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SESSION 06
Maintaining and Enhancing European Biodivesity

MONITORING OF BIRD SPECIES ON NATURA 2000 MIDDLE VISTULA RIVER VALLEY AREA WITHIN THE WARSAW AGGLOMERATION

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Introduction

With over 1000 km in length, the Vistula River is the longest river in Poland. It is partly regulated, while sections of it are left in an almost natural or close to natural state. In some sections one can observe the dynamic processes of the formation and erosion of islands and sandbanks. In other sections there are regulating structures, such as groynes. In the very centre of Warsaw, one of the riverbanks is fully regulated.

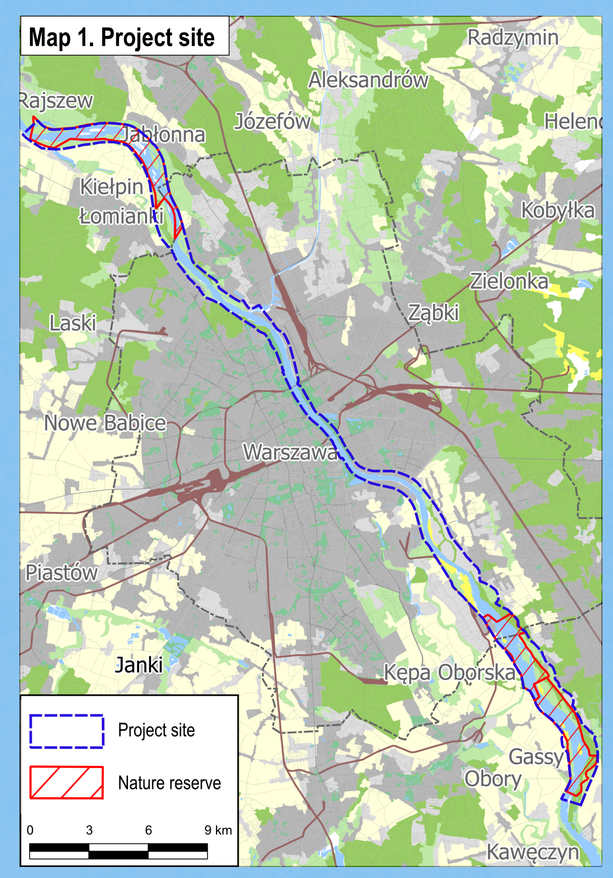
The most important activities in the field of re-naturalisation and protection of birds habitat include the construction of floating islands on barges and restoring early plant growth on the islands, which as a result of overgrowth are not suitable for settlement of seagulls and terns.

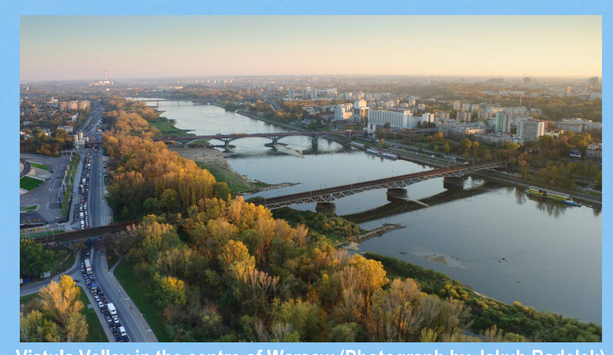
The area surveyed includes more than a 50 km length of Special Bird Protection Site in the Middle Vistula River Valley (PLB140004). It is a section that includes nature reserve areas and also the very centre of Warsaw (**Map 1**).

The observation of birds over a two-year period makes it possible to gather information about the birds' spatial preferences and elements that influence them, such as water level or its temperature.

Different habitats of Vistula Valley within the Warsaw agglomeration (Photographs by Ewa Kominek)

Map 1. Project site





Vistula Valley in the centre of Warsaw (Photograph by Jakub Badełek)

Methods

Two main survey methods:

• Birds are counted on the entire 50 km section of the river, about 40 times per year. The number of surveys per month varies from two during winter to five per month during spring migration, and 3-4 surveys per month during autumn migration. Surveys are especially focused on waterfowl and waders, and also on birds in the riparian forest, such as woodpeckers and birds of pray. Observations are recorded on maps and then digitalised using the GIS program.

• Canoeing - two to three surveys from mid-May to July. Such surveys provide information about the birds breeding on the islands, such as seagulls, terns and plovers. The exact date and number of surveys depends on water levels and the height of floodwaters.

Results

Breeding season:

The most important breeding habitats in the Middle Vistula River Valley are sandy and permanent islands. They are crucial for species that are rare and for those decreasing in numbers. They are the main breeding habitats for the Little Tern (*Sternula albifrons*) – a species that is decreasing in numbers on both costal and inland breeding sites. The Middle Vistula River Valley is also the most important breeding site in Poland for the Common Tern (*Sterna hirundo*) and the Common Gull (*Larus canus*). The most numerous of seagulls are the Black-headed Gull (*Chroicocephalus ridibundus*); their population can vary annually even between several hundred to two thousand pairs on the 50 km length of the river.

All breeding colonies lie on merely a 13km length of the river in the most natural southern section of the project area (**Map 2**).

More than 60 species that are typical to forests, including seven species of woodpeckers, breed in the riparian forests.

Sand Martins (*Riparia riparia*) (nearly 700 pairs in 2012) and Kingfishers (*Alcedo atthis*) (4-6 pairs in 2012) breed on high riverbanks.

Spring migration:

Waders are not very numerous on the Middle Vistula River Valley during spring migration. Nonetheless, their preferences in using the river are obvious. 54% of that species was found on merely a 13 km length of the river (**Chart 1**).

Autumn migration:

Waders are much more numerous during autumn migration. As in spring, the birds choose the most natural sections of the river, avoiding the centre of the city. The relatively even number of birds both in the southern and northern sections of the surveyed area is probably due to the lowest levels of water on record (**Chart 2**).

Wintering

Waterfowl and seagulls are most numerous during winter. More than 50% of waterfowl were found on merely a 10 km length of the river close to the city centre. It is closely related to the availability of anthropogenic feed, mainly from municipal sewerage, and also to weather conditions. Seagulls also spend much of their day preying on sewerage. A substantial fall in the number of waterfowl wintering in the city was noted during the 2012/2013 winter; from more than 6,000 waterfowl in mid-January 2012 to less than 800 in mid-January 2013 and less than 3,000 individuals in mid-February 2013. This was mainly the result of the closure of sewerage pipes (**Chart 3**).

Map 2. Location of breeding colonies

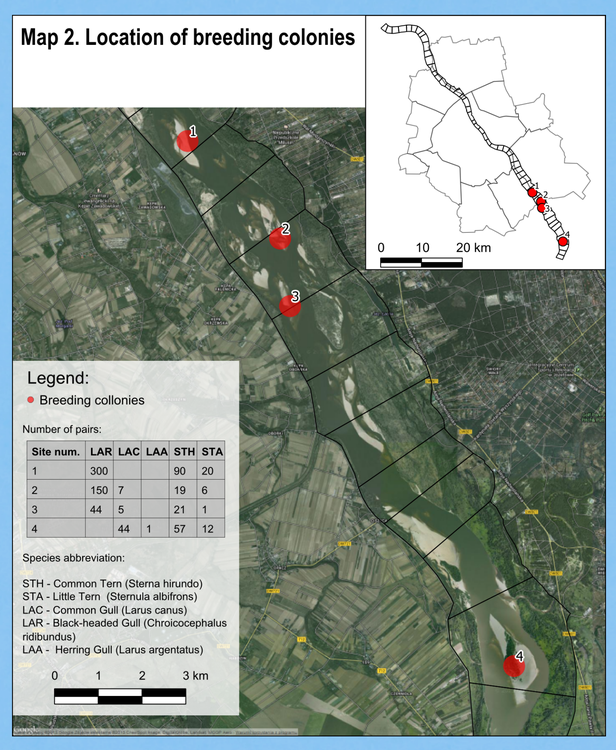


Chart 1. Distribiution of Waders during spring migration (counts from March to May). Mean number of individuals per count (number of counts N=7).

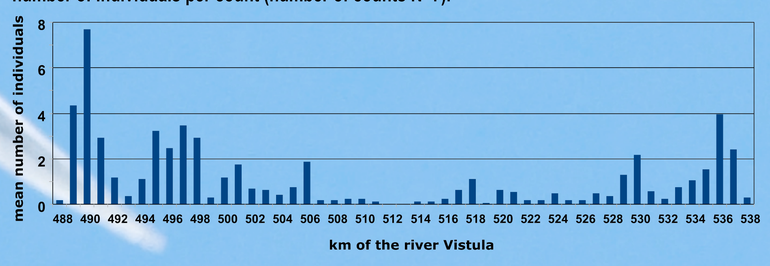


Chart 2. Distribiution of Waders (except Lapwing) during autumn migration (counts from July to November). Mean number of individuals per count (number of counts N=18).

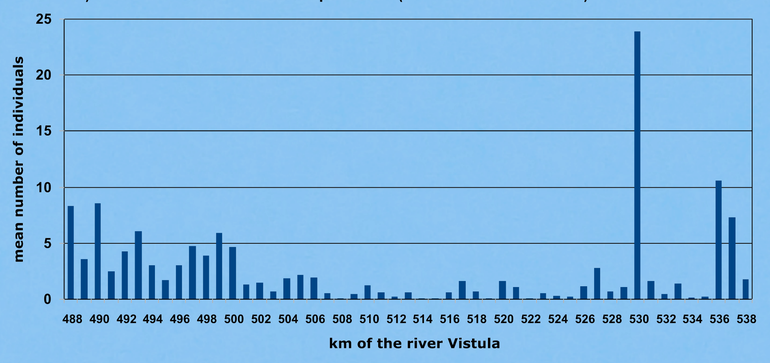
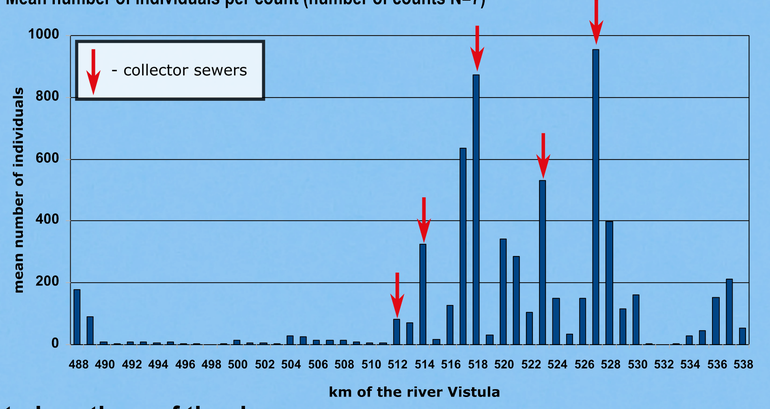


Chart 3. Distribiution of wildfowl during winter 2011/2012 (counts from mid November to February). Mean number of individuals per count (number of counts N=7)



Conclusions

• The Middle Vistula River Valley is an important breeding site for sterns and gulls, although breeding colonies may form only on less regulated sections of the river.

• It is also an important breeding area for the Little Ringed Plover (*Charadrius dubius*), Ringed Plover (*Charadrius hiaticula*), Common Sandpiper (*Actitis hypoleucos*) and Sand Martin (*Riparia riparia*).

• During the spring and autumn migration waders avoid the most regulated sections of the river.

• In winter birds, especially waterfowl and seagulls, are concentrated near anthropogenic food sources. There is a clear difference in the exploitation of these resources by the three most populous wintering waterfowl: the Mallard (*Anas platyrhynchos*), Common Goldeneye (*Bucephala clangula*) and Goosander (*Mergus merganser*).

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MIASTO STOŁECZNE WARSZAWA
STOP STOŁECZNE TOWARZYSTWO OCHRONY PTAKÓW

Little Tern *Sternula albifrons* (Photograph by Marcin Łukawski)