

Primate surveys and conservation assessments

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The conservation of the world's primates demands basic, but elusive and hard-to-get, information. Enormous efforts are underway to accumulate this information, and the fortuitous selection of six papers in this issue of *Oryx* illustrates these endeavours, each highlighting the sort of information needed. Besides a basic understanding of the diversity of primates, we need to know where they live (their geography and habitat requirements) and in what numbers. Only with such data is it possible to identify and evaluate the threats to their continued existence. Field research on particular aspects of primate ecology, behaviour, reproduction and demography provide an understanding of how primates respond to these threats and what conservation measures will be possible, effective and appropriate. The combination of threats currently facing primate populations requires immediate conservation action at all scales—from species-based actions (such as captive breeding), site-level initiatives (such as protected areas), through to national and regional strategies, and international conventions. Baseline density estimates and subsequent monitoring of primate populations are essential for assessing the impact of particular threats and measuring whether conservation programmes are succeeding.

Two papers in this issue provide the first real population assessments of species new to us: a macaque from north-east India and Bhutan, *Macaca munzala*, described in 2005, and the kipunji mangabey *Rungwecebus kipunji*, discovered independently in both the Southern Highlands and the Udzungwa Mountains of Tanzania in 2003 and 2004. Kumar *et al.* and Davenport *et al.* describe, respectively, the results of careful efforts to document the distributions, habitats, and population numbers of these species, and in so doing provide essential information for the protection of their small remnant populations.

There has been a surge in the number of newly recognized primate taxa. The kipunji and Arunachal macaque are but two of 77 that have been described just since 1990: 43 from Madagascar, 10 from Africa, nine from Asia and 15 from the Neotropics. In all, 49 prosimians and 28 monkeys: about four newly described species per year. Reasons why so many primates are only now being

described include the new-found need to document biodiversity before it disappears (or, better, to prevent its disappearance), the increasing facilities of molecular genetics and karyology, renewed discussion of species' definitions, and with so much forest destruction and road building, increased access to remote areas. Many of these species have minuscule geographic ranges or are extremely rare, a large number are nocturnal, and they are nearly all already threatened with extinction.

What is more, some highly range-restricted and threatened primates were described in the 19th century, and yet reliable information on their population status has not always been forthcoming. Waltert *et al.* surveyed the Pelonean forest on north Siberut, harbouring four of the seven primate taxa that occur only on the Mentawai Islands of Indonesia. The numbers they found were high and, they argue, reflect population densities that could be expected elsewhere on the Mentawais if logging and hunting for food were not so intense and widespread. Their findings allow us to assess the effects of the depredations on the habitats and populations of the different species, especially by logging companies that, amazingly, still operate on these tiny and globally important islands, and to examine ways to promote the survival of the monkeys and the well-being of the indigenous communities there.

The remaining three articles describe population surveys for apes. Beck & Chapman report on surveys of the Nigeria-Cameroon chimpanzee, *Pan troglodytes vellerosus* (only recently recognized as a distinct subspecies and poorly known). They examined two small forest enclaves (totalling 7.5 km²) in the Ngel Nyaki Reserve, Nigeria. Their findings make unhappy reading, with only about 12 individuals remaining—a drastic decline since the 1970s, and of questionable viability. In the Republic of Congo, Devos *et al.* examined population trends of the western gorilla, *Gorilla gorilla gorilla*, and central chimpanzee, *Pan t. troglodytes*, over three years in the Odzala National Park. They documented rapid and severe declines in both species due to outbreaks of the Ebola virus.

Finally, Wich *et al.* report on a remarkable, comprehensive overview of the ranges and status of the remnant habitats and populations of the orang-utan—*Pongo abelii* on Sumatra and *Pongo pygmaeus* on Borneo. Almost all of the key people involved in the conservation of wild orang-utans contributed to these range-wide surveys, most of which were carried out to produce the maps and numbers required for a population and habitat viability workshop in 2004 (a highly successful procedure developed by the

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IUCN/Species Survival Commission Conservation Breeding Specialist Group that assesses conservation status using population census data and demography of the species involved). The results confirm and map alarming declines of the populations on Sumatra, now restricted to the north of the island (about 91% now confined to the Leuser Ecosystem). A detailed understanding of the location and size of remaining orang-utan populations is of course critical for their defence. The controversial Ladia Galaska road project in the Leuser Ecosystem will, unless halted, fragment two of the three largest remaining Sumatran populations. Surveys show that lowland, peat swamp rainforests now contain the highest densities and largest numbers of orang-utans—about 40% of the 6,500 or so remaining Sumatran orang-utans live in three peat swamp forests (Singkil, Kluet and Tripa), and the largest single orang-utan population in the world resides in the Sebangau swamp in Borneo. These peat swamps are under severe threat from the palm oil industry—terra firma lowland forests have already been converted. The consequences of draining peat swamps for oil palm will be disastrous not just for the orang-utans and Indonesia's rich wildlife, but of course for the country's carbon emissions as well, currently the third highest in the world because of forest burning.

In recent years there has been a tendency on the part of donor agencies and even some in the conservation community to say that surveys are no longer a priority and that we know all that we need to know for future conservation action. The six papers in this issue clearly illustrate that this is not the case and that surveys remain not just a critical component but the most basic underpinning of our conservation efforts. Estimates of population numbers and densities are essential for monitoring trends over time and space, and they will continue to be so for a long time to come. Nonetheless, there remain critical issues to be resolved. Although counting primates is now more sophisticated and precise than when the efforts began 3 decades ago, the comparability of independent surveys can still be a challenge due to inconsistency in the methods employed. Recognizing the need for harmonization of survey methods, the IUCN/SSC Primate Specialist Group (PSG) has drawn up *Best Practice Guidelines for Surveys and Moni-*

toring of Great Ape Populations (Kühl *et al.*, 2008), a broad consultation and peer review to standardize high-quality data collection. Attending also to the challenge of synthesizing and accumulating information to understand population trends over the long-term, a PSG database is being developed by the Max Planck Institute of Evolutionary Anthropology, Leipzig. The web-based Ape Populations, Environments and Surveys (A.P.E.S.) database (<http://apes.eva.mpg.de>) will centralize all great ape survey data, past and present, facilitating analyses of trends in their populations and a comprehensive picture of great apes at both the species and population level.

Population information not only directly guides conservation action, it also forms the backbone of the *IUCN Red List of Threatened Species* (<http://www.iucnredlist.org>). This year will see the world's 637 primate taxa (species and subspecies) reassessed against the latest IUCN Red List categories and criteria a part of the IUCN-led Global Mammal Assessment, the completion of which will be celebrated at IUCN's 2008 World Conservation Congress, in Barcelona, Spain, in October. The assessment of all the primates will be presented beforehand at the XXII Congress of the International Primatological Society in Edinburgh in August 2008. The numbers are alarming. Some 11% of all primates are now assessed as Critically Endangered, 22% as Endangered, and 15% as Vulnerable—48% of the world's primates threatened with extinction. Another 15% are assessed as Data Deficient. The situation is particularly severe in Asia, where 70% of the region's primates are threatened, mainly by habitat loss and hunting. Population surveys such as those reported in this issue of *Oryx* are pivotal to providing the underlying information that supports these assessments; not only for us to monitor conservation status but also to guide our efforts to protect the world's primates, so many of which are now in such peril.

Reference

- KÜHL, H., MAISELS, F., ANCRENAZ, M. & WILLIAMSON, E.A. (2008) *Best Practice Guidelines for Surveys and Monitoring of Great Ape Populations*. Occasional Paper of the IUCN Species Survival Commission (in press). IUCN, Gland, Switzerland.