

# River Basin Districts Surface Water and Groundwater Classification (Water Framework Directive) (England and Wales) Direction 2009

The Secretary of State and the Welsh Ministers, with the agreement of the Secretary of State to the extent that there is any effect in England or those parts of Wales that are within the catchment areas of the rivers Dee, Wye and Severn, in exercise of the powers conferred by section 40(2) of the Environment Act 1995(a) and now vested in them(b), and having consulted the Environment Agency, hereby give the following Directions to the Environment Agency for the implementation of Article 8 of Directive 2000/60/EC(c):

## Citation and commencement and extent

1.—(1) These Directions may be cited as the River Basin Districts Surface Water and Groundwater Classification (Water Framework Directive) (England and Wales) Direction 2009 and shall come into force on 22nd December 2009.

## Interpretation

2.—(1) In this Direction—

“the 2009 Directions” means the River Basin Districts Surface Water and Groundwater Typology and Environmental Standards (Water Framework Directive)(England and Wales) Directions 2009(d);

“the Agency” means the Environment Agency;

“the Directive” means Directive 2000/60/EC of the European Parliament and of the Council of 23rd October 2000 establishing a framework for Community action in the field of water policy(e).

(2) Any expression used in both this Direction and the Directive and not otherwise defined in this Direction has the same meaning for the purposes of this Direction as it has for the purposes of the Directive.

## Application of the Directions

3. These Directions apply to all bodies of surface water and groundwater in a river basin district.

## Classification Process for Surface Water Bodies and Groundwater bodies

4. The Agency is directed to classify water bodies as follows—

(a) the ecological status of a body of surface water (other than one designated as artificial or heavily modified) in accordance with Part 1 as read with Part 4, of Schedule 1;

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(a) 1995 c.25.

(b) By article 2 of and schedule 1 to the National Assembly for Wales (Transfer of Functions) Order 1999 (S.I. 1999/672), the functions under section 40 of the Environment Act 1995 are exercisable by the Secretary of State and the National Assembly for Wales concurrently in relation to the Environment Agency as a cross border body. The functions of the National Assembly for Wales are now exercisable by the Welsh Ministers by virtue of section 162 of and schedule 11 to the Government of Wales Act 2006 (c. 32). The Welsh Ministers may exercise these functions only with the agreement of the Secretary of State where such exercise would have an effect in England or where the exercise of the functions relates to matters including water resources management, rivers or other water courses or control of pollution of water resources, in those parts of Wales which are within the catchment areas of the rivers Dee, Wye or Severn.

(c) O.J. No. L327, 22.12.2000, p. 1; as last amended by Directive 2008/105/EC of the European Parliament and Council on environmental standards in the field of water policy (OJ No. L348, 16.12.2009, p.84.

(d) The 2009 Directions came into force on 22 December 2009.

(e) OJ L327, 22.12.2000, p.1.

- (b) the ecological potential of a water body designated as artificial or heavily modified in accordance with Part 2 of Schedule 1;
- (c) the chemical status of a body of surface water in accordance with Part 3 of Schedule 1; and
- (d) a body of groundwater in accordance with Schedule 2.

5. In performing its functions under direction 4, the Agency must—

- (a) discount data that are influenced by one-off, unrepresentative or transient incidents, provided that the status of each affected body of water is not adversely affected; and
- (b) estimate and report the level of confidence and precision of the classification results.

### **Monitoring**

6. The Agency must—

- (a) in order to ensure that classification results reflect impacts on the ecological quality of the water environment that are of sufficient spatial extent to affect ecological status, aim to ensure that the monitoring data and modelling results it uses in classification are representative of the water body as a whole; and
- (b) review and update the classification of water bodies as new data is collected through its monitoring programmes and from other sources, as applicable and at least once every 6 years in accordance with the requirements of the Directive.

### **Solway Tweed River Basin District**

7.—(1) In relation to the Solway Tweed River Basin District, in order to ensure a common approach, the Agency must act jointly with the Scottish Environment Protection Agency and may, as necessary, adapt the requirements of these Directions for that purpose.

(2) In this Direction, “Solway Tweed River Basin District” means the area identified in regulation 3 of the Water Environment (Water Framework Directive) (Solway Tweed River Basin District) Regulations 2004(a).

21 December 2009

*Chris Ryder*  
Signed by the Authority of the Secretary of State  
A Senior Civil Servant in the  
Department for Environment, Food and Rural Affairs

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21 December 2009

*Claire Bennett*  
**Head of Climate change and Water Division** under authority of the  
Minister for Environment, Sustainability and Housing, one of the Welsh Ministers

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(a) S.I. 2004/99.

# SCHEDULE 1

Direction 4(a)-(c)

## Classification of Surface Water Bodies (other than those designated as artificial or heavily modified)

### PART 1

#### Determining the ecological status of a body of surface water

1.—(1) The ecological status of a body of surface water (other than one designated as artificial or heavily modified) must be classified in accordance with the following steps—

- (a) by estimating the representative values of appropriate indicators of the condition of the relevant biological, physicochemical and hydromorphological quality elements from monitoring or modelling results; and
- (b) by comparing the values of the appropriate indicators estimated from monitoring or modelling with the applicable standards, and boundary values set out in the 2009 Directions.

(2) In paragraph (1), the appropriate indicators include—

- (a) indicators of the biological and other quality elements expected to be most sensitive to the pressures to which the water body is subject;
- (b) the concentrations of those specific pollutants likely to be in the water body in quantities that could cause a failure of a specific pollutant standard;
- (c) the values for those other physicochemical quality elements at risk of being so altered as to be failing a physicochemical standard; and
- (d) the criteria for hydromorphological elements relevant to high status.

2. The ecological status of the water body must be classified as—

- (a) ‘high’ if—
  - (i) the values of all the appropriate indicators of the biological and physicochemical quality elements comply with the highest corresponding standard given in the 2009 Directions,
  - (ii) the hydrological and morphological conditions described in Part 4 of this Schedule are assessed as reflecting totally, or nearly totally, undisturbed conditions, and
  - (iii) there is no evidence that any high impact alien species listed in Tables 1 (rivers), 2 (lakes) and 3 (transitional and coastal waters) has become established<sup>(a)</sup> in the water body;
- (b) no lower than ‘moderate’ where the lowest classed quality element is a specific pollutant or physicochemical quality element; and
- (c) in any other case, according to the lowest classed biological or physicochemical quality element.

TABLE 1

List of high impact alien species applicable to rivers

<i>Species common name</i>	<i>Species scientific name</i>
Floating pennywort	<i>Hydrocotyle ranunculoides</i>
Water fern	<i>Azolla filiculoides</i>
Canadian pondweed	<i>Elodea canadensis</i>
Nuttall’s pondweed	<i>Elodea nuttallii</i>

(a) “Established” means the presence of a listed species successfully reproducing at a level ensuring continued survival in the water body.

North American signal crayfish	<i>Pacifastacus leniusculus</i>
Red swamp crayfish	<i>Procambarus clarkii</i>
Freshwater amphipod	<i>Crangonyx pseudogracilis</i>
Freshwater amphipod	<i>Dikerogammarus villosus</i>
Mysid crustacean	<i>Hemimysis anomola</i>
Zebra mussel	<i>Dreissena polymorpha</i>
Quagga mussel	<i>Dreissena bugensis</i>
Chinese mitten crab	<i>Eriocheir sinensis</i>
Goldfish	<i>Carassius auratus</i>
Japanese knotweed	<i>Fallopia japonica</i>
Himalayan balsam	<i>Impatiens glandulifera</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>
Topmouth gudgeon	<i>Pseudorasbora parva</i>

TABLE 2

List of high impact, invasive alien species applicable to lakes

<i>Species common name</i>	<i>Species scientific name</i>
Australian swamp stonecrop	<i>Crassula helmsii</i>
Water fern	<i>Azolla filiculoides</i>
Parrot's feather	<i>Myriophyllum aquaticum</i>
Curly water-thyme	<i>Lagarosiphon major</i>
Water primrose	<i>Ludwigia grandiflora</i>
Canadian pondweed	<i>Elodea canadensis</i>
Nuttall's pondweed	<i>Elodea nuttallii</i>
North American signal crayfish	<i>Pacifastacus leniusculus</i>
Red swamp crayfish	<i>Procambarus clarkii</i>
Freshwater amphipod	<i>Crangonyx pseudogracilis</i>
Freshwater amphipod	<i>Dikerogammarus villosus</i>
Mysid crustacean	<i>Hemimysis anomola</i>
Zebra mussel	<i>Dreissena polymorpha</i>
Quagga mussel	<i>Dreissena bugensis</i>
Topmouth gudgeon	<i>Pseudorasbora parva</i>
Goldfish	<i>Carassius auratus</i>

TABLE 3

List of high impact, invasive alien species applicable to transitional waters and coastal waters

<i>Species common name</i>	<i>Species scientific name</i>
Common cord-grass, Townsend's grass or ricegrass	<i>Spartina anglica</i>
Japanese weed	<i>Sargassum muticum</i>
Slipper limpet	<i>Crepidula fornicata</i>
Leathery sea squirt	<i>Styela clava</i>
American oyster drill	<i>Urosalpinx cinerea</i>
Pacific oyster	<i>Crassostrea gigas</i>
Colonial tunicate	Non-native <i>Didemnum spp.</i>
Marine tubeworm	<i>Ficopomatus enigmaticus</i>
Chinese mitten crab	<i>Eriocheir sinensis</i>

## PART 2

### Determining Ecological Potential of a body of surface water designated as being artificial or heavily modified

1. A water body designated as heavily modified or artificial in must be classified by—
  - (a) estimating (from monitoring or modelling) representative values of indicators of the condition of the relevant biological and physicochemical quality elements results;
  - (b) comparing the values of the indicators estimated from monitoring or modelling with the applicable standards set out in the 2009 Directions; and
  - (c) determining whether or not all practicable mitigation has been taken to improve the modified or artificial hydromorphological characteristics of the body other than those which would have only a significant adverse impact on—
    - (i) the use served by the modified or artificial characteristics, or
    - (ii) the wider environment.
2. In paragraph 1, the indicators must include—
  - (a) indicators of the biological quality elements which are not sensitive to the artificial or heavily modified characteristics of the water body;
  - (b) the concentrations of those specific pollutants likely to be in the water body in quantities that could cause a failure of a specific pollutant standard; and
  - (c) the values for those other physicochemical quality elements at risk of being so altered as to be failing a physicochemical standard.
3. When determining whether all practicable mitigation has been taken, mitigation measures may be excluded which would contribute only a very minor improvement in the ecology of the water body.
4. A water body must be classified as—
  - (a) ‘good or maximum ecological potential’ provided that none of the values of the indicators of those quality elements not sensitive to the heavily modified or artificial characteristics of the water body, including biology, specific pollutants and other physicochemical quality elements are less than ‘good’ and all practicable mitigation is in place;
  - (b) ‘moderate ecological potential’ provided that none of the values of the indicators of those quality elements not sensitive to the hydromorphological conditions of the water body, including biology, specific pollutants, and other physicochemical quality elements are less than ‘moderate’;
  - (c) ‘poor ecological potential’ provided that none of the values of the indicators of those biological quality elements not sensitive to the hydromorphological conditions of the water body, elements are less than ‘poor’; or
  - (d) ‘bad ecological potential’ where the value of one or more of the indicators of those biological quality elements not sensitive to the hydromorphological conditions of the water body, is less than ‘poor’.

## PART 3

### Determining the chemical Status of a body of surface water.

- 1.—(1) The chemical status of a body of surface water must be classified by—
  - (a) estimating (from monitoring or modelling) the concentrations in the water body of the appropriate substances listed in Part 5 of the 2009 Directions;

- (b) classifying the condition of each appropriate substance by comparing the values estimated from monitoring or modelling with the applicable standards set out in the 2009 Directions; and
  - (c) classifying the chemical status of the surface water body as ‘good’ unless the standard for one or more substances is failed, in which case water body must be classified as failing to achieve good chemical status.
- (2) “Appropriate substances” includes all those substances likely to be in the water body in quantities that could cause a failure of the corresponding environmental quality standard.

## PART 4

### Determining high status for hydromorphological quality elements in a water body

#### SECTION 1

##### *Introductory*

1. The morphological and hydrological condition of water bodies must be assessed in order to determine whether they can be classified as high status for hydromorphological quality elements.
2. A water body may only be classified as ‘high status’ if there are no, or only very minor, anthropogenic alterations to the relevant hydromorphological quality elements.
3. In this section, the term “hydromorphological quality elements” means the hydrological regime, tidal regime, river continuity and morphological conditions as listed in Annex V of the Directive.
4. The extent of anthropogenic alterations affecting water bodies-must be assessed —
  - (a) in relation to morphological conditions for rivers, lakes and transitional and coastal waters, using all relevant criteria set out in sections 2, 3 and 4; and
  - (b) in relation to hydrological conditions, using all relevant criteria set out in section 5.

#### SECTION 2

##### *Determining High Status Morphological Conditions for Rivers*

- 1.-The morphological condition of a river water body, must be assessed by considering both the direct and indirect pressures on the hydromorphological quality elements of watercourses.
2. High status morphological condition must not be assigned to —
  - (a) any water body which has been identified as being at risk of failing to achieve good ecological status due to the extent of morphological pressures; or
  - (b) any artificial or heavily modified water body.
3. For any water body that has not been excluded by the criteria set out in paragraph 2, detailed assessment must be undertaken to ascertain whether high status morphological conditions are present within those water bodies that remain.
4. The detailed assessment must consider the nature and extent of impacts to river morphological conditions, taking account of the following —
  - (a) the extent of direct physical modification of the river beds or banks;
  - (b) the presence of structures that prevent or limit migration of aquatic organisms and sediment transport
  - (c) the presence of flood and defence structures and embankments;
  - (d) the structure, condition and extent of riparian zone vegetation;
  - (e) land use and land management including agriculture and built development on land adjacent to the river network and within the water body catchment area;

## SECTION 3

### *Determining High Status Morphological Conditions for Lakes*

**1.** The morphological condition of a lake water body must be assessed by considering both the direct and indirect pressures on the hydromorphological quality elements of lake water bodies.

**2.** High status morphological condition must not be assigned to —

- (a) any water body which has been identified as being at risk of failing to achieve good ecological status due to the extent of morphological pressures; or
- (b) any water body designated as artificial or heavily modified.

**3.** In relation to any water body that has not been excluded by the criteria in paragraph 2, the extent of the impacts resulting from changes to the following morphological conditions in lake water bodies must be assessed by reference to—

- (a) physical modification to the beds or banks;
- (b) the presence of flow and sediment altering structures;
- (c) the presence of structures at the lake outfall;
- (d) the presence of flood embankments;
- (e) the presence of a causeway;
- (f) evidence that there has been reduction of lake area due to land reclamation;
- (g) catchment land use; the extent of the catchment that is developed or used for intensive agriculture, horticulture or forestry;
- (h) dumping of waste materials and fill into the lake;
- (i) significant cutting or removal of macrophytes;
- (j) recreational pressures.

## SECTION 4

### *Determining High Status Morphological Conditions for Transitional and Coastal Waters*

**1.** The morphological condition of a transitional or coastal water body, must be assessed by considering direct and indirect pressures on the morphological quality elements of the water body in question.

**2.** High status morphological condition must not be assigned to—

- (a) any water body which has been identified as being at risk of failing to achieve good ecological status due to the extent of morphological pressures; or
- (b) any water body that exceeds the UKTAG (2008) Morphological Condition Limit of 5% **(a)**.

**3.** In relation to any water body that has not been excluded by the criteria in paragraph 2, an assessment must be undertaken to ascertain whether high status morphological conditions are present within those water bodies that remain by reference to the nature and extent of impacts to morphological conditions from—

- (a) flood defence embankments;
- (b) shoreline reinforcement;
- (c) aggregate extraction activity;
- (d) maintenance and capital dredging ;
- (e) land claim;

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(a) As set out in this link: UKTAG - UK Environment Standards and Conditions (Phase 2) Final.

- (f) shellfishery and finfishery activity causing physical disturbance to the benthic environment;
- (g) alterations to flow and sediment dynamics;
- (h) other structures resulting in direct removal of sediment/displacement of habitat.

## SECTION 5

### *Determining High Status Hydrological Conditions for River, Lake and Transitional Water bodies*

**1.** The hydrological condition of any water body, must be assessed by considering the nature and extent of anthropogenic alterations to hydrological regime of the water body.

**2.** High hydrological status must be assigned to any water body that meets the criteria for high status in each of the following tests—

- (a) abstraction test - the total quantity of upstream abstraction must be less than 5% of the Q<sub>n95(a)</sub> flow at the water body outflow point, including non-consumptive abstraction;
- (b) discharge test - the total upstream discharges must be less than 5% of the Q<sub>n95</sub> flow at the water body outflow point, including local return of water associated with abstractions and dry weather flows from sewage treatment works;
- (c) flow regulation test - the total surface area of reservoirs in the upstream catchment must be less than 1% of the total catchment area;
- (d) urbanisation influence test - the total area of urban and sub-urban land within the total upstream catchment must be less than 20% of the total upstream catchment area, and the total area of urban land within the total upstream catchment must be less than 10% of the total upstream catchment area; and
- (e) in relation to a lake water body only, there must be no active management of outflow levels.

**3.** In relation to paragraphs 2(a) and 2(b), a water body cannot be considered for high status unless the hydrological regime for both total abstraction and total discharge is less than 5% of Q<sub>n95</sub>.

**4.** To assess transitional waters, the above tests should be used where applicable to the main freshwater inflow and the majority of minor inflows.

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(a) Q<sub>N95</sub> is the level of flow exceeded for 95% of the time at the point of measurement over a ten year period.

## SCHEDULE 2

Direction 4(d)

### PART 1

#### Determining the chemical status of a body of groundwater

1.—(1) The groundwater chemical status of a body of groundwater must be assessed as follows:—

- (a) by determining whether or not one or more of the indicators set out in Column 1 of Table 1 are applicable to the body of groundwater; and
- (b) if any of those indicators are applicable, by carrying out appropriate investigations to determine whether or not the criteria in Column 2 of Table 1 corresponding to the applicable indicator or indicators for poor groundwater chemical status are satisfied.

(2) The body of groundwater must be classified as—

- (a) ‘good groundwater chemical status’ where—
  - (i) none of the indicators set out in column 1 of Table 1 are applicable, or
  - (ii) one or more of those indicators are applicable but none of the corresponding criteria for poor groundwater chemical status set out in column 2 of the Table 1 are satisfied; and
- (b) in any other case, as ‘poor groundwater chemical status’.

Table 1: Risk indicators and classification criteria for groundwater chemical status	
Column 1	Column 2
<i>Indicators of a risk that the chemical status of a body of groundwater is poor</i>	<i>Criteria for poor groundwater chemical status</i>
(a) Failure of a threshold value for groundwater in the 2009 Directions indicative of saline intrusion; or (b) Indications of other intrusions of pollutants into the body of groundwater.	(i) Significant and sustained upward trend in electrical conductivity indicating saline intrusion; (ii) Significant and sustained upward trend in the concentration of indicators of other intrusions; or (iii) Evidence that abstractions have been rendered unsuitable for use without purification treatment as a result of an intrusion.
(a) Failure of a threshold value for groundwater in the 2009 Directions indicative of a risk to the ecological or (b) chemical quality of an associated surface water from point or diffuse source pollution of groundwater	An applicable chemical or physicochemical standard for ‘good’ in the 2009 Directions is failed in an associated surface water body and the concentration in the surface body of the pollutant concerned resulting solely from inputs via groundwater represents $\geq 50\%$ of the value of the standard.
Indications of damage to a wetland directly depending on the body of groundwater resulting from pollution where the source of pollution is suspected to be the groundwater.	There is evidence of significant damage to a wetland caused by pollution and the pollutants responsible for that damage are judged to have reached the wetland via groundwater.

<p>(a) Failure of a threshold value for groundwater in the 2009 Standards Directions indicative of a risk of deterioration in the quality of water being abstracted, or intended to be abstracted, for human consumption; or</p> <p>(b) other indications of deterioration in the quality of water within a drinking water protected area</p>	<p>Deterioration in the quality of water within a drinking water protected area has compromised a relevant abstraction of water intended for human consumption..</p>
<p>Failure of a threshold value for groundwater in the 2009 Directions indicative of other significant environmental risks including those to the ability of groundwater to support human uses.</p>	<p>The average of the monitoring results representative of the risk to the quality of the groundwater in the body exceeds the threshold value</p>

## PART 2

### Classification of groundwater quantitative status

- 1.—(1) The quantitative status of a body of groundwater must be classified as follows—
- (a) by determining whether or not one or more of the indicators in Column 1 of Table 2 are applicable to the body of groundwater; and
  - (b) if any of those indicators are applicable, by carrying out appropriate investigations to determine whether or not the criteria in Column 2 of Table 2 corresponding to the applicable indicator or indicators for poor groundwater quantitative status are satisfied.
- (2) The body of groundwater must be classified as—
- (a) ‘good groundwater quantitative status’ where—
    - (i) none of the indicators set out in column 1 of Table 2 are applicable, or
    - (ii) one or more of those indicators are applicable but none of the corresponding criteria for poor groundwater quantitative status set out in column 2 of the Table 2 are satisfied; and
  - (b) in any other case as ‘poor groundwater quantitative status’.

Table 2: Risk indicators and classification criteria for groundwater quantitative status	
Column 1	Column 2
<p><b>Indicators of a risk that the chemical status of a body of groundwater is poor</b></p>	<p><b>Criteria for poor groundwater quantitative status</b></p>
<p>(a) Failure of a threshold value for groundwater in the 2009 Directions indicative of saline intrusion; or</p> <p>(b) Other indications of other intrusions of pollutants into the body of groundwater.</p>	<p>(i) Significant and sustained upward trend in electrical conductivity indicating saline intrusion; or</p> <p>(ii) Significant and sustained upward trend in the concentration of indicators of the risk of other intrusions; or</p> <p>(iii) Evidence that abstractions have been rendered unsuitable for use without treatment as a result of an intrusion.</p>
<p>Flow conditions in an associated surface water body are unsatisfactory and there is reason to suspect that groundwater</p>	<p>Flow conditions are preventing the surface water body maintaining or achieving the target status class and the reduction in river</p>

<p>abstractions may be a contributing factor. Flow conditions are unsatisfactory if they prevent the surface water body maintaining or achieving the target status class.</p>	<p>flow in the surface body concerned resulting solely from groundwater abstraction represents <math>\geq 50\%</math> of the value of the applicable river flow standard.</p>
<p>Indications of damage to a wetland resulting from insufficient water availability where alterations to groundwater levels are suspected to be the major cause of the insufficient water availability.</p>	<p>There is evidence of significant damage to a wetland caused by insufficient water availability and the major reason for the insufficient water availability is judged to be alterations to groundwater levels resulting from human activities.</p>
<p>Indications that the quantity of groundwater being abstracted from the body of groundwater may represent more than a very small proportion of the long-term annual average rate of overall recharge.</p>	<p>The annual average volume of water abstracted from the groundwater represents more than 20% of the long-term annual average rate of overall recharge and there is evidence of a long-term fall in groundwater levels in the body of groundwater.</p>

**ISBN 978-0-85521-191-6 (Web only publication)**