Dam Removal:
Marieberg Dam

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Olle Calles

KK-stiftelsen

Overview

- Mörrumsån River:
  - Why it is important
- Improving longitudinal connectivity
  - Dam removal
    - Whole ecosystem monitoring
    - Impacts on fish movement/connectivity

Mörrumsån Diversity

Length: 185 km

Drainage basin: >3 300 km^2

Fish: 24 species

Salmo salar

Threatened

Anguilla anguilla

Critically endangered

Lutra lutra

Near threatened

Alcedo atthis

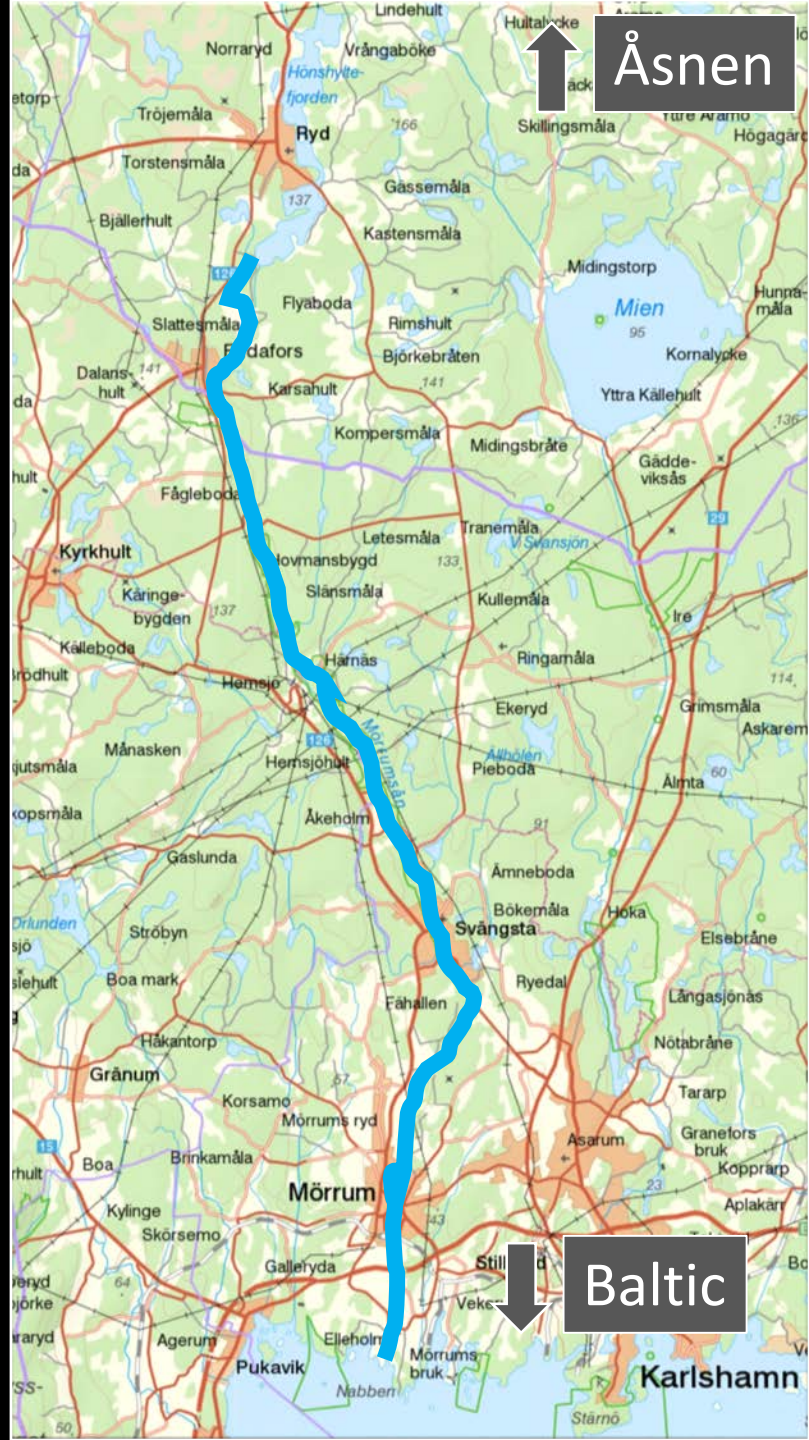
Listed

Unio crassus

Endangered

Margaritifera margaritifera

Endangered

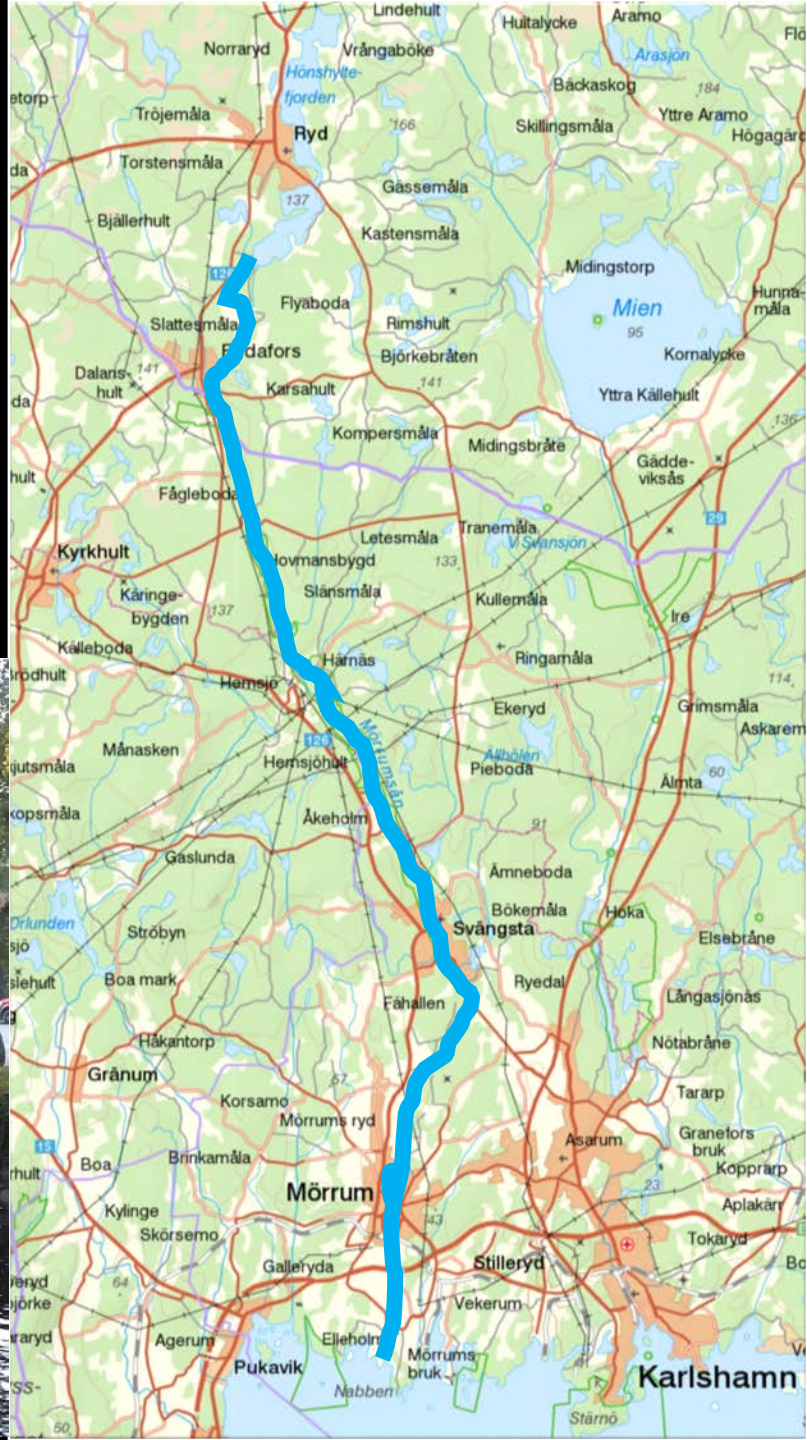


Mörrumsån History

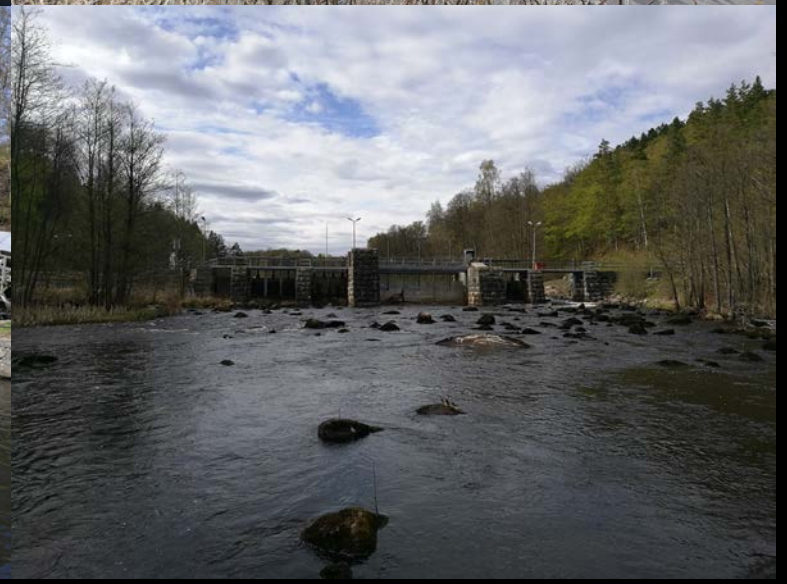
A modern sport fishery was developed in 1941

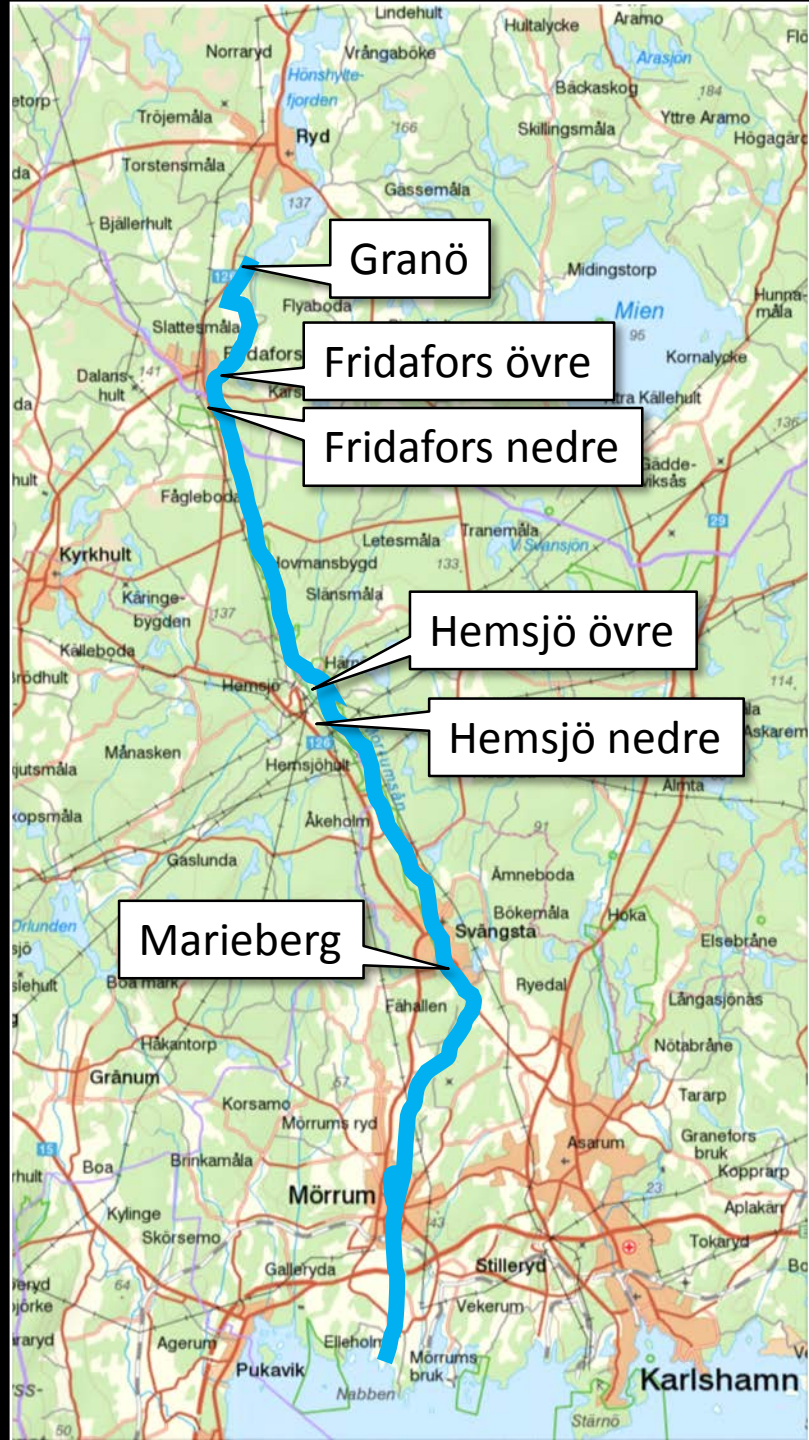
King Valdemar II
1231 Jordebok

Today: 12-13 000 anglers/year

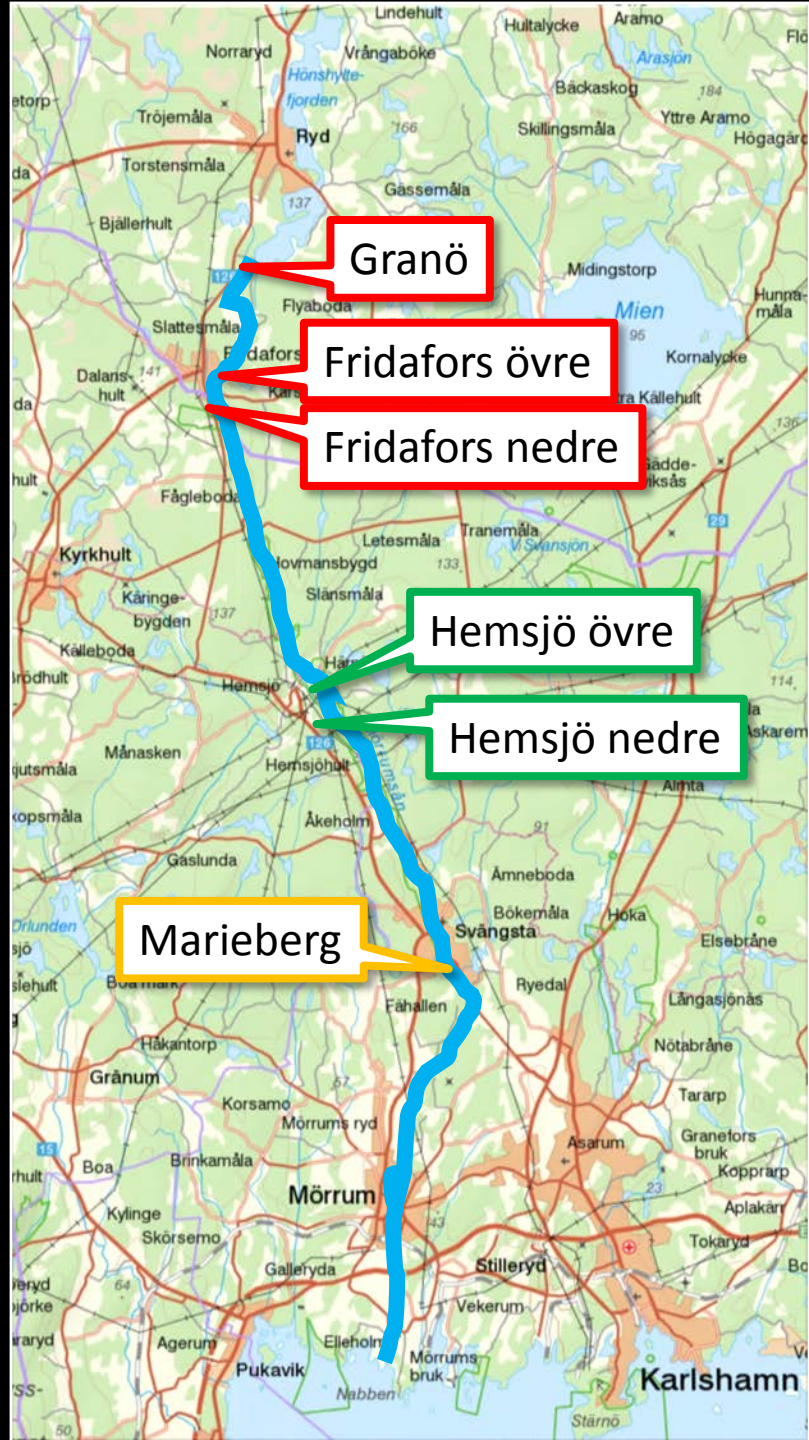


Mörrumsån A regulated river





Mörrumsån Fish passage

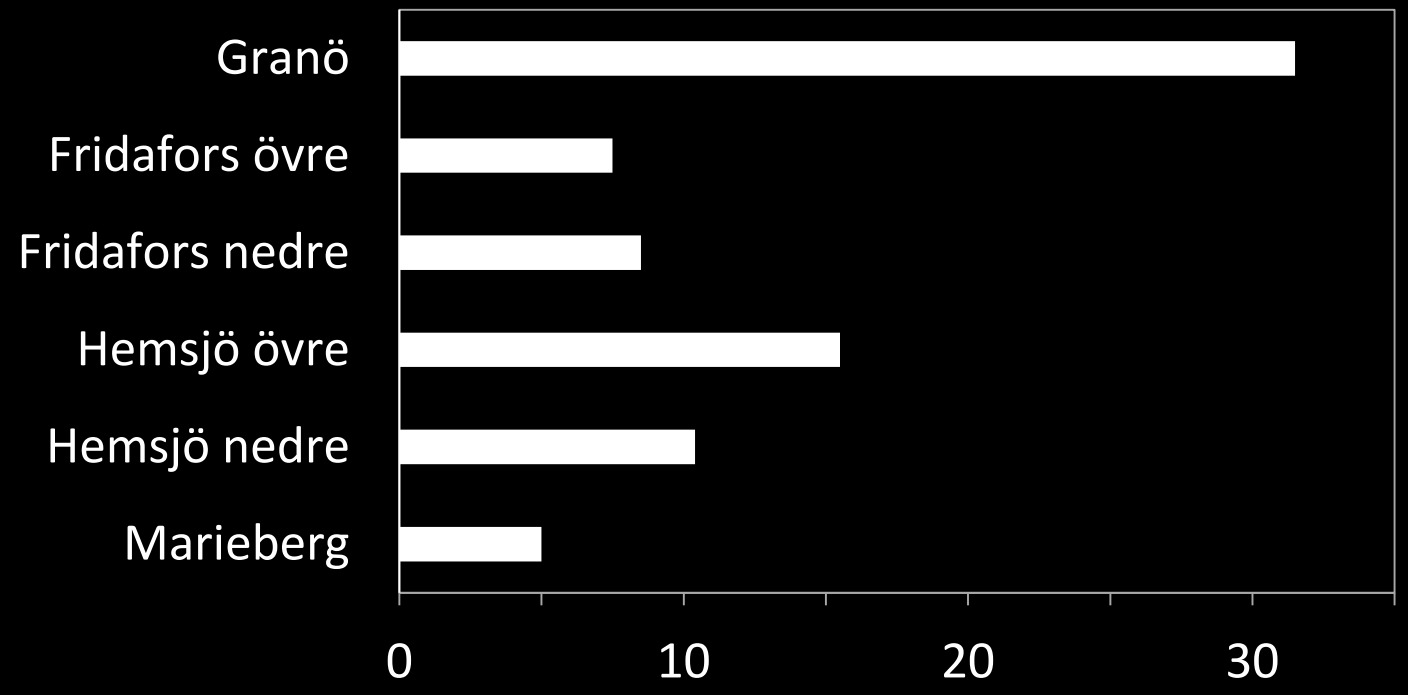


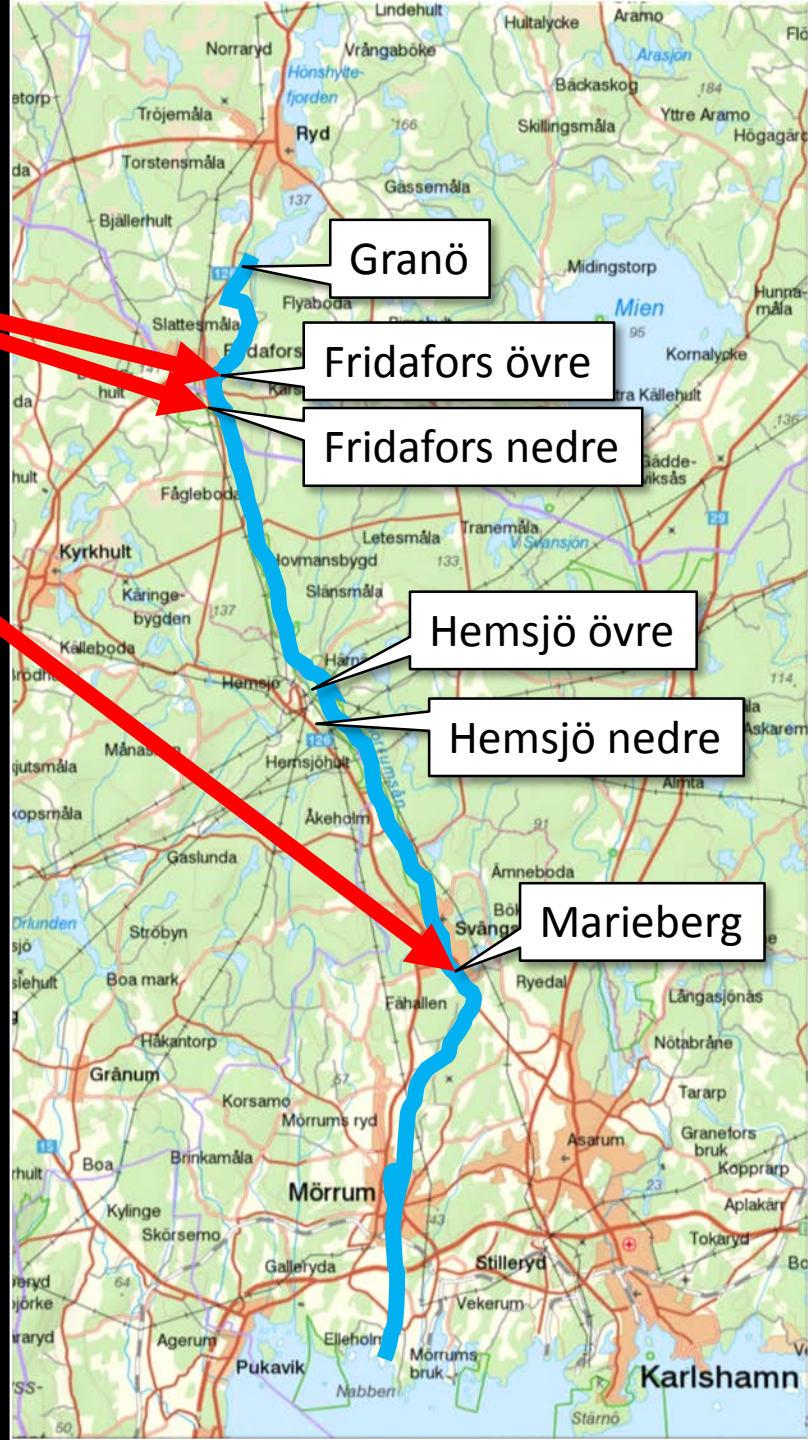
Mörrumsån Future Improvement

Addition of fish passage solutions

Dam removal

Annual Power Generation (GWh)





Communities
Invertebrate
Food
Webs
Decomposition
Rates
Vegetation
Sedimentation
Holistic
Genetics
Monitoring
Fish Movement

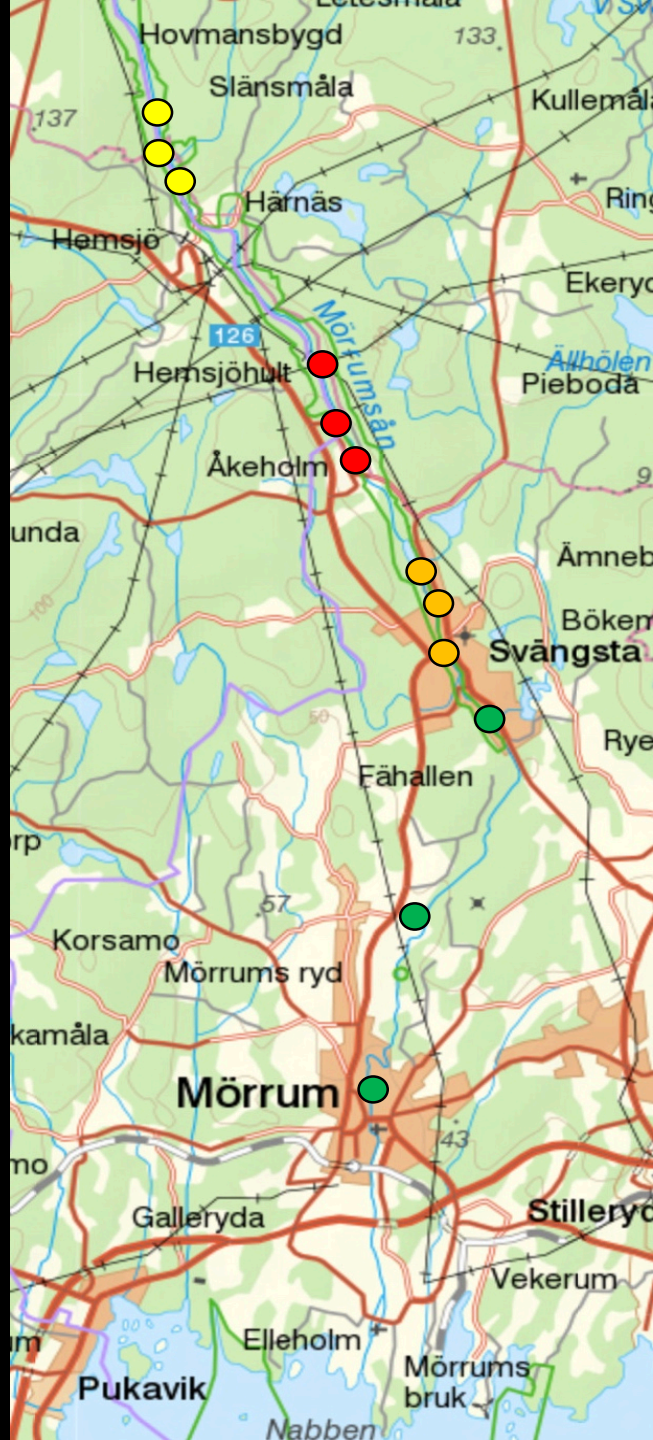
Monitoring

BACI design

Fish Communities

Invertebrate Communities

Environmental Parameters



Radio Telemetry

2018 Smolt Migration

Pre-Dam-Removal

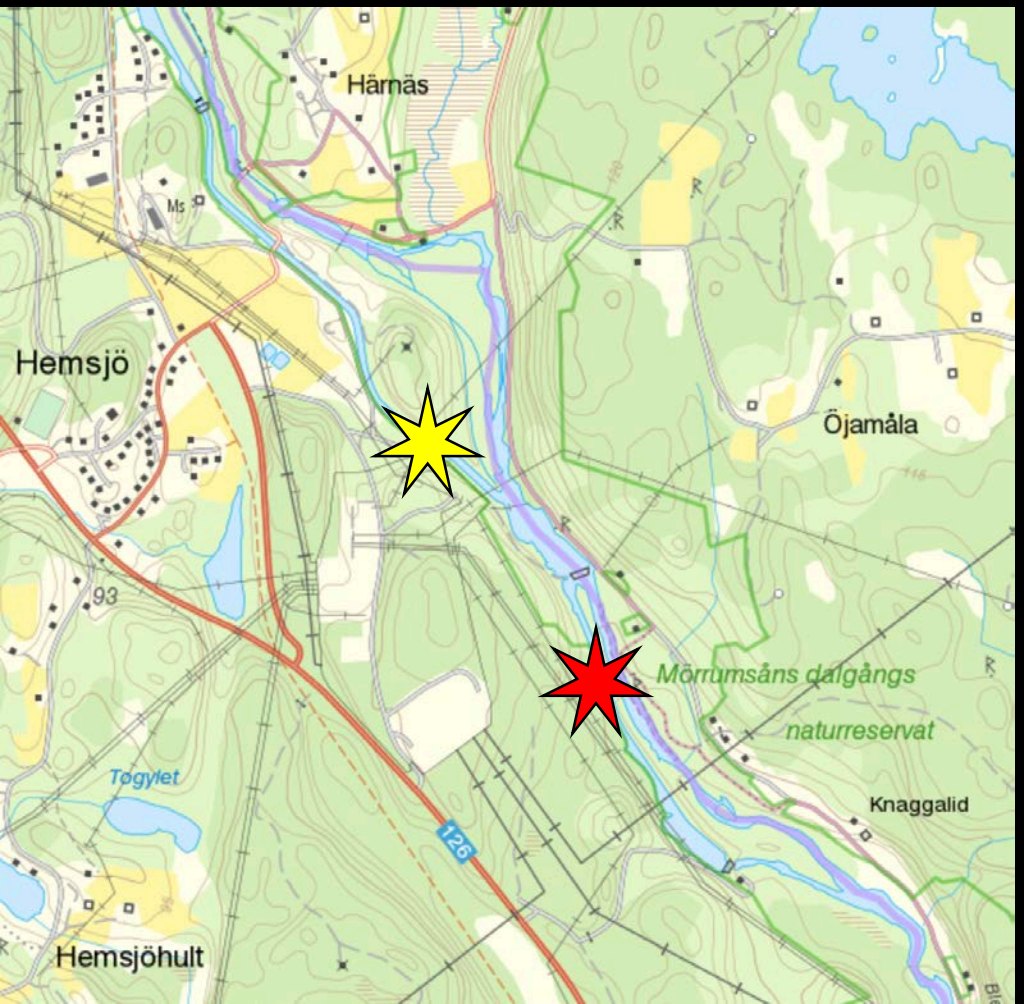
Smolt Tracking

Goals:

- Determine the extent of delays caused by Marieberg dam
- Characterize migration patterns in **entire river**

Smolt Tracking

Spring 2018



Hemsjö Övre

Hemsjö Nedre

Smolt Tracking

Tagging Results:

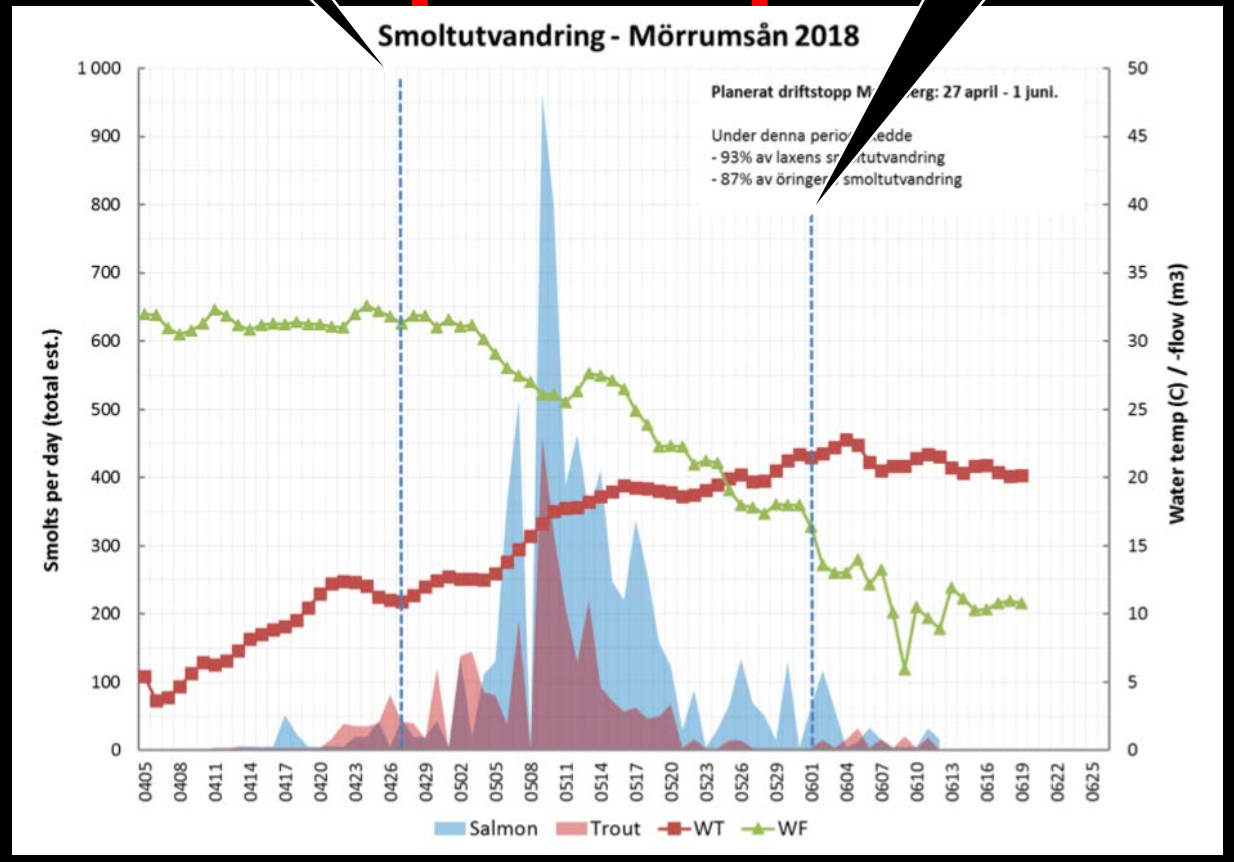
47 radio tagged ATS smolt

Spill ON

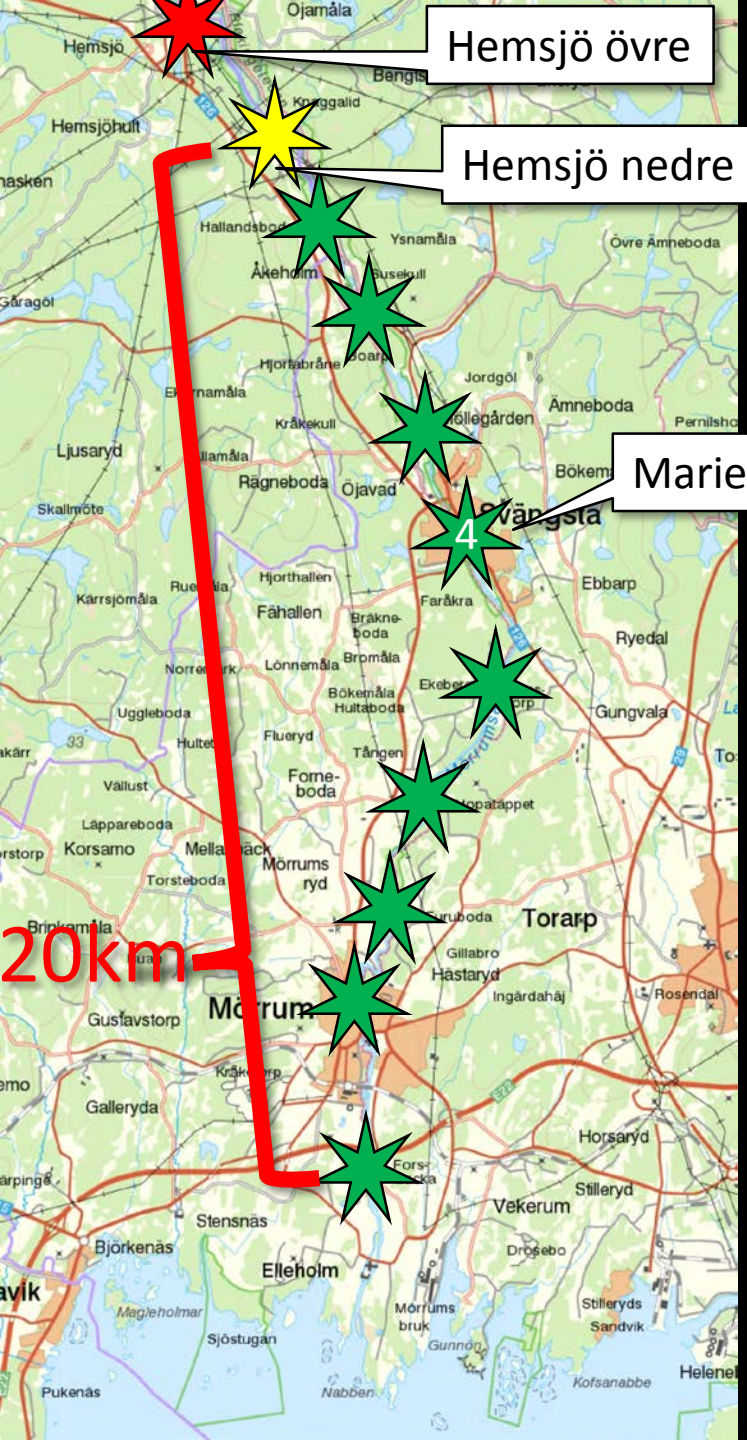
Tagging Period:

April 29 - May 23

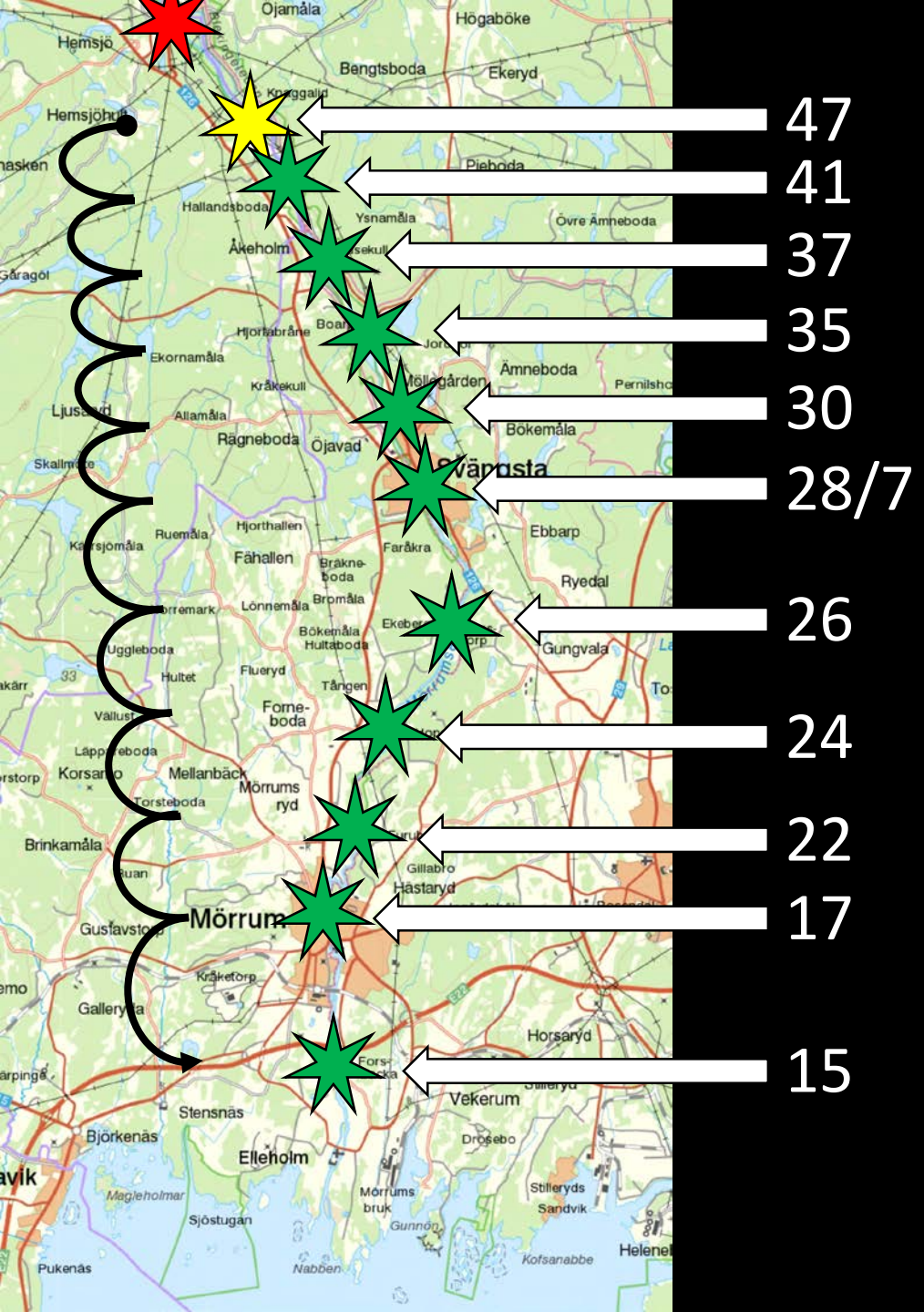
Spill OFF

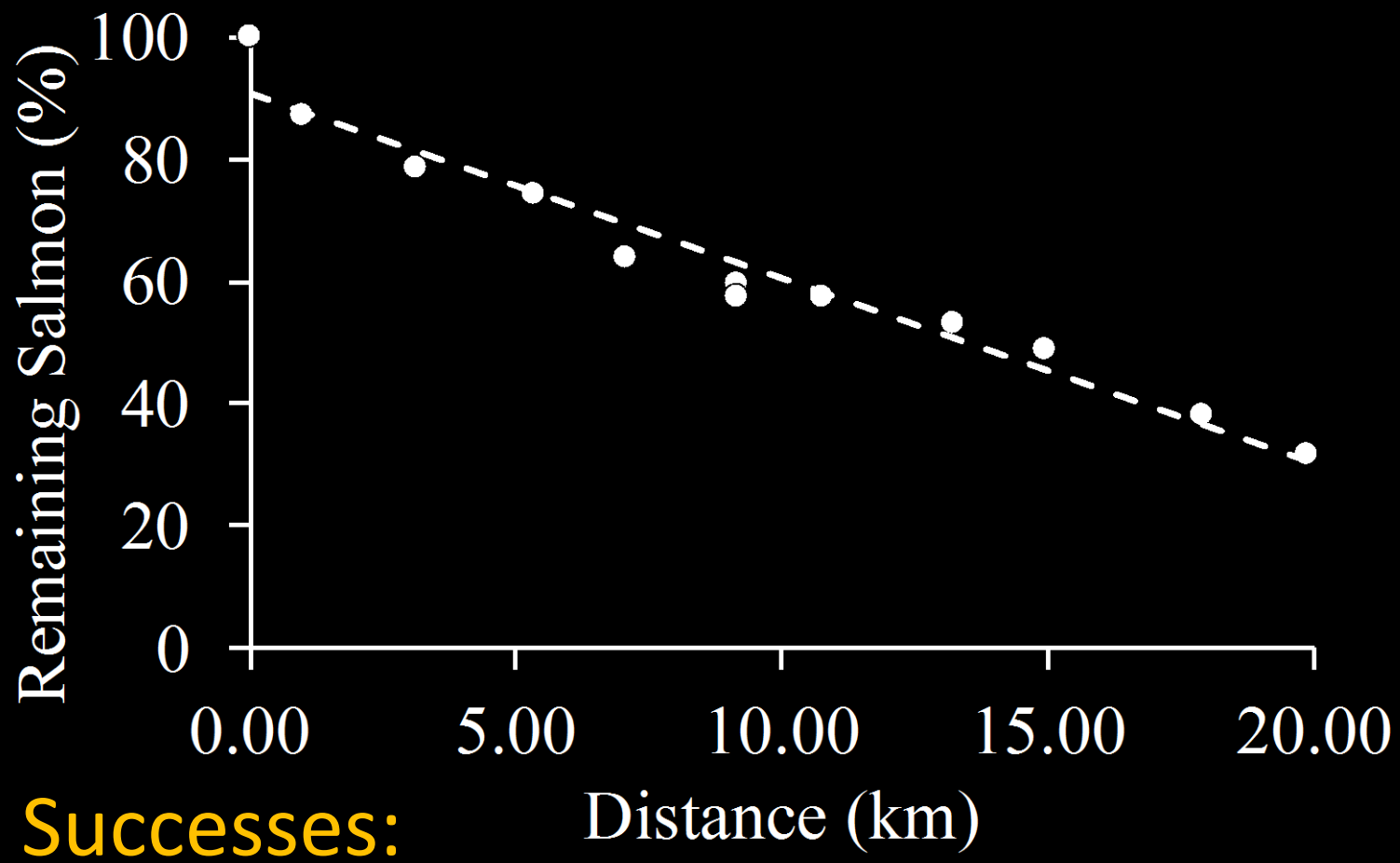


Smolt Tracking



Smolt Tracking



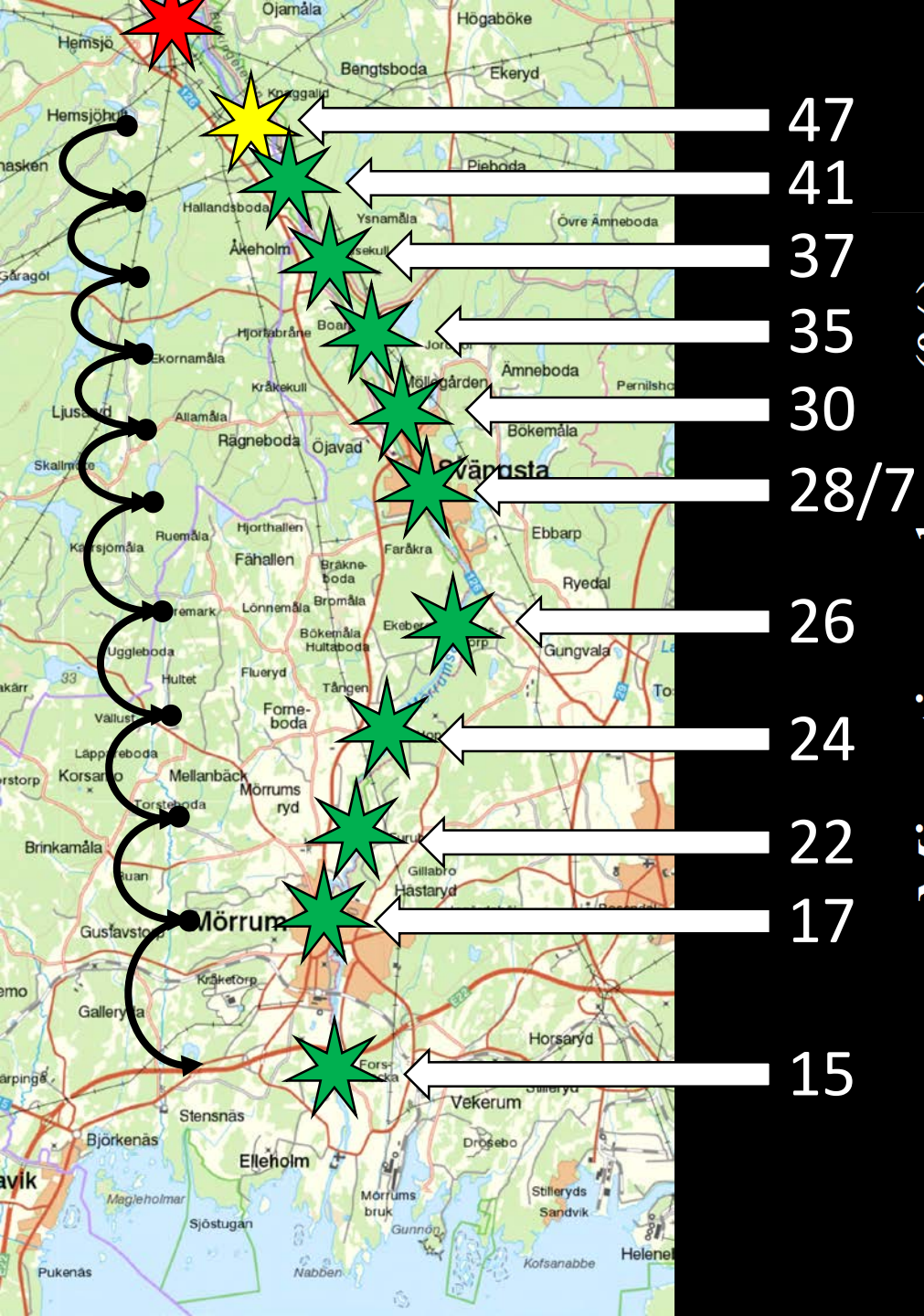


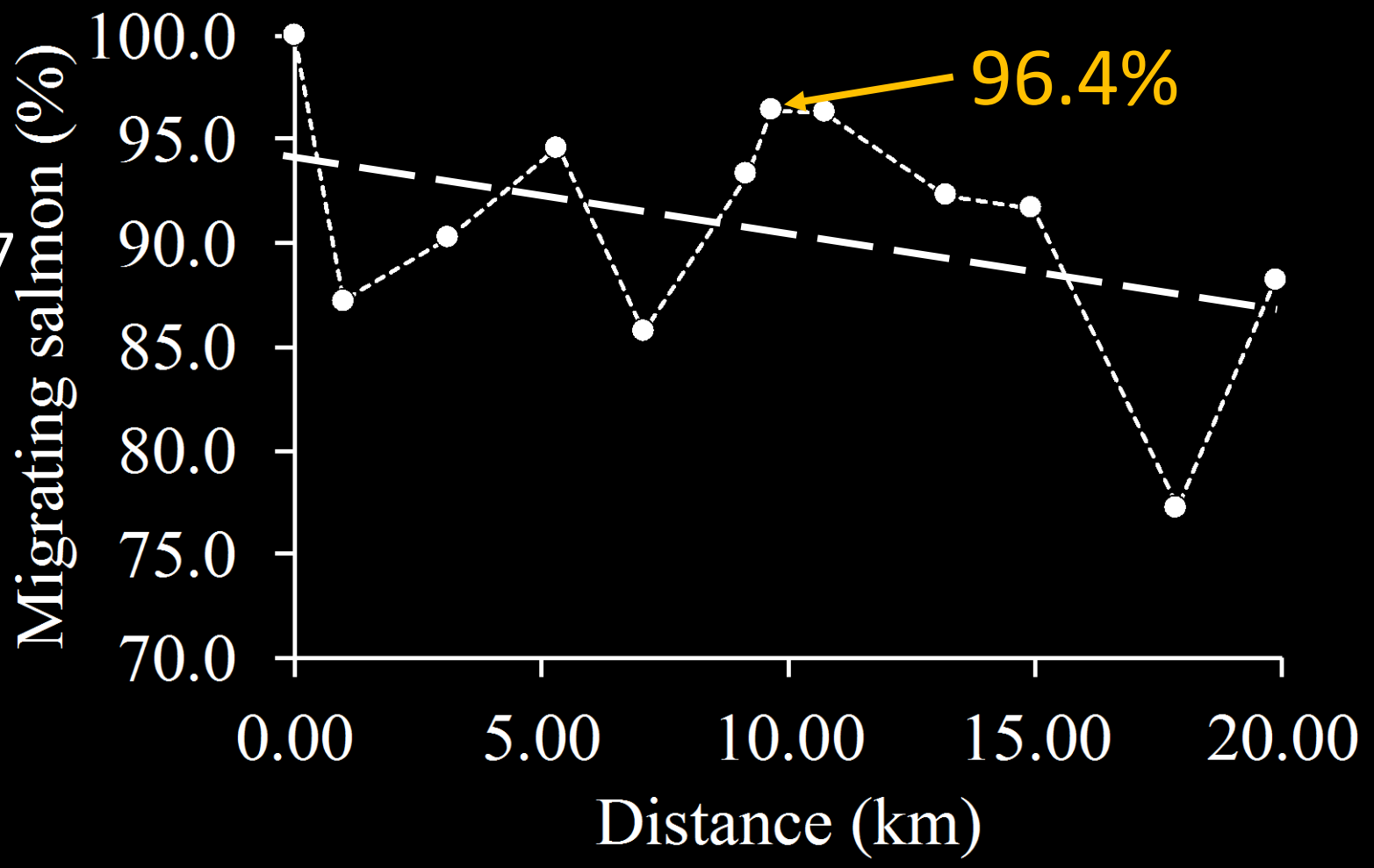
Successes:

32% reached the sea

3.4% lost per km

Smolt Tracking



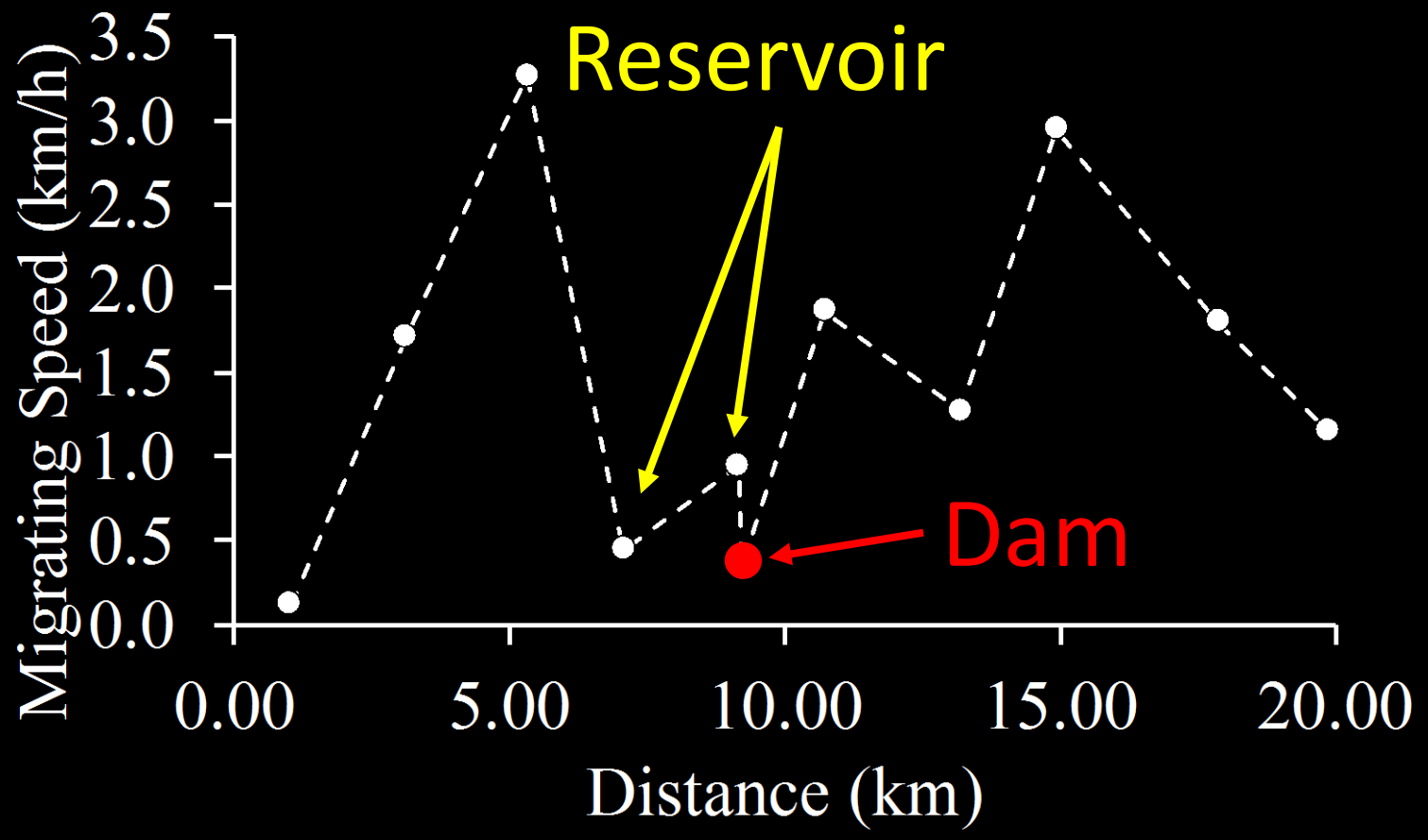


Dam Effect

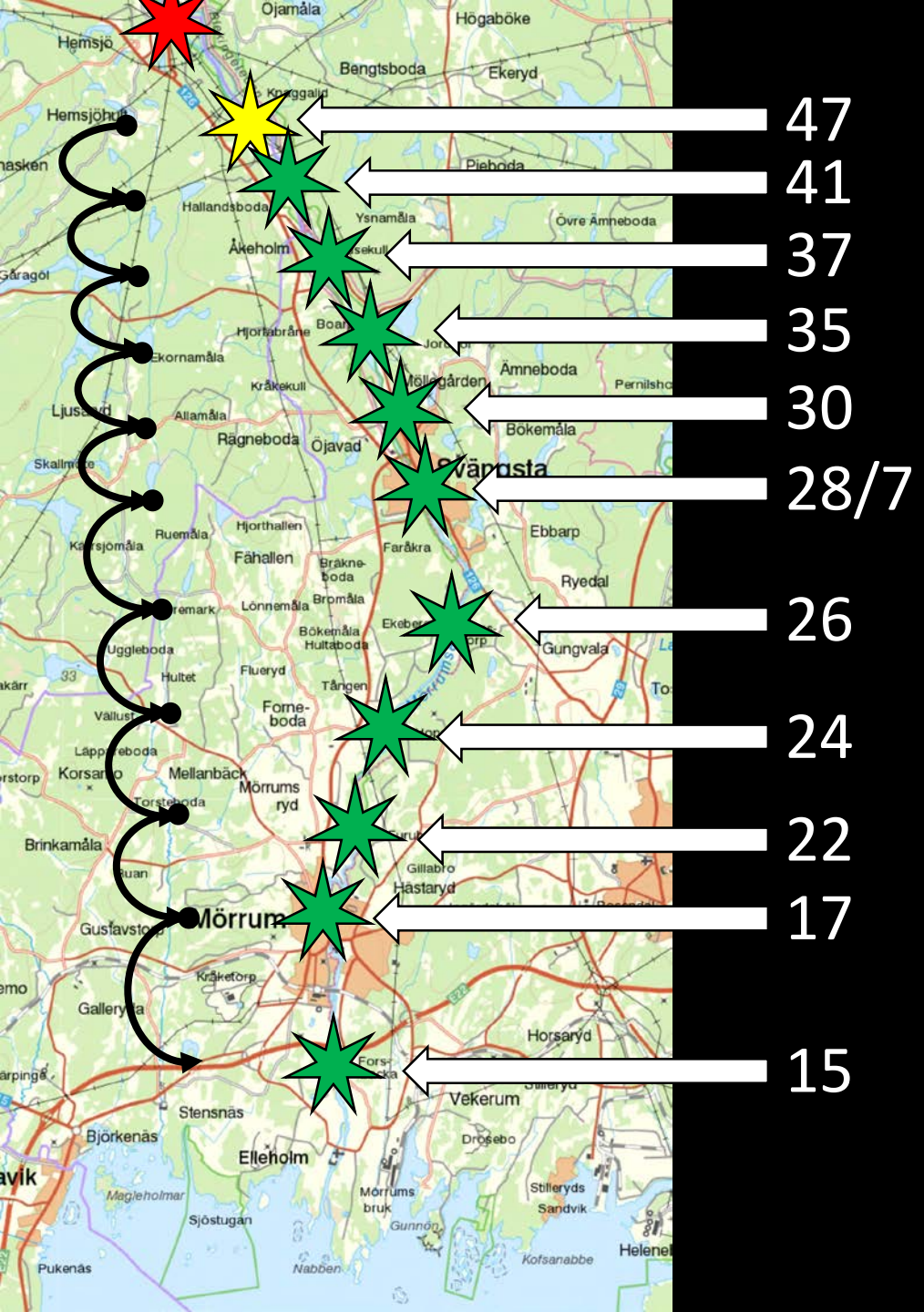
Losses:

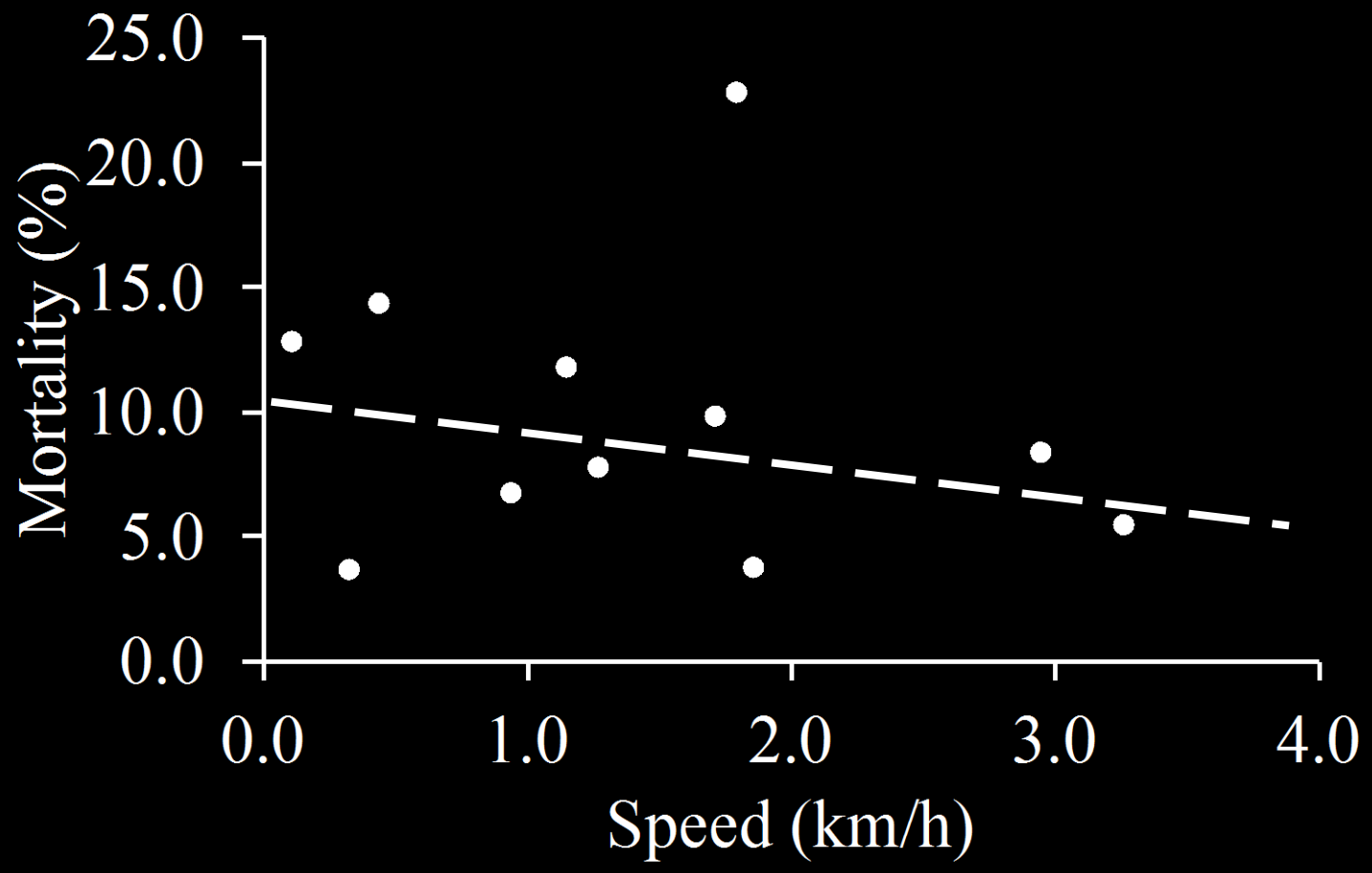
Minimized due to surplus spill

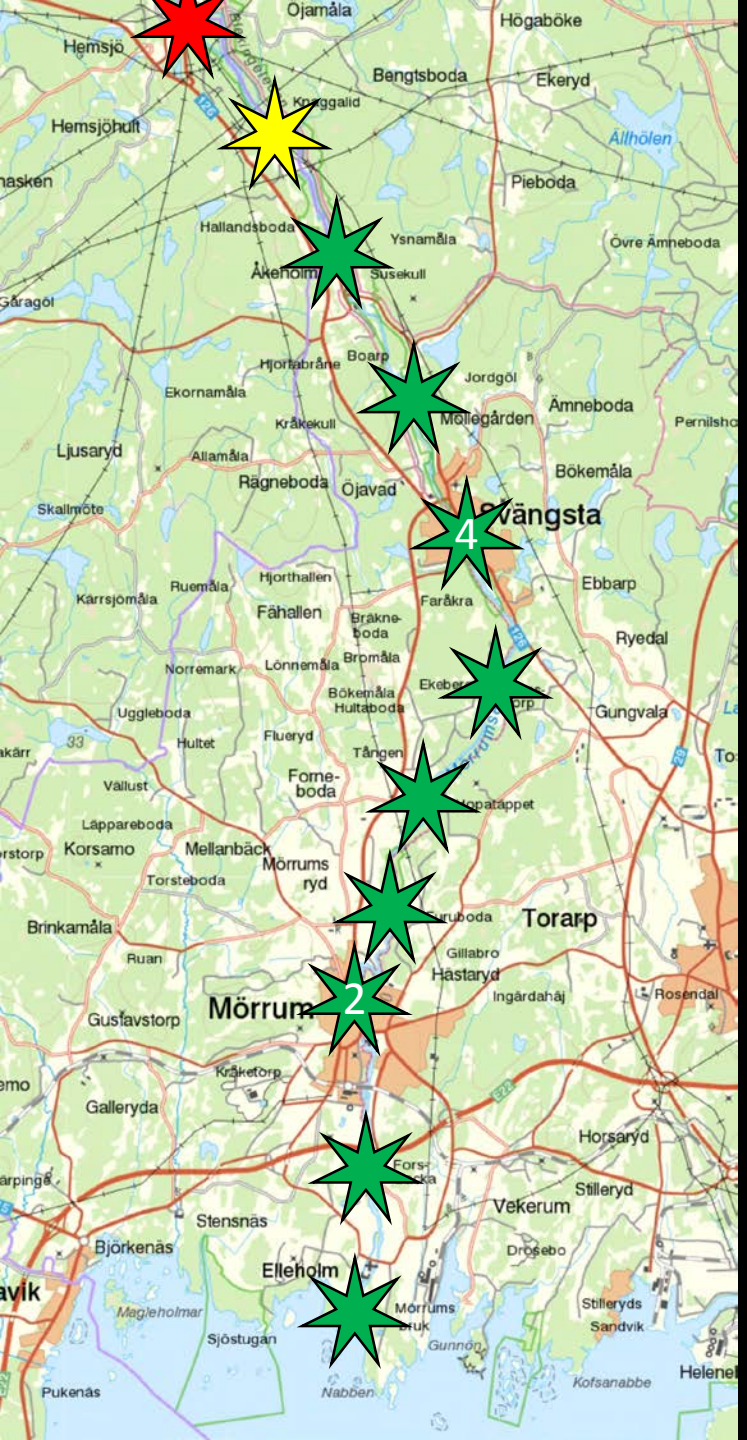
Speed



Smolt Tracking







Next Steps

Smolt tracking 2019

Time-to-Event Analysis

Abiotic Factors

- Discharge
- Diel Period
- Water Temp.
- Distance
- Tree Cover
- River Width

Biotic Factors

- Length
- Condition Factor
- Smolt Status

Continued Monitoring pre-dam-removal

Thanks for listening

SVEASKOG

uni per

KK·stiftelsen

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SLU