

ENVIRONMENTAL PROTECTION



NRA

*National Rivers Authority
South West Region*

**River Fowey Catchment
River Water Quality
Classification 1990**

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ENVIRONMENT AGENCY



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RIVER WATER QUALITY IN THE RIVER FOWEY CATCHMENT

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National Rivers Authority South West Region



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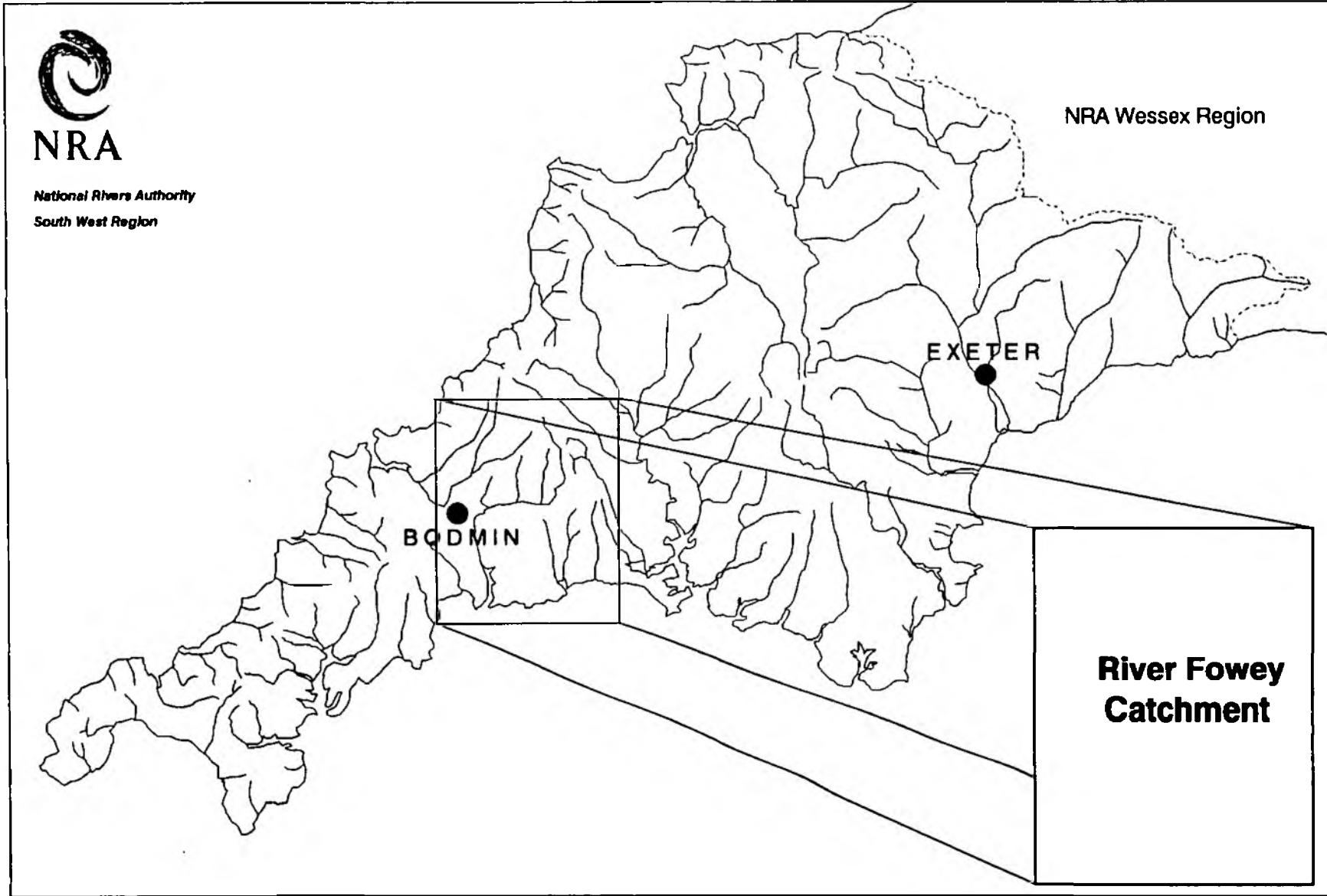
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BODMIN

**River Fowey
Catchment**

River Fowey Catchment



1. INTRODUCTION

Monitoring to assess the quality of river waters is undertaken in thirty-two catchments within the region. As part of this monitoring programme samples are collected routinely from selected monitoring points at a pre-determined frequency per year, usually twelve spaced at monthly intervals. Each monitoring point provides data for the water quality of a river reach (in kilometres) upstream of the monitoring point.

River lengths have been re-measured and variations exist over those recorded previously.

Each water sample collected from each monitoring point is analysed for a range of chemical and physical constituents or properties known as determinands. The analytical results for each sample are entered into a computer database called the Water Quality Archive.

Selected data are accessed from the Archive so that the quality of each river reach can be determined based on a River Classification System developed by the National Water Council (NWC), (9.1).

This report presents the river water quality classification for 1990 for monitored river reaches in the River Fowey catchment.

2. RIVER FOWEY CATCHMENT

The River Fowey flows over a distance of 38.4 km from its source to the tidal limit in the Fowey Estuary, (Appendix 10.1). Water quality was monitored at eight locations on the main river. All sites were sampled at approximately fortnightly intervals.

Throughout the Fowey catchment six secondary tributaries of the River Fowey were monitored at monthly intervals and one secondary tributary (St. Neot Stream) was sampled approximately fortnightly. Two reservoirs (Colliford Lake and Siblyback Reservoir) were also sampled at monthly intervals.

The River Lerryn, Trebant Water and Pont Pill Stream flow over a distance of 8 km, 8.8 km and 7.4 km respectively from their source to the tidal limit in the Fowey Estuary, (Appendix 10.1) and were all monitored at one location. Monitoring points were located in the lower reaches of these streams.

2.1 SECONDARY TRIBUTARIES

The St. Neot Stream flows over a distance of 13.9 km from its source to the confluence with the River Fowey, (Appendix 10.1) and was monitored at three locations.

The Cardingham Water flows over a distance of 9.4 km from its source to the confluence with the River Fowey, (Appendix 10.1) and was monitored at three locations.

The Northwood Brook and Siblyback Stream flow over a distance of 4.7 km and 4.2 km respectively before joining the main River Fowey, (Appendix 10.1) and were monitored at two locations.

The Warleggan Stream flows over a distance of 12.7 km from its source to the confluence with the River Fowey, (Appendix 10.1) and was monitored at one location in the lower reaches.

The Bedvella Stream flows over a distance of 3 km from its source to the confluence with the River Lerryn, (Appendix 10.1) and was monitored at one location in the lower reaches.

Each sample was analysed for a minimum number of determinands (Appendix 10.2) plus additional determinands based on local knowledge of the catchment. In addition, at selected sites, certain metal analyses were carried out.

The analytical results from all of these samples have been entered into the Water Quality Archive and can be accessed through the Water Act Register, (9.2).

3. NATIONAL WATER COUNCIL'S RIVER CLASSIFICATION SYSTEM

3.1 River Quality Objectives

In 1978 river quality objectives (RQOs) were assigned to all river lengths that were part of the routine monitoring network and to those additional watercourses, which were not part of the routine network, but which received discharges of effluents.

For the majority of watercourses long term objectives were identified based on existing and assumed adequate quality for the long term protection of the watercourse. In a few instances short term objectives were identified but no timetable for the achievement of the associated long term objective was set.

The RQOs currently in use in the River Fowey catchment are identified in Appendix 10.1.

3.2 River Quality Classification

River water quality is classified using the National Water Council's (NWC) River Classification System (see Appendix 10.3), which identifies river water quality as being one of five quality classes as shown in Table 1 below:

Table 1 - National Water Council - River Classification System

<u>Class</u>	<u>Description</u>
1A	Good quality
1B	Lesser good quality
2	Fair quality
3	Poor quality
4	Bad quality

Using the NWC system, the classification of river water quality is based on the values of certain determinands as arithmetic means or as 95 percentiles (5 percentiles are used for pH and dissolved oxygen) as indicated in Appendices 10.4.1 and 10.4.2.

The quality classification system incorporates some of the European Inland Fisheries Advisory Commission (EIFAC) criteria (Appendix 10.3) recommended for use by the NWC system.

4. 1990 RIVER WATER QUALITY SURVEY

The 1990 regional classification of river water quality also includes the requirements of the Department of the Environment quinquennial national river quality survey. The objectives for the Department of the Environment 1990 River Quality Survey are given below:

- 1) To carry out a National Classification Survey based on procedures used in the 1985 National Classification Survey, including all regional differences.
- 2) To classify all rivers and canals included in the 1985 National Classification Survey.
- 3) To compare the 1990 Classification with those obtained in 1985.

In addition, those watercourses, which were not part of the 1985 Survey and have been monitored since that date, are included in the 1990 regional classification of river water quality.

5. 1990 RIVER WATER QUALITY CLASSIFICATION

Analytical data collected from monitoring during 1988, 1989 and 1990 were processed through a computerised river water quality classification programme. This resulted in a quality class being assigned to each monitored river reach as indicated in Appendix 10.5.

The quality class for 1990 can be compared against the appropriate River Quality Objective and previous annual quality classes (1985-1989) also based on three years combined data, for each river reach in Appendix 10.5.

The river water classification system used to classify each river length is identical to the system used in 1985 for the Department of the Environment's 1985 River Quality Survey. The determinand classification criteria used to determine the annual quality classes in 1985, subsequent years and for 1990 are indicated in Appendices 10.4 and 10.4.1.

Improvements to this classification system could have been made, particularly in the use of a different suspended solids standard for Class 2 waters. As the National Rivers Authority will be proposing new classification systems to the Secretary of State in the near future, it was decided to classify river lengths in 1990 with the classification used for the 1985-1989 classification period.

The adoption of the revised criteria for suspended solids in Class 2 waters would not have affected the classification of river reaches.

The river quality classes for 1990 of monitored river reaches in the catchment are shown in map form in Appendix 10.6.

The calculated determinand statistics for pH, temperature, dissolved oxygen, biochemical oxygen demand (BOD), total ammonia, un-ionised ammonia, suspended solids, copper and zinc from which the quality class was determined for each river reach, are indicated in Appendix 10.7.

6. NON-COMPLIANCE WITH QUALITY OBJECTIVES

Those monitored river reaches within the catchment, which do not comply with their assigned (RQO), are shown in map form in Appendix 10.8.

Appendix 10.9 indicates the number of samples analysed for each determinand over the period 1988 to 1990 and the number of sample results per determinand, which exceed the determinand quality standard.

For those non-compliant river reaches in the catchment, the extent of exceedance of the calculated determinand statistic with relevant quality standard (represented as a percentage), is indicated in Appendix 10.10.

7. CAUSES OF NON-COMPLIANCE

For those river reaches, which did not comply with their assigned RQOs, the cause of non-compliance (where possible to identify) is indicated in Appendix 10.11.

8. GLOSSARY OF TERMS

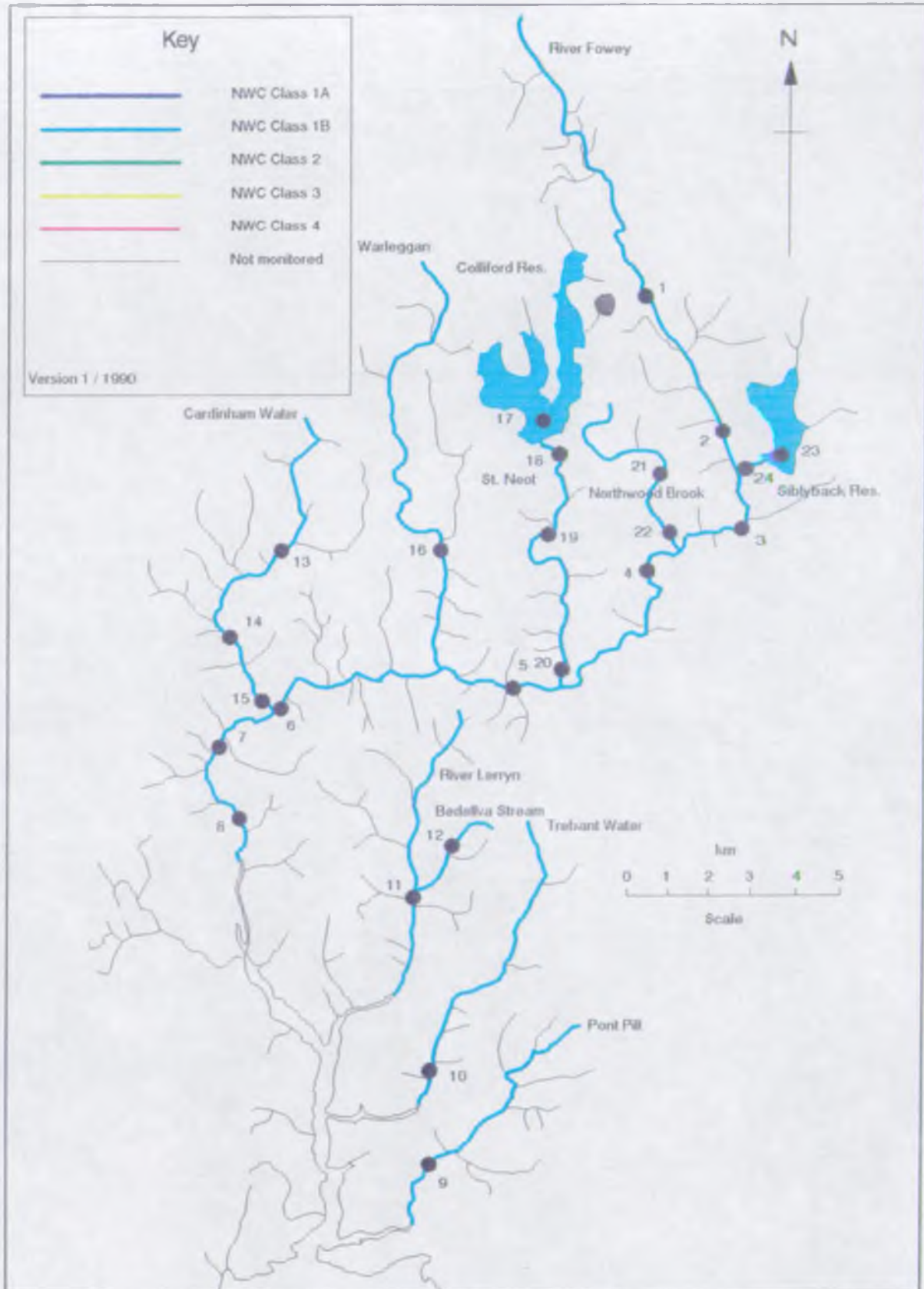
RIVER REACH	A segment of water, upstream from sampling point to the next sampling point.
RIVER LENGTH	River distance in kilometres.
RIVER QUALITY OBJECTIVE	That NWC class, which protects the most sensitive use of the water.
95 percentiles	Maximum limits, which must be met for at least 95% of the time.
5 percentiles	Minimum limits, which must be met for at least 95% of the time.
BIOLOGICAL OXYGEN DEMAND (5 day carbonaceous ATU)	A standard test measuring the microbial uptake of oxygen - an estimate of organic pollution.
pH	A scale of acid to alkali.
UN-IONISED AMMONIA	Fraction of ammonia poisonous to fish, NH_3 .
SUSPENDED SOLIDS	Solids removed by filtration or centrifuge under specific conditions.
USER REFERENCE NUMBER	Reference number allocated to a sampling point.
INFERRED STRETCH	Segment of water, which is not monitored and whose water quality classification is assigned from the monitored reach upstream.

9. REFERENCES

Reference

- 9.1 National Water Council (1977). River Water Quality: The Next Stage. Review of Discharge Consent Conditions. London.
- 9.2 Water Act 1989 Section 117
- 9.3 Alabaster J. S. and Lloyd R. Water Quality Criteria for Freshwater Fish, 2nd edition, 1982. Butterworths.

Fowey Catchment River Quality Objectives



BASIC DETERMINAND ANALYTICAL SUITE FOR ALL CLASSIFIED RIVER SITES

pH as pH Units

Conductivity at 20 C as uS/cm

Water temperature (Cel)

Oxygen dissolved % saturation

Oxygen dissolved as mg/l O

Biochemical oxygen demand (5 day total ATU) as mg/l O

Total organic carbon as mg/l C

Nitrogen ammoniacal as mg/l N

Ammonia un-ionised as mg/l N

Nitrate as mg/l N

Nitrite as mg/l N

Suspended solids at 105 C as mg/l

Total hardness as mg/l CaCO₃

Chloride as mg/l Cl

Orthophosphate (total) as mg/l P

Silicate reactive dissolved as mg/l SiO₂

Sulphate (dissolved) as mg/l SO₄

Sodium (total) as mg/l Na

Potassium (total) as mg/l K

Magnesium (total) as mg/l Mg

Calcium (total) as mg/l Ca

Alkalinity as pH 4.5 as mg/l CaCO₃

NWC RIVER QUALITY CLASSIFICATION SYSTEM

River Class	Quality criteria	Remarks	Current potential uses
	Class limiting criteria (95 percentile)		
1A Good Quality	<ul style="list-style-type: none"> (i) Dissolved oxygen saturation greater than 80% (ii) Biochemical oxygen demand not greater than 3 mg/l (iii) Ammonia not greater than 0.4 mg/l (iv) Where the water is abstracted for drinking water, it complies with requirements for A2* water (v) Non-toxic to fish in EIFAC terms (or best estimates if EIFAC figures not available) 	<ul style="list-style-type: none"> (i) Average BOD probably not greater than 1.5 mg/l (ii) Visible evidence of pollution should be absent 	<ul style="list-style-type: none"> (i) Water of high quality suitable for potable supply abstractions and for all abstractions (ii) Game or other high class fisheries (iii) High amenity value
1B Good Quality	<ul style="list-style-type: none"> (i) DO greater than 60% saturation (ii) BOD not greater than 5 mg/l (iii) Ammonia not greater than 0.9 mg/l (iv) Where water is abstracted for drinking water, it complies with the requirements for A2* water (v) Non-toxic to fish in EIFAC terms (or best estimates if EIFAC figures not available) 	<ul style="list-style-type: none"> (i) Average BOD probably not greater than 2 mg/l (ii) Average ammonia probably not greater than 0.5 mg/l (iii) Visible evidence of pollution should be absent (iv) Waters of high quality which cannot be placed in Class 1A because of the high proportion of high quality effluent present or because of the effect of physical factors such as canalisation, low gradient or eutrophication (v) Class 1A and Class 1B together are essentially the Class 1 of the River Pollution Survey (RPS) 	Water of less high quality than Class 1A but usable for substantially the same purposes
2 Fair Quality	<ul style="list-style-type: none"> (i) DO greater than 40% saturation (ii) BOD not greater than 9 mg/l (iii) Where water is abstracted for drinking water it complies with the requirements for A3* water (iv) Non-toxic to fish in EIFAC terms (or best estimates if EIFAC figures not available) 	<ul style="list-style-type: none"> (i) Average BOD probably not greater than 5 mg/l (ii) Similar to Class 2 of RPS (iii) Water not showing physical signs of pollution other than humic colouration and a little foaming below weirs 	<ul style="list-style-type: none"> (i) Waters suitable for potable supply after advanced treatment (ii) Supporting reasonably good coarse fisheries (iii) Moderate amenity value

Poor Quality	(i) DO greater than 10% saturation (ii) Not likely to be anaerobic (iii) BOD not greater than 17 mg/l. This may not apply if there is a high degree of re-aeration	Similar to Class 3 of RPS	Waters which are polluted to an extent that fish are absent only sporadically present. May be used for low grade industrial abstraction purposes. Considerable potential for further use if cleaned up
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4 Bad Quality	Waters which are inferior to Class 3 in terms of dissolved oxygen and likely to be anaerobic at times	Similar to Class 4 of RPS	Waters which are grossly polluted and are likely to cause nuisance
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X	DO greater than 10% saturation		Insignificant watercourses and ditches not usable, where the objective is simply to prevent nuisance developing
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- Notes
- (a) Under extreme weather conditions (eg flood, drought, freeze-up), or when dominated by plant growth, or by aquatic plant decay, rivers usually in Class 1, 2, and 3 may have BODs and dissolved oxygen levels, or ammonia content outside the stated levels for those Classes. When this occurs the cause should be stated along with analytical results.
 - (b) The BOD determinations refer to 5 day carbonaceous BOD (ATU). Ammonia figures are expressed as NH₄. **
 - (c) In most instances the chemical classification given above will be suitable. However, the basis of the classification is restricted to a finite number of chemical determinands and there may be a few cases where the presence of a chemical substance other than those used in the classification markedly reduces the quality of the water. In such cases, the quality classification of the water should be down-graded on the basis of biota actually present, and the reasons stated.
 - (d) EIFAC (European Inland Fisheries Advisory Commission) limits should be expressed as 95 percentile limits.

EEC category A2 and A3 requirements are those specified in the EEC Council directive of 16 June 1975 concerning the Quality of Surface Water intended for Abstraction of Drinking Water in the Member State.

** Ammonia Conversion Factors

(mg NH₄/l to mg N/l)

Class 1A	0.4 mg NH ₄ /l = 0.31 mg N/l
Class 1B	0.9 mg NH ₄ /l = 0.70 mg N/l
	0.5 mg NH ₄ /l = 0.39 mg N/l

NWC RIVER CLASSIFICATION SYSTEM

CRITERIA USED BY NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION FOR NON-METALLIC DETERMINANDS

River Class	Quality Criteria
1A	Dissolved oxygen % saturation greater than 80% BOD (ATU) not greater than 3 mg/l O Total ammonia not greater than 0.31 mg/l N Non-ionised ammonia not greater than 0.021 mg/l N Temperature not greater than 21.5 C pH greater than 5.0 and less than 9.0 Suspended solids not greater than 25 mg/l
1B	Dissolved oxygen % saturation greater than 60% BOD (ATU) not greater than 5 mg/l O Total ammonia not greater than 0.70 mg/l N Non-ionised ammonia not greater than 0.021 mg/l N Temperature not greater than 21.5 C pH greater than 5.0 and less than 9.0 Suspended solids not greater than 25 mg/l
2	Dissolved oxygen & saturation greater than 40% BOD (ATU) not greater than 9 mg/l O Total ammonia not greater than 1.56 mg/l N Non-ionised ammonia not greater than 0.021 mg/l N Temperature not greater than 28 C pH greater than 5.0 and less than 9.0 Suspended solids not greater than 25 mg/l
3	Dissolved oxygen % saturation greater than 10% BOD (ATU) not greater than 17 mg/l O
4	Dissolved oxygen % saturation not greater than 10% BOD (ATU) greater than 17 mg/l O

STATISTICS USED BY NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION

Determinand	Statistic
Dissolved oxygen	5 percentile
BOD (ATU)	95 percentile
Total ammonia	95 percentile
Non-ionised ammonia	95 percentile
Temperature	95 percentile
pH	5 percentile
Suspended solids	95 percentile
	arithmetic mean

NWC RIVER CLASSIFICATION SYSTEM

CRITERIA USED BY NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION FOR METALLIC DETERMINANDS

SOLUBLE COPPER

Total Hardness (mean) mg/l CaCO ₃	Statistic	Soluble Copper*	
		Class 1 ug/l Cu	Class 2
0 - 10	95 percentile	< = 5	> 5
10 - 50	95 percentile	< = 22	> 22
50 - 100	95 percentile	< = 40	> 40
100 - 300	95 percentile	< = 112	> 112

* Total copper is used for classification until sufficient data on soluble copper can be obtained.

TOTAL ZINC

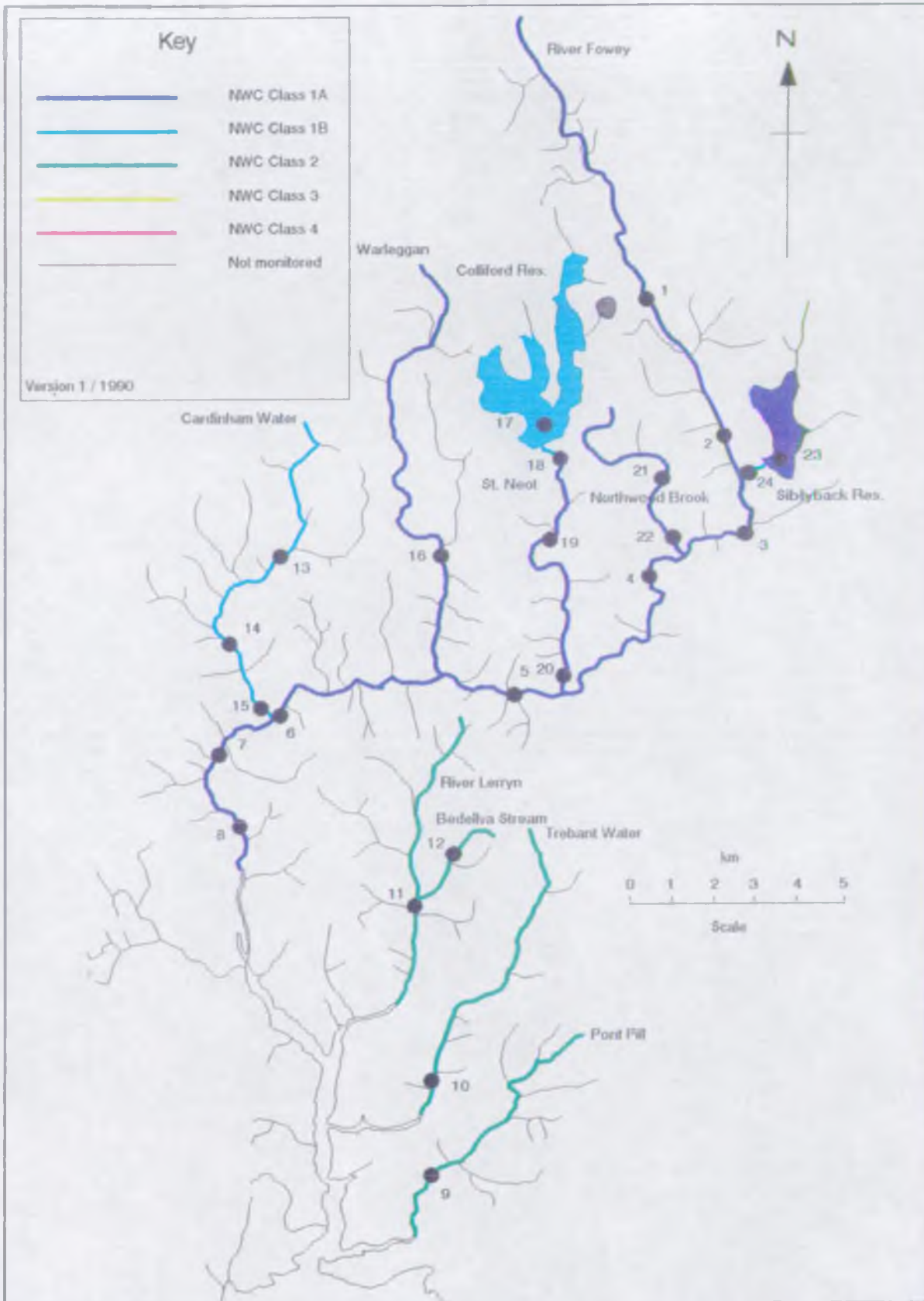
Total Hardness (mean) mg/l CaCO ₃	Statistic	Total Zinc		
		Class 1 ug/l Zn	Class 2	Class 3
0 - 10	95 percentile	< = 30	< = 300	> 300
10 - 50	95 percentile	< = 200	< = 700	> 700
50 - 100	95 percentile	< = 300	< = 1000	> 1000
100 - 300	95 percentile	< = 500	< = 2000	> 2000

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 1990 RIVER WATER QUALITY CLASSIFICATION
 CATCHMENT: FOWEY (17)

1990 Map Position Number	River	Reach upstream of	User Reference Number	National Grid Reference
1	FOWEY	HARROWBRIDGE	R15B001	SX 2065 7442
2	FOWEY	LAMELGATE	R15B024	SX 2230 7084
3	FOWEY	DRAYNES BRIDGE	R15B002	SX 2281 6893
4	FOWEY	TREVERBYN BRIDGE	R15B003	SX 2063 6748
5	FOWEY	BODITHIEL BRIDGE	R15B004	SX 1763 6486
6	FOWEY	BODMIN ROAD BRIDGE	R15B005	SX 1118 6438
7	FOWEY	RESPRYN BRIDGE	R15B025	SX 0994 6353
8	FOWEY	RESTORMEL	R15B006	SX 1080 6130
	FOWEY	NORMAL TIDAL LIMIT (INFERRED STRETCH)		
9	PONT PILL PONT PILL	TRETHAKE MILL NORMAL TIDAL LIMIT (INFERRED STRETCH)	R15B032	SX 1555 5310
10	TREBANT WATER TREBANT WATER	EAST TENCREEK NORMAL TIDAL LIMIT (INFERRED STRETCH)	R15B031	SX 1510 5546
11	LERRYN RIVER LERRYN RIVER	COUCH'S MILL NORMAL TIDAL LIMIT (INFERRED STRETCH)	R15B029	SX 1486 5911
12	BEDELLVA STREAM BEDELLVA STREAM	BOCONROC LERRYN R. CONFLUENCE (INFERRED STRETCH)	R15B030	SX 1556 6039
13	CARDINHAM WATER	MILLTOWN	R15B017	SX 1163 6819
14	CARDINHAM WATER	CALLYWITH	R15B023	SX 1006 6630
15	CARDINHAM WATER	GLYNNMILL	R15B021	SX 1114 6440
16	WARLEGGAN RIVER WARLEGGAN RIVER	PANTERS BRIDGE FOWEY CONFLUENCE (INFERRED STRETCH)	R15B009	SX 1593 6795
17	ST. NEOT RIVER	INFLOW, COLLIFORD LAKE (UNKNOWN STRETCH)	R15B034	SX 178 711
18	ST. NEOT RIVER	COLLIFORD LAKE	R15B014	SX 1808 7075
19	ST. NEOT RIVER	COLLIFORD BRIDGE	R15B007	SX 1830 6865
20	ST. NEOT RIVER	TREVENNA	R15B008	SX 1855 6494
	ST. NEOT RIVER	TWO WATERS FOOT FOWEY CONFLUENCE (INFERRED STRETCH)		
21	NORTHWOOD BROOK	WORTHA	R15B016	SX 2063 6984
22	NORTHWOOD BROOK NORTHWOOD BROOK	TREBANT BRIDGE FOWEY CONFLUENCE (INFERRED STRETCH)	R15B011	SX 2098 6829
23	SIBLYBACK STREAM	INFLOW, SIBLYBACK RES. (UNKNOWN STRETCH)	R15B033	SX 2315 7033
24	SIBLYBACK STREAM SIBLYBACK STREAM SIBLYBACK STREAM	SIBLYBACK RESERVOIR TREKEIVRESTEPS BRIDGE FOWEY CONFLUENCE (INFERRED STRETCH)	R15B010	SX 2283 6998

Reach Length (km)	Distance from source (km)	River Quality Objective	85	86	87	88	89	90
			RWC Class	RWC Class	RWC Class	RWC Class	RWC Class	RWC Class
8.8	8.8	1B	1A	1A	1A	1A	1A	1A
4.2	13.0	1B	1A	1A	1B	1B	1B	1A
2.4	15.4	1B	1A	1B	1A	1B	1B	1A
3.4	18.8	1B	1A	1A	1A	1B	1B	1A
5.6	24.4	1B	1A	1B	1B	1B	2	1A
7.8	32.2	1B	1A	1A	1A	1A	1A	1A
1.9	34.1	1B	1A	1A	1A	1A	1A	1A
2.9	37.0	1B	1A	1A	1A	1A	1A	1A
1.4	38.4	1B	1A	1A	1A	1A	1A	1A
5.5	5.5	1B	1B					2
1.9	7.4	1B	1B					2
7.6	7.6	1B	1B					2
1.2	8.8	1B	1B					2
5.5	5.5	1B	1B					2
2.5	8.0	1B	1B					2
1.6	1.6	1B						2
1.4	3.0	1B						2
4.0	4.0	1B	1A					1B
2.9	6.9	1B	1A					1B
2.5	9.4	1B	1A					1B
9.8	9.8	1B	1A	1A	1A	1A	1B	1A
2.9	12.7	1B	1A	1A	1A	1A	1B	1A
0.9	0.9	1B	1B	1B	1B	1B	1B	
4.7	5.6	1B	1B	1B	1B	1B	1B	1B
0.3	5.9	1B	1B	1B	1B	1B	1B	1B
2.7	8.6	1B	1B	1A	1A	1A	1A	1A
5.2	13.8	1B	1A	1A	1B	1B	1B	1A
0.1	13.9	1B	1A	1A	1B	1B	1B	1A
2.4	2.4	1B	1B	1A	1A	1A	1A	1A
2.0	4.4	1B	1B	1A	1A	1A	1A	1A
0.3	4.7	1B	1B	1A	1A	1A	1A	1A
2.0	2.0	1B	1A	1B	1A	1B	1B	
1.4	3.4	1B	1A	1B	1A	1B	1B	1A
0.6	4.0	1B	1A	1B	1A	1B	1B	1B
0.2	4.2	1B	1A	1B	1A	1B	1B	1B

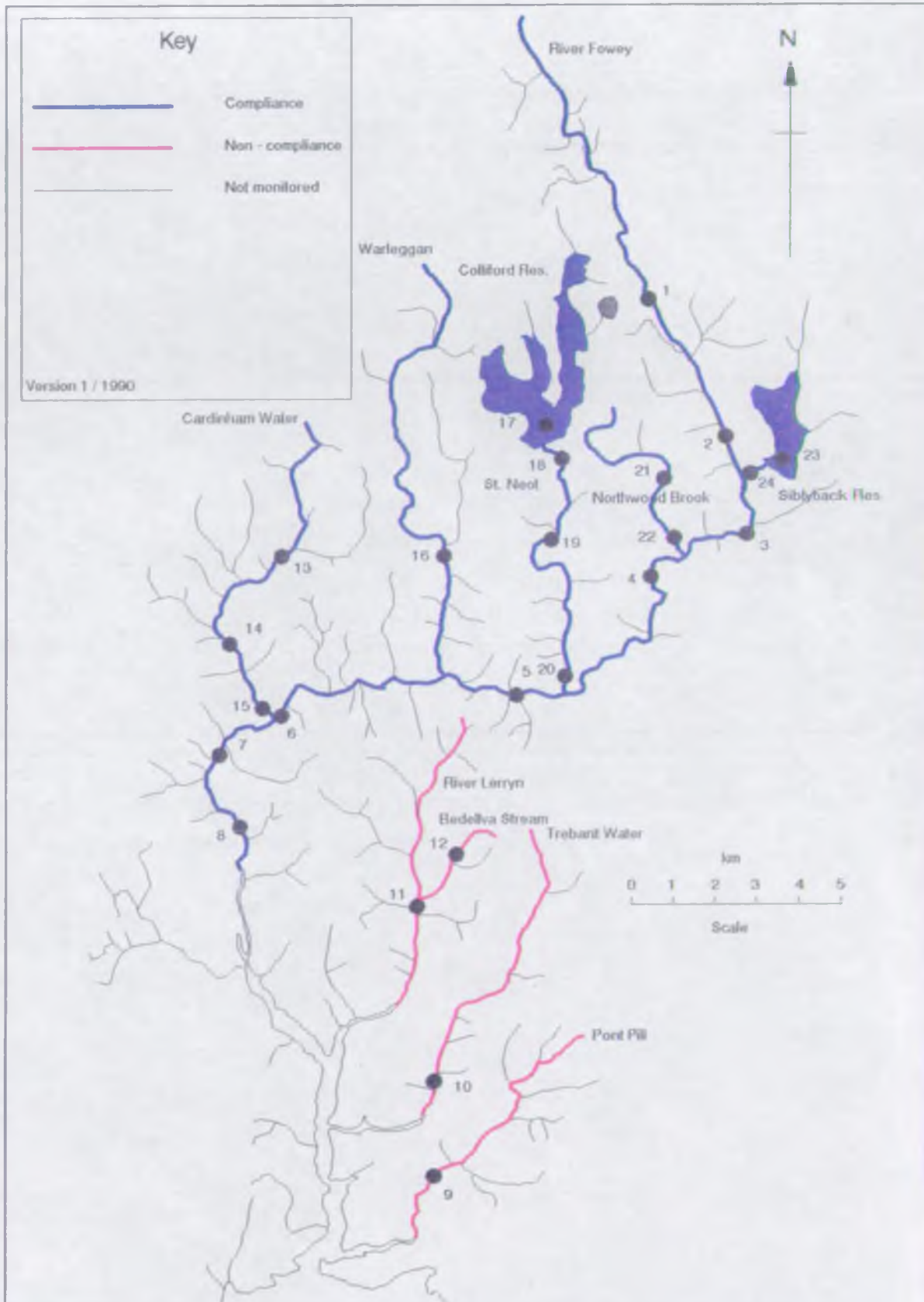
Fowey Catchment Water Quality - 1990



NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 1990 RIVER WATER QUALITY CLASSIFICATION
 CALCULATED DETERMINAND STATISTICS USED FOR QUALITY ASSESSMENT
 CATCHMENT: FONEY (17)

River	Reach upstream of	User Ref. Number	90 RMC Class	Calculated Determinand Statistics used for Quality Assessment																			
				pH Lower Class 95tile		pH Upper Class 95tile		Temperature Class 95tile		DO (%) Class 95tile		BOD (MGU) Class 95tile		Total Ammonia Class 95tile		Union. Ammonia Class 95tile		S.Solids Class Mean		Total Copper Class 95tile		Total Zinc Class 95tile	
FONEY	HINCHENRIDGE	RL58001	1A	1A	5.6	1A	6.5	1A	14.9	1A	80.3	1A	2.2	1A	0.060	1A	0.010	1A	4.6	1A	6.0	1A	15.5
FONEY	LAVELGROE	RL58024	1A	1A	5.7	1A	6.7	1A	14.9	1A	81.0	1A	2.1	1A	0.047	1A	0.010	1A	4.0	1A	6.4	1A	14.7
FONEY	DRAVENS BRIDGE	RL58002	1A	1A	5.9	1A	6.9	1A	15.2	1A	81.7	1A	2.8	1A	0.042	1A	0.010	1A	3.0	1A	5.5	1A	9.9
FONEY	TREVENEN BRIDGE	RL58003	1A	1A	6.2	1A	6.9	1A	15.7	1A	88.0	1A	2.7	1A	0.040	1A	0.010	1A	4.4	1A	10.0	1A	17.5
FONEY	BODDINDEL BRIDGE	RL58004	1A	1A	6.3	1A	7.1	1A	16.1	1A	86.0	1A	2.4	1A	0.073	1A	0.010	1A	5.6	1A	6.0	1A	22.7
FONEY	BODDIN FORD BRIDGE	RL58005	1A	1A	6.4	1A	7.3	1A	15.8	1A	90.0	1A	2.2	1A	0.056	1A	0.010	1A	8.8	1A	6.0	1A	36.6
FONEY	RESEMAN BRIDGE	RL58025	1A	1A	6.5	1A	7.4	1A	15.8	1A	87.0	1A	2.4	1A	0.080	-	-	1A	6.6	1A	8.3	1A	37.8
FONEY	RESIDORREL	RL58006	1A	1A	6.5	1A	7.3	1A	16.2	1A	87.7	1A	2.6	1A	0.055	1A	0.010	1A	6.4	1A	6.5	1A	29.0
FOOT HILL	TREHANE MILL	RL58032	2	1A	7.4	1A	8.1	1A	15.0	1A	89.0	2	6.8	1A	0.107	1A	0.010	1A	8.9	1A	7.0	1A	31.0
TREHANE WIDER	EMET TRENCH	RL58031	2	1A	7.2	1A	7.8	1A	16.0	1B	69.0	2	7.6	2	0.924	1A	0.010	1A	11.0	1A	6.9	1A	18.0
LENNON RIVER	COUCH'S MILL	RL58029	2	1A	7.0	1A	7.7	1A	16.0	1B	61.9	2	5.7	1A	0.230	1A	0.010	1A	8.7	1A	9.5	1A	18.8
MEDELLIA STREAM	BODDINOC	RL58030	2	1A	6.9	1A	7.7	1A	16.4	1A	85.2	1B	3.8	1A	0.240	1A	0.010	1A	19.5	2	51.6	1A	168.8
CROCIENAM WIDER	MILLION	RL58017	1B	1A	6.5	1A	7.6	1A	15.4	1A	82.0	1B	3.6	1A	0.070	-	-	1A	18.5	1A	9.0	1A	57.0
CROCIENAM WIDER	ONLIMITE	RL58023	1B	1A	6.4	1A	7.5	1A	15.0	1A	84.3	1B	3.1	1A	0.060	1A	0.010	1A	14.0	-	-	-	-
CROCIENAM WIDER	GLISSMILL	RL58021	1B	1A	6.5	1A	7.7	1A	15.0	1A	85.0	1B	3.7	1A	0.089	1A	0.010	1A	12.6	-	-	-	-
WARRLEIGH RIVER	SPINDERS BRIDGE	RL58009	1A	1A	6.3	1A	7.3	1A	14.5	1A	87.0	1A	2.4	1A	0.110	1A	0.010	1A	7.4	1A	11.6	1A	46.2
ST. NEOT RIVER	COLLIPOD LAKE	RL58034	1B	1A	5.7	1A	6.3	1A	20.5	1B	70.0	1A	2.1	1A	0.100	1A	0.010	1A	5.6	-	-	-	-
ST. NEOT RIVER	COLLIPOD BRIDGE	RL58014	1B	1A	5.6	1A	6.9	1A	18.5	1B	70.3	1A	2.3	1A	0.100	1A	0.010	1A	3.5	1A	5.0	1A	11.7
ST. NEOT RIVER	TREVENNA	RL58007	1A	1A	6.0	1A	6.9	1A	17.3	1A	85.0	1A	2.4	1A	0.236	1A	0.010	1A	3.7	1A	10.0	1A	20.0
ST. NEOT RIVER	TWO WIDERS FOOT	RL58008	1A	1A	6.2	1A	7.2	1A	17.0	1A	83.1	1A	2.4	1A	0.109	1A	0.010	1A	7.9	1A	14.8	1A	26.6
NORWOOD BROOK	NORWA	RL58016	1A	1A	5.6	1A	6.6	1A	15.1	1A	83.4	1A	2.1	1A	0.151	1A	0.010	1A	15.8	1A	8.3	1A	13.6
NORWOOD BROOK	TREHANE BRIDGE	RL58011	1A	1A	6.1	1A	7.1	1A	14.1	1A	85.6	1A	2.8	1A	0.300	1A	0.010	1A	16.4	1A	7.6	1A	19.8
SIELEBACK STREAM	SIELEBACK RESERVOIR	RL58033	1A	1A	6.2	1A	7.0	1A	20.4	1A	81.0	1A	2.2	1A	0.100	1A	0.010	1A	2.6	-	-	-	-
SIELEBACK STREAM	TREHANEWIDERS BRIDGE	RL58010	1B	1A	6.0	1A	7.1	1A	17.8	1B	68.0	1A	2.6	1A	0.080	1A	0.010	1A	3.3	1A	6.0	1A	18.6

Fowey Catchment Compliance - 1990



NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION

1990 RIVER WATER QUALITY CLASSIFICATION

NUMBER OF SAMPLES (N) AND NUMBER OF SAMPLES EXCEEDING QUALITY STANDARD (F)

CATCHMENT: FOWEY (17)

River	Reach upstream of	User Ref. Number	pH Lower		pH Upper		Temperature		DO (%)		BOD (ATU)		Total Ammonia		Union. Ammonia		S.Solids		Total Copper		Total Zinc	
			N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F
FOWEY	RAFFONERIDGE	R15B001	46	-	46	-	45	-	45	-	46	-	46	-	40	-	46	1	44	-	44	-
FOWEY	LAPHELGRUE	R15B024	46	-	46	-	45	-	45	-	46	-	46	-	35	-	46	1	45	-	45	-
FOWEY	DRAYNES BRIDGE	R15B002	55	-	55	-	55	-	53	1	55	-	55	-	45	-	55	-	50	-	50	-
FOWEY	TREVEREEN BRIDGE	R15B003	44	-	44	-	43	-	43	-	44	-	44	-	33	-	44	1	44	-	44	-
FOWEY	BODDINDEL BRIDGE	R15B004	52	-	52	-	51	-	51	-	52	-	52	-	48	-	52	1	46	-	46	-
FOWEY	BODMIN ROAD BRIDGE	R15B005	47	-	47	-	47	-	47	-	47	-	47	-	36	-	47	4	47	-	47	-
FOWEY	RESEREN BRIDGE	R15B025	40	-	40	-	39	-	39	-	40	-	40	-	1	-	40	4	38	-	38	1
FOWEY	RESTORMEL	R15B006	54	-	54	-	53	-	53	-	54	-	54	-	43	-	54	2	49	-	49	-
FONT PILL	TREHANE MILL	R15B032	20	-	20	-	20	-	19	-	20	1	20	-	18	-	20	1	19	-	19	-
TREHANT WATER	EAST TENCREEK	R15B031	20	-	20	-	19	-	19	-	20	1	20	1	18	-	20	1	20	-	20	-
LENSON RIVER	COUGH'S MILL	R15B029	21	-	21	-	21	-	21	1	21	1	21	-	20	-	21	2	21	-	21	-
BEDELIA STREAM	BODINOC	R15B030	22	-	22	-	22	-	22	-	22	-	22	-	20	-	22	1	22	1	22	-
CROINDHAM WATER	MILLTON	R15B017	12	-	12	-	11	-	11	-	12	-	12	-	9	-	12	1	12	-	12	-
CROINDHAM WATER	COLLESMITH	R15B023	22	-	22	-	21	-	21	-	22	-	22	-	15	-	22	2	21	-	21	-
CROINDHAM WATER	GLINMILL	R15B021	21	-	21	-	19	-	19	-	21	-	21	-	13	-	21	3	20	-	20	-
MARLEIGH RIVER	BRIDERS BRIDGE	R15B009	39	-	39	-	39	-	39	-	39	-	39	-	26	-	39	1	36	-	36	-
ST. NEOT RIVER	COLLIFORD LAKE	R15B034	12	-	12	-	11	-	11	-	12	-	12	-	11	-	12	1	12	-	12	-
ST. NEOT RIVER	COLLIFORD BRIDGE	R15B014	46	-	46	-	46	-	45	-	46	-	46	-	45	-	46	-	45	-	45	-
ST. NEOT RIVER	TREVENNA	R15B007	51	-	51	-	51	-	51	-	51	-	51	-	49	-	51	-	48	-	48	-
ST. NEOT RIVER	TWO WIERS FOOT	R15B008	50	-	50	-	50	-	50	-	50	-	50	-	48	-	50	3	47	-	47	-
NORTHWOOD BROOK	MORHA	R15B016	28	-	28	-	28	-	28	-	28	-	28	-	24	-	28	4	28	-	28	-
NORTHWOOD BROOK	TREHANT BRIDGE	R15B011	39	-	39	-	37	-	37	-	39	-	39	-	32	-	39	4	33	-	33	-
SIDELBACK STREAM	SIDELBACK RESERVOIR	R15B033	12	-	12	-	12	-	12	-	12	-	12	-	11	-	12	-	12	-	12	-
SIDELBACK STREAM	TREKNEVESDEPS BRIDGE	R15B010	38	-	38	-	38	-	38	-	38	-	38	-	35	-	38	-	35	-	35	-

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION

1990 RIVER WATER QUALITY CLASSIFICATION

PERCENTAGE EXCEEDENCE OF DETERMINAND STATISTICS FROM QUALITY STANDARDS

CATCHMENT: POWEY (17)

River	Reach upstream of	User Ref. Number	PERCENTAGE EXCEEDENCE OF STATISTIC FROM QUALITY STANDARD										
			pH Lower	pH Upper	Temperature	DO (%)	BOD (ATU)	Total Ammonia	Un-ionised Ammonia	Suspended Solids	Total Copper	Total Zinc	
POWEY	HARROWBRIDGE	R15B001	-	-	-	-	-	-	-	-	-	-	-
POWEY	LAMELGATE	R15B024	-	-	-	-	-	-	-	-	-	-	-
POWEY	DRAYNES BRIDGE	R15B002	-	-	-	-	-	-	-	-	-	-	-
POWEY	TREVERBYN BRIDGE	R15B003	-	-	-	-	-	-	-	-	-	-	-
POWEY	BODITHIEL BRIDGE	R15B004	-	-	-	-	-	-	-	-	-	-	-
POWEY	BODMIN ROAD BRIDGE	R15B005	-	-	-	-	-	-	-	-	-	-	-
POWEY	RESPRYN BRIDGE	R15B025	-	-	-	-	-	-	-	-	-	-	-
POWEY	RESTORMEL	R15B006	-	-	-	-	-	-	-	-	-	-	-
PORT PILL	TRETHAKE MILL	R15B032	-	-	-	-	-	36	-	-	-	-	-
TREBANT WATER	EAST TENCREEK	R15B031	-	-	-	-	-	52	32	-	-	-	-
LERRYN RIVER	COUCH'S MILL	R15B029	-	-	-	-	-	13	-	-	-	-	-
BEDELLVA STREAM	BOCONROC	R15B030	-	-	-	-	-	-	-	-	-	29	-
CARDINHAM WATER	MILLTOWN	R15B017	-	-	-	-	-	-	-	-	-	-	-
CARDINHAM WATER	CALLYWITH	R15B023	-	-	-	-	-	-	-	-	-	-	-
CARDINHAM WATER	GLYNNMILL	R15B021	-	-	-	-	-	-	-	-	-	-	-
WARLEGGAN RIVER	PANTERS BRIDGE	R15B009	-	-	-	-	-	-	-	-	-	-	-
ST. NEOT RIVER	COLLIFORD LAKE	R15B034	-	-	-	-	-	-	-	-	-	-	-
ST. NEOT RIVER	COLLIFORD BRIDGE	R15B014	-	-	-	-	-	-	-	-	-	-	-
ST. NEOT RIVER	TREVENNA	R15B007	-	-	-	-	-	-	-	-	-	-	-
ST. NEOT RIVER	TWO WATERS FOOT	R15B008	-	-	-	-	-	-	-	-	-	-	-
NORTHWOOD BROOK	WORTHA	R15B016	-	-	-	-	-	-	-	-	-	-	-
NORTHWOOD BROOK	TRENANT BRIDGE	R15B011	-	-	-	-	-	-	-	-	-	-	-
SIBLYBACK STREAM	SIBLYBACK RESERVOIR	R15B033	-	-	-	-	-	-	-	-	-	-	-
SIBLYBACK STREAM	TREKEIVESTEPS BRIDGE	R15B010	-	-	-	-	-	-	-	-	-	-	-

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 IDENTIFICATION OF POSSIBLE CAUSES OF NON-COMPLIANCE WITH RQO
 CATCHMENT: FOWEY (17)

* = WORK ALREADY IN HAND

1990 Map Position Number	River	Reach upstream of	User Reference Number	Reach Length (km)	Possible causes of non-compliance
9	PONT PILL	* TRETHAKE MILL	R15B032	5.5	LAND RUN-OFF, SEWAGE TREATMENT WORKS, (POLLUTION AT SEWAGE TREATMENT WORKS)
10	TREBANT WATER	EAST TENCREEK	R15B031	7.6	LAND RUN-OFF, FISH FARM EFFLUENT, POLLUTION (ONE OFF)
11	LERRYN RIVER	* COUCH'S MILL	R15B029	5.5	LAND RUN-OFF, SEWAGE TREATMENT WORKS
12	BEDELLVA STREAM	BOCONNOC	R15B030	1.6	MINING