

**Inland Fisheries Ireland**  
**Standard Operating Procedure (SOP)**  
**For Pike management operations using electrofishing apparatus**

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**Version Final V0.3**

## DOCUMENT CONTROL SHEET

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## Version Control Table

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V0.1	Draft	Dr. Declan Cooke	Dr Greg Forde	Dr. Ciaran Byrne	30/07/2015
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**This Standard Operating Procedure applies to pike management operations using electrofishing equipment. It provides guidelines and instruction for staff engaged in these operations so that they are carried out in a safe and consistent manner. It is envisaged that this document will be modified over time to reflect advances in equipment available and progress in our understanding of pike management techniques.**

**The current version of this SOP is based on the requirements of IFI's Wild Brown Trout and Pike Policy documents and the equipment currently available to IFI staff for the purposes of pike management on wild brown trout fisheries. In addition it also takes into consideration the latest IFI Fish Stocking Guidance document (August 2015).**

## **1. Boats and Equipment**

### **Introduction**

There are currently 2 types of vessel available to IFI staff with which electrofishing stock management operations are carried out. Both are certified as compliant with the relevant safety standards required by IFI for these operations and are CE approved.

The "Pioner multi" is used on larger waterbodies and is capable of carrying 1,350kg in calm to moderate conditions. Pioner boats are produced by Cipax AS under the supervision of Det Norske Veritas (DNV GL). DNV control, test and approve all Pioner models in accordance with CE recreational craft directive (RCD) regulations. Cipax AS is ISO 9001-2008 and ISO 14001-2004 accredited. Cipax AS have confirmed that the transport of live fish in an appropriate tank in the Pioner Multi is safe if the tank is lashed down, covered and does not lead to the overall loading of the boat exceeding manufacturer's guidelines. This is subject to the approval of the Marine Survey office (MSO) who have indicated concern over the fitting of additional equipment to these boats as to whether this would have any potential impact on the boats stability, this is further compounded by the effects of free surface movement of water within the tank which could also have a negative effect of stability. The MSO have therefore recommended that a heel test is undertaken and minimum freeboard test as per the requirements of P2 passenger boat stability standards ( S.I 273 of 2003). They also need to review crew maximum numbers, defining river and weather operating conditions and possible modifications to the tanks to reduce free surface effects. In the absence of the completion of these additional tests any pike operations will not include the transport of live fish.

The "Rigiflex 370" boat is used on smaller water-bodies (< 50 Ha), rivers & canals where vehicular access can be difficult. It will carry 440kg and is generally used for surveying and pike management on rivers or small lakes. The 370 conforms to EU standards CE Category. D (SHELTERED WATERS: Designed for voyages on sheltered coastal waters, small bays, small lakes, rivers and canals where conditions up to, and including, wind force 4 and significant wave heights up to, and including, 0.5 m may be experienced). This vessel is not suitable to carry a fish tank (REF: EU DIRECTORATE GENERAL FOR INTERNAL POLICIES POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY Design Categories of Watercrafts).

## 1.0 Health & Safety

- 1.01 During all pike management operations, sections 14.101 and 14.111 of the IFI Safety Statement (Appendix i) on Netting & Electrofishing from Boats must be adhered to.
- 1.02 Equipment must be safely stowed, positioned and, where necessary, lashed down (see Appendix ii).
- 1.03 The stability of the boat must be maintained at all times by ensuring loads are evenly distributed.
- 1.04 Loads must never exceed maximum recommended by supplier – this to include any water payload.

## 1.1 Communications & Conditions

- 1.11 The weather forecast will be obtained in advance of electrofishing operations. A standard reference source for weather forecasts is for example: (Met Éireann forecast for Inland Lakes). <http://www.met.ie/forecasts/inland-lakes.asp>
- 1.12 A safety patrol log and checklist sheet must be partially filled before operations commence, the form is to be completed on return to shore. (See Appendix iii).
- 1.13 All boats must have radio communications and at least 1 mobile phone to a designated shore backup.
- 1.14 A dry bottle with flares, tool kit, torch, fire extinguisher and first aid kit must be on board all electrofishing craft operating in open water.
- 1.15 Electrofishing operations from a boat can only be carried out in wind conditions less than force 5 on the Beaufort scale, in open waters.
- 1.16 Wind/weather conditions must be re-assessed regularly throughout the period of operations and the forecast referred to where necessary.
- 1.17 An agreed route/work area should be established with the shore backup staff member who will be informed of any major deviations to the agreed plan. (See sec. 2.01 Staff memb. 4).
- 1.18 Electro-fishing will not be carried out in wet weather.

## 1.2 Fuel & Engine

- 1.2.1 Adequate fuel must be carried at all times. (*use the rule of thirds (1/3 there, 1/3 back and 1/3 in reserve).*)
- 1.2.2 The fuel line from the tank to the engine must be connected and checked to ensure it is in good condition and free of kinks and leaks.
- 1.2.3 Clamps or bolts should be used to secure the engine to the boat. Engine restraint cables may be used for additional security.
- 1.2.4 The engine must be fitted with a kill cord, with one end connected to the kill switch and the other end to the leg, wrist or lifejacket of the coxswain.

- 1.2.5 Subsequent to starting, the engine should be allowed to run for a period before setting off to ensure that a good flow from the cooling water tell-tale is confirmed.

### **1.3 Electrofishing Equipment**

- 1.3.1 Equipment on-board for electrofishing operations will include generator, transformer, cathode, anode, control box, outboard, fuel and knotless hand-net.
- 1.3.2 The electrofishing equipment on-board should be organised to permit adequate movement at the bow of the boat and allow free access to the stern (see Appendix ii).
- 1.3.3 The generator emergency stop button should be located within arm's reach of the staff member at the helm.
- 1.3.4 The exhaust outlet of the generator emits heat and fumes hence should be positioned in a way to prevent contact to any part of the craft or personnel on-board.
- 1.3.5 If the operation is to include the removal of live fish the containers for keeping the live fish should be not less than 250 litres in capacity containing between 100 and 150 litres of water with an appropriate recirculation system, the container must be also be fitted with a suitable cover *subject to the recommendation of the MSO*.
- 1.3.6 All electrofishing equipment should be checked regularly for wear and tear and must be serviced annually by an accredited supplier.
- 1.3.7 Electrofishing equipment and practices should be regularly reviewed to ensure that the best available technology and techniques are applied to the operations.

### **1.4 PPE & Biosecurity**

- 1.4.1 The biosecurity form required for catch and record management for these operations will be as per (Appendix iv).
- 1.4.2 Staff using high voltage electrofishing equipment must use the following personal protective equipment: Personal Floatation Device (PFD), Polarised Sunglasses, Insulated gloves and clothing to protect from the elements (e.g. dry-suit, overalls, wellingtons/wader's, rain wear) and hearing protection during operations if required(see also Appendix i).
- 1.4.3 When staff engaged in pike management operations are required to move equipment or personnel from one waterbody to another, the biosecurity protocol for IFI field staff must be adhered to (see Appendix v).

## **2. Staff & Operations**

### **Introduction**

Previous experience has demonstrated that the safest and most effective staff compliment for pike management operations comprises an electro-fishing team of three members on board the boat, with shore back-up provided by a fourth member.

Team member 1: Coxswain operates the outboard and manoeuvres the boat through the agreed fishing area and observes closely all activity and risks. An emergency cut out switch/button will be located within close reach of the coxswain.

Team member 2: Operates the anode. When fish are stunned the anode will be used to steer the fish towards the catching net. This crew member will direct the coxswain when necessary, towards fish or away from danger.

Team member 3: Operates the catching net and is responsible for fish handling and fish welfare. This team member will take selected fish on board and will place them in the tank (if fish are being translocated) or euthanised the fish and place them in the holding box (See Section 3.2). These positions can be rotated at intervals by the Officer in charge with agreement of team members in the interest of H&S.

Team member 4 will be based on land and as close as is practicable to the operations and will communicate on an hourly basis, at least, with the boat team. This team member will have good knowledge of the area of operations. In the event of a loss of contact for more than the allotted time, team member 4 will report to their line manager and proceed to the area to investigate until contact has been re-established.

## **2.0 Staff**

- 2.0.1 An officer in charge (OIC) will be appointed for the purposes of the operation by agreement with the team and/or selected by Inspector/ Assistant Inspector.
- 2.0.2 The officer in charge will have identified, in advance, the type of operation to be carried out with the Assistant Inspector or the Inspector for that area.
- 2.0.3 The officer in charge will check with operators that all is clear to start fishing and all team members are comfortable to do so.
- 2.0.4 All team members will have completed training in boat handling, fish handling, electro-fishing and first aid.

## **2.1 Operations**

- 2.1.1 A conductivity check will be carried out on the water body on which management operations are intended, in advance of fishing with an approved device.
- 2.1.2 When the generator is started, settings must be checked and adjustments made to suit the conductivity.
- 2.1.3 The cathode will then be checked and released overboard away from the outboard propeller by the Coxswain.
- 2.1.4 Connections will be checked between the control box and the transformer and from the transformer to the generator by the officer in charge.
- 2.1.5 Throughout the operation all aspects of fish welfare (Section 3) will be adhered to by the team.
- 2.1.6 When fishing ceases for the day the team will return to base, check all equipment and the officer in charge will report any incidents to Assistant Inspector/Inspector for the area.

- 2.1.7 All fish captured will be either re-located or stored for disposal by an approved rendering service. Dealings with any such service will be recorded on form No. EC1004/2009 (see Appendix vi).
- 2.1.8 A log will be completed by the officer in charge and signed after each operation. The log will be retained for a period of 3 years.

## **2.2 Operational Health & Safety**

- 2.2.1 At least one team member should have a detailed knowledge of the area to be fished.
- 2.2.2 All matters of health and safety including incidents, dangerous occurrences and near misses must be reported to the line manager and recorded in the appropriate accident record book.
- 2.2.3 Suitable personal protective equipment will be worn by all staff as per 14.92.1 of the IFI safety statement (see also section 1.4.2).
- 2.2.4 Smoking in, on or around boats is strictly prohibited.

## **3.0 Fish Welfare**

### **Introduction**

All non-target fish species shall be avoided during operation and if encountered shall be allowed to swim away from electrical current and will only be taken on board for resuscitation if in obvious stress. Any such fish retained of necessity will be recorded.

All staff currently engaged in pike management operations must have completed training in fish handling and welfare. IFI staff is advised to carefully handle, transport and where necessary, humanely euthanise fish during the course of these operations.

Equipment has been made available to IFI staff to ensure that the highest possible standards of fish welfare are achieved. Extensive investigations have been carried out to ensure that the most appropriate equipment is used for fish handling and transport. Evaluations of this type of equipment are on-going and any new innovations that will assist in this operation will be adopted in due course.

### **3.1 Measurement**

- 3.1.1 Where a pike is estimated to be approximately 80cm or larger, a measurement will take place immediately using a marker on the gunwale of the boat. Where a pike is measured at > 85cm, a determination will be made by the officer in charge whether the pike is in a fit state for immediate release.
- 3.1.2 Any healthy pike caught that is in excess of or equal to 85cm from the snout to the fork in the tail will be returned immediately, in accordance with section 5.4.2 of IFI's pike policy.
- 3.1.3 Any pike < 85cm will be retained on the boat and either dispatched using a prescribed implement (baton), by percussive stunning, or held in an on-board tank for recuperation and eventual re-stocking to an approved recipient water-body – if such is available (see Appendix vii).

### **3.2 Additional Equipment**

- 3.2.1 The implement used to dispatch pike will be a baton with a circular cross-section. It will be made of wood, be of 30cms in length and weigh in excess of 200g.

- 3.2.2 The electrofishing boats currently in use by IFI are Cipax AS ISO 9001-2008 and ISO 14001-2004 accredited. The “Pioner multi”, used on larger waterbodies is approved to carry 1,350kg in calm to moderate conditions. (Section 1.00).
- 3.2.3 Where live transfer of fish are to take place a covered tank, as described in section (1.3.5) fitted with a *Rule Charge N' Flow Transfer bilge Pump 280 GPH, 12 VDC RP280KR* or similar specification device, is recommended for safe & humane transfer of fish.
- 3.2.4 The tank will be carried on board the large electrofishing boat during pike management operations when pike are being caught for transfer. It will be part filled with water and the pump engaged as required to safely and humanely hold fish, on a temporary basis, while being transferred to appropriate recipient waters.

### 3.3 Handling of Fish

- 3.3.1 The decision to euthanise or retain pike for re-stocking will be made on the basis of:
- The health and safety of IFI staff.
  - The suitability of the craft in use to carry a payload of live fish and water.
  - The recommendations of the Marine Surveyors office (MSO).
  - The prevailing weather conditions at the time.
  - The health status of the fish and their likelihood to survive as determined by the Officer in charge.
  - The availability of an appropriate designated recipient water-body within a reasonable distance (Appendix vii).
  - A fish health screening of fish from the donor water body either from the Marine Institute or appropriate veterinarian stating that the fish screened posed no disease risk to the recipient water body.
  - Where no suitable waters for transfer exist within a reasonable distance of the fishing activity no fish will be retained.
- 3.3.2 All euthanised fish will be stored on board the boat in a covered fish box, brought back to the appropriate base and disposed of using an approved animal waste disposal service (see Appendix vi).
- 3.3.3 Where fish are being retained for transfer, all handling will be carried out in accordance with recommendations.
- 3.3.4 Fish destined for re-stocking will be retained in the on board tank for no more than 3.5 hours and the quantity of fish held in the tank will not exceed a total biomass weight of 75kg.
- 3.3.5 Fish destined for re-stocking will be brought ashore at a pre-determined location, where they will be transferred to a fish transport tank and / or to a holding cage for recovery (section 3.36).
- 3.3.6 The fish transport tank and / or holding cage will have a maximum capacity of not less than 2m<sup>3</sup>. The facility will be designed to ensure adequate amounts of fresh, oxygenated water and space are available to facilitate fish recovery and minimise stress and should be secure.
- 3.3.7 The Rigiflex 370 boat is used on smaller waterbodies where vehicular access can be difficult. It can carry 440kg and is generally used for surveying and pike management on rivers or small lakes. (see section 1.00). Operations carried out using this craft will not involve the retention of live fish for relocation. All pike caught during these operations will be euthanised or if appropriate - released.

## 4 Interaction with the Public

### Introduction

Occasionally in the past and in recent years, pike management operations on managed Wild Brown Trout fisheries have been subject to particular scrutiny by some members of the public. The importance of proper conduct, on the part of IFI staff, in such circumstances needs to be recognised. Staff engaged in pike management operations may be required to carry out their work with the additional burden of public observation, sometimes in a hostile environment.

Social media and the widespread availability of recording devices mean that the actions and behaviour of IFI staff can quickly become a matter of public record. In response to these factors, IFI staff, who are routinely engaged in pike management operations, shall receive training in public relations. In addition to this training, an explanatory pamphlet has been produced (see Appendix viii) which can be given to members of the public who engage with IFI staff during such operations. This pamphlet provides information on the issues likely to be of public concern with regard to pike management.

### 4.1 Public Health & Safety

- 4.1.1 When operations are being conducted in the presence of the public, staff should continue to carry out their work in accordance with this SOP while ensuring the health and safety of all persons present.
- 4.1.2 Where necessary, the public will be made aware of the potential hazards inherent in the use of high voltage electrical currents in the presence of water.
- 4.1.3 It is vital that the public is protected from this hazard and they should therefore be advised not to approach within 20 metres of any electrofishing operation (Ref: IFI H& S Officer).
- 4.1.4 Where members of the public wish to observe management operations, they may do so only from a safe distance of greater than 20 metres.
- 4.1.5 If members of the public fail to act in accordance with advice from IFI staff, electrofishing operations should temporarily cease. The person or persons should be cautioned and informed that they may be committing an offence under section 301-(7) of the Fisheries (Consolidation) Act 1959.

### 4.2 Staff Under Observation

- 4.2.1 Where staff are being observed by a member of the public, possibly using a camera, they should be confident in the knowledge that they are operating to an SOP and work as normal, following established procedures. Staff should not allow themselves be drawn into a debate with any persons unnecessarily. The information pamphlet (See Appendix viii) should be presented to the person/s involved and any queries addressed by the officer in charge (Section 4.11) who may refer to the information in the FAQ.
- 4.2.2 If members of the public become abusive to IFI officers during the course of pike management operations, staff should operate on the basis that abuse is not acceptable and the officer in charge should advise the person making abusive statements that such behaviour is unacceptable. If a person continues to abuse the staff and interferes with or obstructs the work, the matter may be treated as an offence under section 301-(7) of the Fisheries (Consolidation) Act 1959.

- 4.2.3 It should be made clear that obstruction of a Fisheries Officer can result in prosecution. If obstruction still does not cease, the person(s) involved must be cautioned and any further comments or behaviours recorded in writing.
- 4.2.4 If obstruction or abusive behaviour persists beyond section 4.23 above, the situation is likely to become a matter for An Garda Síochána to deal with under the Public Order Act. The officer in charge should endeavour to de-escalate the situation and contact the Gardaí.

### **4.3 Information**

- 4.3.1 IFI have prepared an explanatory pamphlet in relation to pike management on designated wild brown trout fisheries. Staff should carry copies of this leaflet with them when engaged in pike management operations.
- 4.3.2 This pamphlet contains contact details of designated staff members in IFI and will be offered to members of the public who indicate a wish to find out more about IFI policy and procedures regarding pike management (see also FAQ Appendix viii).
- 4.3.3 IFI staff will, at all times, interact with members of the public in a courteous and professional manner.

## Appendix i: IFI Safety statement on Electrofishing operations

### 14.92 High Voltage Electro-fishing from Boats

#### 14.92.1 Personal Protective Equipment

Durable rubber gloves (gauntlet style that reach the elbow) should be worn. The objective is to keep hands and arms as dry as possible. Dry skin is a good insulator.

Ensure Wellington boots/waders are worn and in good condition.

Personal Flotation Devices must be worn at all times.

Always check that your personal flotation device is in good condition and check that the cylinder has not been tampered with or removed.

Personal Flotation Devices shall be serviced annually and access to records shall be freely available to staff.

Staff working near the generator must wear the provided personal hearing protection. Contact the H&S Executive for noise monitoring.

**If multiple boats are used, hearing defenders with built in radio communication must be used. This is to ensure communication between each boat.**

The use of sun factor, head & neck coverings should be worn in fair weather conditions.

Polaroid glasses where appropriate should be provided to all staff involved in electro-fishing.

#### 14.92.2 Unsafe Environment/Conditions

Electro fishing equipment to be removed IMMEDIATELY from water in circumstances such as the following:

- \_ Increase in speed of flowing water
- \_ Obstructions noted
- \_ Presence of animals or people on the banks
- \_ Person falling overboard
- \_ Equipment falling overboard
- \_ Rain/Heavy mist/Lightening

The area to be fished must be surveyed in advance of the operation.

#### 14.92.3 Safety Standards of Equipment

Equipment to be in good working order and checked before use, no defective equipment, frayed cables or damaged control boxes may be used.

Regular servicing and maintenance of equipment is required. Servicing should take place annually before the field season commences. Service records must be kept at the office.

Each piece of equipment should have a scaff tag indicating the service date and the date of next service.

Faulty equipment should be removed from service until repaired by a competent person.

Equipment to comply with safety standards and specifications of the Low Voltage Directive.

Generators must be secured/tied down on board; power must be fed from the control box not the generator.

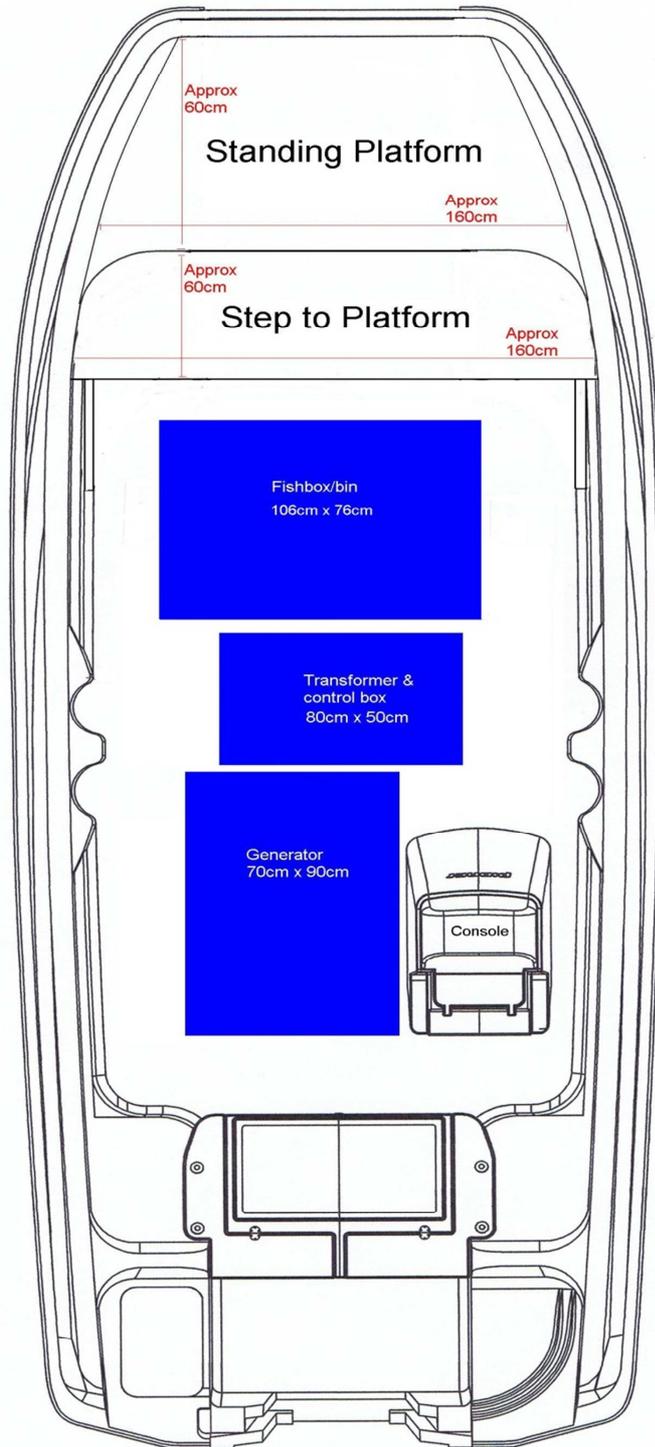
Where applicable new boats should be tested for electrical continuity of metal surfaces using a multi-meter before it is used for electro-fishing operations.

The following equipment should be carried:

- \_ First aid box,
- \_ Fire extinguisher(Dry Powder)
- \_ Radio/mobile phone
- \_ Spares for generator
- \_ Repair kit for boat
- \_ Knife
- \_ Spare rope
- \_ Sufficient fuel for intended duration
- \_ Baler
- \_ Spare oars and oar locks
- \_ Straps (for securing items)
- \_ Rito-mastic (for wood repairs)
- \_ Bushman

Appendix ii: Recommended Positioning of equipment in Boat

Safety rail on bow and 1 meter down port and starboard side from bow



## Appendix iii: Safety Log for Lake Operations

Date:		Time	am / pm	Launch Location	District	Crew:
Officer in Charge		Weather Forecast:			Communications Method/s:	
Reason for Launch		Water Conditions:			Test Check <input type="checkbox"/>	
		Launch Site Suitability:				
		Boat Type:		Outboard:		
PRE-DEPARTURE CHECKS CARRIED OUT						
Personnel		Tick if in order	Boat Equipment			Tick if in order
Life Jacket/s			Pair of Oars or Auxiliary Outboard			
Life Jacket service date		DATE	Baler			
Appropriate Clothing			Anchor			
Appropriate Footwear			Fire Extinguisher (Serviced)		DATE	
Vehicle Equipment			Boat Hook			
Spare Wheel			Engine (Serviced)		DATE	
Tailboard (Inspect Brake & Indicator Lights)			2 Deadman Switch & Cord			
Trailer Winch			Fuel			
Check Fuel is Stored Correctly			Tool Kit & Spark plugs			
Tie Down Strap			2 Orange Smoke Flares (Serviced)		DATE	
Defect Inspection on Trailer & Hull			2 Parachute Flares (Serviced)		DATE	
		Bung Placement	Dry Storage Container			
		Bearings	Oar Pins and Spares			
		Tyres	First Aid Pack (Serviced)		DATE	
		Weld Joints	Communications			
Pre-Launch			Torch			
Assign Tasks			Knife			
Tie Outboard to Boat			Length of Floating Rope			
Inspect Prop			Communications Log			
Run Outboard			Time:		Time:	
Inspect cooling system			Time:		Time:	
			Time:		Time:	
Comments:						
<i>Contact backup on engine failure ⇒ tow or row ashore ⇒ call 112 or 999 and ask for the coast guard if there is a threat to life</i>						
Signed:		(Officer in Charge)	Date:	Signed:		(Vehicle driver)

## Appendix iv: Standard Catch Record Form



SM3

## Removed Fish (Weekly)

Catchment			Watercourse			Date
Method			Number			Crew/Club
	Species	Length (cm)	Weight (kg)	Scale Env. No.	Sex	Stomach contents
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Pike		Total Weight				
	Bycatch					

## Appendix v: Biosecurity Protocol for Field Survey Work

Invasive species are an ever present threat in our aquatic and riparian systems and it is imperative that none of our field operations exacerbate the risks to the environment and to the economy that are posed by these species. Fish parasites, pathogens and diseases also represent a significant threat to the health status of our watercourses. The introduction or transfer of such pathogens or diseases has the potential to wipe out large populations of fish in affected waters or catchments. Vigilance is required if we are to stop the spread of invasive species and fish diseases, and it is imperative that we in IFI lead by example in the ongoing struggle against these significant threats to our fishery watercourses.

The need for basic biosecurity in our fisheries operations must become ingrained in the psyche of our staff if we are to do our part to stop the spread of hazardous invasive species and fish pathogens. Much to do with biosecurity involves awareness, common sense and agreed procedures. Listed below are some basic procedures that must be implemented when conducting field work.

Each field vehicle must carry a 'disinfection box'. This should contain Virkon Aquatic or another proprietary disinfectant, a spray bottle, cloths or sponges, a scrubbing brush and protective gloves.

On completion of any field operation, all equipment used must be treated according to the procedures listed below. Equipment in this respect includes the following: boats, trailers, outboard motors, anchors and rope, weights, tanks, buckets and bins, all PPE (including boots, wellingtons, waders, wetsuits, dry suits, waterproof clothing, life jackets, diving apparatus, etc.) and any technical or sampling apparatus used as part of the survey / field work. Protective gloves must be worn when using any disinfectant solution in any of the procedures listed below.

- Visually inspect all equipment that has come into contact with the water for evidence of attached plant or animal material, or adherent mud or debris. This should be done before leaving the site.
- Remove any attached or adherent material (fish, fish scales, vegetation and debris) before leaving the site of operation.
- Ensure that all water is drained from boats, live wells and other water retaining compartments, outboard motors, tanks and other equipment before transportation elsewhere.
- High-pressure steam cleaning, with water > 40 degrees C, is recommended for boats (including oars, row locks, attachment ropes, anchors and buoys), trailers and outboard motors that are being moved from one watercourse to another. Many roadside garages provide these facilities. If it is not possible to steam clean the equipment, a normal power hose must be used. After cleaning visually inspect the equipment to ensure that all adherent material and debris has been removed.
- It is recommended to apply disinfectant, using the spray bottle from the 'disinfection box', to the undercarriage and wheels of the vehicle and trailer after steam cleaning or power hosing.
- Wet or live wells and other water retaining compartments in boats must be cleaned, rinsed or flushed with a 1% solution of Virkon Aquatic or another proprietary disinfection product. Alternatively, a 5% solution (100 ml / 20 litre solution) of chlorine bleach should be used. Rinse thoroughly with clean water.
- Tanks that are used to stock or transfer live fish should be thoroughly washed with a 1% solution of Virkon Aquatic or another proprietary disinfection product. Alternatively, a 5% solution (100 ml / 20 litre solution) of chlorine bleach should be used. All disinfected equipment must be thoroughly rinsed with clean water.
- Outboard motors should be flushed with a 1% solution of Virkon Aquatic or another proprietary disinfection product, or with water > 40 degrees C. Alternatively, a 5% solution (100 ml / 20 litre solution) of chlorine bleach should be used. Facilities will be provided at IFI stores countrywide to accommodate this operation.
- Nets (to include monofilament and braided gill nets, fyke nets and seine nets) must be cleaned of all vegetation and debris before returning to base. The clean nets must then be placed in a freezer for a period of four days (3 days will suffice for monofilament nets). Following this treatment the nets must be soaked in a 1% solution of Virkon Aquatic or a proprietary disinfectant for a period of not less than 15 minutes and thoroughly rinsed thereafter. Where these proprietary disinfectants are not available the nets must be soaked in a 5% solution (100 ml / 20 litre solution) of chlorine bleach for 1 hour and thoroughly rinsed after. An SOP on 'Management and Disinfection of Survey Nets' is available on request from IFI.

- Footwear should be dipped in or scrubbed with a disinfectant solution (e.g. 1% solution of Virkon Aquatic or another proprietary disinfection product) and thoroughly dried afterwards.
- All PPE should be visually inspected and any attached vegetation or debris removed. Where appropriate, the gear should be wiped down with a cloth soaked in 1% solution of Virkon Aquatic or another proprietary disinfection product. Alternatively, a 5% solution (100 ml / 20 litre solution) of chlorine bleach should be used. Rubber gloves must be worn when undertaking this procedure.
- Sampling equipment (e.g. electrofishing electrodes and cable, grab samplers, metre sticks, buckets and bins, etc.) must be cleaned, rinsed or wiped down with or dipped in a suitable disinfectant solution.
- Landing nets and hand nets must be dipped in disinfectant solution and rinsed in clean water.
- All field equipment must be suitably disinfected before being returned to the IFI warehouse / base for storage. Staff will be requested to sign a prepared form detailing the nature of the disinfection process carried out and the date on which this was conducted.

#### **Additional Bio-security Measures to be implemented during the Lough Corrib works and surveys**

All equipment being used during the L. Corrib survey will have gone through the disinfection procedures prior to the survey.

To prevent the spread of Lagarosiphon (or re-introduction into controlled bays) the following procedures will be in place for the duration of the L. Corrib survey;

- There will be no movement of gill nets between Lower and Upper L. Corrib for duration of survey (in line with extent of Lagarosiphon maps)
- 1 boat, crew and equipment to be located at the Moycullen stores for the full duration of the survey. This team will survey the area where Lagarosiphon has NOT been recorded.
- A second boat, crew and equipment will be temporarily based in Moycullen. This team will also operate in the area where Lagarosiphon has NOT been recorded until that area has been fully surveyed. After 7 survey nights this crew, boat and equipment will relocate to either the Oughterard or Greenfields stores. They will then begin to survey within the known Lagarosiphon areas.
- The 3 remaining boats, crew and equipment will operate out of the remaining IFI stores for the full duration of the survey. These will be Oughterard, Cornamona (HQ) and Greenfields.
- As these crews will be operating within known Lagarosiphon areas the following bio-security measures will be followed:
- Gill nets not to be set in dense areas of Lagarosiphon – move net to just outside this area
- Prior to resetting gill nets all nets must go through the cleaning process
- The cleaning process will consist of running nets when back on shore to remove any obvious plant fragments and then put back into fish box. Fish box with nets then to be placed in freezer and left there over-night.
- All floats, weights and rope used to also be place in freezer over-night
- Mobile freezer unit to be stored in Cornamona stores
- All nets, floats, weights and rope to be brought to Cornamona every afternoon for cleaning process
- Nets not to be removed from freezer until 8am following morning
- Nets may have to have a thawing process applied – use boiling water to aid the thawing process or use a steam washer
- All IFI boats moving between the upper lake and lower lake (moving between Lagarosiphon area of lake to non Lagarosiphon area of lake) are to come ashore (shore or islands) and check the boat and boat engine for any signs of Lagarosiphon fragments that may have become tangled around engine propeller or other parts of the boat. Remove any

Lagarosiphon found and place in storage bag to be disposed of safely when the boat and crew have come ashore for the evening. DO NOT THROW PLANT FRAGMENTS BACK INTO THE WATER IN THIS AREA.

- All boats and engines to be cleaned prior to leaving Galway and returning to IFI warehouse with Virkon / and steam washing

**Note**

*Disinfectants must be used with care and in strict accordance with the manufacturer's instructions. They must be disposed of safely and never in close proximity to open waters.*

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Appendix vi EU 1004/2009 record of disposal

<p>COMPANY STAMP</p>	<p><b>COPY</b></p> <p><i>Commercial Document for the transportation within Ireland of processed and unprocessed animal by-products not intended for human consumption in accordance with Regulation (EC) No. 1774/2002</i></p>	<p>Serial Number</p> <p style="font-size: 24pt;"><b>7922</b></p>																	
<p><b>1 Consignor</b> (sender's name and address in full and, if appropriate, approval number of the plant of origin)</p> <p><i>INLAND FISHERIES IRELAND Carab Development Carran Co Mayo</i></p>	<p><b>2 Consignee</b> (receiver's name and address in full and, if appropriate, approval number of the plant of destination)</p> <p style="background-color: black; color: black;">[REDACTED]</p>																		
<p><b>3 Carrier, means of transport</b></p> <p>Carrier (hauler's name and address in full)</p> <p style="background-color: black; color: black;">[REDACTED]</p> <p style="background-color: black; color: black;">[REDACTED]</p> <p style="background-color: black; color: black;">[REDACTED]</p> <p>3.1 Registration number of vehicle</p>	<p><b>4 Quantity/Identification of consignment</b></p> <p>4.1 Weight of ABP's (kgs) or number of ABP's (e.g. 3 heads) <i>500kg</i></p> <p>4.2 Date of despatch <i>12/3/15</i></p> <p>4.3 Container Number (if applicable)</p> <p>4.4 Number of seals (if applicable)</p>																		
<p><b>5 Description of the animal by-products and processed products derived therefrom</b></p> <p>5.1 The category of animal by-products or in the case of processed products the category of animal by-products from which the processed products were derived, (delete as appropriate):</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%;">• Category 1 Material -</td> <td style="width:50%;">*For Disposal Only*</td> </tr> <tr> <td>• Category 2 Material -</td> <td>*Not For Animal Consumption*</td> </tr> <tr> <td>• Manure and Digestive Tract Content -</td> <td>*Manure*</td> </tr> <tr> <td>• Category 3 Material -</td> <td>*Not For Human Consumption*</td> </tr> </table> <p>5.2 The description of animal by-products or processed products e.g. rendered fats, processed animal protein, etc:</p> <p><i>Fish Non processed</i></p> <p>5.3 In the case of category 3 material and processed products derived therefrom destined for use as feed, the species from which it was derived:</p> <p><i>N/A</i></p> <p>5.4 In the case of animal by-products for use as raw petfood or in feed for fur animals, the animal by-products from which it is derived and if applicable, the nature and methods of treatment:</p> <p><i>Fish Non processed</i></p> <p>5.5 In the case of category 1 material, dispatched from a knacker premises, the following details:</p> <table style="width:100%; border: none;"> <thead> <tr> <th style="width:80%;"></th> <th style="width:10%; text-align: center;">Yes</th> <th style="width:10%; text-align: center;">No</th> </tr> </thead> <tbody> <tr> <td>Is material eligible for fallen animal scheme?</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input checked="" type="radio"/></td> </tr> <tr> <td>Does the skip/container contain BSE positive water?</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input checked="" type="radio"/></td> </tr> </tbody> </table>			• Category 1 Material -	*For Disposal Only*	• Category 2 Material -	*Not For Animal Consumption*	• Manure and Digestive Tract Content -	*Manure*	• Category 3 Material -	*Not For Human Consumption*		Yes	No	Is material eligible for fallen animal scheme?	<input type="radio"/>	<input checked="" type="radio"/>	Does the skip/container contain BSE positive water?	<input type="radio"/>	<input checked="" type="radio"/>
• Category 1 Material -	*For Disposal Only*																		
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Is material eligible for fallen animal scheme?	<input type="radio"/>	<input checked="" type="radio"/>																	
Does the skip/container contain BSE positive water?	<input type="radio"/>	<input checked="" type="radio"/>																	
<p><b>6 Declaration by the Consignor</b></p> <p>I, the consignor, declare that the information provided by me in sections 1 to 5 is correct and that the consignment is being transported in accordance with the requirements of Regulation (EC) No. 1774/2002. <i>10/9/2014</i></p> <p>Signature <span style="background-color: black; color: black;">[REDACTED]</span> Date <i>12-3-2015</i></p>																			
<p><b>7 Declaration by the Carrier</b></p> <p>I, the carrier, declare that I have collected the material described above and that it is being transported to the consignee at Section 2, above in accordance with the requirements of Regulation (EC) No. 1774/2002. <i>10/9/2014</i></p> <p>Signature <span style="background-color: black; color: black;">[REDACTED]</span> Date <i>12/3/15</i></p>																			

Appendix vii: List of potential recipient water-bodies for pike re-stocking

**Area 1. WRBD - Loughs Conn & Cullin**

Name	Eastings - Northings
1. Rubble Lake	135715 - 303124
2. Lough Ogirra	135461 - 303359
3. Cregaballagh Lough	135296 - 303048
4. Derryhick Lake	120494 - 298784
5. Cloonkeen Lake	110469 - 286912
6. Carrowmore Lake	123179 - 288589

**Area 2. Loughs Corrib, Mask & Carra**

1. Lough Hackett	530661 - 749249
2. Cloondroon Lough	
3. Somerville lake	
4. Clare lake	

**Area 3. Lough Sheelin**

1. Lough Key, Boyle, Co Roscommon.	183786 - 305506
2. Royal Canal, Mullingar, Co Westmeath.	244353 - 252863
3. Slevins lake, Mullingar, Co Westmeath	245077 - 256064
4. Corkapark, Citywest, Dublin.	305335 - 228158
5. East Clare lake ( Rosslara, Garrura ).	
6. Lacken lake , Balljamesduff, Co Cavan, (ERBD area).	

## Appendix VIII

FAQs & General Information for members of the public

### Frequently asked questions about stock management.

#### Q 1: Why is there a need for stock management operations?

**A 1:** Stock Management is undertaken/required on certain waters for the conservation of wild brown trout in waters which are managed by IFI as wild brown trout fisheries. Such waters are identified in IFIs pike and trout management policies. These stock management operations are informed by scientific research, are based on best practice and carried out in accordance with IFIs pike and trout management policies under strict standard operating procedures.

**Further information on the above policies and standard operating procedure can be obtained at**

- <http://www.fisheriesireland.ie/policies/455-inland-fisheries-ireland-pike-policy>
- <http://www.fisheriesireland.ie/policies/454-inland-fisheries-ireland-brown-trout-policy>

#### Q 2: Are all pike being culled?

**A 2:** No. Inland Fisheries Ireland **does not** indiscriminately kill pike but conducts surveys and implements stock management programmes in accordance with our management policy on a small number of lakes which are designated by IFI as wild brown trout fisheries.

#### Why is pike management required? Is it effective?

IFI have conducted surveys and scientific studies over a number of decades, in relation to the impact of predation by pike on wild Brown Trout. Based on the best available scientific advice, IFI have identified a number of internationally important wild Brown Trout fisheries upon which pike management will be conducted. This management regime aims to sustain optimum stock densities of Brown Trout so that they continue to function as premier trout angling resources.

Many years of pike management operations on this small number of designated trout lakes has demonstrated that pike management operations have been extremely effective at maintaining good stock densities of trout. Research pertaining to pike management on wild brown trout fisheries is on-going both in Ireland and internationally.

#### Q 3: Are all pike captured during stock management operations being killed?

**A 3:** No, not all pike are killed during stock management operations. Where possible all pike over 85cm considered fit and likely to survive are released unharmed. When the larger electrofishing boat is being utilised and weather conditions are suitable pike under 85cms considered fit and likely to survive may be retained for transfer to another lake – should one be available. Unfortunately, a number of unavoidable casualties are sustained during these operations. Pike that are unlikely to survive are euthanized by IFI staff. This is done in a humane manner as set out under the Standard Operating Procedure (SOP) for Pike management operations.

**Q 4: How were these policies formulated?**

**A 4:** The substantive body of work was undertaken by Policy Development Groups comprised of relevant IFI staff and members of the key stakeholder groups. Each of the groups was chaired by a Senior Research Officer from IFI. In the case of the pike and trout policies stakeholders representing each angling discipline (pike angling and trout angling) were represented on each policy group. Inputs were then received from the National Inland Fisheries Forum, the Department of Communications Energy and Natural Resources and also other relevant State Agencies.

**Q 5: How can the policy recommendations be changed?**

**A 5:** The current pike and trout policies are for a period of three years from the date of launch. These will be reviewed after 3 years. The policy review process will be set out in advance of the review and submissions may be submitted through the appropriate channel at that time.

**Q5a: Are there any legislative changes being proposed regarding pike management?**

**A 5a:** Yes, certain changes are proposed in the two policies referred to above. In the event that there is a legislative change please participate in the relevant consultative process at the time which will be advertised in the National media and on the IFI website.

**Q 6: How many pike have been killed in this year's operations?**

**A 6:** During stock management operations on occasions pike are removed and when pike are euthanized records are maintained and at the end of the year will be made available on the IFI website. Details of this year's stock management are available online at [www.fisheriesireland.ie](http://www.fisheriesireland.ie) (page to be developed)

**Q 7: Is it possible to look into the tanks or board IFI boats during operations or assist in the operations?**

**A 7:** Due to the hazardous nature of the work and the dangers present we are unable to allow you to enter the work areas. Under health and safety regulations you must remain at least 20 metres from the work area. If you wish to observe management operations, you may do so only from a safe distance.

**Q 7a: Is there a supervisor/spokesperson who can explain procedures during operations?**

**A 7a:** Each operational area has a designated person who will be happy to answer questions. This person will be able to provide contact details for management should you require further information. Furthermore comments, compliments or complaints may be registered on

<http://www.fisheriesireland.ie/About-Us/making-a-comment-compliment-or-complaint.html>

A list of IFI offices can be found at the link below

<http://www.fisheriesireland.ie/About-Us/contact-us.html>

**Q 8: What happens to the fish that are killed?**

**A 8:** A proportion of fish taken during stock management operations will be used for scientific purposes. Each fish will be measured, weighed, aged and have their stomach contents examined. This information will be analysed to provide information on the age cohorts of each fish species present, their relative growth rates,

their feeding patterns and other relevant information. Fish scales will be retained for possible subsequent genetic or other use. Any fish in excess of those required for scientific research will be disposed of using an approved animal rendering service.

**Q 9: How can comments, compliments or complaints regarding the implementation of the pike policy be registered with IFI?**

**A 9:** Inland Fisheries Ireland (IFI) wants to provide you with the best possible service. There may be times when you think we can improve our service and/or there may be times you want to tell us about something you are not happy about.

Whatever age you are, you have rights including:

- the right to have your say and be listened to.
- the right to complain if you are not happy about something we have done.

You may submit your comment, compliment or complaint by following the procedure outlined at the link below.

<http://www.fisheriesireland.ie/About-Us/making-a-comment-compliment-or-complaint.html>

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