

COMMISSION OF THE EUROPEAN COMMUNITIES

Proposal for a Council Directive relating to the quality requirements for waters
favourable for shellfish growth (presented by the Commission to
the Council). COM (76) 570 final, 3 November 1976

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SUMMARY

The aim of the following proposal for a directive is to lay down the quality requirements for waters favourable to shellfish growth. It is based on the principles outlined in the programme of environmental action of the European Communities adopted by the Council on 22 November 1973 (OJ No C 112, 1973) which defines the quality objectives for water and sea-water in particular.

In order to attain this objective the proposal for a directive:

- fixes the values of the parameters which characterize the quality requirements of waters favourable to shellfish growth;
- lays down the minimum sampling frequency for the water under consideration;
- specifies the reference methods of analysis to be used.

I. EXPLANATORY MEMORANDUM

Introduction

All the changes which man is currently making in the marine environment tend, despite a certain ability to control this environment, to modify its characteristics to such an extent that the natural balance could be seriously disturbed for a considerable period.

The problem is particularly acute as regards coastal waters and estuary areas where the effects of pollutants can be more harmful because of the ecological fragility of these areas.

In these waters the naturally-occurring beds of shellfish or the shellfish-farming areas (oysters, mussels, clams, cockles, scallops, periwinkles etc.) are very extensive and generally exploited for human consumption.

In order to prevent and combat water pollution, the Programme of Environmental Action of the European Communities (1) specifies that the Community programme must define the quality objectives and more particularly establish a series of reference parameters and numerical values relating to the various uses and functions of the water and in particular of water favourable to shellfish growth.

2. AIM

The purpose of defining quality objectives for water favourable to shellfish growth, which is the subject of this directive, is to encourage the increase of the shellfish population under suitable conditions. In fixing the parameters and numerical values which characterize the quality of the water, due account was taken as far as possible of the effects of each parameter not only on the survival of this population at the different stages of its life cycle but also the effects on its growth and reproduction, and the effects on other constituent elements of the aquatic ecosystem which may supply it with food.

(1) OJ No C 112, 20th December 1973.

These quality objectives are not incompatible with national or Community rules concerning consumer health protection.

This proposal, however, deals with the problems of human consumption of these shellfish solely as regards the changes in the flavour of the shellfish meat brought about by certain substances.

For the purpose of this directive:

- (a) the term "waters favourable to shellfish growth" means sea-water or areas thereof where there are naturally-occurring beds and/or farms for raising shellfish, in particular oysters, mussels, clams, cockles, scallops, periwinkles.
- (b) the term "areas favourable to shellfish growth" means any place where the water is favourable to shellfish growth.

3. EXISTING CONDITIONS AND RULES

Examination of the legal situation in the Member States reveals that there are few specific laws relating to shellfish breeding. All the Member States, however, have adopted general texts protecting sea-water against direct or indirect discharges of pollutants. In doing this, the Member States have so far preferred a system of rules concerning the discharge of pollutants rather than the fixing of quality objectives.

In the Federal Republic of Germany, the general law concerning the protection of surface waters (Wasserhaushaltsgesetz 27.7.1957) also applies to coastal waters; it provides that substances can be discharged into coastal waters only if they are non-polluting and do not cause any degradation of the quality of the water.

The Land Schleswig-Holstein enacted a special law protecting the breeding of mussels (Schleswig-Holsteinische Gesetz zum Schutze der Muschelfischerei, 28 August 1953 SVBL 1953 - S III).

In Belgium the law of 26 March 1971 on the protection of surface waters against pollution also applies to coastal waters. Article 2 prohibits the discharge of any polluting substance except in the case of authorized discharges of waste water. Article 5 (Chapter 1) requires prior authorization for any discharge into coastal waters.

In Denmark the problem is regulated by the 1973 law on the protection of the environment. Chapter 4 of this law applies to discharges in all water including sea-water. Paragraph 17 prohibits the discharge of polluting substances into water.

The law relating to fishing in maritime waters (law No 159 of May 1965) prohibits the discharge of waste and chemical substances into sea-water if the said discharges can have a harmful effect on fish life.

In France the law of 1964 (No 64-1245) relating to the control and the division of waters and to measures against the pollution thereof applies to direct or indirect discharge flow, dumping and deposition of materials of any kind which are bound to cause or to increase degradation of the waters, whether surface or underground waters or sea-water within the limits of the territorial waters by modifying their physical, chemical, biological or bacteriological characteristics.

Certain specific texts concern the protection of sea fishing.

In Ireland the problem is regulated by the Fisheries (Consolidation) Acts of 1959 and 1962. Paragraph 172 of the 1959 law prohibits the discharge of any substance which has a harmful effect on fish or on the quality of water favourable to fish-breeding. These laws also apply to coastal waters. Paragraph 253 of the 1959 law provides for the protection of molluscs and prohibits the discharge of any substance likely to harm oysters or their habitats. Under section 282 the same prohibition applies to places where mussels and scallops are found.

In Italy Article 15(d) of the general law relating to maritime fishing (Law No 962 of 14.7.1965) prohibits the use of toxic substances which could kill fish and other aquatic organisms or harm the biological resources of maritime waters.

In harbour areas all activities causing pollution are prohibited and controlled (Règolamento DPR 15/2/1952 No 328); the aim of this ban is to protect the fishing areas.

In the Netherlands the 1969 law on the pollution of surface waters includes coastal waters. Article 1 of this law prohibits the unauthorized discharge into water of wastes pollutants or noxious substances. Authorization is granted or refused in the light of the local situation and it is normally accompanied by conditions protecting fish life. Under this law it is possible to establish quality standards for water. To date such standards have not been adopted.

In the United Kingdom the law concerned is the Sea Fisheries Regulation Act 1966. Article 5(1), (c) and (d), provides for the adoption of secondary legislation prohibiting the discharge of any substance likely to harm maritime fishing and for the adoption of regulations protecting and encouraging the development of all types of crustaceans.

In view of the legal situation in the Member States and since the Treaty has not provided for the necessary powers to attain these objectives Articles 100 and 235 should be invoked as the legal basis for the proposed directive.

The Opinion of the European Parliament and of the Economic and Social Committee is required in accordance with the provisions of these Articles.

4. COMMENTS ON THE PREPARATION OF THE PROPOSED DIRECTIVE

4.1 General Comments

In accordance with the Programme of Environmental Action of the European Communities the Commission convened a group of national experts in order to assist it in preparing the technical section of this proposed directive.

This group, which met five times, provided information on the legal situation in the Member States. The group advised the Commission on the drawing-up of the list of parameters and the numerical values to be applied at Community level and also on the definitions.

4.2 Scope

The proposed directive concerns the quality requirements for waters favourable to shellfish growth, which, by decision of the competent authorities of each Member State, are or will be defined as being in need of protection to allow of the development of the shellfish population under favourable conditions.

The proposed directive is applicable to waters favourable to shellfish growth in natural or artificial basins where there are naturally-occurring beds or shellfish-farming areas.

4.3 The parameters and their numerical values

The values for the parameters given in the Annex characterize waters favourable to shellfish growth.

Although the parameters given in the Annex to this proposal were considered separately, the interaction of their effects with other characteristics of the quality of the water has been indicated and quantified in certain cases.

The synergic effects due to the simultaneous presence of various noxious substances were not taken account of systematically.

In this case the values assigned to the parameters can be modified considerably in relation to the values indicated in the proposed directive. Certain noxious substances can have sublethal effects even at considerably lower levels than those which are known to be directly harmful. The responsible authorities should take this into account and lay down specific provisions in these individual cases.

The parameters relating to radioactivity are not given in the list considered in the proposed directive. They must conform to the provisions in force in the Member States.

The list of parameters given in the Annex should not be considered as exhaustive. In the case of certain pollutants the available data was too incomplete to allow of including figures in the proposals. Consequently, the fact that certain parameters are not listed does not mean that they are not harmful to shellfish.

As was already indicated, the values given in the Annex to this proposal apply solely where the concentration of the other substances in waters favourable to shellfish growth is very low. For all these reasons the requirements set out in Article 7 concerning the non-degradation of good quality water must be strictly applied without exception.

The letters used to indicate the values assigned to the parameters in this proposal have the following meanings:

I When the value assigned to a parameter is given in the column headed by the letter I it is mandatory. Member States cannot fix values below the level indicated; they can, however, set values above this figure.

G The values assigned to the parameters and shown in column G are indicative and should be regarded as guidelines. When a value is shown both in column I and column G, the Member States have the option of setting more values above the level indicated, based on the G value. Where these guidelines are adopted by the Member States, they will be a mandatory character in the countries which adopt them.

For the purposes of this Directive waters favourable to shellfish growth will be considered as conforming to the values assigned to the parameters defined in the Annex (with the exception of the values set for pH, temperature, oxygen, salinity and bacteriological quality) when they fulfil the following conditions:

- in the case of parameters given in column I, when the values obtained from 95% of the samples examined are less than or equal to the values indicated in this column.
- In the case of parameters given in column G, when the values obtained from 90% of the samples examined are less than or equal to the values indicated in this column.

As regards the 5 or 10% of the samples which do not comply:

(a) the water must not exhibit values deviating from the limit value assigned to the parameter in question by more than 50%, except for the parameters temperature, pH, oxygen, salinity and bacteriological quality.

(b) Consecutive samples of the water taken at a statistically satisfactory frequency must not deviate from the values assigned to the parameters in question.

4.4 Sampling and methods of analysis

The greatest attention must be paid to the frequent sampling of waters favourable to shellfish growth. Sampling must be carried out at regular intervals and at the minimum frequency set out in the Annex.

The sampling methods must ensure the reproducibility of the conditions under which the measurements are taken.

The determination of the temperature and of the content of hydrocarbons must be carried out at the sampling point in accordance with the requirements of Article 6.2. In the case of other determinations, the samples may be transported to the laboratory and examined there as quickly as possible.

The samples are to be taken at places where the density of the shellfish population is highest. However, the choice of the sampling points will depend on the local situation. There is no general rule governing the number of sampling points. In many cases the capacity of the examining laboratory will be a restricting factor. In high-production and extensive areas favourable to shellfish growth the distance between the sampling points should be approximately 500 metres at most.

The reference analysis methods for the parameters under consideration are indicated in the Annex. Member States have adopted the necessary measures to ensure that laboratories which use other methods prove to the Commission that the results obtained are equivalent or comparable to those given in the Annex.

4.5 Inspection of waters favourable to shellfish growth and local conditions

General investigation of the ambient conditions in waters favourable to shellfish growth and of the region falling within the extreme limits reached by the water in the course of tidal movements should be carried out scrupulously and repeated in order to determine the geographical, hydrodynamic and topographical data, the volume and nature of all polluting and potentially polluting discharges, and the phenomena of dilution, dispersion and degradation of the discharges and their effects as a function of the distance from the area favourable to shellfish growth.

The risk of accidental pollution which these discharges could create in the reference area, i.e., the comparable coastal area nearest the area favourable to shellfish growth must also be assessed.

PROPOSAL FOR A COUNCIL DIRECTIVE
relating to the quality requirements for
waters favourable to shellfish growth

THE COUNCIL OF THE EUROPEAN COMMUNITY

Having regard to the Treaty establishing the European Economic Community
and in particular Articles 100 and 235 thereof,

Having regard to the proposal from the Commission,

Having regard to the Opinion of the European Parliament,

Having regard to the Opinion of the Economic and Social Committee,

Whereas the protection and improvement of the environment require
practical measures to protect water against pollution, including those
waters favourable to shellfish growth;

Whereas it is necessary from the ecological and economic points of view
to protect the shellfish population from the harmful effects of the
discharge of pollutants into sea-water;

Whereas the programme of action of the European Communities on the
environment (1) provides that quality objectives are to be jointly drawn
up fixing the various requirements which an environment must meet, and in
particular, defining the quality objectives for sea-water;

(1) OJ No C 112, 20.12.1973, p. 1.

Whereas a disparity between the provisions already in application or in preparation in the various Member States concerning the quality requirements for waters favourable to shellfish growth can create unfair conditions of competition and thus directly affect the functioning of the Common Market; whereas therefore an approximation of the laws, as provided for in Article 100 of the Treaty, should be carried out in this field;

Whereas this approximation of the laws should be accompanied by Community action to attain, through more comprehensive rules, one of the objectives of the Community in the field of the protection of the environment and the improvement of the quality of life; whereas therefore certain specific provisions should be laid down; whereas, since the power to take the necessary action is not provided for by the Treaty, Article 235 of the Treaty should be invoked,

Whereas, in order to attain the quality objectives, the Member States must lay down limit values corresponding to certain parameters; whereas waters favourable to shellfish growth must be made to conform to those values within five years following the notification of this Directive;

Whereas it should be provided that waters favourable to shellfish growth will, under certain conditions, be deemed to conform to the relevant parametric values even if a certain percentage of samples taken in the shellfish breeding area does not comply with the limits specified in the Annex;

Whereas, in order to ensure control of the quality of waters favourable to shellfish growth, samples should be taken regularly and the parameters specified in the Annex should be measured;

Whereas certain circumstances are beyond the control of Member States and therefore the possibility of granting certain waivers should be provided for; whereas these waivers must be notified to the Commission;

Whereas technical progress necessitates rapid adaptation of the technical requirements laid down in the Annex; whereas, in order to facilitate the introduction of the measures required for the purpose, a procedure should be provided for whereby close cooperation would be established between the Member States and the Commission within a Committee on Adaptation to Technical Progress set up under the Council Directive of 8 December 1975 concerning the quality of bathing water¹,

HAD ADOPTED THIS DIRECTIVE:

¹ OJ No L 31, 5.2.1976 (76/160/EEC)

Article 1

1. This Directive concerns the quality requirements for waters favourable to shellfish growth.
2. For the purposes of this Directive:
 - (a) "waters favourable to shellfish growth" means sea-water or areas thereof where there are naturally-occurring beds and/or farms for raising shellfish, in particular oysters, mussels, clams, cockles, scallops and periwinkles.
 - (b) "areas favourable to shellfish growth" means any place where waters favourable to shell growth are found.
 - (c) "reference area" means the nearest coastal area to the areas favourable to shellfish growth which is not subject directly or indirectly to discharges likely to cause pollution and which is comparable to the area favourable to shellfish growth by reason of the similarity of its geographical and meteorological conditions.

Article 2

For the purposes of this Directive, Member States shall adopt the requisite measures to specify the areas favourable to shellfish growth and the reference areas within the time limits laid down in Article 11.

Article 3

1. The physical, chemical and bacteriological parameters which define the quality requirements for waters favourable to shellfish growth are indicated in the Annex which forms an integral part of this Directive.

Member States shall set the values of these parameters applicable to waters favourable to shellfish growth.

2. The values set pursuant to paragraph 1 may not be less stringent than those given in the Columns of the Annex marked I.

3. Whereas values appear in the Columns marked G in the Annex, whether or not there is a corresponding value in the I columns in the Annex, Member States shall endeavour, subject to Article 7, to observe them as guidelines.

Article 4

1. Member States shall take all necessary measures to ensure that, within five years following the notification of this Directive, the quality requirements of waters favourable to shellfish growth conform to the parametric values set in accordance with Article 3.

2. Member States shall ensure that in areas favourable to shellfish growth which are developed after the notification of this directive, the "I values" laid down in the Annex are observed from the time that the area favourable to shellfish growth is exploited.

Article 5

1. For the purposes of Article 4, waters favourable to shellfish growth shall be deemed to conform to the relevant parameters;

if samples of that water taken at the same sampling point and at the intervals specified in the Annex, over a period of twelve months show that it conforms to the parametric values for the quality of the water concerned, in the case of:

- 95% of the samples for parameters corresponding to those specified in column I in the Annex, except for pH, temperature, oxygen, salinity and the bacteriological quality, which must conform to the percentages or values indicated in the Annex,

- 90% of the samples in all other cases,

and if, in the case of the 5% and 10% of the samples which do not comply:

- the values measured in the water do not deviate from the parametric values in question by more than 50%, except for the parameters regarding temperature, pH, oxygen, salinity and bacteriological quality,

- consecutive samples of water taken at a statistically suitable intervals do not deviate from the relevant parametric values.

2. Deviations from the values referred to in Article 3 shall not be taken into consideration in the calculation of the percentage referred to in paragraph 1 when they are the result of natural disasters or abnormal weather conditions.

Article 6

1. The competent authorities in the Member States shall carry out the sampling of the waters favourable to shellfish growth, the minimum frequency of which is laid down in the Annex.

2. The samples shall be taken in the areas favourable to shellfish growth at the depth of water where the density of shellfish is highest, except for hydrocarbon samples which shall be taken at surface level and for the temperature, which shall be measured 1 metre below the surface.

3. An investigation of the conditions prevailing in the reference areas and the regions within the maximum limits reached by the water in the course of tidal movements shall be carried out scrupulously and repeated periodically in order to obtain geographical and topographical data, and to determine the volume and nature of all polluting and potentially polluting discharges and their effects according to the distance from the area favourable to shellfish growth, with a view to ensuring the salubrity of these waters.

4. Should inspection by a competent authority or sampling and analysis operations reveal that there is a discharge or a probable discharge of substances likely to lower the quality of the water favourable to shellfish growth, additional sampling must take place to discover the sources of the pollution and to eliminate them. Such additional sampling must also take place if there are any other grounds for suspecting that there is a decrease in the quality of the water.

5. The reference methods of analysis to be employed for the different parameters concerned are set out in the Annex. The Member States shall take the necessary measures to ensure that laboratories which employ other methods prove to the Commission that the results obtained are equivalent or comparable to those specified in the Annex.

Article 7

1. Implementation of the measures taken pursuant to this Directive may in no circumstances lead either directly or indirectly to deterioration of the current quality of waters favourable to shellfish growth.

2. Member States may fix more stringent growth values for waters favourable to shellfish than those laid down in this Directive.

Article 8

1. In the case of water suitable for shellfish growth lying across frontiers, Member States shall jointly delimit all waters suitable for shellfish growth in the cross-frontier areas to which this Directive applies and define the values applicable to them.

2. The Commission shall participate in this joint operation.

Article 9

This Directive may be waived in the event of natural disasters or abnormal weather or geographical conditions.

In no case may the exceptions provided for in this Article disregard the requirements essential for public health protection and consumer protection.

Where a Member State waives the provisions of this Directive, it shall forthwith notify the Commission thereof, stating its reasons and the periods anticipated.

Article 10

Such amendments as are necessary for adapting to technical progress;
the parameters,
the G and I values of these parameters and/or
the methods of analysis
given in the Annex shall be adopted by the Committee set up under Article 10 of Council Directive of 8 December 1975 concerning the quality of bathing water and in accordance with the procedure laid down in Article 11 thereof.

Article 11

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive within two years of its notification. They shall forthwith inform the Commission thereof.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

Article 12

This Directive is addressed to the Member States.

Done at
for the Council
The President.

ANNEXQuality requirements for waters favourable to shell first growth

	PARAMETERS	G	I	MINIMUM SAMPLING AND MEASURING FREQUENCY(1)	METHODS OF ANALYSIS AND INSPECTION
1.	pH pH unit		pH variations must not exceed ± 0.5 pH units within the limits between pH 7.0 and 9.0 as against those in the reference area.	Quarterly	Electrometric, with calibration by means of two buffer solutions of known pH, close in value to, preferably on either side of the pH value to be measured
2.	Temperature °C		The difference in the temperature of the water favourable to shell fish growth must not exceed 2°C at 1 metre beneath the surface of the water as against that in the reference area. Moreover, the variation must not exceed 5°C in 6 hours at each point at which samples are taken in the area favourable to shell growth	Quarterly (two samples)	Thermometric
3.	Colour Scale unit Pt		Natural colour of the water favourable to shell-fish growth identical to that of the reference area after final filtration of the sample through a membrane of 0.45 μ	Quarterly	Comparative method standards on the Pt/Co scale

(1) These minimum sampling and measuring frequencies apply when samples taken in previous years gave results which are appreciably better than those in this Annex and when no new factor likely to lower the quality of the water has appeared.

	PARAMETERS	G	I	MINIMUM SAM- PLING AND MEASURING FREQUENCY(1)	METHOD OF ANALYSIS AND INSPECTION
4.	Materials in mg/l MES suspension		<p>Maximum 20 % in addition to the existing contents measured as against the reference area.</p> <p>These values do not apply when the following substances are present in the environment :</p> <p>(a) suspended materials with noxious properties</p> <p>(b) soluble noxious substances</p> <p>(c) when the oxygen content of the water is reduced as a result of the decomposition of organic materials</p>	Quarterly	<p>- by filtration on a 0.45 μ membrane</p> <p>drying at 105°C and weighing</p>
5.	Salinity ‰	12-38 ‰	<p>- < 40 ‰</p> <p>- All variations of more than 10 % in relation to the reference area for over a week</p> <p>No modification of the salinity balance of the water favourable to shell-fish growth</p>	Monthly	- Conductimetric
6.	Oxygen % O ₂ (saturation)	≥ 80 %	<p>≥ 70 % (average value)</p> <p>Must not drop below 70 % for more than 6 hours during the period and never below 50 %</p>	Monthly (over a period of 24 hours)	- the Winkler method

PARAMETERS	G	I	MINIMUM SAMPLING AND MEASURING FREQUENCY (1)	METHOD OF ANALYSIS AND INSPECTION
7. Hydrocarbons of petroleum origin		<p>Hydrocarbons must not be present in water favourable to shell-fish growth in such quantities as to :</p> <ul style="list-style-type: none"> - produce a visible film on the surface of the water and/or a deposit on the shell-fish - communicate to the shell-fish a perceptible hydrocarbon flavour - have noxious effects on the shell-fish 	Quarterly	Visual inspection of the water favourable to shell-fish growth and tasting of the shell-fish
8. Synthetic organohalogenated substances such as PCT, DDT and its metabolites, TDE/DDE aldrin, dieldrin		<ul style="list-style-type: none"> - the total amount of synthetic organohalogenated substances must not exceed a concentration of $5 \mu\text{g}/\text{l}$ - in no case should the concentration of a single substance exceed 1 % of the lethal concentration of the shell-fish larvae (LC 50/96 hours) <p>(LC 50/96 h : is the lethal concentration corresponding to a mortality of 50 % of the shell-fish larvae in 96 hours)</p>	Half-yearly	In water favourable to shell-fish growth : Gas chromatography after extraction with a suitable solvent and purification

	PARAMETERS	G	I	MINIMUM SAMPLING AND MEASURING FREQUENCY (1)	METHOD OF ANALYSIS AND INSPECTION
9.	Bacteriological quality faecal coliforms/100 ml		<ul style="list-style-type: none"> - \leq 300 in 90 % of the samples - \leq 500 in 10 % of the remaining samples of shell-fish flesh and the intervalvular liquid 	Quarterly	In shell-fish flesh and intervalvular liquid : fermentation in multiple tubes. Subculturing of positive tubes on the confirmation medium. Amount according to MPN (most probable number)
10.	<u>Metals</u> Silver mg/l Ag Arsenic As Cadmium Cd Chrome Cr Copper Cu Mercury Hg Nickel Ni Lead Pb Zinc Zn		Concentration of each substance ⁽²⁾ in the water favourable to shell-fish growth must not exceed a level which causes : <ul style="list-style-type: none"> - noxious effects on the shell-fish and its larvae - an unpleasant change in taste The synergic effect of these metals must be taken into consideration	Half-yearly	In water favourable to shell-fish growth : Atomic absorption preceded, where appropriate, by concentration and/or extraction
11.	Substances affecting the taste of the shell-fish (cyclic hydrocarbons and derived phenolates)		A lower concentration than that likely to change the taste of the shell-fish as compared with that found in the reference area	Quarterly	Organoleptic examination of shell-fish

(2) The values assigned to these parameters will be fixed in accordance with the procedure for adaptation to technical progress referred to in Article 10 of this Directive.