

In the study, no proven cases of polygyny were found in Marsh Warblers but there was a real shortage of females in this small, isolated and declining population. One case occurred with Sedge Warblers. Examination of polygyny cases described elsewhere suggests polyterritorial behaviour is the principal strategy to achieve this. Because of this, the true extent of polygyny may be different to determine.

### **Population dynamics and breeding biology of Blyth's Reed Warbler *Acrocephalus dumetorum*.**

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I have studied population dynamics and breeding biology of Blyth's Reed Warbler in Lappeenranta, SE Finland, from 1978 to 1985. Data on fluctuation of the same population, however, are available since 1962.

Blyth's Reed Warbler has rapidly increased in numbers both in the study area and in the whole Finland since the very first record in 1930 up to the 1970's, but the expansion has levelled off during the last decade.

In addition to breeding pairs, there were unpaired males every summer (on average 40%). There seems to be an excess of males. Blyth's Reed Warbler hybridizes regularly with the closely related Marsh Warbler *A. palustris* in the study area (every year 1-3 mixed pairs, or about 5-10% of the total number of Blyth's Reed Warbler pairs). Some males were polyterritorial polygynous; three males paired with both *A. dumetorum* and *palustris* female at the same time.

The general breeding biology of Blyth's Reed Warbler resembles very much that of the Marsh Warbler. The species is single-brooded with the most frequent clutch size of 6 eggs, but a replacement clutch is often laid even though a brood has been lost close to fledging. On average, 65% of the eggs laid produce a fledged young. The breeding success is fairly high compared to most other open-nesting small passerines. This factor possibly partly explains the recent expansion of the species towards northwest and west in Northern Europe.

I'm going to continue my work on Blyth's Reed Warbler special problems with include, for example the interspecific relationships between Blyth's Reed Warbler and Marsh Warbler. I will also try to solve some problems dealing with conservation biology by using *Acrocephalus* Warblers as a model species of patchy habitats.

### ***Acrocephalus* mating systems: A comparative approach**

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A comparative survey of mating systems in six European *Acrocephalus* species revealed that two of the species can be classified as polygynous and four as monogamous.

Several correlations were then found between mating system and various aspects of behaviour, ecology and morphology.

Males of polygynous species invested little or nothing in parental care, whereas males of monogamous species shared it equally with females.

Males of polygynous species defended large resource based territories in high productive marshland ecotones rich in arthropod food. Monogamous males defended smaller territories in less productive marshland.

Females of polygynous species fed their young on larger prey collected within territory near the nest. In monogamous species smaller prey was collected from longer flights often outside territory.

Polygynous species also had larger bills as an adaptation to take larger prey.

Males of polygynous species had short, simple songs used in territorial defense, whereas males of monogamous species had long, complex songs for mate attraction.

These correlations were then used to make predictions about the mating system or ecology and behaviour of less well known *Acrocephalus* species.

The comparative approach is a useful tool in the continuing investigation into the evolution of polygyny. It suggests that the emancipation of males from biparental care and the constraints of food supply have been important factors in the evolution of polygyny. In *Acrocephalus* warblers, polygyny is best viewed as a continuum of gradual departure from monogamy in the rich but variable marshlands of Europe.

## **Ecological differences between Reed and Marsh Warblers at the same site**

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Since 1987 we have studied syntopically coexisting Reed Warblers and Marsh Warblers at an eutrophic reed bed near Düsseldorf. A mosaic-like and continuously interfacing structure of mixed vegetation consisting of reeds, stinging nettles, and other herbaceous plants enables coexistence.

Both species demonstrate a clear ecological segregation with respect to choice of song posts, nest sites, feeding sites (RW preferentially foraged in willow bushes, MW almost exclusively in herbaceous vegetation), and further aspects.

Furtheron there existed marked differences with respect to prey taxa, prey sizes, and feeding techniques. Both species fed outside their for short periods defended and small breeding territories, a fact which perhaps minimizes the need for interspecific territoriality.

Some aspects of our study recommend to redefine the role of territoriality in the case of *Acrocephalus* warblers with respect to some diverging functions, e.g. nest site and foraging sites.

Breeding success (fledglings / nest) - as demonstrated by several studies - is just double as high in the MW as in the RW. These differences could be confirmed even at the same site due to 100% higher cuckoo parasitism and egg losses. By indirect measures it seemed most probable that the Cuckoo was the main egg predator too. MW conceal their nest much better than RW (nesting in herbaceous vegetation vs reeds) and counteract better against cuckoo parasitism.

The higher losses by RW seem to be balanced through its longer laying period, higher extent of replace and second clutches, perhaps lower mortality and higher age, and through a supposedly less costly migration strategy.

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