



Implementation of new Rules on criteria for the designation of a water protection zone in Slovenia

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Content of this presentation

1. Legal basis for water protection area designation
2. Hydrogeological basis for water protection area design
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1. Legal basis and related acts for Water Protection Area (WPA) designation

Before 2004 water protection zones were legalized by municipal authorities ordinance.

Since 2004 water protection zones are legalized by decrees on the state level.

Legal basis and basic rules:

- **Water Act** (Ur.l. RS, št. [67/2002](#), [110/2002](#), [2/2004](#), [41/2004](#))
- Rules on **criteria for the designation of a water protection zone** (Ur.l. RS, št. [64/2004](#), [5/2006](#))
- Rules on **construction in water protection zones that may be carried out only pursuant to the water consent** and on the required documentation for obtaining water consent (Ur.l. RS, št. [62/2004](#))
- Rules on criteria for **marking a water protection zone** and a bathing water zone (Ur.l. RS, št. [88/2004](#))



CONSTRUCTIONS

- Construction Act (Ur.l. RS, št. [110/2002](#))
- Decree on the introduction and **application of uniform classification of facilities** and on the designation of facilities of national importance (Ur.l. RS, št. [33/2003](#), [78/2005](#) corr.)
- Rules on the **categories of** demanding, less demanding and simple **construction works**, on conditions for the building of simple construction works without a construction license and on the categories of work on construction works and the attached land (Ur.l. RS, št. [114/2003](#), [130/2004](#), [100/2005](#))

FERTILIZATION AND PLANT PROTECTION

- Decree on the **limit input concentration values of dangerous substances and fertilizers in soil** (Ur.l. RS, št. [84/2005](#))
- Plant Protection Products Act (Ur.l. RS, št. [11/2001](#), [2/2004](#), [37/2004](#), [98/2004](#)-UPB1, [14/2007](#), [35/2007](#)-UPB2)
- Rules on the **responsibilities of users of plant protection products** (Ur.l. RS, št. [62/2003](#), [5/2007](#))



WASTE WATER DISCHARGE AND TREATMENT

- Decree on the **emission** of substances in the discharge of waste waters from **small urban waste water treatment plants** (Ur.l. RS, št. [103/2002](#), [41/2004-ZVO-1](#), [98/2007](#))
- Decree on the **emission** of substances in waste water discharged from **urban waste water treatment plants** (Ur.l. RS, št. [35/1996](#), [90/1998](#), [31/2001](#), [62/2001](#), [41/2004-ZVO-1](#), [45/2007](#))
- Decree on the **emission** of substances and heat in the discharge of **wastewater into waters and public sewage system** (Ur.l. RS, št. [47/2005](#), [45/2007](#))
- Operational programme for the discharge and treatment of urban waste water (14.10.2004)

ASSESSMENT OF THE EFFECTS ON THE ENVIRONMENT

- Decree laying down the **content of environmental report** and on detailed procedure for the **assessment of the effects of certain plans and programmes on the environment** (Ur.l. RS, št. [73/2005](#))



2. Hydrogeological basis for water protection area design

- **(WPA I) The narrowest area – the most rigorous regime of protection:**
 - This is immediate recharge area of the water abstraction point.
 - Natural characteristics are not allowing sufficient retention time to intervene, dilution is low and pollutant quickly reach the abstraction site.
 - Regime of protection is focused to restriction of microbiological as well of all other inputs.
- **(WPA II) The narrow area – rigorous regime of protection:**
 - Natural characteristics are allowing sufficient retention time and dilution of pollutant to intervene.
 - Regime of protection should ensure the acceptable risk of slow decay pollutants' inputs.
- **(WPA III) The wider area – moderate regime of protection:**
 - This is entire recharge area of the abstraction site.
 - Long term health compliant water quality should be ensured.
 - Regime of protection should ensure the acceptable risk of inputs of radioactive substances, conservative substances or substances with very slow decomposition.



WPA – Aquifers of intergranular or fissured porosity with significant intergranular flow dynamics

Wider area (III.)

- Groundwater divide

Narrower area (II.)

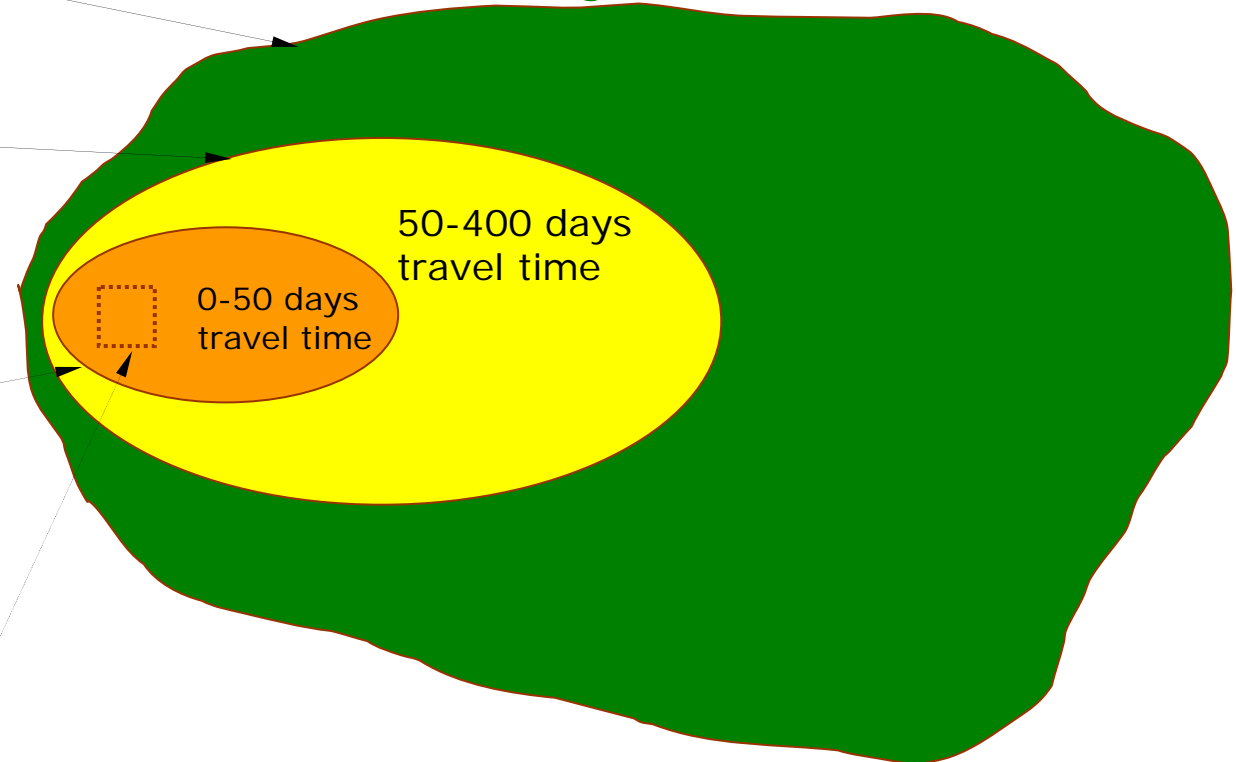
- 400 days isochrone

The narrowest area (I.)

- 50 days isochrone

Fenced abstraction site area (0.)

Entire recharge area





WPA – Aquifers of karst and fissured porosity with significant channel-flow hydrodynamics

Wider area (III.)

- Groundwater divide

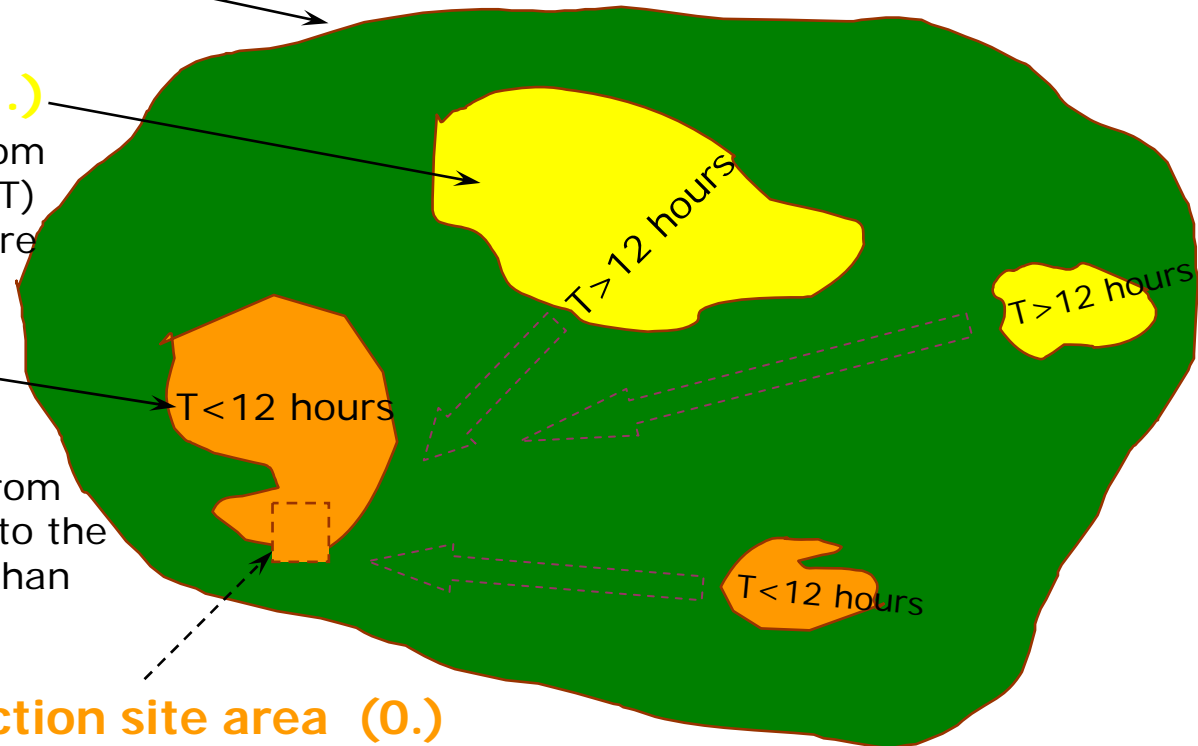
Entire recharge area

Narrower areas (II.)

- Distinct karstified areas from where the flow travel time (T) to the abstraction site is more than 12 hours.

The narrowest areas (I.)

- Distinct karstified areas from where the flow travel time to the abstraction site (T) is less than 12 hours.



Fenced abstraction site area (0.)

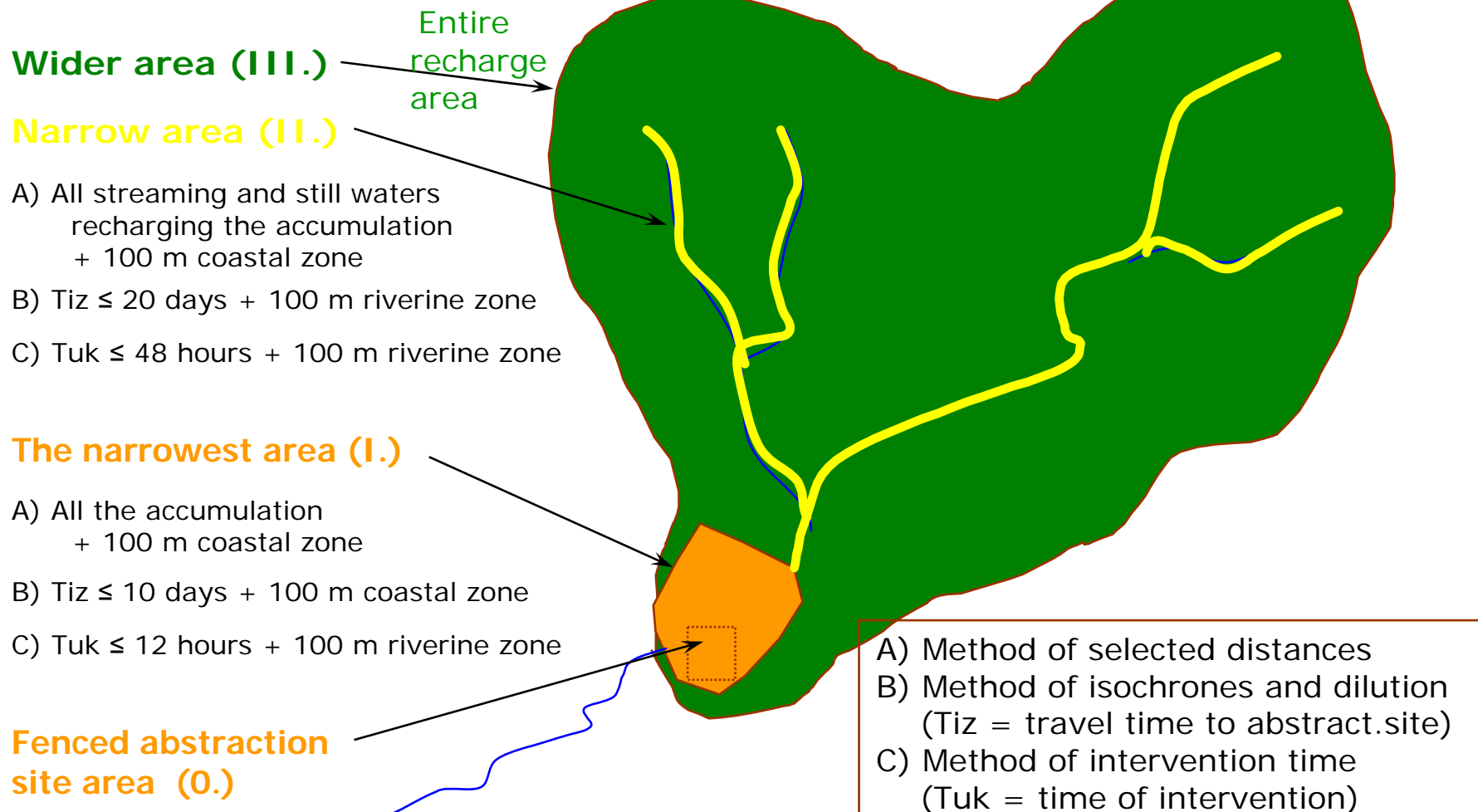


WPA – Aquifers of karst and fissured porosity with significant channel-flow hydrodynamics

- Karst aquifers =
 - dominant channel porosity,
 - in the channel the groundwater flow velocity is higher than in the surrounding rock
- Karstified area =
 - Karst phenomena (such as sinkholes, caves, dolines, channels and open fractures) enable fast water-flow through the aquifer



WPA – Still surface water





WPA – Streaming surface water

Wider area (III.)

Entire recharge area

Narrower area (II.)

A) All streaming and still surface waters recharging abstraction site section + 100 m riverine zone

B) $T_{iz} \leq 5$ days + 100 m riverine zone

C) $T_{uk} \leq 12$ hours + 100 m riverine zone

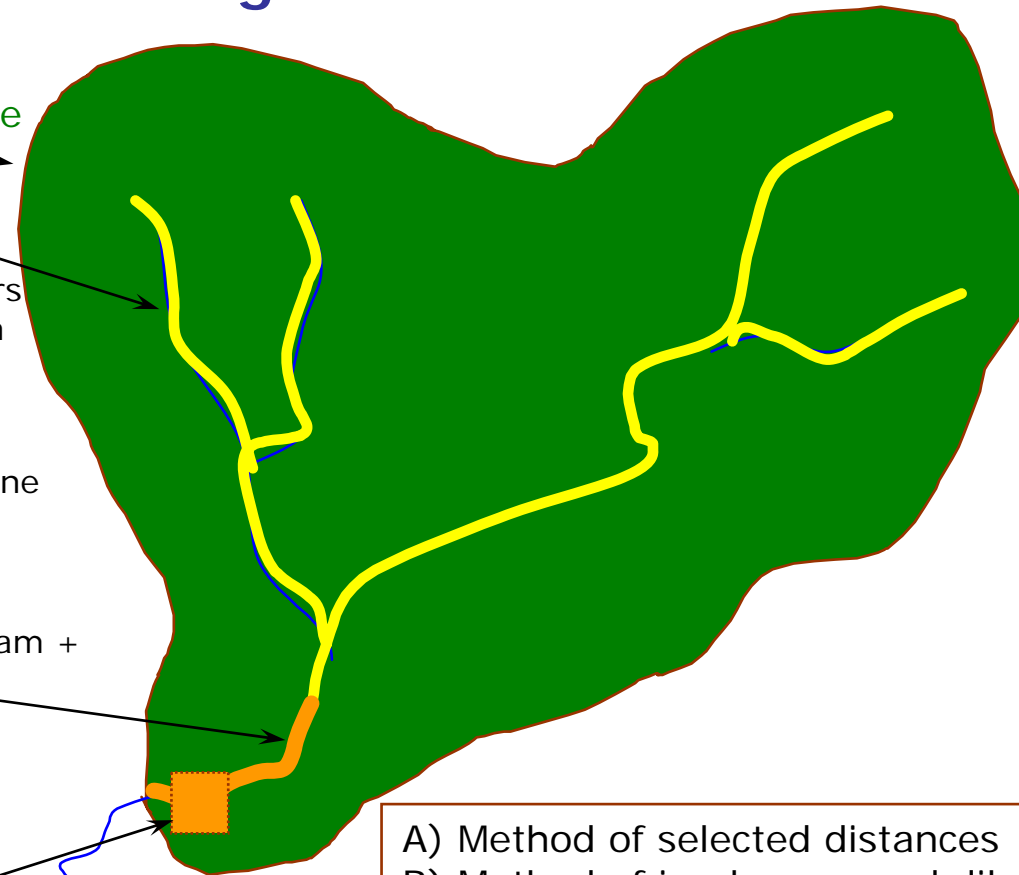
The narrowest area (I.)

A) 15 km upstream + 50 m downstream + 100 m riverine zone

B) $T_{iz} \leq 1$ day + 100 m riverine zone

C) $T_{uk} \leq 4$ hours (or at least 500 m upstream) + 100 m riverine zone

Fenced abstraction site area (0.)



- A) Method of selected distances
- B) Method of isochrones and dilution (T_{iz} = travel time to abstract.site)
- C) Method of intervention time (T_{uk} = time of intervention)



3. Protection measures distribution

- Fertilization (WPA I, II)

- WPA I

- **No fertilization is allowed** (exceptionally the fertilization under conditions of the rules for ecological farming).
 - All cultivable agricultural land must be green covered through the whole year.

- WPA II

- Fertilization is allowed only under conditions of the rules for ecological or integrated farming and if the nitrogen limit values are not exceeded following Decree on the limit input concentration values.
 - Mineral nitrogen is not allowed on non-agricultural land except if the water is in good status in last five years proved by the monitoring.



- **Fertilization (WPA III)**

- **WPA III**

- Fertilization is allowed only if the nitrogen limit values are not exceeded following Decree on the limit input concentration values.
 - Fertilization plan is obligatory.



- Plant protection products (PPP)

- WPA I

- No PPP is allowed (exceptionally those that are allowed according the rules for ecological farming).

- WPA II

- No PPP is allowed on karst aquifer areas.
 - The only PPP allowed are those that are permitted to be sell in the florist's shops, shops with foodstuff and non-foodstuff according the classification of danger, packaging and application.

- WPA III

- The only PPP allowed are those that are permitted to be sell in the florist's shops, shops with foodstuff and non-foodstuff according the classification of danger, packaging and application.



• Constructions (WPA I, II)

– WPA I

- No **residential** or **non-residential buildings** construction is allowed (except cultural monuments).
- Certain **transport infrastructures civil engineering works** and **pipelines, communication and electricity lines** construction is allowed but only pursuant to the water consent.
- Certain **buildings of simple construction works** are allowed but mainly only pursuant to the water consent.

– WPA II

- **Reservoirs, silos and warehouses, waste deposits, military objects, oil and long-distance gas pipelines** construction is not allowed.
- **Constructions for mining or extraction** and **chemical plant constructions** is not allowed.
- Other **buildings** construction is allowed but only pursuant to the water consent.
- The majority of **transport infrastructures civil engineering works** and **pipelines, communication and electricity lines** construction is allowed but only pursuant to the water consent.
- Certain **complex constructions on industrial sites** are allowed but only pursuant to the water consent.



• Constructions (WPA III)

– WPA III

- ***Reservoirs, silos and warehouses, waste deposits*** construction is not allowed.
- Use of construction materials from which water-harmful substances could be eluated, is not allowed.
- Certain ***non-residential buildings*** are allowed only pursuant to the water consent.
- ***Complex constructions on industrial sites*** are allowed only pursuant to the water consent.
- The majority of ***transport infrastructures civil engineering works*** and ***pipelines, communication and electricity lines*** construction is allowed but only pursuant to the water consent.
- Almost all building of simple construction works are allowed to construct.



- Waste water emission and treatment plants

- WPA I

- ***Treatment plants*** and ***treated wastewater sinks*** construction is not allowed.

- WPA II, III

- ***Small urban waste water treatment plants*** and ***septic tanks*** construction is not allowed.
- ***Treated wastewater sinks*** construction is allowed but only pursuant to the water consent.



Water consent could be required on three different ways depending on construction classification:

1. "pd"

- Impacts of the construction on water status have to be verified in the construction permitting procedure.

2. "pp"

- Design of protection measures of the construction have to be verified by risk analysis.
- Impacts on water status have to be verified in the construction permitting procedure.

3. "pip"

- The construction have to be included in the state or municipal Spatial plan.
- The Spatial plan has to be verified by **environmental report and the assessment of the effects on the environment.**
- *Impacts of the construction on water status and the design of protection measures verified by risk analysis* have to be verified in the Spatial plan enacting procedure.



4. Implementation of the water protection area decrees

1. Verification of the existing WPA municipal authorities ordinance
2. Verification of improvements and expert technical documents proposed by local authorities
3. Preparation of the draft WPA decree proposed by Ministry of Environment
4. Public consultation (municipality and stakeholders)
5. Enforcement of the decree



- Internet site with the basic rules and decrees

http://zakonodaja.gov.si/rpsi/r04/predpis_PRAV1024.html

Thank you for your attention!