



**Monitoring Protocol No. 4**

**for**

**Offshore Finfish Farms-Audit of Operations**

(subject to revision from time to time)

**11 May, 2000**

# **Monitoring Protocol No. 4 for Offshore Finfish Farms - Audit of Operations**

## **1. Purpose of audit**

The purpose of the audit set out below is to provide for an integrated assessment of finfish farm operations, based on a number of key monitoring programmes, so as to enable the Department of the Marine and Natural Resources to

- Establish whether the terms and conditions of aquaculture licences are being complied with;
- Inform decisions on proposals for increased farm production;
- Advise farm operators of changes in environmental parameters or other factors which need to be taken into account in their operations, and
- Make information from monitoring programmes readily available to interested parties and the public.

## **2. Scope of audit**

The audit will assess in an integrated way a wide range of data from the following primary sources:

- Benthic monitoring (in accordance with Monitoring Protocol No. 1 for Offshore Finfish Farms);
- Water column monitoring (in accordance with Monitoring Protocol No. 2 for Offshore Finfish Farms);
- Sea lice monitoring (in accordance with Monitoring Protocol No. 3 for Offshore Finfish Farms);
- Annual finfish farm surveys by Engineering Division of the Department of the Marine and Natural Resources (see checklist at Appendix 1);
- Fish Health Monitoring by the Marine Institute (see checklist at Appendix 2);
- Product Monitoring by the Marine Institute;
- Monitoring of escaped fish by the Marine Institute;
- Other relevant surveys by the Department of the Marine and Natural Resources or the Marine Institute in relation to finfish operations or aquaculture generally.

### 3. Implementation

The data referred to will be collated and reviewed by the Marine Institute and forwarded to the Department of the Marine and Natural Resources for publication and any necessary action, on the following basis:

- Annually, in the case of data relating to mean sea lice figures, fish health status and escaped fish;
- Triennially, in the case of other data.

# **APPENDIX 1**

**INSPECTION CHECKLIST FOR MARINE FIN-FISH FARMS**

**NAME OF FARM: -**

**INSPECTED BY:-**

**DATE: -**

**FILE NO: -**

**SITE:-**

**LAND BASE:-**

**Tel:-**

**TIME:-**

**WIND FORCE: -**

**WIND DIRECTION: -**

**SEA CONDITION:-**

**TIME OF HIGH TIDE: -**

## FARM PERSONNEL MET:-

NAME

STATUS

### RECORDS

Are Records of:

Smolts brought on to the farm  
Amount of fish harvested  
Mortalities.

Good	Ave	Poor

### MANAGEMENT

Are chemicals stored properly  
Is food stored properly

Yes / No

Yes / No

Is the Pier used:

Public	Private

Name of pier:

If pier is public is its use  
causing an obstruction:-

Yes / No

If Yes is obstruction

Major	Intermediate	Minor

Is there equipment/supplies on the shore

Yes / No

If yes, is it stacked neatly

Yes / No

Is there any litter or debris on the shore or  
public pier, that may have come from the farm

Yes / No

Is there provision for litter collection and removal

Yes / No

Are land based facilities kept tidy

Yes / No

Are disinfection facilities readily accessible

Footbath (1)

Yes / No

Hand Wash (2)

Yes / No

Wheelbath (3)

Yes / No

CAGES:

Type	Number	Depth (Net)	Volume	No. of Fish*	Fish Size	Wt. Fish

\*State source of information

Are cages in licensed area:-

Checked by Insp.	Visual Inst. Survey
Yes	No

Are cages configured as specified\*

Yes / No

\*If no give details

Are the cages moored as specified  
(no. and direction of mooring ropes)

Yes / No

Are cages tidily arranged:-

Yes / No

Main colour of structures:-

Visual impact of farm:-

Major	Intermediate	Minor

Are navigation lights installed

Yes / No

Are navigation lights installed as specified

Yes / No

Are navigation lights working

Yes / No

Are navigation buoys installed as specified

Yes / No

Are Radar reflectors fitted

Yes / No

Are walkways non-slip

Yes / No

Are walkways of adequate width

Yes / No

Wear or fatigue on:

Mooring ropes

Shackles/Eyes

Joint / Hinges

Nets

Fouling on the nets

Major	Intermediate	Minor

Are there top predator nets.	Yes / No
Are there underwater predator nets.	Yes / No
Is there a seal scarer.	Yes / No
Do cages carry Life-belts (with lines).	Yes / No

### HARVESTING

How are fish killed	_____
Did you observe this	Yes / No
How is blood being disposed of	_____
Did you observe this	Yes / No
How is offal disposed of	_____
Did you observe this	Yes / No

### MORTALITIES

How are dead fish disposed of	_____
Did you observe this	Yes / No

### GENERAL VISUAL OBSERVATIONS

Is there any increase in the turbidity of the water	Yes / No
Is there any visible trace of oil, fat or grease on the water or on the shoreline	Yes / No
Is there any evidence of scum, froth or foam on the water	Yes / No
Is there any litter or debris in the water	Yes / No

### BOATS

List boats used on the farm: -

Type	Length	Reg No.



Do boats used appear to be to be sea worthy and appropriate  
to the site conditions

Yes / No

If no please specify:

Did all persons seen at sea wear life-jackets

Yes / No

OTHER COMMENTS: -

/Overall assessment

## OVERALL ASSESSMENT

# APPENDIX 2

## FISH FARM INSPECTION REPORT

Part 1

Farm:-	Lab. Ref. No.:-F
Address:-	Site:-
Tel:-      Fax:-	Main Activity:-
Contact Name:-	Inspector:-
Fish species:-	Date:-

## License details

Licensed:-

License No.

Under Review    Y/N

License Applied for-

Site	Species	Licensed Production	Actual Population/Nos.

## Site Information

Water Supply:-

Temperature:-    °C

Type of Site:-

Spring      Y/N    Stream      Y/N

Bore Hole      Y/N    River Catchment:-

Current Stocks	Type Cages/Tanks	Number Cages/Tanks	Number Empty

## Broodstock

	Number	Mortality	Disease
Female		Y/N	
Male		Y/N	

Details / Reason For Morts.

## FISH FARM INSPECTION REPORT

Part 1

Main activity		Annual Produce			Ann.Produ.
	Species	Tonnes		Species	Tonnes
Fry Production			Ongrowing		
Ova Production			Restocking		
Parr Production			Table Product.		
Smolt Production					

Movements					
Permits in use:-		Y/N	Permits available for inspection:-		Y/N

<u>Transfer</u>		Age & Species	Number of Fish	Associated Mortalities Y/N & Nos.	Date
From	To				

Following:-		Y/N	Harvesting:-		Y/N
Reason	From	To	Date	Tonnes	Associated Mortality

Chemicals and Treatments in use/or used prior to harvesting on farm.					
ANTIBIOTICS	DISINFECTANTS	INSECTICIDES	VACCINES	CHEMICALS	
Amoxycillin Tri Hyd. Metasul Oxolonic Acid Oxytetracycline Sulfatrim	Buffodine Chloramine T Copper sulphate Iosan (Vanodine) Roccal Sodium Hydroxide	Cypermethrin Ivermectin Nuvan	Biojec 1500 Biojec 1800 AVL	Formalin Malach. Green	
Product/ Quantity	Reason for use		Result		Date treated

Storage:-					
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## FISH FARM INSPECTION REPORT

Part 1

Feed

Type in use:-

Specify

Unmedicated:-

Medicated:-

Storage:-

Recent Health History

Farm Veterinary Surgeon:-


Record keeping

	Chemicals & Medicine	Fish movements	Mortality records
Records books in use			
Records available for inspection			
Records unavailable			

Other comments

General assessment

	Food Storage	Chemicals & Medicine Storage	Management	Health	Record Keeping
fair					
good					
poor					

Other comments

# FISH FARM INSPECTION REPORT

Part 1

[illegible][illegible]

## Sampling History &amp; Details

Part II  
Lab. Ref. No.:-S

Marine  Fresh water  Aquaria  Other

Temp.  °C Water Quality:-

## Sample History &amp; Information

EU Directive 91/67  
 EU Directive

## Current Treatments

Compound	Fish treated	Reason	Date	Compound	Fish treated	Reason	Date
Alfacron				Ivermectin			
Amoxycillin Tri Hyd				Oxolinic Acid			
Buffodine				Oxyteracycline			
Chloramine T				Roccal			
Copper sulphate				Sodium Hydroxide			
Cypermethrin							
Formalin							
Formalin & Mal. G				Vaccines			
Malachite Green							
Metasul							
Nuvan							

## Result of Treatment.

## Sample Details

Sample No.	Type of sample	Age	Species	State of Fish	No. of Fish	No's. Fish tested per category:-			
						Parasit.	Bacti.	Histo.	Viro.

Type of sample:- fresh =F, frozen = Fn, fixed =Fd, unsuitable = U.

State of fish:- alive = A, moribund = M, dead = D.

CDM Field Data.xls



## Post Mortem

Part II  
Lab. Ref. No.:-S

## Macroscopic Observations

Swimming Behaviour			Feeding Behaviour	
Flashing	Y	N		yes
Jumping	Y	N		
Spiralling	Y	N		
Surface swimming	Y	N		
Normal	Y	N		

External Examination				No. fish	Other Details
Colour:-		Dark	Normal	Pale	
Excessive mucus (gills)		Y	N		
Excessive mucus (skin)		Y	N		
Eyes		Normal	Abn		
Gills		Normal	Abn		
Mouth		Normal	Abn		
Skin:-					
Scale loss		Y	N		
Fin rot		Y	N		
Tail rot		Y	N		
Lesions		Y	N		
Ulcers		Y	N		
Trailing casts		Y	N		

Internal Examination					No. fish	Other Details
Gall Bladder	Normal	Pale	Haem.	Enlarged		
Stomach & Intestine	Normal	Pale	Haem.	Enlarged		
Heart	Normal	Pale	Haem.	Enlarged		
Kidney	Normal	Pale	Haem.	Enlarged		
Liver	Normal	Pale	Haem.	Enlarged		
Pancreas & PC	Normal	Pale	Haem.	Enlarged		
Spleen	Normal	Pale	Haem.	Enlarged		
Swim Bladder	Normal	Pale	Haem.	Enlarged		
Gonads	Yes	No				
Flash in gut	Yes	No				

Comments

## Post Mortem

Part II  
Lab. Ref. No.: -S

## Microscopic Observations

Parasitology	No. fish	Severity	Parasitology	No. fish	Severity
Anisakis			Lepeophtherius		
Argulus			Myxosoma cerebralis		
Caligus			PKD		
Chilodonella			Saprolegnia		
Costia			Scyphidia		
Dactylogyrus			Trichodina		
Diphyllbothrium			Trichophyra		
Eubothrium			Other		
Gyrodactylus salaris					
Gyrodactylus sp.					
Hexamita			No parasites observed		
Ichthyophonus			Total no. of fish sampled		
Ichthyophthirius					
G = Gills, S = Skin, GT = Gut, K = Kidney, B = Brain, F = Fin Severity:- L = Light, M = Moderate, H = Heavy.					

Additional Notes

Signed:-

Date:-