

## Asian Elephants in the Seima Biodiversity Conservation Area, Mondulkiri, Cambodia

Edward Pollard

*Wildlife Conservation Society Cambodia Program, Phnom Penh, Cambodia*

### Introduction

The Seima Biodiversity Conservation Area (SBCA) was established in 2002 by decree of the Ministry of Agriculture, Forestry and Fisheries of the Royal Government of Cambodia. The total area of the Conservation Area is 3034 km<sup>2</sup> (303,400 ha). The conservation area is located in eastern Cambodia in Mondulkiri and Kratie provinces. The site remains almost entirely forested and contains an unusually high diversity of forest types (Walston *et al.* 2001, WCS/FA 2006a, Zimmerman & Clements 2002), from Annamitic evergreen forest, through mixed deciduous formations to deciduous dipterocarp forest on the Cambodian Eastern Plains.

Southern Mondulkiri, the area which now forms the SBCA, was first surveyed for wildlife in 2000. Walston *et al.* (2001), obtained camera-trap photos and found tracks and fresh dung from several elephants in what was then a Samling International logging concession. They concluded that:

*“Assessing the population of elephant in the area is impossible without more intensive surveys in both the dry and wet season. However, it is clear that, although the species still exists in small numbers, the overall population has been reduced dramatically over the last few decades.”*

The Cambodian government's Forestry Administration (FA) began intensive conservation efforts with technical support from the Wildlife Conservation Society (WCS) in the SBCA in 2002. Since that time increasing efforts have been made to understand the status of Asian Elephants in southern Mondulkiri. Several mineral licks that are used regularly by elephants have been the location of dry season camera-trapping work since 2002. These results have helped the project identify key sites for

elephants, and have led to the identification of several distinctive individuals, such as a bull with only one tusk. Since 2003, anecdotal observations and the data collection along standardised recce transects has revealed more information about the distribution of elephants in the landscape. These results have also identified dung and tracks from very young animals indicating that the population is breeding. The population size is small, however, and at low density. A faecal DNA based survey using capture-recapture methodology was carried out in 2006. When analysis is complete this survey will provide the first accurate assessment of the size of an elephant population in Cambodia. More generally, the survey tested the utility of the method for monitoring low-density Asian elephant populations.

The FA currently uses two main interventions to help protect Asian elephants and other species of conservation concern in the SBCA: (1) active law enforcement and (2) land-use planning. In addition, a range of other programs support and enhance these on-going field activities (WCS/FA 2006b). Political support is garnered at the local, provincial, and national level to help address issues ranging from large-scale economic land concessions, to localised disputes over resource access. Education and awareness of environmental issues are carried out by all components of the project, and through partnerships with other organisations. These and other activities help provide a suitable enabling environment. The core conservation strategies however remain law enforcement, together with land-use planning and community engagement.

### Law enforcement

Law enforcement in the SBCA has to date managed to balance successful application of the law with support from local residents. This has been achieved without significant conflict. The

law enforcement strategy for the SBCA was designed in 2004 (Lynam & Soriyun 2004). It addresses the main threats to the site and elephants. The basis for all activities is the active enforcement of existing laws, specifically clauses within the Forest Law, and the Land Law. There are no laws, and regulations specific to the management of the SBCA. The strategy is to simply enforce existing, national level laws.

At present, protection of the elephant population is carried out using two main methods: (1) regular foot and vehicle patrols and (2) permanently-manned guard posts. These programs have been effective in controlling the principal threats of hunting, and habitat loss due to conversion to agriculture. The FA have hired and trained 32 staff from the FA, police, military and local communities to undertake patrolling activities with support from WCS. These staff have been equipped and trained to carry out



**Figure 1.** Single elephant passes a mineral lick in the semi-evergreen forest.

wildlife enforcement activities and record and collate elephant and other wildlife information. Training takes place annually for both new and seasoned patrol staff.



**Figure 2.** A pair of elephants wallowing in a mineral lick.

Patrolling is now continuous, with up to five teams in the field at any one time. Patrols operate out of four stations and regularly visit all critical elephant habitat. The locations of mineral licks and rivers that are of high importance to elephants are known by the patrol team and are the focus of regular patrols. This high level of patrolling is supported by an informant network of local villagers who report illegal activities to the law enforcement team leaders.

A specialised database, MIST (Management Information SysTem) is used to monitor and assess patrol effort and success. Enforcement teams record their location continuously, and the locations of any illegal activities encountered. These data are compiled and are used to track patrol effort and coverage, and the number of illegal activities encountered. These data can be used to show the degree to which critical elephant habitat has been patrolled. In addition this information shows that, since the start of intensive patrolling in 2004, there have been no documented cases of hunting of elephants.

The patrols and political support have also been successful in controlling encroachment and conversion. The whole of the SBCA is still under nearly 98% forest cover. This success in controlling encroachment is made clear through comparison with the neighbouring sections of Snoul Wildlife Sanctuary, which have been almost totally cleared of natural forest in the last five years.



**Figure 3.** A small group of curious elephants.

## Land-use planning

The law enforcement work has been a success in part because of support from important members of the local communities. These communities have been supportive of the activities because law enforcement also protects their resources and traditional lands. However, a process of land-use planning is also required to ensure that the resource-gathering and farming practices that are carried out within the SBCA are compatible with the goals of biodiversity conservation. By stabilising land-use across the landscape the project will ensure that forest habitat is retained for elephants and other species.

The SBCA contains many indigenous villages and is fringed by large recent Khmer settler populations. This situation requires the Project to engage with communities to agree land-use zones and regulations because the laws themselves are sometimes quite vague. The Project works with partners at a local, provincial, and national level. One village in the SBCA is a national pilot site for the application of village level land use planning and the development of communal tenure. If successful these methods will be used across the SBCA in coming years. This work is done under the general heading of PLUP (Participatory Land-use Planning) which includes participatory research, legal extension, mapping, community organisation, and conflict resolution.

Land-use planning which protects vital elephant habitat whilst maintaining local residents' farmland is a critical tool in the prevention of human–elephant conflict (HEC). The project continues to monitor any reports of human–wildlife conflict. There are at present very few problems with HEC in the SBCA (Scally *et al.* 2007). This is surprising considering the close proximity of villages and farmland to elephant habitat, particularly in the dry season. This may be because there are still large areas of undisturbed elephant habitat. The potential remains, however, for further encroachment to lead to a dramatic increase in the level of conflict. This may be especially so along the southwestern border of the SBCA in Keo Seima district, which

appears to be an important area for elephants, but has also seen a large amount of in-migration of people from other areas of Cambodia. Furthermore, elephants are encountered regularly only a few hundred metres from the village of O Am, and yet there is very little HEC. Monitoring of the situation and efforts to reduce impacts on elephant habitat will be a major focus of future project activities.



**Figure 4.** Elephant investigating the camera.

A significant elephant population is also known to the north of the SBCA in the Phnom Prich Wildlife Sanctuary (WWF in litt). There is some evidence of seasonal movement between this population and that in the SBCA. Further work is planned to determine the degree of connectedness between elephant populations in SBCA, Phnom Prich, and other protected areas (Bu Gia Map National Park in

Vietnam and Mondulkiri Protected Forest, Cambodia). To ensure the continued protection of Asian Elephant Habitat WCS and the World Wildlife Fund – Greater Mekong Program are working with the local government in Mondulkiri to develop a conservation plan for the province. This will form part of a multi-stakeholder landscape-scale corridor planning process under the Asian Development Bank's biodiversity corridors initiative.

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Author’s e-mail: [epollard@wcs.org](mailto:epollard@wcs.org)



**Figure 5.** The distinctive bull elephant with only one tusk, drinking at a mineral lick.