



LUMPFISH WELFARE CHART

The Lumpfish Operational Welfare Scoring Index (LOWSI) is a rapid and validated method to assess lumpfish welfare based on the assessment of four visual indicators: skin damage, caudal fin damage, eye condition and sucker deformities, and a fifth indicator based on the body mass index (BMI), also known as relative weight. The BMI indicates if lumpfish have a normal fish weight.

Use this table to: Score the four visual indicators

Score the BMI
The BMI is also known as the relative weight (Wr) it is an index used by fish farmers to indicate normal fish weight.

The BMI is the expected weight in percentage, with 100% being the normal weight, thus a BMI of 80% indicates that the fish is 20% underweight.

Skin Damage

- Reddening
- Abrasion
- Wounds
- Ulcers

Caudal Fin Damage

- Ray splitting
- Fin erosion

Eye Condition

- Injuries
- Cataracts
- Exophthalmia

Suction Disc

- Asymmetry
- Indentation
- Depression
- Papillae
- Curling

SCORE

0



No Damage

SCORE

1



Moderate Damage

SCORE

2



Severe Damage



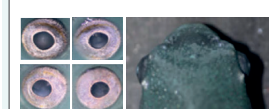
No Damage



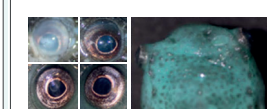
Moderate Damage



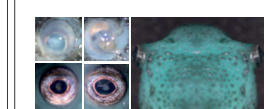
Severe Damage



No Damage



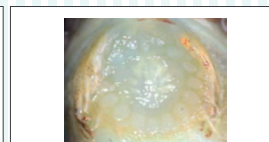
One Eye Damage



Both Eyes Damage



No Deformities



Moderate Deformity



Severe Deformity

BMI
(RELATIVE WEIGHT)

BMI > 90%
NORMAL

BMI=75-90%
UNDERWEIGHT

BMI < 75%
EMACIATED

To calculate the BMI and the LOWSI use the online Rapid Welfare Assessment tool, follow the steps below:

1

Scan the code with your phone.



2

Access the website:
bsciweb.swan.ac.uk/lumpfish/
Click on the Rapid Welfare Assessment Tool.

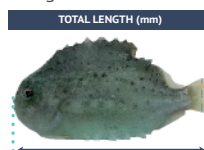
3

If you are scoring many lumpfish, download the excel file.



4

Measure the lumpfish total length in millimetres.



5

Measure the lumpfish weight in grams.



6

Score the 4 visual indicators. Record the data in the excel file. Upload the excel file, check the results, and the action plan.

The LOWSI

score ranges from 0 (worst) to 10 (best) where the higher score indicate lumpfish with better welfare

The LOWSI is calculated by subtracting 10 to the sum of the five indicator scores.

Lumpfish are classified into three welfare classes based on the values of the LOWSI. In this example, the LOWSI is 6, the welfare of this lumpfish is moderately compromised (class B).

Subtract 10 to the sum of the five indicators score.

10

1 SKIN DAMAGE 0

2 CAUDAL FIN DAMAGE 2

3 EYE CONDITION 0

4 SUCKER DEFORMITIES 1

5 BMI (Body mass index) 1

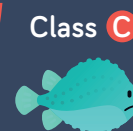
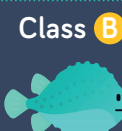
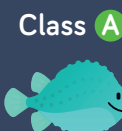
INDICATOR SCORE TOTAL = 4

$10 - 4 = 6$

LOWSI SCORE OF
8-10
Good Welfare

LOWSI SCORE OF
5-7
Moderately compromised

LOWSI SCORE OF
0-4
Severely compromised



Class A ACTION PLAN

- No action required
- Continue monitoring

Class B ACTION PLAN

- Increase frequency of monitoring
- Check mortality
- Check diet and food delivery
- Check use of shelters
- Check diseases & parasites
- Check sources of stress
- Check environment parameter

Class C ACTION PLAN

- Consider immediate corrective actions
- Consult with Veterinary Services
- Consider culling (under veterinary advice)
- Continue monitoring and reassess