



## MARINE FISH FARM MONITORING REPORT

REPORT FROM: **MARINE SCIENCE DINGWALL**  
REPORT TO: **OPERATIONS STAFF**

### SITE DETAILS

COMPANY: **Wester Ross Fisheries Ltd**  
LOCATION: **Ardessie A**  
RECEIVING WATER: **Little Loch Broom**  
CAGE GROUP:  
CONSENT NUMBER: **CAR/L/1003012**  
NGR: **NH 0466 9021**  
TEAM: **North Highland**  
SITE ID: **LIT1**

### SURVEY DETAILS

MONITORING METHOD: **Benthic**  
SURVEY TYPE: **Self Monitoring**  
SURVEY DATE: **16/09/2011**  
DATE RECEIVED: **31/12/2011**  
REPORT DATE: **06/02/2012**  
EVALUATED BY: **MW/AP** BIOMASS: **90 (t)**  
SUBMISSION NO: **N 3466** MAX BIOMASS **262 (t)**

**CLASSIFICATION: Unsatisfactory**

REPORTED BY: **Marine Biologist**

REPORTED BY: **Marine Chemist**

DATE:

# MARINE FISH FARM MONITORING REPORT

SITE ID LIT1 SUBMISSION NO: N 3466

## SUMMARY

*Evaluated against quality criteria stated in SEPA's Fish Farm Manual Annex F according to NWM/MAR/010*

The seabed was described as black mud at the cage edge & brown muddy sand at 25m & the Ref stations.  
No waste or fungus was reported.

### Biology:

An enrichment effect was evident at both the cage edge & 25m stations. Both stations were dominated by the enrichment polychaete, *Capitella*, with their ITI scores indicating degraded communities.

Due to the abundance of enrichment polychaetes, the cage edge station met SEPA's criteria within the AZE. Although their numbers had decreased at the 25m station, & species richness & diversity had improved, this station still failed SEPA's criteria outwith the AZE.

These stations showed little similarity to the Ref stations, which had high species richness & diversity, & their ITI scores indicated normal communities.

Based on the faunal data, this survey is classed as unsatisfactory.

### Chemistry:

Redox Potential (Eh): This site failed SEPA's action levels for redox at the 25m SE (rep 2) station with an Eh value of -154 at the 3 cm depth profile and also because negative values were recorded through all of the profiles at the 0m and 25m stations; the sediment at these stations is severely anoxic and degraded. There was no surface data for redox potential recorded at any station. The replicates at the Ref 1 station widely differed, the 1cm depth reading for the first replicate was 22 compared to 248 for the second replicate; the 5 cm depth profile differed similarly with a reading of 2 for the first replicate and 106 for the second. Values for the Ref 2 station were high and positive through all profiles.

Loss on Ignition % (LOI): LOI values were all very low and passed well within SEPA action levels. The values ranged from 1.3 to 2.2%.

Particle Size Analysis (PSA): PSA analysis showed that sediment at all stations was composed of brown silty fine to coarse sand with shell fragments; a strong marine odour was also noted at the 0m and 25m stations where the sediment was also dark brown indicating enrichment at these stations

This site is classified as UNSATISFACTORY for marine chemistry. This is due to the redox failure at the 25m SE station and the negative depth profile readings throughout the profiles at the 0m and 25m stations.

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## SITE DETAILS

12 x 15m<sup>2</sup> cages  
in continuous use for 6 months (after 4 years fallow)  
  
depth = 21m

## DATA QUALITY

A std survey was carried out, which complies with licence prior to variation for site-specific MPS being issued.

Survey carried out at peak biomass.

## INTERNAL RECOMMENDATIONS

**It is of concern that the area of enrichment has developed after only 6 months of use. However, the new MPS sets the AZE at 52m from the cage edge - whether the area of enrichment extends this distance will be seen in the next survey.**

