

Report on Activities Conducted by Earthwatch Institute to Commemorate the International Year of Biodiversity 2010

Earthwatch Annual Debate 2010, London, UK

To celebrate the International Year of Biodiversity, this event held at the Royal Geographical Society saw five experts take the stage in a lively debate to choose 'an environmental mascot for Britain' – a species which best symbolises Britain. Speakers highlighted the timely relevance of the debate to the IYB, and raised awareness of the importance of biodiversity and critical environmental issues.

A poster stand was held at this event, presenting further information on IYB, including detail on the global activities conducted by Earthwatch that support IYB.

Lecture attendance: >450

National media coverage:

<http://www.telegraph.co.uk/earth/earthnews/8025171/Britains-most-symbolic-species-debated.html>

<http://www.guardian.co.uk/environment/poll/2010/oct/14/species-britain-mascot?INTCMP=SRCH>

Further details: http://www.earthwatch.org/europe/newsroom/news_events/news-3-bumble.html/

Earthwatch Annual Lecture 2010 - Can economics really save wild nature?

Dr Pavan Sukhdev (special adviser to the United Nations Environment programme (UNEP) Green Economy Initiative) gave the 5th Annual Earthwatch Oxford at the Said Business School, Oxford on 10th February 2010 entitled *Can economics really save wild nature?* Pavan spoke about the value of nature following the two years of research for The Economics of Ecosystems and Biodiversity (TEEB) study hosted by UNEP and with support from the European Commission. Some 300 guests from business, academia, government and the general public attended representing the wide interest in putting a price to the 'value of nature'. The evening was hosted by Earthwatch and Sustainability.

Further details: http://www.earthwatch.org/europe/newsroom/news_events/news-5-sukhdev.html

<http://www.iucn.org/about/union/secretariat/offices/europe/?4752/Can-economics-really-save-wild-nature>

Global Business of Biodiversity Symposium, London, UK

Earthwatch staff attended and presented at this unique, private-sector focused business and biodiversity conference. Supported by the UK government, the event saw the launch of the highly anticipated 'The Economics of Ecosystems and Biodiversity (TEEB) for Business' report from study leader Dr Pavan Sukhdev. Nigel Winser, Executive Vice-President presented on the key barriers, enablers and policy actions required to engage the private sector on biodiversity.

Further details: <http://www.businessofbiodiversity.co.uk/>

Online Activities

The International Year of Biodiversity was celebrated on the Earthwatch website, with an extensive features section detailing the importance of biodiversity in 2010, and the efforts made by Earthwatch to further the aims of the IYB worldwide. The website received around 250 unique views in 2010.

In addition, contributions were made to the UK and international IYB websites, providing case-studies of recent Earthwatch successes in conserving biodiversity, and news items:

- o Coastal Ecology of the Bahamas <http://www.cbd.int/2010/stories/earthwatch-institute-bahamas/>
- o Amazon Forest Conservation <<http://www.cbd.int/2010/stories/earthwatch-institute-amazon/>>
- o Mangroves of Kenya <<http://www.cbd.int/2010/stories/earthwatch-institute-kenya>>
- o Climate Change and Caterpillars <<http://www.cbd.int/2010/stories/earthwatch-institute-caterpillars/>>
- o Wildlife of the Mongolian Steppe <<http://www.cbd.int/2010/stories/earthwatch-institute-mongolia/>>
- o Garden Tiger makes reappearance in Oxfordshire: <http://www.decadeonbiodiversity.net/Garden-Tiger-makes-reappearance-in-Oxfordshire>

Biodiversity Conservation Research Activities

Natural habitats enhanced in the Bahamas

The 'Coastal Ecology of the Bahamas' team have accomplished a variety of in-situ restoration activities focusing on six different habitats. On Long Island they have mitigated the effects of tropical storms and historical damage, and in Baker's Bay transplanted coral colonies to reef modules to restore a coral reef. At Guana Cay on Abaco Island they conserved 93 acres of coastal sand beach by invasive species removal and dune restoration.

Contributions to management plans in Mongolia and recommendations made for the US Great Plains

Conservation strategies implemented by Earthwatch scientists in Mongolia have received worldwide recognition. The Ikh Nart Nature Reserve has been designated as a "model" reserve for Mongolia by IUCN. This was a direct result of the management plan produced and implemented in 2007, on the basis of data collected by Earthwatch volunteers on the 'The Wildlife of the Mongolian Steppe' project, which demonstrated the importance of the reserve as a breeding ground for endangered species. Park managers are now looking to expand the reserve based on new research, and the federal government is considering upgrading Ikh Nart from a Nature Reserve to a National Park. The lessons learned at Ikh Nart are being drawn upon to advise future management of the US Great Plains.

Ecological survey of endangered butterflies of Mount Fuji Japan

A symbiotic relationship between Reverdin's blue butterfly and at least six species of ant has been newly documented by this research team. The discovery will be further investigated by the scientists, who aim to conserve the ecosystem on which the butterfly depends.

Taxa of conservation significance enhanced in Kenya

Three species of mangrove are being studied on the research project, 'Tidal Forests of Kenya', and the population size of all three is increasing as a result. Earthwatch scientists are working to reintroduce mangrove trees to the coastal environment and studying the effects of this on the surrounding ecosystem. They have greatly improved knowledge on how to maximise growth and survival of mangrove seedlings, for example finding that the presence of certain species of mangrove positively impacts the growth of other mangrove species, and that planting at higher densities results in greater growth and survival rates compared to lower densities.

Managing change in the ecosystems of Robben Island, South Africa

On Robben Island, data from Earthwatch research has been used to support an experimental program of fishery closures near penguin colonies during the breeding season. It is hoped this will help sustain the species population by increasing prey availability during the crucial chick-rearing stage. Furthermore, Earthwatch volunteers on the 'South African Penguins' project have collected data indicating that breeding success is higher among penguins nesting in man-made sites, therefore providing artificial burrows could help increase reproduction rates. Experiments into which artificial nests work best are now being undertaken to compliment the fishery program.

Research provides insights into climate change impacts on the mammals of Nova Scotia

Earthwatch research showed that erratic weather patterns can have a negative impact on Canadian wildlife by triggering premature breeding in deer mice. Early breeding caused litters to fail, prevented mice from breeding again, and in some cases surviving until the true spring/summer season, as the vastly changing weather had caused all their energy stores to be used up prematurely. This decimated the deer mouse population and subsequently altered community dynamics, allowing rarer jumping mice to become unusually dominant. This data supports the continuing evidence that seasonal variability induced by climate change has negative effects on wildlife.

Rare and previously unrecorded species found by 'Puerto Rico's Rainforest' teams

During ecological surveys in the rainforest of Las Casas, Puerto Rico, Earthwatch volunteers captured, measured and released two specimens of the Puerto Rican Galliwasp (*Diploglossus pleei*), a small skink-like lizard that represents the only member of its genus in Puerto Rico. Volunteers also observed a species of *Sphaerodactylus* gecko not previously known to exist at Las Casas.

Management plan now being implemented on 'Macaws of the Peruvian Amazon' project

Having recorded a decline in the number of macaws using clay-lick sites in recent years, data collected on Earthwatch volunteer expeditions on macaw feeding patterns has been used to create a management plan for the area. This was implemented in January 2010 and involved vegetation clearance in order to improve bird access to the important Colpa Colorado clay-lick. The research team are monitoring the effectiveness of the management plan.

Research in Costa Rica reveals interactions between climate and parasitism

The Earthwatch team continues to find new caterpillar and parasitic species at all of their research sites (the USA, Ecuador, Costa Rica) and new interactions between plants, caterpillars, and parasitoids, which have important effects when it comes to maintaining species diversity. A new climate model developed by the team has led to new climate change predictions, suggesting that interactions, such as parasitism, are likely to decline quickly with climate change. For example, the natural 'biological control' of pests in banana plantations by rainforest parasitoids could be unbalanced, resulting in greater insect infestation and damage to crops.

'Wildlife Trails of the American Southwest' project scientists influencing conservation worldwide

The establishment of corridors between protected areas has been described as the single most important and revolutionary conservation activity over the last half century to conserve species, ecosystems, and ecological processes. The 'Wildlife Trails of the American Southwest' project was highlighted for its cutting-edge research and impact on influencing conservation actions worldwide through linking protected areas with wildlife corridors, in a 2009 book entitled *Rewilding the World: Dispatches from the Conservation Revolution*.

Successful community-based wildlife management in the Amazon

Earthwatch scientists have introduced community-based wildlife management in the Peruvian Amazon's Pacaya-Samiria National Reserve. Four indigenous communities living within the Park have implemented plans which incorporate protected areas where hunting will no longer continue. For the areas where hunting is allowed, villagers agreed to include quotas for hunted species in the wildlife management plans, and that habitat conservation should also form part of the agreements.

For more information on our other research activities see the Earthwatch Science Report 2010:
http://www.earthwatch.org/europe/our_work/field_research/sciencereport/

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