DARWIN NEWS

Issue 9
July 2007

Newsletter of the UK Darwin Initiative

Promoting biodiversity conservation and the sustainable use of resources

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You can find out more about any of these projects from the Darwin Initiative website, in the *Projects* section.

http://www.darwin.gov.uk

http://www.defra.gov.uk/environment/darwin

Lagopsis darwiniana, a new species named after the Darwin Initiative (Photo: A.I. Pyak)
(see article "*New endemic species of deadnettle and buttercup found in Mongolia*")

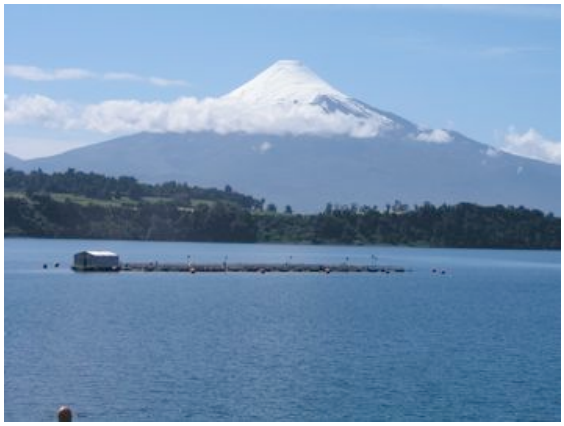
award comes on top of their recent winning entry for the 2006 Arab Gulf Programme for United Nations Development Organizations (AGFUND) prize. Shoals' "*Discovering the Ocean World*" primary school teachers' pack topped the category for projects implemented by NGOs providing education services, having been nominated for the prize by Mrs Pamela Bapoo-Dundoo (National Coordinator in Mauritius for the United Nations Development Programme managed Global Environment Facility, Small Grants Programme). ■

Eric Blais, Director of Shoals Rodrigues, receives the Médaille de la Reconnaissance Rodriguaise. from the Commissioner for Health.

Salmon farming in troubled waters: coming to terms with exotic aquaculture in Chile

Dr. Carlos Garcia de Leaniz, University of Wales Swansea
Project ref.: 162/15/020

SALMON farming is one of the most buoyant and lucrative businesses in Chile, capitalizing on a highly valuable export commodity that generates significant revenue. Chile is set to become the world's top salmon producer, and the industry is considered a successful example of the country's commitment to free market, world trade and economic growth. The problem is that there are no naturally occurring salmonids in the Southern Hemisphere.



Atlantic salmon farm in freshwater, Lake Llanquihue (X Region Chile)

All salmonids found in Chile (and there are many) are fish that are being farmed, fish that have escaped from fish farms, or fish that have been purposely stocked for sea ranching, or more often for sport fishing. Salmonids in Chile are therefore non-native (or alien) species: widely distributed, self-sustained, and locally abundant, but non-native. But then, so are grapes (wine being another of Chile's icons of economic growth), eucalyptus trees, or most agricultural crops.

Rainbow trout farm in seawater, Caleta Martin (X Region Chile)

Under such a scenario, the Darwin Initiative project "*Reducing the impact of exotic aquaculture on native aquatic biodiversity*" is drawing attention to the potential impacts of salmon farming on Chile's unique aquatic ecosystems, with a view to making the industry more sustainable. Not an easy task. To begin with, how to get the industry and other stakeholders fully convinced of the importance of the project? A workshop organized in Puerto Montt on January 2007, provided the right opportunity to get all stakeholders together, inform them about the project, and most importantly, give them the chance to air their views and articulate their worries.

Participants in the First International Darwin Workshop "Reducing the Impact of Exotic Aquaculture on Native Aquatic Biodiversity", held at Puerto Montt , Chile (17-18 January 2007)

The workshop included a two-day public conference opened by the Rector of the University of Los Lagos (Dr. Raul Aguilar) and led by Professor Ian Fleming (Canada), who provided an incisive insight into cultural invasions and the implications of fish escapes from aquaculture. The conference provided students and stakeholders with an opportunity to listen to 22 national and international speakers, and to find out more about the impact of salmonid escapes in other countries. The overall impression was that the workshop was a success, and the group discussions ended with a joint statement endorsed by all stakeholders[8]. The conference presentations were attended by an active and participative audience of about 50 people, including

8 Joint statement and conference abstracts available at http://www.biodiversity.cl/

representatives from industry, NGO's, academia, government, sport anglers, as well professional (artisan) fishermen.

Mr. Eric Vargas, a native Mapuche chief and president of a national union opposing the spread of the salmon industry, closed the conference with a passionate and emotive speech. "If things go badly", he said, "the salmon industry will pack and go. But we will have to stay". In the end we got the impression that we had just made a start in the right direction, and that support from stakeholders will prove critical towards achieving the project goals in these troubled waters. ■

Counting bats in the heart of Transylvania

Kate Jones (Zoological Society of London[9]) and Colin Catto (Bat Conservation Trust[10])
Project ref.: 162/15/033

BATS face an uncertain future with global warming and increasing human population pressures likely to impact their populations. Monitoring bat populations is critical to both inform and influence conservation policy and to ensure resources are directed to where they are most needed. Bats are also good indicators of general environmental health as they are top predators of common nocturnal insects that are themselves sensitive to pesticide usage, land use practices, water quality and microclimates. Our project "*Monitoring Bat Biodiversity: Indicators of Sustainable Development in Eastern Europe"* is a partnership between Zoological Society of London (ZSL) and Bat Conservation Trust (BCT). It aims to transfer bat monitoring expertise developed in the UK to leave behind a legacy of sustainable national monitoring in Romania and Bulgaria.

Colin Catto (centre) training the Romanian surveyors

Bats use high frequency calls to forage at night and these 'echolocation' calls can be used to monitor different species. In the UK, for their National Bat Monitoring Program, BCT uses a network of hundreds of volunteers to monitor bats on foot using special detectors designed to hear high frequency sounds. However, Romania and Bulgaria have only a small base of bat enthusiasts and in order to deliver a national monitoring scheme, we had to think of a better technique to deliver country wide monitoring. We decided simply to attach bat detectors to vehicles! A vehicle speed of 15 mph is slow enough to detect bats along a road and, if driven for between 1 and 2 hours, one vehicle can survey 15–30 miles per evening. Linking a global positioning system (GPS) to the detector means that geo-referenced locations of bat populations can be generated and so can be monitored over time.

In July 2006, we held our first training workshop trying this technique out with our partner organisation in Romania (Romanian Bat Protection Association,) in a tiny fishing village in Cefa, in the heart of Transylvania. Nine bat workers from throughout Romania attended and we provided them with sets of equipment, training in how they worked and how to collect data. We first set them off in practice runs around the village to see how well they managed. In order to geo-reference bat records it is important to start driving, start the GPS and start echolocation call recording simultaneously. This was quite a stressful experience at first which resulted in lots of screaming - both from car engines and the trainees! However, they soon got the hang of it and after the workshop was over, five separate teams have been enthusiastically collecting bat transects over the summer from all over Romania.

Romanian monitoring teams collecting a bat car transect

We will return to Romania in May to report on progress and offer another workshop for the Romanian new recruits. We are also heading to Rousse in Bulgaria to train a whole new set of bat workers in this technique with our partner organisations there (Nature Park Roussenski Lom, The Green Balkans and Institute of Zoology, Bulgarian Academy of Sciences). We hear that the project has already created quite a stir in Bulgaria with even the British Ambassador wanting to take part! See more information on our project website (http://www.ibats.org.uk). ■

Bulgarians practicing for their car transects later this year

Indigenous vegetables in West Africa: an overlooked wild resource

Enoch Achigan-Dako (University of Abomey Calavi, Benin) and Margaret Pasquini (CAZS Natural Resources, University of Wales Bangor)
Project ref.: 162/15/003

UNTIL very recently, horticultural research and development in West Africa has focused nearly exclusively on a few commercially-important crops of temperate origin (such as cabbage, lettuce, carrot, tomato, and onion), overlooking the tremendous contribution to rural people's subsistence of indigenous plant resources collected from the wild, both in the dry and wet seasons. West Africa holds a considerable reserve of vegetable plant diversity, a reserve which is, however, fast disappearing, through the combined effects of climate change, deforestation and land clearing, overgrazing and in some cases, intensive aggressive harvesting. At the same time, food habits

9 http://www.zoo.cam.ac.uk/ioz/
10 http://www.bats.org.uk/