

Conservation news

Making a difference in Aceh

After the devastating December 2004 tsunami and the end of the 30-year civil conflict between the Government of Indonesia and the Aceh Freedom Movement, there has been a dramatic rise in the demand for the timber within Aceh's forests. Initially this timber was used to supply the reconstruction efforts but with high levels of unemployment, especially amongst thousands of ex-combatants, illegal logging now threatens one of Asia's largest forest blocks, the 750,000 ha Ulu Masen Ecosystem. The accompanying increase in disturbance, along with the opening up of old farmland, has been coupled with monthly, often weekly, reports of rural communities experiencing problems with elephants and tigers across Aceh. With funding from the Multi Donor Fund and supervision from the World Bank, Fauna & Flora International (FFI), in partnership with the Government of Aceh, took several important steps to address these conservation challenges by launching three flagship initiatives last month.

Firstly, FFI developed and delivered a new field training programme to a cohort of 30 Forest Rangers, including many ex-combatants. These newly trained rangers have already made an impact, having seized 30 m³ of illegal timber, three chainsaws and three mobile phones. Secondly, FFI developed and delivered a Community Ranger training programme to provide alternative employment for ex-poachers and ex-loggers. The first 10 rangers graduated from the course and were put straight into action, gathering field data to stop a road being constructed through prime elephant and tiger habitat. Finally, the first Conservation Response Units were launched with much fanfare, with more than 1,000 villagers turning out to join the head of local government and numerous other officials. For the four elephant units and 20 Forest and Community Rangers, FFI provided the initial start-up costs and training. In a strong display of commitment towards conservation the Aceh Jaya district government has agreed to cover fully the annual operational costs of these units, thereby making this strategy sustainable. This combined strategy is being scaled up, with an ambitious target of over 250 rangers and 20 elephant units trained and deployed to form a law enforcement and human-wildlife conflict management network across all six of Ulu Masen's districts by 2010. This will further bolster FFI's monitoring of illegal logging and police training work.

Since October 2008 the Aceh Criminal Investigation Unit, working in conjunction with already established forest rangers, acted upon FFI's monitoring data to examine 67 illegal logging operations, of which eight proceeded to court and four resulted in prison sentences, the first such

successes for the project. Whilst there is still much to do the initial signs are promising.

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Chytrid fungus strikes mountain chickens in Montserrat

The chytrid fungus *Batrachochytrium dendrobatidis*, a vertebrate parasite, was first described as the cause of death of adult frogs in Australia and Panama, in 1993. Since then many anurans have succumbed to this chytrid, causing losses of species worldwide. In the Caribbean *B. dendrobatidis* has been linked to amphibian declines in Puerto Rico. In 2002 the disease was also responsible for a high number of deaths of the mountain chicken frog *Leptodactylus fallax* in Dominica. This giant frog, the largest native amphibian in the Caribbean, was once common across six islands but is now confined to Dominica and Montserrat. Given the uncertain status of the species in Dominica the Montserrat mountain chicken population was seen as the global stronghold for the species. In an article in *Oryx* in 2007 (41, 398–401) a team led by the Durrell Wildlife Conservation Trust found that the mountain chickens of Montserrat were chytrid-free between 2003–2005, when the study was undertaken.

However, on 14 February 2009 Montserrat Forestry Department staff discovered dead and moribund frogs at a number of sites. As an immediate response Gerardo García and Javier Lopez, Heads of Herpetology and Veterinary Departments at Durrell, respectively, travelled to Montserrat at the end of February for 2 weeks to diagnose the situation. The Durrell team, assisted by Montserrat Forestry Department staff, undertook seven day and seven night surveys in 13 localities within the known distribution range of the mountain chicken. Samples of all mountain chickens found were collected for chytrid detection, and skin samples from Montserrat whistling frogs and cane toads were taken to determine the spread of the disease (these two anurans are immune to the fungus but are carriers). On-site examination of fresh and Congo red-stained skin scrapes showed structures compatible with chytridial sporangia, and PCR tests carried out in Dominica and at the Zoological Society of London (ZSL), led by Andrew Cunningham, confirmed the presence of chytrid DNA from dead and dying animals. A total of 320 swabs and tree frogs collected are also being processed at ZSL and will provide further information on the epidemiology of the outbreak in Montserrat. Further samples are required for

sequencing of the pathogen and identification of the infection's origin.

These post-infection surveys, compared to those undertaken previously in a healthy scenario, show that all populations are now empty or severely depleted, except at Fairy Walk and Corbet Spring, where the species remains. The Durrell team's analysis of the situation was that the epidemic would advance towards this last stronghold, with devastating consequences. In Dominica, a much larger island than Montserrat, the disease decimated all mountain chicken populations within a few months. Studies of the spread of chytrid in Australia, Panama and Costa Rica have shown that the disease can travel 28–100 km per year. Given the small size of the species' distribution range there was only a short time (at best a few weeks) to take action.

In the face of the rapid spread of this disease and in consultation with the Montserrat government, Durrell activated a plan to evacuate frogs from the affected area (see <http://blog.durrell.org> for more details of the operation). This part of the rescue programme was organized by a collaborative team from Durrell, ZSL and Parken Zoo in Stockholm. During the week of the 12 April, 12 Montserrat mountain chickens arrived safely at Durrell's headquarters in Jersey and have been placed in a bio-secure unit. Another 12 have gone to London Zoo and a further 26 to Parken Zoo. These animals will form the basis for a targeted breeding programme for the species, from which new founders will be taken to send back to Montserrat when the time is right.

Durrell has been working in Montserrat since the early 1990s supporting the Montserrat government in the protection of the island's biodiversity. The mountain chicken has been an important flagship species for Montserrat and Durrell, and every effort is being made to save the species from extinction.

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New website for the Rapid Response Facility

The Rapid Response Facility (RRF), the emergency small grants programme jointly operated by the UNESCO World Heritage Centre, the United Nations Foundation, and Fauna & Flora International (FFI), recently launched a new website at <http://www.rapid-response.org>. This new site not only provides information about RRF funding but also tools and guidance for practitioners around the globe dealing with emergency conservation response, and an opportunity for those practitioners to interact with and learn from each other.

The RRF was created to provide rapid support to sites of high biodiversity value in times of acute threat, with a particular focus on natural World Heritage sites. Grants of up to USD 30,000 are available to a variety of grantees, such as statutory agencies responsible for site management, registered local, national or international non-governmental organizations, and the private sector (including local and multinational corporations).

The RRF relies on the support of local and international experts with detailed site-level knowledge to provide rapid external reviews of grant applications. This facilitates a transparent and informed grant governance process capable of processing applications in just 8 working days. To date, the RRF has awarded 16 grants in eight countries. The grantees have tackled crises ranging from the immediate restoration of essential conservation capacity following an earthquake or violent attack to combating cases of illegal road construction, encroachment and associated habitat loss.

At the request of several RRF grantees the new website features an interactive forum where past and current grantees, potential applicants and other interested parties can ask questions and share lessons learned. This forum represents an important step in the RRF's efforts to share knowledge across organizations and sectors to improve the speed and efficacy of emergency conservation response.

In addition, <http://www.rapid-response.org> houses various resources that have been developed as part of FFI's exploration of the value of cross-sectoral partnerships in post-conflict and post-disaster situations. This work, funded by the United States Agency for International Development, has resulted in a set of tools and case studies designed to be of use for both conservation and development practitioners. Several of these tools—including a checklist on issues to consider when launching a cross-sectoral partnership—are already available on the new RRF website and others will be added in due course.

For those interested in approaching the RRF for emergency funding, the site also provides information on application procedures, funding criteria, and past RRF funding decisions. The RRF Secretariat is available to answer any questions and can be contacted at rrf@fauna-flora.org

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Surge in rhino poaching stirs conservationists into action...

In 2007 the rhinos of Kaziranga National Park suffered their worst poaching for 10 years. From 1997 to 2006 fewer than six greater one-horned rhinoceros *Rhinoceros unicornis* were poached on average each year in and around the Park. But in 2007 this rose to 20. This important Park holds the largest population of rhinos in Asia. Located in the state of Assam in

north-east India, Kaziranga has 1,855 greater one-horned rhinos and is a vital stronghold for this species.

Traders from Dimapur in the state of Nagaland, which neighbours Assam, have been assisting Naga poachers from the Paite tribe, and other local people, with .303 rifles. The poachers recruit poor villagers from the area to act as their guides and to carry provisions, paying them in advance USD 42–625. The poachers, usually 3–5 strong, escape under cover of darkness, walking c. 85 km to avoid detection, to Dimapur. They then receive USD 6,250–10,400 per kg for the horn. It is not clear how or where the horn goes but it ends up somewhere in eastern Asia.

There were several reasons for the upsurge in poaching in 2007. An inexperienced senior officer was put in charge of supervising the Park Forest Guards. He took a long time to react to rhino poachers, who became increasingly successful in killing rhinos in quick succession. This had a direct impact on the discipline and morale of the Forest Guards who were confused as to how to react. In addition there were over 100 unfilled positions in Kaziranga, mostly frontline guards, and anti-poaching patrols were thus less effective. Compounding this, there was a shortage of fuel, limiting the movement of vehicles around the Park, and insufficient money was available to access intelligence by paying a sufficient number of informants.

NGOs and the media reacted in early 2008, criticizing the government and publicizing the crisis. This came to a head when a rhino that had been shot, and had her horn hacked off while still alive, was found and photographed while she bled to death over 36 hours. The Assam NGO, Aaranyak, sent the picture to contacts worldwide. Almost immediately, government action followed. The police arrested more than 10 rhino poachers and traders around Kaziranga. In May 2008 an effective and knowledgeable senior officer took over and reinstated strong leadership of the Forest Guards. Most of the Park staff vacancies were filled. To improve relations between the Forest Department and the local villagers, meetings for conservation awareness were held and a tourist restaurant was established to employ local people. NGOs added much needed funds for intelligence to boost the number of informers in the surrounding villages.

As a result of these improvements rhino poaching halved in Kaziranga in 2008, showing that the Assam Forest Department can work with NGOs to resolve a conservation crisis.

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... and return of the greater one-horned rhinoceros to Manas National Park

The greater one-horned rhinoceros *Rhinoceros unicornis* has made a successful comeback to Manas National Park in Assam, India, following the release of three orphaned rhinos from a boma in November 2008. These rhinos were less than 4 months of age when rescued from the annual floods of Kaziranga National Park.

The calves were hand-raised at the Centre for Wildlife Rehabilitation and Conservation (CWRC), a joint initiative of Wildlife Trust of India, International Fund for Animal Welfare, and Assam Forest Department. CWRC was established in 2002 to address wildlife emergencies that arise from calamities and conflicts in the state of Assam. Kaziranga National Park gets flooded almost every year, forcing animals to migrate to higher elevations during which many become stranded or injured because of conflict with people.

The first rhino calf was rescued in July 2002 and the other two were admitted to CWRC in July 2004. A rhino rehabilitation protocol was developed in 2005 during a consultation workshop involving expertise available on the black *Diceros bicornis* and white rhinoceros *Ceratotherium simum* of Africa. The calves, all females, were hand-raised with human milk formula for 18 months before being weaned. Manas National Park was chosen as the release site as the rehabilitation programme would facilitate the re-introduction of the species. The first calf was moved to Manas National Park in February 2006, where it was held in a 5.7 ha twin segment boma. The other two calves were moved to the other segment of the boma in January 2007. In late 2007 the boma was extended by another 7.7 ha to provide adequate grazing space. Suitability for release was assessed by studying health and behaviour, and in November 2008 all three rhinos (5–6 years old) were released. A post-release monitoring programme using radio-telemetry is in progress and, as of April 2009, the rhinos have established two ranging areas.

Up to the mid 1990s Manas National Park held a healthy population of rhinos but they were wiped out during a period of civil unrest in the late 1990s. The civil unrest in Lower Assam ended in 2004 following political agreements that led to the formation of the independent and autonomous Bodoland Territorial Council (BTC). Thanks to the efforts of BTC, this World Heritage Site and global biodiversity hotspot is on the road to recovery. Three more orphaned rhinos are being hand-raised at CWRC and will be released in Manas in the next 2 years.

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10th Conservation Workshop for the Fauna of Arabia

The 10th Annual Conservation Workshop for the Fauna of Arabia was held at the Breeding Centre for Endangered Arabian Wildlife in Sharjah, United Arab Emirates (UAE), in February 2009. This regional forum is hosted by the Environment and Protected Areas Authority of the Government of Sharjah under the patronage of His Highness Sheikh Dr Sultan bin Mohammed al Qassimi. For the last 3 years the workshops have focused on protected areas (*Oryx*, 41, 2–3 & 42, 172–173), following earlier workshop recommendations that the identification and protection of suitable habitats is a key conservation issue throughout the Arabian Peninsula. The 10th Workshop sought to advance the theme of protected areas by setting three objectives: (1) to update the current status of protected areas and protected area systems in the Arabian Peninsula, (2) to apply a formal management effectiveness tracking tool, and (3) to progress plans for the promotion of priority sites for the development of transboundary conservation areas.

Country representatives provided a brief summary of the status of developments within their protected area networks, with particular focus on those issues raised in the evaluation of protected area management effectiveness conducted as part of the 2008 meeting. Detailed reports were presented for 61 sites in Jordan, Saudi Arabia, Yemen, Oman, Bahrain and the UAE. These highlighted some ongoing issues, including the need for current, active, integrated management plans for all sites within a given network, a general lack of adequate visitor facilities, continued impacts from recreational and harvesting uses, and a continued need for social research to inform area management.

An adaptation of the *Management Effectiveness Tracking Tool* (S. Stolton et al., 2007, WWF International, Gland, Switzerland) was used to explore the variation in management effectiveness of seven protected areas drawn from different ecoregions in the Peninsula. The tool emphasized the need for greater park planning activities and better management plans, with explicit links between monitoring indicators and protected area objectives. Moreover, there was a general need for more socio-economic information and greater community involvement in protected area planning and management.

Cross-border cooperation emerged as an important theme in the 2007 Workshop and in 2008 some key sites were identified and prioritized. Delegates at the 2009 meeting were charged to review developments and identify major constraints relating to the creation of transboundary conservation areas in their region. Six regional reviews were completed and some clear patterns emerged. Although there had been little concrete progress towards the re-

alization of any single such conservation area there was evidence of increasing acceptance of the concept among conservation managers and policy makers in the region, with some bilateral discussions having already begun at the technical level. There was initially some concern expressed over the ceding of national authority within jointly managed conservation areas. These understandable fears were allayed by reference to examples of successful transboundary conservation areas in southern Africa, wherein partner nations maintain their own wildlife regulations within national boundaries but coordinate compatible habitat and species' management actions across those boundaries. Delegates were in general agreement that further progress would come only with the full engagement of political leaders within the concerned areas, and that a small committee of senior conservation managers should be formed to make high-level contacts in an attempt to win champions for the transboundary conservation area concept.

Plans are currently underway for the 2010 meeting. Enquiries should be directed to Kevin Budd, Breeding Centre for Endangered Arabian Wildlife, P.O. Box 29922, Sharjah, United Arab Emirates; e-mail breeding@epaa-shj.gov.ae

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Elephant deaths due to electrocution: a consequence of inappropriate habitat management?

A series of deaths of crop-raiding elephants *Elephas maximus* in the state of Karnataka in southern India has caused anxiety among Government officials and conservationists. These deaths, mostly due to electrocution, have taken place around protected areas in the Western Ghats of Karnataka. In the 17 months from January 2008 to May 2009 there were a total of 33 deaths from high voltage electricity illegally connected to farm fences to stop crop-raiding of rice, sugar cane, banana, raagi (millet) and maize fields. This includes one elephant killed by low-lying electric transmission cables.

The network of protected areas in Karnataka, including Nagarhole (642 km²) and Bandipur (874 km²) Tiger Reserves and Biligiri Rangaswamy Temple Sanctuary (539 km²), together with other protected areas in neighbouring states, host the largest contiguous population of Asian elephants. These protected areas are part of the Mysore Elephant Reserve. Studies by the Wildlife Conservation Society–India Program suggest that the elephant density in

Nagarahole-Bandipur is c. 3 km⁻², with a healthy adult sex ratio (M:F) of 1:4.33. The conflict has been severe at the eastern, northern and western boundaries of Nagarahole and Bandipur Reserves and Biligiri Rangaswamy Temple Sanctuary, respectively. Other locations of conflict are in northern Kodagu and Hassan districts, and around Bannerghatta National Park, where the populations are isolated by excessive habitat fragmentation from development projects and agriculture.

In India there is a lack of scientific wildlife management, especially for large and conflict-prone species, and most measures to reduce conflict are ad hoc. Scientific understanding of the spatio-temporal patterns, extent, intensity and causes of the conflict, seasonal movements of elephants, and the effects of changes in land-use patterns around the reserves is lacking. Inappropriate management of elephant habitat in the name of so-called habitat improvement could be one of the reasons for high human-elephant conflict. Studies in Africa have demonstrated that extensive construction of artificial water holes, water retention dams and other water-harvesting measures all reduce calf mortality and artificially augment an elephant population beyond the carrying capacity of an area, forcing elephants to move into agricultural fields for forage. Spatial clustering of water holes increases availability of surface water in an area, affecting seasonal movement patterns of elephants. Ill-informed media reports attributing conflicts to 'lack of water and food sources' within reserves also bolsters support for unscientific habitat improvements undertaken by wildlife departments.

Large developmental projects in elephant habitats, such as dams, mining, highways, and linear fragmentation from construction of forest roads and power transmission lines, have all reduced habitat availability for elephants. Some of these disturbances can facilitate the spread of invasive plants such as *Lantana camara*, *Chromolaena odorata* and *Parthenium hysterophorus*, reducing habitat quality for elephants. Historical modification of elephant habitat by logging and slash-and-burn agriculture might also have contributed to the spread of invasive plants. Competition with livestock for palatable forage and reduction of forage quality by man-made fires are other possible contributors to the increase in conflict, and shortage of staff in the Forest Department has attributed to the failure to control conflict.

Before expensive or socially unacceptable mitigation measures are implemented a comprehensive, scientific policy is necessary. Monitoring and evaluating current mitigation, and surface water management strategies, are of prime importance. Raising awareness and sensitizing communities, police and electricity companies regarding illegal electric fences can help minimize the problem. Elephant proof trenches have been successful when well-maintained but the expensive powered fences erected by

wildlife departments are largely inefficient because of a lack of maintenance.

The judiciary has recently been actively promoting wildlife conservation in India. The High Court of Karnataka took cognizance of the issue of elephant deaths and ordered a suo moto enquiry into the incidences, following which a committee of wildlife biologists and Forest Department officials was formed to enquire into habitat viability, fragmentation, corridors and other issues, and to propose plans to reduce conflict. In its report the committee suggested eradication of invasive plant species, immunization of cattle, maintenance of physical barriers, setting up of special squads to manage conflict situations, filling of vacancies in the Forest Department, capacity building, awareness creation and translocation of an isolated elephant population from Kodagu and Hassan districts.

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Wild leopards of Mumbai prefer domestic prey

The leopard *Panthera pardus*, categorized as Near Threatened on the 2008 IUCN Red List, occurs in Sanjay Gandhi National Park in Mumbai, India. This 103 km² Park is home to c. 24 leopards but their habitat is disappearing rapidly due to encroachment by slums, residential complexes, religious architecture, agriculture and quarries. There are more than 54 illegal settlements within the Park, with a total human population > 250,000. This high rate of encroachment has led to a drastic reduction in habitat for the leopard and its prey base, and leopards inevitably wander from the forest into human settlements. Human habitat is attractive for these leopards because it provides abundant prey in the form of dogs and livestock. Leopard sightings in the slums and residential complexes are common and attacks on humans have been reported. Nineteen leopard related deaths in 2004 led to a mass trapping of 23 individuals, which are now housed in small enclosures in the Park.

A microscopic analysis of hair from 117 leopard scats collected between May 2008 and March 2009 revealed that almost half of the prey consumed were domestic dogs, with dogs, rodents and wild boar forming almost 90% of the hair samples. The leopards seem to be surviving on small prey as 81% of hairs belonged to species weighing < 20 kg. Similarly, in Royal Chitawan National Park, where the density of domestic ungulates at the Park boundary is much higher than that of wild ungulates, livestock forms a major component of the diet of leopards. A survey of slum dwellers in and around Sanjay Gandhi National Park corroborated the relative commonness of dog and livestock predation by leopards, with 75% of the residents questioned claiming they see leopards about once every 10 days.

The next step is to conduct studies of prey abundance and density within the Park to determine whether there is a lack of natural prey for the leopards or if they are choosing dogs over natural prey on the basis of convenience and abundance. Leopard attacks fell markedly after the mass trapping in 2004 and the subsequent commencement of a leopard-awareness education campaign by the Bombay Natural History Society. This educational programme is part of a long-term plan to promote the conservation of Sanjay Gandhi National Park and its top predator.

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Conservation Leadership Programme announces 2009 Team Conservation Awards

With winning projects ranging from protection of the elusive Andean cat in Argentina to local community involvement in the conservation of an endemic bird species in the Philippines, the Conservation Leadership Programme has announced the winners of the 2009 Team Conservation Awards. This year the Programme granted 29 awards to research teams in 12 different countries, with support totalling USD 500,000.

The awards provide a launching pad for young professionals who are just beginning a career in the field of environmental conservation, building the capabilities of future leaders and providing them with knowledge, skills and experience to address the most pressing conservation issues of our time. The Conservation Leadership Programme thus supports the vital work of a new generation of conservation professionals who are leading a number of diverse, practical projects—developing an education centre promoting the conservation of important bird areas in Brazil, protecting freshwater turtles in China, community-based conservation of a threatened tree species in Egypt, and dugong conservation in the Comoros and Madagascar.

The Programme is a partnership between FFI, BP, BirdLife International, Conservation International and the Wildlife Conservation Society. As part of this year's award, winning teams are invited to send a representative to Beijing, China, to attend an introductory training course that will be held in conjunction with the Society for Conservation Biology's Annual Meeting in July. For a complete list of projects, visit <http://www.conservationleadershipprogramme.org/Projects.asp>

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New website for the northern bald ibis

A new website of the International Advisory Working Group of the Northern Bald Ibis (<http://www.iagnbi.org/>) was launched in February 2009, providing information on a range of topics dealing with the biology and conservation of the northern bald ibis *Geronticus eremita*. This Critically Endangered species, with populations in Morocco, Syria and Turkey, was formerly widespread throughout North Africa and in some parts of the Middle East (Morocco to Algeria, Turkey, Syria and Iraq). Little is known about where the remaining wild populations of the northern bald ibis migrate to and where they spend the winter (but see this issue pp. 329–335 and *Oryx*, 38, 106–108). The new website contains information on the International Advisory Working Group and the various wild populations of the northern bald ibis, and on ongoing research projects and information on captive populations. The website is developed and hosted by the International Advisory Group for the Northern Bald Ibis, a team who dedicate their work to this species, supporting research, field projects and helping to bring governments and non-government organizations together to develop and implement the conservation and rehabilitation of the species.