BIO-info
Nyheter fra Institutt for biologi

BIO-info 11/2011, 18. mars 2011 BIO: sakslister og møtereferater BIO-info arkiv
submission deadline to bio.info@bio.uib.no is Wednesday 16:00

Fra toppen!

Japan

Bildene etter jordskjelv- og tsunamikatastrofen i Japan berører oss alle. Fortsatt er omfanget av disse ødeleggelsene vanskelig å få oversikt over. Samtidig kjempes det en desperat kamp for å hindre at kjernekraftkatastrofen i Fukushima skal utvikle seg til en ukontrollerbar nedsmelting. Spredningen av radioaktivitet gir både umiddelbare effekter på mennesker og miljø, men det skaper også frykt hos befolkningen i de berørete delene av landet.

Scenene som utspiller seg gir ettertanke til teknologioptimismen som mange av oss har i ryggmargen. De skråsikre ekspertuttalelsene om at dette ikke kunne skje, og at når det først skjedde, ville ingeniørkunnskapen raskt kunne rette på feilene, blir lite verdt når en voldsom tsunamibølge feier alle sikkerhetsforanstaltninger til side.

Risikoanalyser handler om å forutse det uforutsette, og analysere konsekvensene ved et verst tenkelig scenario. Det er ikke alltid lett å få dette til, men kunnskapsbasert risikohåndtering er viktig i all moderne teknologi. Selv om vi er eksperter på hver våre områder, er vi ikke alltid villig til å akseptere usikkerheten i våre antagelser. Det er også en lærepenge.

Hilsen Anders

Ukens bilde

Tropical forest

Photographer: **Marius Kambestad**

Hemispherical photograph taken in semi-dry tropical forest in Panama during bark beetle collection. Photos like this one were analyzed with software to obtain a value of canopy openness for each sample site.

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

Innhold:

Siste nytt fra BIO

Editors choice Science - Birks/Grytnes; Limited reception services and closed administration

BIO-forskere er blant Editors choice i Science

Artikkel med Birks og Grytnes som medforfattere valgt ut som Editors choice i Science 4. mars ((litt ned på siden: "Trees Matter, Too").

Artikkelen er: Ohlson, M., K. J. Brown, H. J. B. Birks, J. A. Grytnes, G. Hornberg, M. Niklasson, H. Seppa, and R. H. W. Bradshaw. 2011. Invasion of Norway spruce diversifies the fire regime in boreal European forests. Journal of Ecology 99:395-403. Link

Limited reception services and closed administration

There are two events next week reducing the support from BIO's administration:

- The BIO administration is away on seminar Tuesday and Wednesday next week (22 and 23 March).
- The expedition area is being rebuilt thereby reducing the services offered. Phones, post, packages and PhD defences will be handled. Most of the rebuilding work is being done on Monday-Wednesday, but the level of services will be affected the whole week. On Tuesday and Wednesday Beate's office will serve as the reception (staffed by Jannicke).

We are sorry for the inconvenience these two events might cause.

Utdanningsnytt

Masterdag og TraineeVest

Masterdag – takk for innsatsen

Mellom 50 og 60 studenter møtte fram til BIOs Masterdag og fikk møte forskningsgruppene og høre om mastermulighetene ved instituttet. Vi vil gjerne få takke alle forskningsgruppene for strålende innsats både før og under Masterdagen!

Tommy, Berit (og Toro) gjorde en heltmodig innsats for at alle skulle få nystekte vafler. Anders ønsket velkommen og fortalte om master ved BIO.

Trainee Vest – søknadsfrist på stillinger 20. mars

Trainee Vest og Karrieresenteret søker topp motiverte traineer til kull 4 med traineeoppstart i august 2011! Her finner du til sammen 11 attraktive stillinger (Bergen Kommune søker 2 traineer i sin annonse) som trenger samfunnsvitere, økonomer, humanister, ingeniører og diverse andre fagbakgrunner. Noen av stillingene er også relevante for realister. Søknadsfrist vil være 20 mars 2011

Siste nytt fra verden rundt oss

UiB ønsker forslag til bokinnkjøp

Bokinnkjøp - Universitetsbiblioteket ønskjer forslag til satsingsområde.
Bibliotek for realfag mottar årleg eit fastsett beløp til innkjøp av trykte bøker. I tillegg kan vi, etter søknad, få tildelt midlar til særlege satsingsområde. Det kan vere eit særleg stort behov for å styrke bokstammen der nye forskingsfelt oppstår, der nye studieprogram eller kurstilbod etablerast, eller der det viser seg at bokstammen vi har er i ferd med å bli forelda.

Bibliotek for realfag ynskjer tilbakemelding frå fagmiljøa om fagområde der det er særleg ynskeleg at vi set inn ein innsats (eksempelvis faunistikk/floristikk, geobiologi og liknande). I første omgang er vi ute etter å bli merksam på kva fagområde dette kan gjelde, gjerne med eit par ord om kvifor akkurat dette feltet er viktig. Ettersom vi ser kva løyvingar vi får, vil vi og vere interesserte i forslag til spesifikke titlar.

Fristen vi har fått i år er kort, så vi må ha svar frå fagmiljøa innan onsdag 30. mars.

Vi vil gjerne med det same passe på å minne om at vi alltid tar imot tips om det er bøker som manglar i samlingane våre. Vi tillegg innspel frå fagmiljøa stor vekt, også når det gjeld bruken av våre ordinære løyvingar.

Innspel kan sendast til: hege.folkestad@ub.uib.no

Ledige stillinger for biologer
Mer info finner du her. Stillinger utlyst på BIO finner du på instituttets nettside nederst til høyre.

Forskning: utlysninger, nye satsinger og prosjekter

Praktikantplasser i FN, New York;

Praktikantplasser i FN, New York
FN-delegasjonen i New York utlyser praktikantplasser for norske universitets- eller høgskolestudenter høsten 2011. Søknadsfrist 15. april 2011 for tiltredelse ultimo august 2011. Mer info

Mer info om utlysninger inkl. løpende, dvs. uten frister finner du her

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

PhD: disputas og prøveforelesning

Disputaser: Inger Hilde Zahl, Mia Bengtsson

Inger Hilde Zahl: Bedøvelse av fisk
Inger Hilde Zahl disputerer for ph.d.-graden med avhandlingen:" Anaesthesia of farmed fish with special emphasis on Atlantic cod (Gadus morhua) and Atlantic halibut (Hippoglossus hippoglossus)"
Veiledere: Ole Bent Samuelsen, Anders Kiessling, Magne K. Hansen
Bedømmelseskomite: Professor Tor Einar Horsberg, Norges veterinærhøgskole, Senior Lecturer Lynn Sneddon, School of Biological Sciences, Univesrity of Liverpool, Professor Heidrun Inger Wergeland, Institutt for biologi, Universitetet i Bergen
Leder av disputasen: Professor Harald Kryvi, Institutt for Biologi

Tid og Sted: Onsdag 23. mars, kl. 10:15, Stort Auditorium, 2. etasje, Datablokken, Høyteknologisenteret i Bergen, Thormøhlensgt. 55, Bergen
Alle interesserte er velkommen!

http://www.uib.no/info/dr_grad/2011/Zahl_IngerHilde.html

Mia Bengtsson: En ukjent mikroskopisk verden på tareblader

Mia Bengtsson disputerer for ph.d.-graden med avhandlingen:"Bacterial biofilms on the kelp Laminaria hyperborea"
Veileder: Kjersti Sjøtun, Lise Øvreås, UiB
Bedømmelseskomite: Professor Johannes Imhoff, Leibniz-Institut für Meereswissenschaften, Germany, Associate Professor Eva Lindstrøm, Institutionen för ekologi og genetik, Uppsala University, Sweden, Professor Jorun K. Egge, Institutt for biologi, Universitetet i Bergen
Leder av disputasen: Professor Arild Folkvord, Universitetet i Bergen
Tid og Sted: Onsdag 23. mars, kl. 13:15, Stort Auditorium, 2. etasje, Datablokken, Høyteknologisenteret i Bergen, Thormøhlensgt. 55, Bergen
Alle interesserte er velkommen!

http://www.uib.no/info/dr_grad/2011/Bengtsson_Mia.html

Kurs, møter, seminar og arrangement

British-Scandinavian meeting in Microbiology; ICCE 2011; MEECE summerschool; HIM summerschool; Møte om miljøaspekter ved produksjon av laks; Forskningsrådets næringslivsdag; BBB Junior Scientist Symposium

Fighting Infections: Challenges and Recent progress: A British-Scandinavian meeting in Microbiology and Infection

May 25-28. 2011.Radisson Blue Hotel Norge, Bergen

The meeting is organised by three Norwegian societies in collaboration with colleagues in other Scandinavian countries. It is a joint meeting with Society for General Microbiology in UK, continuing a tradition.

The meeting will reflect aspects of medical, veterinary and general microbiology of importance today, especially for infectious diseases. In a number of lectures given both by national members and speakers invited from abroad, the meeting focuses on science, diagnostics, treatment and prevention of diseases. In addition there will be shorter presentations from various research groups and laboratories. Young scientists are encouraged to participate and to apply for grants

Deadline for abstracts er 15. april. NB: Registration fee will increase after 1. april More info

EuCheMS International Conference on Chemistry and the Environment ICCE 2011

Zurich, Switzerland, 11-15 September 2011 More info

Marine Ecosystem Evolution in a Changing Environment, Summer School 2011

is now open for applicants More info

Summer School "Highlights in Microtechnology" (HIM) 2011 - 2nd announcement
Neuchâtel (Switzerland) from June 14 to 24, 2011
European PhD students can receive a scholarship from European PF7 project EURODOTS that covers part of the registration fees : please check here to have all necessary information and eligibility criteria. More info

Workshop on acidification in aquatic environments
What can marine science learn from limnological studies of acid rain?
Fram Centre, Tromsø, Norway, 27-29 September 2011 More info

Møte om Miljøaspekter ved produksjon av laks
Norges Tekniske Vitenskapsakademi, NTVA, inviterer til møte i Bergen
Tirsdag 5. april 2011 kl. 19:00 Sted: Nansensenteret på Marineholmen Mer info (her)

Forskningsrådets næringslivsdag arrangeres 12. april 2011 på Det Norske Teatret i Oslo.
Mer info

Seminar om "Kjemiåret 2011"
Arrangør: Norges Tekniske Vitenskapsakademi, NTVA, og TEKNA
Sted: Lokalene til Det Norske Videnskaps-Akademiet, DNVA, Drammensveien 78, Oslo
Dato: Torsdag 24. mars 2011, kl. 14:00 - 18:00 Mer info her

BBB Junior Scientist Symposium "Methods in Genetics"
March 25 13:00-15:00 in auditorium 4, BB Building at 13.00 More info

Mer info om kurs, møter, seminar og arrangement etc finner du her.

Nye artikler

Stefansson; Imsland; Folkvord; Jordal; Nilsen; Klement; Handeland; Ray; Sandaa; Bratbak; Willis; Birks; Grytnes; Aksnes; Thingstad

Imsland, A. K., R. Koedijk, **S. O. Stefansson**, A. Foss, S. Hjörleifsdóttir, G. Ó. Hreggvidsson, E. Otterlei and **A. Folkvord**, 2011. A retrospective approach to fractionize variation in body mass of Atlantic cod Gadus morhua. J. Fish Biol., 78, 251-264. doi:10.1111/j.1095-8649.2010.02860.x

Murashita, K., **A.-E. Olderbakk Jordal**, **T. O. Nilsen**, **S. O. Stefansson**, T. Kurokawa, B. Th. Björnsson, A.-G. Gamst Moen and **I. Rønnestad,** 2011. Leptin reduces Atlantic salmon growth through the central pro-opiomelanocortin pathway. Comp. Biochem. Physiol., 158, 79-86. doi:10.1016/j.cbpa.2010.09.001

Gunnarsson, S., A. K**. Imsland, J.** Arnason, A. Gustavsson, I. Arnarson, J. Kjartannsson, A. Foss, S. **Stefansson** and H. Thorarensen, 2011. Effect of rearing temperatures on the growth and maturation of Arctic charr (Salvelinus alpinus) during juvenile and on-growing periods. Aquaculture Research, 42, 221-229. doi:10.1111/j.1365-2109.2010.02615.x

Imsland AK, Klement AV, Handeland SO & Stefansson SO 2011. Growth and osmoregulation in Atlantic salmon (Salmo salar) smolts in response to different feeding frequencies and salinities. Aquaculture Research, 42, 469-479. doi:10.1111/j.1365-2109.2010.02640.x

Groups of Atlantic salmon (Salmo salar) yearling smolts were reared in duplicate tanks supplied with freshwater or seawater, and subjected to di!erent feeding frequencies, 100% (fed every day), 50% (fed every other day), 25% (fed every forth day) and 0% (starved), from 26 May to 26 July. After 8 weeks, all the groups were re-fed in excess for 6 weeks. Fish were maintained on their respective a priori salinity treatments during the 6-week follow-up period. Starvation for a period of 8 weeks in freshwater resulted in a loss of hypo-osmoregulatory ability when smolts were challenged with seawater and unfed smolts maintained in freshwater were unable to adapt to seawater in mid-July. Ration levels influenced the growth rate and body size significantly. The overall growth rate was higher in freshwater than at corresponding rations in seawater. Partial compensatory growth was observed in the 0 and 25% groups following re-feeding. Branchial Na1,K1-ATPase (NKA) activity decreased rapidly in unfed smolts in freshwater and was the lowest in the starved group, whereas an initial increase was observed in those groups reared in seawater. After re-feeding NKA activity di!erences decreased between the former feeding groups. Our results suggest that nutritional factors and/or energy levels are critical for the maintenance of hydro-mineral balance of salmon smolts.

Hiroyuki Ogata, **Jessica Ray,** Kensuke Toyoda, **Ruth-Anne Sandaa**, Keizo Nagasaki, **Gunnar Bratbak** and Jean-Michel Claverie 2011. Two new subfamilies of DNA mismatch repair proteins (MutS) specifically abundant in the marine environment. The ISME Journal, doi:10.1038/ismej.2010.210

MutS proteins are ubiquitous in cellular organisms and have important roles in DNA mismatch repair or recombination. In the virus world, the amoeba-infecting Mimivirus, as well as the recently sequenced Cafeteria roenbergensis virus are known to encode a MutS related to the homologs found in octocorals and **ε**-proteobacteria. To explore the presence of MutS proteins in other viral genomes, we performed a genomic survey of four giant viruses (‘giruses’) (Pyramimonas orientalis virus (PoV), Phaeocystis pouchetii virus (PpV), Chrysochromulina ericina virus (CeV) and Heterocapsa circularisquama DNA virus (HcDNAV)) that infect unicellular marine algae. Our analysis revealed the presence of a close homolog of Mimivirus MutS in all the analyzed giruses. These viral homologs possess a specific domain structure, including a C-terminal HNH-endonuclease domain, defining the new MutS7 subfamily. We confirmed the presence of conserved mismatch recognition residues in all members of the MutS7 subfamily, suggesting their role in DNA mismatch repair rather than DNA recombination. PoV and PpV were found to contain an additional type of MutS, which we propose to call MutS8. The MutS8 proteins in PoV and PpV were found to be closely related to homologs from ‘Candidatus Amoebophilus asiaticus’, an obligate intracellular amoeba-symbiont belonging to the Bacteroidetes. Furthermore, our analysis revealed that MutS7 and MutS8 are abundant in marine microbial metagenomes and that a vast majority of these environmental sequences are likely of girus origin. Giruses thus seem to represent a major source of the underexplored diversity of the MutS family in the microbial world

Jeffers, E. S., M. B. Bonsall, **Willis KJ**. (2011). "Stability in Ecosystem Functioning across a Climatic Threshold and Contrasting Forest Regimes." Plos One **6**(1).

Classical ecological theory predicts that changes in the availability of essential resources such as nitrogen should lead to changes in plant community composition due to differences in species-specific nutrient requirements. What remains unknown, however, is the extent to which climate change will alter the relationship between plant communities and the nitrogen cycle. During intervals of climate change, do changes in nitrogen cycling lead to vegetation change or do changes in community composition alter the nitrogen dynamics? We used long-term ecological data to determine the role of nitrogen availability in changes of forest species composition under a rapidly changing climate during the early Holocene (16k to 8k cal. yrs. BP). A statistical computational analysis of ecological data spanning 8,000 years showed that secondary succession from a coniferous to deciduous forest occurred independently of changes in the nitrogen cycle. As oak replaced pine under a warming climate, nitrogen cycling rates increased. Interestingly, the mechanism by which the species interacted with nitrogen remained stable across this threshold change in climate and in the dominant tree

species. This suggests that changes in tree population density over successional time scales are not driven by nitrogen availability. Thus, current models of forest succession that incorporate the effects of available nitrogen may be over-estimating tree population responses to changes in this resource, which may result in biased predictions of future forest dynamics under climate warming.

Ohlson, M., K. J. Brown, **Birks HJB., Grytnes JA**, Hornberg G, Niklasson M, Seppa H, Bradshaw RHW (2011). "Invasion of Norway spruce diversifies the fire regime in boreal European forests." Journal of Ecology **99**(2): 395-403.

1. Global wildfire activity and biomass burning have varied substantially during the Holocene in both lime and space. At the regional to continental scale, macroclimate is considered to be the predominant control regulating wildfire activity. By contrast, the role of forest tree composition is often considered as a subsidiary factor in studies addressing temporal variation in regional wildfire activity. 2. Here, we assemble a spatially comprehensive data set of 75 macroscopic charcoal records that reflect local burning and forest landscapes that are spread over a substantial part of the European boreal forest:, spanning both oceanic and continental climates. 3. We show that the late-Holocene invasion of Norway spruce Picea abies, a new forest dominant in northern Europe, significantly reduced wildfire activity, thus altering forest disturbance dynamics at a subcontinental scale. 4. Synthesis. Our findings show that a biotic change in the local forest ecosystem altered the fire regime largely independent of regional climate change, illustrating that forest composition is an important parameter that must be considered when modelling future fire risk and carbon dynamics in boreal forests.

Staby, A. and **D. L. Aksnes** (2011). "Follow the light-diurnal and seasonal variations in vertical distribution of the mesopelagic fish Maurolicus muelleri." Marine Ecology-Progress Series **422**: 265-273.

Previous 1 d studies (Giske et al. 1990, Sarsia 75:65-81; Balino & Aksnes 1993, Mar Ecol Prog Ser 102:35-50; Rasmussen & Giske 1994, Mar Biol 120:649-664) of the mesopelagic fish Maurolicus muelleri have suggested that their vertical distribution changes as though they were following a constant light intensity, sometimes termed the 'isolume'. Here we investigated whether such behaviour is consistent under varying light conditions and over an extended period. We analysed acoustic observations of ontogenetically varying scattering layers (SLs) versus surface irradiance from selected days during a 9 mo period (January to September 2008). On the majority of days, a strong correlation (r(2) > 0.90) between upper SL depth and surface irradiance was observed. The SLs of M. muelleri suggest that this species has a restricted range of preferred light intensities. This tendency was found regardless of season and migration phase, i.e. during dawn descent, dusk ascent and daytime. The irradiance estimated at the top of the upper SL for consecutive days, regardless of migration phase, varied on average by less than 1 order of magnitude, while the average monthly estimates for the descent, ascent and daytime periods varied from 0.004 to 0.39 mu E m(-2) s(-1), 0.08 to 2.35 mu E m(-2) s(-1) and 0.02 to 0.68 mu E m(-2) s(-1), respectively. During their ascent, fish experienced up to 9 times higher light intensities than during the descent. Our study suggests that the vertical migration of M. muelleri emerges because of a vertical habitat selection that can be characterised by the preference of a restricted range of light intensities and that these intensities may be state and age dependent.

Tanaka, T., **T. F. Thingstad**, et al. (2011). "Lack of P-limitation of phytoplankton and heterotrophic prokaryotes in surface waters of three anticyclonic eddies in the stratified Mediterranean Sea." Biogeosciences **8**(2): 525-538.

We investigated the identity of the limiting nutrient of the pelagic microbial food web in the Mediterranean Sea using nutrient manipulated microcosms during summer 2008. Experiments were carried out with surface waters at the center of anticyclonic eddies in the Western Basin, the Ionian Basin, and the Levantine Basin. In situ, the ratio of N to P was always higher in both dissolved and particulate organic fractions compared to the Redfield ratio, suggesting a relative P-starvation. In each experiment, four different treatments in triplicates (addition of ammonium, phosphate, a combination of both, and the unamended control) were employed and chemical and biological parameters monitored throughout a 3-4 day incubation. Temporal changes of turnover time of phosphate and ATP, and

alkaline phosphatase activity during the incubation suggested that the phytoplankton and heterotrophic prokaryotes (Hprok) communities were not P-limited at the sites. Furthermore, statistical comparison among treatments at the end of the incubation did not support a hypothesis of P-limitation at the three study sites. In contrast, primary production was consistently limited by N, and Hprok growth was not limited by N nor P in the Western Basin, but N-limited in the Ionian Basin, and N and P co-limited in the Levantine Basin. Our results demonstrated the gap between biogeochemical features (an apparent P-starved status) and biological responses (no apparent P-limitation). We question the general notion that Mediterranean surface waters are limited by P alone during the stratified period.