



Webbinar on Advanced wastewater treatment for API reduction: Results of CWPharma project and proceedings in Sweden

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20-10-29

What is an EU-directive?

- the main part of the present Swedish environmental legislation originate from the European Union's legislation (EU-directives)
- EU-directives must be implemented in each member states' national legislation and applied in line with the EU-Court judgements
- The EU-Court has interpreted some requirements in Article 4 of the Water Framework Directive (WFD)

Ecological status of a water body

Good ecological status means

The values of the quality elements for the surface water body type show **low levels of distortion resulting from human activity**, but **deviate only slightly from those normally associated with the surface water body type under undisturbed conditions**.

WFD, Annex V, table 1.2 General definitions

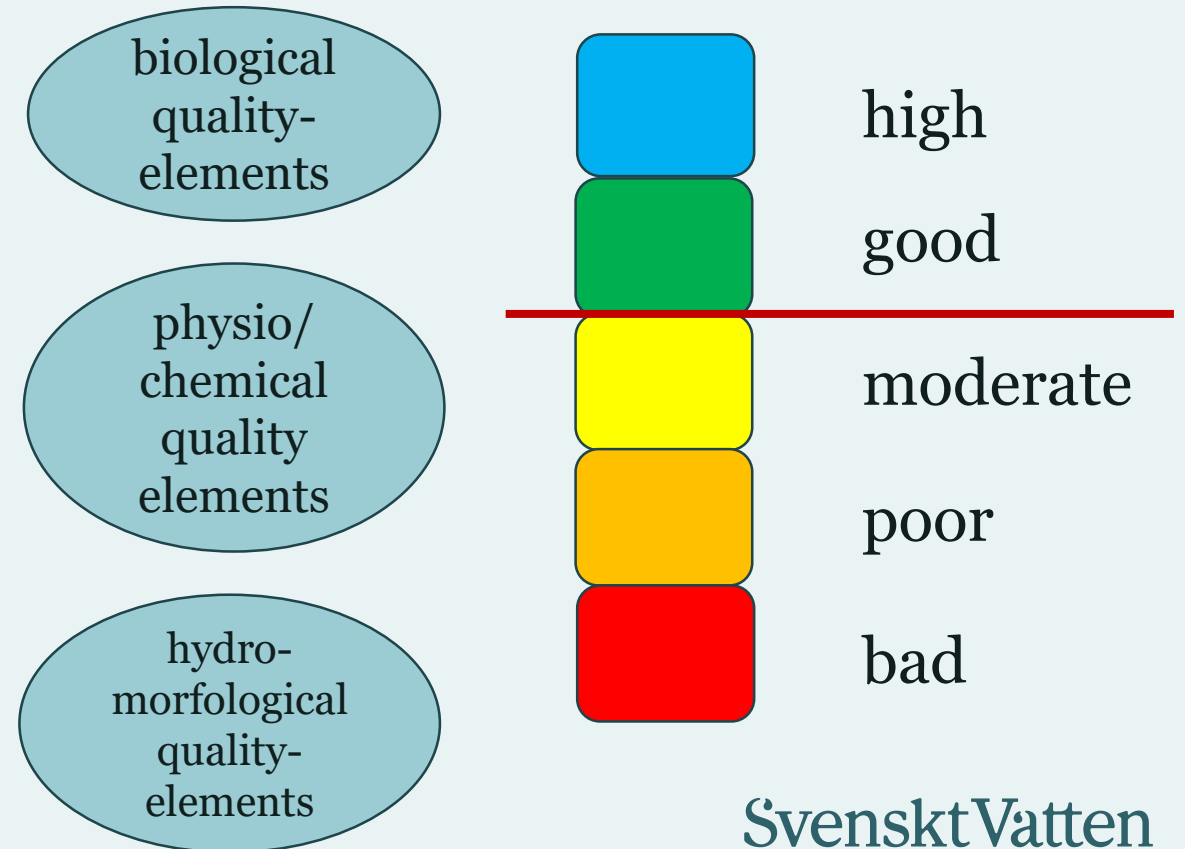
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Svenskt Vatten

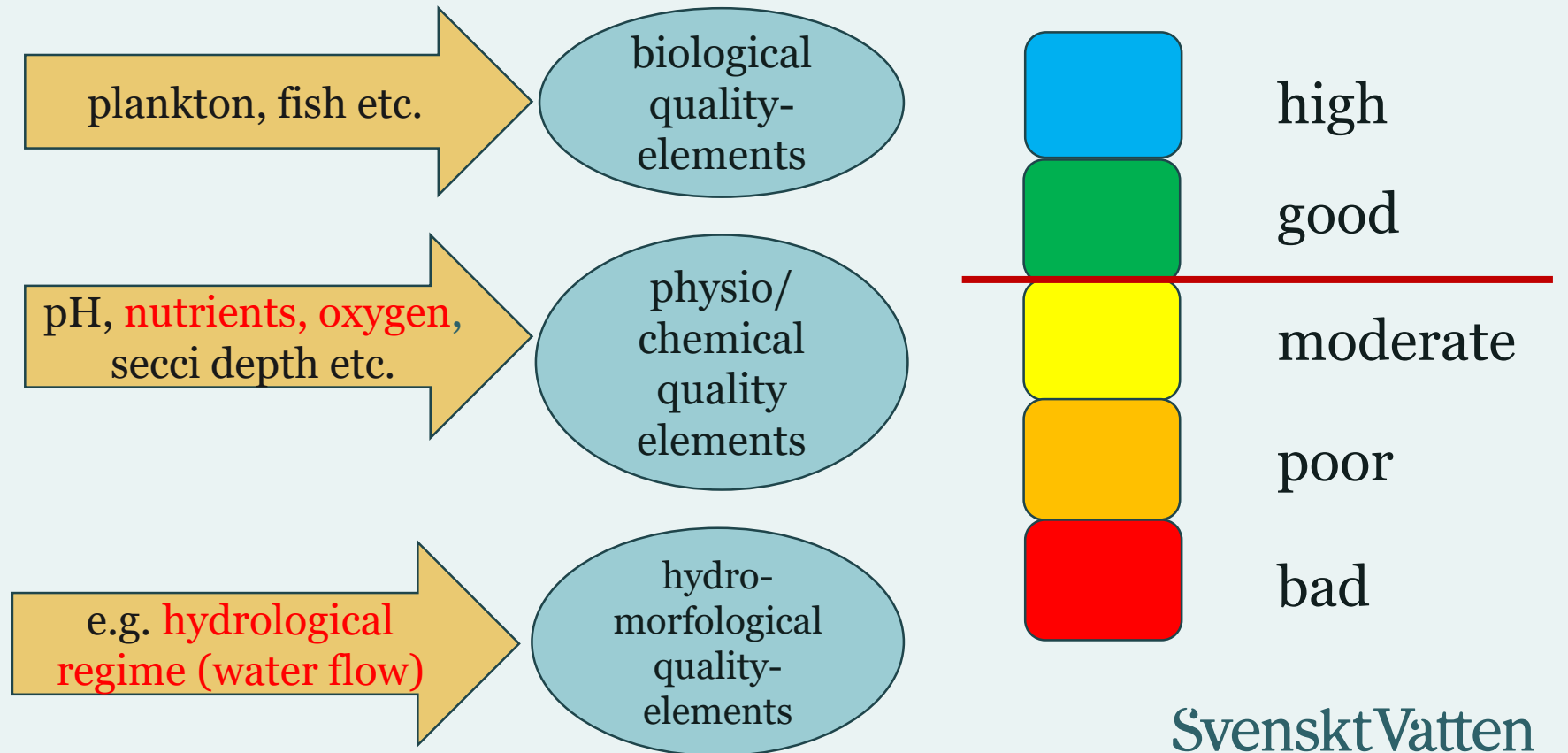
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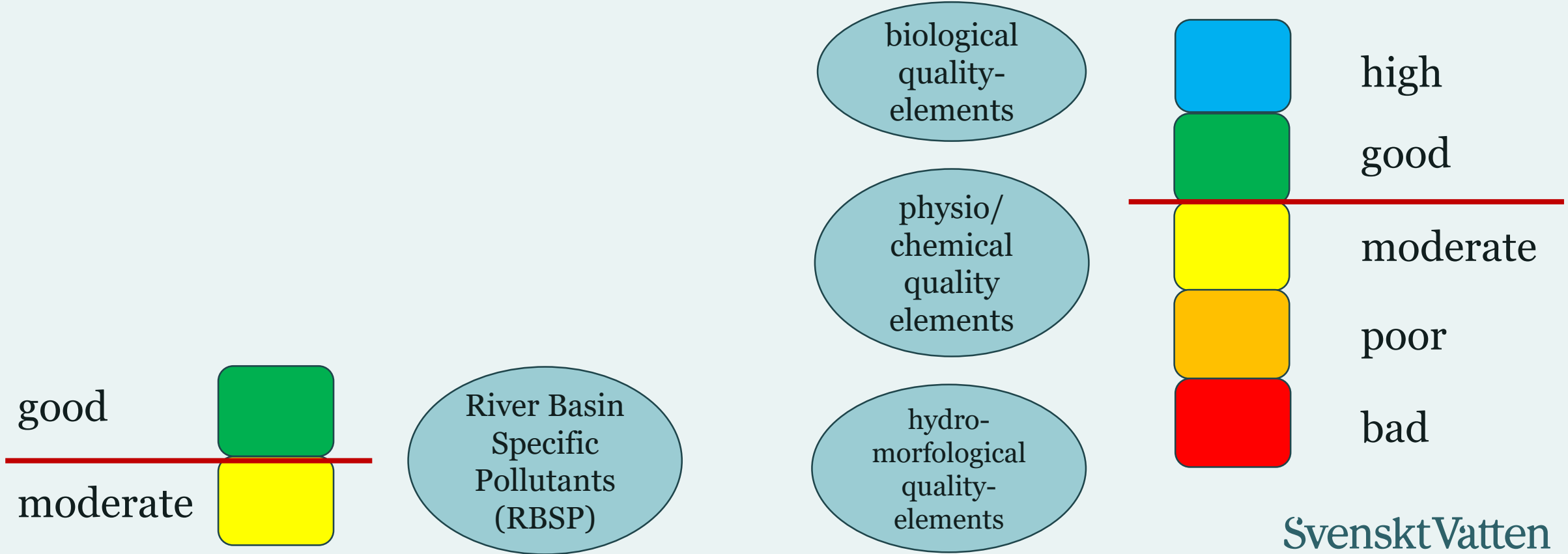
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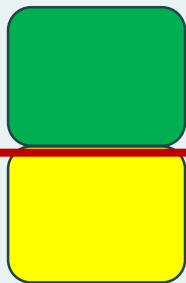


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32 substances in Sweden
e.g. ammonia, nitrate, five metals, four pharmaceuticals (diclofenac, 2 estrogens and ciprofloxacin) and several other organic substances

good
moderate



River Basin Specific Pollutants (RBSP)

biological quality-elements

physio/chemical quality elements

hydro-morphological quality-elements

high

good

moderate

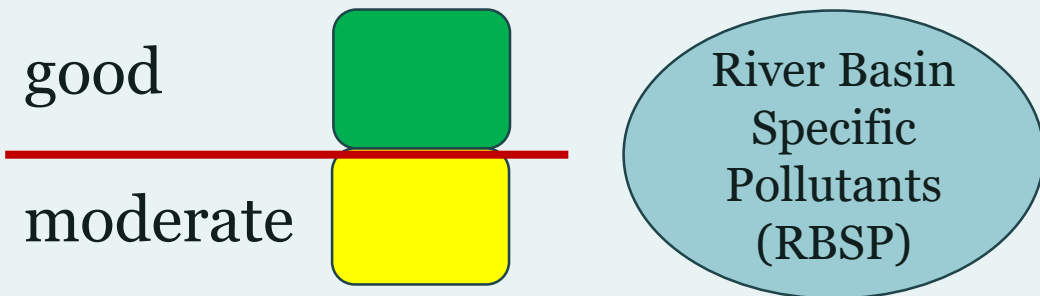
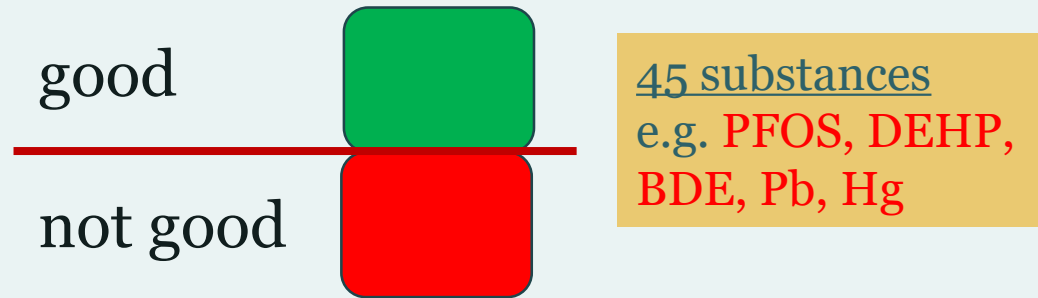
poor

bad

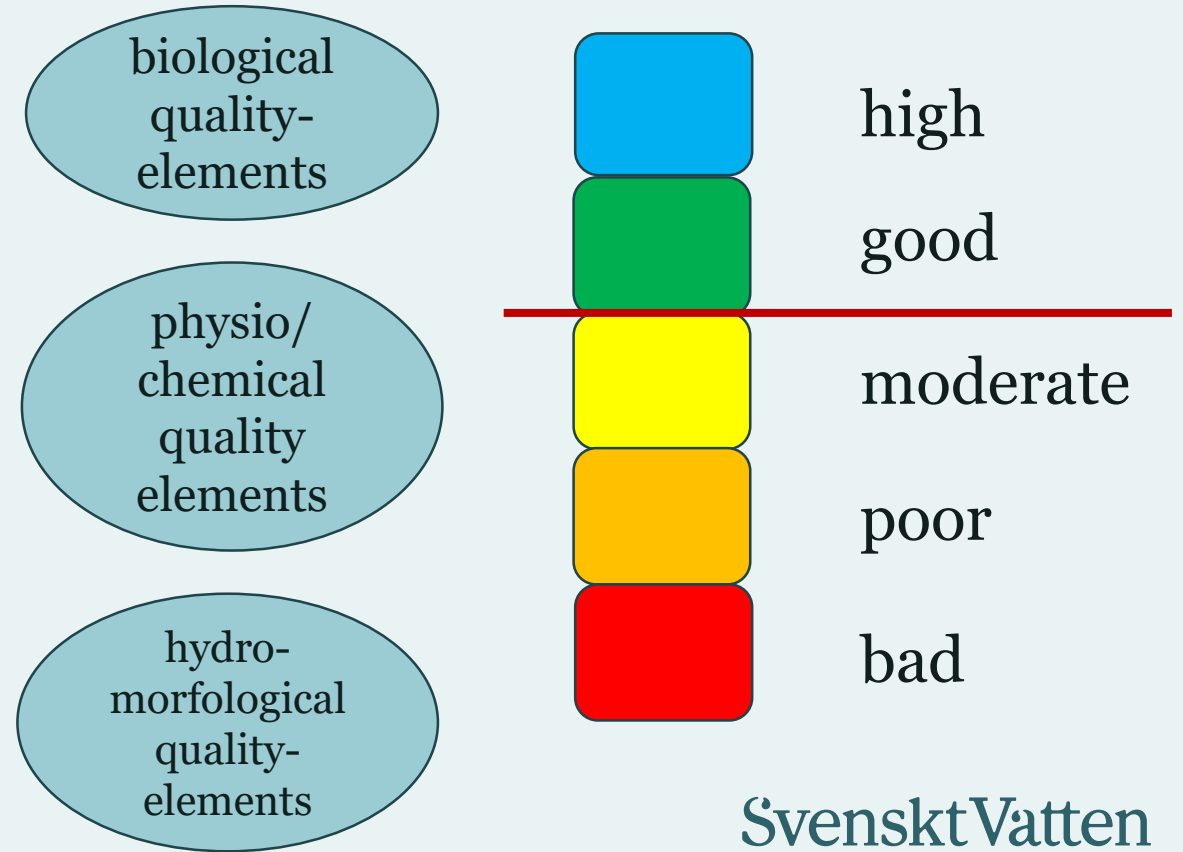
Svenskt Vatten

Ecological status and chemical status of a water body

The EU EQS-directive regulate substances and limit values for assessing **chemical status** of the water bodies (Article 4-objective, WFD)



The WFD and the Swedish Agency for Water and Marine Management regulate quality elements and limit values for assessing **ecological status** of the water bodies (Art. 4, WFD)



The EU-court Weser judgement in brief

the objectives, the non-deterioration requirement and the exemption rules in the Article 4 of the WFD shall be applied on all activities and projects.

- **non-deterioration requirement** – an activity is not permissible if the status of the water body will deteriorate. If the status is bad already only measures improving the status are permissible
- **exemption rules** – extended time til 2027 or less stringent status requirement. A condition for applying any of the exemptions is that the status may not deteriorate further.

(the condition is not possible to fulfil when no more treatment technology is available as the population will continue to increase)

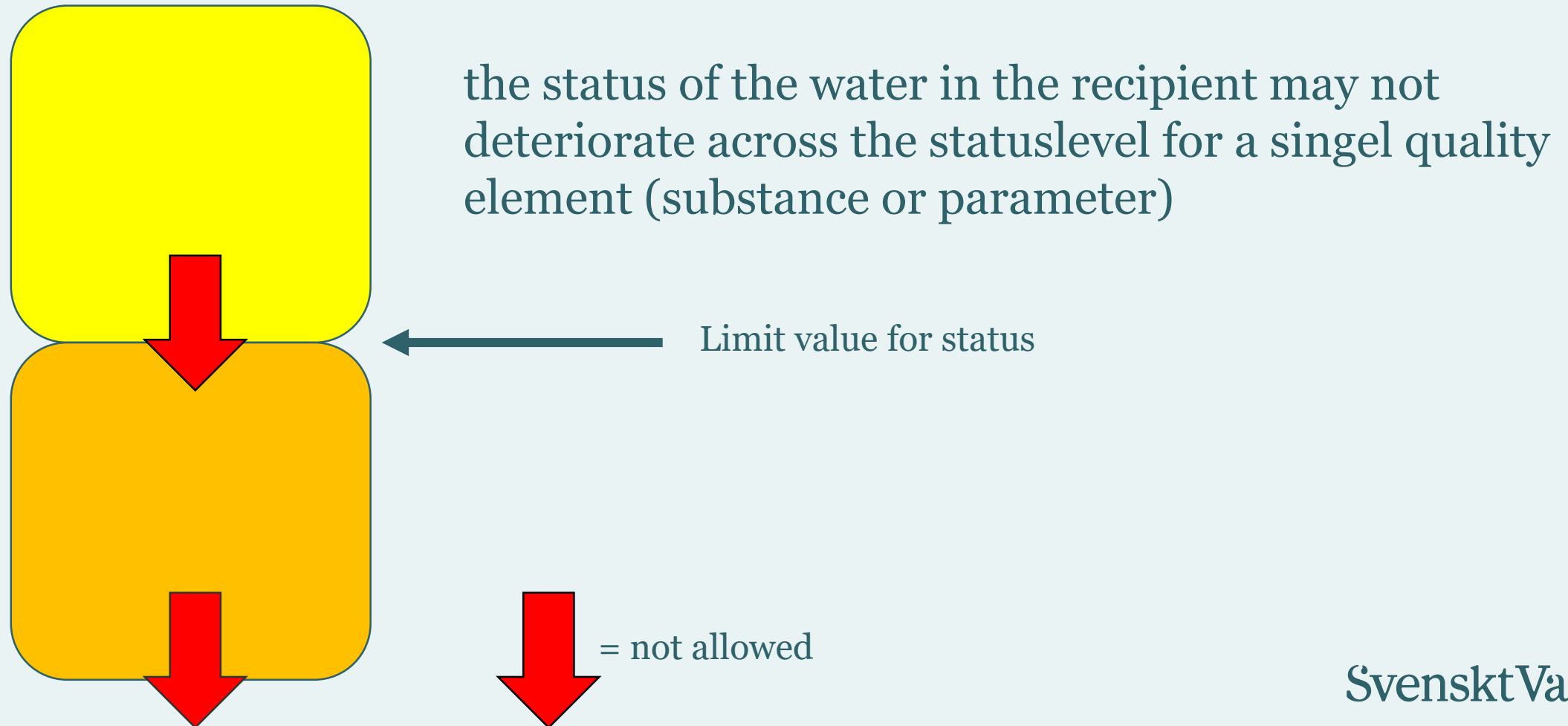
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Remember: the option in Article 4.7 in the WFD to deviate from the WFD requirements, if specific conditions are fulfilled, is not applicable on UWWTP emitting to waters with good or less than good status (most common situation)

The non-deterioration requirement in the WFD as interpreted by the EU-court in the Weser judgement



Problems for UWWTPs as the population grows

- ❑ Swedish UWWTPs larger than 2000 pe reduce 96 % (emit ~0,2 mg/l) of the P-load in average and the most effective reduce 98-99 % (emit ~0,1 mg/l)
 - when reducing 98-99 % of the P-load, measures to meet an increase of the P-load as the population grows is very limited or none at all
 - when reducing 80 % of the P-load as required in the EU's UWWT-directive, the population may double three times without increasing the P-emissions since it is possible to increase the P-reduction to 97,5%
- ❑ it is not possible to treat all types of pollutants in waste water
- ❑ the Swedish population today grows twice as fast as 10-15 years ago

The UWWTD is subordinated the WFD

Article 10: ... ensure that the urban waste water treatment plants built to comply with the requirements of.... Articles ... and 7 are designed, constructed, operated and maintained to ensure sufficient performance...

Article 7: ensure that urban waste water shall before discharge be subject to appropriate treatment as defined in Article 2 (9)

Article 2 (9): 'appropriate treatment' means treatment of urban waste water by any process and/or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions of this and other Community Directives

Two examples of consequences

- the permit for a new UWWTP at skiresort halved the size applied. No other recipient is available
 - the plans for developing the resort could not be implemented
- an application for a permit to redirect waste water from two to a third already existing but expanded and upgraded UWWTP ($<0,2 \text{ mg P/l}$) was recently rejected, despite
 - greatly reduced P-load to the coast and on the sea, and
 - removed waste water P-load on two freshwater recipients





Options

- adjust the Article 4.7 in the WFD, or open a similar Article in the UWWTD to allow, under specific conditions, UWWTP:s to deviate from the WFD objectives and the non-deterioration requirement
- rectify pollution more stricter at source and strengthen the requirements in EU legislation on chemicals (introduce an extended producers responsibility)
- assess consequences for UWWTPs permissibility when revising the EQS-directive

A man in a brown jacket and cap is fly fishing in a river. The background shows autumn foliage and trees. The text "Thank you!" is overlaid on the right side of the image.

Thank you!

Sweden shall have clean drinking water and healthy lakes, rivers and seas