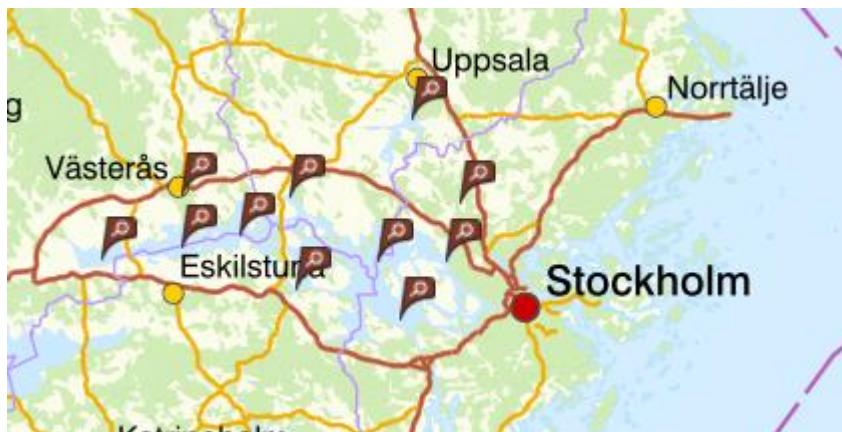


Title: **Application of data-driven models in exploring cyanobacterial bloom risks in Mälaren**

Background and objective: To assess cyanotoxin risk in drinking water supply is listed as one of the main national tasks in public inspection by 2022, according to Swedish national control plan for food industry (NKP 2018-2021). This project aims to identify the potential cyanobacterial bloom risk in Lake Mälaren based on a long-term national monitoring program. This includes pattern of occurrence, comparing risk in different locations (upstream and downstream) by applying WHO alert level for both drinking water and public bathing, identifying driving factors and limiting condition for cyanobacterial bloom, testing possible regression model for cyanobacterial early warning or prediction.



Methodology: Multiple data-driven approaches will be applied in exploring cyanobacterial bloom risks. Those approaches may include ANNs, Classification, Random forest (RF), Categorical regression, Trend, and Pattern analysis and Multivariate analysis as well as Bayesian network.

Further application and collaborative work: This project is part of a national initiative to establish a smart platform for managing cyanotoxin in drinking water and beyond named DiCyano (www.dicyano.com). The student will also have opportunity to learn other aspects of cyanobacterial management.

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