

Crayfish has a high social, cultural and economic value in Sweden

- 0.5 kg crayfish per person and year (world record)
- ~ 35% is produced in Sweden
- Economic value of the Swedish crayfish production amounts to around 300 million SEK yearly



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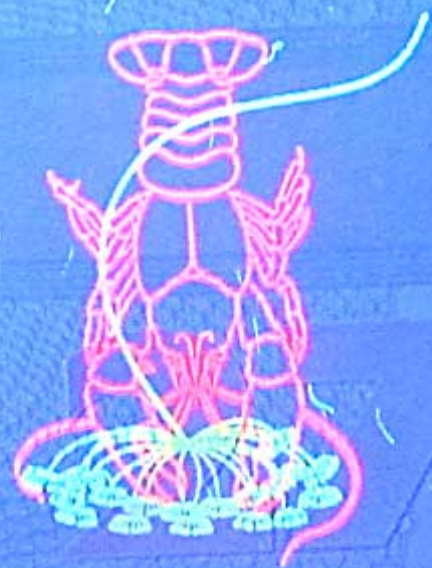
= 1 billion SEK!!

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Viseringar och stämplat
Visas and stamps
Visas et tampons

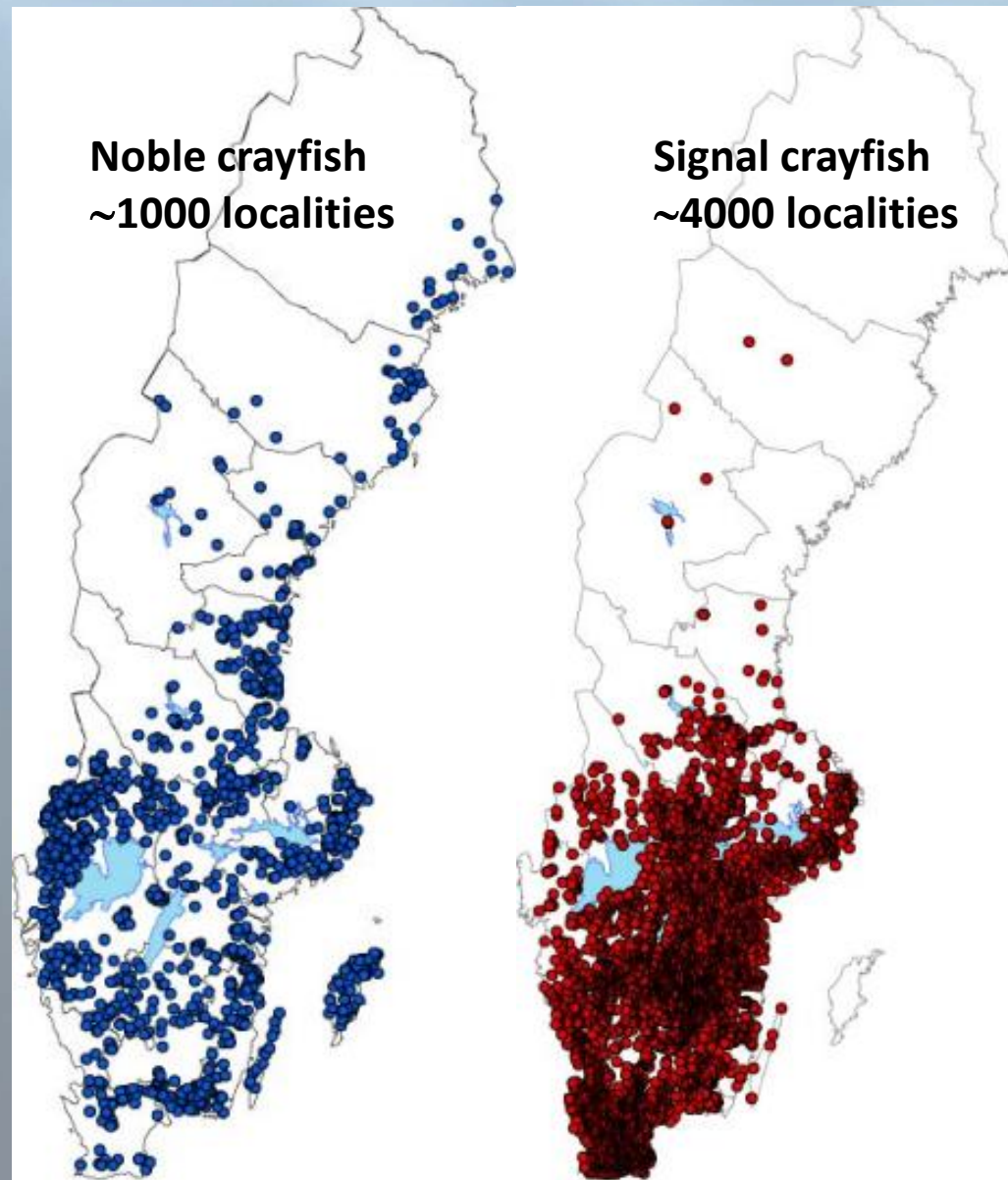
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Viseringar och stämplat
Visas and stamps
Visas et tampons

Status of the noble crayfish in Sweden

- Noble crayfish is the only native crayfish species in Sweden
- Only 3% of populations remain
- The crayfish plague is the main reason for the decline. It was introduced from Finland in 1907
- The introduction of signal crayfish (a chronic carrier) in the 1960s heavily accelerated the spread of crayfish plague
- The noble crayfish became redlisted as critically endangered in 2010



Information campaigns

“Kräftmytkrossaren”

www.krafta.nu

- campaigns in 2006, 2009, 2012 in TV (anslagstavlan), Radio (RixFm, MixMegapol), hats, flyers, milk cartons...
- 30 000 visitors first month
- Updated again in 2013, with apps for Android & Iphone



Institutionen för akvatiska resurser



Noble crayfish and aquaculture?

- Farming of noble crayfish for consumption has a high potential
 - short supply of noble crayfish
 - high final market price (up to 900 SEK/kg)
 - semi-intensive farming in simple ponds
 - crayfish farming is environmentally friendly
- Payed for the crayfish three/four times:
 - the fishing event,
 - the crayfish themselves,
 - processing and crayfish party,
 - accommodation,
 - *and you don't need to spend time fishing yourself...*
- Governmental committee of inquiry (SOU 2009:26):
 - support to aquaculture research
 - **high quality brood stock material**



24/09/2013 15:21



25/09/2013 15:06



26/09/2013 09:53



23/09/2013 19:44



24/09/2013 12:09



03/10/2013 19:00



23/09/2013 16:31



02/10/2013 15:08



24/09/2013 18:16

Genes or environment?

Research project 2013-2015 (2016)

Combining conservation and sustainable exploitation of an endangered species – the noble crayfish in Sweden

Johan Dannewitz, Stefan Palm & Lennart Edsman

Department of aquatic resources, institute of freshwater research



Forskningsrådet Formas

Formas främjar framstående forskning för hållbar utveckling

Two subprojects

1. DNA-studies

- Population structure in Scandinavia?

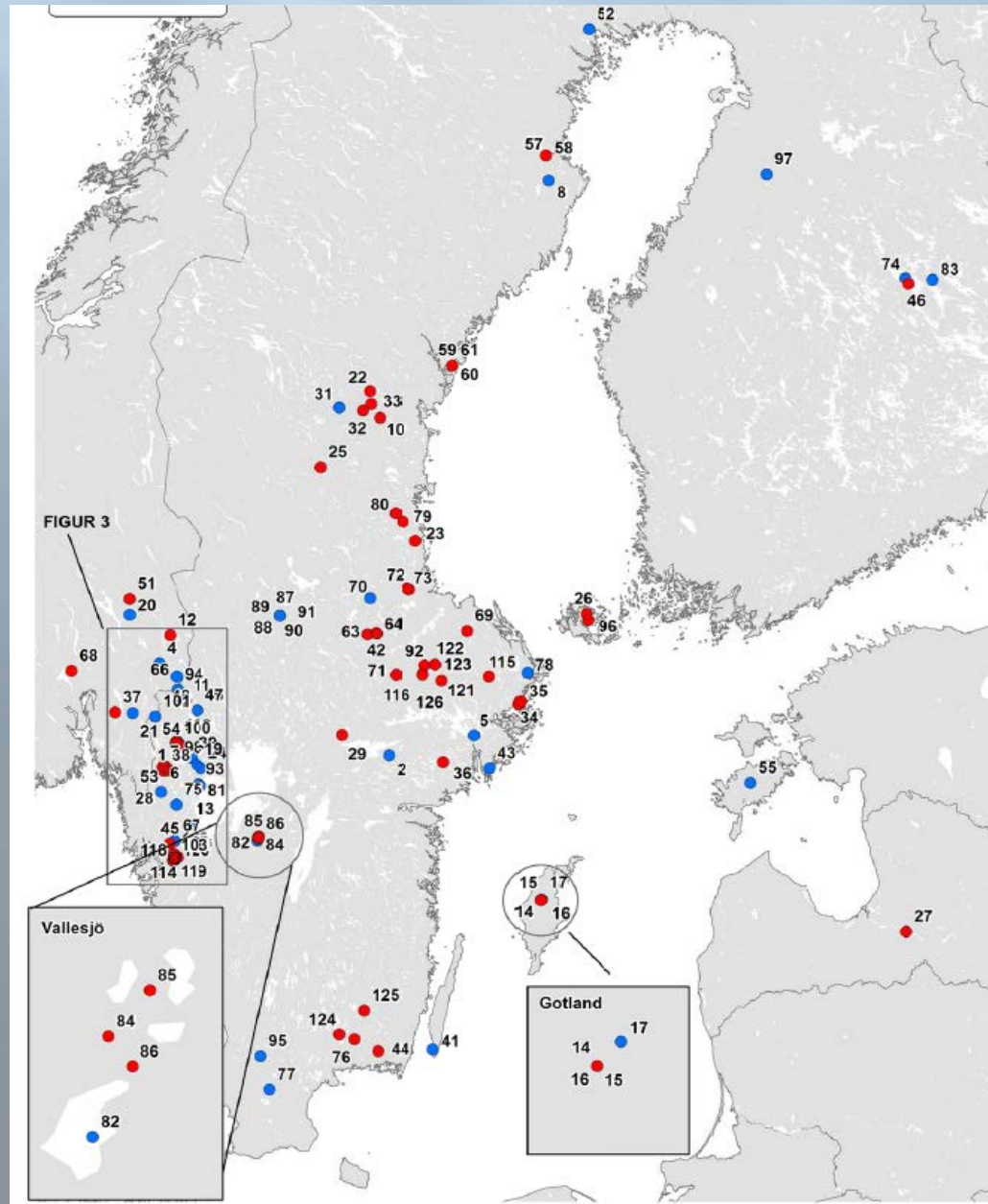
2. Rearing experiment

- Genetically based trait differences?
 - Growth
 - Survival
 - Morphology
 - Behaviour, and more...
- Local adaptation
- **Screening for suitable broodstock material**



Subproject 1 - population genetic structure

- Almost 3000 individuals
- ~ 140 locations



Subproject 1 - applications

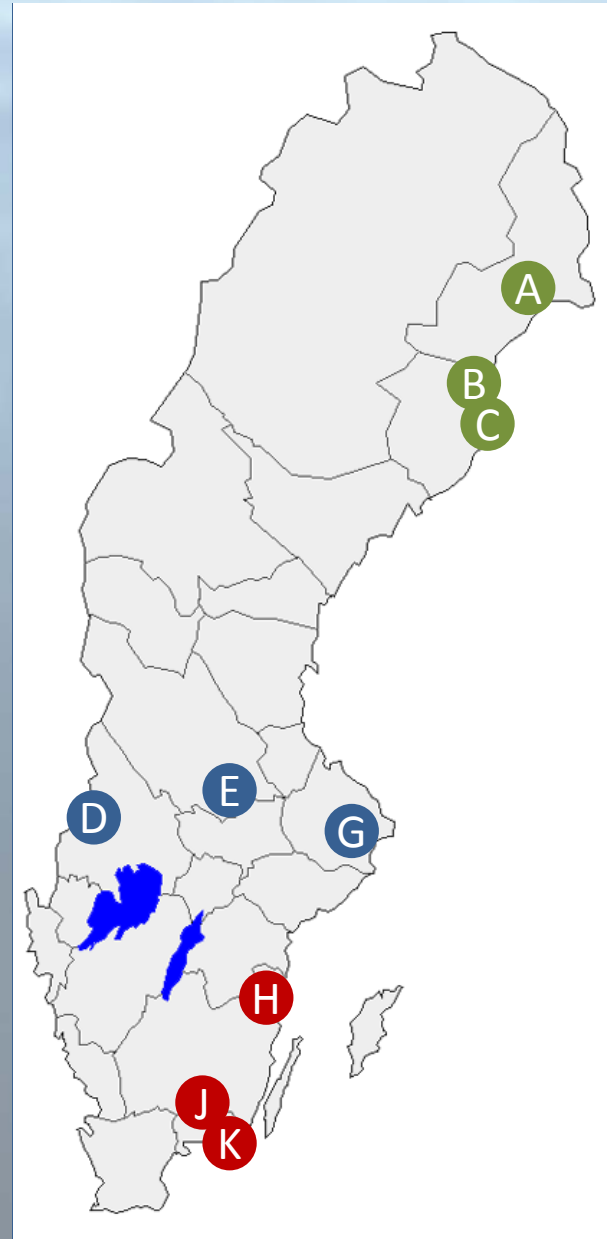
Genetic survey of Swedish crayfish populations

- Colonization history
- Effects of releases
- Particularly valuable populations
- Recommendations (reintroductions and supportive releases)

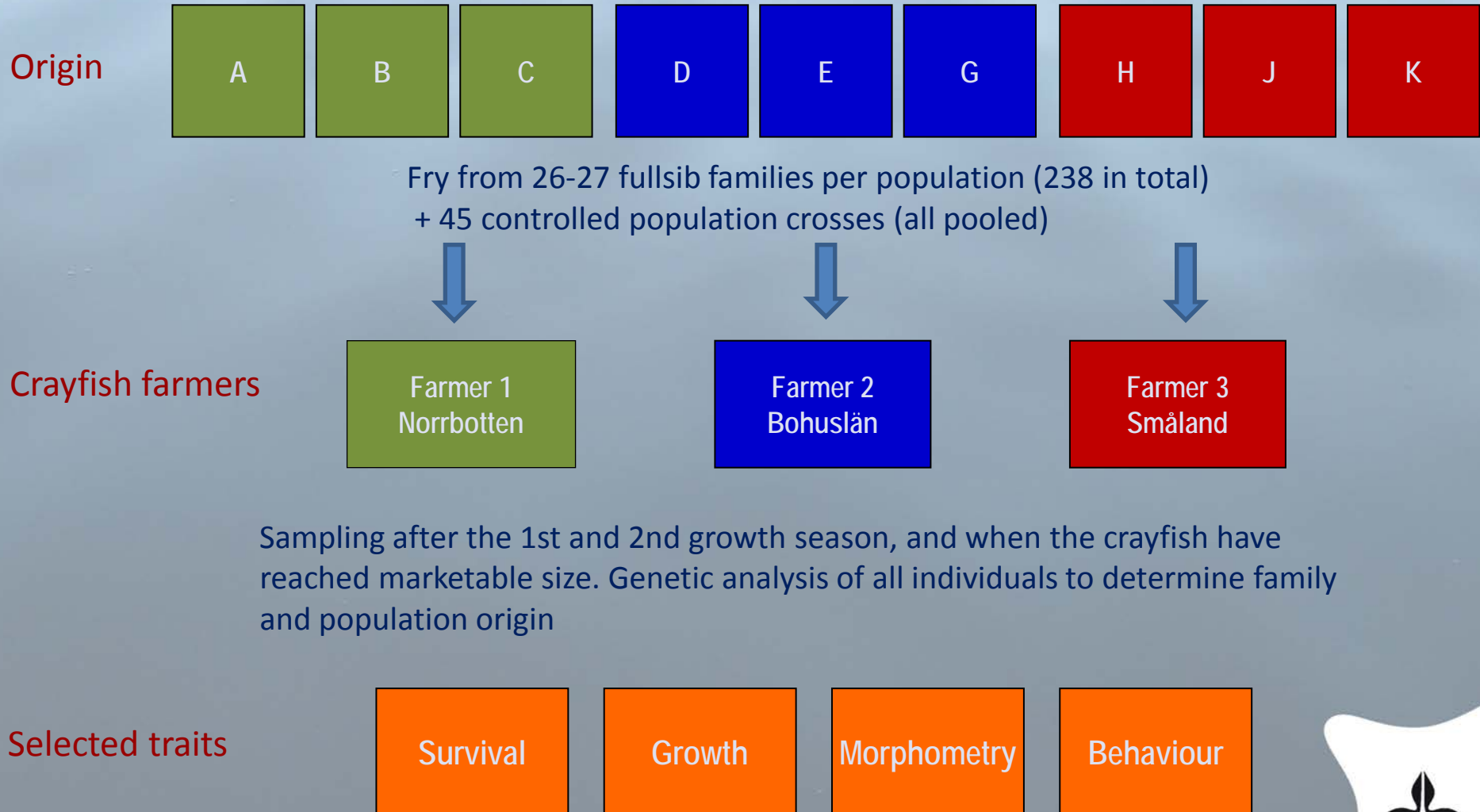


Subproject 2
Rearing experiments to study trait variation across populations

Selection of experimental populations



Experimental design



Timetable

Step 1 (autumn 2013 – summer 2014):
mating and hatching



In total 238 small tanks for mating,
hatching and early rearing of fry

Step 2 (summer 2014 – autumn 2015):
rearing of offspring at three farmers



Replicated 5 x 5 m experimental ponds

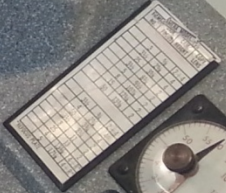
Step 3 (2015-2016): laboratory work





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E81

E82

E83

E84

Subproject 2 - applications

- Trait differences between populations/regions
 - Genetically and/or environmentally induced?
 - Local adaptation?
- Suitable populations for reintroductions and supportive stocking
- **Suitable populations for aquaculture**

Thanks for your
attention!



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AND

Labassco