

Nitrate vulnerable zones (NVZ) in the Czech Republic



Implementation history, designation and
revisions procedures, background data

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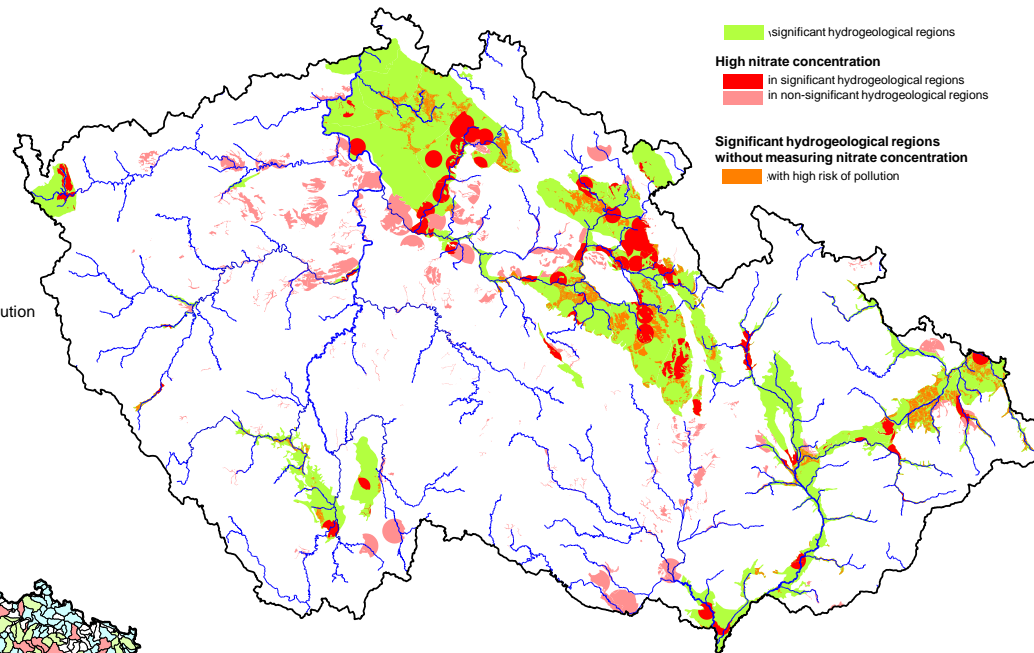
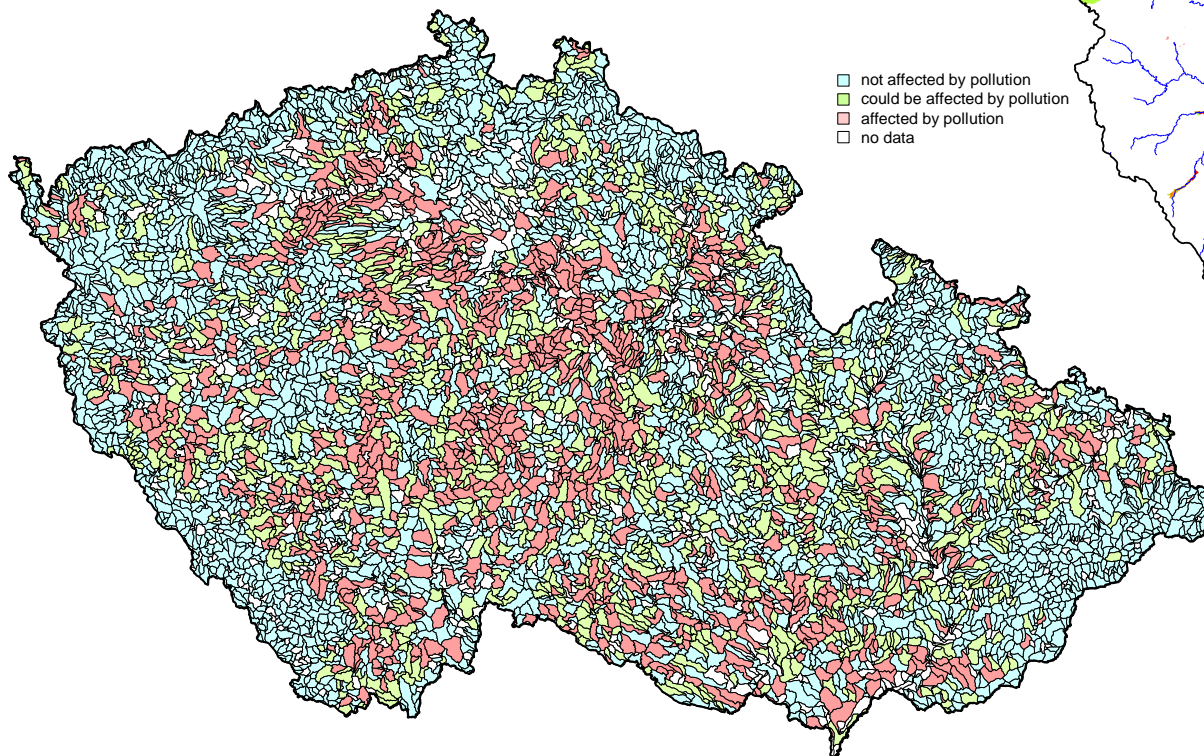
Implementation history of NVZ in the Czech Republic

- ✓ **1998-2002: R&D Project – Reducing non-point pollution of surface and groundwater in the Czech Republic.** Evaluation of the monitored data, determination of soil and subsoil vulnerability and vulnerability of the aquatic environment, nitrogen balance calculations and design of the initial NVZ designation.
- ✓ **2003: Designation of NVZ** (Government Regulation No. 103/2003 Coll.)
- ✓ **2007: 1st revision of NVZ** (amended Government Regulation No. 219/2007 Coll.)
- ✓ **2012: 2nd revision of NVZ** (new Government Regulation No. 262/2012 Coll.)
- ✓ **2016: 3rd revision of NVZ** (amended Government Regulation No. 235/2016 Coll.)

Initial designation of NVZ (1998-2002)

- ✓ Evaluation of nitrate concentrations in surface and groundwaters from all the resources available. No systematic monitoring for Nitrate directive available.

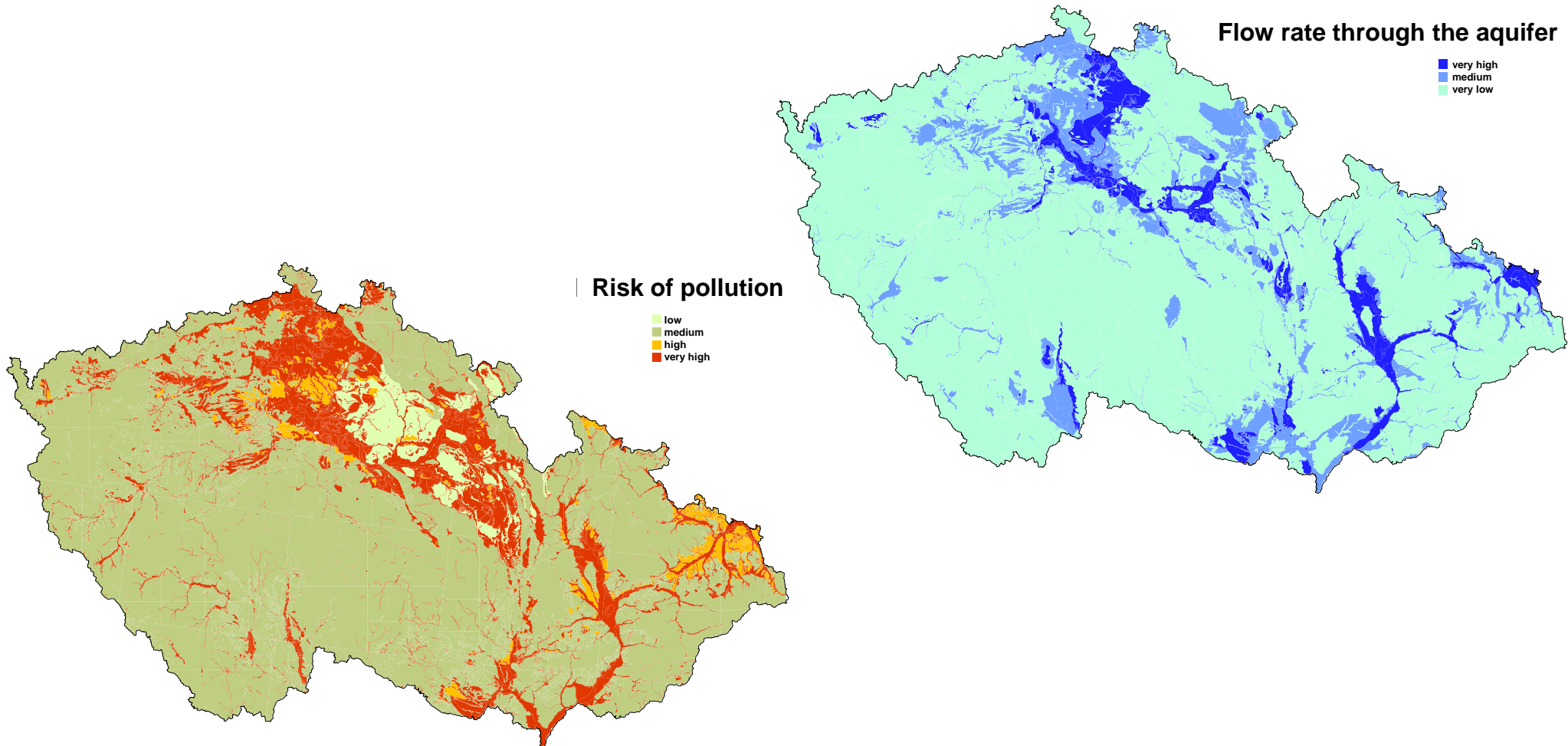
Surface water



Groundwater

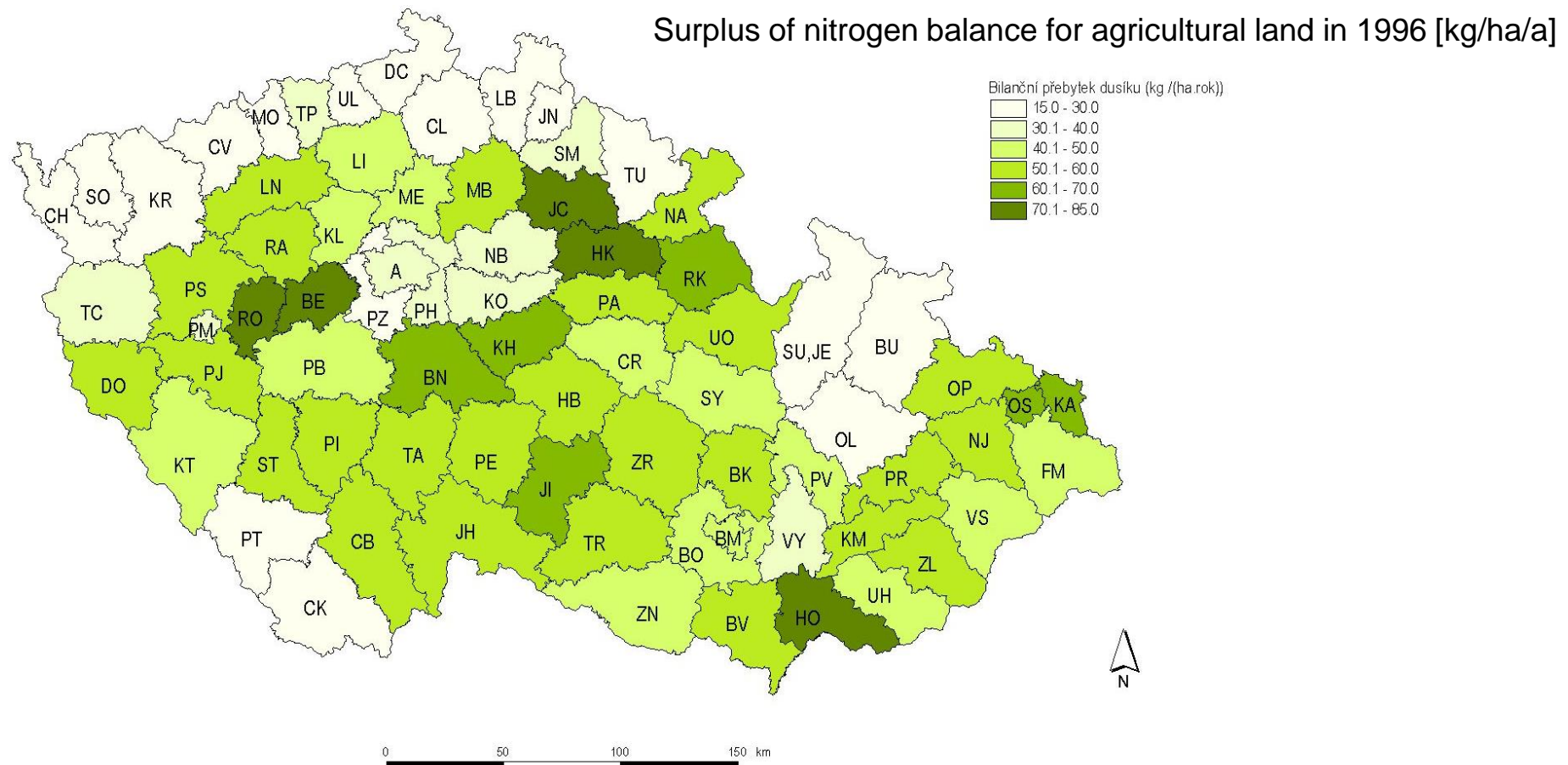
Initial designation of NVZ (1998-2002)

- ✓ Determination of soil and subsoil vulnerability to leaching of nitrate to waters.



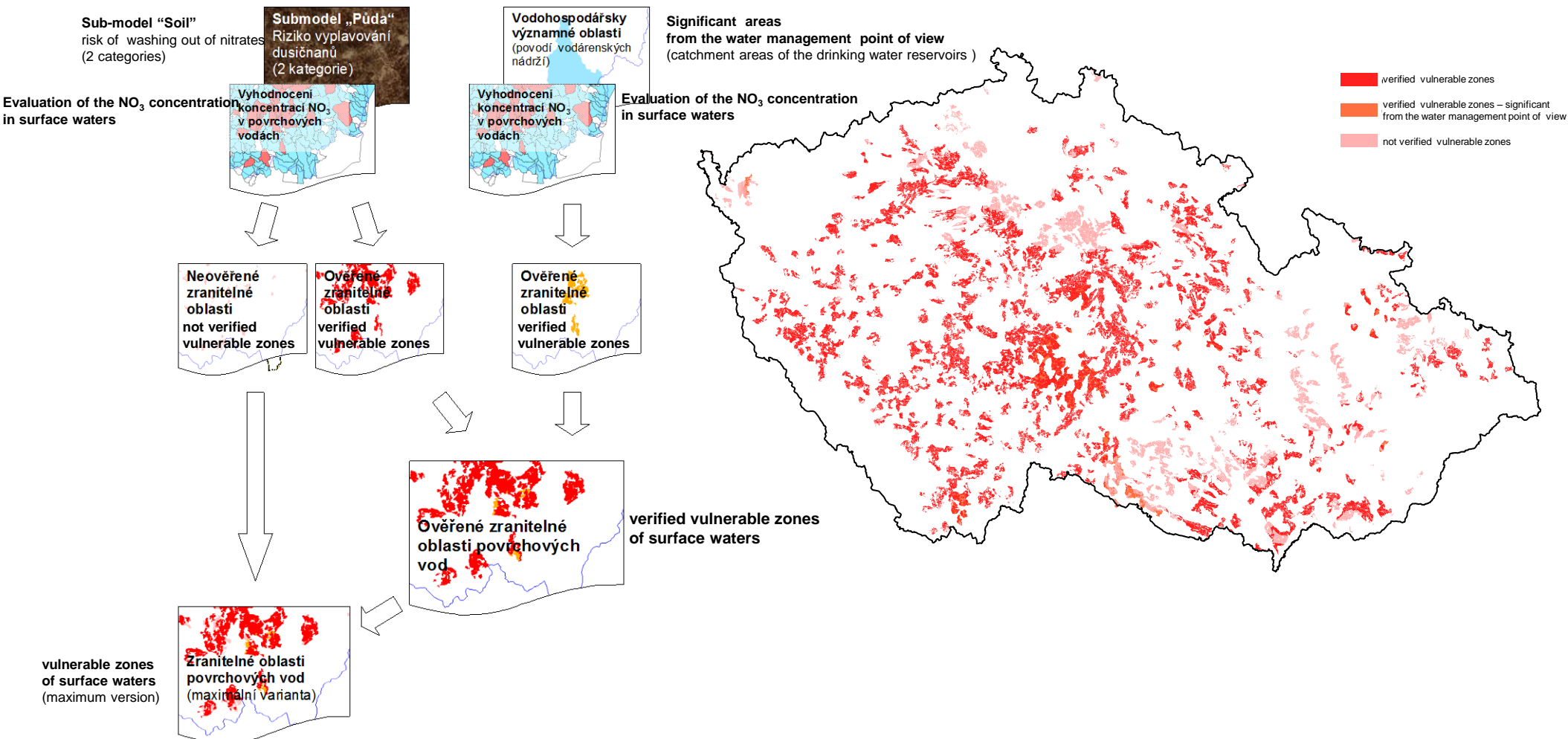
Initial designation of NVZ (1998-2002)

- ✓ Calculation of nitrogen balance for agricultural land and determination of surplus available for leaching.



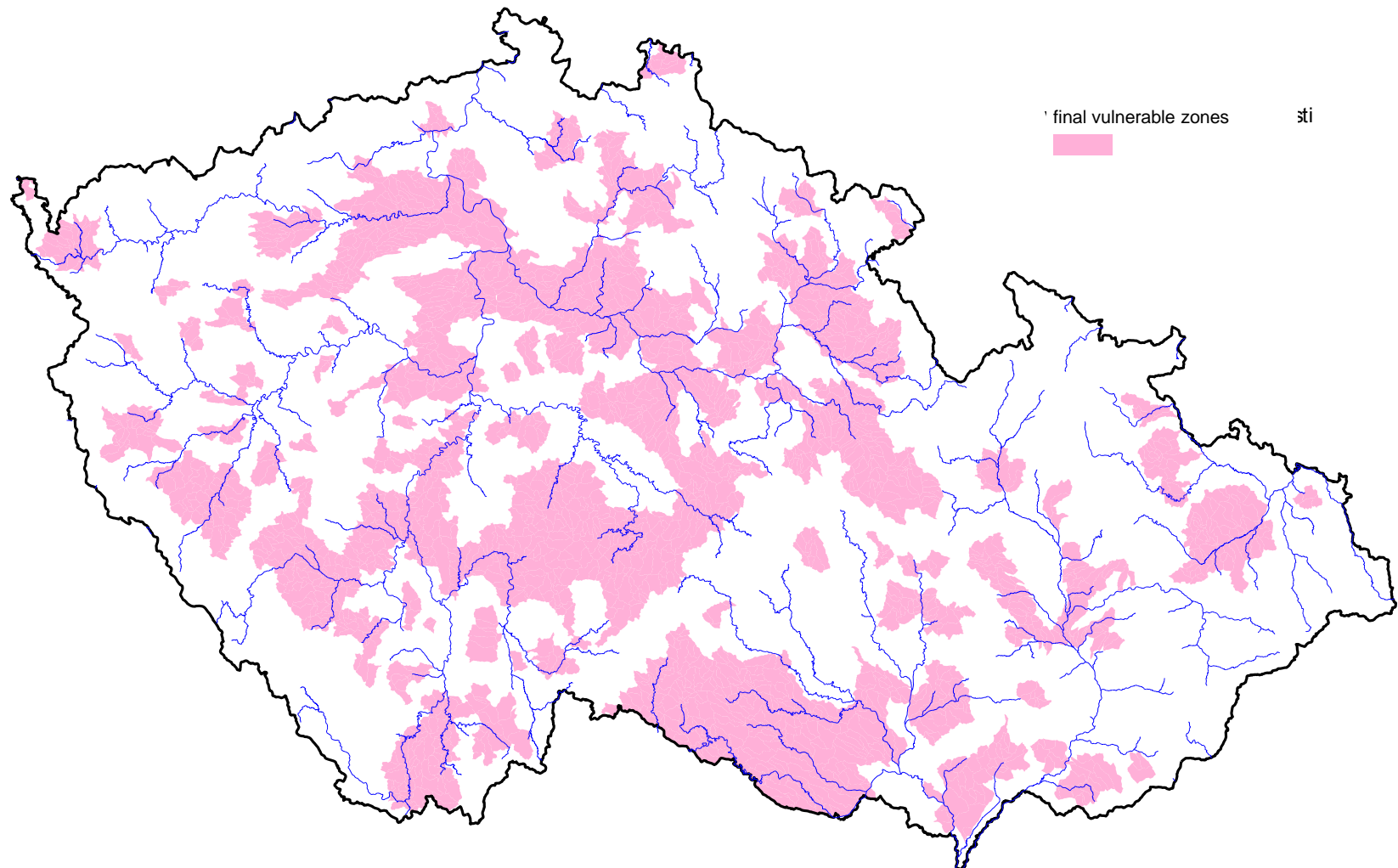
Initial designation of NVZ (1998-2002)

- ✓ Creation of conceptual model and initial designation of nitrate vulnerable zones



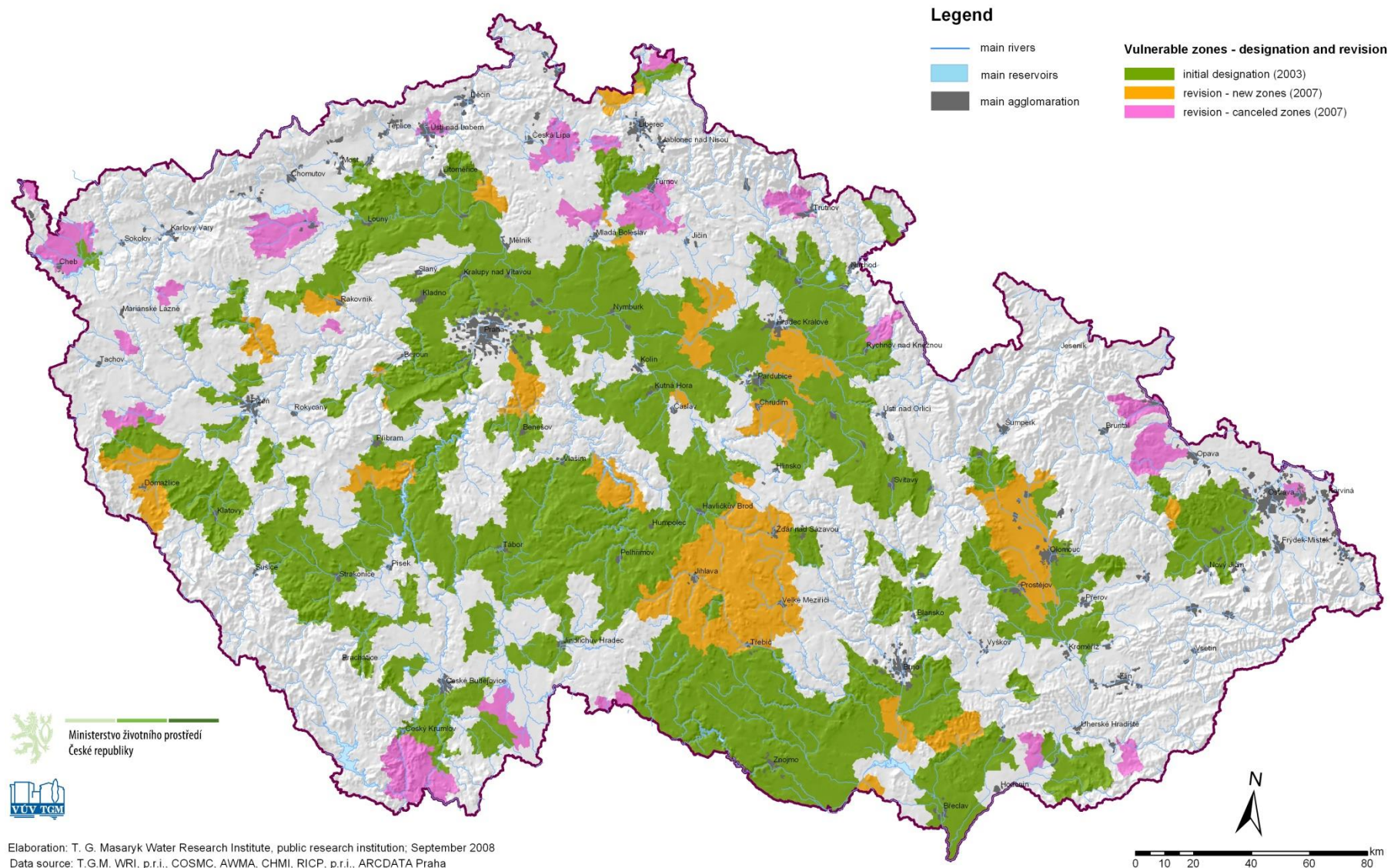
Initial designation of NVZ (1998-2002)

- ✓ Final designation of NVZ in cadastral units for better administration of the action programme



1st revision of NVZ (2007) – how to add and remove NVZ

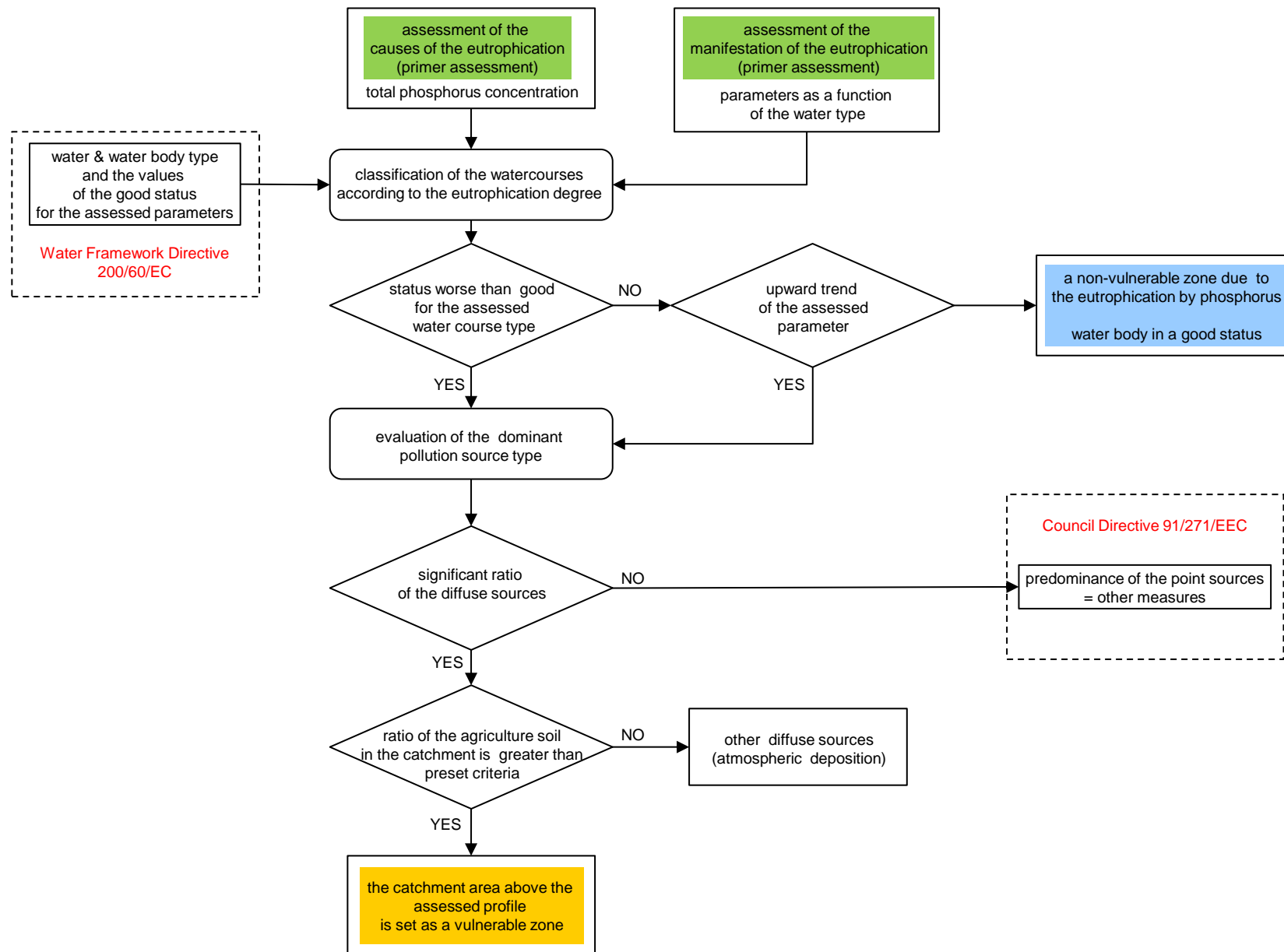
Designation and revision of vulnerable zones in the years 2003 and 2007



2nd revision of NVZ (2012) – new eutrophication tool

- ✓ Eutrophication of inland waters = high concentration of phosphorus
- ✓ Eutrophication of coastal and marine waters = high concentration of nitrogen mainly
- ✓ To support the reduction of eutrophication of the seas has been proposed standard for NVZ cancelation. The standard is 25 mg/l nitrates (maximum) for all waters in evaluated river basin and groundwater unit.
- ✓ New eutrophication tool was established for addressing measures to reduce phosphorus runoff from soils in specific NVZ.

2nd revision of NVZ (2012) – new eutrophication tool



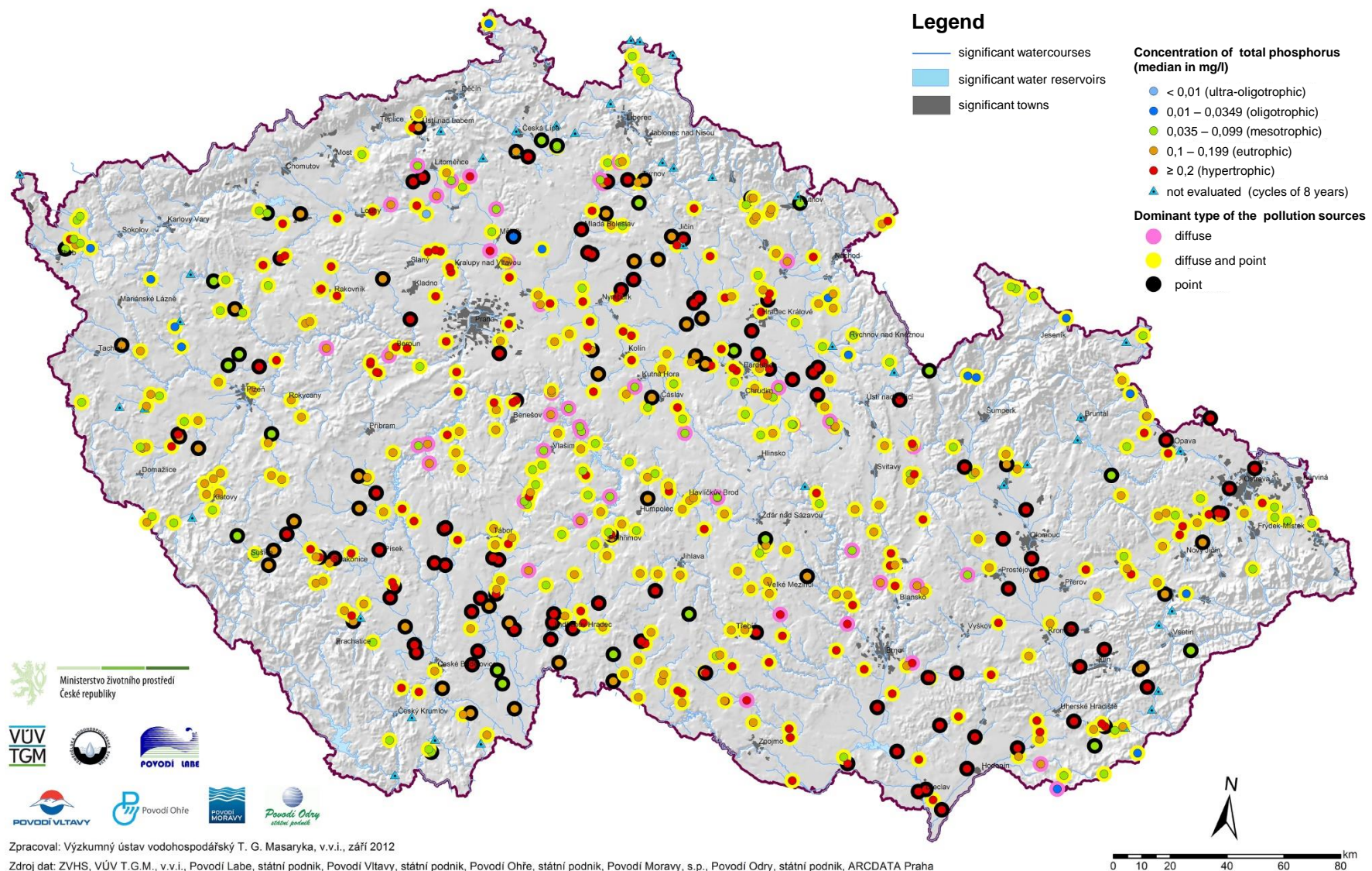
2nd revision of NVZ (2012) – new eutrophication tool

- ✓ Evaluation of predominant phosphorus source in surface water according ratio of N-NO_3 to N_{anorg}

Parameter	Altitude (m a.s.l.)	Unit	Type of pollution source		
			nonpoint pollution	nonpoint and point pollution	point pollution
$\text{N-NO}_3/\text{N}_{\text{anorg}}$ (median)	➤ 200	%	≥ 99	95–98,99	< 95
	≤ 200	%	≥ 98	90–97,99	< 90

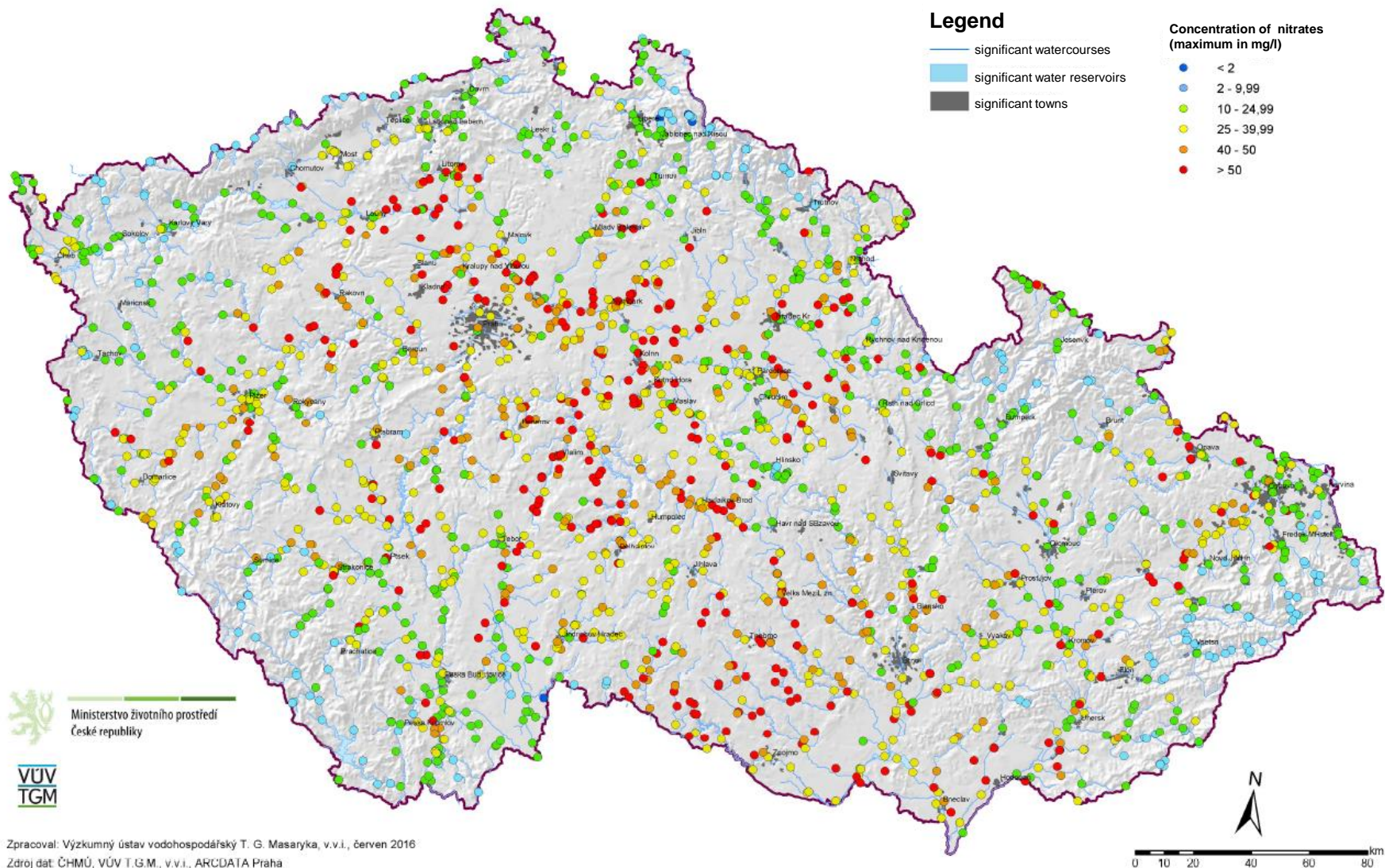
2nd revision of NVZ (2012) – new eutrophication tool

Assessment of the eutrophication of the watercourses according to the total phosphorus concentration and the dominant pollution sources (2008-2011)



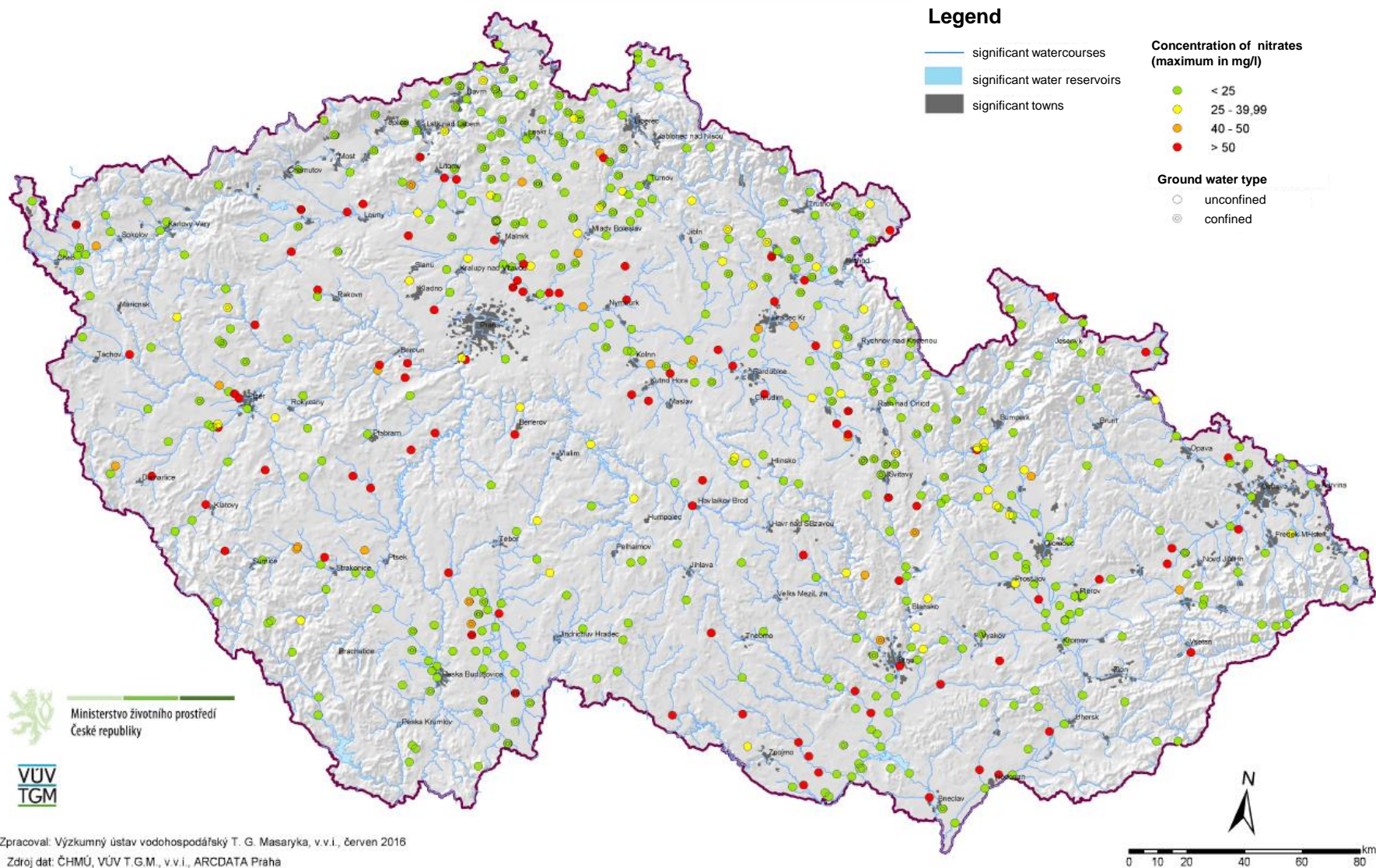
3rd revision of NVZ (2016) – current situation

Maximum nitrates concentrations in surface waters in the period 2012-2015



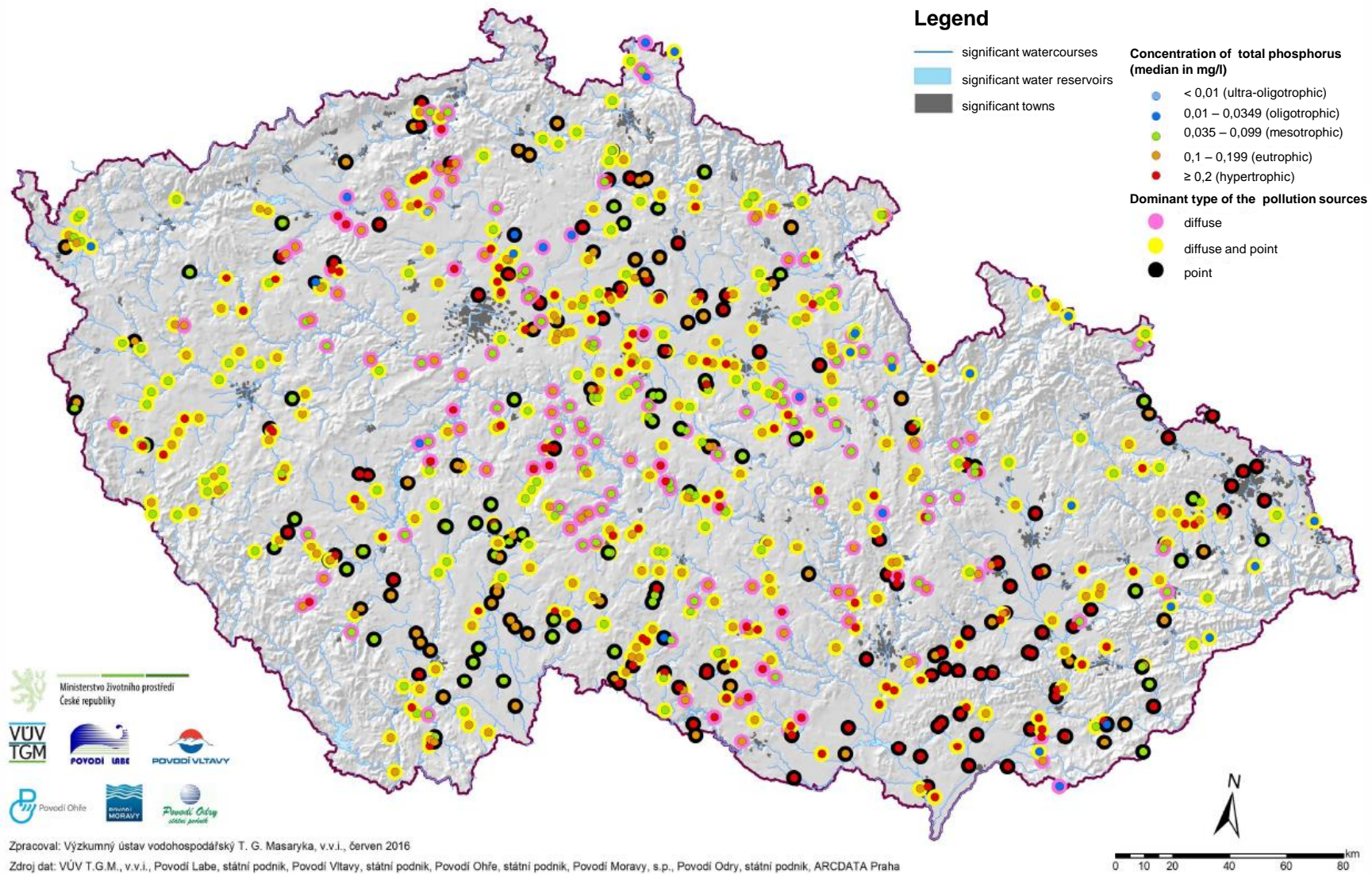
3rd revision of NVZ (2016) – current situation

Maximum nitrates concentrations in ground water in the period 2012-2015



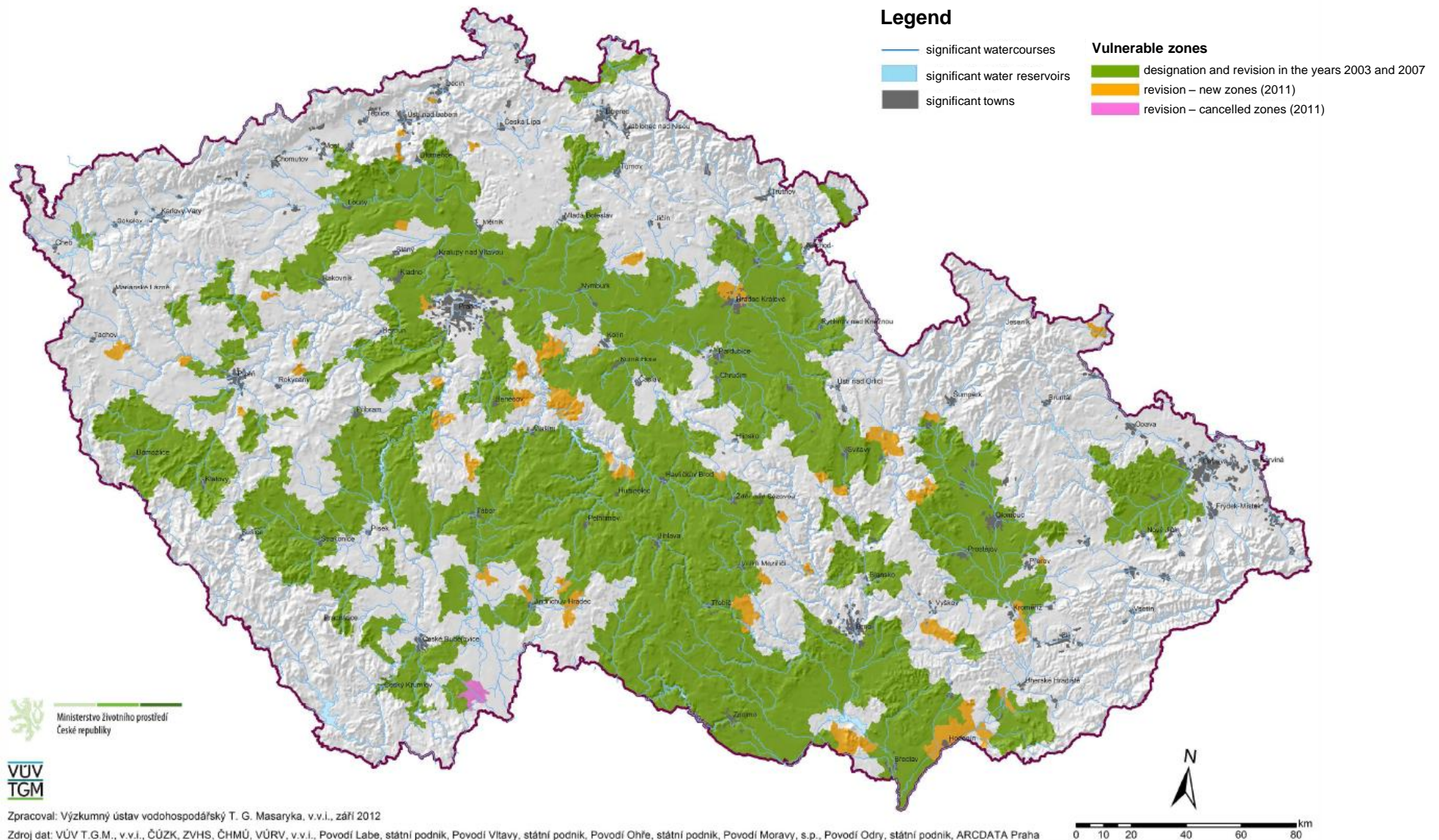
3rd revision of NVZ (2016) – current situation

Assessment of the eutrophication of the watercourses according to the total phosphorus concentration and the dominant pollution sources (2012-2015)



3rd revision of NVZ (2016) – current situation

Revision of the vulnerable zones in the year 2011



Thank you for your attention