



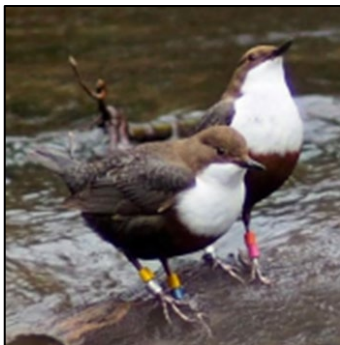
Masterarbeiten an der Schweizerischen Vogelwarte 2023/2024

<https://www.vogelwarte.ch/de/vogelwarte/mitarbeit/thesis/>

Testing for general intelligence in wild great tits (*Parus major*)

Aims: To cope with rapid environmental change, often due to human pressures, wild birds must adapt their behaviour to survive. Although there is strong natural selection for behavioural flexibility, little is known about whether birds that are good at one task (problem solving) are also good at other tasks that require different cognitive abilities (e.g. learning). You will set-up multiple cognitive tasks in a wild population of great tits to explore for inter-individual variation in general intelligence.

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Exposure to plastic and their consequences in the European dipper (*Cinclus cinclus*)

Aims: Plastics now extensively pollute all ecosystems, with the aquatic ecosystems being particularly affected. The exposure of wild birds to plastics and its consequences, however, remain little investigated. You will quantify plastic exposure in dippers along a gradient of anthropogenic pressure on rivers frequented by this bird and investigate the relationships between plastic exposure and measures of health and fitness.

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Does artificial light at night affect stress hormone secretion of barn owls (*Tyto alba*)?

Aims: Artificial light at night (ALAN) is one of many forms of pressures that humans put on natural habitats. However, little is known about the effects of ALAN on nocturnal species, such as the barn owl. You will study the effects of ALAN on stress hormone secretion (corticosterone) in blood and evaluate whether saliva corticosterone is an alternative, less invasive tool to monitor stress hormones in birds.

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Does artificial light at night affect food provisioning behaviour and stress levels of breeding barn owls (*Tyto alba*)?

Aims: Artificial light at night (ALAN) is one of many forms of pressures that humans put on natural habitats. However, little is known about the effects of ALAN on nocturnal species, including the barn owl (*Tyto alba*). You will study the effects of ALAN on the provisioning behaviours of adult breeding owls, on their stress physiology, and on the consequences on offspring growth and survival.

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Effects of extreme weather events on nestling growth and survival in the Alpine swift (*Tachymarptis melba*)

Aims: Extreme weather events are becoming more frequent, with potentially significant consequences for wild birds' reproduction and survival. In Switzerland, Alpine swifts usually breed under roofs, which can expose them to heat stress during abnormally hot weather. You will collect data to determine the temperatures at which Alpine Swifts become heat-stressed and analyse data to test the effect of extreme temperatures on nestling growth and survival over the past 25 years.

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Disturbance tolerance in feeding behaviour of Snowfinches *Montifringilla nivalis* using acoustic recordings and visual observations

Aims: To avoid predators becoming aware of the location of their nests, many birds do not approach the nest in the presence of potential predators. You assess the tolerance of Snowfinches towards disturbance and estimate the consequences of disturbance for reproduction.

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Diet and growth of Snowfinch *Montifringilla nivalis* nestlings

Aims: In Snowfinches, nestling growth decreases with date. Relating genetically identified species (mostly arthropods) in the diet of nestlings to the growth rate will give insight into the requirements of nestlings. To identify which arthropod species provide the most profitable food for nestlings, you will identify arthropod species that are crucial for the development of Snowfinch nestlings.

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The ontogeny of seed caching behaviour in nutcrackers as a critical ecosystem function

Aims: The spotted nutcracker provides a critical ecosystem function by dispersing seeds of the Swiss stone pine. Recently, novel GPS-tracking technologies revealed the unexpected result that adult nutcrackers mostly cache seeds where tree recruitment is unlikely. You will therefore investigate how different movement behaviours in juvenile nutcrackers affect their breeding success and survival with potential consequences for seed dispersal

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The role of birds and mammals as dispersers of the invasive Chinese windmill palm (*Trachycarpus fortunei*) in Ticino

Aims: In Ticino, the invasive Chinese windmill palm outcompetes native vegetation, reduces invertebrate diversity, and is expected to destabilize protection forests. However, little is known about the dispersal ecology of this palm species and its relevance as a food source for birds and mammals. You will study the seed disperser community of the windmill palm in different environments using camera traps and by carrying out seed removal experiments.

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Acoustic tools to survey breeding status and populations of owl species

Aims: Boreal and Pygmy Owls mark their territory with nocturnal calls from February to April mainly in subalpine forest. In winter, however, these areas are difficult to access, and thus data to infer population trends is scarce which causes uncertainties in this baseline data. Therefore, we aim at establishing a long-term monitoring for owls using passive acoustic methods to which this Master thesis studies methodological questions.

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