

Aquatic Survival

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Aquarists Dedicated to the Preservation of Aquatic Life

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The Future of Fishes

by Rob Huntley

What is the Future of Fishes?!

In a nutshell the future of fishes looks pretty bleak!

Actually, did you know that a "**bleak**" is a small silvery fresh-water fish, about 6 inches (15 cm) long, found in N. European rivers? And the scientific name? - I don't have a clue. My *Collins English Dictionary* doesn't get that technical. Anyway, Who Cares?

Yes I said "**Who Cares?**".

With the exception of 5-year-olds with dip-nets, who cares that mundane little minnows even exist? I, for one, had never heard of a bleak until the day I decided to check the dictionary to see if "bleak" was actually a word or whether it was slang I'd picked up along the way. With so many species of fish on the planet, I'm sure there are a few besides the bleak that are unknown to me (24,000 known species, and guesstimates suggest possibly 35,000 - if we can discover them before they disappear).

So I don't care and you don't care. We have never seen a bleak and we don't know anyone who has. And if we couldn't care less right now, then why should we worry about its future? Good question and unfortunately the answer all too often revolves around things like:

- What benefit can we humans derive from the little beast?
- Can we eat it?
- Does something we eat depend on the

little guy for food?

- Does it eat "bad bug" larvae?
- Does it eat "river-choking" weeds?
- Does it put up a good fight on the end of a fishing rod? ... or perhaps, in the case of the bleak, does it make good bait?
- Can we make it into cat food?
- Can we pulverize it into fertilizer, or chicken feed?
- Does it look good, or show interesting behaviour, in an aquarium?

What underlies all of these judgements is **WE!** The way we human beings tend to justify the "existence of life" is based on whether that "existence of life" justifies human beings. The long and short of it though is that **WE** are not serving ourselves very well by this approach, and our service to other living organisms on our planet is pitiful. Apparently Phil Pister of the Desert Fishes Council was once asked "What use is a pupfish?", to which he appropriately replied, "What use are you?".

Anyway, ... as I was saying ... the future of fishes is pretty bleak! There are a lot of bad news stories - Lake Victoria cichlids, Mexican desert fishes, or any

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Message from the General Manager

The potential exists for ACN to take an evolutionary step forward in 1997. In the last few months of 1996, Kai Witte was appointed as President of the ACN. Under his leadership, the ACN Board of Directors has been giving considerable thought as to how the administrative capabilities of the ACN can be broadened and improved. I am hopeful that the momentum will continue in '97, and that there will be more to tell you at a future time.

What we can report at this time is that we have a new editor of *Aquatic Survival*. I would like to personally express my thanks to Dean Staff for taking on this role particularly in consideration of his ongoing volunteer commitment to the ACN as Membership Coordinator. I urge all members to support Dean and the ACN bulletin by providing timely reports of their conservation related activities, special feature articles, conference announcements or proceedings reports, and whatever else you have that you feel could be of interest to the aquatic conservation community.

For those of you on email, we have implemented a new address for sending material to be considered for publication in *Aquatic Survival*. Email your submissions to **editor@acn.ca** and it will be automatically forwarded to the editor's own mailbox. Regular submissions can be still be mailed to the main ACN address or faxed to the ACN fax number.

This issue is being sent out a little later than usual. I would just like to mention that the delay is largely attributable to yours truly and current limitations on my volunteer time, and not to change in editorship. My apologies for the delay.

Rob Huntley

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The Future of Fishes - continued from Page 1

of a number of threatened rainforest fishes but to describe one or two of these examples would not even graze the surface of the issue. What we are talking about is the plight of the fishes and aquatic habitats of the **whole earth**. It is believed that at least one third of freshwater fish species are going to bite the bullet in the next few decades with more to follow suit. Just to ballpark a figure, this equates to something like 10,000 species. In the scale of the lifetime of the planet, these species will disappear in about the same time it takes to order a burger and fries: "1/3 of freshwater fish species to go, please". Should further stimulation really be necessary to spark aquarists to react? If nothing else, aquarists should be interested enough to become keen observers, learners and informers. Hopefully more and more of us will be spurred on to go even a few steps further than that.

Hobbyists in Oblivion

So what are we going to do about it? Is the answer to lock ourselves in our fishrooms and forget about it?

Some time ago, at a meeting of the Capitol Aquarium Society in Austin, Texas, Dennis Hough (one of the ACN founders) told a story which went something like this:

There was once a community tank fish person that died and went to heaven. When he got to the Pearly Gates, the following conversation took place:

St. Peter: You were a good person, kept the tanks clean, did your water changes, and treated your charges with respect and a minimum of pain. But

to get to heaven you need a specialty choose one.

Hobbyist: But which one St. Peter?

St. Peter: Well, let's take a walk and you select one. Here, look through this door.

(The scene was of intent marine reef keepers, spending hundreds and thousands of dollars, setting up the newest PC driven ozone generators, automatic controllers with remote sensors)

Hobbyist: Not for me ... what else is there?

(Looking through another door they spied some hobbyists intently smug about what looked like some old wet peat moss. They were anxiously rubbing their hands while looking at the clock. Then they raised the temperature, added water, and presto ... their baby killifish came alive.)

Hobbyist: You've got to be kidding St. Peter; what else is there?

(St. Peter takes the hobbyist by the arm and walks right past a closed door and doesn't even offer a chance to look inside)

Hobbyist: Why don't we look in there?

St. Peter: Quiet! There are African cichlid keepers behind that door, and they think they are the only ones in heaven.

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Well, a little humorous, but definitely some meaningful points are there to consider:

1. Aquarists spend a small fortune on their hobby (of which some could be redirected towards conservation);

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2. Aquarists have a vast amount of interest and expertise concerning species with bleak characteristics, not to mention bleak outlooks - species which most people, even other aquarists, might view with total indifference;
3. Aquarists often specialize, often to the exclusion of other domestic varieties, and even more often, to the exclusion of wild fishes.

Many of us are like these heavenly aquarists, oblivious to other specialty interests, and oblivious to the world around us. I personally spent many years breeding nothing else but freshwater angels - in all the domestic forms available - no thoughts to what the wild forms looked like. We are prisoners in our own fishrooms. We need to see above our everyday existence and check out what is happening to nature. Nature is the foundation of the hobby we love so dearly the crumbling foundation!

It is my belief that among the aquarists of the world, there are a large number of us who would really like to do something to save fish and aquatic habitats. Reading about issues and nodding approvingly about token accomplishments is good in its own way, and it helps to spread the word to the general public about aquatic concerns. But for a lot of aquarists it is not enough. But how do we actually accomplish something meaningful?

Drawing together the abundance of amateur knowledge, experience and resources into a unified program with which the scientific community will identify in a positive way, is a long uphill battle which **BOGGLES THE MIND!!** But it has to be done if aquarists are going to assert their strengths in support of this global issue. Even if we can't relate to every mundane looking minnow, few people have such a great affinity to fish and aquatic ecosystems as we do. If we aquarists don't act, **Who do you think will?**

Amateurs and Conservation

I'm going to take the easy way out for awhile now and use a long quote. I don't think I can say any better, what Colin Tudge has already said about amateurs and conservation, in his 1991 book titled; *Last Animals at the Zoo - How Mass Extinction Can Be Stopped*.

"Aquarists and aviarists (and even keepers of reptiles and amphibia) often achieve remarkable results in private apartments and garden sheds. Late in 1990 Dr. Gordon Reid of the Horniman Museum in South London, who maintains some of the only remaining breeding groups of some of the Lake Victoria haplochromines was negotiating with the British Cichlid Society to help him in his endeavours. People who can raise other kinds of cichlid (members of the family Cichlidae) can also keep haplochromines. Invertebrates - perhaps particularly - could benefit from 'amateur' assistance. Paul Pearce Kelly of London Zoo is wondering at this minute whether and to what extent to elicit outside help in rearing (by hand) the multitudinous progeny of his red-kneed tarantulas.

"Parrots as a group are appallingly endangered ... Some commercial dealers in parrots are enemies of the order, and indeed of life; they pluck them from the wild, and welcome rarity to increase cash value. But some breeders are among the most skilful and knowledgeable bird handlers in the world, and some are dedicated conservationists. Harry Sissen in Yorkshire for example has wonderful success with macaws and in 1989 alone he and his wife bred Palm Cockatoos, lesser Vasa Parrots, Hawk-heads, and Blue-throated and Golden Conures. Very few zoos compare.

"There are theoretical dangers in the involvement of amateurs and breeders. The tradition among many aquarists, for example is to 'improve' their proteges - like the breeders of 'koi' carp, with their perpetual quest for exotic colours. They stop at nothing; some deliberately create hybrids so as to produce new forms, and fish in general hybridise easily (because, as we have seen, there is often very little genetic difference between related species, even though the ecological differences may be profound). Selective breeding and the creation of hybrids are anathema to the conservation breeder. In general, then, hobbyists or commercial breeders who wanted to be involved in species survival plans would have to accept the discipline of the species co-ordinator, just as zoos do. Many will surely find, though,

that the satisfaction of belonging to a serious conservation endeavour exceeds the pleasure of breeding what in many cases are simply grotesques.

"Some professionals fear, too, that amateurs may simply lose interest, and abandon a task half-way through. We all of us do, of course; we all grow tired of hobbies. On the other hand, no one would entrust an entire species to just one keeper, amateur or a professional. Neither can we be sure that professionals are 100 per cent reliable. Scientists run out of grants, zoos close down, reserves get flattened by hurricanes. Nothing is safe. We just have to spread the risks as best we can.

"Finally, it has been suggested that amateurs might require more organising than their endeavours would be worth. This, though, seems merely to be a theoretical point. Good amateurs really are good. A few hours' input from a professional now and again could elicit hundreds of hours (and hundreds of thousands of pounds [sterling]) worth of help. Indeed the time could come - and why not? - when amateurs might also act as keepers of studbooks or even as species co-ordinators. For retired people this could be a wonderful occupation: absorbing, and granting instant membership of a worldwide cause. You do not have to keep animals to be a good organiser.

"In short it seems reasonable to regard the possible involvement of amateurs and breeders" (Tudge, 1991).

(As an aside, Dr. Gordon Reid has moved to Chester Zoo since Tudge's book was written.)

The ACN

Although Tudge's book was not known to us at the time, it was these sorts of compelling questions and ideas that prompted a small group of us to put on a blindfold and declare the Aquatic Conservation Network as an official entity.

The direction was unclear from the start. We knew that there was a good cause, and also a good reason for amateur aquarists to try to band together to pursue the

cause. One simple thing was clear to me at the time the ACN was founded ... putting out my recycling box on garbage day, and composting my kitchen vegetable scraps, was not going to save too many fish. It was not enough to simply be "conservation-minded". Action of a different kind was, and still is, needed.

In 1990, Chris Andrews, then Chair of the Freshwater Fish Specialist Group of the IUCN (International Union for the Conservation of Nature), confirmed my thoughts that no unified body for amateur aquarist focus on conservation existed, and that a new organization should be developed.

My feelings at that time were reinforced by editorials which appeared in three of the leading North American hobby magazines during 1990 and 1991:

- A two part editorial titled "Fish Finale? (The Forgotten Life Form?)" by Dennis Hough in *FAMA (Freshwater and Marine Aquarium)*;
- A three part series of editorials by Shawn Prescott titled "The green movement and the aquarium hobby", also in *FAMA*;
- Ray Hunziker's "Taking Count" in *TFH (Tropical Fish Hobbyist)*; and
- Edward Bauman's "Lost Habitat" in *AFM (Aquarium Fish Magazine)*.

With encouragement from a few key people in science and the hobby, the Aquatic Conservation Network was given life by Dennis Hough, Shawn Prescott and myself. We obtained the support of certain notable people in the scientific community, the hobby and the tropical fish industry, who served as the initial advisory body and boosted our profile considerably just from having their names on the bannerhead.

Quite a few people have since rallied to support the development of the ACN and I won't try to list them here. However, it is important to recognize the contribution of our first President, Roger Langton, who helped greatly with formalizing some of the administrative functions and took us over many initial hurdles.

Since day one the ACN has had a wish list a mile long (I'm Canadian so make that 1.609 km).

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Consequently we have been tempted to try to do too much at once, and not without the typical problems associated with grass roots organizations having aspirations greater than their means.

Our biggest successes to date, I believe, have been with this newsletter and with our electronic networking. Communications is one area where we have to some extent given a helping hand by creating awareness, information and opportunity for others to make important connections in the efforts they are making. Unfortunately, this type of success is not easily measured, so we have to assume from the positive feedback received, that we are making a difference.

Other initiatives to which we aspire are going to take more time, money and people and most importantly - organization: a rationalization of priorities and agenda. The reality is that no amount of success will, it seems, make the list of conservation needs any shorter. We will be continually confronted by what we haven't done and by having to cope with demeaning attitudes of expectation from others. The hard part of helping is being criticized for not doing better.

Onwards we go!

Closing Remarks

You might have been expecting a presentation of "The Future of Fishes" to focus on a few special interest topics - issue by issue, family by family, or whatever. Instead, I have given you yet another dissertation on how the hobby should be involved in conservation and, again, made a plug for the Aquatic Conservation Network. I make no apologies for that.

I have presented these thoughts in the hope that they will reinforce some of the conservation motives that we stand for and to hopefully spur people on in this thankless task. The ACN has been 5 years on the road now. The results have been worthwhile, but at the same time they have fallen short of the aspirations

of some of us. Considering the issues are so large, it is to be expected that uphill will continue to be the way to go for a long time. Hang in there!

Yes ... "the future of fishes is pretty bleak!" And, as much as I hate to promote the concept of human control and domination of the planet and its wildlife, "The Future of Fishes" is ... UNFORTUNATELY ... in our hands!

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This article was adapted from a presentation made during an electronic conference on FISHNET (CompuServe) on February 21, 1993.

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Conference Report

Peter Burgess, one of the ACN's Directors, Represented ACN at two recent UK fishkeeping events. His report follow.

British Aquarists Festival (BAF), Manchester, 25 - 27 October

ACN stand manned by Peter Burgess. Thanks to Aquarian fishfood manufacturers for providing part of their exhibition stand for displaying ACN material. Thanks also to Graeme Butt of Aquarian for contributing £100 towards the cost of air-mailing ACN material from Canada to England. (I was supposed to give a conservation talk but had laryngitis and couldn't utter a word all weekend!)

Supreme Festival of Fishkeeping, Weston-super-Mare, 1 - 3 November

ACN stand manned by Peter Burgess. Thanks to Andrew Bartyla of Hagen (UK) Ltd. For covering Peter Burgess' accommodation expenses. Thanks also to Joe Nethersell and the Federation of British Aquatic Societies for allowing ACN to exhibit at this event. Paul Davies of Alpha Aquarium kindly allocated part of his exhibition space for the display of ACN material. Aquarian covered Peter Burgess' travel costs. A small display of the Madagascar killifish, *Pachypanchax omalonotus* was exhibited, the specimens being provided by Tim Henshaw of the Bolton Metropolitan Museum Aquarium. (Peter Burgess gave a 15 minute talk on fish conservation and the work of ACN.)

It was very encouraging to see a growing interest in fish conservation at these major UK fishkeeping events. The Aquarian stand at the BAF, Manchester had a very strong conservation theme, with extensive displays showing the work of the various Fishes and Aquatic Invertebrates Taxon Advisory Groups (FAI TAGS): seahorse TAG, Tadpole shrimp TAG, Cichlid TAG, and the livebearing fishes TAG. Illustrated talks on the work of the various FAI-TAGs were presented at both events. TAG speakers included: Colin Grist, Bristol Zoo Aquarium - talking on livebearers; Steve Matchett, London Zoo Aquarium - seahorses; and Justin Bell, Chester Zoo Aquarium - cichlids.

Peter Burgess

Marketing and Shipping Live Aquatics - '96

The first international conference of Marketing and Shipping Live Aquatic Products was convened in Seattle on October 13-15, 1996.

Over 200 growers, harvesters, shippers, buyers, researchers and regulators of live finfish, shellfish and plants, met to discuss transporting live aquatic products-for food and ornamental use. Speakers addressed over 50 topics to representatives of this rapidly expanding industry.

Central to the Conference were discussions of technological refinements of fish handling and transportation, and improved understanding of the physiological needs of fish and shellfish. Frequently, live aquatics are shipped thousands of miles, often with extremely small amounts of water, for consumption, propagation, growth or display. One speaker described the most famous live aquatic cargo ever delivered - Keiko, the 7,760 pound movie star killer whale from Mexico.

Philosophers addressed the humane considerations of live aquatic transport. Fishermen and growers compared harvesting and handling methods with other practitioners and explored new market and business opportunities. Buyers found new product sources. Researchers and innovative shippers discussed containers, packaging, reconditioning and improved holding methods. Equipment suppliers demonstrated products to a focused and attentive audience. Regulators addressed the need for national and international controls.

Participants represented New Zealand, Bahrain, Fiji, South Africa, Brazil, Iceland, Norway, Puerto Rico, Denmark, Great Britain, Canada, British West Indies, Samoa, Mexico, Chile, Taiwan, Hong Kong, Sri Lanka, Australia, Hawaii, Alaska and mainland United States. Hosts were University of Alaska Marine Advisory Program and Nor'Westerly Food Technology Services. A proceedings will be available. A second conference is planned and papers are solicited.

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The Shasta Dam

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The Shasta Dam in Northern California is getting an \$80 million alteration to help an endangered run of salmon harmed by the dam's changes to the Sacramento River. The retrofit involves a device that will pull cold water from the depths of the reservoir to help keep young fish from dying in the too-warm waters released downstream. Winter-run chinook salmon embryos and fry begin dying at 57.5 degrees; the reservoir has reached 62 degrees in times of drought. The 55 miles downstream of the 602-foot dam are prime salmon habitat, but their numbers have dwindled in the half a century since the dam was built. The New York Times reported in July that "once complete in December, the cooling system will be the largest structure ever devoted to fish preservation."

In 1987, the Bureau of Reclamation began voluntarily shutting down Shasta Dam's electricity production so that cold water could be released to protect the fish, resulting in revenue losses of approximately \$40 million over the years. The new device will allow cold water to be released year-round, thus enabling the dam to produce electricity in the warmer months.

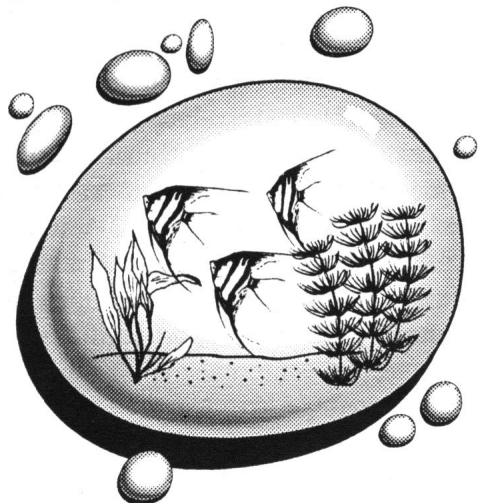
Coral Reef Fish Specialist Group

Reprinted with permission from the Species Survival Commission, *Species Number 26-27*; written by Patricia Almada-Villela, Don McAllister, Julie Hawkins, Callum Roberts, Frederick W. Schueler, Elizabeth Woods, Members Coral Reef Fish Specialist Group.

The Coral Reef Fish Specialist Group (CRFSG) is completing Phase I of its program and plans to publish a Global Overview of the Status of Coral Reef Fishes of the world in 1997. Faced with gaps in knowledge and a lack of reviews, the CRFSG felt that its first task was to gather key data, carry out analyses, and provide a review of current knowledge. Feedback on this document will assist the CRFSG in Phase II, an action plan on coral reef fishes of the world.

Between 3,000 and 4,000 species of fishes inhabit coral reefs. Over a thousand species are harvested for fresh, preserved, or live food, the aquarium industry, medicines, and curios, providing income and employment in many developing countries. National and some global catch figures are often quite incomplete and some are unreliable. Fishes caught locally for subsistence are frequently ignored in national statistics, though important for diet and health. Despite data deficiencies, it is clear that catches in many areas are on the decline, despite

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increased fishing effort. Several species of coral reef fishes were listed in 1996 for the first time on the official IUCN Red List. Their previous absence on the List showed lack of resources/analysis, rather than absence of rarity.

Coral reefs, home to these fishes, lie in a 40°-wide equatorial belt and their global area totals about 230,000 km² (recent World Conservation Monitoring Centre estimate). Reef condition is declining in many areas. As recovery of coral reefs takes longer than the recovery of most fish species, when the stress is removed, this decline in habitat area and quality is of grave concern.

Fundamental questions that the Overview is addressing include the status and number of coral reef fish species; what species are at risk; where the global species, phyletic, and endemic species hot spots are located; where coral habitat is most at risk; the primary threats to coral fishes; and options for the conservation and ecologically sustainable use of coral fishes. Below we report on CRFSG progress. Progress has been achieved through considerable voluntary work by members of the Group and by grants from The Curtis and Edith Munson Foundation of Chicago, the Sir Peter Scott Trust for Education and Research in Conservation, the Sir Peter Scott IUCN/SSC Action Plan Fund, the British Ecological Society/Coalbourn Trust, The Norcross Wildlife Foundation, and Ocean Voice International. More recent funding support was provided by the U.S. State Department's grant to us via the Species Survival Commission of IUCN, by a new grant from the Sir Peter Scott Trust for Education and Research in Conservation, the University of York Innovation and Research Priming Fund, and Ornamental Fish International. We are very grateful to all our donors for this vital support.

GIS Analyses

About 33,724 coral reef fish species records, representing 1,897 species in 32 families, have been compiled in the CoralfishBase database with the family, genus, and species name, the latitude and longitude of the record, and the source of the information (literature, museum collection, Sir Peter Scott file, etc.). Using an equal-area global grid devised by Ocean Voice International, the QuikMap GIS software, FoxPro database, and statistical software, preliminary analyses on CoralfishBase have

been carried out and are summarized below. Analyses included how many species or other taxa occur in each cell of the equal-area grid, and the calculation of isopleths for those numbers.

Biodiversity of Coral Reef Fishes

There are two dominant patterns in the global distribution of coral reef fishes. First, there is the occurrence of species diversity hot spots: the principle one lies in the coral triangle around Borneo, the Philippines, and New Guinea, and a lesser one in the Greater Caribbean; diversity declines outwards from these hot spots. A second pattern is the clinal increase in numbers of species towards the equator, sometimes disrupted by cool upwelling, river discharge, etc. Analyses of satellite data suggest that 9% of the variation is explained by sea surface temperatures which together with latitude explain about 17% of the variation. The patterns on isopleth maps of the number of fish species closely match those for the number of genera of reef building corals, suggesting a reliance of fish on habitat diversity, or reliance on a common underlying factor(s). Equal-area grids permit us to define quantitatively and to study endemic species.

From data being collected in the grid data base on various human impacts on reefs, we will identify hot spots of anthropogenic stresses -- areas for conservation initiatives, while fish hot spots will help select potential sites for marine protected areas.

The CRFSG plans to prepare lists of all known coral fishes, a list of tropical marine aquarium fishes with eco-labeling categories, and a provisional Red List of coral fishes.

Country Study of Coral Fishes and Habitat

The primary data source is a country by country survey. This status assessment is being carried out with input of governments, NGOs, and key people from over 108 countries. The survey has two main foci: (a) the status of coral fishes/fisheries and (b) the status of fish habitat. Data has been collected for about 30% of the countries. The survey data will be complemented by published information and subjected to various analyses.

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The country survey and data from the GIS mapping project have already been used to identify marine species of fishes at risk, for the IUCN Red List. The listing of some species was strongly supported by information received in the country study, while the inclusion of several other species in the Red List was the direct result of the GIS analysis.

The Marine Aquarium Industry Influence

There are perhaps two billion coral reef fishes in aquaria of hobbyists around the world, providing recreational, educational, and economic benefits. Most of these fishes are harvested in the wild. Fishes from the Philippines, Indonesia, and Malaysia are captured, to a large extent, by stunning them with a solution of sodium cyanide. Some fishes, corals, and other species are killed by the cyanide. Marine aquarium fishes are captured in other countries by more environmentally friendly methods, though not necessarily at sustainable levels. For example, populations of Emperor

angelfish and a number of seahorse species are declining. The harvest of cleaner fishes may harm the health and diversity of coral reefs. Considerable material on this industry has been gathered and a report on its effects on coral reef fishes and habitat is under preparation. A cooperative partnership between Ocean Voice International of Canada and the Haribon Foundation for Conservation of Natural Resources, devoted to sustainable alternatives for the harvest of marine aquarium fishes, funded by grants from the International Development Research Centre and the Canadian International Development Agency, has provided useful information. A bibliography, with over 275 references, on the toxicity of cyanide to fishes and corals is being finalized by Don McAllister.

Other

The CRFSG also plans to include in the report a chapter on habitat loss, coral reef fisheries, and root causes of population declines in coral reef fishes.

**For more information, please contact Don McAllister
c/o Ocean Voice International, P.O. Box 20060 Perth
Mews P.O., Perth ON K7H 3M6.
Or E-mail mcall@superaje.com**

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*Project Piaba aims to conserve and maintain the
ornamental fishery in the middle Rio Negro basin in Brazil.*

Notebook

**This section is devoted to notes of interest to the aquatic conservation community.
If you have an important fact, observation or theory to report, but never seem to have the time
to write a letter or an article, just send along a short note, or an email.
It takes only a minute or two to spread the word. ds**

◆ World Who Is Who and Does What in Environment & Conservation

This is a unique guide to the world's most eminent and/or active environmental and conservational policymakers, campaigners, researchers, authors, and academic or other benefactors. The results of many years' pertinent activity and already several of *ad hoc* data-gathering, the book gives personal and other details of some 1,300 outstanding environmentalists and conservationists concerned with any part of parts of the vast range of disciplines and hundreds of narrower subject-areas involved. The biographies in this pioneering volume were prepared mainly from detailed answers to Questionnaires and have been approved by their subjects personally or in a very few cases by a trusted factotum: they emanate from over 120 countries throughout the world. At least two more (cumulative) editions are planned, bringing the entire work past the total of 3,000 biographies which should embrace those of practically all the world's leaders in these vital fields.

The A-Z biographical listings include information on each biographee's qualifications and affiliations, academic background and work experience, achievements and awards, and specialist interests and publications. Details are also given of entrants' specialist abilities and language capabilities, their willingness to be consulted for advice or by the media or to act as consultants or referees, and their contact addresses with telephone and fax etc. numbers. Abbreviations and acronyms etc. being listed with their meanings in Appendix III at the very end of the book fully cross-referenced Appendices I and II before it display entrants by their nation (in the sense of country of work) and speciality, so that users can readily identify, locate, contact, experts in any geographical region and/or pertinent field of endeavour.

This initial edition of approximately 600 pages is expected to be available from early in the Autumn of

1996 from Earthscan Publications Ltd, 120 Pentonville Road, London N1 9JN, England, UK, for the subsidized price of £50 (hardbound), to which £5 should be added for handling, packing, and postage, of orders placed by mail. The equivalents in US\$ will be 80 and 8, respectively. Persons whose biographies are published in the book may obtain a single copy each at the further discounted 'thank you' price of £40, or £45 postage etc. paid (US\$ 60 or 68).

For further information or to place an order for this landmark reference volume, please contact Earthscan at the above address or fax (44) 171 278 1142.

◆ The State of Canada's Environment - 1996

Since its introduction a decade ago, *The State of Canada's Environment* has become the central reference for Canadian scientists, researchers, lawyers, business people, students, journalists and community leaders interested in environmentally responsible policy and action. Breaking new ground in the release of environmental information, *The State of Canada's Environment - 1996* is now available in three effective formats.

Internet: Accessible by subscription through the World Wide Web, this version features an on-line hotlink glossary of 500 key terms, more than 750 maps, graphs and tables, full indexing of more than 450,000 words, downloadable graphs, tables and related data.

Print: The printed version, available in English or French, is illustrated throughout in four colours, and comes with complimentary Internet access until April 1998.

CD-ROM: Compatible with both IBM and MacIntosh, the bilingual CD-ROM offers all the data and interactive functions of the

Notebook (continued)

Internet version, and also comes with complimentary Internet access until April 1998.

The report can be ordered on-line via the Internet at <http://www.ec.ga.ca>; toll-free at 1-800-734-3232 or by mail to Enquiries Canada, 47 Clarence Street, 3rd Floor, Ottawa, Ontario, K1A 0S5. Prices are listed below:

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◆ **Silenced Rivers - The Ecology and Politics of Large Dams**

Massive dams are much more than simply machines to generate electricity and store water. So says Patrick McCully in his new book *Silenced Rivers*, a telling indictment of the social and ecological effects of such dams. McCully, Campaigns Director of the California-based *International Rivers Network* says in the introduction to his book:

“Megadams are concrete, rock and earth expressions of the dominant ideology of the technological age icons of economic development and scientific progress just as are nuclear bombs and the motor car. More than 400,000 square kilometers of land - an area the size of California - has disappeared under water. Somewhere between 30 and 60 million people have been displaced. Dams kill people because they spread disease such as malaria and because they break.”

McCully maintains that rivers are now the most degraded of major ecosystems. Dams are the reason why one-fifth of the world's freshwater fish are now either endangered or extinct.

Silenced Rivers explains the history and politics of dam building worldwide. It describes the many technical, safety and economic problems that afflict the technology, and explores the role played by international banks and aid agencies in promoting it. McCully also tells the story of the rapid growth of the international anti-dam movements, and stresses how replacing large dams with less destructive alternatives will depend upon opening up the dam industry's practices to public scrutiny.

Silenced Rivers - The Ecology and Politics of Large Dams is published by Zed Books in association with the Ecologist and the International Rivers Network on 20 January, priced £14.95/\$25.00 USD paperback and £42.50/\$60.00 USD hardback.

◆ **Restoring Nature's Place: A Guide to Naturalizing Ontario Parks and Greenspace** by Donna Havinga and Jean-Marc Daigle, Ecological Outlook Consulting

Restoring Nature's Place offers both the inspiration and the practical know-how needed to pursue a “restorative”, community-based approach to naturalization. By weaving together a wealth of information in the areas of ecology, participation, and environmental education, Restoring Nature's Place celebrates people's growing commitment to healing the land, and establishes a hopeful long-term and holistic framework for naturalization and ecological restoration in Ontario and beyond.

The guide lays the philosophical and theoretical groundwork for a restorative approach by linking naturalization to the development of healthy, sustainable communities, and to the protection and restoration of biodiversity and ecological integrity. The causes and impacts of ecosystem degradation are also explored, highlighting the urgent need for restoration at the local level, throughout watersheds, and across regional landscapes.

In addition, *Restoring Nature's Place* offers a wide array of technical and procedural information. Guidelines for developing local and regional natural

Notebook (continued)

heritage strategies are provided as the basis for a site selection process that can contribute to landscape scale restoration. A detailed nine-step approach to site-level planning touches on everything from conducting inventories, to setting naturalization goals and objectives, to aftercare, management, and monitoring. Restoration strategies and techniques for the major terrestrial and freshwater ecosystems of Ontario are discussed at length. Guidelines and tools for community involvement all aspects of naturalization and restoration initiatives are outlined, as are basic principles and tools for complementary educational programs and materials. The guide also includes extensive resource lists, a cultural guide to over 300 plant species native to Ontario, and numerous case studies written by people involved hands-on in restoration across Ontario.

Restoring Nature's Place presents technical information in an accessible, easy-to-read format, and is targeted to a broad audience reflecting the wide range of participants in Ontario's burgeoning naturalization and restoration movement, from municipal parks staff and administrators, community groups and environmental organizations, to conservation authorities, schools, landscape professionals and private landowners.

Restoring Nature's Place can be purchased from the Ontario Parks Association at a cost of \$49.00 (plus taxes and handling). For information, contact Restoring Nature's Place c/o Ontario Parks Association 1185 Eglinton Avenue East Suite 404 North York, ON M3C 3C6

Coming Events

Further details for some of these events can be found on the ACN World Wide Web Pages via our home page at <http://www.acn.ca>

The Bay Area Killifish Association -- "West Coast Weekend 1997"

The Bay Area Killifish Association, is hosting the West Coast Weekend VI, **April 26 and 27, 1997** at Rickey's Hyatt, located at 4219 El Camino Real in Palo Alto, California.

Featured speakers are:

- Arcadio Valdes "Mexican endangered species"
- Peter Tirbak "His 1997 trip to Gabon, Africa"
- Andre Schonewillé "Lampeyes"
 - * Andre will be bringing some from the Cameroon's.
- Ken McKeighen "Native fish of the Southwestern United States"

- * Ken's artwork will be on display at the conference. He will also host a workshop entitled "Killifish in Acrylics" in which he will demonstrate on how he sketches and paints from live specimens.

- Al Castro "Speaking of Killies"
- Charlie Grimes "Collecting in Brazil"

...plus more to be announced!

After the conference, there will be a tour of the native fish habitats in the Nevada and California deserts. Advance registration for this tour is a must, because of the limited space.

There will also be a fish show (AKA sanctioned), raffle, fish sale (50 / 50 split) and "the auction", including 100 pairs of new and rare species.

This will be the best show in the Bay Area in 1997 . West Coast Weekend VI is open to all hobbyists and the public. The purpose of the BAKA is to further education and to expose the public to the killifish hobby. This show offers the opportunity to see beautiful freshwater fishes and talk with some of the most knowledgeable hobbyists in Northern California. For more information call: Paul Vormbaum West Coast Weekend Chairman (408) 268-3370.

Second Annual Wildlife Law Conference

April 8, 1997

Georgetown University

Law Centre

600 New Jersey Ave, Washington DC 20001 USA

The 2nd Annual International Wildlife Law Conference will once again bring together representatives from the academic, governmental and non-governmental sectors to focus upon the role of international wildlife treaty regimes in preserving biological diversity, and how these regimes can be strengthened to achieve this objective. Papers growing out of this conference will appear in a special symposium issue of *The Colorado Journal of International Environmental Law & Policy*.

Panel #1 focuses on the operation of the precautionary principle in the context of international wildlife agreements, including the contours of the principle in specific treaty regimes, the appropriate standards for applying the principle, and an assessment of its efficacy in protecting the viability of flora and fauna species.

Panel #2 examines the operation of the Convention of Biological Diversity, including its interaction with international wildlife conservation agreements and its implementation at the international, regional and national levels. Several speeches will speculate on the future viability of the CBD.

Panel #3 will examine one of the most controversial aspects of the International Convention for the Regulation of Whaling; the aboriginal subsistence whaling provision. Speakers will focus on the tension between cetacean conservation and the recognition of aboriginal peoples' rights under international law; the recent application by the Makah Tribe of the US for a gray whale quota under the provision, and the future

implications of permitting aboriginal whaling outside the framework of the IWC moratorium on whaling.

Conference Sponsors:

- Wildlife Group, American Society of International Law
- GreenLife Society - North America
- Georgetown International Environmental Law Review
- Colorado Journal of International Environmental Law & Policy
- Environmental Law Society, American University School of Law

Acknowledgement

Mark Rosenquist, a member of ACN, was a special presenter at the National Marine Educators Association 20th Annual Conference. It was held August 1 -5, 1996 at the University of New Hampshire, Durham New Hampshire.

His presentation was on Aquarium Societies as Resources for Educators. "National and local aquarium societies are a valuable resource for teachers when they encounter problems in their classrooms using aquariums." ACN and other aquarium societies was discussed at length with a number of people and many visitors were able to receive the names of national societies and local aquariums throughout the US and Canada.

Thank you, Mark, for your support of ACN.

ACN-L

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The annual membership fee is \$25 (Canadian or U.S. currency) or £15 Sterling.
See registration information on the previous page.

