

# Manual for building a pike factory

for the SEABASED-project

The pike is one of the most common predatory fishes in lakes and coastal areas in Baltic sea in Northern Europe. Unfortunately, the population of pike in the Baltic Sea has decreased radically in recent decades, which has affected the imbalance in the coastal ecosystems. One reason for the pike's reduced densities is that a large part of Sweden's wetlands has disappeared through ditching, cultivation, or lake subsidence. This has led to a decrease in potential places for the pikes to rejuvenate, many of these habitats have disappeared completely.

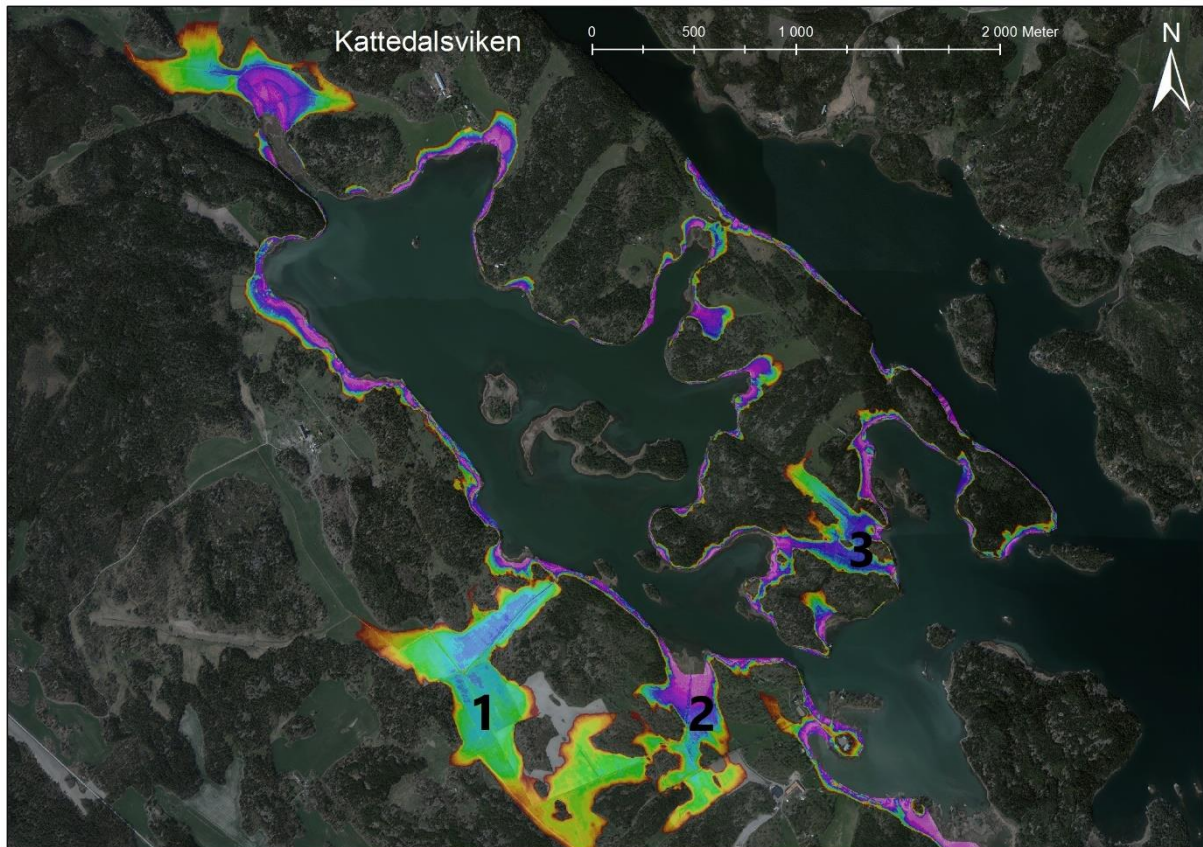


Figure 1. Map from Kattedalsfjärden with altitude data. The numbers show possible placements to build pike factories, where the landowner was positive to the measure.

## Pike factories in the SEABASED-project

Within the SEABASED-project, we have worked to investigate if there were suitable conditions in our selected pilot areas in Östergötland to establish so called "pike factories". One of the landowners we contacted in Kattedalsfjärden was positive that we were investigating the possibility of building a pike factory on his land. We found 3 possible places to build pike factories (figure 1).

A procured external consultant investigated if there were prerequisites for establishing "pike factories" in the three areas.

The consultant's conclusion was that area 1 had the best conditions for building a pike factory, but that area consisted of productive agricultural land that the landowner did not

want to lose. For Area 2, it was considered that no measure was necessary. It flooded already during spawn period and was probably a good area for pike spawning. What remained was area 3 and there was the landowner positive about building a pike factory. But we came to the conclusion that the area had too small catchment area to ensure that the area would hold water throughout the whole spawning period. We therefore chose to refrain from planning and construction of pike factories in these areas.

The project has nevertheless been valuable as we have gained experience in how such a project should be carried out.

### **Goals for a pike factory**

A pike factory is designed with the aim on satisfying optimal conditions for favorable pike recruitment. In other words, shallow wetlands that are heated in early spring with vegetation and which favorably dry out in late summer are preferred. The fish spawn attaches to the vegetation and is therefore not at risk being suffocated in the bottom sediment. The grass also provides plenty of hiding places for the fry. Not only do the pike wetlands benefit the pike, but they also have positive effects on the entire environment. In drier climates, wetlands have a great value in retaining fresh water, which for example can contribute to less impact on groundwater levels. Wetlands are also very important for birds, insects and vegetation and contribute to increased biodiversity.

The best chance of succeeding in the construction of a pike factory is when it is built in environments where there have been wetlands earlier. It is often a matter of restoring wetlands that have disappeared due to ditching. It is also possible to build pike factories in areas where natural conditions do not exist, but these areas require more excavation work and are therefore more expensive to build and it takes time for vegetation to establish.

The measures often seem complicated as there may be several interest groups that must be heard/included for its implementation. A successful restoration effort requires that the landowner has a positive attitude and that the necessary permits can be given for the measure. Great consideration must also be given to, among other things, social, economic, and cultural-historical interests. Be prepared that restoration efforts might take a long time to complete.

### **Recommended steps for pike factories**

These are the steps we recommend when constructing a pike factory. In SEABASED project we completed the 5 first steps:

1. Identify possible suitable pike factory locations by studying height data (GIS), maps and satellite photos
2. Contact the landowners and inform them about the proposal
3. In the event of a positive reaction from the landowners, make a field visit, preferably together with the landowner.
4. Check which legal permits are required and if other interests are affected.
5. Procure an expert consultant who does a feasibility study and design of the intended "pike factory".
6. Think about how long-term management of the pike factory should be carried out. For example, grazing cattle while it is being lowered can be a good measure.

7. Before the pike factory is created, a test fishing for adult pike in the area should be carried out so that the effect of the pike factory can be followed up. The test fishing is also carried out in a nearby reference area to monitor the success.
8. Procure an expert consultant who carries out the construction of the pike factory.

During the first years, a fish counter should be installed so it is possible to get data on how many adult pike swims up in the wetland. Alternatively, the pike are caught in cages before entering