

BIO-info 29/2010, 10. sept 2010 [BIO: sakslister og møtereferater](#) [BIO-info arkiv](#)  
submission deadline to [bio.info@bio.uib.no](mailto:bio.info@bio.uib.no) is Wednesday 16:00

## Fra toppen!

### Forskerutdanning og PhD-veiledning i fokus

PhD-kandidatene utgjør en viktig del av forskningsuniversitetet. Her får unge forskerspirer for alvor føling med forskningens utfordringer, gleder og - innimellom - skuffelser. PhD-kandidatene inngår i større eller mindre forskningsgrupper, de kan være del av større eller mindre prosjekt, og de har i varierende grad kontakt med sin veileder og veiledningskomité.

Noen har stor suksess med sine forsøk og undersøkelser, mens andre sliter med metodiske, økonomiske, eller personlige problemer. Noen er lønnet av UiB, noen av NFR, noen av næringslivet, og noen av hjemlandet. Ulike PhD-kandidater vil derfor oppleve hverdagen svært ulikt, selv om de er i gang med sitt doktorgradsprosjekt på samme institutt.

Årets PhD-seminar **tirsdag 19. oktober** samler alle PhD-studenter på BIO, uansett hvordan de opplever hverdagen, til informasjon og diskusjon om ulike sider ved forskerutdanningen. Her vil veiledning stå i fokus, men også andre aspekter ved det å være PhD-student. Jeg forventer at alle PhD-studenter, veiledere og forskningsgrupeledere stiller på seminaret. Mer info finner du lenger bak i BIO-info.

Hilsen Anders



## Ukens bilde



### UNIS Summer Course

Photographer: **Anders Lanzén, Lise Øvreås**

[UNIS](#) offers many different kinds of courses, including short courses such as AB-327 a course in arctic microbiology. This summer **Lise Øvreås** was a lecturer at the course, while **Trine S. Jensen** and **Anders Lanzén** attended as students, and **Antonio Garcia-Moyano** was able to collect samples. They send us these pictures. In the picture to the left, Garcia-Moyano is collecting iron-oxidising bacteria. [Learn more](#) about their UNIS experience.



*You are invited to submit photos (electronically!) for "Ukens bilde". Please include a very short description and credit information. Send your pictures to [Elinor Bartle](#)*

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### Siste nytt fra BIO

PhD seminar, Årsbefaring nybygget, BIO gratulerer

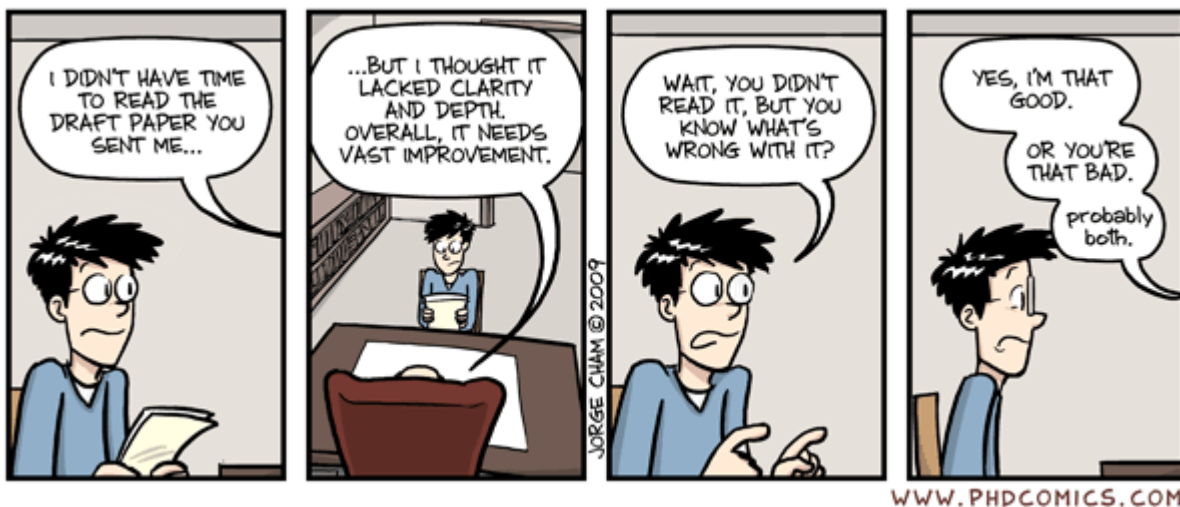
#### Annual PhD Seminar at BIO for candidates and supervisors

Department of Biology invites all PhD candidates, supervisors and research group leaders to a one day seminar on PhD education. The seminar will take place at Stort Auditorium, High Technology Centre on October 19<sup>th</sup> 08:30-15:30. This seminar is a part of your responsibilities whether you are a PhD candidate, a supervisor or a research group leader!

Program highlights:

- New Procedures for follow up the PhD candidates
- Research supervision, Professor Gunnar Handal, UiO
- Supervision, reflections from supervisors and candidates including group work
- Ethical and formal guidelines for publishing
- Publish or perish. Reflections on the process of scientific publishing
- Being both a PhD student and an employee
- Presentation of Molecular and Computational Research School
- Presentation of the candidates PhD committee at Mat.Nat.Fak

Please register on <http://biologi.uib.no/phd/>. Registration deadline is October 1st. Full program details will be updated on this website.



#### Årsbefaring – nybygget i slutten av september

Det er snart ett år siden bygget ble overtatt og tid for årsbefaring. Byggherren trenger derfor hjelp til å finne alle feil og mangler som må rettes. Mye av det som er påpekt tidligere er rettet opp men vi har ingen oversikt over hva som fremdeles gjenstår så vi må begynne med blanke ark.

Det vi trenger informasjon om er alle typer feil og mangler med bygget, for eksempel:

Skader/feil på gulvbelegg og vegger.

Dører og vinduer som går tregt, beslag, lister og håndtak etc som er løse.

Feil på det elektriske anlegget, ventilasjon, vann og avløp.

Slurvet utført arbeid og dårlig håndverk.

Vi trenger også en mangelliste for den faste innredningen som kom med bygget dvs laboratorieinnredningen og minikjøkken (dårlige låser, skuffer, dører etc.)

Vi har opprettet en [nettside](#) der du kan melde inn feil og mangler. Beskriv skaden / mangelen kort og presist og angi stedet så nøyaktig du kan. FRIST: Onsdag 22. september.

Takk for hjelpen!

# BIO-info

## Nyheter fra Institutt for biologi

### BIO gratulerer Marianne med doktorgraden

Marianne Presthus Heggen forsvarte avhandlingen "Oribatid mites in palaeoecological investigations" den 20 august 2010, og BIO ønsker lykke til i ny jobb som Førsteamanuensis ved Høgskolen i Bergen.



### Latest updates from External Web:

Les mer om endringene og om videre utviklingsplaner i [Webredaksjonens blogg](#).

## Undervisningsnytt

### Besøk fra JCU



Instituttet hadde 09. september besøk av John Chandler (Director, Business Development at the Faculty Science and Engineering) fra James Cook University i Australia. Målet med møtet var å forbedre og videreutvikle utvekslingsavtalen UiB har med JCU og se på nærmere samarbeid. På bildet ser vi Sigurd Stefansson, Audrey Geffen, Andreas Steigen, John Chandler, Marielle Hauge (MBI) og Diem Hong Thi Tran (MatNatfak). Foto: Beate Ulrikke Rensvik.

## Siste nytt fra verden rundt oss

### BIO på kanadisk radio, Meitemark-jakt, Kulturlandskapsprisen

#### BIO on CBC radio in Canada - and then online for a long time

The Science paper by Utne Palm et al. has gathered fans all over the world, and now "Quirks and Quarks" will air an interview with co-author Karin Pittman on their first show of the season this Saturday <http://www.cbc.ca/quirks/>. Quirks & Quarks is the award-winning radio science program of the Canadian Broadcasting Corporation. The program is heard by a national audience in Canada of nearly 500,000 people, and by thousands more around the world on the weekly podcast. Shows and segments are available online for years after initial airing.

For the past 35 years, Quirks & Quarks has brought its listeners to the cutting edge of scientific inquiry. Every week, the program presents the people behind the latest discoveries in the physical and natural sciences - from the smallest sub-atomic particle to the largest objects in the sky and everything in between. The program also examines the political, social, environmental and ethical implications of

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## Nyheter fra Institutt for biologi

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new developments in science and technology. Quirks & Quarks is a program for people fascinated by the world above, below and around them. And you don't need a PhD to enjoy it!

### Mailing list: Nanoscience and Nanotechnology at the University of Bergen, please subscribe

Dear colleagues,

If you are interested in informations about Nanoscience and Nanotechnology activities at the University of Bergen, please subscribe to our mailing list by sending an email with "subscribe" in the header to nano@uib.no.

We send out informations concerning relevant seminars, funding possibilites etc. We only send out crucial information and you will not recieve more than about two emails a month or less.

If you have any further questions please do not hesitate to contact me directly on bodil.holst@uib.no. You can also contact me if you need to use nanorelated equipment for your research which is not available in your own lab or if you just generally think that "nano" perhaps might be able to provide some answers to a research question in your own field.

The mailing list is open for everybody.

Best wishes,

Bodil Holst

Dr. Bodil Holst  
Professor, Head of Nanophysics Group  
Department of Physics and Technology



### Velkommen til meitemark-jakt!

I samarbeid med Nettverk for miljølære inviterer Forskningsrådet alle landets skoler til en real dugnad for å kartlegge hvilke arter av meitemark vi har i ulike deler av landet. Selve meitemarkjakten skal foregå i forbindelse med **Forskningsdagene** til høsten. 216 klasser fra 107 skoler er allerede påmeldt. [Les mer.](#)



### Høgtidleg overrekking av kulturlandskapsprisen til Ulvund i Hordaland 2010

Fylkesordførar Torill Selsvold Nyborg overrekte diplom og 50.000 kroner til prisvinnarane frå Ulvund. Det var ei verdig og flott markering av det unike kulturlandskapet på Ulvund og eldsjelene som held det i hevd. Samlinga vart held på Myrkdalsstovo den 31. august. Mange aktørar frå Voss kommune, Universitetet i Bergen, landbruksrådgjevinga, fylkesmannen, Hordaland fylkeskommune og næringsorganisasjonane i landbruket medverka med helsingar og gåver til at ramma rundt feiringa vart høgtidleg og minnerik. [Les mer.](#)

### Ledige stillinger for biologer

Mer info finner du [her](#).

### Forskning: utlysninger, nye satsinger og prosjekter

Nytt fra NFR og EU

Mer info om utlysninger inkl. løpende, dvs. uten frister finner du [her](#)

Husk å sende søknadsutkastet til [post@bio.uib.no](mailto:post@bio.uib.no) 1 uke i forveien (gjelder ikke mindre bevilgninger som legater og fonds)

#### Follow the Research Council on Twitter

The Research Council has set up a Twitter account for its English-language news information. [Read more](#)



#### Gi forskerne bedre EU-hjelp!

Norske forskningsinstitusjoner med ambisjoner om å lykkes med EU-søknader, bør opprette interne støttefunksjoner som kan vie sin tid til selve søknadsprosessen, mener Arne Flåøyen, avdelingsdirektør ved Veterinærinstituttet. [Les mer](#)

#### Indikatorrapporten:

Norge trenger kunnskap om forsknings- og innovasjonssystemet for å utvikle målrettet og effektiv politikk. [Les mer](#)

#### Full åpenhet om habilitet i Forskningsrådet

Forskningsrådet skal kartlegge omfanget av erklært inhabilitet i søknadsbehandlingen. [Les mer](#)

#### Og de nominerte er...

For fjerde år på rad skal over tusen norske næringslivsledere kåre vinneren av Forskningsrådets innovasjonspris. [Les mer](#)

#### Broad thematic call for proposals for research funding for 2011 ( LATINAMERIKA )

A total of NOK 25 million is available for Researcher projects and Personal postdoctoral fellowships addressing any of the 5 priority areas in the LATIN AMERICA programme. Support for research seminars is also offered. Deadline: 13.10.2010 13:00 CET [Read more](#)

#### NOK 400 million for research infrastructure ( INFRASTRUKTUR )

This call encompasses advanced scientific equipment within all scientific disciplines, international cooperation on equipment and associated infrastructure, and key equipment components that are part of larger-scale, complex, national and international research infrastructures. Deadline: 13.10.2010 13:00 CET [Read more](#)

#### NOK 10 million to research on Russia ( NORRUSS )

Research projects on Russian policy and social conditions in the northern areas, with an upper limit of NOK 5 million, are invited. Deadline: 13.10.2010 13:00 CET [Read more](#)

#### NOK 3,5 million to CGIAR fellowships ( NORGLOBAL )

Young scientists from Norwegian institutions can apply for overseas fellowships to work at one of the 15 CGIAR institutions. Deadline: 13.10.2010 13:00 CET [Read more](#)

### PhD: disputas og prøveforelesning

Kari Skjånes

#### **Kari Skjånes PhD forelesning**

Kari Skjånes vil mandag 13. september holde forelesning over oppgitt emne for PhD graden. Tittel: "Artificial photosynthesis, status and possibilities"

Tid: Mandag 13. september 2010, kl. 10:15

Sted: Lille Auditorium, 2. etasje, datablokken, Høyteknologisenteret, Thormøhlensgt. 55  
Bedømmelseskomité: Vigdis Torsvik, Mikal Heldal og Svein Rune Erga

Alle interesserte er velkommen!

### Avsluttende mastergradseksamen

Marco Vindas, Kristoffer Barlaup Hauge

#### **Marco Vindas : Effect of tryptophan enriched diets on aggression in hierarchical groups of juvenile Atlantic salmon (*Salmo salar*)**

Marco Vindas holder tirsdag 14. september avsluttende presentasjon av sin masteroppgave i Havbruksbiologi.

Veiledere: Ian Mayer Sensor: Øyvind Øverli, UMB. Bisitter: Anne Christine Utne Palm

Tid og Sted: Tirsdag 14. september kl. 14.15, Seminarrom K3, Biobyggene, HIB.

Alle interesserte velkommen!

#### **Kristoffer Barlaup Hauge: Bat (Chiroptera) activity and community composition in contrasting agricultural landscapes and the adjacent Budongo forest reserve, Uganda**

Kristoffer Barlaup Hauge holder torsdag 16. september avsluttende presentasjon av sin mastergradsoppgave i Biologi, biodiversitet, evolusjon og økologi.

Veiledere: Vigdis Vandvik og Richard Telford. Sensor: Svein Dale, UMB. Bisitter: Dag Aksnes

Tid og sted: Torsdag 16. september kl. 11.15, Seminarrom K1, Biobyggene, HIB.

Alle interesserte velkommen!

### Kurs, møter, seminar og arrangement

Åpent strategiseminar, Kurs i Fiskehelse, Debattmøte om formidling, Planet Under Pressure, Kulturnatt i Bergen

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

#### **Åpent strategiseminar på fakultetet for ansatte og studenter**

I 2010 pågår arbeid med å utforme en ny strategisk plan for Det matematisk-naturvitenskapelige fakultet. Den nye planen skal gjelde for perioden 2011-2015.

Det er ønskelig med mange innspill til den strategiske planen og/eller til prosessen fra både ansatte og studenter. Før sommerferien ble det laget et utkast/skisse til en strategisk plan. Alle ansatte og studenter ble invitert til å komme med innspill til denne.

Onsdag 22. september blir det holdt et åpent dagsseminar for alle interesserte studenter og ansatte ved fakultetet knyttet til strategiplanarbeidet.

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Programmet vil blant annet ta for seg skissen/utkastet som foreligger, og innspill vi har fått til denne. Vi vil også gjennomgå nåværende (gjeldende) strategiske planer, diskutere nylig gjennomførte evalueringer av våre fagområder samt evalueringene fra forrige "runde".

Mer informasjon finnes på: <http://www.uib.no/matnat/ressurser/aktuelt/intern-strategiprosess-ved-matnat>...og denne vil oppdateres etter hvert (mht klokkeslett, sted og endelig program for den 22. september).

Kristin Bakken  
Assisterende fakultetsdirektør

### Kurs i Fiskehelse

8-10. nov. 2010. Dette kurset er rettet mot ansatte i Mattilsynet, men er nyttig for alle som ønsker en introduksjon til fiskehelse og større forståelse for oppdrettsnæringen i Norge. Et lesepensum vil være tilgjengelig for deltakerne i forkant av kurset og det forventes at deltakerne bruker noe tid på forberedelser i før kurset. Her finner [du foreløpig program](#) og [kursplakat](#). Se omtale av kurset på [VHs hjemmesider](#).

### Debattemøte i Forum for vitenskap og demokrati

TID: Fredag 10 september kl 1415-1600

STAD: Bergen ressurscenter for internasjonal utvikling - NB!

Bør forskarar snakke med journalistar?

Forum for vitenskap og demokrati inviterer til debatt om forskingsformidling. Innleiar: Lars Nyre

Kommentatorar: Jostein Gripsrud og Magne Lindholm. [Les mer](#).

### Planet Under Pressure: new knowledge towards solutions

Major international science conference in advance of the Earth Summit, organised by the International Council for Science's global-change programmes (DIVERSITAS, IGBP, IHDP, WCRP). 26-29.

03.2012. London. [Learn more](#).

### Culture Night in Bergen

From Signe Knappskog, International Staff Services, Department of Human Resources: Maybe some of you have already heard about all the activities going on in Bergen this Friday as part of the "Cultural Night"? It is a yearly event and different type of cultural activities is free or at a reduced price. I haven't been able to find a program in English, but I hope this Norwegian version will also give you some useful information. [Learn more](#).

## Nye artikler

Torstein Solhøy, John Birks, Kathy Willis, Vigdis Vandvik, Hilary H. Birks, Anne Elisabeth Bjune, Gaute Velle, David A. Strand, Anne C. Utne-Palm, Per J. Jakobsen, Victoria A. Braithwaite, Knut H. Jensen, Anne G. V. Salvanes, Chitra Bahadur Baniya.

\*\*\*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).

Vatne, S., **Solhøy, T.**, Asplund, J. & Gauslaa, Y. 2010. Grazing damage in the old forest lichen *Lobaria pulmonaria* increases with gastropod abundance in deciduous forests. *The Lichenologist* 42: 615-619. doi:10.1017/S0024282910000356

**Abstract:** Gastropod abundance was quantified in forest litter around 33 trees harbouring *Lobaria pulmonaria* in southern Norway. In total, 1709 snails representing 28 species were found, and the number of snail species strongly increased with the total number of specimens found. Number of snail species, as well as snail abundance, was highest around trees on high pH soils. There was a positive relationship between number of snail specimens and cover of grazing traces on *L. pulmonaria* presumably because calcareous soils facilitate both litter dwelling and climbing gastropods. The



results suggest that gastropods may limit the distribution of *L. pulmonaria* in calcareous broad-leaved forests.

Herzschuh, U. & Birks, H.J.B. 2010. Evaluating the indicator value of Tibetan pollen taxa for modern vegetation and climate. *Review of Palaeobotany and Palynology* 160: 197-208. doi: 10.1016/j.revpalbo.2010.02.016

**Abstract:** Pollen taxa of known indicator value are of great potential in the qualitative interpretation of pollen diagrams. Here we apply several numerical approaches to a lake-sediment based pollen data-set from the eastern and central Tibetan Plateau (112 samples) to assess the indicator value of Tibetan pollen taxa for modern vegetation types and for modern climate. Results from Multi-Response Permutation Procedures indicate that the differences between groups of pollen spectra originating from the same vegetation type (temperate desert, temperate steppe, alpine desert, alpine steppe, high-alpine meadow, subalpine shrub, and patchy forest) are statistically significant. Indicator Species Analyses identify several indicator taxa for most vegetation types. Multivariate regression tree analysis indicates that about 390 mm of annual precipitation is the most critical threshold for the modern pollen spectra. This roughly separates desert and steppe vegetation from high-alpine meadow, subalpine shrub, and patchy forest vegetation. A strong pollen climate relationship on the Tibetan Plateau is confirmed by the large number of statistically significant pollen taxa–climate (annual precipitation or/and annual temperature) relationships as evaluated by statistical response-modelling, involving generalised linear models.

Lang, B., Brooks, S.J., Bedford, A., Jones, R.T., Birks, H.J.B. & Marshall, J.D. 2010. Regional consistency in Lateglacial chironomid-inferred temperatures from five sites in north-west England. *Quaternary Science Reviews* 29: 1528-1538. doi: 10.1016/j.quascirev.2009.02.023

**Abstract:** High resolution Lateglacial ice-core records from Greenland show both millennial and centennial-scale change and have been used as a benchmark for Lateglacial climatic stratigraphy throughout the North Atlantic region and beyond. In this study we assess the local reflection in north-west Europe of climatic events recognised in ice cores and identify differences in the climate signature between Greenland, UK and sites in continental Europe. This study uses chironomid-inferred temperature analysis and loss-on-ignition data from five carbonate lakes in north-west England to determine the pattern of Lateglacial climatic change and demonstrates the reproducibility of chironomid-inferred temperature reconstructions both within a catchment and from sites within a small area.

At both millennial and centennial scales, our results show statistical similarities between sites, giving a clear regional signal. Chironomid assemblages pick out the rapid shifts at the major event boundaries at all sites and indicate temperatures of between 12 and 13 °C for the region at the beginning of Greenland Interstadial 1, a rapid fall of around 4 °C into the Younger Dryas and a rise of around 5 °C in the Early Holocene. At a finer scale, four centennial cooling events are identified within the interstadial, together with an oscillation in the Early Holocene which we tentatively identify as the pre-Boreal event. The records were analysed statistically using redundancy analysis and sequence-slotting techniques. Differences in the impact of individual climatic events, demonstrate that subtle changes in the chironomid-inferred temperatures reflect the local geographical setting and morphology of the lakes; with more marked impact registered in higher altitude and more wind-exposed sites. Whilst the overall pattern of Lateglacial climate can be recognised from Greenland to central Europe, important regional differences, that can be attributed to marine influence and, perhaps, changes in atmospheric circulation, are beginning to emerge.

Floyd, C.A., Lee, J.A., Anderson, A.J., Haberle, S.G., Gasson, P.E. & Willis, K.J. 2010. Historic fuel wood use in the Galapagos Islands: identification of charcoal remains. *Vegetation History and Archaeobotany* 19: 207-217. doi: 10.1007/s00334-010-0239-1

**Abstract:** Charcoal fragments from five historic campsite locations in the Galápagos Islands were identified and radiocarbon dated to investigate postulated early human presence in the archipelago,

historic fuel wood collection patterns and the resultant impact on native vegetation. A variety of taxa and fuel types were revealed to be present in the charcoal assemblages, indicating geographically driven rather than species-specific methods of collection. Historic anthropogenic impact was therefore spread amongst woody taxa in the lowland plant communities, with severity dependent on proximity to campsite location. All charred remains were found to date from within the historic period, supporting the preponderance of archaeological evidence indicating that human presence did not begin in Galápagos until after European discovery.

Carly J. Stevens, Cecilia Duprè, Edu Dorland<sup>1</sup>, Cassandre Gaudnik, David J.G. Gowing, Albert Bleeker, Martin Diekmann, Didier Alard, Roland Bobbink, David Fowler, Emmanuel Corcket, J. Owen Mountford, **Vigdís Vandvik**, Per Arild Aarrestad, Serge Muller, Nancy B. Dise. Nitrogen deposition threatens species richness of grasslands across Europe. *Environmental Pollution* 158 (2010) 2940-2945

**Abstract:** Evidence from an international survey in the Atlantic biogeographic region of Europe indicates that chronic nitrogen deposition is reducing plant species richness in acid grasslands. Across the deposition gradient in this region (2e44 kg N ha<sup>-1</sup> yr<sup>-1</sup>) species richness showed a curvilinear response, with greatest reductions in species richness when deposition increased from low levels. This has important implications for conservation policies, suggesting that to protect the most sensitive grasslands resources should be focussed where deposition is currently low. Soil pH is also an important driver of species richness indicating that the acidifying effect of nitrogen deposition may be contributing to species richness reductions. The results of this survey suggest that the impacts of nitrogen deposition can be observed over a large geographical range.

Juan C. Larrasoaña, María Ortuño, **Hilary H. Birks**, Blas Valero-Garcés, Josep M. Parés, Ramon Copons, Lluís Camarero, Jaume Bordonau. Palaeoenvironmental and palaeoseismic implications of a 3700-year sedimentary record from proglacial Lake Barrancs (Maladeta Massif, Central Pyrenees, Spain). *Palaeogeography, Palaeoclimatology, Palaeoecology* 294 (2010) 83–93

**Abstract:** A multidisciplinary study including sedimentological, mineral magnetic, and palaeobotanical techniques applied to a sediment core recovered from proglacial Lake Barrancs in the seismically active Maladeta Massif has provided the basis for documenting environmental changes and palaeoseismic activity in the Central Pyrenees for the last ca. 3700 yr. Lake Barrancs is located downstream of the Tempestats and Barrancs cirque glaciers and sedimentation is dominated by clastic input corresponding to seasonal changes in sediment supply. Slow fine particle settling during the winter and sediment-loaded homopycnal flows during the warm season, triggered by snow-melting and glacier outwash, have resulted in deposition of rhythmites composed of clays, silts, and sands. The predominance of finer-grained sediments and the low concentration of relatively finer magnetite grains suggest that glacier activity was very small, if not absent, before ca. A.D. 350. Their replacement by coarser-grained sediments and the overall increased (but highly oscillating) concentrations of relatively coarser magnetite grains in the uppermost 4.3 m of the record suggest the onset of glacial activity and enhanced snow-melting in the catchment of Lake Barrancs after A.D. 350. We suggest that this onset of glacial and enhanced snow-melt activity was driven by a complex balance between winter precipitation and annual mean temperatures, among other climatic variables. Peat layers suggest two dramatic lake-level drops at A.D. 300 and A.D. 450, when Lake Barrancs was drained. The mechanisms for such extreme hydrological events are not clear. Changes in the precipitation/evaporation ratio cannot account for such desiccation events. Dam failure is unlikely since there are no geomorphological evidence of breaching processes. Geomorphological and structural evidence demonstrates active faulting since formation of Lake Barrancs and reactivation during earthquake shaking. Based on this, we propose an alternative explanation for the desiccation events that involves the draining of the lake through pre-existing fractures opened by earthquakes. Further studies in Lake Barrancs and other lakes from the Maladeta massif are necessary to validate the hypotheses presented here concerning the response of glacial and snow melt activity to climate variability and the palaeoseismic record of the Central Pyrenees.

**Birks, H.H. & Bjune, A.E.** 2010. Can we detect a west Norwegian tree line from modern samples of plant remains and pollen? Results from the DOORMAT project. *Vegetation History and Archaeobotany* 19: 325-340. 10.1007/s00334-010-0256-0

**Abstract:** In the DOORMAT (Direct Observation of Recent Macrofossils Across Treeline) project, the modern representation of local vegetation by pollen and plant remains (plant macrofossils) across a west Norwegian tree line, composed of *Betula pubescens* and *Pinus sylvestris*, has been studied over 2 years. The aim was to discover if the modern tree line could be detected and therefore how precisely past tree-line movements could be reconstructed and related to Holocene climate changes by using oneproxy or a combination of both. Traps were placed in the vegetation from 663 to 1,120 m a.s.l., spanning the pine altitudinal species limit, the birch tree-line ecotone, and the vegetation zones up to the mid-alpine zone. Three traps were also set in the small lake Trettetjørn close to the modern tree line at 800 m a.s.l. Traps were emptied twice a year to sample both summer and winter seasons. Macrofossils represent their local vegetation well. However, tree *Betula* remains were trapped above the tree line and *Pinus* and *Picea* remains were recorded 1.0–1.5 km away from their sources, demonstrating considerable dispersal capacity. This shows that rare macrofossil remains do not necessarily represent the local presence of these trees. Aerial tree pollen deposition in traps at the upper limit of pine woodland and in the subalpine birch woodland was unexpectedly low, whereas pollen accumulation rates (PAR) were orders of magnitude higher in the lake traps. We hypothesise that the lake receives regional pollen rain washed in from its catchment by snow meltwater and that high values in traps are due to continuous suspension of pollen in the lake water during summer. The interpretation of tree-line changes from existing Holocene pollen and plant macrofossil data from Trettetjørn was supported and refined by the DOORMAT macrofossil data, but the modern pollen data were anomalous.

Larocque, I., **Velle, G.** & Rolland, N. 2010. Effect of removing small (<150 µm) chironomids on inferring temperature in cold lakes. *Journal of Paleolimnology* 44: 709-719. 10.1007/s10933-009-9313-z

**Abstract:** Sieving samples for chironomid analysis with a 150 µm mesh was shown to greatly reduce sample preparation time, and use of only larger specimens did not affect chironomid-inferred salinities in African lakes. Here, we tested if this method is suitable for temperature reconstruction in colder lakes at higher latitudes. Removal of specimens <150 µm in two training sets, one from Canada and one from Sweden, had little impact on the performance statistics of the calibration models. Chironomid abundance, however, decreased greatly because more than half of the head capsules in assemblages were <150 µm. This had major impacts on the temperature reconstructions. Inferences were on average 2°C warmer with the modified models (all specimens >150 µm) than those obtained with the full model (all specimens >100 µm). General patterns of temperature change were also altered. For Lake 7 on Southampton Island, Canada, a cooling trend was reconstructed with the full Canadian model while the modified Canadian model yielded a warming trend. When only specimens >150 µm were used, two to three times more wet sediment was needed to obtain a sufficient number of head capsules. These results indicate that, in cold lakes (mean July/August air temperature ≤11°C), large proportions of head capsules are <150 µm, and sieving the samples in a 150 µm mesh leads to altered temperature reconstructions.

**David A. Strand, Anne C. Utne-Palm, Per J. Jakobsen, Victoria A. Braithwaite, Knut H. Jensen, Anne G. V. Salvanes.** Enrichment promotes learning in fish. *MARINE ECOLOGY PROGRESS SERIES* Vol. 412: 273–282, 2010

**ABSTRACT:** Captive birds and mammals reared in enriched rearing environments have been shown to behave more flexibly compared to animals reared in impoverished or plain environments. Recent evidence has shown that this is also true for fish; enrichment promotes faster recovery after a stressful experience, a higher propensity for exploration of novel areas and the development of more sophisticated social behaviour. Here we report how enrichment influences social learning in juvenile cod *Gadus morhua* that were reared in either spatially enriched or plain tanks. Naïve juvenile cod were allowed to repeatedly observe experienced tutors as they foraged on gammarid or mysid prey, or

control tutors that acted as social stimuli but did not forage. The naïve fish then received a mixture of mysid and gammarid prey. Enriched-reared fish improved their ability to consume live prey in the presence of foraging tutors, but plain-reared fish did not. Although gammarids were consumed more often and more quickly than mysids, both among tutors and naïve fish, social learning from tutors demonstrating mysid hunting and consumption had its greatest effect on social learning in the enriched fish.

**Chitra Bahadur Baniya.** Vascular and Cryptogam Richness in the World's Highest Alpine Zone, Tibet. Mountain Research and Development (MRD) International Mountain Society (IMS) [www.mrd-journal.org](http://www.mrd-journal.org)

**Abstract:** This study explores the elevational richness patterns of vascular and cryptogam species in the highest alpine zone in the world, the Tibet/Xizang Autonomous Region (78°25'–99°06'E, 26°50'–36°53'N). The data are based on the published flora for vascular plants, bryophytes, and lichens. Elevational ranges have been interpolated for each species recorded in the flora at altitudes between 4500 and 6000 m into 16 elevational bands of 100 m each. A species is assumed to be present at all elevational bands between its lower and upper limits as recorded in the flora. Total richness has been further subcategorized into richness of different functional groups and some dominant angiosperm families. Generalized linear models (GLMs) up to 3 orders are applied to assess the relationship between species richness and elevation and the statistically most appropriate model based on the highest F value among the significant models is selected. A total of 1585 species, 385 genera, and 111 families are recorded in the flora from this part of the alpine zone. Flowering plants are represented by 1328 species, 261 genera, and 54 families. A significant decreasing quadratic relation with increasing elevation is the most common pattern among most of the functional groups. Bryophytes, lichens, and their functional groups show a linear declining pattern except for a quadratic relation in foliose lichen richness. A significant unimodal relation is found with some angiosperm families. The patterns found are both similar and dissimilar to published results from studies using interpolation or direct observations. Scale, environmental heterogeneities, stress, disturbance, and tolerance by individual species are the likely causes for these patterns.