ANNEX 8

SCOTTISH ENVIRONMENT PROTECTION AGENCY
ADRIS COASTAL WATER CLASSIFICATION SCHEME

A Scheme for Classifying the Quality of Scottish Non-Estuarine Coastal Waters and Relevant Territorial Waters.

1 Introduction

The purpose of this scheme described below is to classify Scottish Coastal Waters. A classification scheme is required both for national reporting purposes and also to measure performance and compliance with coastal water quality standards. The scheme described below was developed originally by an ADRIS (Association of District River Inspectors Scotland) Working Group and following further revision was adopted by SEPA for use between 1996 and 2006.

2 Basis of the Scheme

ADRIS decided that the Scheme should continue to:-

a) be simple
b) be readily applicable to all Scottish Controlled Coastal Waters
c) recognise the generally unpolluted status of Scottish coastal waters
d) recognise areas affected by existing developments
e) recognise areas and discharges subject to all relevant EC Directives.

3 Application of the Scheme

Coastal boundaries with defined estuaries should use the same limits as have been agreed with the Scottish Office for the EC Urban Waste Water Directive.

The classification takes account of all features up to 3 miles seawards of the territorial waters baseline. Where an offshore discharge or dumping ground causes a reduction in the quality distinct from the quality at the shore (i.e. more than 200 metres offshore) then an additional length should be included in the classification, corresponding to the longest axis of the area affected by the activity.

It was recognised that there was a need to classify offshore areas where there was some deterioration in quality in addition to shore length. It is assumed that water quality within a mixing zone is acceptable if the associated discharge does not exceed its consent.

It was also agreed that the classification scheme should:-

a) Embrace all quality-influencing parameters and effects, regardless of whether the River Purification Boards were empowered to control them (e.g. effluent discharges) or not (e.g. sea dumping of sewage sludge/dredge spoil; marine garbage and debris); and
b) For the sake of simplicity, and to accord with a revised estuary classification scheme be 'default based' rather than 'points based'.

The relatively small unit of the proposed scheme (0.1km) results in some very small lengths (0.1 or 0.2 km) of classes C or D coastline around some outfalls but this has been shown to be realistic in practice. It is also considered reasonable to ignore affected lengths smaller than 0.01km. Where a length is greater than this then the whole 0.1km length is downgraded.

It is also considered reasonable to assume the presence of intermediate zones between, for example, class C and class A waters even if no data exist to substantiate this. Therefore an appropriate buffer zone of class B may be assumed unless there is a clear hydrographic boundary which would explain a major sudden change in quality.

It may be that class A coastal waters abut a class C estuarine water. This may be a consequence of the few parameters included in one scheme but not in the other (i.e. microbiology in the coastal scheme, migratory fish in the estuary scheme). Abrupt transitions between coastal and estuarine classification are therefore considered to be inevitable and acceptable.

When using colours to depict coastal classifications, it was agreed to follow the convention adopted by the Scottish Executive for the classification of estuarine waters i.e.:-

Class A	Blue
Class B	Green
Class C	Orange
Class D	Red

The main provisions of the Coastal Water Classification Scheme are tabulated below. For each of the four quality classes (A, B, C and D) there is criteria covering aesthetic condition, biological condition, bacteriological condition and chemical condition criteria specified for that class. A water body satisfying class C aesthetic, biological and bacteriological condition criteria, but failing the chemical condition criterion, would be classified as class D overall).

Where only limited data on chemical and biological data is available, coastal waters will be classified according to that data together with information on, for example, known discharges, pollution complaints, etc and additional survey work may not be required. Where no discharges occur, no pollution complaints have been substantiated and other pollution sources are absent, a stretch of coast will be assumed to fall into class A.

4. Guidance Notes

a) Normally adjacent to extremely sparsely populated and industrially undeveloped areas. Sewage and petroleum residues absent, but traces of items in Section B of Table 1 may be present.
b) Fauna and flora consistent with physical and hydrographical conditions (e.g. level on shore or sub-tidal locations, sediment characteristics, tidal and other currents, salinity and water quality), and unaffected by effluent discharges, etc.
c) Where there are known or suspected sources of TBT (tributyltin), or the degree of imposex in dogwhelks has been measured, then the following guidelines will apply:-

<10% imposex	Class A
10 - 40% imposex	Class B
>40% imposex	Class C

d) Presence of traces of sewage derived solids or petroleum residues, or conspicuous accumulations of other materials. See Table 1.
e) 'Occasional' = Presence observed on less than 20% of visits.
f) Presence of conspicuous accumulations of sewage derived solids or petroleum residues, or gross accumulations of other materials. See Table 1.

g) Transitional fauna characterised by a decline in numbers of species but, in the case of organic enrichment, accompanied by extremely abundant populations of opportunistic species (see Rees et al 1990).
h) Seasonal growths of green seaweeds on shores distant from freshwater inputs.
i) Includes both List I and List II Substances.
j) Frequent = Presence observed on 20% or more visits.
k) Gross, offensive accumulations of sewage solids or petroleum residues. See Table 1.
l) Macrofauna absent, or poor in species, abundance or biomass (see Rees et al 1990).
m) 'Frequently' fail = at least 20% of samples fail to meet the values set as mandatory quality standards.

The classification system assumes the GESAMP (1982) definition of pollution, i.e.:-

Pollution is the introduction by man, directly or indirectly, of substances or energy into the marine environment resulting in such deleterious effects as: harm to living resources, hazards to human health, hindrance to marine activities including fisheries, impairment of quality for use of seawater and reduction of amenities.

ADRIS COASTAL WATERS CLASSIFICATION SCHEME

CLASS/DESCRIPTION	AESTHETIC CONDITION	BIOLOGICAL CONDITION	BACTERIOLOGICAL CONDITION	CHEMICAL CONDITION
A Excellent	Near Pristine **and** (Note a)	Flora and fauna **and** normal (Note b, c)	Likely to meet quality standards no less stringent than the guideline standards for EC Designated Bathing Waters.	
B Good	Unpolluted, but may **and** show traces of contamination (Note d)	Flora and fauna **and** normal (Notes b, c)	Likely to meet quality standards no less stringent than the mandatory standards for EC Designated bathing waters.	
C Unsatisfactory	Occasional **or** observations or substantiated complaints of sewage solids smell nuisance or oil (Notes e, f)	Flora and/or fauna **or** modified by effluent discharges (Notes c, g, h)	Likely to occasionally **and** fail to meet quality standards no less stringent than the mandatory standards for EC Designated bathing waters	Likely to meet all quality standards applied as a consequence of the EC Dangerous Substances Directive (Note l)
D Seriously Polluted	Frequent observations **or** or substantiated complaints of sewage solids, smell nuisance or oil (Notes j, k)	Flora and/or fauna **or** impoverished or absent (Note 1)	Likely to frequently fail **or** to meet quality standards no less stringent than the mandatory standards for EC Designated bathing waters. (Note m)	Likely to fail any one or more of quality standards applied as a consequence of the EC Dangerous Substances Directive.