survey techniques used to search for tree cavities in Tasmanian forests are prone to errors, and they will present improvements which will help swift parrot conservation.

Blood samples were collected from the 53 nestlings to screen them for psittacine beak and feather disease (PBFD), and the results show that only one chick had been exposed to the virus (*Circovirus*). This chick had been exposed to a strain of the virus typically carried by sulphur-crested cockatoos, and the nest in which this chick was found had experienced severe flooding due to rain. The low rate of exposure to PBFD in this breeding season will be compared to successive seasons for the better interpretation of the dynamics of disease in this species. In the next breeding season, for example, the researchers will collect samples of substrate from swift parrot nests to investigate the possible transmission of PBFD between parrot species that share the same tree cavity successively over the course of a breeding season.

Another important objective of the project is to develop techniques for tracking breeding swift parrots, in order to determine better how they locate food sources and other resources. To this end, the researchers successfully undertook the first trial of transmitters on swift parrots in aviaries at Adelaide Zoo. The aim for the trial was to identify a tracking device that could be safely deployed on breeding adults, to obtain accurate data that can be used to interpret the behaviour of breeding birds. They tested one control group with no transmitters, and three transmitter designs using ultra-lightweight materials (one collar and two backpacks of different weights) on other groups. No differences were observed in body weight or condition in any of the groups with transmitters compared to the control group.

A juvenile swift parrot

However, these trials have clearly shown that the collars are more suitable than the back-packs. A collar can be attached to a swift parrot in only one minute, it does not cause the bird to bite the transmitter, and it poses very little risk of becoming entangled in vegetation. Further modifications to the design are reducing the overall size of the transmitter, in readiness to follow the parrots in the wild using highly innovative technology.

Dr David Waugh, Director, Loro Parque Foundation

All photos: Dejan Stojanovic

Conserving the Javan rhino

Indonesia's remote Ujung Kulon National Park (UKNP) holds the only viable population of the Critically Endangered Javan rhino (*Rhinoceros sondaicus*). No more than an estimated 44 Javan rhinos remain on the planet, and surveys and other data suggest that only four to five females are still breeding. Javan rhinos persist in Ujung Kulon because they are carefully monitored and guarded by Rhino Protection Units (RPUs) – elite anti-poaching teams that patrol the park every day – sponsored by the International Rhino Foundation (IRF). Over the past 15 years, this intense monitoring and protection has essentially eliminated losses from poaching. Evidence suggests that the species has recently been extirpated in Vietnam, where what may have been the last individual was poached in May 2010.

During the first quarter of 2011, the four RPUs operating in Ujung Kulon removed 12 illegal traps/snares and stopped one illegal fishing operation. The RPUs averaged 21.5 days per month on patrol during the first three months of the year, walking a total of 669 kilometers. Seventy-three rhino footprints were identified.

The breeding population of Javan rhinos occupies primarily the western half of the national park, and thus is susceptible to catastrophic losses through disease or natural disasters. Although the population is believed to be relatively stable, it likely has reached its carrying capacity in the current habitat and probably cannot grow any larger without intervention.

For the past 15 years, the RPUs have kept the Ujung Kulon population safe from poaching. However, protection in itself isn't going to be enough to save the species from extinction. In the longer term, a second viable population needs to be established elsewhere in Indonesia. The first step towards accomplishing this goal is to create conditions that will allow the existing population to expand by increasing the habitat available in eastern UKNP, in the Gunung Honje area.

Over the past year, IRF through its implementing partner Yayasan Badak Indonesia (Rhino Foundation of Indonesia) and supported by the Asian Rhino Project, Save the Rhino International, WWF and other donors, has been working to expand the useable habitat for Javan rhinos in UKNP by creating the 4,000-hectare Javan Rhino Study and Conservation Area (JRSCA). The project intensifies active management in Gunung Honje, with the short-term objective of providing more habitat to allow the population to increase. We are doing this by constructing small bridges, an electric fence and a patrol road: eradicating invasive species which have taken over a good portion of the habitat: planting rhino food plants: providing a water supply and salt lick: and constructing additional guard posts. The continued survival of the Javan rhino depends on the population increasing in numbers as rapidly as possible, and in spreading the population out so that 'all the eggs are not in one basket'. The JRSCA will eventually serve as a 'staging ground' from which translocations to a second site can occur.

As one of the first steps towards establishing the JRSCA, we began working on a plan to fairly relocate families living inside the park boundaries so that we can make the area as safe as possible for the rhinos. UKNP authorities successfully negotiated with people living in the Gunung Honje area and to date have helped to move 51 families living illegally in the park. These families agreed to relocate outside park boundaries, and will be eligible to participate in various job opportunities, possibly to include construction and development of the JRSCA.

Other early steps include building three new guard posts to provide for the security of the area: construction of these is already underway. At the same time, we are working on constructing a fence in the eastern part of the park to keep out domestic

cattle, which carry diseases to which rhinos are susceptible. The fence will also make it easier for biologists and veterinarians to study the rhinos. Workers have already begun clearing a small, unpaved road along the fence placement.

Our next immediate focus will be on restoring good habitat for the rhinos in the JRSCA area. Much of the park has been taken over by the invasive arenga palm (*Arenga obtusifolia* – imagine a pasture overgrown with weeds, only this is a rain forest). The JRSCA area has been re-zoned as a 'research zone' in order to accommodate our work to eradicate arenga palm. A supporting environmental risk assessment was carried out prior to beginning the work. We are starting to clear the palms, and as soon as that is completed we will begin re-planting rhino food plants to attract rhinos to the JRSCA area, while also keeping them safe through the efforts of the RPUs.

Abridged from Susie Ellis (Executive Director, IRF) and Maggie Moore (IRF Program Officer) in ***Animal Keepers' Forum*** *Vol. 38, No. 9 (September 2011)*

Growing crisis for African vultures

Between 2000 and 2004, Dr Jean-Marc Thiollay carried out a series of roadside counts of raptors in Burkina Faso, Mali, Niger and northern Cameroon. As far as possible, he followed the same routes he had taken to make similar counts 30 years earlier. He found that numbers of four large vulture species – Rueppell's (*Gyps rueppellii*), white-backed (*G. africanus*), lappet-faced (*Torgos tracheliotos*) and white-headed (*Trigonoceps occipitalis*) – had fallen by 98% outside protected areas, while the smaller hooded vulture (*Necrosyrtes monachus*) had also suffered widespread collapse. On sections of his route, some species had completely disappeared: he saw no lappet-faced or Rueppell's vultures in northern Mali and Niger, where he had recorded 96 and 114 respectively in the 1970s.

Although on a more localised scale, these rates of decline are comparable to those that have brought three Asian species of *Gyps* vulture to the brink of extinction. The collapse in Asian vultures is now known to be the result of a single factor – contamination of livestock carcasses with the veterinary drug diclofenac. But in Africa a number of threats – varying between the different sub-regions – are at work.

'The huge population declines in West Africa are due to habitat loss and degradation, and the near-extinction of wild antelopes and other ungulates that used to provide their major food resource,' explains Paul Kariuki Ndang'ang'a, BirdLife International's Species Programme Manager for Africa. 'There have been mass vulture deaths in East Africa associated with misuse of chemicals. In South Africa, there is an unsustainable trade in vulture parts for traditional medicine and sorcery. Other threats include power line collisions, disturbance at breeding sites, drowning in farm reservoirs, direct persecution and declining food availability.'

He adds that of Africa's 11 vulture species, eight (including six of the eight species endemic to Africa) are either threatened or Near Threatened. Some have only become threatened in the last three or four years. Until 2007, Egyptian (*Neophron percnopterus*), Rueppell's and white-backed vultures were all considered of Least Concern. Egyptian vulture is now listed as Endangered, while the other two are Near Threatened. Some species, like hooded vulture, which is still considered of Least Concern globally, are in trouble and may even be locally extinct in parts of their former ranges.

It is still not clear whether poisoning of vultures is mostly confined to East Africa, or whether such incidents are more likely to be reported there because of the long-established networks of conservation and monitoring organisations. In April 2004, in the worst incident reported in Kenya so far, 187 vultures died as a result of Furadan poisoning: as in other cases of poisoning in Kenya, it seems that vultures were not the intended victims – the targets were lions which had killed cattle. This kind of conflict between farmers and wild carnivores often happens at the boundaries of protected areas, but vultures can be attracted over long distances by the sight of others descending on carcasses, which may explain why a recent survey found that numbers of white-backed, Rueppell's and hooded vultures in Kenya's Masai Mara National Park had fallen by up to 60% over recent decades. Elsewhere, vultures may be killed deliberately. Poachers in Botswana are suspected of poisoning vultures so that they will not draw park rangers' attention to their activities.

Fortunately diclofenac, the scourge of Asia's vultures, does not seem to be much used as a veterinary drug in Africa, though it has been found on sale in Tanzania. Ironically, it has also been used by wildlife vets attached to national parks to treat injured animals which have been released back into the wild. The BirdLife Africa Partnership is monitoring the use of this and other non-steroidal anti-inflammatory drugs which are toxic to vultures.

The threat posed by the use of vulture parts in traditional medicine (*muti*) first emerged in southern Africa, but has since been identified in West Africa too. Vultures are now rarely seen in much of Nigeria, and there is evidence that the traders are meeting demand with vultures from surrounding countries. Followers of *muti* believe that smoking vulture brains in cigarettes will give them supernatural powers of prediction when gambling, Demand has surged with the growth of national lotteries and with events such as the 2010 World Cup hosted by South Africa. In 2007, a study estimated that every year 160 Cape vultures (*Gyps coprotheres*) are killed for *muti* in eastern South Africa alone – numbers there declined by up to 70% between 1992 and 2007.

As we learned from the Asian vulture crisis, a catastrophic crash in populations of once-common species can be well under way before anyone realises what is happening. The BirdLife Africa Partnership is setting up a vulture monitoring network which will provide data enabling problems to be identified, and conservation solutions to be developed. In January and February 2010, roadside surveys were carried out in Kenya, Tanzania, Uganda and Ethiopia, and the findings were mixed, confirming that even in neighbouring countries prevailing economic and cultural practices can put differing pressures on vultures. The team in Kenya recorded only five of the eight species previously known to occur there. The surveys did not include the key habitat of palm-nut vulture (*Gypohieras angolensis*), and the lammergeier (*Gypaetus barbatus*) was already known to have declined from 20–30 pairs in the 1970s to just one pair. But the failure to record hooded vultures, one of the