

## Non-native species of birds in the Czech Republic

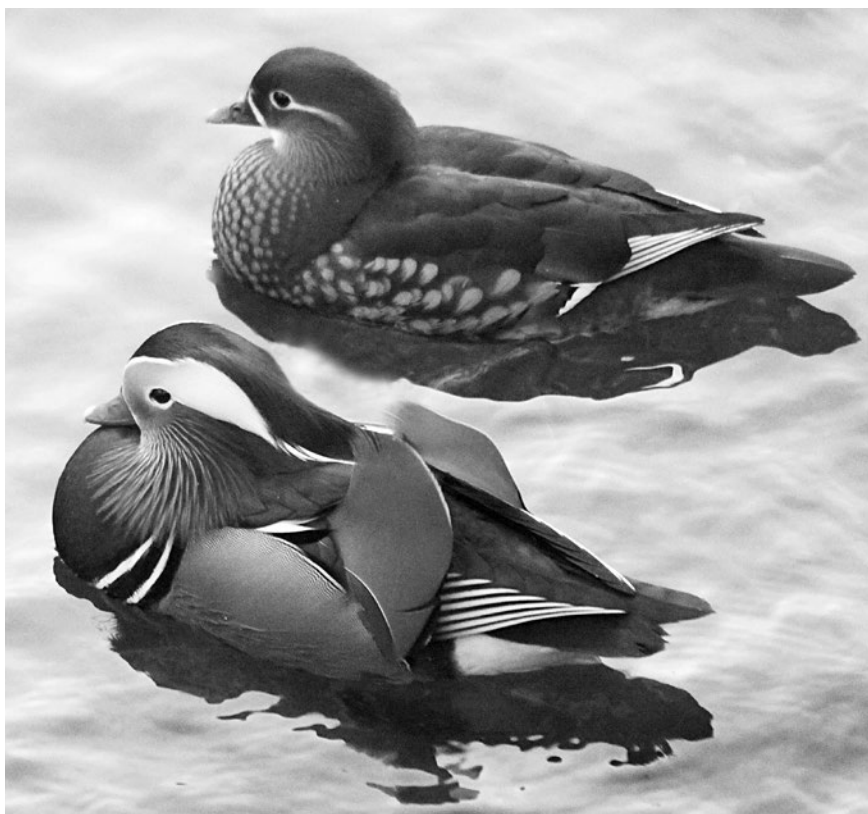
Non-native species of plants and animals are defined by the International Union for Conservation of Nature as „a species, subspecies or lower taxon occurring outside its natural past or present area“. We can see many other terms linked to the concept of introduction. For non-native plants, phrases like „neophyte“ and, less frequently, „neozoa“ for fauna are also used. However, there are other names and it is probably appropriate to clarify them. Current technical terminology is described in detail in the book by Mlíkovský and Stýbl (2006).

The term **reintroduction** is quite clear: It means bringing back a species into areas where it had previously lived, but from where it had then disappeared. Reintroductions are primarily the subject of nature conservation, often correcting unnecessary interventions in the populations of a species in the past. In our country, reintroductions were only attempted in recent decades, particularly with birds of prey which were hunted without restriction until recently. These species are now artificially bred and are then released into the wild.

The most prominent example in the Czech Republic is the attempts to reintroduce the peregrine falcon. It used to be hunted ruthlessly. Only legal



*The peregrine falcon, a symbolic bird known in the Czech Republic since time immemorial, showed major and rapid changes in the nesting population during the 20th century.* **Photo by Eduard Stuchlík**



*A pair of mandarin ducks. This ornamental bird of the East Asian species from the Anatidae genus has been bred in Europe since the 18th century. About 8,000 live in the wild in Western Europe. Individuals which escaped from farms have lately begun to establish permanent breeding populations in our country.*

**Photo by Eduard Stuchlík**

protection, which began in 1929, resulted in their numbers rising again so that they could occupy their former nests. In the late 1950s, the falcon population suddenly almost disappeared in all its cosmopolitan habitats (especially in developed industrialized areas), apparently in connection with the effects of pesticides, especially DDT, on hatching eggs. Only about five breeding pairs sur-



*The white-tailed eagle, which became extinct in our country in the 19th century, has been reintroduced with great success since the 1980s.* **Photo by Brno Zoo Archive**

vived. Artificial rearing, combined with the ban on DDT, increased the number of falcons in the early 21st century again – but only to a few dozen pairs in our country (Štastrný et al. 2006).

Reintroduction of the white-tailed eagle, begun in the 1980s, was more successful, and the present population is almost 100 pairs. Reintroduction of the golden eagle after 2010 was similarly successful. The return of the white-tailed eagles in the Czech countryside is, however, mainly the result of their spreading into their former European habitats (Hlaváč et Beran 2011).

Plants or animals whose natural range is far from our territory can take hold in our wilderness in two ways: either through **deliberate introduction**, meaning importation and introduction into the wild; or **unintentional introduction**, for which we sometimes use the term *zavlečení* (dragging in, introduction). This latter is common, for example, with insects which can enter this country within a load of crops. With mammals, the importation of rats through ports, for instance, is well documented. Roughly 600 such species have been recorded in the Czech Republic.

With birds, it is necessary to take into account other factors, not just direct human influence. Above all, it has to do with their ability to fly (which applies to the vast majority of bird species), thus allowing the possibility of long-distance movements within a short time. We must also distinguish between two categories of birds – nesting and non-nesting species. It is generally



A family of swans. Mainly limited to chateau parks until recently, since the 1950s these have become a common scene in many of our waters. **Photo by Eduard Stuchlík**

known that some alien species which do not nest in this country occur regularly here – for example, various northern European birds which either winter here or fly over our country on their journey to their wintering grounds. As examples we can mention the northern waxwing, the brambling or bean goose, etc. Even more common is the occasional occurrence of „rare“ species which come to us individually and might be spotted just once. But it is a matter of definition as to whether the non-native species should include those that demonstrably settled to nest here some time ago due to the natural extension of the European area. Among these are, for example, the collared dove, the Syrian woodpecker, the great cormorant, and wild populations of the mute swan.

In any case, non-native species are those whose populations have been introduced into our countryside by humans – whether intentionally or unintentionally – and survive here by themselves. The frequently used term **acclimatization** is directly linked to the success of the introduction of an alien species. It has been precisely defined by Niethammer (1963) as the ability to **adapt** to new climatic conditions in the area. **Naturalization** defines a newly settled species as fully adapted to all conditions in the area. As can be seen from



The Egyptian goose comes to our country from artificial nesting populations in neighboring countries, and has recently nested at several places in Bohemia.

**Photo by Petr Suvorov**

the text below, from all the species of acclimatized birds in our country, only the pheasant can probably be considered as naturalized. (Among mammals, a similar example of domesticated animal that did not become an invasive species would be the North American muskrat.)

The introduction of an individual species used to be mainly a matter of interest to the people who attempted it. Hunting and aesthetic factors were amongst the prevailing interests for bird introductions. In the former overseas colonies, nostalgia for familiar companions in human settlements often played a role, for example for sparrows or starlings. Nature conservation strives to avoid introductions, if possible, because it always constitutes an interference in local biota, an intervention that often has unexpected consequences. Even introduction of a domestic species poses risks, mainly genetic, for the domestic population, which is why it is now regulated by law in this country. General introduction issues, particularly those related to success, however, have only been investigated recently (Blackburn et al. 2009).

Introduced birds may originate either from birds caught in the wild and released directly to another area, or from artificially bred birds. With some introductions, it is possible to determine the origin; with others, it is not. In the Czech Republic, there has been no case of a species that escaped from captivity and established a permanent population (unintended introduction). Quite often we can observe parrots in the wild, mainly budgerigars, but their nesting in the wild has so far been recorded only once. Also, occasionally there may have been a nested pair of monk parakeets; but the published report on their nesting colony turned out to be a forgery (Hudec et Šťastný, 2006). It should be noted that the monk parakeet and some other species of parrots have nested regularly in western and southern Europe.

The mandarin duck is the species that is probably closest to establishing a permanent population after escaping from farms in the Czech Republic. In recent years, we have observed an increasing number of occurrences on the river Svratka in Brno, with several pairs nesting regu-



A pair of silver pheasants. It is one of the species that has been introduced into our wilderness areas as a game bird.

**Photo by Petr Suvorov**



Although the gobbling turkey is seen mainly in breeding units, hunters continue to release it into the wild as a game bird. However, completely free populations cannot survive there. **Photo by Petr Suvorov**



South Asian peafowl have been known in Europe since antiquity. They primarily adorned various palace gardens, but occasional attempts were made to introduce them into the wild as game birds. **Photo by Eduard Stuchlik**

larly and successfully. Individual occurrences of nesting ruddy shelduck are also known. A special case is, however, the nesting of species which had been successfully introduced in other European countries, from where they are expanding. Leaving aside the aforementioned mandarin duck, which apparently originates from populations bred in our own country, it is still only the occasionally nesting Egyptian goose which falls into this category.

As far as we know, attempts at deliberate introduction in the Czech Republic have been made with 23 bird species up to the present (Kokeš et Hudec in lit.) Of these, the common ostrich was probably only kept in the menagerie of Emperor Rudolf II at the turn of the 16th and 17th centuries in Prague; and, after 1990, ostrich farms were created in several places, but there was virtually no introduction into the wild. Purposes for which other species were introduced in our countryside are in themselves interesting: Of the other 22 species, 21 were brought in as game, even though the role of some was rather more decorative (such as peacocks and some pheasants). Only one species served as purely

decorative: The great swan was introduced to the ponds of nobles' castles, probably in the middle ages. Details about its implementation are missing, and the original exclusivity was lost completely in the 1950s, when the swan naturally spread from northern Europe to the south, becoming a common bird throughout the Czech Republic.

All other information relates to the introduction of game. There are only general reports of two species (rock ptarmigan and northern bobwhite), but specific details are lacking. Of the additional 19 species, only seven were bred in game reserves and parks. The most famous of these is the Indian peafowl, known in the Czech Republic from 1587. It served mainly as a decorative bird, but attempts to introduce it as game are also known. The same applies to the less-widespread Chinese golden pheasant, which was documented in Bohemia for the first time in 1694; and the even rarer diamond pheasant, which has been reared in several castle „flower gardens“ in

Moravia (Kroměříž region) since the first half of the 19th century. Attempts to introduce two ostrich species – the Australian emu (1900–1914) and the South American greater rhea (1906–1913, and then after 1935) were short-lived. The Swinhoe's pheasant and the green pheasant were bred in a semi-free range in the chateau park in Lešná in the 1930s.

Only 12 species were introduced solely into the wild. Of these, the common pheasant turned out to be the most successful, and gradually – the only one of the introduced species – became fully naturalized. It is still not clear when the common pheasant was introduced into our countryside. It was most likely imported by the French Emperor Charles IV in the first half of the 14th century, along with other agricultural novelties.

After their introduction into the wild, all other species lasted either for only a brief time, or their population had to be constantly enhanced by artificially bred birds. The first of these was the wild turkey. It came to our territory from Mexico, probably as early as 1534, and it apparently spread rapidly: In 1587, 200 „Indian turkeys“ were consumed, among others, at the wedding feast of Wilhelm von Rosenberg to Polyxena of Pernstein.

Reports on the introduction of game birds have been known in our country since 1781. While most attempts failed, free or semi-free breeding still takes place at several places. Even according to statistics of the former Ministry of Agriculture, in 1987 spring stocks of hunting turkeys in the Czech Republic amounted to 1,394 birds, of which 1,053 were hunted down, most (493) in the former Northern Bohemia. Among other species, Reeves' pheasant is the most successful: It has been traditionally reared since the second half of the 19th century, in particular in the Kroměříž region, and its eggs are still sold for breeding in hunting grounds. In contrast, the silver pheasant,



The common pheasant is the only introduced bird species that has bred both in game preserves and freely in the wild since at least the 14th century. However, it is questionable whether it would have survived without hunters' care. **Photo by Robert Doležal**



*Willow ptarmigan. All previous attempts at introducing this northern bird to our countryside ended in failure.*

*Photo by Petr Suvorov*

which has been sporadically released for short periods since 1794, has proven successful because it is aggressive towards other pheasants. Experiments with the introduction of speckled guinea fowl have been conducted over and over again, with varying success, since 1745. An episodic attempt with the blue-eared pheasant was made in 1956 near Prague.

Of smaller burrowing species, none has taken permanent hold in our country. The southern European partridge is perhaps the most successful, particularly the still-bred and released chukar partridge. The first reports on the release of its close relative – the rock partridge – date back to 1680; but the distinction between these two species is new, and therefore which of the two was involved during the later attempts at reintroduction is not known. Since the late 19th century, numerous attempts have failed with the red-legged partridge. Other unsuccessful attempts took place mainly from 1908 with the willow ptarmigan. The last official attempt took place in Šumava: on April 5, 27 birds originally from the former Soviet Union were released, the last of them being seen in October 1976. Several unsuccessful attempts took place in the Czech Republic in the years 1880-1914 with the California quail. In the late 19th and early 20th centuries, it became fashionable to try to introduce the Latin American tinamu, but without any success.

The general view of the entire history of introductions in this country is also interesting. News of the introduction of a non-indigenous species dates back to the 14th century. In the 15th century, only one species was introduced; there were

none in the 16th century, but three in the 17th, followed by three in the 18th, five in the 19th, and four in the 20th century. These figures are obviously linked not only to the increased travel options, including the discovery of America, but above all with economic, business, and social developments. The purpose of the introductions has probably not changed: Imperial menageries, pleasure gardens, and noble hunting grounds from the Renaissance period, just like the private farms of today, showcase wealth and prestige, besides being personal hobbies of the owners. Power was manifested in the possession of rare animals and, most of the time, also in the ability to kill them, primarily in hunting as a pastime of the gentry. This is why introductions have mostly focused on game animals. Such introductions are especially typical in the 19th and early 20th centuries, when alien species and different subspecies, particularly of pheasants, were imported, mainly through England. An example is a subspecies of the common pheasant: The original „Czech“ pheasant has been almost entirely displaced by its hybridization with an imported central Asian subspecies, which has a white neck band that is seen as being more „sporty“, and is also an easier and faster flying target.

Frequent attempts at introductions during the socialist era in this country are interesting as well. They were performed by the former Research Institute of Forestry and Wildlife in Zbraslav and by individual forestry offices, particularly the one in Židlochovice. The economic aspect seems to have been negligible; the justification was „political“. Hunting, including as trophies, was a matter of



*Numerous attempts at the introduction of small southern European phasianidae – chukar partridge (pictured) and the similar barberry partridge – always ended in failure within several years.*

*Photo by BioLib*

prestige in the highest political circles, and the patronage of the powerful, of course, has always had its economic consequences.

Only recently have we seen ecologically significant experiments with the introduction of alien species that could affect the domestic ecosystem, sometimes subtly but sometimes disastrously. One has only to look at rabbits and others non-native mammals in Australia. Therefore, most new laws are based on the precautionary principle. There is enough worry with damage caused by unintentionally introduced non-native species.

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