FishEthoBase

A project of fair-fish international
fair-fish · Zentralstr. 156 · CH-Zurich

fishethobase.fair-fish.net

Billo Heinzpeter Studer, Director | Dr. Jenny Volstorf, Vice director | Dr. João Luis Saraiva | Dr. Maria Filipa Castanheira | Dr. Pablo Arechavala-López

Portraits: Christoph Dill (4) and Irmi Studer-Algader (1)

Assessment of fish species' welfare state and welfare potential in farming

FishEthoBase (*2013) establishes **ethological profiles** of farmed fish species in order to provide a scientific basis to improve **fish welfare**.
FishEthoBase **full profiles** represent and interpret all traceable findings from wildlife, lab and farm. **Short profiles** on the other hand focus on 10 core criteria, scoring the findings in a risk analysis along 3 dimensions: **Likelihood** of fish welfare under minimal farming conditions, **Potential** of improving fish welfare, and **Certainty** of the findings. The sum of high values in the 3 dimensions yields the **FishEthoScore**, a sharp assessment of the welfare state and potential of a species.

Major results so far:

- The short profiles yield an efficient ethological assessment of the welfare state and potential of species. Based on this experience, we plan to cover the most important 250 species within 3 years (currenty farmed: >230, FAO/SOFIA 2009).
- FishEthoScores across species differ remarkably, with amazingly poor results for some of the most farmed species.
- The scores provide advice for choice of species, suggest focal points in consultancy, and indicate research gaps.

Li	Po	Ce	FishEthoBase short profiles of the first 22 species*	
4	5	4	*Oreochromis niloticus,* Nile tilapia	➜ Table 1 below
4	1	3	*Seriola lalandi,* Yellowtail amberjack, Kingfish	
2	5	5	*Dicentrachus labrax,* European seabass	➜ Table 4 below
1	4	3	*Salmo salar,* Atlantic salmon	➜ Table 6 below
1	4	2	*Salvelinus alpinus alpinus,* Arctic char	
1	4	2	*Seriola dumerili,* Great amberjack	
1	3	2	*Cyprinus carpio,* Common carp	➜ Table 2 below
1	3	2	*Rachycentron canadum,* Cobia	
1	3	1	*Thymallus thymallus,* Grayling	
0	7	5	*Clarias gariepinus,* African sharptooth catfish	
0	5	4	*Scophthalmus maximus (Psetta maxima),* Turbot	➜ Table 8
0	5	1	*Litopenaeus vannamei,* Pacific whiteleg shrimp	
0	4	4	*Oncorhynchus mykiss,* Rainbow trout	➜ Table 5 below
0	4	4	*Sander lucioperca,* Pikeperch	
0	3	4	*Perca fluviatilis,* European perch	
0	3	3	*Salvelinus fontinalis,* Brook trout	
0	3	1	*Lota lota,* Burbot	
0	2	2	*Oncorhynchus masou,* Cherry salmon	
0	1	3	*Sparus aurata,* Gilthead seabream	➜ Table 3 below
0	1	2	*Acipenser gueldenstaedtii,* Russian sturgeon	
0	0	1	*Acipenser baerii,* Siberian sturgeon	
0	0	0	*Pangasianodon hypophthalmus,* Pangasius	➜ Table 7 below

* ordered by their ranks in Likelihood and Potential – Status: 20/06/2017

The 8 most farmed fish species assessed so far

ordered by the number of fishes concerned, based on www.fishcount.org.uk

Criteria:

1 Are minimal FARM likely to provide the **home range** of the species? Is there potential for improvement? How certain?
2 Are minimal FARM likely to provide the **depth range** of the species? Potential? Certainty?
3 Is the species likely to remain in a **single habitat?** Potential? Certainty?
4 Is the species likely to **reproduce** in captivity without manipulation? Potential? Certainty?
5 Is the **aggregation** imposed by the minimal FARM likely to be compatible with the WILD? Potential? Certainty?
6 Is the species likely to be **non-aggressive** and non-territorial? Potential? Certainty?
7 Are minimal FARM likely to match the natural **substrate and shelter** needs of the species? Potential? Certainty?
8 Are minimal FARM (handling, confinement) likely n**ot to stress** the individuals of the species? Potential? Certainty?
9 Are **malformations** of this species likely to be rare under FARM? Potential? Certainty?
10 Is a **humane slaughter** protocol likely to be available? Potential? Certainty?

Legend:
WILD: natural behaviour
FARM: farming conditions
Li: Likelihood of fish welfare under minimal FARM
Po: Potential of improving fish welfare
Ce: Certainty of our findings in Likelihood and Potential
High | ? or Middle | Low

Blue digits: FishEthoScore (sum of criteria scoring "High")

1. Oreochromis niloticus		1	2	3	4	5	6	7	8	9	10
Likelihood	4 (out of 10)	?				?					
Potential	5 (out of 10			?						?	?
Certainty	4 (out of 10)									?	?

2. Cyprinus carpio		1	2	3	4	5	6	7	8	9	10
Likelihood	1 (out of 10)	?		?		?	?	?			
Potential	3 (out of 10	?				?	?				
Certainty	2 (out of 10)	?				?	?				

3. Sparus aurata		1	2	3	4	5	6	7	8	9	10
Likelihood	0 (out of 10)				?	?	?	?		?	
Potential	1 (out of 10				?						
Certainty	3 (out of 10)				?						

4. Dicentrarchus labrax		1	2	3	4	5	6	7	8	9	10
Likelihood	2 (out of 10)					?					
Potential	5 (out of 10						?				
Certainty	5 (out of 10)										

5. Oncorhynchus mykiss		1	2	3	4	5	6	7	8	9	10
Likelihood	0 (out of 10)							?			
Potential	4 (out of 10										
Certainty	4 (out of 10)										

6. Salmo salar		1	2	3	4	5	6	7	8	9	10
Likelihood	1 (out of 10)		?			?					
Potential	4 (out of 10					?					?
Certainty	3 (out of 10)					?					

7. Pangas. hypophthalmus		1	2	3	4	5	6	7	8	9	10
Likelihood	0 (out of 10)	?	?	?		?	?	?	?	?	
Potential	0 (out of 10		?			?	?			?	
Certainty	0 (out of 10)		?			?	?			?	

8. Scophthalmus maximus		1	2	3	4	5	6	7	8	9	10
Likelihood	0 (out of 10)					?					
Potential	5 (out of 10										
Certainty	4 (out of 10)										