

Protocol workshop Fish health, 1 Dec 2020, 9.00-12.00

Arranged by Elin Dahlgren, Helena Strömberg, Josefin Sundin, all at SLU Aqua, and Lo Persson SLU VFM.

In total 31 participants from across SLU were present at the digital workshop (table 1).

9.00 Introduction

Elin introduced the workshop and all participants introduced themselves briefly.

9.15 – 10.15 Invited presentations

Lo Persson from the Dept. of Wildlife, Fish and Environmental studies (VFM) presented “Salmon health” where she gave an update on current status of fish health related to wild salmon and the research/interests of VFM and Aqua (according to her knowledge). She also touched upon fish health in aquaculture.

Stefan Örn from the Dept. of Biomedical Science and Veterinarian Public Health, presented “Integrated freshwater fish health in the Great lakes” and described his plans for future sampling in the great lakes (Vänern, Vättern, Hjälmaren and Mälaren).

Maria Ovegård from the Dept. of Aquatic Resources (Aqua) presented “Cod health” where she gave an update on the status for cod populations in Swedish waters including the health status.

10.15 – 10.30 Break

10.30 – 11.00 Sub-group discussions in break out rooms

The participants were split into four break out rooms for more detailed discussions. The participants introduced themselves and their connection to fish health in more detail and the groups were then asked to discuss the need for, and potential benefits of, increased collaboration.

- Participants’ interest in issues regarding fish health, current projects
- Complementary relevant fish health perspectives (in relation to previous presentations)
- Need of/potential with coordination of fish health within SLU

Notes from group 1:

- A freshwater fish health program is missing and has been lacking for a long time
- Long monitoring time series are needed
- Fish health is becoming worse, but certain chemicals have decreased, there are other pollutants to consider
- How does bad status in an individual affect population viability? This connection needs to be done and we have a lot of data
- What is happening regarding M74 at the moment?

Notes from group 2:

- Coastal fish survey collects a lot of data, could be used more in issues related to fish health
- Provides good opportunity for collection of material/data
- People with expertise in ecotoxicology has increased substantially at SLU – use their competence for fish health issues, perhaps create a sub-group for this?
- Work on different species without collaboration makes fish health a fragmented topic at SLU, risk of missing general patterns and potential synergies

Notes from group 3:

- General discussion about fish health and interesting topics for the group
- M74 and thiamine
- Algal toxins
- Brominated dioxins
- Farmed Arctic charr and reproductive problems

Notes from group 4:

- How fish health affects stock assessment (e.g. M74 is taken into account in salmon stock assessment but what about other issues/species?)
- Interaction between farmed fish and wild fish and spread of disease/parasites etc. between the two
 - o Screening of all brood stock fish
 - o Anthropogenic transfer of pathogens with fishing gear, stock fish etc.
 - o Differences in cage farming at sea and in freshwater
- Severe health problems for salmon in Vindelälven, good river for monitoring of salmon health due to existing infrastructure
- Lack of competence at SLU with regards to fish disease, step in the right direction with new Norwegian professor (15%)

11.00 – 11.15 Whole group feedback discussion (sum up sub group discussions)

All groups reported the main things they had discussed. In general, people are very positive to increased collaboration.

Josefin introduced the next discussion about wants & needs regarding fish health at SLU and how to move forward.

11.15 – 11.30 Sub-group discussions in break out rooms

- Group suggestions on relevant topic (or go with suggestions below)
- What would you like to gain from increased SLU cooperation regarding fish health?
- Suggestions on how to increase SLU cooperation regarding fish health?
- Is there interest in future shared research? Suggestions on future relevant calls?
- Suggestions on how to keep contact /share information.

Notes from group 1:

- SLU Platform where interested people can sign up. Presentations for each person so that it is clear who knows what. There can also be subgroups in the platform where people working on similar topics can work together in smaller groups
- The platform can be a website with seminars, news posting, call for joint funding applications
- Think ecosystem if we have a platform, also water quality
- A coordinator for the SLU fish health platform is needed!
- When we have organized us within SLU, SVA, HaV and University of Gothenburg could also be invited to collaborate
- A simpler platform in Teams for an easy way of communication

Notes from group 2:

- Need for coordination to increase the possibilities for collaboration (not enough time for each researcher to keep track of all potential collaborators/related competences/topics)
- A place for internal collaboration, like a platform across faculties
- Could also be a sub-group of the water forum at SLU with a link to a fish health website (or similar) at the SLU water forum site, where competences in relation to fish health can be accessed and potentially also new material and information
- List with people and their competences with regards to fish health could be useful but hard to keep up to date
- Workshop is a good format to get an overview, could also be a good opportunity to update potential lists
- Write an SLU Aqua report from the workshop to be distributed across SLU (not only internal)

Notes from group 3:

- Fish health too wide to be effective? – divide into smaller sub groups that can work together (e.g. salmon and M74, coastal cod issues)
- Create a list or something with key competences, available infrastructure, specific interests – the list needs to be searchable
- Annual workshop, good to get an overview of what is going on across SLU regarding fish health

Notes from group 4:

- What do we want with our monitoring? What data are we collecting and why?
- Platform? Should talk to people running other platforms.
- Increased collaboration would improve:
 - o Interdisciplinary work
 - o Enable comparative studies
 - o Make available facilities more visible

11.30 – 11:45 Whole group feedback discussion (sum up sub group discussions)

All groups reported the main things they had discussed. There is a need for coordination across SLU: suggestions included some sort of platform/website/or list of people and their competences. In addition, an overview of available facilities could be useful. Annual workshop would also be good to get an overview of activities and people related to fish health.

11.45 – 12.00 Short summary of the day and how we move forward

Helena summarised the day and thanked all participants. We will write a protocol/report from the workshop and look into possibilities for funding for a coordinator that could put together a website (linked to from Water forum).

Table 1. List of participants with their area of interest, affiliation, and role at the workshop.

Name	Area of interest	Department*	Role
Elin Dahlgren		Aqua	Organizer
Josefin Sundin	Eel health, pharmaceuticals	Aqua	Organizer
Helena Strömberg		Aqua	Organizer
Lo Persson	Salmon health	VFM	Organizer/invited
Stefan Örn	Ecotox	BVF	Invited
Maria Ovegård	Cod health	Aqua	Invited
Anders Alanärä	Aquatic ecology	VFM	Participant
Anti Vasemägi	Genetics	Aqua	Participant
Caroline Ek	Salmon health	SLU Aqua/University of Gävle	Participant
Linda Vikström	Connectivity and fish health	VFM	Participant
Gustav Hellström	Salmon health	VFM	Participant
Noora Mustamäki	Fish health in national reference areas	Aqua	Participant
Michele Casini	Fish condition	Aqua	Participant
Anna Norman Haldén	Aquaculture	BVF	Participant
Douglas Jones	Salmon health	Aqua	Participant
Serena Donadi	General	Aqua	Participant
Anders Kiessling	Aquaculture, pathogen transfer between farming and wild fish	HUV	Participant
Martin Ogonowski	Anthropogenic pollutants	Aqua	Participant
Kerstin Holmgren	General	Aqua	Participant
Jens Olsson	General	Aqua	Participant
Erin Mc Callum	Anthropogenic pollutants	VFM	Participant
Hege Sande	Cod, condition	Aqua	Participant
Henrik Jeuthe	Aquaculture	HUGEN	Participant
Joacim Hjelm	General	Aqua	Participant
Rebecca Whitlock	Salmon health	Aqua	Participant
Stina Drakare	Algal blooms, coordinator for FOMA programme	MVM	Participant
Monica Mion	(joined meeting after presentations)	Aqua	Participant
Anna-Karin Dahlberg	(joined meeting after presentations)	MVM	Participant
Kartik Baruah	(joined meeting after presentations)	HUV	Participant
Øystein Evensen	(joined meeting after presentations)	NMBU - Norges miljø- og biovitenskapelige universitet	Participant
John Persson	(joined meeting after presentations)	Aqua	Participant

*1) Aqua = Dept. of Aquatic Resources, VFM = Dept. of Wildlife, Fish, and Environmental studies, BVF = Department of Biomedical Sciences and Veterinary Public Health, HUV = Dept. of Animal Nutrition and Management, HUGEN = Dept. of Animal Breeding and Genetics, MVM = Department of Aquatic Sciences and Assessment