EVALUATION REPORT

Prepared by Dr Sara Barrento

24/06/19

HIGHLIGHTS

78 participants

26 companies

7 international speakers

All agreed that knowledge and information gained from participating in the event met their expectations

Background context

Over five hundred and eighty species of aquatic species are farmed globally - most are fish. Lumpfish is a novel marine species to aquaculture and one of the fastest growing farmed fish in Europe. But novel species are challenging - there is little information to guide best practice and as a result this can impact on their welfare. Lumpfish are unique as they are not farmed for human consumption, they provide a service to salmon farmers. Lumpfish are cleaner fish - they clean sealice off salmon. This event aimed to bring to life the 1st Symposium on Welfare in Aquaculture the first edition focused on welfare indicators of novel species.   This event explored commonalities and differences in the welfare requirements of different farmed species and asked whether some common welfare metrics exist. The morning symposium was followed by a workshop on lumpfish welfare in the afternoon.

Symposium aims
1. To raise awareness about the importance of welfare in novel species to aquaculture
2. Identity commonalities and differences in the welfare requirements of different farmed species
3. Identify welfare metrics

Workshop Aims

The workshop focused on better welfare for better lumpfish and provided the opportunity for participants to:

4. identify key limitations and challenges in implementing lumpfish welfare
5. explore solutions and new services
6. contribute to the publication of a lumpfish welfare code of practice
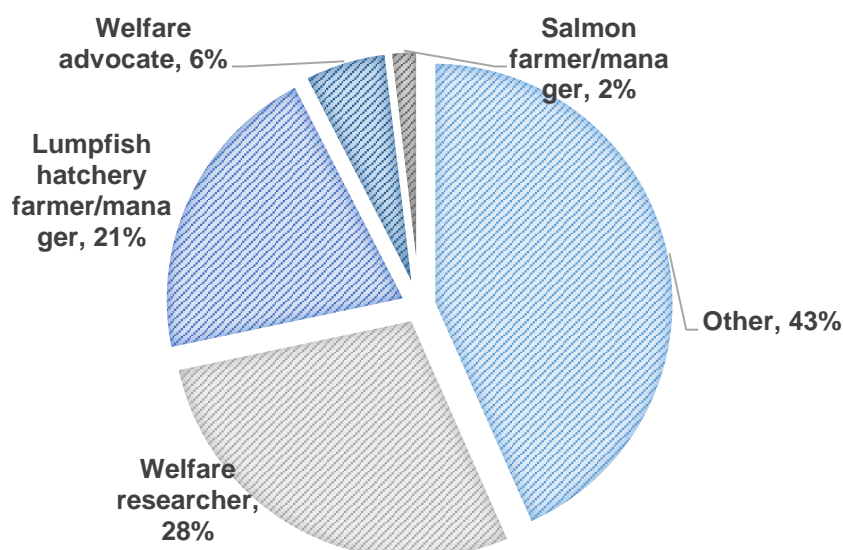
Event Planning & Organization

The event took place on the 14th of May, 2019 but event planning and organization started in December 2018. Planning included the following:

- Creation of task team
- Drafting of symposium programme
- Task agenda
- Implementation of task agenda
- Formal invitation to symposium speakers
- Communication strategy
- Creation of EventBrite page
- Implementation of Communication Strategy
- Speakers' attendance confirmation
- Final revision of symposium program and communication

Participants General Info

Overall, 78 delegates participated in the morning symposium, of 98 registrations on EventBrite. Participants attending the symposium included representatives of 26 companies, 6 Higher Education Institutions and 7 international speakers.

In total 53 participants, attending both the morning symposium and afternoon workshop answered a written form questionnaire with a multiple-choice question about their professional background (see graph below and full questionnaire on page 8).

Most participants selected "Other", this category included Veterinarians, Fish Welfare auditors, and feed producers just to mention a few (please refer to full list below).

The number and professional background of participants highlights that the event was well advertised and there is a great interest within the aquaculture industry on fish welfare.

Other	No. of Participants
Aquaculture & behaviour researcher	1
Assurance	1
Behavioural researcher	1
Certification	1
Cleanerfish coordinator	1
Clinical practice veterinarian	1
Disease Researcher/Animal Production Manager	1
Drug discovery	1
ENGO / Research	1
Equipment manufacturer & supplier	1
Feed producer	1
Fish Biologist	1
Fish welfare auditor	1
Funding	1
PhD Researcher	1
Postgraduate student in aquaculture	1
Research not in welfare	1
Research technichian/salmon quality	1
Salmon processor	1
Student	2
Technician	1
Vet	1

The symposium included eight talks by international experts, interest groups in welfare and farmers. Please see program below.

Symposium Program

1st Symposium on Welfare in Aquaculture
Welfare Indicators for Novel Species
Swansea University - 14th May 2019
Programme of events

09:00-09:30 Registration & Welcome at Taliesin Create

SYMPOSIUM TALKS: FARADAY LECTURE ROOM

09:30-09:40 Introduction by Professor Carlos Garcia De Leaniz

TALK 1
TIME
09:40-10:00

TITLE
Fish welfare criteria in worldwide aquaculture: the CAREFISH project

SPEAKER
Maria Filipa Castanheira
University of Algarve, Portugal

TALK 2
TIME
10:00-10:20

TITLE
The effects of stress on the welfare of farmed fish. Uses and misuses of cortisol measurements

SPEAKER
Professor Michail Pavlidis
University of Crete, Greece

TALK 3
TIME
10:20-10:40

TITLE
The use of fish behaviour in aquaculture and its use as an operational welfare indicator

SPEAKER
Dr Sonia Rey Planellas
Stirling University, UK

TALK 4
TIME
10:40-11:00

TITLE
Lessons learned from applying the principle of fish welfare indicators to farmed Atlantic salmon

SPEAKER
Malcolm Johstone
RSPCA Assured, UK

11:00 - 11:30 Coffee Break at Taliesin Create

TALK 5
TIME
11:30-11:50

TITLE
Development of operational welfare indicators for lumpfish

SPEAKER
Carolina Gutierrez-Rabadan
CSAR, Swansea University, UK

TALK 6
TIME
11:50-12:10

TITLE
Maintaining good welfare under aquaculture intensification: problems and solutions

SPEAKER
Daniel Phillips
Ocean Matters, UK

TALK 7
TIME
12:10-12:30

TITLE
An overview of people's perception on fish welfare

SPEAKER
Inês Grenho Ajuda
Compassion in World Farming, UK

TALK 8
TIME
12:30-12:40

TITLE
Symposium closing remarks. Intro to the afternoon workshop

SPEAKER
Dr Sara Barrento
Swansea University, UK

12:45 - 13:45 Lunch by Gower Seafood Hut at Taliesin Create

Workshop: The Welfare of Lumpfish
Location: Taliesin Create 13:45-16:45

Convenors: Professor Carlos Garcia de Leaniz, Carolina Gutierrez-Rabadan, Dr. Sara Barrento, Swansea University, Centre for Sustainable Aquatic Research

Workshop Program

The afternoon workshop included five activities: 2 individual activities and 3 group activities. Please see full details below. Participants were evenly distributed in 10 tables, each with a facilitator to guide participants in all 5 activities.

Workshop: The Welfare of Lumpfish
Taliesin Create 13:45 – 16:45

1

13:45-13:50
―――――
Fill in Knowledge Exchange Workshop Form

2

13:50-14:00
―――――
Each person to score 2 fish based on welfare score sheet

Individual activities

Each participant has 5 minutes to write on a post with it their personal views.

The group discuss and agrees on a minimum of 3 important topics. Each topic/idea is written on one individual post it.

3

14:00-14:30
―――――
List the challenges

4

14:30-15:00
―――――
List the solutions

5

15:00-15:30
―――――
List opportunities and future aims

Coffee Break: 15:30-16:00

Overview and wrap up discussion
16:00-16:45

Workshop Activities

Activity 1

Knowledge Exchange Workshop
The Welfare of Lumpfish

The workshop aims to bring together experts on lumpfish and salmon aquaculture, researchers, welfare advocates, policy makers, and interest groups in lumpfish welfare.

To kick-start the workshop, we invite participants to answer the questions below.

The workshop will focus on **better welfare for better lumpfish** and it will provide the opportunity for participants to:

1. identify key limitations and challenges in implementing lumpfish welfare
2. explore solutions and
3. contribute to good practice

Participant info

This form is anonymous, but for statistical purposes, we would like to know which of the following best describes your role:

☐ Lumpfish hatchery farmer/manager
☐ Salmon farmer/manager
☐ Welfare advocate
☐ Welfare Researcher
☐ Policy maker
☐ Other, please specify: _____

Q1. How useful are the following indicators for lumpfish welfare?

For each indicator please circle the option that best describes the indicator usefulness

BEHAVIOUR INDICATORS

1. Aggression (e.g. chasing, biting)

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

2. Lethargy (e.g. laying on the side, innactive)

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

3. Gasping

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

4. Loss of appetite

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

5. Erratic swimming (e.g. spiralling)

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

6. Others, please specify

PHYSICAL INDICATORS

7. Fin damage

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

8. Condition Factor / relative size

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

9. Poor growth

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

10. Eye damage (popeye)

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

11. Suction cup deformities

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

12. Skin damage (presence of lesions)

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

13. Body/eye darkening

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

14. Operculum/gill damage

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

15. Body deformities (e.g. mouth, spine)

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

16. Blood parameters (e.g. glucose, cortisol)

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

17. Diseases/Parasites

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

18. Mortality

Not useful	Rarely useful	Moderately useful	Useful	Very useful	Don't know

19. Others, please specify

Q2. From the list below, tick the indicators that are used in your facility/business to assess the welfare of lumpfish (if relevant).

☐ Not relevant – I don't work in this sector

☐ Aggression (e.g. chasing, biting)

☐ Lethargy (e.g laying on the side, innactive)

☐ Gasping

☐ Loss of appetite

☐ Erratic swimming

☐ Fin damage

☐ Condition factor

☐ Poor growth

☐ Eye damage (e.g. popped eye)

☐ Suction cup deformities

☐ Skin damage (presence of lesions)

☐ Body/eye darkening

☐ Operculum/gill damage

☐ Body deformity (e.g. mouth, spine)

☐ Blood parameters (e.g. glucose, cortisol)

☐ Diseases/parasites

☐ Mortality

☐ Others, please specify:

_____

☐ None

Thank you for your contribution

Activity 2

This form is anonymous, but for statistical purposes, we would like to know which of the following best describes your role:

- ☐ Lumpfish hatchery farmer/manager
- ☐ Salmon farmer/manager
- ☐ Welfare advocate
- ☐ Welfare Researcher
- ☐ Policy maker
- ☐ Other, please specify: _____

You should have 2 fish cards with pictures of one lumpfish. Each fish card has a key identifying number from 1 to 12; and a variable number of pictures showing the whole body, details of the fins and one picture of the suction cup. Based on the score sheet provided, please score 2 fish cards, by circling the numbers below for each descriptor (dorsal, caudal and anal fins, and the sucker deformities).

Fish no.	Dorsal Fin Damage	Caudal Fin Damage	Anal Fin damage	Sucker Deformity
	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4

Activity 3
List the challenges

Activity 4
List the solutions

Activity 5
List opportunities and future aims

Feedback from participants

Please click the picture or follow the link to listen to participants' feedback
https://youtu.be/ezrjr9wv-f8

Google forms feedback questionnaire

In total 32 participants out of 53 attending both the morning symposium and afternoon workshop answered a google form questionnaire about the event.
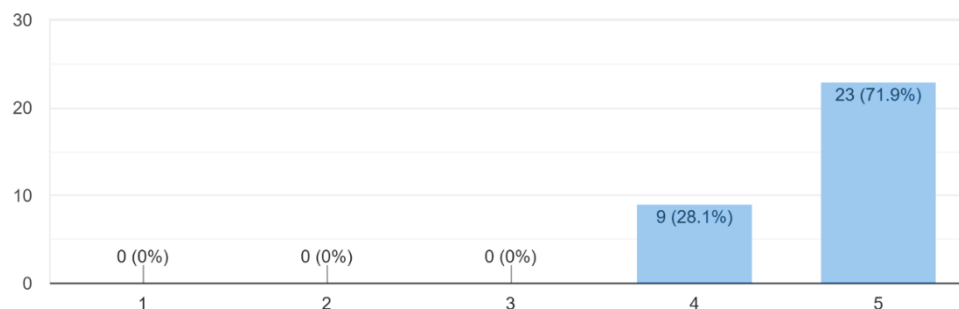
Therefore 60% of participants filled in the feedback form, which consisted of four multiple-choice questions (Likert scale), and one open ended question. The figures below show the questions and participants feedback.

1. OVERALL ASSESSMENT OF THE EVENT

All participants rated the event as very good or excellent, based on Likert scale: from 1 to 5, where 1 is insufficient and 5 is excellent.

What is your overall assessment of the event?
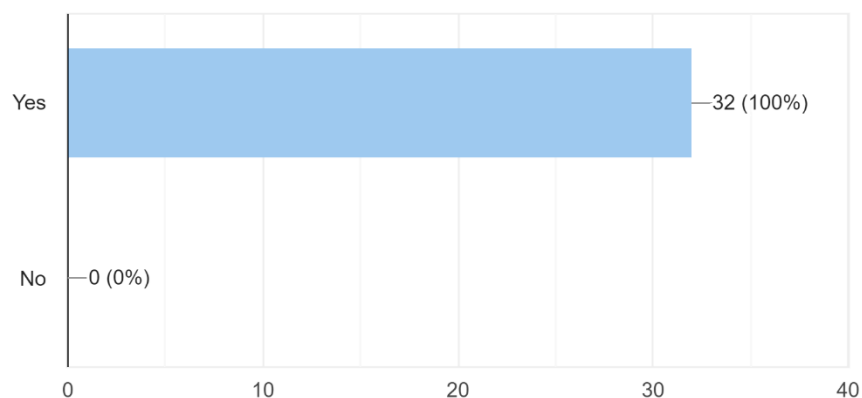32 responses

2. WHICH TOPICS OR ASPECTS OF THE WORKSHOP DID YOU FIND MOST INTERESTING OR USEFUL?

- The mixed tables and the presence of a facilitator
- Range of talks and topics
- Debating topic with different backgrounds
- Molecular physiology of stress
- The complexity around developing species specific welfare indicators and the clear need for welfare training across producers
- Behaviour and stress detection
- Knowledge transfer and different view points
- Industry updates on current practice and tech
- Presentations
- Workshop - our table had a really nice mix of people from different backgrounds

- Welfare cleanerfish
- Networking with people who have built up wealth's of interesting information through experience
- Presentations
- Cortisol measurements
- All of it was very informative and useful
- Workshop
- Learning more about lumpfish from other researchers
- Consumer results
- Behaviour metrics and welfare
- Fish behaviour and its use as an operational welfare indicator.
- Talks
- Welfare indicators and inclusion of welfare in standard farming programs
- Morning talks. Nice diversity
- OWIs
- The time given for discussion and networking. Also, the final wrap up was very well organised and helpful.
- Talks by Carolina & Dan
- Welfare indicator/consumer perception
- Practical methods of welfare assessment; Welfare as a precursor to health issues
- I found the development of welfare indicators particularly interesting and useful.
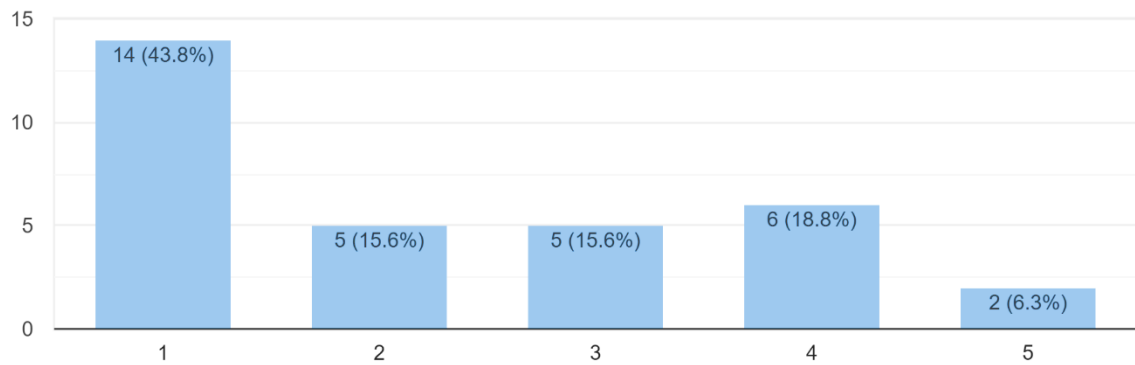- Discussion of measurable indicators of welfare

Knowledge and information gained from participation at this event: met your expectations.

32 responses

Knowledge and information gained from participation at this event: will be useful/applicable in my work (Definitely; Mostly; Somehow; Not at all)

32 responses

Where 1 is definitely and 5 is not at all

Please comment on the organization of the event (from 1 = insufficient to 5= excellent)

32 responses