



Innhold (klikk på sidetallet, så kommer du dit direkte ...)

Viktige tidsfrister	1
Siste nytt fra BIO	1
<i>Gamle øresteiner gir fersk kunnskap</i>	1
<i>Arne Skorping med helside i Trends in Parasitology</i>	2
<i>Two new Marie Curie Fellows and a Fulbright Fellow in the EECRG</i>	3
<i>3 søkere til førsteamanuensis i biologisk oseanografi</i>	4
<i>Ny web-side for BIO kommer snart</i>	4
Siste nytt fra verden rundt oss	4
<i>Oppfølging av kommersialisering - et lederansvar</i>	4
<i>Øystein Djupedal lover at forskning ikke skal tape</i>	4
Ny doktorgrad	4
<i>Christian Jørgensen: Torskens livshistorie</i>	4
Gjesteforelesninger, seminarer og kollokvier	5
<i>John Birks i BIO-SEM</i>	5
<i>Seminar ved Sarssenteret</i>	5
<i>GIS- anvendelser</i>	6
<i>Plants for the future</i>	6
Nye finansieringsmuligheter	6
<i>MARS Travel Award for Young Scientists</i>	6
<i>Applications Grand Prix Scientifique 2006</i>	6
<i>Legat til botanisk forskning</i>	7
Nye artikler	7
<i>Arne Skorplings bokomtale</i>	7
<i>Per Holmstad og Arne Skorping: parasittenes innflytelse på rypas økologi</i>	7
<i>Magnus Devold og Are Nylund: forekomst av ISA-virus i vill laksefisk i Norge</i>	7
<i>Audrey Geffen: europeisk samarbeid om aldersbestemmelse av fisk</i>	8

Viktige tidsfrister

Mer info om følgende utlysninger og mange flere finner du på **Intranett >Forskning >BIO**

- 30. nov:** - OECD mobilitet og workshops, EØS-Polen , **1. des:** - Forskningsrådet: FUGE; SFI; Samarbeid med Vest-Balkan; BILAT (mest US og Canada)
- EURY
15. des: - Fellowships for taxonomy of deep-sea life
- Meltzerfondet; Bergen universitetsfond; mindre legater og fonds

Siste nytt fra BIO

Gamle øresteiner gir fersk kunnskap

Ørestein fra fisk kan fortelle om fiskens vandringer for mange tusen år siden, hvor fort den vokste og ved hvilke temperaturer den levde.

Ved hjelp av 400.000 kroner fra Meltzer-fondet har en tverrfaglig forskningsgruppe ved Universitetet i Bergen ledet av professor i fiskeribiologi, [Arild Folkvord](#), satt i gang et pilotprosjekt der de forsker på ørestein fra fisk. De sammenlikner data fra en seks tusen år gammel ørestein fra boplassen Skipshelleren i Vaksdal kommune, med tilsvarende data fra øresteiner fra vikingtiden og nyere tid fra bl.a. Finnmarkskysten og Troms. Fra BIO deltar for øvrig Prof [Audrey Geffen](#) og forsker [Hans Høie](#). Les mer i [På Høyden](#).



Postadresse:	Besøksadresse:	Telefon:	E-post:	Jarl Giske:
Postboks 7800	Bioblokken, 3. etg.	+47 55 58 44 00	post@bio.uib.no	Tlf 84403
N-5020 Bergen	Høyteknologisenteret	Telefaks:	Internett:	Mob 9920 5975
Norge	i Bergen.	+47 55 58 44 50	http://www.bio.uib.no	
	Thormøhlensgate 55			



Arne Skorping med helside i *Trends in Parasitology*

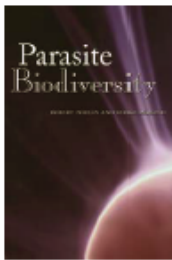
Noen vil si at en bokomtale ikke er forskning. Det har de rett i. Men hvem er det som blir bedt om å skrive en bokomtale i et høyt respektert tidsskrift? BIO er stolt av å ha i blant oss flere som etterspørres på dette markedet. Denne gangen, og det er ikke første gang heller, er det [Arne Skorping](#) som har skrevet en bokomtale i siste nummer av *Trends in Parasitology*. Den er ikke lenger enn at den kan leses mens du drikker en kopp kaffe:

Global parasitology

Parasite Biodiversity by Robert Poulin and Serge Morand. Smithsonian Books, 2005. £191.01 (208 pages) ISBN 1588341704

Arne Skorping

Department of Biology, University of Bergen, Allègaten 41, N-5007 Bergen, Norway



Most biologists would know, or at least suspect, that there is an incredible number of parasite species out there. But the diversity of these organisms varies enormously among habitats, hosts and organs. Horses can have > 30 different nematode species infecting their guts simultaneously, whereas rabbits rarely have more than two.

There is no end to what kinds of parasite humans might pick up in the tropics, although we are pretty safe (but not completely) in the Arctic. So, when we start to examine a host population or a community of hosts in a certain habitat, are there any general rules that will tell us what to expect? There should be and, during the past decades, ecologists have examined several different hypotheses that might explain the variation in the richness of parasites species. Robert Poulin and Serge Morand, two of the most prolific profilers of current parasite macroecology, have done an impressive job of putting a considerable number of these studies into a sensible context.

This book addresses some of the key questions regarding parasite diversity. What kinds of host tend to have many parasite species and why? What processes were involved in creating the current distribution of species richness among host taxa? Are there differences in parasite species richness between habitats? What determines parasite extinction, and how does parasite richness affect the diversity of hosts? Sometimes, the authors can provide reasonably good answers to the questions they ask, although often they cannot. However, Poulin and Morand make a serious effort to review the relevant theories and data that exist for each question. Some readers might feel that the book has a bias towards comparative studies, a field in which both authors have made major contributions. There is certainly a need for more experimental studies of the dynamics of parasite communities and, hopefully, this text will stimulate

researchers to examine some of the theoretical assumptions on simple laboratory systems.

I enjoyed reading *Parasite Biodiversity*. The authors have managed to merge understanding of epidemiology, community ecology and comparative studies into a highly readable text. This book is ideal for those who want a quick start in the subject of parasite macroecology. It outlines the important questions, reviews the current state of knowledge and makes valuable suggestions about how to progress. Although not a voluminous text, Poulin and Morand have managed to cover a wide range of research literature. In a small book with such a broad perspective, one can always disagree with what has been omitted. For example, it is hardly mentioned how and why the diversity of parasites varies among different host organs. Most of the examples are about worms and vertebrates; a little more information about other host and parasite taxa would have been desirable. However, the main value of *Parasite Biodiversity* is its focus on general patterns and processes that are relevant to understanding biodiversity, and the selection of taxa is, therefore, somewhat irrelevant.

This is the kind of parasitology that should be read by both general-community ecologists and parasitologists who wish to see their subject integrated into an ecological framework. But the more traditionally inclined parasitologist would also benefit from taking a closer look at this book. At conferences, I sometimes meet colleagues who ask the obligatory question 'what parasite species are you working on?' Replying that I do not work on any particular species but, instead, focus on problems often seems to confuse the asker. Perhaps this book will help to change the view that parasitology is just an endless quest to provide new information about an ever-increasing number of species.

Two new Marie Curie Fellows and a Fulbright Fellow in the EECRG

The Environmental and Ecological Change Research Group (EECRG) has three visitors this semester: **Jonathan Tyler** and **Morten Mortensen** are Marie Curie Fellows at the QPALCLIM training site; **Michelle Crenshaw** is a Fulbright Fellow.

Jonathan Tyler is from University College London. His PhD research is concerned with unravelling the climatic significance of oxygen isotope ratios preserved in lacustrine diatom silica. This involves a detailed study of the seasonal patterns in the isotope geochemistry of waters and diatom silica at Lochnagar, a remote mountain loch in eastern Scotland. In addition, he is looking at the ecology of Lochnagar's diatoms, with particular focus on their seasonal productivity, in order to assess the way lake sediments are weighted by certain times of year. During his time in Bergen, Jonathan will be analysing diatom samples collected over the past two years, and addressing the complexities of numerical analysis of time series hydrological and ecological data, in conjunction with Richard Telford and John Birks.

Morten Mortensen, a Ph.D. student from Aarhus University and who also works at the National Museum in Copenhagen, aims to reconstruct the vegetational development and climatic changes that took place during the Late Glacial and Preboreal in Denmark. In 2001 an archaeologist excavated a kettle hole in Jylland, Denmark and discovered bones from reindeer, one of which had been penetrated by an arrowed head. The bones are the remains from a successful hunting party that took place more than 14 000 years ago. This is the earliest evidence of human activity in Denmark yet to be found. Besides the archaeological finds the kettle hole also contained what seems to be undisturbed sediment covering the Bølling to Preboreal period. A single locality with sediment covering this time span is not known from any other site in Denmark. Morten is analysing the plant macrofossils from the site during his 3-month stay at the University of Bergen. He is working with Hilary Birks.



*Michelle
Crenshaw*

*Morten
Mortensen*

*Jonathan
Tyler*

Michelle C. Crenshaw, a doctoral candidate in the Department of Biology at the University of Waterloo, Canada has a US Fulbright Fellowship for the 2005-2006 academic year to study in the EECRG with John Birks and Richard Telford. Michelle completed two undergraduate theses at the University of Missouri (1999) working with Umbrella birds in Costa Rica and sediment deposition patterns in a Missouri reservoir. She obtained her M.Sc. in aquatic ecology from Southern Illinois University (2002) and was a research scientist as part of an international UNESCO Ecohydrology team studying the ecology of Lake Naivasha, Kenya in 2000. Her current research aims to develop and test Generalized Additive Models, which can help predict patterns of aquatic community response and recovery in acid-sensitive lakes. Multiple environmental stressors affect nearly all ecosystems, often altering them beyond their natural range of variation. The new methods should improve understanding of how stressors interact to regulate whole-lake ecosystems.

3 søkere til førsteamanuensis i biologisk oseanografi

Det har meldt seg 3 søkere til en 1. amanuensis-stilling i biologisk oseanografi:

Eirik Olav Duerr, PhD (59)

Øyvind Fiksen, Dr.Scient. (37)

Richard David Marriot Nash, PhD (50)

Interesserte kan dvele ved [utlysningsteksten](#) og [stillingsomtalen](#). BIO har foreslått for fakultetet at fakultetsstyret oppnevner denne bedømmelses-komiteén på møtet sitt 16. november:

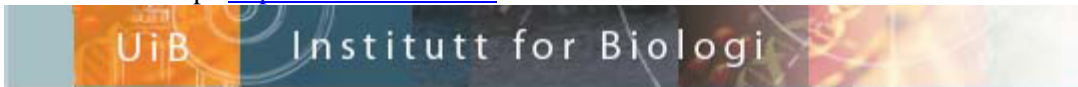
Professor Kurt Tande, Norges Fiskerihøgskole, UiTø

Professor Gunilla Rosenqvist, Institutt for biologi, NTNU

Professor Arne Skorping, Institutt for biologi, UiB (leder)

Ny web-side for BIO kommer snart

Mandag 14. november lanserer BIO sin nye webside. Den er neppe 100 % ferdig da, men det blir jo en webside aldri. En forsmak kan du få ved å trykke [her](#). Når du først er inne på nettstedet, bruk anledning til å se på din egen webside. Du kan fortsatt oppdatere innholdet ved å gå inn på din nåværende side på <http://www.bio.uib.no/>.



Siste nytt fra verden rundt oss

Oppfølging av kommersialisering - et lederansvar

Arbeidstakeroppfinnelsesloven ble endret fra 2003. Ledere på alle nivåer har nå ansvar for å vurdere og følge opp oppfinnelser som er gjort av egne forskere og andre arbeidstakere.

Bergen Teknologioverføring AS (BTO) er opprettet av 7 forskningsinstitusjoner i Bergen for å bistå dem i å ta bedre beslutninger knyttet til kommersialisering av forskning.

BTO inviterer administrative og faglige ledere, mellomledere, instituttledere og forskere hos våre eiere og samarbeidspartnere til kommersialiseringskonferanse i Grand selskapslokaler onsdag 23. november 2005.

Dato: 23. november 2005

Tid: Kl. 11:00 – 15:00

Sted: Grand selskapslokaler, Handelens & Sjøfartens Hus, inngang fra Ole Bulls plass 1

Påmelding: Elektronisk påmelding innen 16. november på denne nettsiden:

www.bergento.no/konferanse/pamelding.htm

Øystein Djupedal lover at forskning ikke skal tape

- Forskning har allerede tapt gjennom for mange administrasjoner og for mange ministre før meg. Dette har jeg vært rasende på. Jeg håper at Stortinget skal slippe å holde rasende innlegg mot meg, sier den nye [kunnskapsministeren](#) i følge Forskningsrådet.

Ny doktorgrad

Christian Jørgensen: Torskens livshistorie

[Christian Jørgensen](#) disputerer fredag 11. november for PhD.-graden ved UiB med avhandlingen: "*Fisheries-induced life history evolution in cod*". Skreien er den store torskestammen som vandrer fra Barentshavet til Lofoten for å gyte, og den består av noen titalls milliarder individer. Når man står overfor slike mengder med fisk er det lett å overse at hvert av disse individene forsøker å gjøre det beste av livet, og at det har sin egen dynamikk drevet av for eksempel miljøet og tilgangen på mat. Livshistorieteori forsøker å forstå når et individ skal vokse og når det skal begynne å reprodusere, hvor mye det skal investere i reproduksjon i forhold til andre aktiviteter, og hvordan dette påvirkes for eksempel av dødelighet og



vekstbetingelser.

Ved å lage en matematisk modell av torskens fysiologi og tolke denne i lys av livshistorieteori forsøker avhandlingen å belyse dynamikken i hele fiskebestanden med utgangspunkt i enkeltindividet. For eksempel utfordres en av standardantagelsene i fiskeriforvaltning, nemlig at fisk gyter hvert eneste år etter at de har blitt kjønnsmodne. I modellen hopper over halvparten av fisken over sin andre gytesesong og prioriterer i stedet å vokse. Under dagens intensive fiske er dette alvorlig: førstegangsgytere er uerfarne og regnes for å ha liten suksess, mens torsk som gyter for tredje gang eller mer er sjeldne fordi de mest sannsynlig har blitt fisket opp. Hvis andregangsgyterne hopper over gyting må man derfor tenke på nytt omkring rekruttering til fiskebestander. Data fra sild støtter en slik tolkning, og har begrunnet innsamling av nyere data også for torsk. Avhandlingen ser også på langtidseffekter av fiske på torskebestanden, den evaluerer hvilke mål på bestanden som gir et godt inntrykk av rekruttering, og den gjør et forsøk på å utvikle ny modelleringsmetodologi som kan besvare flere typer spørsmål fiskeriforvaltninga står overfor.

Personalia:

Christian Jørgensen er født 23. januar 1974 og oppvokst på Skjetten i Akershus. Han er utdannet biolog fra Universitetet i Bergen og Universitetsstudiene på Svalbard, og avla i 2001 cand.scient.-graden i miljøfysiologi ved Universitetet i Bergen med veiledning også fra Norsk Polarinstitutt. Høsten 2002 ble han ansatt som stipendiat ved Institutt for biologi ved Universitetet i Bergen med finansiering fra Norges Forskningsråd. Flere av arbeidene i avhandlingen er gjort i samarbeide med forskere fra *International Institute for Applied Systems Analysis* i Østerrike og IFREMER (det franske havforskningsinstituttet).

Tidspunkt og sted for disputasen:

11.11.2005, kl. 10:15, Stort auditorium, rom 2144, Datablokken, Høyteknologisenteret

Gjesteforelesninger, seminarer og kollokvier

John Birks i BIO-SEM

Palaeoecology and Current Environmental Problems – Is Palaeoecology still a 'Quaint but Irrelevant Speciality'?

H.J.B. Birks

Department of Biology & Bjerknes Centre for Climate Research, University of Bergen, and Environmental Change Research Centre, University College London.

Palaeoecology was dismissed in 1984 as a 'quaint but irrelevant speciality'. Considerable advances have been made in palaeoecology, particularly in palaeolimnology. Four case studies are discussed on the application of palaeoecological approaches and techniques to environmental questions – causes of recent lake acidification in southern Norway; causes of recent aquatic regime shifts in shallow lakes; effects of recent climate change on arctic lake ecosystems; and reconstructing Pacific salmon population shifts. The links between Quaternary palaeoecology and contemporary environmental and earth system ecology are outlined, and the question of how quaint and irrelevant palaeoecology is in biological and environmental sciences is revisited.

Tirsdag 8. november 14.15 til 15.00. Jahnebakken 5, Auditorium 101

Presentasjonene innen BIO-seminarserien finner sted annen hver tirsdag på samme tidspunkt og sted.

Seminar ved Sarscenteret

“A study of pitx gene expression patterns in *Danio rerio*”

Kari Ersland, Research Assistant in Chourrout Group

Wednesday Nov 9 at 13.00 –14.00, in the Sars Seminar room (222 A4) HIB, Biobuilding, 2nd floor

GIS- anvendelser

[Institutt for geografi](#), UiB, inviterer til arrangement i forbindelse med årlig markering av den internasjonale geografiske informasjon systemer (GIS) dagen.

Temaet i år er "GIS: nåværende bruk og fremtidig anvendelse innen privat og offentlig sektor i Norge", og er ment som en måte å knytte GIS forskning med næringslivets behov.

Programmet finner du [her](#)

Torsdag 17. november, kl. 9:30-14:30, Seminar Rom, Institutt for geografi, 7. etasje, SV bygget Fosswinckels gate 6

Plants for the future

UMB inviterer til møte om den strategiske forskningsplanen "Plants for the future".

Hensikten med møtet er å få innspill på forhold av interesse for Norge og på eventuelle mangler ved forskningsplanen, se [strategi](#). Samlet tilbakemelding fra Norge blir sendt EPSO (European Plant Science Organisation, (www.epsoweb.org) etter møtet. Vi ønsker skriftlige kommentarer til planen fra institusjonen, også fra dem som eventuelt ikke kan delta.

Møtet arrangeres i samarbeid mellom Universitet for miljø- og biovitenskap og Forum for bioteknologi og finner sted **torsdag 8. desember** kl. 10-14 i Oslo. Les [invitasjon, program og påmeldingsinfo](#) Les også [pressemelding](#)

Nye finansieringsmuligheter

MARS Travel Award for Young Scientists

Marine Research Stations Network (MARS) travel award for young scientists

Dear colleagues,

We gladly announce the fifth series of the MARS Travel Award for Young Scientists

This year maximally three awards of 2000 €each will be granted to promising young scientists to study a research topic at another MARS member institute.

Both institutes must be full members who have paid their dues for 2005, or have announced to become a member from 2006 on.

At least one of the awards will be given to a candidate from East and Central Europe.

The research topic should fall into one of the following themes:

Marine biodiversity, including taxonomy and ecosystem functioning

Marine genomics and molecular biology

Marine model organisms and natural products

Climate change problems

Sustainable ecosystems and human factors

The awarded topics, and after completion of the project an abstract of the results, will be published in extended format in the MARS Newsletter.

Proposals must include a maximum 2 page outline of the intended research, the addresses of the sending and receiving MARS member institutes, a letter of support from the sending and the host institute, and a CV of the Young Scientist. The proposals will be refereed by two reviewers.

The deadline for proposals is **18 November 2005**. <http://www.marsnetwork.org/awardinfo2.php>

Proposals can be sent to the Executive Secretariat.

Prof.Dr. Fred Buchholz (President)

Prof.Dr. Herman Hummel (Executive Secretary) E-mail: h.hummel@nioo.knaw.nl

More information on the MARS network can be found on the website: www.marsnetwork.org

Applications Grand Prix Scientifique 2006

Created in 1969, the Grand Prix Scientifique from the Fondation Simone et Cino del Duca will be awarded, in 2006, to a French or European research group of international renown for work in one of the following fields : chemistry cellular and molecular, biology, genomic, integrative biology, human biology and medical sciences, and their applications. of 294, 000 euros.

Deadline for submitting applications: **December 1st**, 2005. Les UiB-[omtalen](#) og selve [utlysningen](#).

Legat til botanisk forskning

Kvart år i mars vert det delt ut midlar frå Olaf Grolle Olsens legat. Midlane skal nyttast til botanisk forskning, og plantematerialet som vert samla inn med midlar frå fondet, skal tilkoma herbaria ved Bergen Museum.

Fondet gir midlar kun til arbeid som vert utført ved Universitetet i Bergen.

Søknadsfrist: 1. desember 2005 [Les mer...](#)

Nye artikler

Arne Skorpings bokomtale

Skorping A. 2005. Global parasitology. Trends in Parasitology 21: 455.

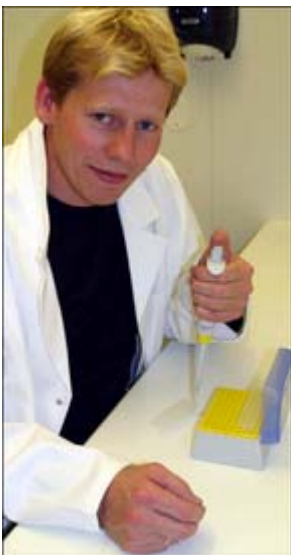
Per Holmstad og Arne Skorping: parasittenes innflytelse på rypas økologi

[Holmstad PR](#), Hudson, PJ & Skorping, A. 2005. The influence of a parasite community on the dynamics of a host population: a longitudinal study on willow ptarmigan and their parasites. Oikos 111: 377-391.

Abstract: Despite the fact that most host populations are infected by a community of different parasite species, the majority of empirical studies have focused on the interaction between the host and a single parasite species. Here, we explore the hypothesis that host population dynamics are affected both by single parasite species and by the whole parasite community. We monitored population density and breeding productivity of two populations of willow ptarmigan (*Lagopus lagopus*) in northern Norway for 8 and 11 years, respectively, and sampled eukaryotic endoparasites. We found that increasing abundances of the cestode *Hymenolepis microps* was associated with increased breeding mortality and reduced annual growth rate of the host population in both areas, and reduced host body mass and body condition in the area where such data were available. In one of the areas, the abundance of the nematode *Trichostrongylus tenuis* was associated with reductions in host body mass, body condition and breeding mortality and the filaroid nematode *Splendidofilaria papillocerca* was negatively related to host population growth rates. The parasite community was also negatively related to host fitness parameters, suggesting an additional community effect on host body mass and breeding mortality, although none of the parasites had a significant impact on their own. The prevalence of parasites with very different taxonomical origins tended to covary within years, suggesting that variability in the parasite community was not random, but governed by changes in host susceptibility or environmental conditions that affected exposure to parasites in general. Other variables including climate, plant production and rodent densities were not associated with the recorded demographic changes in the host population.

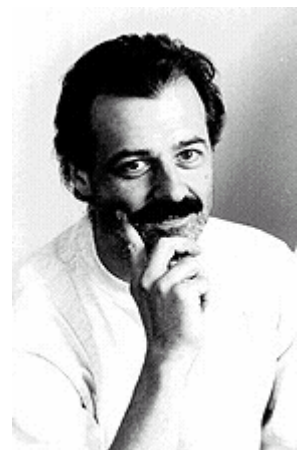


Magnus Devold og Are Nylund: forekomst av ISA-virus i vill laksefisk i Norge



Plarre H, [Devold M](#), Snow M, Nylund A 2005. Prevalence of infectious salmon anaemia virus (ISAV) in wild salmonids in western Norway. DISEASES OF AQUATIC ORGANISMS 66: 71-79

Abstract: Studies of infectious salmon anaemia virus (ISAV), an important pathogen of farmed salmon in Norway, Scotland, the Faeroe Islands, Ireland, Canada, the USA and Chile, suggest that natural reservoirs for this virus can be found on both sides of the North Atlantic. Based on existing information about ISAV it is believed to be maintained in wild populations of trout and salmon in Europe. It has further been suggested that ISAV is transmitted between wild hosts, mainly during their freshwater spawning phase in rivers, and that wild salmonids, mainly trout, are possible carriers of benign wild-type variants of ISAV. Change in virulence is probably a result of deletions of amino acid segments from the highly polymorphic region (HPR) of benign wild-type isolates after transmission to farmed salmon. Hence, it has been suggested that the



frequency of new outbreaks of ISA in farmed salmon could partly reflect natural variation in the prevalence of ISAV in wild populations of salmonids. The aims of the present study were to screen for ISAV in wild salmonids during spawning in rivers and to determine the pathogenicity of resultant isolates from wild fish. Tissues from wild salmonids were screened by RT-PCR and real-time PCR. The prevalence of ISAV in wild trout *Salmo trutta* varied from 62 to 100% between tested rivers in 2001. The prevalence dropped in 2002, ranging from 13 to 36% in the same rivers and to only 6% in 2003. All ISAV were nonpathogenic when injected into disease-free Atlantic salmon, but were capable of propagation, as indicated by subsequent viral recovery. However, non-pathogenic ISAV has also been found in farmed salmon, where a prevalence as high as 60% has been registered, but with no mortalities occurring. Based on the results of the present and other studies, it must be concluded that vital information about the importance of wild and man-made reservoirs for the emergence of ISA in salmon farming is still lacking. This information can only be gained by further screening of possible reservoirs, combined with the development of a molecular tool for typing virulence and the geographical origin of the virus isolates.

Audrey Geffen: europeisk samarbeid om aldersbestemmelse av fisk

Appelberg M, Formigo N, [Geffen AJ](#), Hammer C, McCurdy W, Modin J, Moksness E, Mosegaard H, Morales-Nin B, Troadec H, Wright P 2005. A cooperative effort to exchange age reading experience and protocols between European fish institutes. FISHERIES RESEARCH 76: 167-173

Abstract: In Europe, research to improve age estimation methods is often limited to small-scale studies and thus it has been difficult to integrate innovations into routine protocols. There has even been a lack of pilot scale studies and implementation of control mechanisms in the age reading process. This was recognised and addressed by European Fish Ageing Network (EFAN; 1997-2000). EFAN was established as an active, independent and informal network for exchange of ideas and experience for improving age estimation. For the first time, age reading problems were addressed on a common platform across Europe. EFAN improved awareness and sensitivity towards the quality of age reading, however, this did not always deliver changes in the routine age reading processes. The present project, Towards Accreditation and Certification of Age Determination of Aquatic Resources (TACADAR); 2002-2006 aims to submit a quality assurance manual including an evaluation of the legal aspects and implications to the European Union (EU). Through the network of excellence, TACADAR will strengthen the competitive position of European institutions involved in fish ageing through institutional synergy and international co-operation.

