

## **MSc Internship: Development of an integrated population model for the Kestrel**

2025 is the Year of the Kestrel! For a long time, the Kestrel was the most common bird of prey in the Netherlands. Due to the use of agricultural pesticides, the national numbers of the Kestrel declined around 1960. After a ban on that agricultural pesticide, the Kestrel revived. Since around 1990, the population has been declining again and small revivals are only seen during years with lots of field mice. Nowadays, only a quarter of the numbers from the middle of the last century remain. Increasingly intensive land use makes large parts of the farmland unsuitable for Kestrels.

This year, Sovon is working on a large-scale survival analysis of the Kestrel, based on ringing data made available via the Vogeltrekstation. Using demographic data of the Kestrel, we want to better understand what is going on. How old do Kestrels get? Do young birds survive their first winter? Are there differences between regions or periods? How has reproductive success changed over time?

To deepen these insights, we want to integrate the collected knowledge into an Integrated Population Model (IPM) – a powerful statistical model that combines demographic data such as survival, reproduction and population trends. For the development of this, there is room for a research internship for master students Biological Science with a duration of 6 months.

### **Tasks:**

- Processing and analyzing ringing data and reproduction data of Kestrels
- Integrating data into an Integrated Population Model (IPM) in R
- Visualizing and interpreting model results
- Possibly: writing a (scientific) article

### **Required skills:**

- Proficiency in statistical methods and techniques for data analysis
- Familiarity with programming languages (R, JAGS)
- Familiarity with population dynamics and data integration

### **Contact**

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