

## Tracking the Endangered Greater Spotted Eagle

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The distribution range of the Greater Spotted Eagle *Aquila clanga* (GSE) runs, from west to east, from East Poland across to Ussuriland and Manchuria on the Pacific Ocean, in easternmost Russia and China. From north to south it extends from the southern edge of the taiga to the rim of the steppe zone. The GSE is not only the rarest, but also the least investigated European eagle species. Its migrations are poorly known because of the very low number of birds ringed and recovered, and because of the difficulty in distinguishing it from the closely related Lesser Spotted Eagle *Aquila pomarina* (LSE) during raptor counts at concentration points.

As part of a long-term research program in northeast Poland, we are endeavouring to raise the level of knowledge and thereby the protection of this species, by also making use of the most advanced technology, i.e. satellite telemetry, to investigate its migration and overwintering.

Between 1995 and 2003 we equipped nine adult Greater Spotted Eagles (GSEs) with solar-powered satellite transmitters (PTTs) in the Biebrza river valley in northeast Poland and tracked them using the Argos satellite system. Four birds overwintered in Africa (Sudan, Chad and Zambia), two in Turkey and one in Greece.

The GSEs we tracked flew to at least five countries (Chad, Central African Republic, Tanzania, Zambia, Malawi) from which there



The female Greater Spotted Eagle with PTT 08138 six years after fitting the transmitter at her breeding ground, Biebrza National Park, Poland, 3 April 2005.

Photo by Dariusz Kowalczyk

had previously been no, or almost no, records. The overwintering of two males in Zambia is ca. 1500 km south of the hitherto southernmost points recorded for this species in Africa, in Kenya and Uganda.

In contrast to two young birds tracked, all the adults, apart from one male wintering in northwestern Greece, flew straight from the breeding area to the Bosphorus, their respective routes diverging only slightly. They left Poland in the vicinity of Brest, heading south. Almost parallel with the eastern Polish and Slovakian border they traversed Belarus and Ukraine to cross the Rumanian border in the Carpathians, using this mountain range as a guideline.

Widely divergent was the GSE's overwintering behaviour in comparison with the Lesser Spotted Eagle (LSE). The LSEs, which were simultaneously tracked, often wandered far over their wintering grounds in Central and Southern Africa, whereas all GSEs stayed the whole time within narrowly confined winter home ranges.

The mortality rate of this very rare and threatened species is truly alarming. Out of the first six birds fitted with transmitters apparently only an adult male survived for more than one year after being equipped. One young eagle was killed by an Eagle Owl shortly after fledging while the two other juveniles perished a

few weeks after embarking on their autumn migration, in Ukraine and Albania respectively. One adult female was in all probability shot in the Lebanon, and another evidently died in spring 1997 near Lake Nasser in Egypt.



Female Greater Spotted Eagle with nestling.

Photo by G & T Klosowscy

Of the four adult female and five adult male Greater Spotted Eagles we fitted with radio transmitters between 1995 and 2003 in northeast Poland and tracked using the Argos satellite system, one adult female, trapped on 13 July 1999 and tagged with

PTT 08138, is our record holder as far as long-term tracking is concerned.

Every year since 1999 this eagle has left her breeding area around 20 September to arrive after about two weeks of migration in her wintering grounds in the Göksu Delta on the Mediterranean coast north of Cyprus. Year by year she covers some 2240 km on autumn and spring migration, a short journey compared to that of some other Greater Spotted Eagles from Poland that winter in Africa.

The Göksu Delta (size 14,480 ha) is an important wintering area for both waterfowl and raptors, and regularly supports up to twenty different species of diurnal birds of prey including a significant wintering population of 6-8, in some years 10-15, Greater Spotted Eagles. The Göksu Delta's bird population deserves protection from shooting and habitat destruction, including the massive use of pesticides.

This particular bird roosts overnight some 14 km west of the delta in the mountains at an altitude of 350 to 400 m above sea level. She spends the day in the delta to search for food in freshwater wetlands, where she was observed and photographed by a German ornithologist.

The eagle leaves the Göksu Delta on about 10 March every year to arrive by approximately 5 April in the Biebrza National Park in northeastern Poland, thus the spring migration is even slower than the autumn migration.

The bird is still alive, breeding successfully again this year, and has been observed, photographed and filmed on her wintering ground in the Göksu delta in Turkey.



To-and-fro migration route of adult female Greater Spotted Eagle with PTT 08138 between its breeding grounds in northeastern Poland and its wintering quarters in the Göksu Delta in Turkey.