

COMEBACK OF THE GREY HERON

Population trends in Germany during the last fifty years

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ABSTRACT

Due to the complete protection afforded to the Grey Heron in the years 1965-1975, this bird species is now again widely distributed over Germany. The breeding population has increased since that time and is still growing. Changes in the phenology, behaviour and the successful utilization of new feeding sources have positively influenced the survival strategies of the Grey Heron. Hard winters and a limited food supply should not allow the Grey Heron populations to increase to excess.

Several ways to reduce the birdstrike risk with Grey Herons will be discussed.

(Keywords: Grey Heron, population dynamics)

The Grey Heron (*Ardea cinerea*) belongs to the order Ciconiiformes, family Ardeidae (Heron) and sub-family Ardeinae (day herons). The sub-family Ardeinae consists of 34 species of medium-sized to large wading birds with long bill, neck and legs.

The Grey Heron measures 90 - 98 cm, the weight varies between 1020 - 2073 g. Males are heavier than females. The wingspan is 175 - 195 cm. In flight the wings appear rounded and the neck is retracted. The flight is distinctive with slow heavy wing-beats.

During the Middle Ages Grey Herons were widely sought after as quarry for falconry. The Grey Herons and their breeding colonies were well protected. In the middle of the nineteenth century a heavy persecution of herons began, because of their consumption of fish. Therefore they were considered as being great competitors for fishermen and fish farmers. The hunting of herons and the destruction of heron breeding colonies continued well into the second half of the the twentieth century. In Switzerland the Grey Heron was almost completely wiped out, in Germany its numbers reduced more than half.

In the beginning of the seventieth (Baden-Württemberg 1971, Nordrhein-Westfalen 1974) a complete protection was afforded by law to the Grey Heron. In the following years the populations of the Grey Heron in Germany increased steadily. Figures 1 and 2 show the population trends of the Grey Heron in two German states (or parts of them), Baden-Württemberg in SW-Germany and the Rhineland in W-Germany. These population trends (not the number of breeding pairs) are comparable with those in the other states of Germany.

Due to the protection there are also changes in the behaviour of the Grey Heron; nowadays being less shy than in former years, allowing herons the exploitation of foraging grounds in the vicinity of human developments. In addition, new and/or better feeding sources resulted in a greater individual and population fitness of Grey Herons (Figure 3). In the last years not only the German but although the European population of the Grey Heron increased and was recently estimated about 50.000 breeding pairs.

Figure 4 explains, why nevertheless there will be no increase to excess. On earth, every species (plants and animals alike) selects only those habitats to which it is well adapted and where its fitness is maximized. But because the number of adequate habitats for each species is limited, the growing of the Grey Heron population will come to an end, when the capacity limit is reached. Besides that, severe winters will drastically reduce the number of Grey Herons, keeping in mind, that in the last years there is a shift in the migration behaviour of the Grey Heron from a migratory to a sedentary bird.

Figure 5 shows, that in the past there were only astonishing few birdstrikes with Grey Herons in the civil aviation, but that their numbers increased in 1993. The German Airforce had only one birdstrike with a Grey Heron in the years 1980 - 1993, but already two in the first half of 1994. This may indicate, that the birdstrike risk with Grey Herons is growing. All birdstrikes with Grey Herons happend on or in the vicinity of airfields which can be explained with the habit of the Grey Heron which use to fly at very low levels if not migrating.

For scaring of grey Herons it must be stated that all direct provisions against herons will always be effective only for a short time (Figure 6). The most effective and lasting method will be a biotop management, which

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References:

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changes the habitat and the feeding sources for herons (and other birds dangerous to aircrafts) in a negative way.

The laying out of new ponds for fishing and fish-breeding or for nature protection purposes in the vicinity of airports should not be allowed. If ponds are existing, they should be changed in a way that they are not or less attractive for herons (Figure 7). This can be reached if only fishes bigger than 20 cm are put into those ponds, which the Grey Heron is unable to catch, or by different technical or biological methods, depending on the structure and the depth of the fish pond.

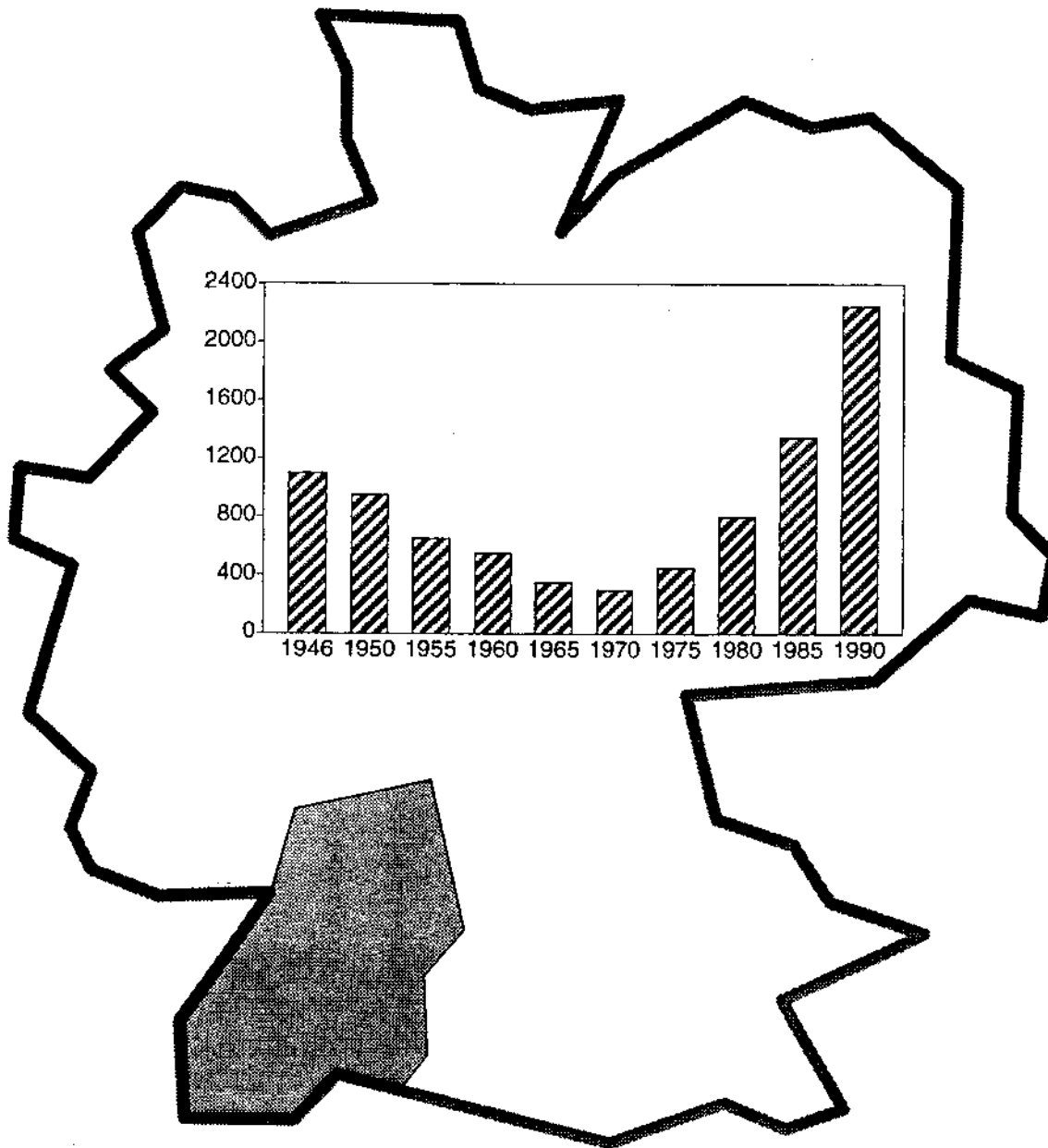
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Figure 1:

Population trends of the Grey Heron

in Baden-Württemberg with number of breeding pairs.

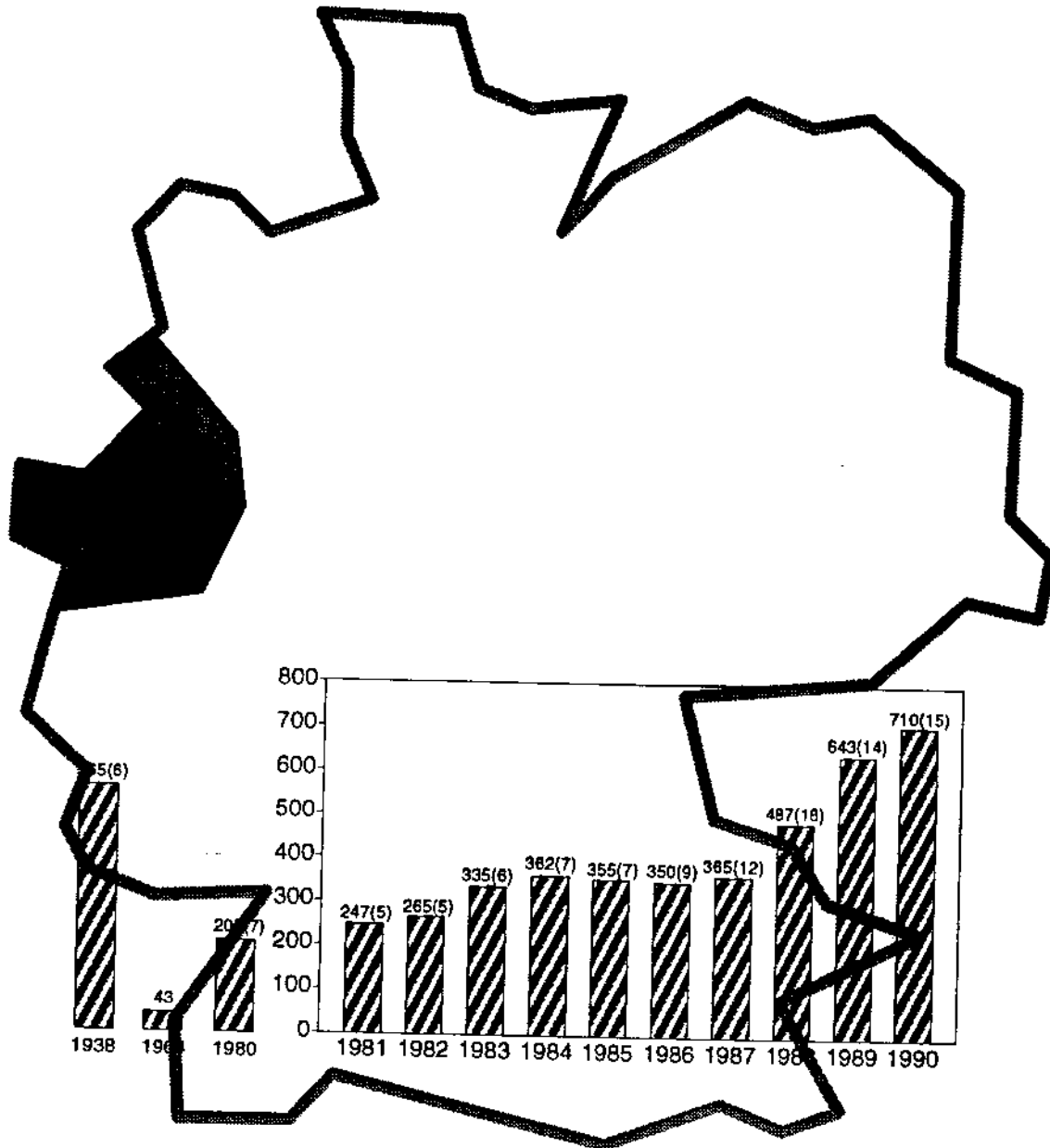


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Figure 2:

Population trends of the Grey Heron in the Rhineland (Nordrhein-Westfalen) with number of breeding pairs and colonies ()



Reasons for the increase of the breeding population of the Grey Heron

After years of heavy persecution, a complete protection was afforded by law to the Grey Heron (Baden-Württemberg 1971, Nordrhein-Westfalen 1974).

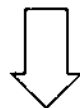
New and/or better feeding sources:

- New and/or greater gravel pits
 - Laying out of ponds for fishing and fish-breeding
 - Laying out of ponds for nature protection purposes
 - Due to the eutrication increasing of biomass
- Wetland programmes for nature protection purposes
 - The diet consists chiefly of aquatic animals, but in the present time there is although a more intensive utilization of reptiles, small mammals and insects

Changes in behaviour:



Due to the protection, the Grey Heron is nowadays less shy with the tendency of living in close contact with man and human developments



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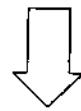
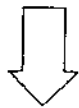
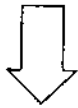
Increase to excess ?

No, because ...

1.) ... of changes in the phenology.

In former years, the greater part of the German Grey Heron population was migratory.

There is, however, a general tendency for herons to be sedentary. Therefore this species' Mediterranean and African winter quarters have lost their former importance.

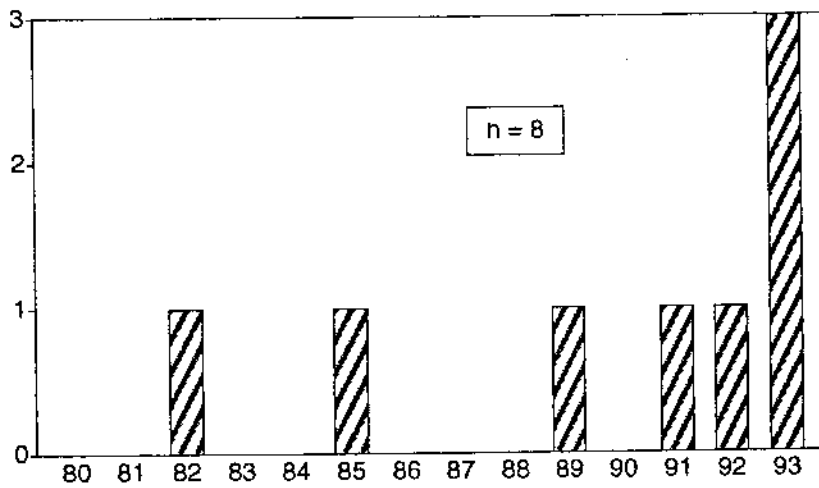


Severe winters will drastically reduce the number of birds. In 1962/63, numbers of Grey Herons in UK and NL were halved and it took several years to recover their original levels.

2.) ... of a limited food supply and limited foraging grounds. In most cases the Grey Heron is a solitary feeder defending his foraging ground. If all suitable habitats are occupied, there will be no more place for additional herons.

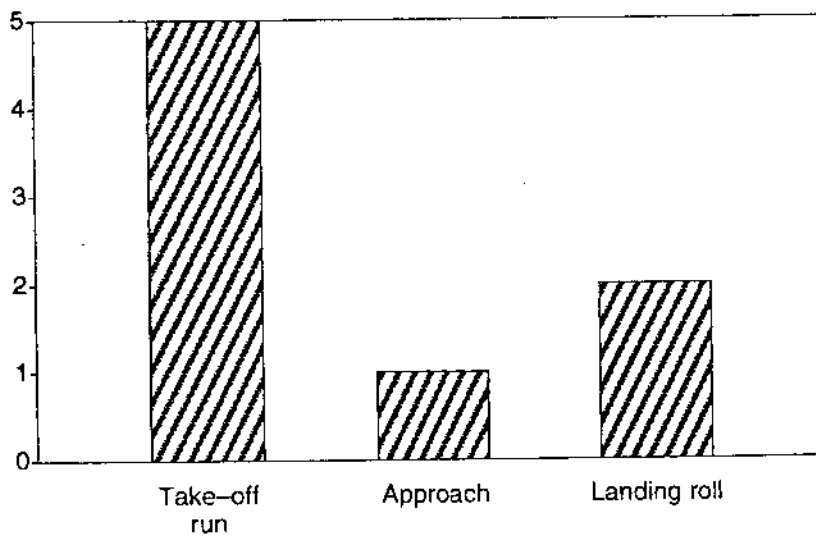
Figure 5:

Bird strikes with Grey Herons in Germany (civil aviation) 1980 – 1993



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Bird strikes with Grey Herons at different flight stages



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Keeping Grey Herons away from airfields

- * Maintaining grass on the airfields at about 20 cm or even longer
 - ⇒ The long grass makes small mammals, reptiles and insects more or less inaccessible to feeding herons.

- * Areas of standing water on airfields should be filled in.
 - ⇒ No aquatic prey for Grey Herons.

- * Wetlands on airfields should be drained.
 - ⇒ No prey of wetlands, like amphibian.

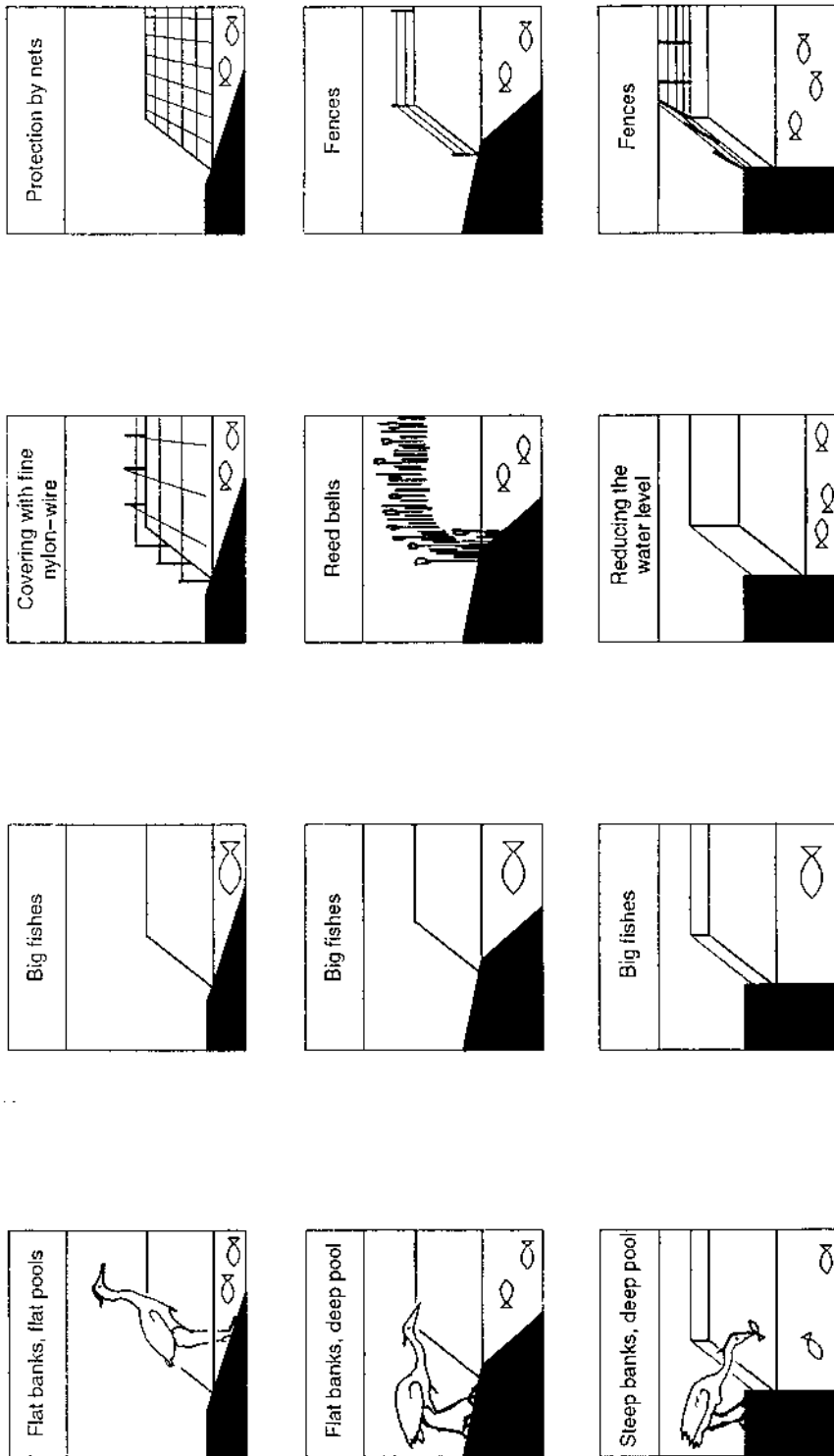
- * Scaring herons with pyro-acoustics, e. g. with pistols that fire an explosive flare.

- * Shooting Grey Herons.

Possibilities for diminishing heron numbers at fish ponds

Figure 7:

Optimal conditions for Grey Herons are flat banks, flat ponds (water depth < 50 cm) and numerous fishes 10 – 15 cm long



(Modified from Utschick, 1982)

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