

Monitoring Galliformes and biodiversity in southwest China

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David Lee 2006

Fieldwork in southern Sichuan

The WPA-Sichuan University project in southwest China is investigating the value of using Galliformes species to monitor general levels of biodiversity in an area recognised as globally important for biological diversity.

This area contains Lady Amherst's pheasant *Chrysolophus amherstiae*, Temminck's tragopan *Tragopan temminckii*, silver pheasant *Lophura nycthemera*, ring-necked pheasant *Phasianus colchicus*, Sichuan hill-partridge *Arborophila rufipectus* and Chinese bamboo-partridge *Bambusicola thoracicus*.

Reserve. Both reserves include a wide range of habitats, which include primary, secondary and replanted forests, bamboo thickets, rhododendron and azalea scrub and, in the case of Mamize, alpine meadow.

The 2006 field season was successful, with the collection of important data on all bird species in the two reserves. Importantly, this work has been conducted alongside staff from the two nature reserves who have been introduced to a number of different survey techniques. This will benefit the further development of a sustainable long-term monitoring programme.

The survey methods used were designed using information collected in the first field season (April-June 2005). This pilot field season was extremely valuable in identifying how a number of problems associated with the study sites, eg terrain, accessibility, weather conditions, could influence the quality and quantity of the data collected, and how these could best be overcome when surveying the biodiversity of reserves.

Other bird species were surveyed along the same routes as the galliform surveys, but at points positioned closer together. Surveys were conducted in the morning and lasted eight minutes at each point. They used distance sampling techniques,

whereby the distance to each bird or group of birds heard or seen is estimated. This information is used to estimate the actual density of birds of a particular species in each habitat type and the reserves as a whole.

It is important for the management of the nature reserves and conservation of a number of bird species that we begin to understand the relationships between species and habitat. Therefore, data were gathered at each survey point and these can be used to classify different forest types and identify characteristics that are associated with the presence or abundance of particular bird species, including the galliform species.

The quality of the data collected from these surveys means that the project will be able to produce diversity indices and density estimates for the Galliformes and other bird species in the two nature reserves and link these to habitat type. It is anticipated that diversity and abundance in these taxonomic groups will also be linked to those of Galliformes and a comprehensive biodiversity monitoring protocol will be produced for this area of China.

Surveying Galliformes in southern Sichuan

Fieldwork was carried out in the two nature reserves simultaneously by teams of two students and two nature reserve staff. Each team spent two weeks in a reserve before moving to the other reserve for two weeks. This was repeated so each team visited each reserve twice and was important for minimising any differences in individuals' field abilities.

The teams monitored numbers of calling galliforms at dawn from fixed points representing the broad habitat types in the reserves. The start time for these surveys changed according to the time of sunrise, ie as the field season progressed, the galliform surveys began earlier in the morning. These counts of calling males lasted for one hour every morning, with the survey split into two 30 minute periods to reduce the problem of the same birds being recorded as two separate individuals.



Lu Gang 2006

Sichuan Hill Partridge

The project aims to discover whether diversity of galliform species can be linked to diversity in other bird species, butterflies and plants. Ultimately, the objective is to provide a protocol for surveying similar species or groups of

species in this region of China to benefit species conservation and protected areas management. The involvement of the Sichuan Forest Department in the project is therefore very important.

With technical assistance from WPA, four MSc students at Sichuan University have conducted field surveys of Galliformes and other bird species in two nature reserves in southern Sichuan: Laojunshan Nature Reserve and Mamize Nature