ASLO Communication to Members

LOGO CONTEST
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American Society of Limnology and Oceanography
Spring, 1991

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MESSAGE FROM THE PRESIDENT

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Six months ago, major changes were introduced in the way the ASLO conducts its business. Most importantly, the Society hired an Executive Director (Dr. Susan Weiler) to complement the otherwise-volunteer Board of Directors. Around the same time, Allen Press, who was already publishing *Limnology and Oceanography*, assumed responsibility for the ASLO Business Office.

In the last Communication to members, I announced a 10-point Action Plan that was to serve as a guide to ASLO priorities and activities in this new operational context. The purpose of the present message is to let members know what progress we have made, and what problems have come up, in the implementation of the Action Plan.

1. Increasing Society membership: As a basic step in this direction, Susan Weiler has begun collecting demographic data on the membership. Of course, this work, when completed, will be of considerable use to the Society in other ways.

One interesting and relevant facet of the preparations for the 1991 summer ASLO meeting, which is being organized by colleagues in my Institute, is that many people are requesting membership application forms when they request information and abstract submittal forms for the meeting. This is a direct result of Alan Longhurst's efforts: his typical approach is "if you were a member, you would have already received all this material in the mail".

As another part of this effort, a membership application will appear on the last page of each issue of *Limnology and Oceanography* (see below).

Finally, Allen Press is in the process of preparing an informational brochure to enhance recruitment.

2. Providing the membership with excellent scientific meetings: A special symposium on "What controls phytoplankton production in nutrient-rich areas of the open sea" will be held in February 1991. This meeting, stimulated initially by discussion of a possible increase in global new production by fertilization of the Antarctic Ocean with iron, has come about through the Herculean efforts of the Program Steering Committee Co-Chairs (Sallie Chisholm and John Cullen), the other Steering Committee members (Karl Banse, Bruce Frost, John Martin, Diane McKnight, Claire Schelske), and Susan Weiler, who has coordinated the effort. Because of them, it has been possible to organize an outstanding agenda and participant list on extremely short notice. Susan has been successful in obtaining external funding from various sources for the meeting, and is in the process of securing additional funds to cover the cost of a special symposium issue of L&O. Many speakers and other participants volunteered to cover their own travel costs in order to enable more students and others on limited funds to participate. This is a most gratifying trend. There has been an overwhelming response to the meeting; we expect around 150 participants, including 20 from outside the U.S. We take this as a sure sign that the Society is providing a much-needed forum on an important topic.

Preparations for the Santa Fe Aquatic Sciences Meeting (February 1992) are well underway. The scientific program is being put together by David Schindler and Mary-Jane Perry, and members should be receiving program information soon.

The Society will also co-sponsor a major meeting "Aquatic Ecology; Scale, Pattern and Process" with the British Ecological Society in Cork, Ireland in April 1992.

3. Consolidating excellence of the Society's publication: Readers of L&O will have noticed that the editorial base of the journal has been broadened by the addition of a number of associate editors. The ASLO Board has approved appointment of Bob Stauffer (Lexington, KY) and Ulrich Sommer (Plon, Germany) to Associate Editorships, rounding out the initial slate of six. Unfortunately, new administrative commitments have forced Ken Denman (Sidney, BC) to step down . We anticipate that this vacancy will be filled by the June meeting if not sooner. Because associate editors serve staggered terms, and due to unanticipated overturn, nominees and volunteers are always welcome (contact Lyn Cole, Limnology and Oceanography, WB-10, University of Washington, Seattle, WA 98195 (Tel: 206-543-0952; Omnet: L.O). The Editorship will change in 1992 when Pete Jumars' second term ends. Nominations and applications for his replacement should be directed to the Executive Director, Susan Weiler (address on masthead).

4. Increasing member services: As mentioned last time, ASLO will publish its Membership Directory on an annual basis. This year's directory should be out in April or May. While some Societies that I am a member of charge members as much as $26 to receive the Directory, the ASLO Directory is still mailed to all members as part of their regular annual dues.

We hope the expanded Communication to Members will come out quarterly starting next year, to serve our membership better. Please contact Susan Weiler if you have anything you would like published, or have particular topics you would like to see covered on a regular basis.

5. Expanding educational and human resource initiatives: As part of this effort, we plan to hold an informational session concerning the various aquatic science funding agencies and how to write successful proposals at the 1992 Aquatic Sciences Meeting. We also plan to develop an informational brochure on aquatic science careers, targeting pre-college students (if you would like to work on this project, please contact Susan Weiler.) The Committee on Under-Represented Minorities in Limnology and Oceanography (CURMLO) is continuing under the strong leadership of Ben Cuker (see item 6).

6. Initiatives for participation of under-represented minority groups: The ASLO Committee on Under-Represented Minorities in Limnology and Oceanography (CURMLO) will continue its work with a special program of events at the 1991 meetings. The NSF Division of Ocean Sciences has awarded Hampton University and ASLO a grant to support these activities at the Halifax and the two subsequent meetings of the Society (see CURMLO Report for more details). His similar initiative in 1990 at the Williamsburg meeting was an outstanding success. As well as attending the ASLO meeting proper, students in the group are offered an additional

program on the week-end prior to the main meeting. Funding has been requested through Canadian channels to support a similar program for Canadian minority students at the 1991 meeting, and a discussion is pending. Anyone interested in being a "meeting mentor", having a participant to recommend for the program or desiring more information should contact Dr. Ben Cuker, Center for Marine and Environmental Studies, Hampton University, Hampton, VA 23668 (Tel: 804-727-5884; Fax: 804-727-5084.)

7. Entering the public area with informed opinion: The first step in this direction is the Special Symposium, "What controls phytoplankton production in nutrient-rich areas of the open sea?", mentioned in (2) above.

ASLO has also joined the Council of Scientific Society Presidents. Susan Weiler represented ASLO at the Dec. 1990 meeting. She found that, when talking to Congressional staff members at the breakfast meeting, it was sufficient to mention oceanography to elicit questions about iron in the Antarctic. This has strengthened our opinion that ASLO has done the right thing in organizing this meeting on such short notice.

8. Becoming active in the international arena: Our first step here is the co-sponsorship of the BES Symposium mentioned in (2) above. The Society will also make more of an effort than it has in the past to involve member scientists from outside North America in Society affairs (participation in editing and on the Board of Directors). We are very pleased by the high international turnout for the 1991 ASLO Symposium, and hope this trend continues. The international response to the 1992 Aquatic Sciences meeting has also been strong.

One problem that arises here (also relevant to the issue of expanding the membership base, (item #1 above) is that although ASLO dues are exceptionally low (considering the size and excellence of the journal) by Western standards, they are nevertheless prohibitively high as judged by the salaries of scientists in many countries. I would welcome the opinions of members on how we might deal with this incompatibility between income and dues.

9. Consolidating the financial base of the Society: Nancy Marcus has agreed to Chair the newly formed Committee on Financial Resources. The mandate of the Committee is to recommend to the Board a financial plan for the future, including a means of raising revenue for the Society. Her co-conspirators are Alice Alldredge, Richard Barber, Jed Fuhrman, Nelson Hairston, Lisa Levin, and Craig Williamson. Her committee will make an initial report to the Board in June 1991.

10. Identifying and involving Society members willing to work for the Society: As with any non-profit organization, we are highly dependent on volunteers. Several new committees have already been formed, but much work remains to be done. Please let me or Susan Weiler know if you would like to become actively involved in the Society in some capacity. I am particularly interested in locating individuals interested in working on the Ethics Committee I proposed last time.

We have had little direct feedback on the Action Plan itself. At least for the time being we take this to be an indication of support. But we would feel more secure if you would express your views to us, be they positive or negative!

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NEW ASLO MEMBERSHIP APPLICATION FORM

ASLO Membership Application Forms have been redesigned, and are now located on the last page of each issue of L&O.

ENCOURAGE A STUDENT OR COLLEAGUE TO JOIN ASLO!

Please xerox the two-sided membership application form from your issue of L&O, and give it any aquatic scientist you think might be interested in joining the Society. If you are not doing so already, please make a point of providing each of your students with a copy of the form, and encourage them to join.

After photocopying, the application form should be completed and returned to Ms. Karen J. Hickey, ASLO Business Manager, P.O. Box 1897, Lawrence, KS 66044-8897, USA (Tel: 913-843-1235; Fax: 913-843-1274)

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ASLO LOGO CONTEST

The following announcement appeared in the last newsletter; the response has been less than overwhelming.... Does this mean there are only a few imaginative, creative individuals in ASLO? If the answer to this questions is "NO!", **respond with your art**! Also, encourage a colleague, student or other talented individual to submit an entry. The competition is open to ASLO members and non-members.

With the recent changes at ASLO, it seems an auspicious time for the Society to develop a new logo. The Board is consequently holding a contest, to obtain a unique logo that will represent the full range of our constituency and be suitable for use on all official ASLO communications.

Contestants may submit more than one design, and each contribution should be limited in size to a single piece of standard typewriter paper. Each contribution must be an original design and signed by the artist. In keeping with the purpose of our Society, the logo should reflect the essential unity of the aquatic sciences, and be appropriate for all aquatic science fields.

Contributions in black-and-white or color will be considered, but entrants should keep in mind that some uses will require the logo to be reproduced using no more than one color of ink, and sometimes in black and white. The logo should maintain its integrity down to a size appropriate for use on stationary and envelopes. If your artistic inspiration outpaces your skill as a draftsperson, you may submit a draft that could be "polished" by a professional if your contribution is selected for final consideration.

The winner will receive a commemorative certificate and: free registration at ASLO's 1992 Aquatic Sciences meeting in Santa Fe, plus 1 year of free membership in ASLO; or 3 years of free membership in the Society.

Contributions should be submitted to the ASLO Executive Director, Dr. Susan Weiler (address on masthead). To receive full consideration, submissions should be received before May 31, 1991, although later entries will be accepted and considered if necessary. Entries will be judged by a committee chaired by the President and drawn primarily or exclusively from the ASLO Board. The judges will have the right to reject all entries and continue the competition.

ASLO NEWS

ASLO PRESENTS TESTIMONY TO NSF/BBS TASK FORCE

The ASLO board wishes to thank everyone who took the time to respond to the request for recommendations from members to the task force considering a structural review of the National Science Foundations Directorate for Behavioral and Biological Sciences. John Hobbie took the input from individual members and combined it with his own perspectives to develop a very compelling document which he presented as oral and written testimony to the Task Force. Judy Meyer, a member of the committee, said the ASLO testimony was perfect, hit the nail on the head, & etc. She especially liked the emphasis on the inter/multidisciplinary nature of aquatic research and the problems of NSF in dealing with this. John, on behalf of all ASLO members, the Board offers hearty congratulations for a job well done, and thanks you for the time and energy you devoted to this important project. The summary from John's testimony is provided below.

Summary: The American Society of Limnology and Oceanography (ASLO) represents, among others, limnologists and coastal research scientists supported by BBS. Basic research in both these fields provide input to current questions of ecology and to resource managers. The management answers are necessary because human population centers are often located on rivers, lakes, and coastal estuaries and bays and these waters are vital for drinking water, irrigation, waste disposal, and recreation. In the U.S., for example, 75% of the population lives within 50 miles of the ocean or the Great Lakes. Limnology has a special relevance to other environmental problems such as acid rain and eutrophication. Coastal studies are vital to understanding problems of recruitment of many of the major U.S. fishery species.

Academic limnology is losing faculty and students at major institutions. Both limnology and coastal studies are experiencing funding problems at NSF and the trend in both fields is for much of the currently funded research to be funded by applied agencies such as EPA and NOAA. Rather than abandon basic research in these fields, ASLO recommends that some program at NSF accept

responsibility for fostering the well-being of these fields as they now appear to fall through the cracks in the regular disciplinary panels.

One structural problem that is acute for both these fields is the difficulty of funding multidisciplinary projects. Biology, chemistry, and physics are necessary on virtually every large project in these fields yet much of the reviewing is carried out in the BBS Directorate. Cross-Directorate funding depends wholly on the goodwill and cooperation of program managers. Is there some way that a structure for review and funding could be developed that is parallel to that for Ocean Sciences, which includes biology, chemistry, and physics in one division and combines these disciplines regularly on its larger projects.

In addition to multidisciplinary work, both limnology and oceanography need molecular, cellular, and other biological techniques--as well as physics, chemistry and geology--so that techniques from remote sensing to gene probes can be used to answer ecological questions. Another structural problem is the lack of interaction between BBS and the Biological Oceanography and Polar Biology and Medicine Programs (Directorate for Geosciences (GEO)), which would facilitate transfer of basic biology and techniques developed in terrestrial organisms and systems to oceanic organisms and systems. Although there are considerable advantages to having Biological Oceanographers in the Geosciences Directorate, due to the lack of communication between program officers in BBS and GEO, it is often difficult to get proposals dealing with molecular, cellular, and genetic aspects of marine organisms properly reviewed and adequately funded. This has hampered the transfer of techniques from fields such as molecular biology into ecological applications, population genetics, and the like. This should be a relatively easy problem to solve, since it would mainly require greater interaction and cooperation between program officers in the two Directorates.

ASLO MEMBER DONATES BACK ISSUES OF L&O

Milton Potash, a long-time member of ASLO, recently donated his entire set of L&O (1956-1990) to ASLO, so that it could be distributed to an institution in need of back issues. Issues from 1956-1983 were sent to the University of Maryland, Eastern Shore. U. Maryland has recently instituted a BS/MS Marine Science Program, and has been subscribing to L&O since 1984. They were extremely pleased to receive these back issues. The issues from 1984-1990 were sent to Fort Valley State College, which has an active undergraduate program in Fisheries. This small institution with high minority enrollment was not subscribing to L&O, and Melinda Davis had been sharing her own copies with students. This collection will be a tremendous asset to their students, who are expected to complete research papers. Thank you for your thoughtfulness, Milton!

There are many other institutions, particularly those with high minority enrollment, and foreign libraries,which are not able to afford subscriptions to L&O or who have recently subscribed but would like back issues. If you have a set you would like to donate, please contact Susan Weiler (address on masthead).

Most back issues are still available from Allen Press for the cost of mailing ($1.50 per issue). If you would like to purchase back issues for your own collection or library, please contact Karen Hickey (address and phone on inside of the front cover of L&O).

MIMI A. R. KOEHL RECEIVES MACARTHUR FELLOWSHIP

ASLO congratulates Mimi Koehl for being one of 36 individuals to receive MacArthur fellowships in 1990. These no-strings awards, this time ranging from $175,000 to $375,000 over 5 years, are given by the John D. and Catherine T. MacArthur Foundation. Mimi was awarded $260,000, to be spent however she wishes. Those of us who must write grants for a living should be particularly envious of Mimi; individuals cannot apply for these awards, they must be nominated by one of more than 100 designated nominators. Nominations are then reviewed by a selection committee, and final approval is given by the foundation's Board of Directors. A total of 319 fellows have been named since 1981, when the program began, and fellows represent fields including the arts, human rights, mathematics, and medicine (as well as aquatic science!). Mimi 's research interests range from the fluid mechanics of suspension feeding to the mechanisms by which benthic organisms withstand wave action. In the last issue, Tommy Edmondson encouraged us all to work on the problems we find worthy of our attention and effort, "within the

normal constraints of employment". Mimi is living proof that this strategy is a good one, both in terms of intellectual stimulation and gratification, and in terms of recognition!

REMINISCENCES ABOUT PETER KILHAM

As mentioned in the previous issue, a posthumous Citation for Scientific Excellence was awarded to Peter Kilham, in tribute "for his many and significant contributions to aquatic science in particular in the fields of biogeochemistry and African limnology, and in memory of intellectual enthusiasm and stimulation he always offered colleagues in the Society". During the Plenary Session of the 1990 annual meeting, Dan Livingstone (Peter's former Ph.D. advisor) reminisced about Peter. A special tribute symposium, "Biology and Geology-Life at the Interface", organized by Robert Hecky and John Melack was also held, and Susan Kilham provided a brief introduction to it. The text of Livingstone's and Kilham's remarks appears below.

A Tribute to Peter Kilham

Daniel A. Livingstone, Dept. Zoology, Duke University, Durham, NC 27706.

This posthumous tribute to our late colleague Peter Kilham is a step we have taken only once before in the history of our Society, and we take it because an untimely death at the age of 45 took Peter from us before we could express in a more usual fashion the regard in which we held him and his work.

It was my good fortune to know Peter for several years while he was a graduate student, and especially to be based at Manyara, Tanzania with him while he was surveying tropical East African lakes. The vicarious pleasure of watching a good student develop is the main reward of graduate teaching. With Peter that pleasure was compounded by seeing him grow personally and socially as he grew scientifically. He was intelligent, imaginative and hard working from the beginning, with very high aspirations for himself in science, but he could also be argumentative and abrasive. Exposure to country people in Africa, professional success, and especially his marriage to Susan Soltau mellowed him. He kept his love for argument, but the arguments became more scientific and less personal.

Peter had an uncanny ability to pluck a generalization out of incomplete and contradictory data. When he reached one of his inspired insights he would go into several months of heroic activity, testing the new idea against an ever-expanding base of field data and results of careful experiment in the laboratory. Peter in hot pursuit of an intuitive idea was an intellectual force to reckon with: driven and hard-driving, loquacious, a stimulating and inspiring colleague, and the generator of many fruitful collaborative efforts. He was a major influence on the development of graduate students from the time he was a graduate student himself. Ecologists so different as Dave Tilman and George Sugihara were set on the course of their lives' work by his intellectual company.

In the short course of 23 years Peter published papers on domestic chicks, people, *Hippopotamus*, copepods, *Sphagnum*, blue-green algae and bacteria. His contributions to comparative limnology were heavily slanted to the geochemistry of lake waters, especially their biological nutrients such as S, F, K, P, and N, but he also published on light, photosynthesis, thermal regime, seiches and mixing. He undertook a limnological reconnaissance of an area in Africa the size of the United States east of the Mississippi. His overwhelming interest, however, was in diatoms, and especially their interaction with silica in their environment. He studied diatoms from the levels of the biochemical composition of their cell wall and the physiology of their nutrient uptake, through the physiological ecology of their growth and competition to their evolutionary adaptation to the pelagic environment. He worked with waters ranging from fresher than rain to saturation with halite; his insightful reviews of the comparative ecology of planktonic diatoms in marine and fresh-water systems reflected that breadth of experience. Perhaps his most far-reaching contribution was the idea of resource competition, which grew out of his studies of diatom communities and silica in the East African lakes.

Good limnologists, unlike good mathematicians and physicists, are productive far beyond the years of their youth. We have profited enormously from the mature insights of colleagues like Beadle, Hutchinson and Thieneman. It is hard to lose in full career a Yoshimura, a Naumann, or a Kilham, whose early creativity and breadth of intellectual grasp holds the promise of rich synthetic insights in later maturity.

It is even harder to lose a warm, colorful and independent friend.

Major Influences on Peter Kilham

Susan Soltau Kilham, Dept. of Biosciences & Biotechnology, Drexel University, Philadelphia, PA 19104

Some of Peter's colleagues and friends may be interested in my personal view of the major influences in Peter's life. In his early years, he was greatly influenced by his father, Lawrence, who introduced him to the joys and fascination of observing nature. Peter spent almost every summer in New Hampshire and his father's work in virology took the family to far-flung places. Peter lived in Uganda on the shores of Lake Victoria during his early teens for more than a year. Both the abundant natural wonders and the people made a major impression on him that was to last his entire life. Peter's father also introduced him to this love for libraries and all the riches to be found there.

During his early professional development, Peter was very fortunate in the people who were his mentors. As Dartmouth College, Gene Likens introduced Peter to limnology and biogeochemistry. These were the early years of the Hubbard Brook project, a very exciting period of planning and speculation. Peter bought his first copy of Hutchinson's Treatise on Limnology (Vol. 1) at that time, the first of three because he wore them out from frequent reading. Hutchinson had a lot of influence on Peter, not just from the synthetic thinking that was so much a part of the Treatise, but also the style. This is where Peter learned about the power of comparative limnology. He also developed a great respect for the work of early limnologists, and sought out their original papers. He was frequently amazed at how much they could discern from a few observations- and Peter loved to emulate this trait. The library was Peter's primary research tool throughout his life- he spent several hours nearly every day wandering the stacks in pursuit of some bit of information.

Most of all, Peter was fortunate in his friends and colleagues who allowed for the 'flights of fancy' and encouraged him in the resulting syntheses. Foremost among these were Dan Livingstone and Bob Hecky, although many others could be mentioned including quite a few taking part in this symposium. Dan asked for documentation and accepted the brashness of the early years. Bob was always there as an enthusiastic participant in the many discussions of "what if's" or "how far can we go with these data." Bob and Peter had a true collaboration throughout Peter's professional life, something to be treasured by all who experience it. Peter's interests in biogeochemistry were solidified during these years and this was also the time when Peter discovered diatoms. It was the combination of these two things that produced many of Peter's major insights: hence the title of this symposium.

Peter loved ideas most of all and listened with great interest to the enthusiasms of others. This is why he loved going to ASLO meetings. Students enjoyed talking to Peter about their ideas, because most realized that he really was interested in how they viewed the world. I especially remember Peter listening with rapt attention to Dave Tilman's youngest daughter when she was three years old, while she explained to him her highly original concept of how lakes work. He was always interested in new insights.

Peter's favorite saying was Pasteur's "Chance favors the prepared mind." This is especially important in a field such as biogeochemistry because of the complex of important and interesting areas of science that it calls upon for input. We were fortunate to have Peter for an all too brief span to provide a few of the connections. This highly integrative area of aquatic research needs people such as those in this symposium to carry on the good fight. I am very grateful to all who chose to take part in this tribute. The speakers were chosen by one especially important criterion: they were people that Peter would have loved to listen to because they can provide provocative and speculative insights. There could be no more fitting memorial to Peter.

PETER KILHAM MEMORIAL FUND, INC.

The Peter Kilham Memorial Fund, Inc., was established in May, 1989, as a non-profit corporation to raise funds for the purpose of endowing lectures to honor the memory of Peter Kilham, and to promote and stimulate research in the subjects that most interested him. Peter Kilham died on March 20, 1989, age 45, while on a research expedition to Lake Victoria. These lectures are to be given for educational purposes, preferably associated with the professional organizations in which Peter was active.

The first lecture endowed by the fund will be a triennial lecture, The Peter Kilham Memorial Lecture, to be given at the regular meetings of Societas Internationalis Limnologie Theoreticae et Applicatae (SIL). The chosen speaker will receive an award of $1,000 US to be provided by the

Fund. The subject of the lecture will be in one of the areas in which Peter Kilham was particularly interested: African Limnology, Biogeochemistry, Ecology & Physiology of Planktonic Diatoms, Comparative Ecology of Lakes and Oceans, Paleolimnology, or Saline Lakes. The first lecture will be presented in Barcelona, Spain, in 1992 at the next regular meeting of SIL.

The Fund has a present value of about $10,000. The Directors of the Fund are Dr. Susan S. Kilham, Principal Officer, Dr. Robert G. Wetzel, Dr. Daniel A. Livingstone and Dr. Gene E. Likens. The Fund enjoys tax-free status. It is anticipated that lectures in Peter's honor will be endowed in other organizations as the Fund grows. Suggestions are welcome.

Contributions may be sent to: Peter Kilham Memorial Fund, Inc., Department of Biology, University of Michigan, Ann Arbor, Michigan 48109-1048 USA.

ASLO FORUM

OPTICAL LIMNOLOGY AND OCEANOGRAPHY: THE RECOGNITION LONG DUE

Richard W. Spinrad and Curtis D. Mobley, Ocean Biology/Optics/Chemistry Division, Office of Naval Research, Code 1123, 800 North Quincy Street, Arlington, VA 22217-5000.

We congratulate the American Society of Limnology and Oceanography (ASLO) for identifying optical limnology and oceanography as a subdiscipline meriting distinct recognition. This is a bold, forward-thinking step in the definition of the aquatic sciences. Although few, if any, would argue with separating the traditional subdisciplines (geological, chemical, physical, and biological limnology and oceanography), those who are unfamiliar with this field may wonder why optical limnology and oceanography is being recognized. We therefore outline below our ideas about the criteria that should be used to define a subdiscipline, and show how optics (i.e. optical limnology and oceanography) meets these standards.

Parentage: The field should be immediately identifiable with a single fundamental scientific discipline. Physics is the unquestionable parent of the field of optical limnology and oceanography (just as it is the parent of physical limnology and oceanography). But the field has grown quite distinct from the physics parent, which warrants separation of the parent and daughter disciplines.

Independence: The field should be characterized by a set of scientific issues that are uniquely relevant to that field. Optical limnologists and oceanographers are faced with their own set of scientific problems, which include closure of the radiative transfer equation, the nature of absorption and scattering by individual particles, and the spectral characteristics of inelastic scattering.

Synergism: The science developed by researchers in the area in question should have strong potential for contributing to other subdisciplines. Hybrid research areas such as bio-optical oceanography, marine photochemistry, and mixed-layer dynamics are good examples of how optical limnology and oceanography feeds into other disciplines. Similarly, the field in question should serve as a "receiver" for scientific developments from other subdisciplines. Optical limnologists and oceanographers rely on new developments in phytoplankton physiology, sediment transport analysis, geochemistry of dissolved organic material, biology of bioluminescence and surface wave dynamics for input to their models of radiative transfer.

History: Since trends and fads are not uncommon in science, it is imperative that there be a demonstrated history of development and growth of any subdiscipline over a period of at least several decades. Optical oceanography began in 1865, when Secchi first dipped a white plate into the sea to determine water clarity. Radiative transfer has been the theoretical framework for optical limnology and oceanography since 1905, when Schuster formulated the two-flow equations for irradiance. Throughout this century, but especially since 1940, optical limnology and oceanography has experienced a continuous evolution throughout Europe, Asia, Australia and North America.

Institutional Commitments: This may include university and private laboratory establishment of centers for research in the field in question, as well as identification of research areas by major funding agencies. Centers dedicated to research in optics have existed for long periods of time throughout the world (e.g. the Institute for Physical Oceanography in Copenhagen, and the Visibility Laboratory in San Diego). Funding agencies in the United States (NASA, NSF, NOAA and DOE) have continuously supported research in optical oceanography, albeit at modest

levels. The Office of Naval Research has recognized the importance of optical oceanography by the establishment of a formal program dedicated to supporting basic research in that field.

Methodology: The field should be responsible for the definition of new and unique experimental approaches that are adopted by other disciplines. Transmissometry and irradiance measurement are two excellent examples of experimental methodologies developed within optical oceanography and now regularly used for selective sampling in biological, chemical, geological and physical studies of lakes and oceans.

Active Research: The field should have an active and growing research community. Review of recent literature shows several dozen optical limnologists and oceanographers actively publishing basic research in mainstream journals. Inclusion of applied research and Soviet literature brings the count into the hundreds. Basic research topics under current investigation range from numerical studies of radiative transfer, to the determination of spectral absorption for selected marine particulates, to the development of novel instruments for in situ measurement of absorption, scattering and radiometric variables.

Conclusion: Optical limnology and oceanography clearly has matured to the stage of being a well defined subdiscipline. The recognition associated with this status is important to all of the limnological and oceanographic communities. As the various subdisciplines become ever more holistic in their approaches to aquatic research, the role of optics no doubt will become even more notable.

ROLE OF ASLO IN COUPLING SCIENCE AND MANAGEMENT

John W. Bishop, Department of Biology, University of Richmond, Richmond, VA 23173

In order to protect aquatic resources, science and environmental management need to be coupled. Science can help predict results of management action (or inaction) and management can help direct scientific research to address environmental problems. Science and management, however, often are uncoupled, resulting in inappropriate management decisions and research that is of minimal use to management. For example, the Clean Water Act of 1972 mandates secondary treatment for all municipal discharges in the United States. The mandate precludes use of scientific advances and has stifled scientific research and innovations in sewage treatment to deal with eutrophication.

ASLO could play an important role in coupling science and management of aquatic resources. Its members possess a range of scientific expertise and it has an organizational structure that promotes communication. Should ASLO become more proactive in environmental issues and if so, how?

I believe that ASLO could accommodate a proactive role without abandoning its scientific heritage. A few suggestions follow: 1) Increase affiliations between ASLO and professional organizations of environmental managers (e.g., joint meetings); 2) Increase symposia and workshops that bring together scientists and managers; 3) Have ASLO develop position papers on environmental matters; 4) Include management-oriented articles in ASLO publications; and 5) Establish liaisons that would couple members of ASLO with organizations (e.g. governmental agencies) that require specific kinds of expertise in aquatic sciences.

I would like ASLO to address this issue and welcome comments from members with similar interests.

PROPOSAL FOR CREATION OF ASLO COMMITTEE TO DEVELOP A MARINE HUMIC SUBSTANCE STANDARD AND REFERENCE COLLECTION

Diane McKnight, and Ronald Malcolm, United States Geological Survey, Box 25046, MS 408, Denver Federal Center, Denver, CO 80225, 303-236-3611 and Patrick MacCarthy, Department of Chemistry and Geochemistry, Colorado School of Mines, Golden, CO 80401, 303-273-3626

The 5th meeting of the International Humic Substances Society (IHSS) was recently held in Nagoya, Japan. One of the main activities of the IHSS is to maintain a collection of reference and standard humic substances from representative soils and freshwaters. These reference samples are purchased from the IHSS at a moderate cost by scientists from around the world and the availability of these samples has advanced the field greatly. Funding for the initial collection of samples was obtained from the USGS. At the third meeting in 1986, the IHSS endorsed an effort

to obtain marine samples for the reference and standard collection, and the desirability of this effort was again agreed upon at the 5th meeting.

Obtaining marine samples in sufficient quantity (about 20 grams or more) poses many challenges. The difficulty in isolating dissolved humic substances from seawater arises from their low concentrations and the high salt content of seawater. These difficulties have restricted research in this field. The few studies that have been done have shown that the chemistry of marine humic substances is different in significant aspects from that of soil and freshwater humic substances. The interpretations of some of these studies have been controversial and no consensus has been established on many related questions, including source and formation pathways. The availability of a reference collection and a better understanding of marine humic substances may lead to progress on other important questions - e.g. global carbon cycling, biogeochemistry of trace metals in the ocean, etc.

Because of these challenges, collaboration with a group of oceanographers from an established organization would be a sensible approach. On behalf of the IHSS, we therefore propose that ASLO establish a joint committee that would develop detailed plans and submit a proposal for funding to the appropriate government agencies. Please let Diane McKnight know if you would be interested in serving on such a committee.

ASLO COMMITTEE AND OTHER REPORTS

REPORT FROM THE COMMITTEE ON UNDER-REPRESENTED MINORITIES IN LIMNOLOGY AND OCEANOGRAPHY (CURMLO)

Ben Cuker, Center for Marine and Environmental Science, Hampton University, Hampton, VA 23668 (Tel: 804-727-5884; Fax (804) 727-5084.)

It is a great pleasure to inform you that I have been notified that the National Science Foundation will continue to support Hampton University and ASLO in our efforts to increase minority representation in the aquatic sciences. The NSF Division of Ocean Sciences has awarded Hampton University and ASLO a grant to support activities at the Halifax and the two subsequent meetings of the Society. The new program is entitled, "Expanding Linkages Between Under-Represented Minorities and Careers in Aquatic Sciences." Participants will include students and professionals. Students will attend a special pre-conference workshop in which they will be given background on some of the major themes covered in the concurrent sessions. There will also be exercises in table and graph interpretation to prepare participants for the variety of data display techniques they are likely to encounter. Program participants will also attend a special evening symposium devoted to brief presentations by students who are in the initial stages of research projects. In addition, participants will go on special field trips to the Bedford Institute of Oceanography and the intertidal zone of the Bay of Fundy.

Updates on several of the 1990 Program participants: Buffy Turner is working for Dr. JoAnn Burkholder, doing research on sea grass at Beaufort, NC until starting graduate school next year. Roderic Buck is doing sportfishing research at VIMS for his thesis. Lionel Sanchez and Robert Shuford, III will attend the special ASLO Symposium on "What Controls Phytoplankton Production in nutrient-rich areas of the open sea?" Thomas Byrom is doing fisheries work for the State of Texas and plans to start graduate school next year. Hellen Drumond is also in Texas, and in graduate school.

REPORT, ASLO WORKSHOP ON RESEARCH AT THE LAND-SEA INTERFACE

"Coastal areas are the sites of the nation's and world's most intense human activity and population growth. Yet the understanding needed for proper stewardship of these areas is restricted by the limitations of existing institutions-institutions that focus on the land or the sea individually, but not on the boundary between them" (At The Land-Sea Interface: A Call for Basic Research, 1990). The impetus for proposing an initiative for basic research at the land-sea interface came from a workshop organized by ASLO and held at Woods Hole, MA in 1987. The above-quoted document proposes the establishment of a federal initiative for research to provide the understanding needed for the management of the land-sea boundary. Copies are available from

ASLO's Secretary, Polly Penhale (Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, VA 23062) and from the Joint Oceanographic Institutions Inc. (Suite 800, 1755 Massachusetts Ave. N.W., Washington, D.C. 20036-2101; Tel 202-232-3900). ASLO members are urged to obtain and read this important report.

REPORT, COUNCIL OF SCIENTIFIC SOCIETY PRESIDENTS (CSSP) MEETING

Susan Weiler, Dept. Biology, Whitman College, Walla Walla, WA 99362

As Trevor mentioned earlier, ASLO joined the CSSP this year. The focus of the CSSP is to develop a consensus on various topics of concern to the scientific community and to promote the involvement of scientists with science policy. This is done through talks and discussions on topics that cut across disciplines, through the development of policy resolutions to be distributed to Congress and other appropriate bodies, and through breakfast meetings with members of Congress (spring meeting) and Congressional staff (winter meeting). The theme of the Winter meeting (Dec. 3-5, 1990) was "Partnerships for Research and Education".

The meeting was extremely informative, and dealt with a number of issues of concern to ASLO:

•Shirley Malcolm, head of the Education and Human Resources at AAAS, spoke about the need for individuals to get involved in pre-college science in their communities. She suggested that Societies could encourage members to work with local school boards, school systems, and organizations like the Scouts to develop hands-on activities to interest students in science. It was mentioned that by one study, the average time spent teaching science in the elementary schools is 18 minutes per week! This, coupled with the fact that most elementary teachers have had no college science courses, points to the need for individual scientists to get involved in some way.

•Concern about scientific ethics and the ability of the scientific community to develop standards was expressed. All Societies were urged to develop their own Code of Ethics. As Trevor mentioned earlier, he would like very much to form a Committee to deal with this subject. I received a copy of Codes developed by various Societies. These could serve as models for an ASLO Code. I will keep these on file, and pass them on to all those on the (hopefully) soon-to-be-formed ASLO Ethics Committee. Again, please contact Trevor if you would be interested in serving on such a committee.

•The CSSP is working on a number of resolutions to be put before Congress and other bodies. Since the CSSP speaks with one voice for over one million scientists, these resolutions can have a far greater impact than one presented by any one Society. This provides ASLO with an ideal mechanism to "magnify" our numbers and potential impact.

After the CSSP meeting, Polly Penhale and I met with representatives from other aquatic societies for a meeting organized by Chris D'Elia to discuss the development of closer ties among the various environmental Societies. Many of these Societies are not yet members of the CSSP, but will soon join. We hope to form a coalition that will enable the environmental community to speak with a louder and more united voice through CSSP and other mechanisms. We also plan to promote each other's initiatives, such as the ESA's recent "Sustainable Biosphere Initiative: An Ecological Research Agenda". For those interested, copies are available from Dr. Marjorie Holland, Public Affairs Office, Ecological Society of America, 9650 Rockville Pike Suite 2503, Bethesda, MD 20814.

OTHER NEWS

WORKSHOP REPORT, INTERNATIONAL DECADE FOR THE EAST AFRICAN LAKES

A workshop was convened March 29-31, 1990 in Bern, Switzerland, to discuss the establishment of a 10-year multi-national, multi-disciplinary study of the East African rift lakes. The project is entitled the International Decade for the East African Lakes (IDEAL). The IDEAL workshop was sponsored by the U.S. National Science Foundation and the National Climate Program of the Swiss Academy of Sciences. Eighteen participants and eleven observers attended the meeting. Emphasis was on experience with large lake or oceanic expeditions. The purpose of the workshop was to consider the development of a 10-year program of research on the rift lakes

with the primary goals of: 1) obtaining long-term, high-resolution records of climatic change and ecosystem responses in tropical East Africa; 2) providing a comprehensive training program for African students and scientists that will result in collaborative efforts between African and northern hemisphere limnologists and paleoclimatologists; and 3) providing the scientific infrastructure within East Africa to facilitate the proper monitoring and guardianship of the East African lakes after the termination of IDEAL. The workshop report is available from Thomas C. Johnson, Duke University Marine Laboratory, Beaufort, NC 28516-9721.

COMMITTEE FOR THE NATIONAL INSTITUTES FOR THE ENVIRONMENT

The Committee for the National Institutes for the Environment has opened a Washington, D.C. office to spearhead efforts to establish a National Institutes for the Environment (BioScience 40(8): 567). The NIE proposal is an effort to greatly expand environmental research and education to drive environmental policy through a new funding agency. Of the $9 billion in federal extramural support for science, 11% goes to environmental sciences (broadly defined). This amount could be increased and the results of this research made more applicable to solving environmental problems through an interdisciplinary agency, analogous to the National Institutes of Health. The present proposal is to set up a series of problem-oriented institutes that would support competitively awarded, mission-oriented environmental research. Congress has appropriated $400,000 for a National Academy of Sciences study of the NIE concept. This study is expected by be completed in spring, 1992. Environmental scientists who are interested in having input in the process should contact Dr. David E. Blockstein, Director of the Washington office of the NIE Committee, AIBS Building, 730 11th St. NW, Washington, DC 20001-4521 (Tel: 202-628-4303; Fax: 202-628-4311).

THE ASSOCIATION OF ECOSYSTEM RESEARCH CENTERS (AERC)

The following was taken from the Association of Ecosystem Research Centers brochure:

The AERC was founded in 1987 to promote the effective use of scientific resources in the search for solutions to environmental problems. Effective management of natural resources and regulation of human activity require improvement in our ability to understand and predict changes taking place in the complex relationships that structure natural systems. The scale of the problems that confront us is so large that scientists who study the environment are seeking new ways to pool their resources, work together and undertake a comprehensive integration of their current knowledge. Its 39 member institutions provide facilities for more than 500 scientists with wide-ranging expertise in the analysis of ecological systems at all levels. For further information, contact: Association of Ecosystem Research Centers, 6th Floor, 730 11th St. N.W., Washington, D.C. 20002-4521 (Tel: 202-393-3252)

1991 ASLO STUDENT TRAVEL AWARD RECIPIENTS

The following 20 students, each of whom will be presenting papers or posters at the 1991 Annual meeting in Halifax, will receive stipends of $300 each:
John Amaral, University of Manitoba; David G. Borkman, Southeastern Massachusetts University; Christopher W. Brown, University of Rhode Island; Celia Y. Chen, Dartmouth College; Robert DeCino, University of Utah; David M. Fields, SUNY-Stony Brook; Janet Fischer, Wellesley College; David K. Hill, University of Wisconsin-Madison; Samantha B. Joye, University of North Carolina; Julie D. Kirshstein, University of North Carolina at Chapel Hill; Michael J. Lemke, Michigan Technological University; Heather J.G. McMurter, University of Ottawa; Carolyn A. Miller, University of Maryland; Shirley Richards, University of Manitoba; Daniel E. Schindler, University of Wisconsin-Madison; Gayle L. Stone, Nova University; Juanita Urban, University of Newfoundland; Penny D. Weissman, SUNY-Stony Brook; John M. Wiesinger, University of Wisconsin-Milwaukee; and Xiahua Yang, SUNY Stony Brook.

These awards are made possible by donations from individual members. Special thanks go to all of you who contributed something extra to the Student Travel Fund when you paid your dues!

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ASLO MEETING ANNOUNCEMENTS

ASLO 1991 SUMMER MEETING, HALIFAX, NOVA SCOTIA.

Our 1991 Summer Meeting will be held in Halifax, Nova Scotia, Canada 10-13 June, and an interesting scientific programme is developing from the abstracts already in hand. We are developing the theme "why haven't oceanographers and limnologists better profited from each others' work?" both in plenary lectures and in special sessions designed to interest both groups.

Air travel to Nova Scotia has never been easier. In addition to what was announced in the Call for Papers (that you could call Air Canada Convention Central at 1-800-361-7585 quoting Event #91-113 for special discounts), there are now also special deals to be struck with Rhodes Travel (1-800-877-9494 or FAX 608-31-1812) if you can use a Delta/Air Canada combination flight. Both deals give the Society complimentary tickets (for student travel?) if enough of you use their services. People coming from Europe may also be able to strike good deals with Rhodes Travel (608-231-3431). General information on ASLO 91 may be had from Alan Longhurst (902-426-3686), and programme information from Glen Harrison (902-426-3879), or from either of us at Omnet BEDFORD.INST (under "Subject", put Glen Harrison or Alan Longhurst).

Student Symposium planned. A special symposium will be held during the Halifax meetings for students in the beginning or middle stages of their research. Students are invited to give brief presentations on their plans for research or progress to date. Helpful discussions on ways to improve the projected or ongoing work will follow presentations. Note that although this activity is being organized by the ASLO minorities project, non-minority students are strongly urged to also participate. This will be a great opportunity to learn from each other and get the friendly advice of some of the top experts in the field, *and* free refreshments! Details are provided in the Halifax Program Booklet.

About ten ASLO members will be needed at the Halifax meeting to serve as mentors for students participating in the minorities program. Meeting mentors will be assigned several students that are interested in their field of expertise and will be expected to help the students navigate the concurrent sessions and provide annotation that will clarify and enrich the experience. Anyone interested in being a "meeting mentor", having a participant to recommend for the program or desiring more information should contact Ben Cuker, Center for Marine and Environmental Science, Hampton University, Hampton, VA 23668 (Tel: 804-727-5884; Fax: 804-727-5084).

ASLO 1992 AQUATIC SCIENCES MEETING, SANTA FE, NEW MEXICO

As mentioned last time, ASLO will sponsor a major Aquatic Sciences meeting to address aquatic science in the most general sense. The meeting is being organized by Polly Penhale and the scientific program is being planned by a committee co-chaired by Mary Jane Perry and David Schindler. It will be held at the Sweeney Convention Center in Santa Fe, New Mexico February 10-14, 1992. Because of the importance that ASLO attaches to this meeting, it will be the only meeting that the Society organizes in 1992. That is, there will be no summer meeting in 1992 and we will not hold a joint meeting on Ocean Sciences with AGU as we have been accustomed to do every second year. There will soon be a special mailing to all ASLO members and those who have already inquired about the meeting. General inquiries should be directed to Susan Weiler (address on masthead).

BRITISH ECOLOGICAL SOCIETY AND ASLO JOINT SYMPOSIUM, 1992, CORK, IRELAND

The British Ecological Society and ASLO will co-sponsor a symposium on "Aquatic Ecology: Scale, Pattern and Process", to be held April 5-8, 1992 at University College, Cork, Ireland. This Symposium will be the first joint venture between the BES and ASLO, and also the first time a BES symposium will be held outside of the U.K. The programme will be structured around the water cycle (from the headwaters to the deep sea). The main theme will be an examination of the roles of temporal and spatial scales and patchiness in aquatic communities and in ecosystem patterns, structures and processes. An invited panel of international speakers will review those patterns, scales, and processes that are important at the community or ecosystem level in their

particular system. Emphasis will be placed on identifying similarities and differences across freshwater and marine habitats. There will be Poster Sessions for papers dealing with all aspects of aquatic ecology within the programme. Excursions are also planned. It is hoped that pre- and post-conference tours can also be arranged. Full details of the programme and conference arrangements will appear in later Bulletins/Newsletters. For further information, please contact Dr. Paul Giller, Dept. of Zoology, University College, Lee Maltings, Prospect Row, Cork, Ireland (Tel: 353-21-276871 ext. 4137; Fax: 353-21-274034).

CALENDAR OF EVENTS, 1991-1992

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37th BROOKHAVEN SYMPOSIUM IN BIOLOGY, Dedicated to Dr. R. W. Eppley

Dates: June 2-6, 1991
Location: Brookhaven National Laboratory
Topics: Theme will be: Primary Productivity and Biogeochemical Cycles in the Sea
Contact: Dr. Paul Falkowski, Dept. Applied Science, or Dr. Avril Woodhead, Biology Dept., Brookhaven National Laboratory, Upton, NY 11973.

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54th ANNUAL MEETING, ASLO

Dates: June 10-13, 1991
Location: Halifax, Nova Scotia on the St Mary's University campus
Topics: Sessions are being planned especially to bring together the common interests of oceanographers and limnologists. Field excursions are planned to take advantage of the extremely varied ecology of Nova Scotia, which matches the theme of the conference: world-class high tides in the Bay of Fundy, the Atlantic coastline with endless inlets and salt marshes, a multitude of lakes set in boreal forest, and the sub-arctic barrens of Cape Breton.
Scientific Program Organizers: Glen Harrison, Stephen Threlkeld, Bernard Boudreau, John Loder, Michael Keen, Michael Sinclair, Trevor Platt and Gary Sprules.
Contact: Alan Longhurst, Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, NS B2Y 4A2, Canada (Tel: 902-426-3686; Fax: 902-426-7827; Omnet: Bedford.Inst).

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ANNUAL MEETING, ASSOCIATION FOR BIOLOGY LABORATORY EDUCATION

Dates: June 12-14, 1991
Location: University of Wyoming
Topics: Presentations of reliable, innovative hands-on workshops suitable for undergraduate biology laboratory courses. All disciplines and levels within biology, ranging from exercises aimed at non-majors to ones appropriate for advanced upper-division undergraduate courses, are appropriate.
Abstract Deadline: Past
Contact: Dr. Jon Glase, Section of Neurobiology and Behavior, 1130 Comstock Hall, Cornell University, Ithaca, NY 14853 (Tel: 607-255-3007).

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CONFERENCE ON LIMNOLOGY OF MOUNTAIN LAKES

Dates: July 1-7, 1991
Location: Proposed site is the Tatranská Lomnica tourist resort, in the High Tatra Mountains in Slovakia
Topics: The objective is to increase knowledge in virtually all aspects of limnology of mountain lakes. Recommended topics to date include: Physical and chemical limnology, life strategies of planktonic and benthic species, production and decomposition, sedimentation, paleolimnology, and acidification. Both oral and poster sessions will be possible.
Abstract Deadline: Past
Contact: Dr. Evzen Stuchlík or Dr. Jan Fott, Dept. of Hydrobiology, Charles University, Vinicná 7, CS-128 44 Prague 2, Czechoslovakia (Tel: 29 79 41-9).

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ZOOPLANKTON ECOLOGY MEETING

Dates: August 24-29, 1991
Location: Milwaukee, Wisconsin
Topics: Zooplankton as predators, prey, and community members; Zooplankton ontogeny and phylogeny. Proceedings of the meeting will be published in the *Bulletin of Marine Science*.
Abstract Deadline: Past
Organizers: J.R. Strickler, Organizer; S. Richman, Treasurer; G.-A. Paffenhofer, Editor in Chief
Contact: J. Rudi Strickler, Center for Great Lakes Studies, 600 E. Greenfield Ave., Milwaukee, WI 53204 (Tel: 414-649-3000).

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5th INTERNATIONAL SYMPOSIUM ON THE ECOLOGY OF REGULATED STREAMS

Dates: September 3-7, 1991
Location: Flathead Lake Biological Station, Polson, Montana
Topics: Emphasis will be on ecosystem approaches to the science and management of regulated rivers. Contributed papers are welcome on any aspect of regulated stream ecology and management. Papers on the following topics as they relate to regulated rivers are especially encouraged: new technologies for ecosystem analysis; ecosystem theory; ecosystem modeling; science, management and conservation; and case histories in whole catchments.
Abstract Deadline: April 15, 1991
Contact: Jack A. Stanford or F. Richard Hauer, organizers. Regulated Stream Symposium, Biological Station, University of Montana, 311 BioStation Lane, Polson, MT 59860, USA (Tel 406-982-3301; Fax 406-982-3201).

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1991 MEETING OF THE AMERICAN FISHERIES SOCIETY

Dates: September 8-12, 1991
Location: San Antonio, Texas, U.S.A.
Topics: This meeting will focus on habitat issues and will explore analogies to the habitat concept, such as the requisite conditions for good fishing and effective fisheries management.
Abstract Deadline: Past
Contact: Donald J. Orth, Dept. of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061-0321 (Tel: 703-231-5919).

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5th INTERNATIONAL CONFERENCE ON TOXIC MARINE PHYTOPLANKTON

Dates: October 28- November 1, 1991
Location: Newport, Rhode Island, U.S.A.
Topics: Taxonomy, cellular and molecular biology, physiology, biochemistry, toxicology, ecology, environmental regulation, public health, aquaculture and mariculture issues of toxic, harmful and nuisance blooms and species of marine phytoplankton. Peer-reviewed conference proceedings will be published.
Contact: Dr. Theodore J. Smayda, Conference Convenor, 5th Int. Conf. on Toxic Marine Phytoplankton, University of Rhode Island, Graduate School of Oceanography, Narragansett, Rhode Island 02882-1197, USA.

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2d ARGENTINIAN ASSOCIATION OF LIMNOLOGY MEETING (RAL'91)

Dates: November 4-8, 1991
Location: La Plata City (Buenos Aires Province, Argentina)
Format: Symposia, conferences, oral presentations and poster displays
Topics: Paleolimnology, lacustrine environments, estuarine environments, fluvial systems, biogeography, environmental policy.
Paper deadline: Past
Contact: Organizing Committee President of RAL'91, Institutio de Limnologia, Dr. Raúl A. Ringuelet, UNLP, C.C. 712-1900 La Plata, Argentina (Tel: 021-3-9125).

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11th BIENNIAL INTERNATIONAL CONFERENCE OF THE ESTUARINE RESEARCH FEDERATION

Dates: November 10-14, 1991
Location: San Fransisco, California
Topics: The meeting will begin with a Plenary Session to celebrate ERF's 20th anniversary -- "A Reflection on 20 Years of Estuarine Science and a View to the Future", and it will include over 20 contributed sessions devoted to a broad diversity of topics relevant to estuarine science and management. There will be special symposia on The NSF Land-Margin Ecosystem (LMER) Program, Estuarine Fronts, Information Exchange Between Estuarine Scientists and Managers, Comparison of Large River-Delta Estuaries, and three special sessions on Comparative Cycling of Natural and Contaminant Materials in Estuaries (Geochemical Cycling, Microbial Biogeochemistry, and Trophic Cycling).
Abstract Deadline: April 26, 1991
Contact: Jerome Williams, ERF Executive Director, POB 544, Crownsville, MD 21032-0544.

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INTERNATIONAL CONFERENCE ON LAND-WATER INTERACTIONS

Dates: December 7-14, 1991
Location: New Delhi, India
Scope: Objectives are to review the state of knowledge of different kinds of interactions, their impact on the structure and dynamics of various freshwater, estuarine and coastal ecosystems, and their value to management of water quality and conservation of aquatic resources. Special emphasis shall be given to the studies related to ecosystem processes in the land-water interface and their significance for open water ecosystems. Several Plenary sessions with invited speakers are planned. There shall also be both oral and poster presentations of contributed papers. Proceedings of the Conference shall be suitably published within a year after the Conference.
Sponsors: Societas Internationalis Limnologiae (SIL); organized by the National Institute of Ecology and International Society for Tropical Ecology.
Contact: Dr. Brij Gopal, School of Environmental Sciences, Jawaharal Nehru University, New Delhi 110067, India.
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NEW ASLO MEMBERSHIP APPLICATION FORM

ASLO Membership Application Forms have been redesigned, and are now located on the last page of each issue of L&O.

ENCOURAGE A STUDENT OR COLLEAGUE TO JOIN ASLO!

Please xerox the two-sided membership application form from your issue of L&O, and give it any aquatic scientist you think might be interested in joining the Society. If you are not doing so already, please make a point of providing each of your students with a copy of the form, and encourage them to join.

After photocopying, the application form should be completed and returned to Ms. Karen J. Hickey, ASLO Business Manager, P.O. Box 1897, Lawrence, KS 66044-8897, USA (Tel: 913-843-1235; Fax: 913-843-1274)

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