and suboptimal utilization of renewable resources. [Full paper](#)

Berland B. Bioluminescens – pluss og minus. *Biolog* nr 1 2011. [Full paper](#)