

Registration code \_\_\_\_\_

**Decree of the Government of Georgia No.**

**Of \_\_\_\_\_ 2015, Tbilisi**

**On Approval of Procedure for Identifying Water Bodies and  
Establishing Boundaries**

**Article 1**

Pursuant to part 3, chapter 13, article 43, subparagraph 1.b of the law of Georgia on “water resource management”, the appended procedure for identifying and determining the boundaries of Water Bodies shall be approved (Annex 1).

**Article 2**

Decree shall be enacted upon promulgation.

Prime Minister

Irakli Garibashvili

**Approved**  
**By Decree of the GoG No.**  
**of \_\_\_\_\_ 2015**

**Annex 1**

## **Procedure for Identifying Water Bodies and Determining Their Boundaries**

### **Chapter I General Provisions**

#### **Article 1. Purpose**

According to the law of Georgia on “Water Resource Management”, water body is a basic unit of water resource management. Purpose of the Decree is to define the procedure for identifying Water Bodies and determining their boundaries.

Main goal of the identification of water bodies is to enable classification of water bodies, to enable the status to be accurately described and compared to environmental objectives in the process of elaborating the river basin management plans (RBMP).

#### **Article 2. Definition of Terms**

For the purpose of this procedure, the following terms shall have the following meanings:

- a). ‘Body of surface water’ means a discrete and significant element of surface water such as a lake, a reservoir, a stream, river or canal, part of a lake, reservoir , stream, river or canal, a transitional water or stretch of coastal water which has borders, and characteristics of Hydrological and hydrogeological regime;
- b). ‘Body of groundwater’ means a distinct volume of groundwater within an aquifer or aquifers which has borders, and characteristics of hydrological and hydrogeological regime;
- c). ‘Surface water’ means inland waters (except groundwater), transitional waters and coastal waters;
- d). ‘Groundwater’ means all water in liquid, solid and gaseous state which is below the surface of the ground in the loose, porous and fissured rocks or, in the caverns;
- e). ‘Aquifer’ means a subsurface layer or layers of rock or other geological strata of sufficient porosity and permeability to allow either a significant flow of groundwater or the abstraction of significant quantities of groundwater;

- f). 'Water Resources' - combination of surface water (including artificial water bodies) and groundwater;
- g). 'Inland water' means all standing or flowing water on the surface of the land, and all groundwater including river, lake, a reservoir, other natural and artificial surface reservoirs, canals, water ponds, glaciers, permanent snow cover and wetlands;
- h). 'Trans-boundary waters' - surface and underground waters, which mark, or cross the boundary between the states or are located at such boundary;
- i). 'Transitional waters' are bodies of surface water in the vicinity of river mouths, which are partly saline in character as a result of their proximity to coastal waters, but which are substantially influenced by freshwater flows;
- j). 'Coastal water' means surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline;
- k). 'Artificial water body' means a body of surface water created by human activity;
- l). 'Heavily modified water body' means a body of surface water, which as a result of physical alterations by human activity is substantially changed in character;
- m). 'Ecological Objectives' – objectives set out in Article 30 of the law of Georgia on the water resources management, which are determined during the elaboration of river basin management plans for each water body and are aimed at the improvement of water status;
- n). 'Surface water status' (state) is the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status.
- o). 'Groundwater status' is the general expression of the status of a body of groundwater, determined by the poorer of its quantitative status and its chemical status;
- p). 'Ecological status' is an expression of the quality of the structure and functioning of aquatic ecosystems associated with surface waters;
- q). 'River Basin' means the area of land from which all surface run-off flows through a hydrologically interconnected sequence of streams, rivers and, possibly, lakes into the sea at a single river mouth, estuary or delta;
- r). 'River Basin District (RBD)' - is defined as the area of land or sea, made up of one or more neighboring river basins together with their associated ground waters and coastal waters which is identified as the main unit for integrated management of river basins;
- s). 'Ministry of Environment and Natural Resources Protection of Georgia (MENRP)' - the central body responsible for the management of water resources;
- t). 'categories of surface water bodies' - rivers, lakes, transitional waters, coastal waters, artificial water bodies and heavily modified surface water;

**Article 3. Basis of the identification of water bodies**

Identification of water bodies shall be based on geographical and hydrogeological determinants. In addition, the identification and further classification of water bodies shall provide for accurate description of the geographical area and planning the measures to achieve target indicators of water bodies.

Water bodies are subject to regular assessment of status and measures for maintaining/improving the status.

**Article 4. Timetable of Initial identification and subsequent review of water bodies**

Identification of water bodies is an iterative process. Initial identification and establishment of boundaries of water bodies shall be performed during the elaboration of the first river basin management plan, in particular, during analysis of basin territorial unit, when status of each water body is described. Further verification and refinement steps of the identification process shall be foreseen during the updating of river basin management plans or at any time (if necessary).

**Article 5. Responsibility for identification of water bodies and establishment of boundaries**

Ministry of Environment and Natural Resources Protection of Georgia will be responsible for identification and establishment of boundaries of water bodies in compliance with this procedure.

**Chapter II**

**Procedure and principles for identification of surface water bodies and establishment of boundaries**

**Article 6. Procedure and principles for identification of surface water bodies**

In order to identify surface water bodies and establishing their boundaries, first the boundaries of surface water categories shall be established to avoid overlapping of the boundaries of surface water categories by water bodies.

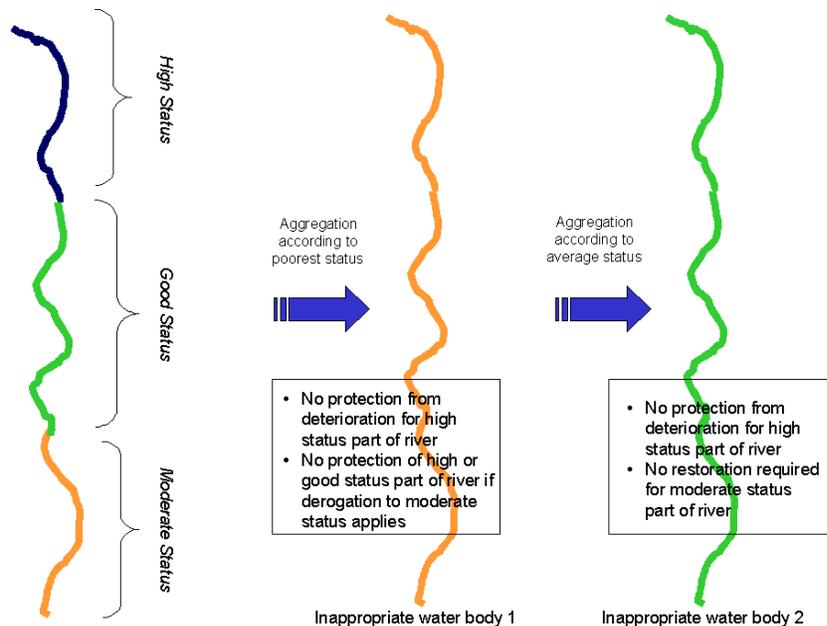
Then, the boundaries of surface water types<sup>1</sup> in each river basin district (RBD) shall be determined.

Then, the water bodies shall be delineated. The delineating should be based on physical features (geological and hydro-morphological), which are significant for the identification purposes.

Then, account shall be taken to the information, which is important for defining surface water status<sup>2</sup>. Initially, in the absence of information on status, the estimated data on status changes are obtained from the pressure and impact assessment results<sup>3</sup>. Monitoring results can be used to specify the status-based boundaries.

When identifying water bodies, multiple and iterative approach is required. In addition, when elaborating river basin management plan, delineation of water body boundaries shall be finalized. A balance between iterative identification and finalization of water body boundaries must be ensured.

Water related environmental objectives are directly associated with water body. If water bodies are identified that do not permit an accurate description of the status<sup>4</sup>, it will be impossible to achieve target indicators related to this water body (Fig. 1).



<sup>1</sup>EU WFD , Annex 2. Par. 1.1 .

<sup>2</sup>EU WFD Guidance Document #13 “water status classification and environmental potential”

<sup>3</sup>EU WFD Guidance Document #3 “pressure-impact assessment”

<sup>4</sup>EU WFD Guidance Document #13 “water status classification and environmental potential”

Figure 1: Illustration of the implications for the target indicators if “water bodies” do not provide for the accurate description of surface water status

In order to save administrative resources, we have to avoid the infinite division of water bodies into sub-bodies, unless such division is aimed at achievement of target indicators. In specific cases, it is expedient to aggregate the water bodies to avoid administrative burden especially for smaller bodies.

## Article 7. Identification of surface water bodies

### 7.1 Identification of surface water bodies based on “discrete and significant” principle

Each surface water body should be identified on the basis of its “discreteness and significance”. The identified bodies of surface water shall be discrete elements of surface water. For a surface water body to be a discrete element of surface water, they must not overlap with each other or be composed of elements of surface water that are not contiguous.

Physical features (geographical or hydromorphological) that are likely to be significant in relation to the identification purposes should be used as discrete elements to identify bodies of surface water. For example, the confluence of one part of a river with another could clearly demarcate a geographically and hydromorphologically distinct boundary to a water body (Fig. 2)

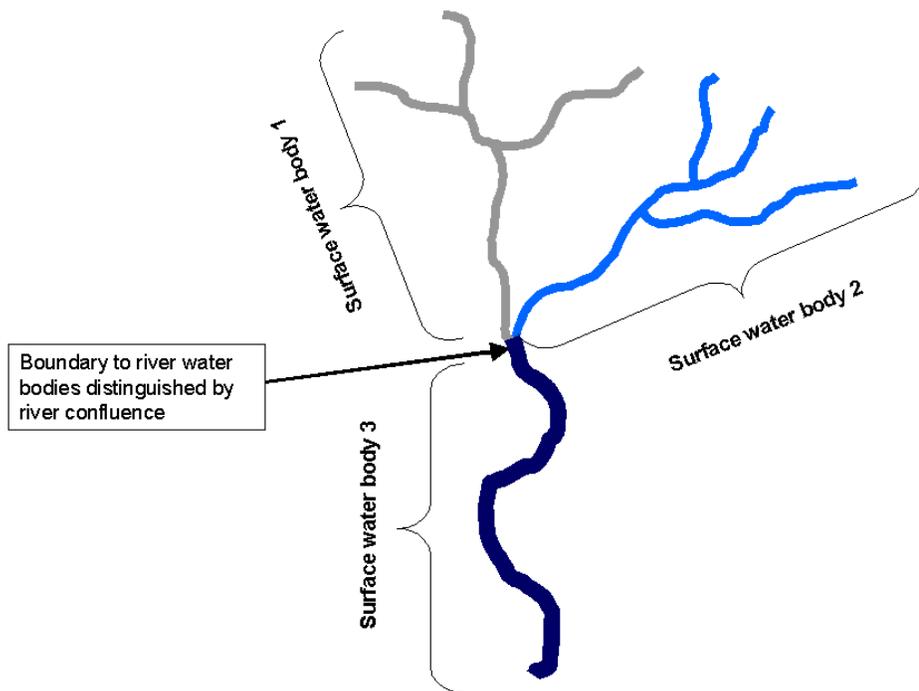


Fig. 2: establishing water body boundary on the basis of the boundary of surface water categories

'Discrete' component is not sufficient for identification of surface water body. The water body has to be also a significant. Besides, in some cases, the conditions of aggregation can be triggered especially for smaller water body according to chapter 4, article 13 requirements.

## 7.2 Identification of surface water bodies on the basis of surface water categories and types

Surface water body must be of one category or another (rivers, lakes, transitional waters, coastal waters, artificial and heavily modified surface water body). A surface water body must not be split between different surface water categories. The boundary of a water body may be established where two different category "meet" (Figure 3)

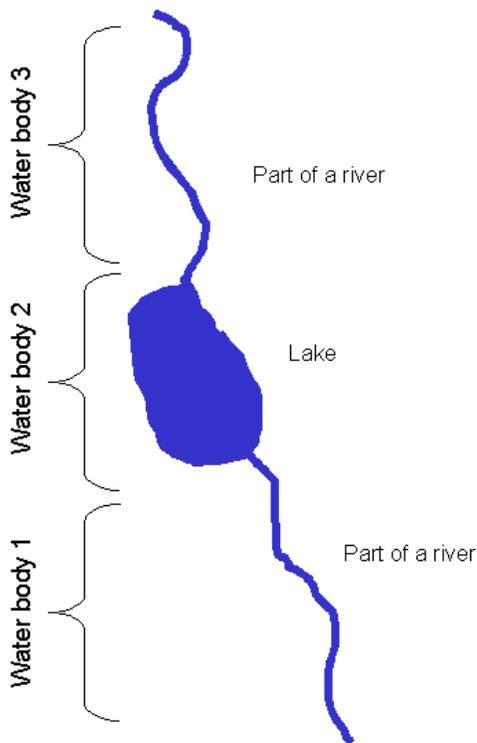
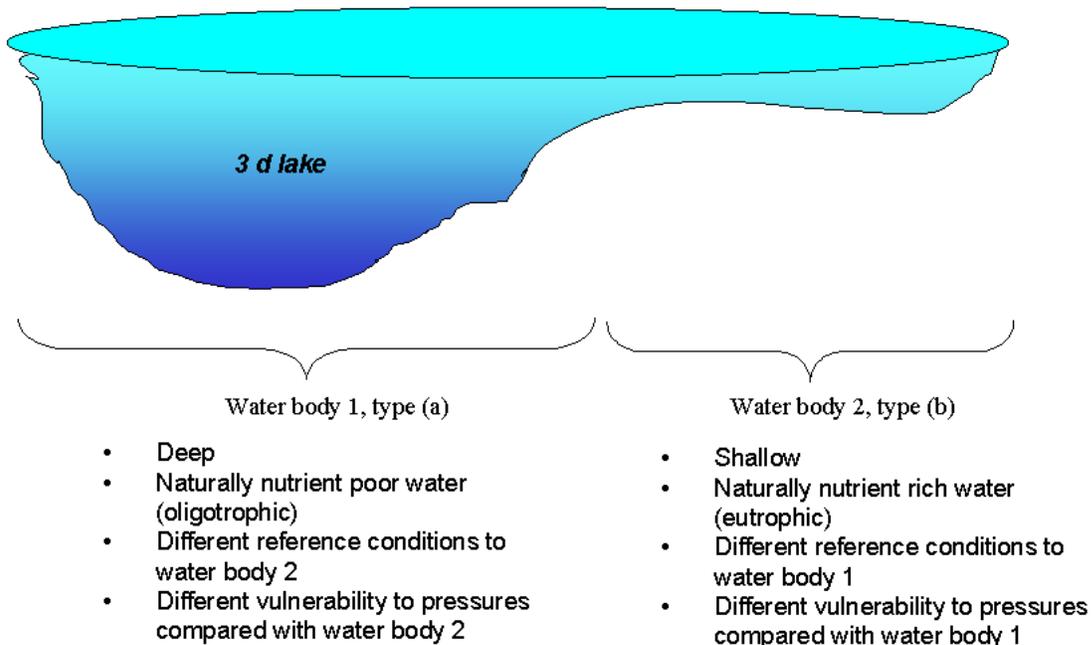


Figure 3: establishing water body boundaries by water body categories

A surface water body must not cross the boundaries between surface water types. It must be of one type<sup>5</sup> or another since one purpose of characterizing surface water bodies is to differentiate them into types.

A part of a lake or part of transitional water can be separated as a discrete element of surface water and identified as a distinct water body. For example, if a part of a lake is different from its other part, the lake should be sub-divided as several water bodies. (Figure 4)

### Sub-division of lakes on the basis of significant differences in characteristics



(figure text last items should be: - different vulnerability to **external exploitation** compared with water body 2; - different vulnerability to **external exploitation** compared with water body 1)

Figure 4: Sub-division of a lake on the basis of a type boundary

### 7.3 Identification of surface water bodies according to differences in status

A discrete element of surface water should not contain significant elements of different status<sup>6</sup>. A water body must be capable of being assigned to a single ecological status class with sufficient confidence and precision through the monitoring programs during the elaboration of RBMP. (Figure 5)

<sup>5</sup>EU WFD Guidance Document, Annex 2, Chapter 1.1.

<sup>6</sup>EU WFD Guidance Document #13 “ water status classification and environmental potential “

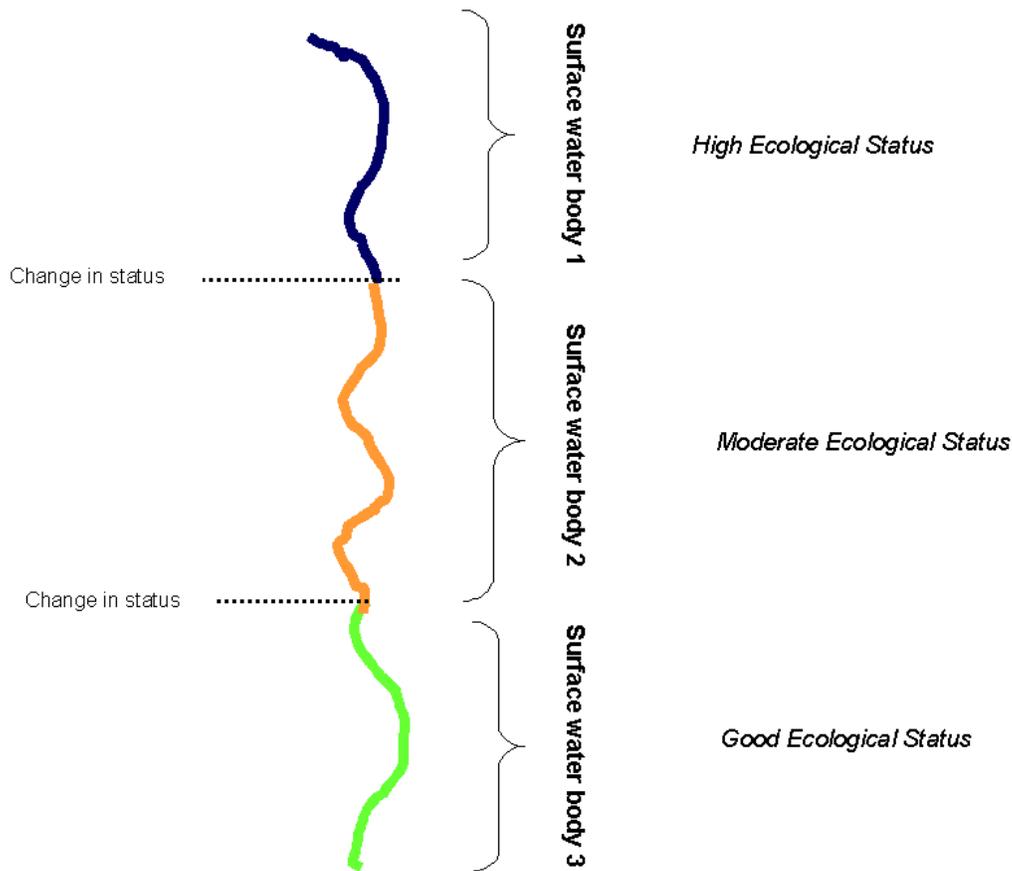


figure 5: Identification of water bodies according to differences in status

Although effects of human activities will always vary, major changes in the status of surface water should be used to delineate surface water body boundaries as necessary to ensure that the identification of water bodies provides for an accurate description of surface water status.

Pressure, impact and status issues are closely related to each other. In the absence of information on status, the data of pressure and impact analysis<sup>7</sup> can be used for establishing boundaries of surface water body.

Initially, there will not be sufficient information to accurately define the status of waters. Consequently, especially during the first stage of elaborating River Basin Management Plan, it may be appropriate to use the analysis on pressures and impacts as a surrogate for status. As understanding of status improves, the boundaries of water bodies can be adjusted. Contiguous elements of surface water within a type that are of the same status may be recombined to avoid unnecessary sub-division of surface waters.

<sup>7</sup>EU WFD Guidance Document #3 “ analysis on pressures and impacts “

**Article 8. Identification of surface water bodies according to the boundaries of protected areas**

The existing boundaries of protected areas may be considered for the identification of water bodies. In case a water body would not fully be inside or outside a protected area, it may be considered to sub-divide the water bodies so that the boundaries coincide.

**Article 9. Heavily modified and artificial water bodies**

Heavily modified and artificial water bodies may be identified and delineated where good ecological status is not being achieved because of impacts on the hydromorphological characteristics of a surface water resulting from physical alterations. The boundaries of heavily modified water bodies are primarily delineated by the extent of changes to the hydromorphological characteristics that result from physical alterations by human activity and prevent the achievement of good ecological status. (Figure 6)

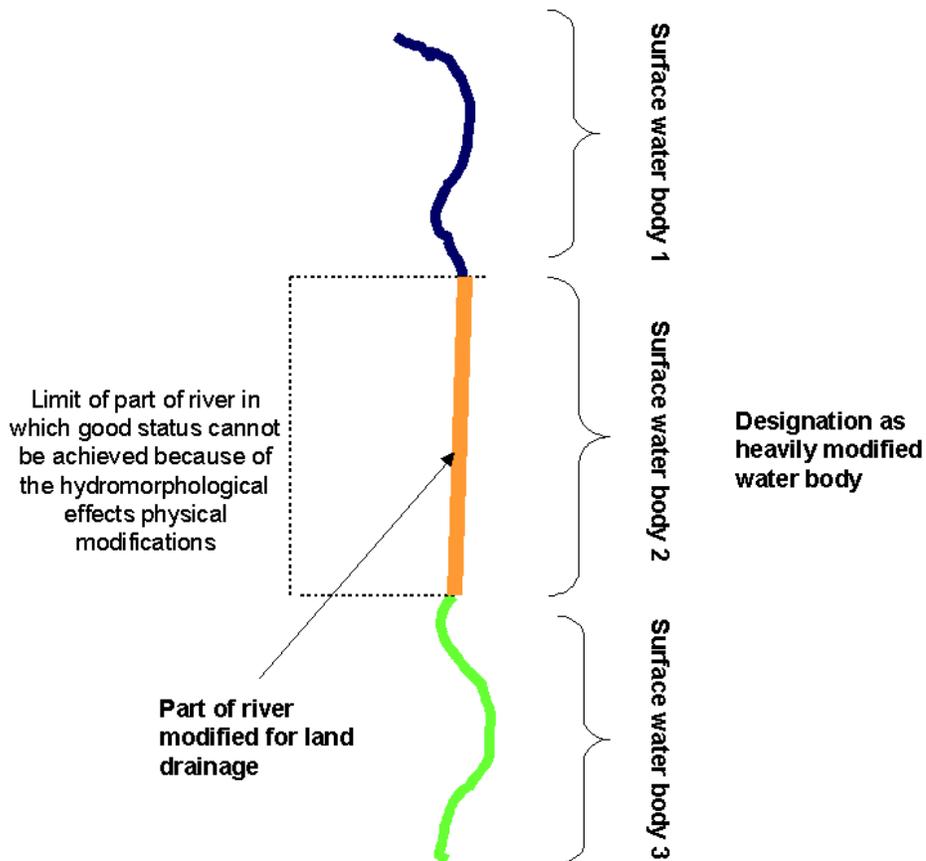


Fig. 6: The establishment of water body boundaries through the identification and subsequent designation of heavily modified water bodies

**Article 10. Small elements of surface water**

Surface waters include a large number of very small waters for which the administrative burden for the management of these waters may be enormous. There is no threshold for “very small water bodies”. However, two systems are set out for differentiating water bodies into types. The smallest size range for river is 10-100 km<sup>2</sup> catchment area, and for lake 0.5-1 km<sup>2</sup> surface area.

It may be appropriate to aggregate elements of water bodies into groups for certain purposes in order to avoid unnecessary administrative burden.

Small elements of surface water can be included as part of a contiguous larger water body of the same surface water category and of the same type, where possible.

Where this is not possible, small elements of surface water shall be assessed and screened for identification as water bodies according to their significance. During the assessment the following factors are considered: ecological importance, importance to the objectives of a Protected Area, significant adverse impacts on other surface waters in the river basin district. Based on the results of such assessment, small elements; (1) belonging to the same category and type, (2) influenced by the same pressure category and level and (3) having an influence on another well delimited water body, may be grouped.

Those small elements of surface water not identified as surface water bodies, shall be protected, and where necessary improved to the extent needed to achieve the environmental objectives<sup>8</sup> for water bodies to which they are directly or indirectly connected. (Figure 7)

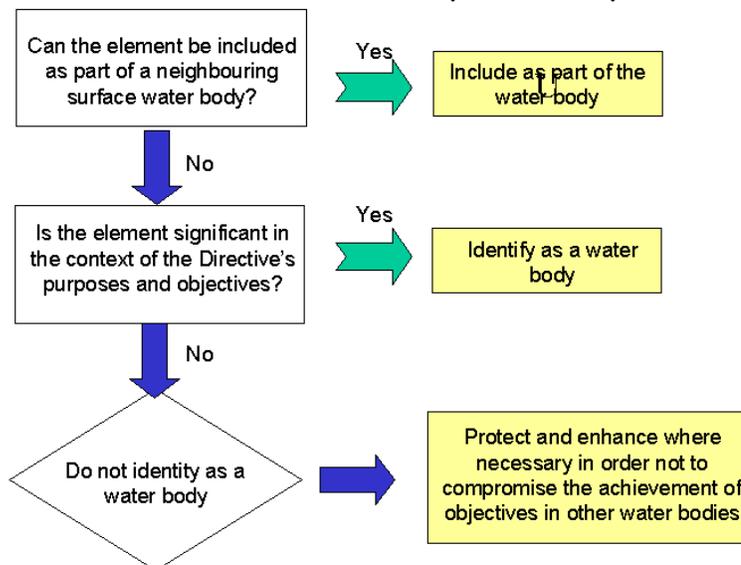


Figure 7: A suggested approach to ensuring appropriate protection of smallest surface waters

<sup>8</sup>EU WFD, Article 4.1

### Article 11. Identification of Wetlands as Water Bodies

Wetlands must be associated with a “water body”, which are directly influencing the status of the related “water body”. The boundaries of such wetlands must be identified according to a general principles in order to meet the requirement of a “discrete and significant” element.

## Chapter III

### Principles and procedure for identification and establishment of boundaries for groundwater bodies

#### Article 12. Procedure for identification and establishment of boundaries for groundwater bodies

Procedure for identification and establishment of boundaries for groundwater bodies is described in figure 8.

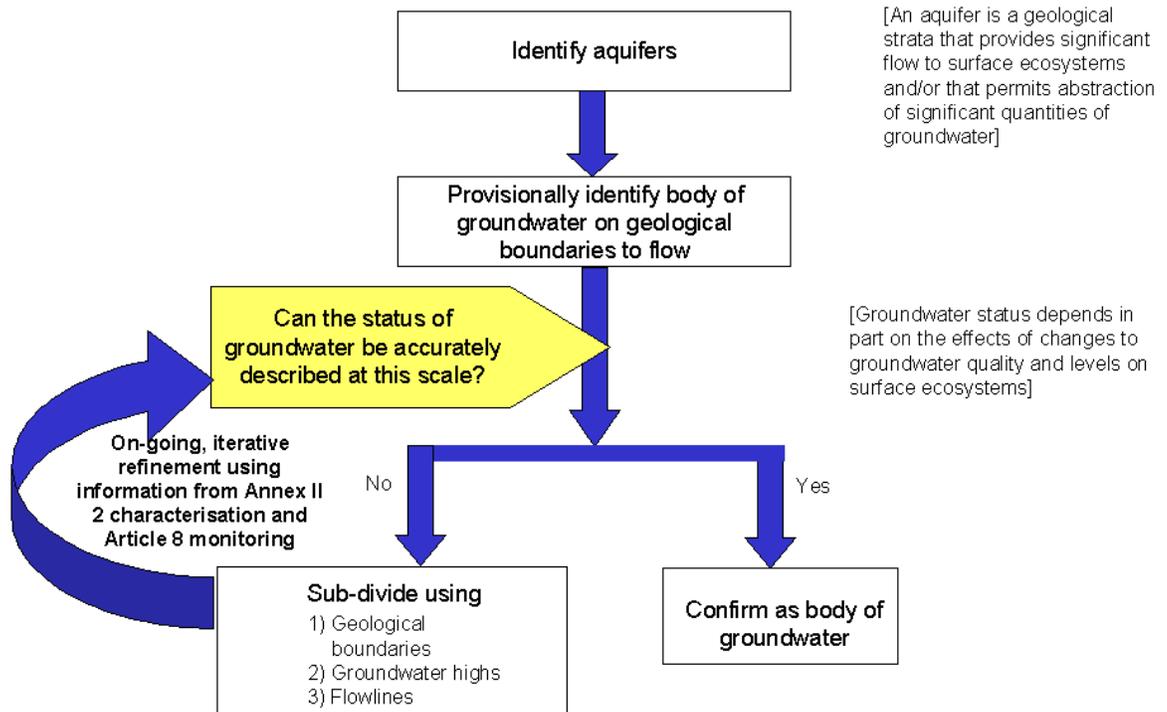


Fig. 8: scheme for Identification of groundwater bodies

### Article 13. Identification of water bodies for groundwater

### 13.1 Identification of bodies of groundwater taking account of significant flow and abstraction of significant water flow

In order to assign groundwater to water body, it is required to determine whether it has a significant flow of water and whether a significant quantity of abstraction is possible.

A significant flow of groundwater is one that, were it from reaching an associated surface water body or a directly dependent terrestrial ecosystem, would result in a significant diminution in the ecological or chemical quality of that surface water body or significant damage to the directly dependent terrestrial ecosystems.

Volume of all groundwater bodies used, or intended to be used, for the abstraction of more than 10 m<sup>3</sup> of drinking water a day as an average, or serve/could serve 50 or more people could be regarded as a significant quantity of groundwater. (Figure 9)

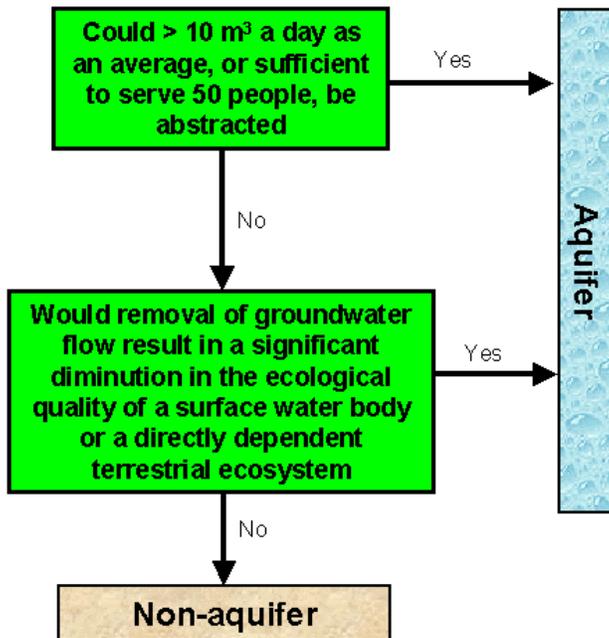


Figure 9: Criteria for qualifying hydrogeological layer as an aquifer

The requirements are different for the water body which is intended for drinking water and the body intended for other purposes.

Bodies should be delineated in a way that enables an appropriate description of the quantitative and chemical status of groundwater. This does not mean that a body of groundwater must be delineated so that it is homogeneous in terms of its natural characteristics, or the concentrations of pollutants or level alterations within it.

The delineation of bodies of groundwater should ensure that groundwater quantitative status can be reliably assessed. In some circumstances, quantitative status may be determined using long-term monitoring data or a water balance calculation.

We need to take into account the particular characteristics of their aquifers when delineating bodies of groundwater. When there is substantial flow between strata with very different characteristics (e.g. karst and sandstone), water bodies can be delineated according to the boundaries between the strata, so that to ensure that the ability to adequately assess quantitative status is not compromised.

### 13.2 Identification of bodies of groundwater taking account of hydraulic boundaries of differences in geology and flows

The starting point for identifying the geographical boundaries of a groundwater body should be geological boundaries to flow, unless the description of status and the effective achievement of the environmental objectives for groundwater require sub-division into smaller groundwater bodies. In such case, sub-divisions of an aquifer or aquifers that cannot be based on geological boundaries should be based initially on groundwater highs or, where necessary, on groundwater flow lines. (Figure 10).

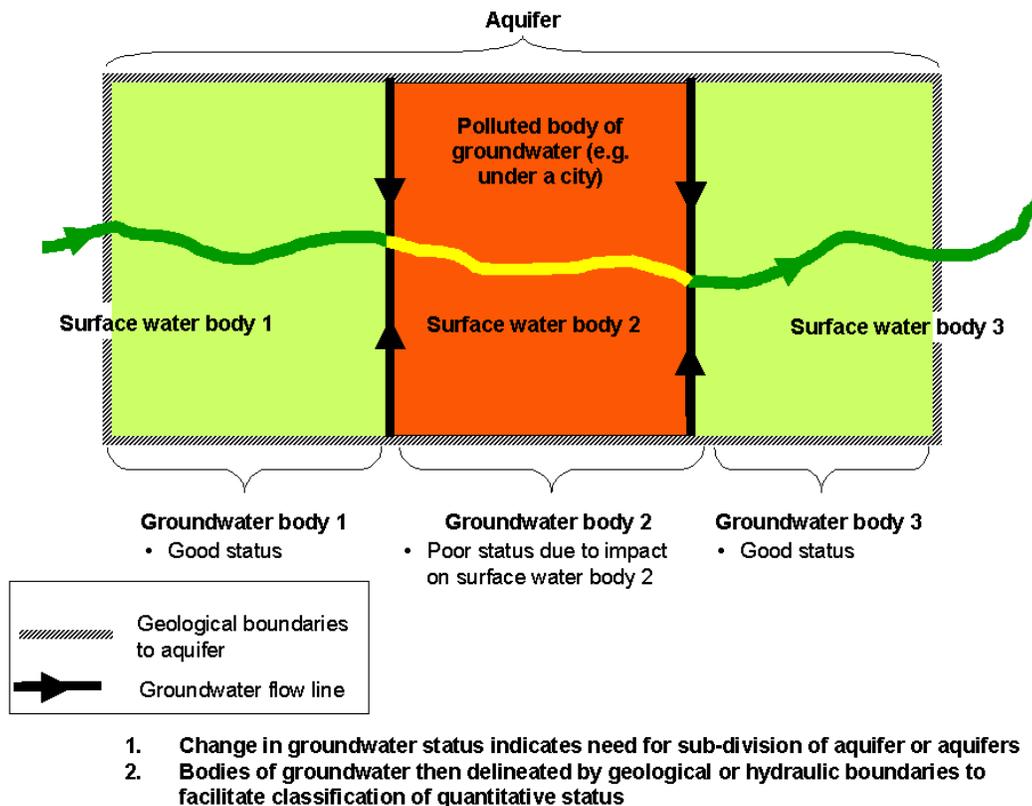


Fig. 10: Sub-division of aquifers into bodies of groundwater using hydraulic boundaries

### **13.3 Identification of bodies of groundwater taking account of Upper and lower boundaries to bodies of groundwater**

Groundwater bodies should be delineated in three dimensions<sup>9</sup>.

The depth of groundwater within an aquifer or aquifers that needs to be protected and, where necessary, enhanced should be established separately, depending on the substantial risks.

Although most pressures will affect the relatively shallow component of a groundwater flow, groundwater flow at depth can still be important to surface ecosystems. Namely, human alterations to groundwater flow at depth can affect shallow groundwater and thus potentially the chemical and ecological quality of connected surface ecosystems. Deep groundwater may also be an important resource for drinking water or other uses.

It is not required to identify deep groundwater as water bodies where that groundwater (a) could not adversely affect surface ecosystems; (b) are not used for groundwater abstraction; (c) was unsuitable for drinking water supply because of its natural qualities or because its abstraction would be technically unfeasible or disproportionately expensive; and (d) could not place the achievement any other relevant objectives at risk.

Groundwater bodies can be identified either separately within different strata overlying each other in the vertical plane, or as a single body of groundwater spanning the different strata. This can be decided taking account of the aquifers and external characteristics.

Therefore, establishment of the upper and lower boundaries - that is directly linked to the estimation of quantitative status - should be based first on geological boundaries and then on other hydraulic boundaries such as flow lines.

### **13.4 Identification of bodies of groundwater taking account of differences in status (status criteria)**

The objectives for bodies of groundwater, and the measures required to achieve them, depend on the existing status of the bodies. Therefore, Major changes in the status of groundwater should be taken into account when delineating groundwater body boundaries to ensure that, water bodies provide for an accurate description of groundwater status. Besides, the need should be kept in mind to ensure that groundwater quantitative status can be reliably assessed. Where status is consistent, large bodies of groundwater may be delineated. Where status differences are reduced during a planning cycle, we may recombine

---

<sup>9</sup>EU WFD, Annex 2, chapter 2.1. and 2.2.

subdivisions of groundwater of the same status for the purposes of subsequent planning cycles. However, water bodies must at least be fixed for one plan period.

### **13.5 Assigning groundwater bodies to a basin district**

Groundwater body should be assigned to one of the river basin management district.

## **Chapter IV Aggregation of water bodies**

### **Article 14. Aggregation of water bodies**

In certain cases, water bodies may be grouped, especially when it comes to small bodies.

Where contiguous elements of surface water within a type are of the same status, their combination is reasonable after defining a status.

Surface and groundwater bodies may be grouped for monitoring, reporting and management purposes where monitoring sufficient indicative or representative water bodies in the sub-groups of surface water or groundwater bodies provides for an acceptable level of confidence and precision in the results of monitoring, and in particular the classification of water body status.

It will be necessary to apply this aggregation on the basis of clear criteria agreed on river basin district level and in a transparent way.