

1997 No. 488

EUROPEAN COMMUNITIES

WATER AND SEWERAGE

The Surface Waters (Fishlife) (Classification) Regulations (Northern Ireland) 1997

Made 12th November 1997

Coming into operation 5th January 1998

The Department of the Environment, in exercise of the powers conferred on it by section 4B of the Water Act (Northern Ireland) 1972^[1] and now vested in it^[2], section 56B of the Water and Sewerage Services (Northern Ireland) Order 1973^[3] and, being a department designated^[4] for the purposes of section 2(2) of the European Communities Act 1972^[5] in relation to measures relating to the prevention, reduction and elimination of pollution of water, in exercise of the powers conferred on it by that section and of every other power enabling it in that behalf, hereby makes the following Regulations:

Citation and commencement

1. This Order may be cited as the The Surface Waters (Fishlife) (Classification) Regulations (Northern Ireland) 1997 and shall come into operation on 5th January 1998.

Interpretation

2.—(1) In these Regulations—

"the department" means the Department of the Environment; and

"pollution control functions" means the Department's functions under or by virtue of the following statutory provisions, that is to say—

(a) the Water Act (Northern Ireland) 1972;

(b) the Water and Sewerage Services (Northern Ireland) Order 1973;

(c) Regulations made by virtue of section 2(2) of the European Communities Act 1972, to the extent that the Regulations relate to pollution of water.

(2) Expressions used in these Regulations which are also used in Directive 78/659/EEC^[6] (quality of fresh waters needing protection or improvement in order to support fish life) shall have the same meaning as in that Directive.

(3) The Interpretation Act (Northern Ireland) 1954^[7] shall apply to these Regulations as it applies to a Measure of the Northern Ireland Assembly.

Classification of waters

3. The classifications SW ("salmonid waters") and CW ("cyprinid waters"), and the criteria for those classifications, set out in Schedule 1 shall apply for classifying fresh waters which need protection or improvement in order to support fish life.

Compliance with relevant requirements

4.—(1) Subject to paragraphs (2) and (3), any waters classified under these Regulations shall be treated in relation to any period of 12 months as complying with the requirements specified in Schedule 1 for waters of the relevant class for any parameter if in that period in relation to those waters—

(a) in the case of the parameter for pH, non-ionized ammonia, total ammonium, total residual chlorine or total zinc, 95 per cent of the samples taken for that parameter in accordance with regulation 7 comply with the requirements;

(b) in the case of the parameter for temperature or dissolved oxygen, the percentage specified in that Schedule of samples taken for that parameter in accordance with regulation 7 comply with the requirements.

(2) When the frequency of sampling is lower than 1 sample per month for any parameter mentioned in sub-paragraph (1)(a) in relation to any waters classified under these regulations, 100 per cent of samples taken for each of those parameters in accordance with regulation 7 in relation to those waters must comply with the requirements specified in Schedule 1 for waters of the relevant class.

(3) Non-compliant samples shall be ignored for the purposes of paragraph (1) if they are the result of a flood or any other natural disaster.

Guideline values and no deterioration principle

5. In discharging its pollution control functions in relation to any waters classified under these Regulations, the Department shall—

(a) endeavour to respect the guideline values and comments specified in Schedule 2 for waters of the relevant class; and

(b) take into account the principle that implementation of measures taken pursuant to Directive 78/659/EEC may on no account lead, either directly or indirectly, to increased pollution of fresh water.

Compliance with standards

6.—(1) Subject to paragraphs (2) and (3), any waters classified under these Regulations shall be treated in relation to any period of 12 months as complying with any standard for any parameter adopted by the Department for those waters as a result of regulation 5 if in that period in relation to those waters—

(a) in the case of the parameter for BOD₅, non-ionized ammonia, total ammonium, nitrites or dissolved copper, 95 per cent of of the samples taken for that parameter in accordance with regulation 7 comply with the standard;

(b) in the case of the parameter for dissolved oxygen, the percentages specified in Schedule 2 of samples taken for that parameter in accordance with regulation 7 comply with the standard;

(c) in the case of the parameter for suspended solids, the average concentration of samples taken comply with the standard.

(2) When the frequency of sampling is lower than 1 sample per month for any parameter mentioned in paragraph (1)(a) in relation to any waters classified under these Regulations, 100 per cent of samples taken for each of those parameters in accordance with regulation 7 in relation to those waters must comply if it is to be treated as meeting the standard adopted as a result of regulation 5.

(3) Non-compliant samples shall be ignored for the purposes of paragraph (1) if they are the result of a flood or any other natural disaster.

Sampling and Analysis

7.—(1) The Department shall ensure that waters classified under these Regulations are sampled and samples are analysed in accordance with the following provisions of this regulation.

(2) Samples in relation to any waters classified under these Regulations shall always be taken at the same sampling point.

(3) The Department shall fix the exact position of the sampling point, and the depth at which samples are to be taken, having regard in particular to—

- (a) the distance of the sampling point to the nearest point where pollutants are discharged; and
- (b) local environmental conditions.

(4) Subject to paragraphs (5) and (6), sampling for any parameter shall be carried out at least at the minimum frequency specified in the Schedules for that parameter for waters of the relevant class.

(5) Where the Department's records show that the quality of any waters classified under these Regulations is appreciably higher for any parameter than the minimum required by these Regulations for waters of that class and the standards adopted as a result of regulation 5, the Department may reduce the sampling frequency for that parameter or, if there is no pollution and no risk of deterioration of their quality, it may dispense with sampling for that parameter altogether.

(6) Where sampling shows that the requirements of regulation 4, or the standards adopted as a result of regulation 5 are not being complied with, the Department shall establish whether this is the result of chance, a natural phenomenon or pollution and shall adopt appropriate measures.

(7) Samples for any parameter shall be analysed using the reference methods of analysis specified in the Schedules in relation to that parameter or methods which are at least as reliable as the reference methods.

Derogations

8.—(1) The Department may derogate from the requirements of these regulations—

- (a) in the case of parameters marked (O) in the Schedules, because of exceptional weather or special geographical conditions; or
- (b) where waters classified under these Regulations undergo natural enrichment in certain substances as a result of which they do not comply with the requirements specified in Schedule 1 or with any standard adopted as a result of regulation 5 for waters of the relevant class.

(2) In this regulation, "natural enrichment" means a process whereby without human intervention a given body of water receives from the soil certain substances contained therein.

Modification of section 4C of the Water Act (Northern Ireland) 1972

9. Section 4C of the Water Act (Northern Ireland) 1972 shall have effect—

- (a) as if it imposed a duty on the Department to exercise the powers conferred on it by that section to classify these Regulations such waters as are appropriate for the purpose of giving effect to Directive 78/659/EEC; and
- (b) in relation to the performance of that duty, as if subsections (4), (5) and (7) of that section were omitted.

Programmes

10. The Department shall establish programmes in order to reduce pollution and to ensure that waters classified under these Regulations conform, within 5 years following classification, to the criteria set out in Schedule 1 and to the values adopted as a result of regulation 5.

Transfrontier Consultation

11.—(1) Where the Department considers classifying for the purposes of these Regulations any fresh waters which cross or form part of the national frontier between Northern Ireland and the Republic of Ireland it shall consult with the competent authorities in the Republic of Ireland in order to determine the stretches of such waters which might be classified and the consequences to be drawn from common quality objectives.

(2) The consequences referred to in paragraph (1) shall be determined by each State after formal consultations and the Commission may participate in any such consultations.

Sealed with the Official Seal of the Department of the Environment on

R. W. Rogers

Assistant Secretary

12th November 1997.

Notes:

[1] 1972 c. 5 (N.I.) as amended by the Water and Sewerage Services (Amendment) (Northern Ireland) Order 1993 (S.I. 1993/3165 (N.I. 16) Art. 16) back

[2] S.R. & O. (N.I.) 1973 No. 504 Art. 4 back

[3] S.I. 1973/70 (N.I.2) as amended by the Water and Sewerage Services (Amendment) (Northern Ireland) Order 1993 (S.I. 1993/3165 (N.I. 16) Art. 12) back

[4] S.I. 1989/2393 back

[5] 1972 c. 68 back

[6] O.J. No. L. 222, 14. 8. 1978, p. 1 back

[7] 1954 c. 33 (N.I.) back

SCHEDULE 1

regulations 3, 4 and 7

Part I

Criteria for classification of water as salmonid and cyprinid waters

No in Annex 1 to 78/659/EEC	Parameter	Requirements to be satisfied for salmonid waters	Requirements to be satisfied for cyprinid waters	Methods of analysis or inspection	Minimum sampling and measuring frequency	Observations
1.	Temperature (°C)	<p>1. Temperature measured downstream of a point of thermal discharge (at the edge of the mixing zone) must not exceed the unaffected temperature by more than 1.5°C for salmonid waters and 3°C for cyprinid waters. Derogations limited in geographical scope may be decided by the Department in particular conditions if it can prove that there are no harmful consequences for the balanced development of the fish population.</p> <p>2. Thermal discharges must not cause the temperature downstream of the point of thermal discharge (at the edge of the mixing zone) to exceed—</p> <p>(a) 10°C(O) during the breeding season in the case of waters which contain species which need cold water for reproduction;</p> <p>(b) at other times or in the case of waters which do not contain such species, 21.5°C(O) for salmonid waters and 28°C(O) for cyprinid waters.</p> <p>Temperature limits may, however, be exceeded for 2% of the time.</p>		Thermometry	Weekly, both upstream and downstream of the point of thermal discharge.	Over-sudden variations in temperature shall be avoided.

No in Annex 1 to 78/659/EEC	Parameter	Requirements to be satisfied for salmonid waters	Requirements to be satisfied for cyprinid waters	Methods of analysis or inspection	Minimum sampling and measuring frequency	Observations
2.	Dissolved oxygen (mg/lO ₂)	50%>=9 When the oxygen concentration falls below 6 mg/l, the Department shall comply with regulation 7(6). The Department must prove that this situation will have no harmful consequences for the balanced development of the fish population	50%>=7 When the oxygen concentration falls below 4 mg/l, the Department shall comply with regulation 7(6). The Department must prove that this situation will have no harmful consequences for the balanced development of the fish population	Winkler's method or specific electrodes (electro-chemical method)	Monthly, minimum 1 sample representative of low oxygen conditions on the day of sampling. However, where major daily variations are suspected, a minimum of 2 samples in 1 day shall be taken	
3.	pH	6 to 9(O) Artificial pH variations with respect to the unaffected values shall not exceed ±0.5 of a pH unit within the limits falling between 6.0 and 9.0 provided that these variations do not increase the harmfulness of other substances present in the water.			Electrometry calibration by means of 2 solutions with known pH values, preferably on either side of, and close to, the pH being measured	Monthly
8.	Phenolic compounds (mg/l C ₆ H ₅ OH)	Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.		By taste		An examination by taste shall be made of water where the presence of phenolic compounds is suspected

No in Annex 1 to 78/659/EEC	Parameter	Requirements to be satisfied for salmonid waters	Requirements to be satisfied for cyprinid waters	Methods of analysis or inspection	Minimum sampling and measuring frequency	Observations
						presumed
9.	Petroleum hydrocarbons	<p>Petroleum products must not be present in water in such quantities that they—</p> <p>(a) form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes,</p> <p>(b) impart a detectable 'hydrocarbon' taste to fish,</p> <p>(c) produce harmful effects in fish.</p>		Visual By taste	Monthly	A visual examination shall be made regularly at least once a month, and an examination by taste or where the presence of hydrocarbons is presumed
10.	Non-ionized ammonia (mg/1 NH ₃)	<=0.025		Molecular absorption spectrophotometry using indophenol blue or Nessler's method associated with pH and temperature determination	Monthly	Values for non-ionized ammonia should not be exceeded in the form of minor peaks in the day time.
11.	Total ammonium (mg/1 NH ₄)	<p>In order to diminish the risk of toxicity due to non-ionised ammonia, of oxygen consumption due to nitrification and of eutrophication, the concentrations of total ammonium should not exceed 1mg/1 In particular geographical or climatic conditions and particularly in cases of low water temperature and of reduced nitrification or where the Department can show that there are no harmful consequences for the balanced development of fish population, the Department may fix a value higher than 1mg/1.</p>				
12.	Total	<=0.005	<=.005	DPD-	Monthly	The value

No in Annex 1 to 78/659/EEC	Parameter	Requirements to be satisfied for salmonid waters	Requirements to be satisfied for cyprinid waters	Methods of analysis or inspection	Minimum sampling and measuring frequency	Observations
	residual chlorine (mg/1 HOCl)			method diethyl-p-phenylenediamine)		corresponding pH = 6 H ₂ O concentration of total chlorine can be accepted if the pH is higher
13.	Total zinc (mg/1 Zn)	≤0.3	≤1.0	Atomic absorption spectrometry	Monthly	The value corresponding to a water hardness of 100 mg/1 CaCO ₃ corresponds to hardness levels between 10 and 500 mg/1 CaCO ₃ corresponding to values can be found in Part II

Part II

Zinc concentrations (mg/1 Zn) for different water hardness value between 10 and 500 mg/1 CaCO₃

	Water hardness (mg/1 CaCO ₃)			
	10	50	100	500
Salmonid waters (mg/1 Zn)	0.03	0.2	0.3	0.5
Cyprinid waters (mg/1 Zn)	0.3	0.7	1.0	2.0

SCHEDULE 2

regulations 5, 6 and 7

Part I

Guideline values in relation to the quality of salmonid and cyprinid waters

No in Annex 1 to 78/659/EEC	Parameter	Salmonid waters (guideline values and comments)	Cyprinid waters (guideline values and comments)	Methods of analysis or inspection	Minimum sampling and measuring frequency	Observations
2.	Dissolved oxygen (mg/1O ₂)	50%>=9 100%>=7	50%>=8 100%>=5	Winkler's method or specific electrodes (electro-chemical method)	Monthly, minimum sample representative of low oxygen conditions on the day of sampling. However, where major daily variations are suspected, a minimum of 2 samples in 1 day shall be taken	
4.	Suspended solids (mg/1)	<=25(O)		Filtration through a 0.45µm filtering membrane, or centrifugation (5 minutes minimum, average acceleration of 2,800 to 3,200g) drying at 105°C and weighing		The values shown are average concentrations and do not apply to suspended solids with harmful chemical properties Floods are liable to cause particularly high concentrations
5.	BOD ₅ (mg/1O ₂)	<=3	<=6	Determination of O ₂ by the Winkler		

No in Annex 1 to 78/659/EEC	Parameter	Salmonid waters (guideline values and comments)	Cyprinid waters (guideline values and comments)	Methods of analysis or inspection	Minimum sampling and measuring frequency	Observations
				method before and after 5 days incubation in complete darkness at 20°C ±1°C (nitrification should not be inhibited)		
7.	Nitrites (mg/1 NO ₂)	≤0.01	≤0.03	Molecular absorption spectrophotometry		
10.	Non-ionized ammonia (mg/1 NH ₃)	≤0.005	≤0.005	Molecular absorption spectrophotometry using indophenol blue or Nessler's method associated with pH and temperature determination	Monthly	Values for non-ionized ammonia may be exceeded in the form of minor peaks in the daytime.
11.	Total ammonium (mg/1 NH ₄)	In order to diminish the risk of toxicity due to non-ionised ammonia, of oxygen consumption due to nitrification and of eutrophication, the concentrations of total ammonium should not exceed 0.04 mg/1 for salmonid waters and 0.2 mg/1 for cyprinid waters				
14.	Dissolved copper (mg/1 Cu)	≤0.04	≤0.04	Atomic absorption spectrometry		The values correspond to a water hardness of 100 mg/1 CaCO ₃ For

No in Annex 1 to 78/659/EEC	Parameter	Salmonid waters (guideline values and comments)	Cyprinid waters (guideline values and comments)	Methods of analysis or inspection	Minimum sampling and measuring frequency	Observations
						hardness levels between 10 and 300 mg/l corresponding limit values can be found in Part II of this Schedule

Part II

Copper concentrations (mg/l Cu) for different water hardness values between 10 and 500 mg/l CaCO₃

	Water hardness (mg/l CaCO ₃)			
	10	50	100	500
mg/l Cu	0.005 ⁽¹⁾	0.02	0.04	0.112

- (1) The presence of fish in waters containing higher concentrations of copper may indicate a predominance of dissolved organo-cupric complexes.
- (2)