General Summary

Nowadays, human-altered changes in the environment have influenced the distribution and abundance of many animals. Although often anthropogenic changes are unfavourable for the majority of organisms, some animals profit from anthropogenic environmental changes. For example, a globally increasing waste production has favoured opportunistic foragers that use areas of waste removal (landfills) as foraging grounds. However, the impact of feeding on dumps is often equivocal, as it can even have opposite effects on different 'subpopulations' of the same species.

Under this project, during three years in the study area of Western Poland, we are going to study a migratory species whose behaviour has been impacted strongly by anthropogenic food subsidies, the white stork *Ciconia ciconia*. Storks are a perfect model system to study the short- and long-term consequences of anthropogenic food sources because birds from different 'sub-populations' differ in their extent to do so, thereby providing a unique setup for a comparative study. By using our long-term studied stork population, we will monitor individuals from a diverse behavioural pools. That includes storks that forage in natural habitats like wetlands and grasslands, in moderate anthropogenically influenced habitats like agricultural lands, and those feeding on landfills. Such plasticity of the species gives us a unique opportunity to examine whether foraging choices impact: (1) nutrition and survival of nestlings, (2) the prevalence of pathogenic bacteria, (3) the physiological stress of individuals. Besides, modern tracking technology will allow us to test if landfill foraging behaviour is (4) being transferred from parents to offspring and (5) maintained throughout an individual's lifetime and (6) whether affects the survival.

To obtain detailed information on the breeding status of the storks, besides regular visits in the field, we will use trail cameras installed next to each studied nest. We will investigate them directly in the field during the breeding season (in total 45 nests yearly) to determine laying date, hatching success, and survival. We plan to monitor temperature and humidity by attaching iButtons next to each studied nest. We will sample nestling for being hosts of pathogenic bacteria. Within experimental group composed of an equal number of juveniles of landfill- and non-landfill foraging parents, we are going to track the movements and activity of individuals by using GPRS-GPS-ACC transmitters (in total 80 juveniles). Tagged individuals will be monitored remotely during at least the first year of life. We will analyse their movement patterns and foraging site selections in purpose to test the parental and social transfer and repeatability of landfill foraging behaviour.

We predict that storks nesting close to landfills will more frequently be infected with pathogenic bacteria. However, the impact of these infections is difficult to assess at the moment, while we do not know benefits from food supplementations on landfills. We do also predict that storks from nests situated close to landfill will use them as foraging grounds and repeat this behaviour if they survive. However, as the white stork is a social migrant, we do also predict that landfill foraging behaviour will spread during migration, but may differ between studied groups. The white stork due to its wide range, broad ecological tolerance, and its occupied niches, is a perfect model species to study the effect of synathropisation and urbanisation of birds, and the evolutionary costs of this phenomenon. What is more, due to storks' nesting in the proximity of human settlements studying the prevalence of pathogenic bacteria is vital from the medical and epidemiological point of view.