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## Milliontilskudd skal øke forståelsen for kulturlandskap

I løpet av få tiår har vi sett den største landskapsendringen siden istiden og dagens raske samfunnsutvikling truer kulturlandskap over hele Europa. Universitetet i Bergen har nå fått seks millioner kroner av EU (CULTURE 2000) for å lede et prosjekt som skal få europeisk ungdom til å verdsette landskapene og bevare dem på riktig måte.

Kulturlandskap er betegnelsen på landskap som er skapt og vedlikeholdt av mennesker. Men i følge prosjektleder **Knut Krzywinski** ved Institutt for biologi, blir denne definisjonen for snever.

- Det er umulig å skille den synlige naturen fra det vi kan kalle det usynlige landskapet. Tradisjon, myter og opplevelsen av tilhørighet er like viktig når en snakker om kulturlandskap. Kunnskap og drift likeså. Derfor er det ikke nok å verne disse områdene fysisk hvis en skal ivareta denne felleseuropeiske kulturarven, sier Krzywinski.

### Skal nå Ringenes herre-generasjonen

Han er koordinator for det europeiske nettverket PAN som i flere år har arbeidet for å samle den europeiske forskningen på kulturlandskap. Botanikeren fra Bergen har nå fått seks millioner kroner fra EU til et informasjonsprosjekt rettet mot ungdom, kalt ECL (Our Common European Cultural Landscape Heritage). Sammen med sine ni partnerne fra hele Europa skal han lage en TV-serie om europeiske kulturlandskap, samt opprette og drive et nettsted med bakgrunnsstoff, videoklipp og annet materiale.

(Skrevet av Silje Gripsrud, enda mer å finne [På Høyden](#))



*Knut Krzywinski gleder seg til å ta i mot sine europeiske forskerkolleger i ECL-nettverket. De samles i Bergen i midten av september for å starte det spennende arbeidet med å lage film og nettside. Prosjektperioden er tre år.*



## Ny forskergruppe ved BIO: Fiskeimmunologi

Inntil fredag 27. august var forskergruppa i ”Utviklingsbiologi hos fisk” instituttets største. Nå har de imidlertid bestemt seg for å dele seg i to grupper. Med over 20 medlemmer, derav 6 faste gr. A-stillinger, sier det seg selv at det kunne bli litt diffuse faglige mål for virksomheten. De 4 forskerne som kom til fiskeutviklingsbiologigruppa fra Fiskehelsegruppa danner nå sin egen gruppe i Fiskeimmunologi, under ledelse av prof. [Heidrun Wergeland](#). I tillegg til henne, består den nye gruppa av postdoktor [Eirin Fausa Pettersen](#), forsker Anita Rønneseth og forsker Hans-Christian Ingerslev. Hva som nå er den største gruppa? Det er mikrobiell økologi med 19 medlemmer, under ledelse av Frede Thingstad.



## European MSc in Aquaculture and Fisheries godkjent av Erasmus Curriculum Development programme

The University College Cork (Ireland), University of Bergen (Norway), the Norwegian University of Science and Technology, Trondheim (Norway), Wageningen University (Netherlands), Universidade do Algarve (Portugal), Ghent University (Belgium) and the University of Warmia & Mazury in Olsztyn (Poland) are teaching and research institutions with international reputations in aquaculture and fisheries. These universities share similar missions, academic interests and research foci. The consortium starts running a new European Master of Science in Aquaculture and Fisheries programme in the academic year 2004-2005 parallel to local programmes of the partner universities.

The new “European Masters of Science in Aquaculture and Fisheries” programme will enable students to benefit from leading expertise in all fields of aquaculture and fisheries science due to the complementary expertise of the partner universities. All partner universities have laboratories carrying out research, thus up-to-date science in practice can be offered to the students. In addition all partner universities already have good relations with research institutes and with the aquaculture industry (companies and farms).

### “European Masters of Science in Aquaculture and Fisheries” Degree

Each student will be registered at one of the participating universities, hereafter called “home university”. Students will follow a core programme at his/her home university. To obtain the European Masters of Science in Aquaculture and Fisheries as a joint or double degree, the students have to study for a total of 120 ECTS with more than 30% at a host university. The degree will be issued at the home university in collaboration with the host.

All participating universities offer, parallel to their local programmes, many complementary courses towards the “European Masters of Science in Aquaculture and Fisheries” programme, all taught in english. Altogether 90 courses of a total of 500 ECTS credits are taught in the Master courses at the seven institutions.

Some topics in the programme are: Nutritional Biochemistry of Fish; Fish reproduction: Physiology and cryopreservation of fish sperm; Breeding in Salmonids, thymallids, and coregonids; Cytogenetics in fish breeding; Utilization of present and fossilized DNA materials in conservation of European fish fauna; Larviculture and larval food production; Management in the aquaculture industry; Aquaculture Genetics; Farm management training; Aquaculture and the Environment; Molluscs and crustacean culture; Engineering in aquaculture; Pathology and parasitology; Modelling in Fisheries; Conservation and management; Ethics and welfare of aquatic organisms; Animal behaviour modelling; Fisheries management; Population Genetic Methods in Aquatic Biology; Ecology of resources and ecosystems.

Thesiswork: Labwork, excursions and thesiswork are a very important part of the programme. Our research related education offers various topics for scientific thesis work on lab scale, but also industry

related research in a company or farm can be done. Our many contacts with non european and other european institutions can give you a chance to specialise in any other field mentioned above.

Link with the Industry: The consortium likes to understand better the needs of the industry. The economical, managerial and marketing aspects of aquaculture and fisheries are as important as the technical aspects of this industries. Each partner is holding optimal liaison with the local industry (companies or farms) and after evaluation research topics are adjusted.

Link with other Research institutions and universities worldwide: This European Consortium of aquaculture and Fisheries research and education institutions has extensive links to colleague institutions all over the world, and hence contributes significantly to competence building for the aquaculture industry worldwide. These institutions worldwide will actively cooperate in a further stage through new and running projects, eg. Brasil, Vietnam, China, etc. Also, all partners keep bilateral Erasmus agreements with several European Universities.

Admission: To be accepted to one of the universities, all below admission requirements are to be met: The applicant must be holder of a Bachelor of Science diploma of minimally 3 years in Aquaculture, biology, agronomy, veterinary medicine, or any related area from a recognized College or University Evidence of a good knowledge of English, written and spoken by presenting a certificate of English test (toefl or ielts).

The candidate's motivation (professionally) must be given

All other admission requirement to find on our website.

One recommendation letter should be included with the application form

Registration: All registration documents are available on the web, please click on the webpage of the university of your choice.

Scholarships: Various public and private institutions may offer scholarships to attend this programme. Please contact the coordinator of the university of your choice for more information.

## Nye publikasjoner

Thunes KH, Skartveit J, Gjerde I, Stary J, **Solhøy T**, Fjellberg A, Kobro S, Nakahara S, zur Strassen R, Vierbergen G, Szadziwski R, Hagan DV, Grogan WL, Jonassen T, Aakra K, Anonby J, Greve L, Aukema B, Heller K, Michelsen V, Haenni JP, Emeljanov AF, Douwes P, Berggren K, Franzen J, Disney RHL, Prescher S, Johanson KA, Mamaev B, Podenas S, Andersen S, Gaimari SD, Nartshuk E, Soli GEE, Papp L, Midtgaard F, Andersen A, von Tschirnhaus M, Bachli G, Olsen KM, Olsvik H, Foldvari M, Raastad JE, Hansen LO, Djursvoll P 2004. The arthropod community of Scots pine (*Pinus sylvestris* L.) canopies in Norway. ENTOMOLOGICA FENNICA 15: 65-90

**Abstract:** We summarise the findings of arthropods collected by fogging the canopy of 24 pine trees in two sites in Eastern and Western Norway. From the samples, taken in 1998 and in 1999, almost 30,000 specimens were determined to 512 species, with Diptera being most species rich (210 species), followed by Coleoptera (76 species) and Araneae (49 species). Of the 96 new species records, nine were new to science (5 Diptera and 4 Oribatida), two were new to the European, three to the Scandinavian and 82 to the Norwegian faunas. The paper demonstrates the need for detailed faunistical inventories of European forests.

Roth B, Møller D, Slinde E 2004. Ability of electric field strength, frequency, and current duration to stun farmed Atlantic salmon and pollock and relations to observed injuries using sinusoidal and square wave alternating current. NORTH AMERICAN JOURNAL OF AQUACULTURE 66: 208-216

**Abstract:** The effects of electricity as a stunning method in the slaughtering process of Atlantic salmon *Salmo salar* and pollock *Pollachius virens* were studied. About 330 slaughter-sized Atlantic salmon were exposed to sinusoidal alternating current (AC) in seawater. Electrical field strength



ranged from 25 to 100 V/m and current duration from 1 to 10 s at frequencies between 30 and 2,000 Hz. In addition, 122 pollock and 25 salmon were stunned by applying square wave AC in the range of 50-1,000 Hz. After stunning, subsequent unconsciousness was evaluated by means of behavioral responses, and injuries were observed by examining fillets. For sinusoidal AC, the proportion of Atlantic salmon sufficiently stunned and the occurrences of obviously broken spinal columns and hemorrhages were dependent on the electrical frequency used. The AC frequency was the most predominant factor in both stunning and inflicted injuries. The proportion of injured salmon exhibited a unimodal response to sinusoidal AC frequency, increasing from 30 Hz to 50-80 Hz and declining with higher frequencies. There was not a consistent injury-versus-frequency pattern for pollock exposed to square wave AC. For Atlantic salmon, use of square wave AC did inflict a higher rate of injuries than that of sinusoidal AC. For minimizing the occurrence of injuries while sustaining sufficient stunning before slaughter, sinusoidal AC frequencies between 500 and 1,000 Hz are recommended at field strengths exceeding 50 V/m and current durations of 10 s.



*Bjørn Roth er post doc i [fiske-utviklingsbiologi-gruppa](#), og Dag Møller (bildet) er prof emeritus.*

[Bjune A](#), Birks HJB, Seppa H 2004. Holocene vegetation and climate history on a continental-oceanic transect in northern Fennoscandia based on pollen and plant macrofossils. *BOREAS* 33: 211-223

**Abstract:** Changes in tree-line, mean July temperature (T-jul) and mean annual precipitation (P-ann) for the last 10 200 cal. yr BP are reconstructed on the basis of pollen and plant macrofossils preserved in lake sediments from two sites near the present-day tree-line in Troms, northern Norway.

Quantitative climate reconstructions are performed using pollen-climate transfer functions based on WA-PLS regression. Early Holocene *Betula pubescens* forests were gradually replaced by *Pinus sylvestris* at Dalmutladdo (355 m a.s.l.) starting about 7000 cal. yr BP. The local presence of pine woodland at that time is supported by finds of stomata and plant macrofossils and by high pollen accumulation rates. Until about 4000 cal. yr BP the *P. sylvestris* tree-line was 250-300 m higher than today, suggesting T-jul about 2.0 °C higher than at present. The later part of the Holocene has a cooler and moister climate and an increasing development of mires and fern-rich vegetation, as shown by increases of *Sphagnum* and fern spores and the re-establishment of *B. pubescens* woodland. The reconstructed T-jul from the two sites shows similar trends to previously published data, with T-jul 1-2 °C warmer between 9500 cal. yr BP and 2000 cal. yr BP T-jul. Maximum T-jul values occur between 8500 and 4500 cal. yr BP, after which there is a gradual decrease in T-jul.

## Ledige stillinger

### [Stipendiat](#) ved Institutt for biomedisin, UiB

Ved Det medisinske fakultet, Institutt for biomedisin, er det ledig ei mellombels stilling som stipendiat for ein periode på 3 år. Stillinga er eksternt finansiert av Norges forskningsråd og er knytt til prosjektet "Boiactive substances from Norwegian Aquatic micro-organisms as cell signalling disrupters with potential to modulate cell death and thromboc". Søknadsfrist 18. september 2004.

### **Stipendiat NTNU:** Risk-Sensitive Life History Theory - When is Gambling Adaptive?

Adaptive trade-offs are normally studied from the point of view of the mean returns to be gained from alternative fitness enhancing options (e.g. mean fitness when producing many small offspring versus few large offspring). However, risk-sensitive foraging has highlighted the importance of variance when considering such adaptive decision-making. Depending on the shape of the fitness (utility) function, individuals should be risk-averse (playing it safe) or risk-prone (gamblers). Evidence to support these predictions has been around for a number of years in the foraging literature (see Real & Caraco 1986 *Ann. Rev. Ecol. Syst.* 17, 371-390). However, few attempts have been made to apply such thinking to a wider range of evolutionary problems. The purpose of this PhD will be to re-examine existing theory and data, and to carry out original experiments to test whether risk-sensitivity has applications outside the study of foraging behaviour. All nationalities are eligible (Masters degree preferred). The preferred start date is January 2005. For further information, please contact:



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**Kontali Analyse AS Kristiansund: [Biolog / fiskerikandidat / høgskolekandidat](#)**

Arbeidet vil blant annet bestå i å innhente og analysere informasjon om biologisk produksjon verden over. Dette kan være informasjon fra alt om rogninnlegg, smoltutsett, tilvekst og forbruk til sykdomsutbrudd, svinn, konsensjonstildelinger og vanntemperaturer. Databasene som Kontali Analyse AS har opparbeidet gjør oss i stand til å utføre en rekke analyser om biologisk produksjon av oppdrettet fisk verden over. Personen vil også ta del i arbeidet med våre faste rapporter samt løpende kundeoppdrag og egne prosjekter. I den ekspansjonsfasen vi er inne i har den rette kandidat mulighet til å etablere en sterk posisjon i havbruk/fiskenæringen world wide.

**Nasjonalt folkehelseinstitutt: [Forskere og post doktor -biomedisinsk rusmiddelforskning](#)**

Nasjonalt folkehelseinstitutt arbeider for å bedre befolkningens helse ved å styrke det forebyggende helsearbeidet i samfunnet. Instituttet gir råd, yter tjenester og fremskaffer kunnskap om hvordan helsetilstanden utvikler seg, hvilke forhold som påvirker den og hva som kan gjøres for å bedre den. Folkehelseinstituttet gir også rettssikre råd og tjenester til rettsapparatet. Instituttet har en administrasjonsdivisjon og fire fagdivisjoner - smittevern, miljømedisin, epidemiologi og retts toksikologi og rusmiddelforskning. Ved Divisjon for retts toksikologi og rusmiddelforskning, Avdeling for rusmiddelforskning, er det ledige stillinger som forskere (fast) og post doktor (3-årige engasjementer).

**STOCKHOLMS UNIVERSITET** söker en [FORSKARASSISTENT \(= post doc\) i växtekologi](#) med placering vid botaniska institutionen – sista ansökningsdag 1 oktober 2004. Arbetsuppgifterna består av egen forskning och viss undervisning (maximalt 20 %).

Behörig att anställas som forskarassistent är den som har avlagt doktorsexamen eller har en utländsk examen som bedöms motsvara doktorsexamen. Examen skall vara avlagd vid ansökningstidens utgång. I första hand bör den komma ifråga som avlagt examen högst fem år före ansökningstidens utgång. Även den som har avlagt examen tidigare bör komma i fråga i första hand, om det finns särskilda skäl. Med särskilda skäl avses ledighet på grund av sjukdom, tjänstgöring inom totalförsvaret, förtroendeuppdrag inom fackliga organisationer och studentorganisationer eller föräldraledighet eller andra liknande omständigheter. Vid tillsättningen kommer särskild vikt att fästas vid vetenskaplig skicklighet. Vikt fästs även vid pedagogisk skicklighet. Anställningen får normalt innehas under fyra år.

**Post doc i mykologi, New Zealand**

En kollega i New Zealand (dr Margaret di Menna) har kontaktet meg (Arne Flåøyen) angående en post doc stilling innen mykologi ved AgResearch i Hamilton New Zealand, <http://www.agresearch.co.nz/>. Dette er et engasjement for 2 år (kanskje noe lengre). Tema: Fungi (maybe bacteria) in relation to pasture plants. Lønn: Ca NZ\$ 55.000 per år (Ca 250.000 kr). Dere kan kontakte meg dersom dere ønsker mer informasjon.

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