

Long-term community-based monitoring of tamaraw *Bubalus mindorensis* on Mindoro Island, Philippines

Abstract

The Critically Endangered tamaraw *Bubalus mindorensis* is endemic to Mindoro Island, Philippines, and little is known of its ecology. During 2006-2011 we used community-based monitoring to examine the population status and ecology of tamaraw in the species' core habitat of Mount Iglit-Baco National Park. Each year, for 5 consecutive days at the end of the dry season, trained local volunteers and rangers or project staff were allocated to 18 vantage points in the study area (c. 160 km²). Tamaraw were categorized as adult (\geq 5 years), juvenile (2-5 years) or calf (\leq 2 years), and sexed when possible. During the study period the population was 239-314 (mean 271), with no significant fluctuations in age structure (percentage of adults, juveniles and calves: 57.8, 21.0 and 21.3%) or estimated adult female reproductive rates (29.1%). In adults, but not in juveniles, the sex ratio was biased towards females (1 : 1.86, $P \leq 0.01$). Bulls were often solitary (32.2% of sightings), whereas the majority of cows (94.7%) formed small groups of 2-12 individuals of different ages, with or without bulls (53.4 and 46.6%, respectively). These results demonstrate that the population remained relatively stable, maintaining a constant age structure and reproductive rate, and that long-term community-based monitoring was effective for quantitative characterization of the tamaraw's social behaviour, which is critical for conservation and management of the species.