Tisza River Sub - Basin: Overview

MAP 1

LEGEND

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *10,000 - 50,000 inhabitants*
- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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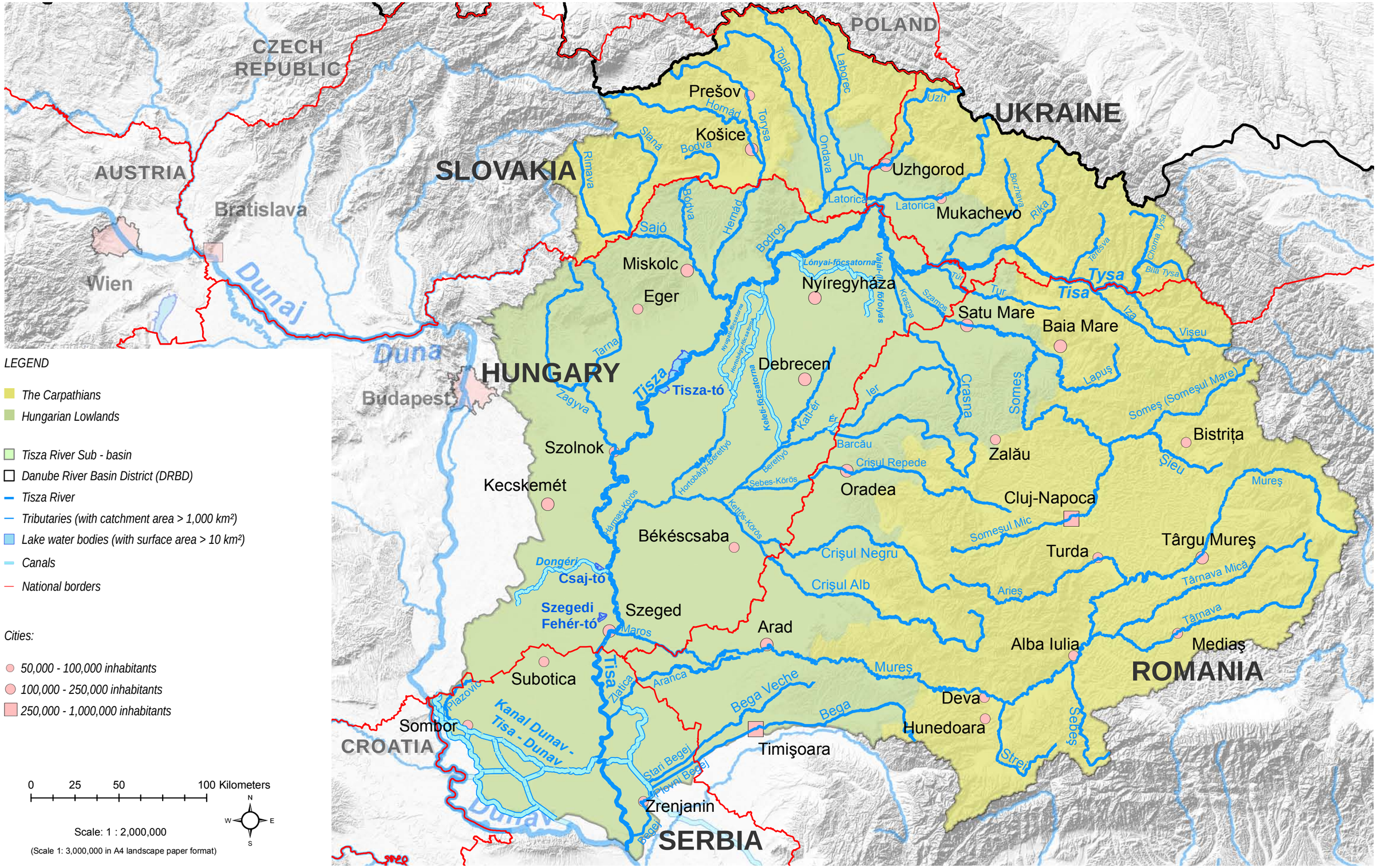
Tisza River Sub - Basin: Ecoregions

MAP 2



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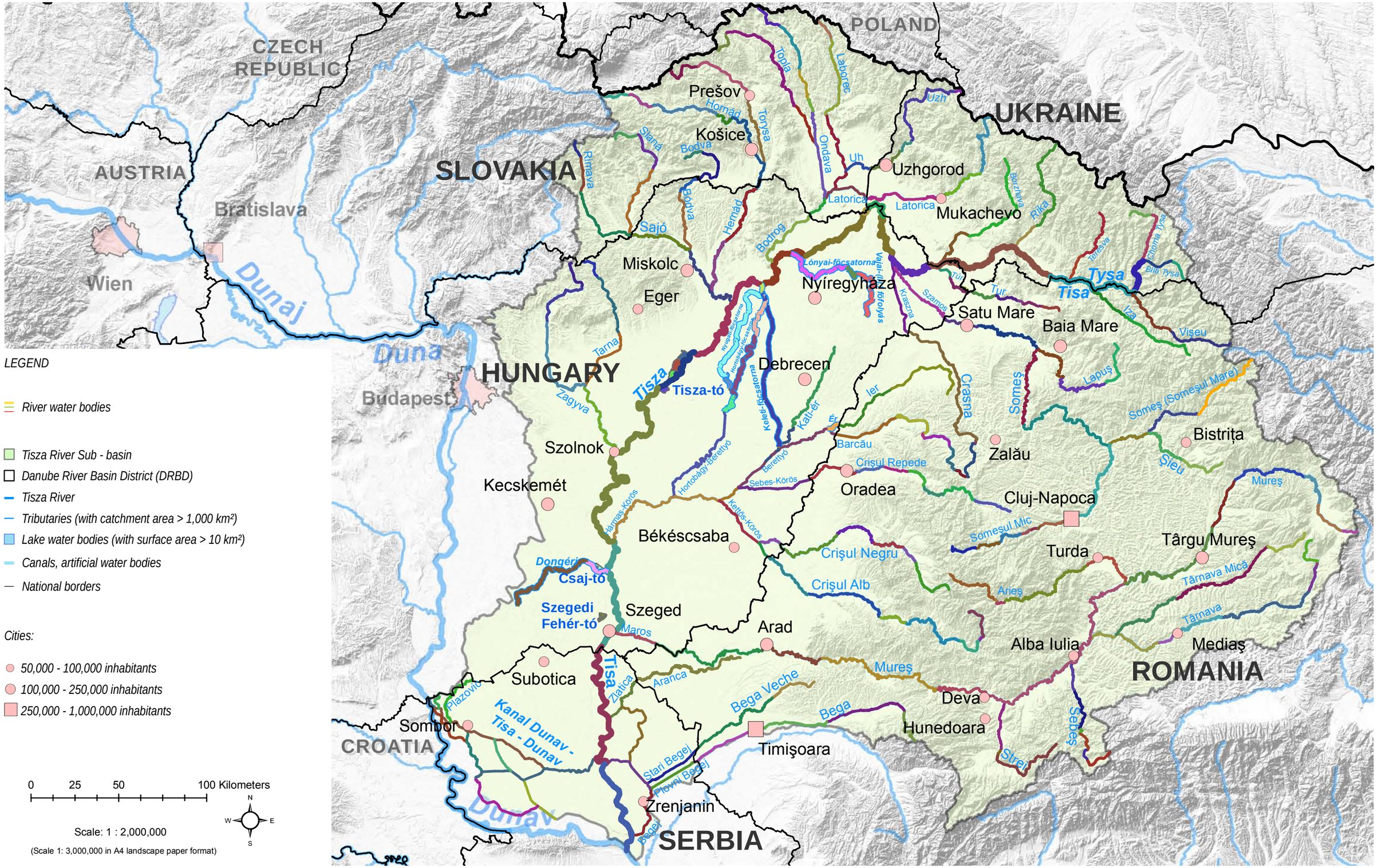
Tisza River Sub - Basin: Surface Water Bodies

MAP 3



LEGEND

- *River water bodies*
- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals, artificial water bodies*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

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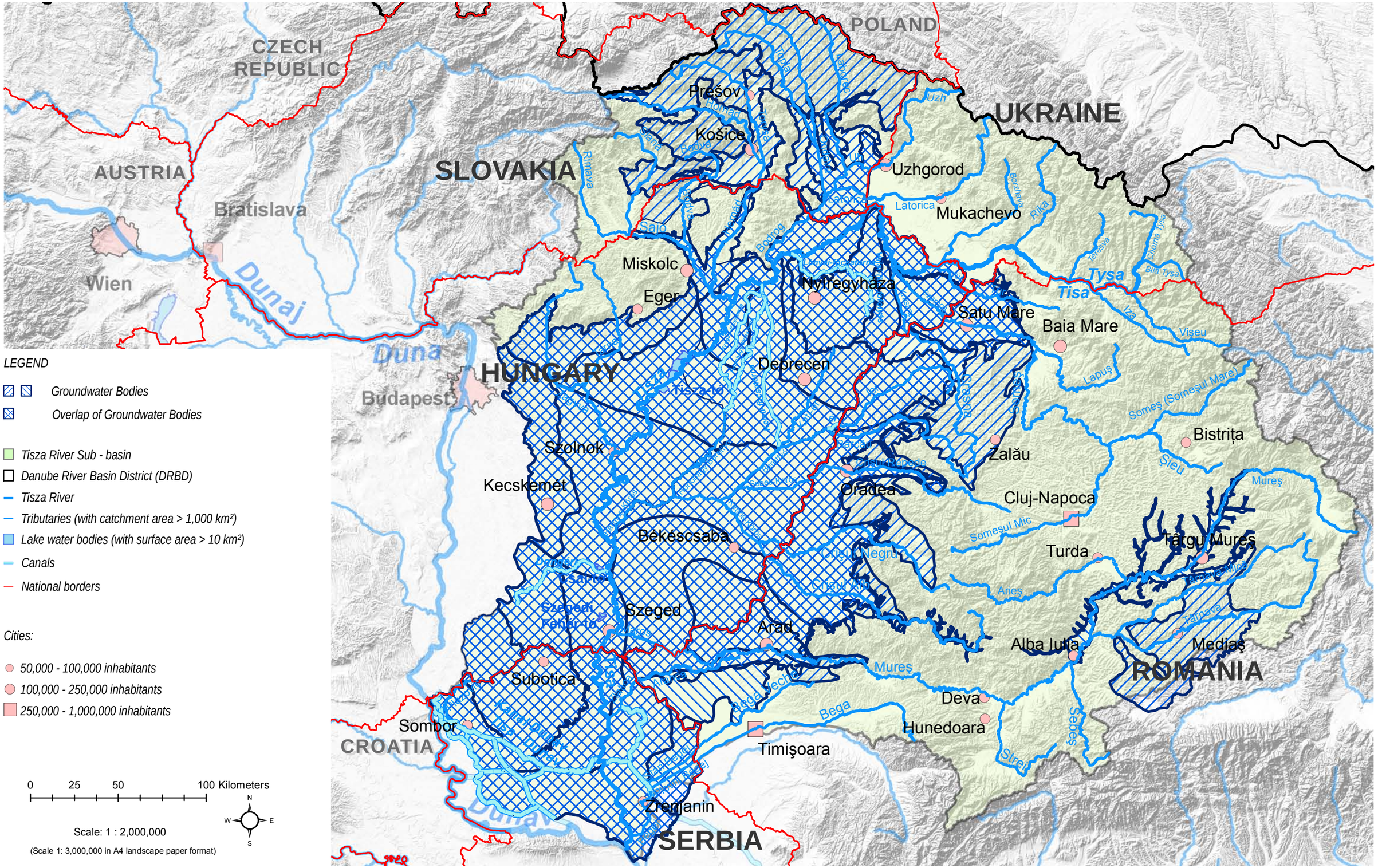
Tisza River Sub - Basin: Groundwater Bodies of Basin-Wide Relevance



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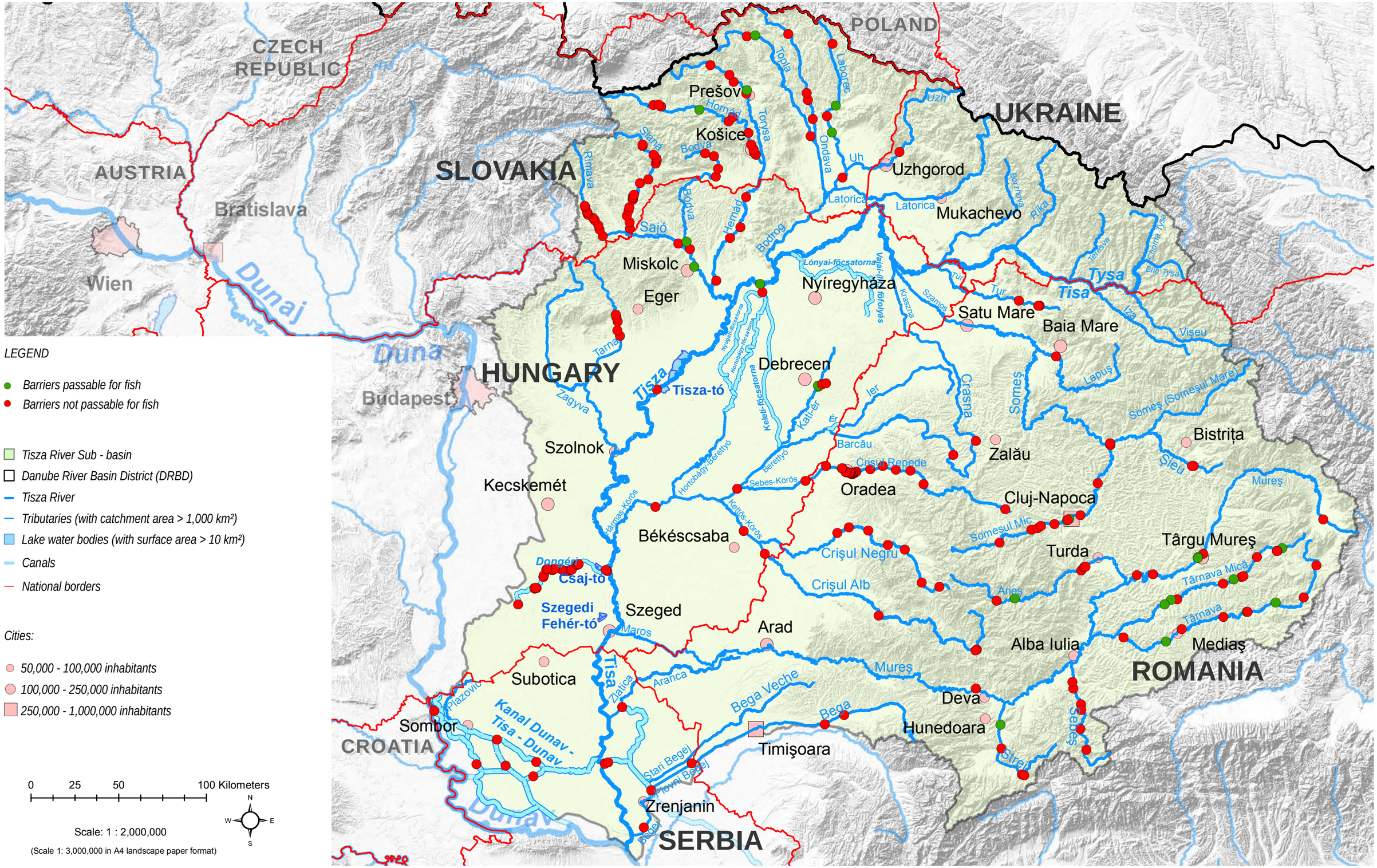
Tisza River Sub - Basin:
River and Habitat Continuity Interruption - Current Situation (2009)

MAP 5



LEGEND

- *Barriers passable for fish*
- *Barriers not passable for fish*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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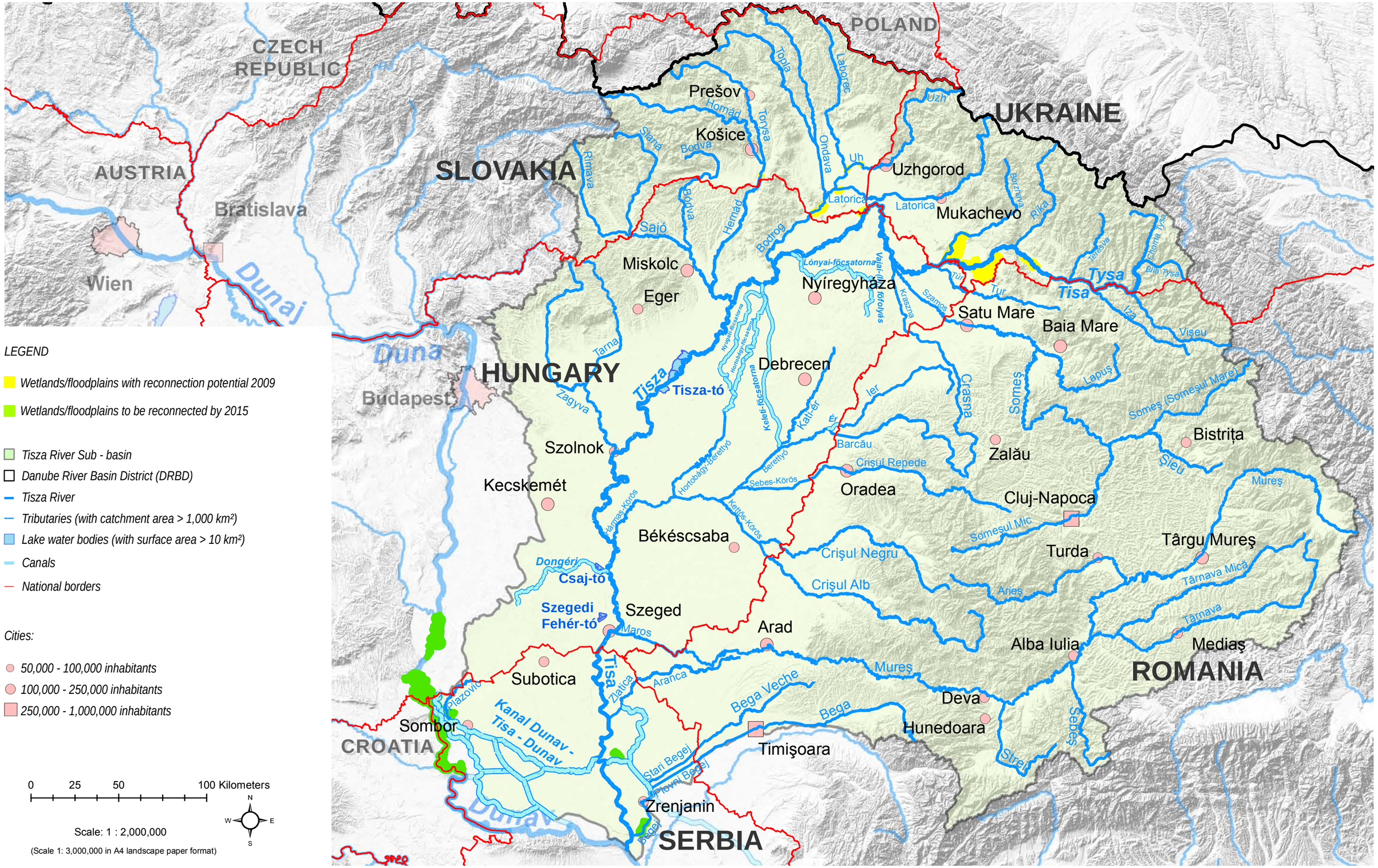
Tisza River Sub - Basin:
Wetlands/Floodplains (>100 ha) with Reconnection Potential (2009) and Expected Improvement by 2015

MAP 6



LEGEND

- *Wetlands/floodplains with reconnection potential 2009*
- *Wetlands/floodplains to be reconnected by 2015*
- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

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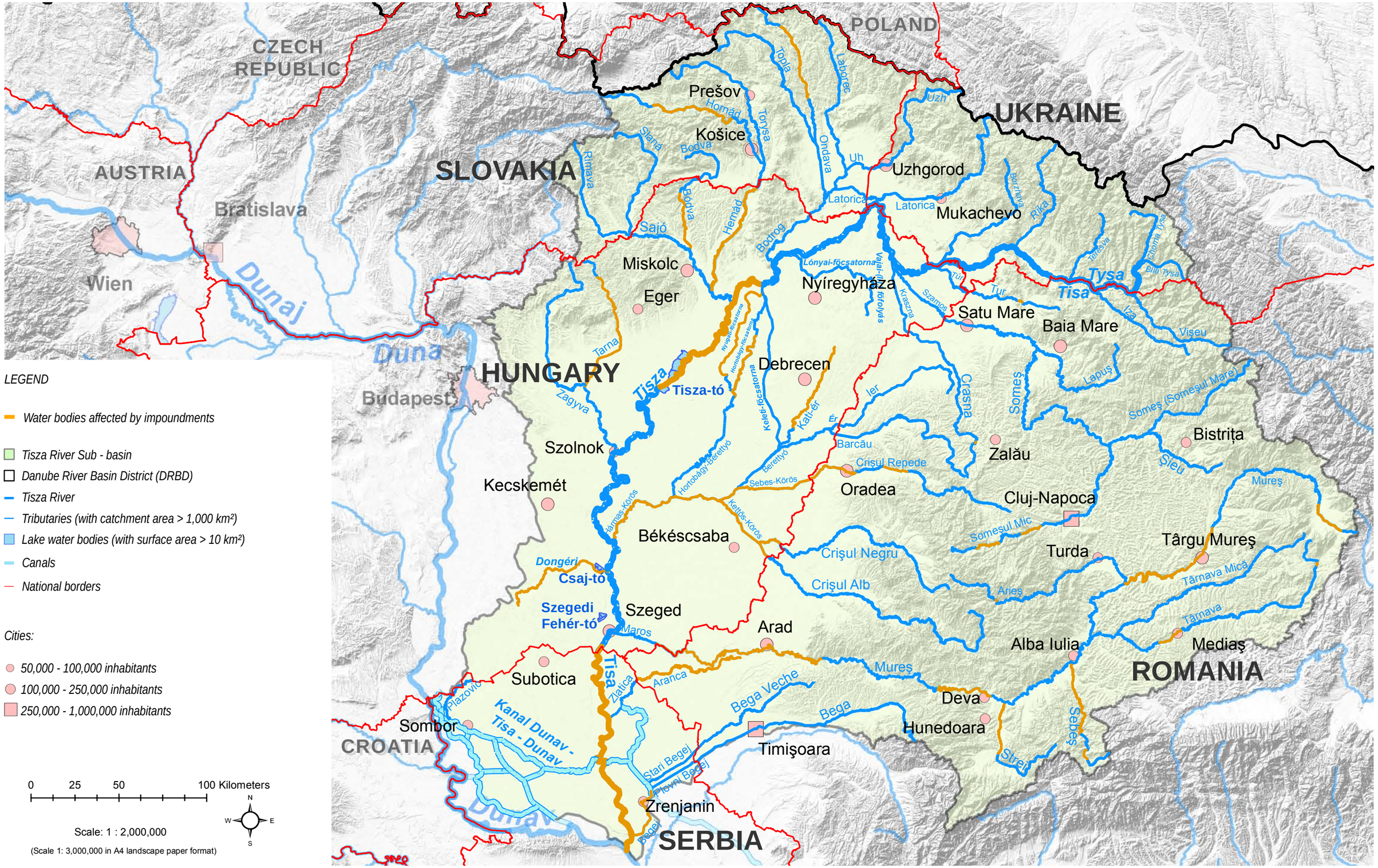
Tisza River Sub - Basin:
Hydrological Alterations/Impoundments - Current Situation (2009)

MAP 7a



LEGEND

- *Water bodies affected by impoundments*
- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

This map illustrates full water bodies which are affected by impoundments. The exact location of individual impoundments is not visualised.

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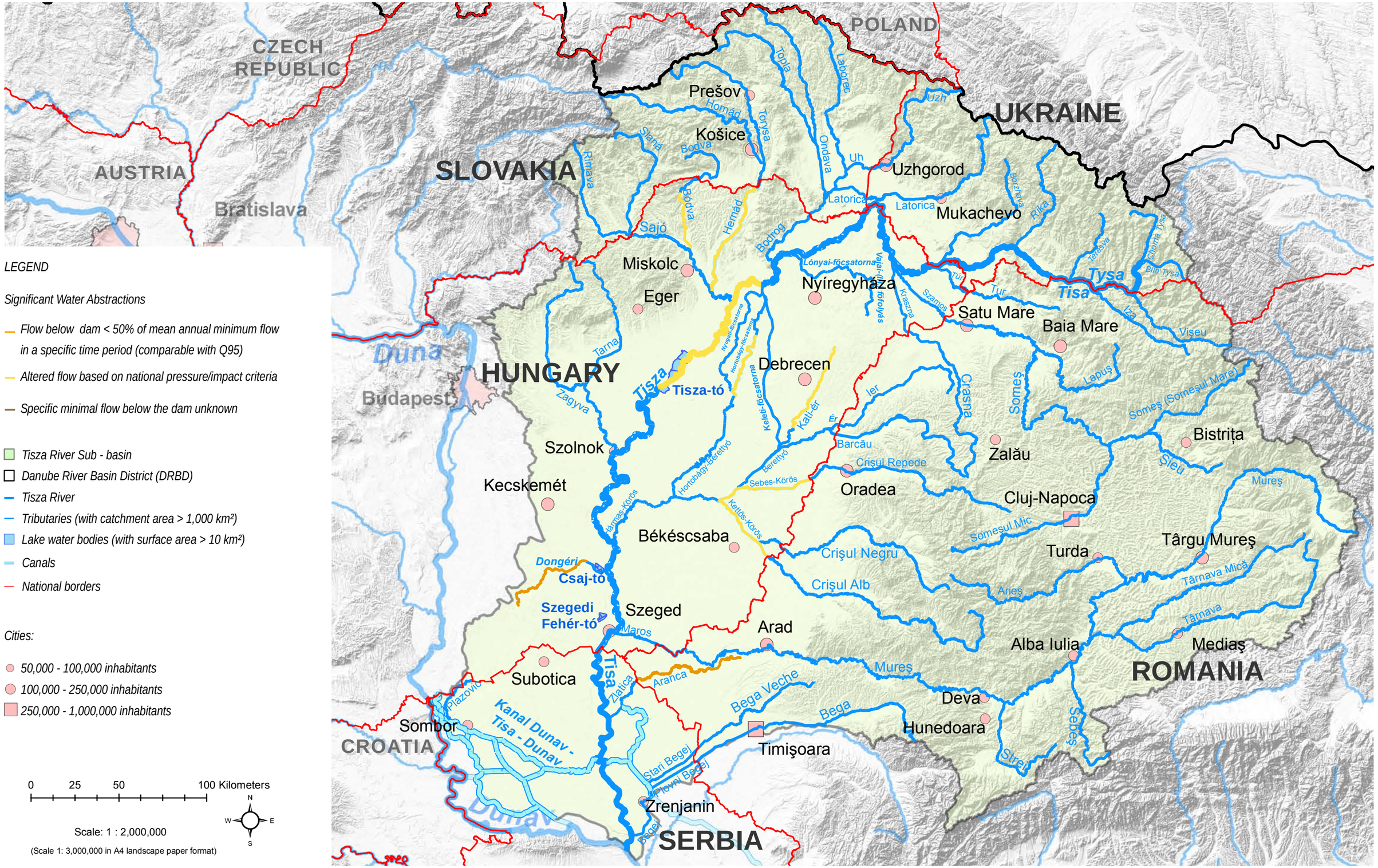
Tisza River Sub - Basin:
Hydrological Alterations/Water Abstractions - Current Situation (2009)

MAP 7b



LEGEND

Significant Water Abstractions

- *Flow below dam < 50% of mean annual minimum flow in a specific time period (comparable with Q95)*
- *Altered flow based on national pressure/impact criteria*
- *Specific minimal flow below the dam unknown*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

This map illustrates full water bodies which are affected by water abstractions. The exact location of individual water abstractions is not visualised.

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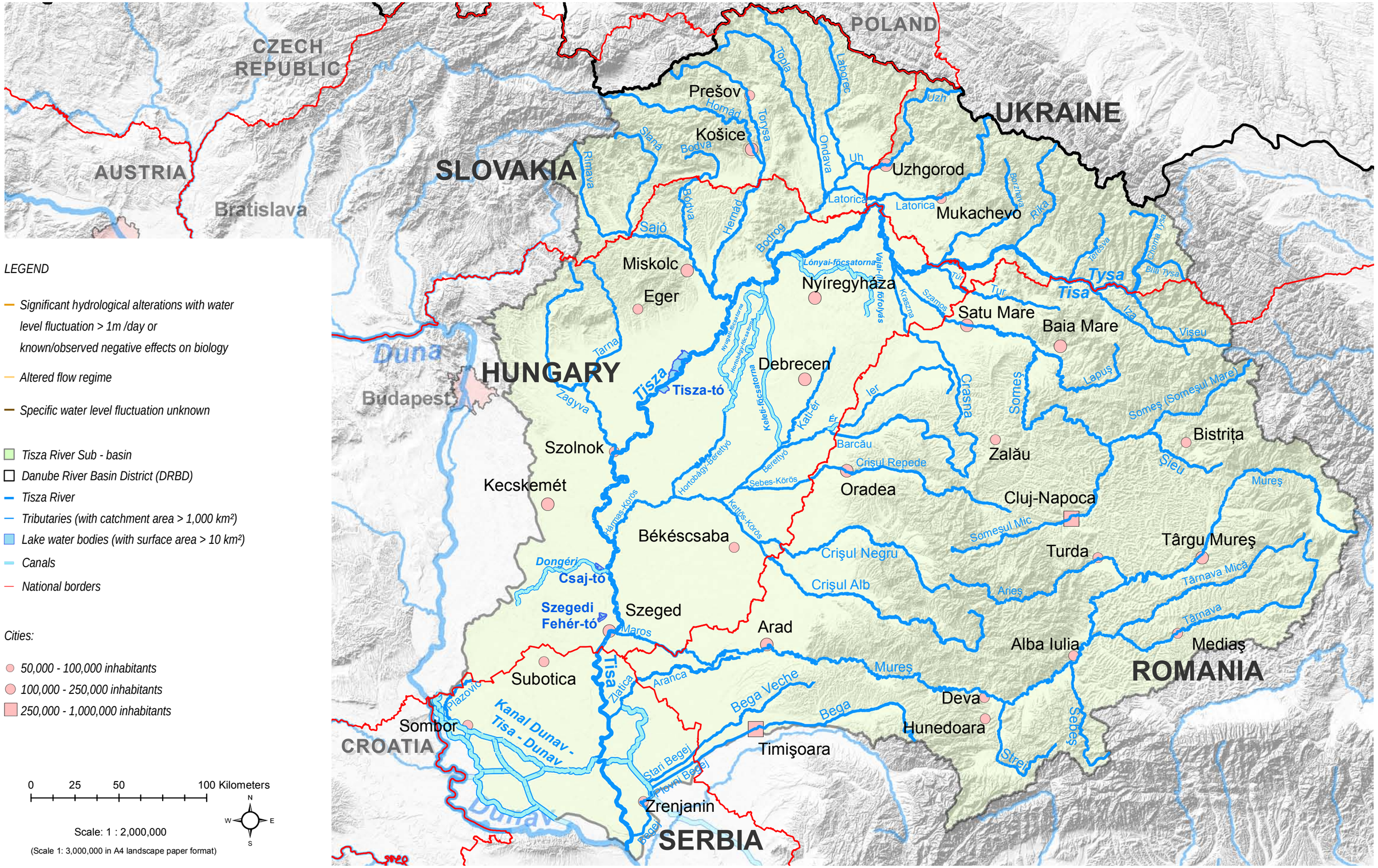
Tisza River Sub - Basin:
Hydrological Alterations/Hydropeaking & Altered Flow Regime – Current Situation (2009)

MAP 7c



LEGEND

- *Significant hydrological alterations with water level fluctuation > 1m /day or known/observed negative effects on biology*
- *Altered flow regime*
- *Specific water level fluctuation unknown*

Cities:

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

This map illustrates full water bodies which are affected by hydopeaking. The exact location of individual hydropeaking is not visualised.

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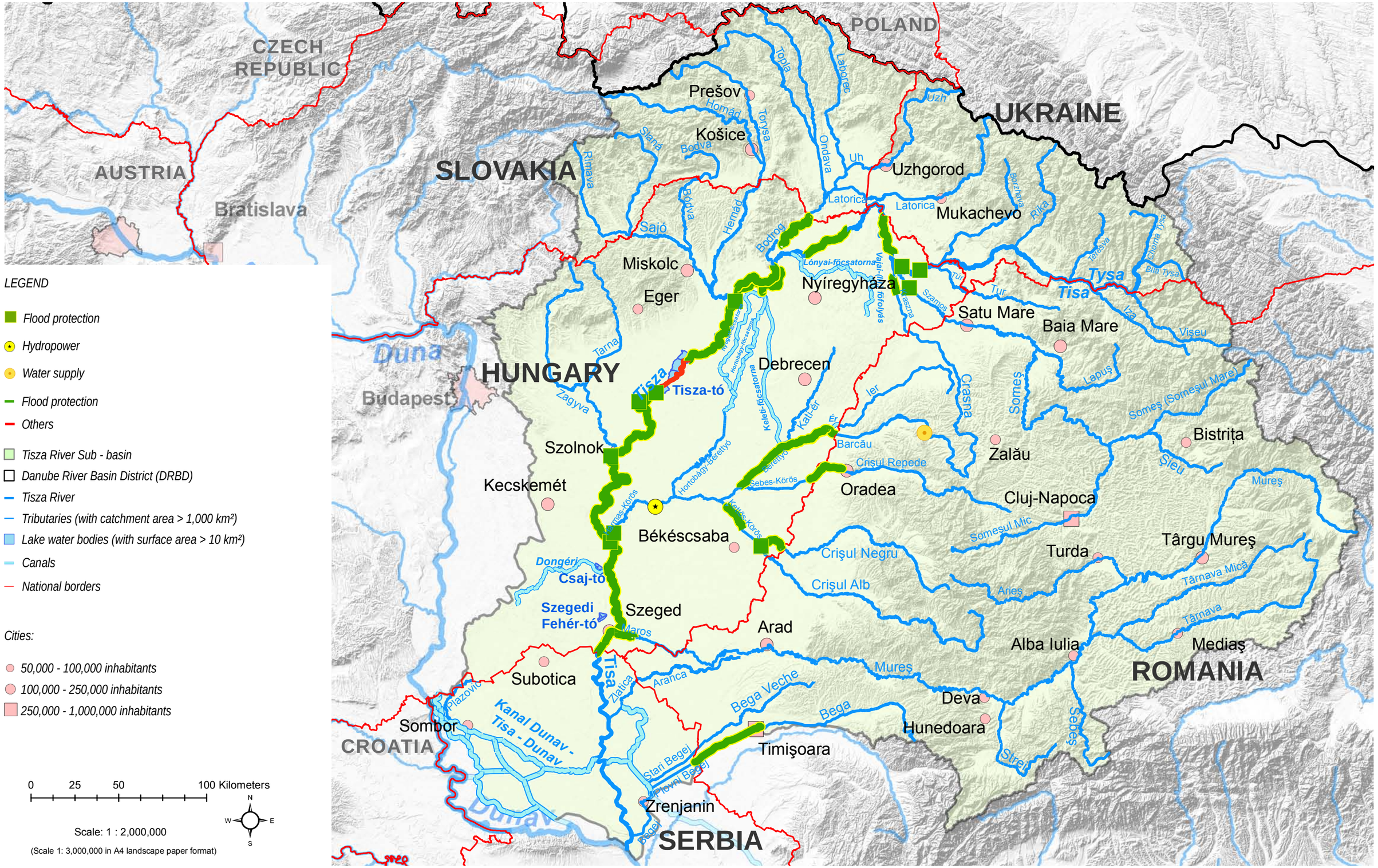
Tisza River Sub - Basin: Future Infrastructure Projects Planned by 2015

MAP 8



LEGEND

- *Flood protection*
- *Hydropower*
- *Water supply*
- *Flood protection*
- *Others*
- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

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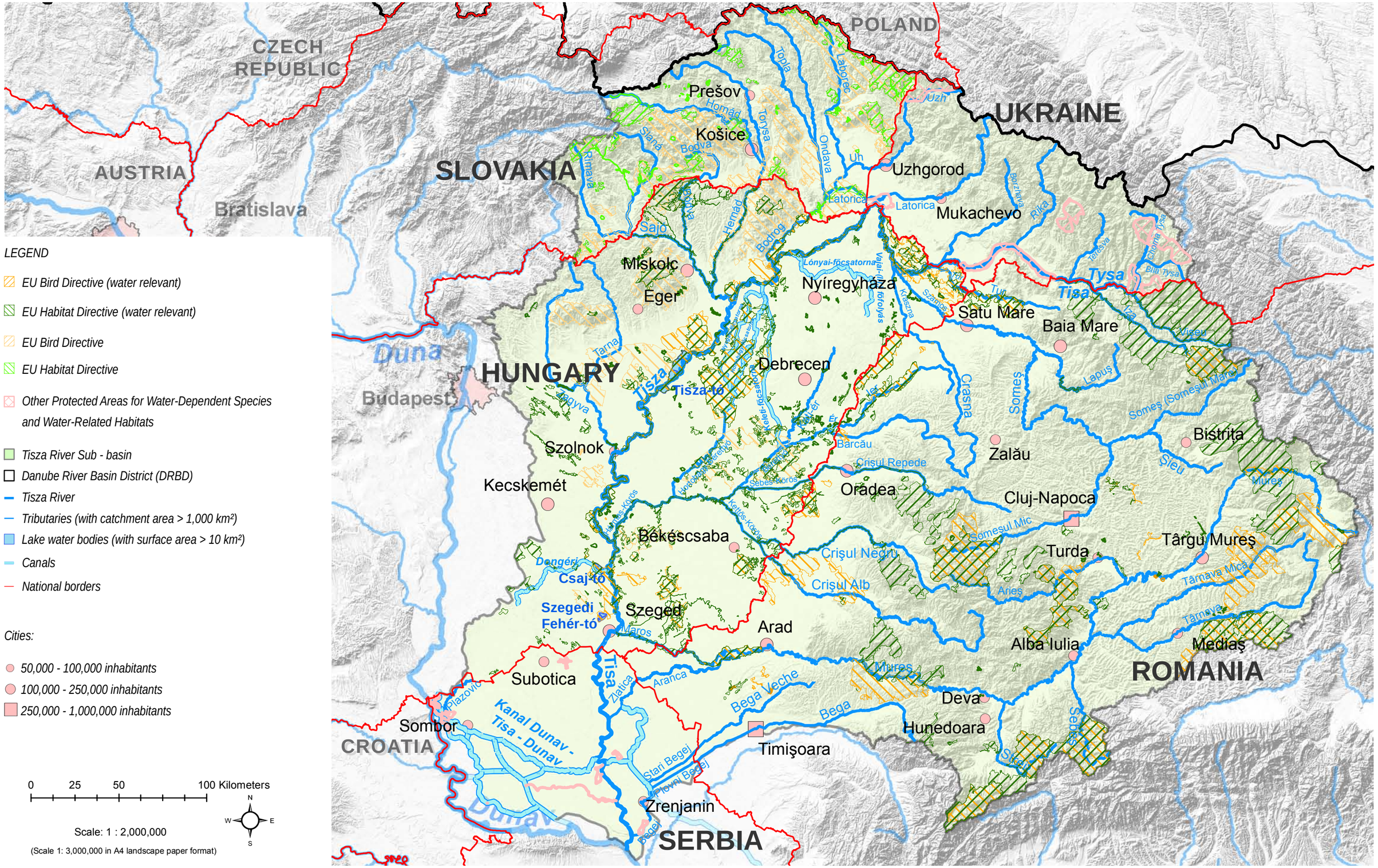
Tisza River Sub - Basin: Protected Areas (Natura 2000 and Others)

MAP 9



LEGEND

- *EU Bird Directive (water relevant)*
- *EU Habitat Directive (water relevant)*
- *EU Bird Directive*
- *EU Habitat Directive*
- *Other Protected Areas for Water-Dependent Species and Water-Related Habitats*
- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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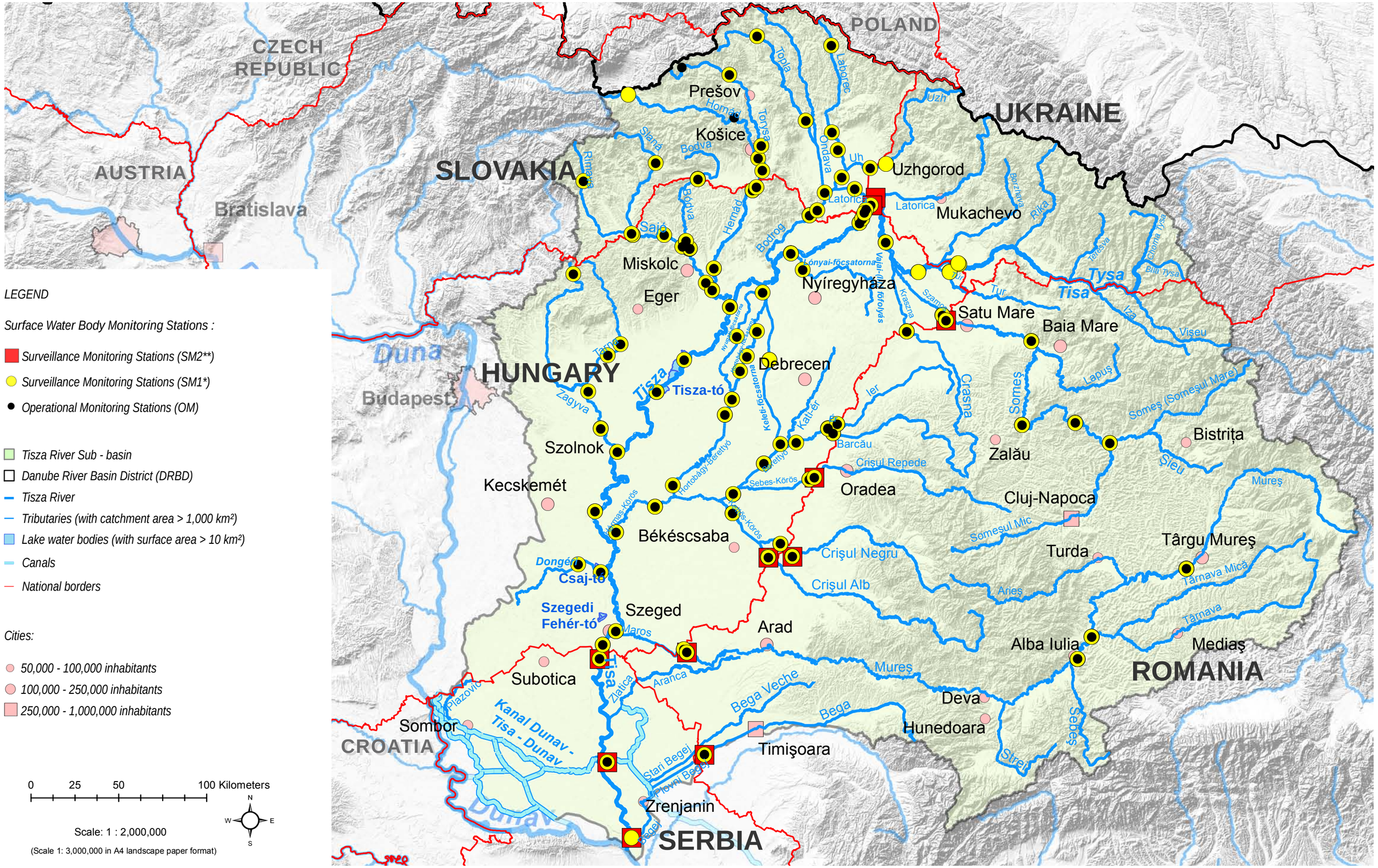
Tisza River Sub - Basin: Transnational Monitoring Network - Surface Waters



LEGEND

Surface Water Body Monitoring Stations :

- *Surveillance Monitoring Stations (SM2**)*
- *Surveillance Monitoring Stations (SM1*)*
- *Operational Monitoring Stations (OM)*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

*Surveillance Monitoring 1 provides an assessment of the overall surface water status in the Danube River Basin District.
**Surveillance Monitoring 2 provides an assessment of long-term trends of specific pollutants and of loads of substances transferred downstream the Danube.

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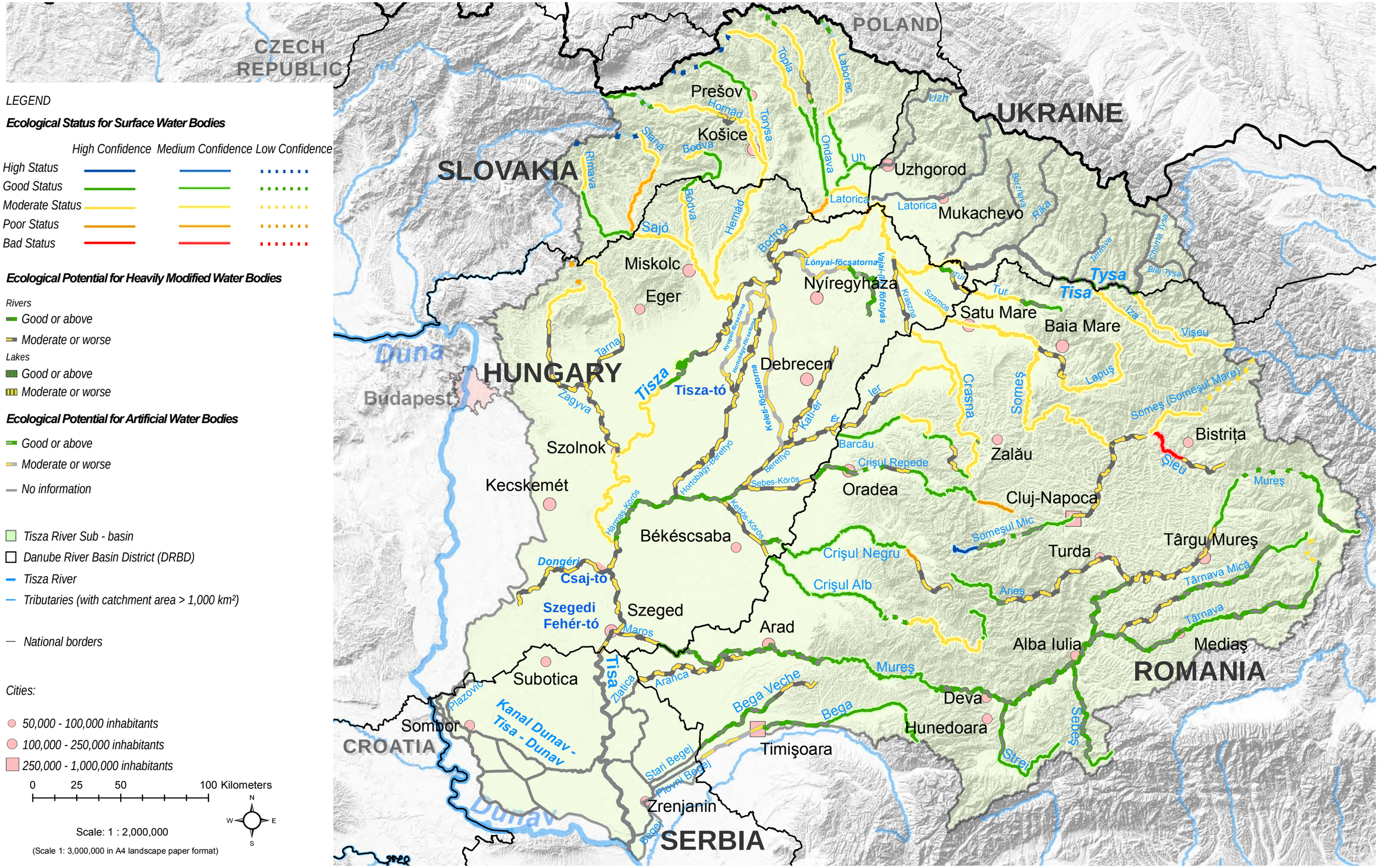
Tisza River Sub - Basin:
Ecological Status and Ecological Potential of Surface Water Bodies

MAP 11



LEGEND

Ecological Status for Surface Water Bodies

	High Confidence	*Medium Confidence*	*Low Confidence*
High Status			
Good Status			
Moderate Status			
Poor Status			
Bad Status			

Ecological Potential for Heavily Modified Water Bodies

Rivers
- *Good or above*
- *Moderate or worse*

Lakes
- *Good or above*
- *Moderate or worse*

Ecological Potential for Artificial Water Bodies
- *Good or above*
- *Moderate or worse*
- *No information*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *National borders*

Cities:
- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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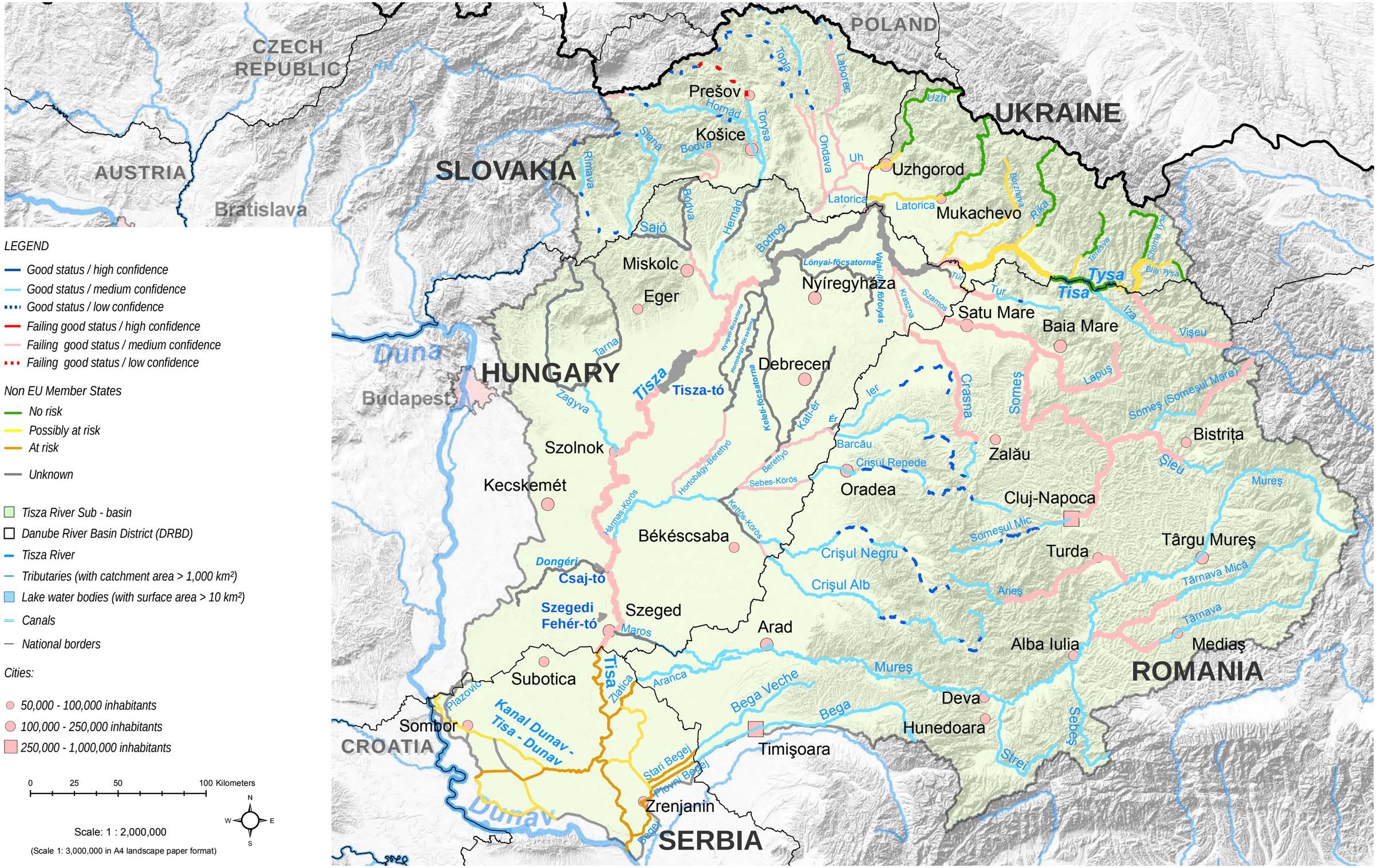
Tisza River Sub - Basin: Chemical Status of Surface Water Bodies



LEGEND

- *Good status / high confidence*
- *Good status / medium confidence*
- *Good status / low confidence*
- *Failing good status / high confidence*
- *Failing good status / medium confidence*
- *Failing good status / low confidence*

Non EU Member States

- *No risk*
- *Possibly at risk*
- *At risk*
- *Unknown*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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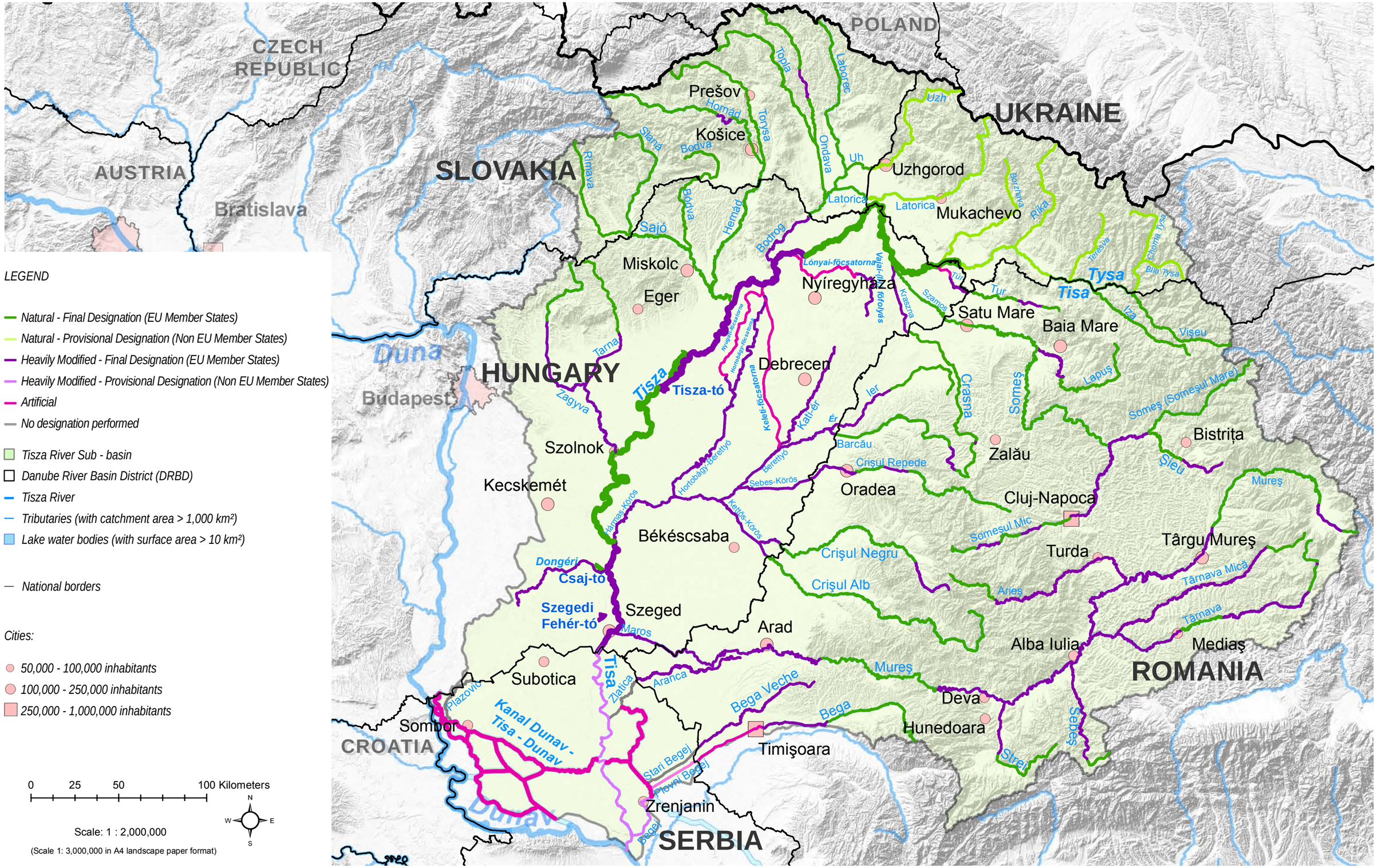
Tisza River Sub - Basin: Heavily Modified and Artificial Water Bodies



LEGEND

- *Natural - Final Designation (EU Member States)*
- *Natural - Provisional Designation (Non EU Member States)*
- *Heavily Modified - Final Designation (EU Member States)*
- *Heavily Modified - Provisional Designation (Non EU Member States)*
- *Artificial*
- *No designation performed*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*

- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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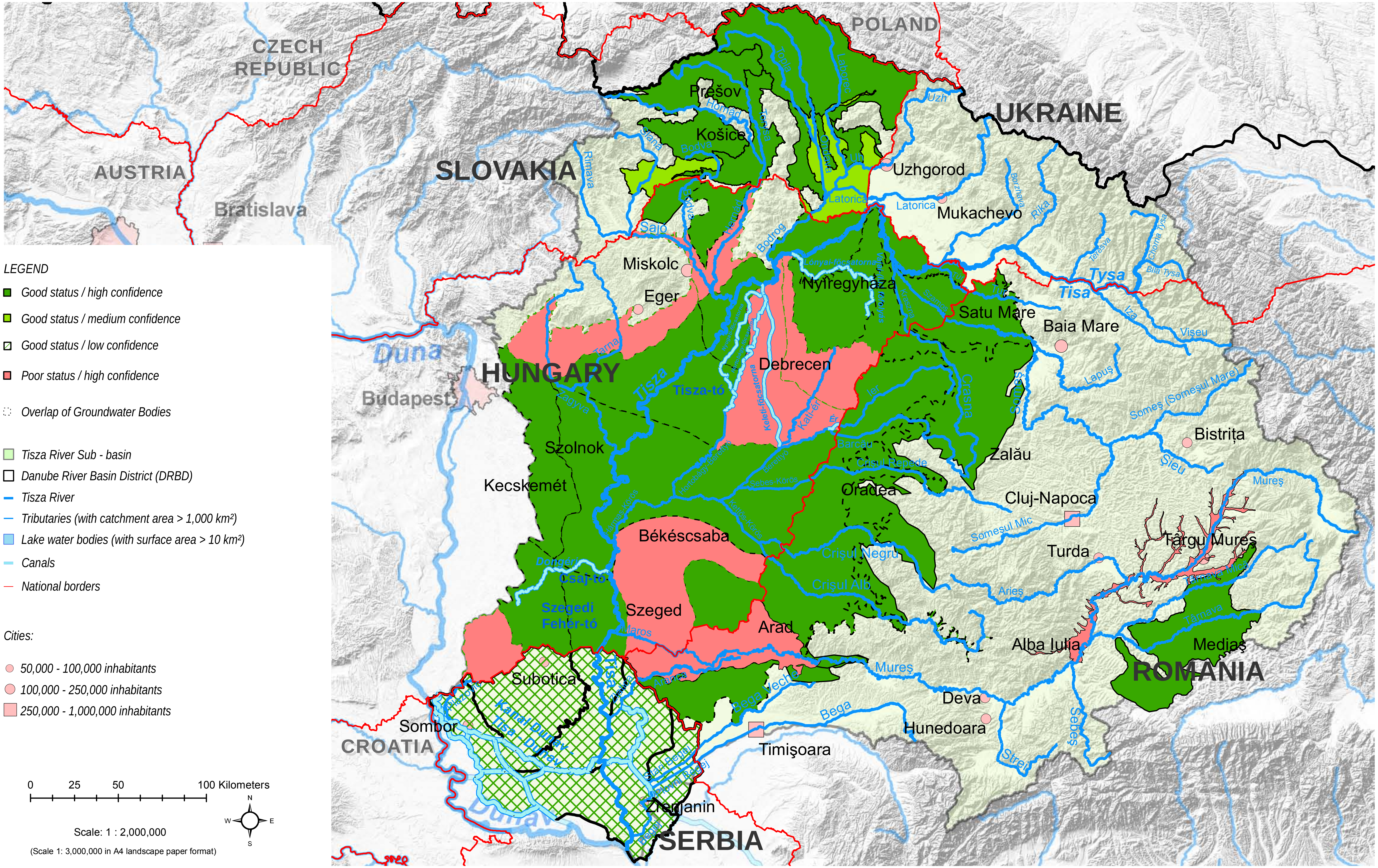
Tisza River Sub - Basin: Chemical Status Groundwater



In case of Hungary and Romania the dashed lines indicates overlap of shallow and deeper groundwater bodies.

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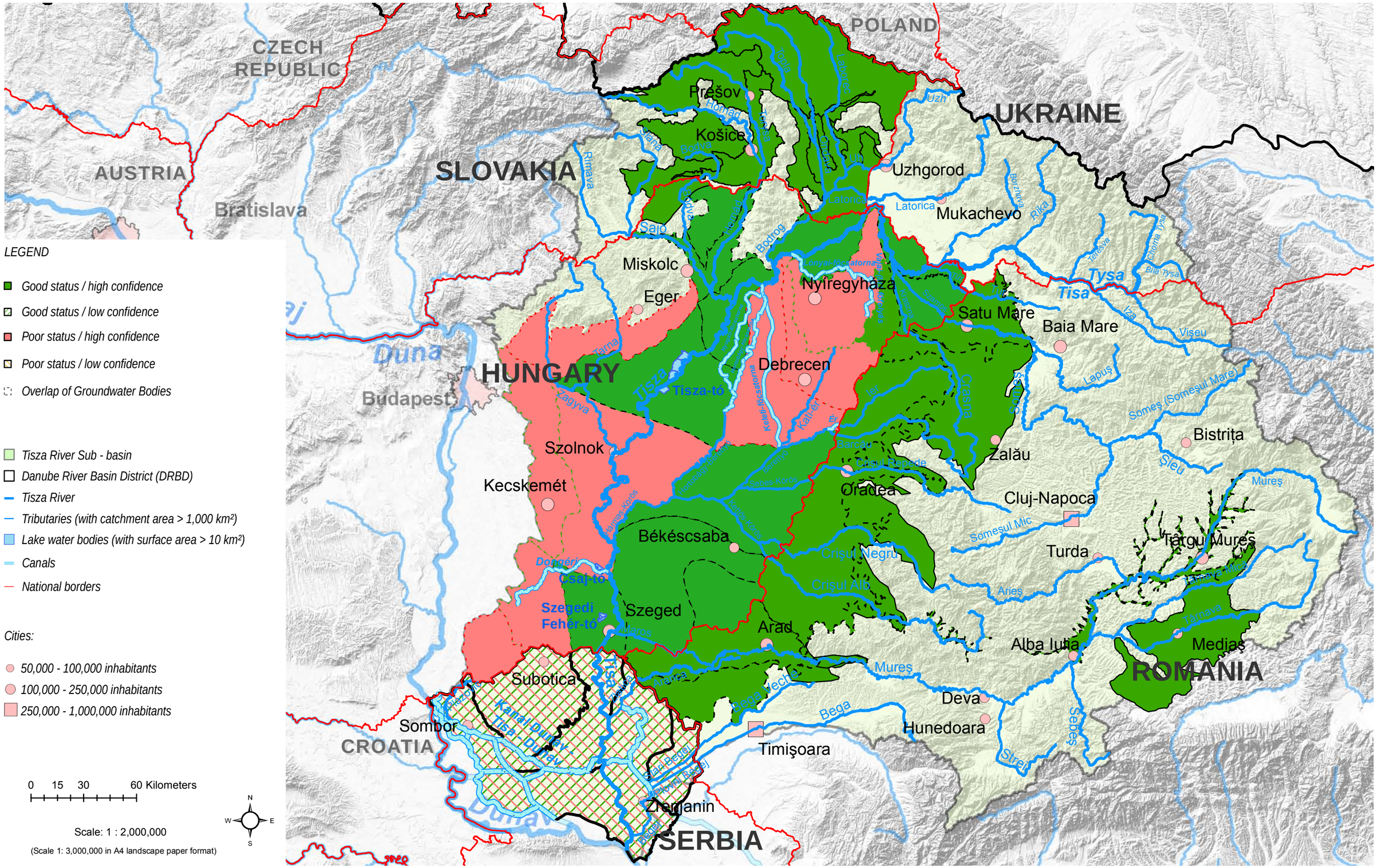
Tisza River Sub - Basin: Quantitative Status - Groundwater



In case of Hungary and Romania the dashed lines indicates overlap of shallow and deeper groundwater bodies.

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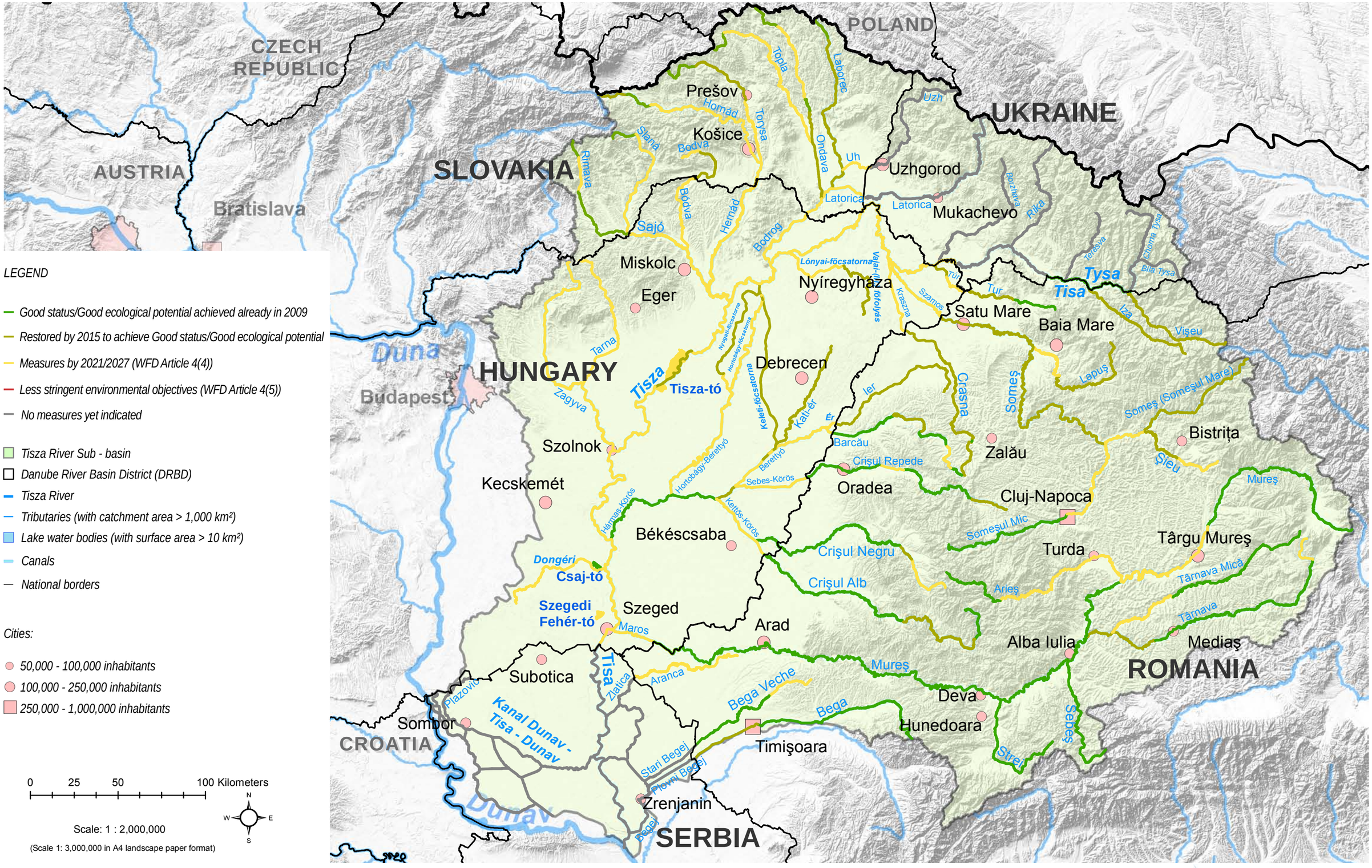
Tisza River Sub - Basin:
Exemptions according to EU WFD Article 4(4) - Surface Waters



LEGEND

- *Good status/Good ecological potential achieved already in 2009*
- *Restored by 2015 to achieve Good status/Good ecological potential*
- *Measures by 2021/2027 (WFD Article 4(4))*
- *Less stringent environmental objectives (WFD Article 4(5))*
- *No measures yet indicated*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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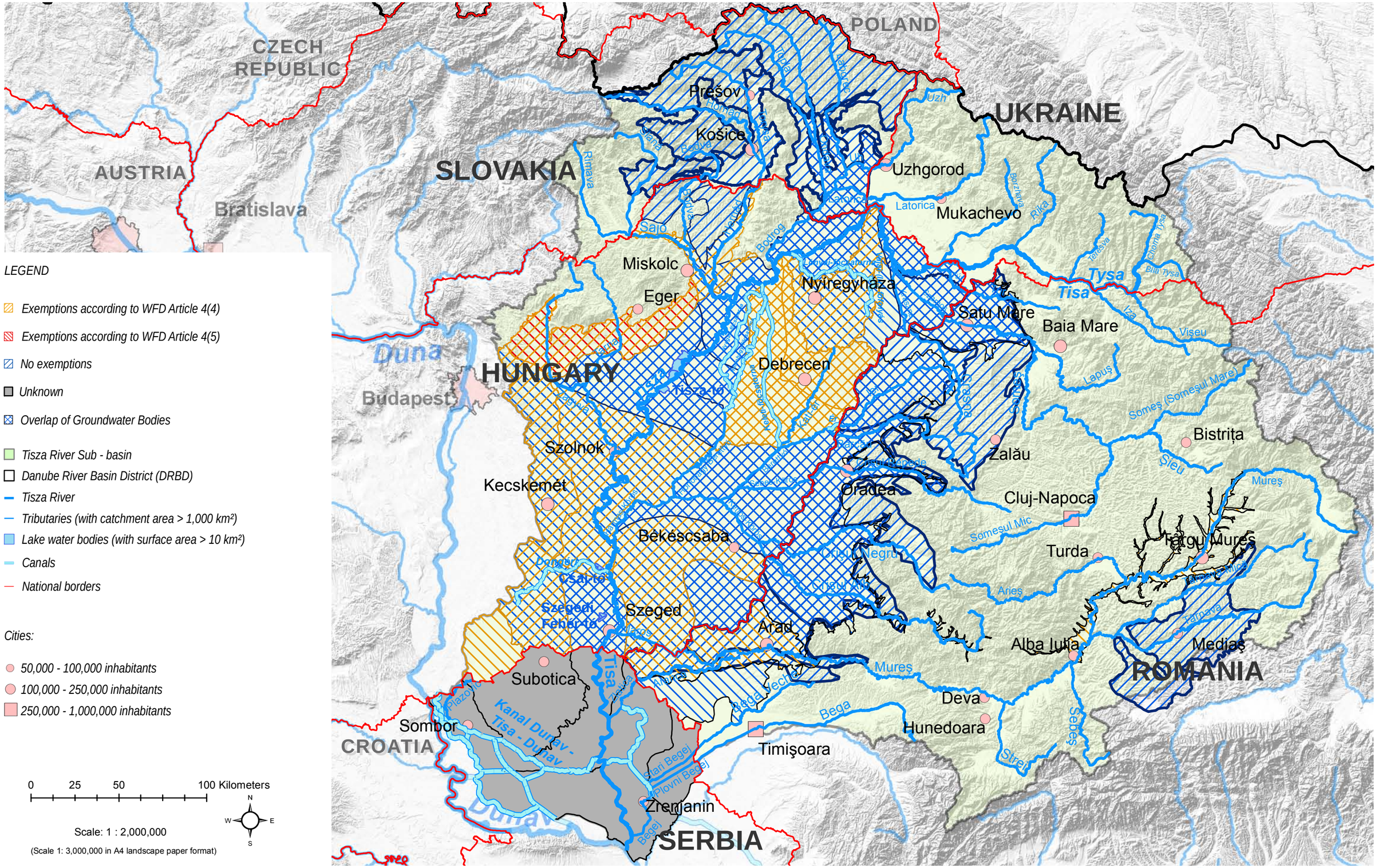
Tisza River Sub - Basin:
Exemptions according to EU WFD Article 4(4) and 4(5) - Groundwater



LEGEND

- *Exemptions according to WFD Article 4(4)*
- *Exemptions according to WFD Article 4(5)*
- *No exemptions*
- *Unknown*
- *Overlap of Groundwater Bodies*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

In case of the Hungarian overlapping groundwater bodies (sp.2.9.1 and p.2.9.1) both exemption 4(4) and exemption 4(5) are indicated. In case of sp.2.9.1 GWB exemption 4(4) is requested to reach good chemical status and in case of both sp.2.9.1 and p.2.9.1 GWBs exemption 4(5) is requested to reach good water quantity status.

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Vienna, December 2010

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Tisza River Sub - Basin:
Urban Wastewater Discharges – Reference Situation - UWWT 2005/2006

LEGEND

Treatment type

≥ 80% of the wastewater

- *Not collected and not treated*
- *Collected but without treatment*
- *Mechanical treatment*
- *Biological treatment*
- *Biological and other more stringent treatment than N- and/or P- removal*
- *More stringent treatment: N- removal*
- *More stringent treatment: P- removal*
- *More stringent treatment: N- and P- removal*

< 80% of the wastewater

- *Mechanical treatment*
- *Biological treatment*
- *Biological and other more stringent treatment than N- and/or P- removal*
- *More stringent treatment: N- removal*
- *More stringent treatment: P- removal*
- *More stringent treatment: N- and P- removal*

Size classes

- *2,000 - 10,000 PE*
- *10,001 - 15,000 PE*
- *15,001 - 99,000 PE*
- *≥ 100,000 PE*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

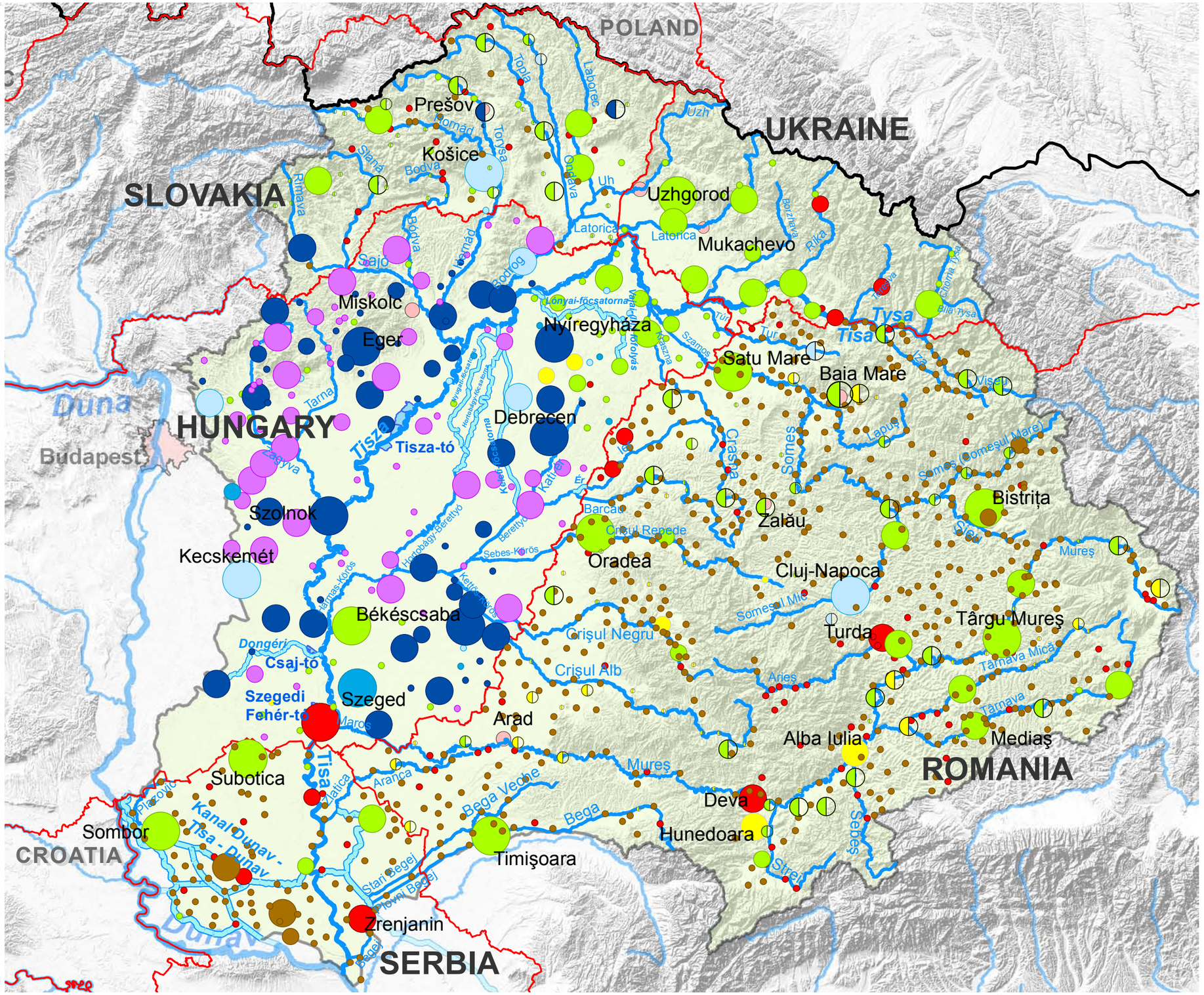
- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)



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Tisza River Sub - Basin:
Urban Wastewater Discharges – Baseline Scenario - UWWT 2015

LEGEND

Treatment type

≥ 80% of the wastewater

- *Not collected and not treated*
- *Collected but without treatment*
- *Mechanical treatment*
- *Biological treatment*
- *Biological and other more stringent treatment than N- and/or P- removal*
- *More stringent treatment: N- removal*
- *More stringent treatment: P- removal*
- *More stringent treatment: N- and P- removal*

< 80% of the wastewater

- *Mechanical treatment*
- *Biological treatment*
- *Biological and other more stringent treatment than N- and/or P- removal*
- *More stringent treatment: N- removal*
- *More stringent treatment: P- removal*
- *More stringent treatment: N- and P- removal*

Size classes

- *2,000 - 10,000 PE*
- *10,001 - 15,000 PE*
- *15,001 - 99,000 PE*
- *≥ 100,000 PE*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

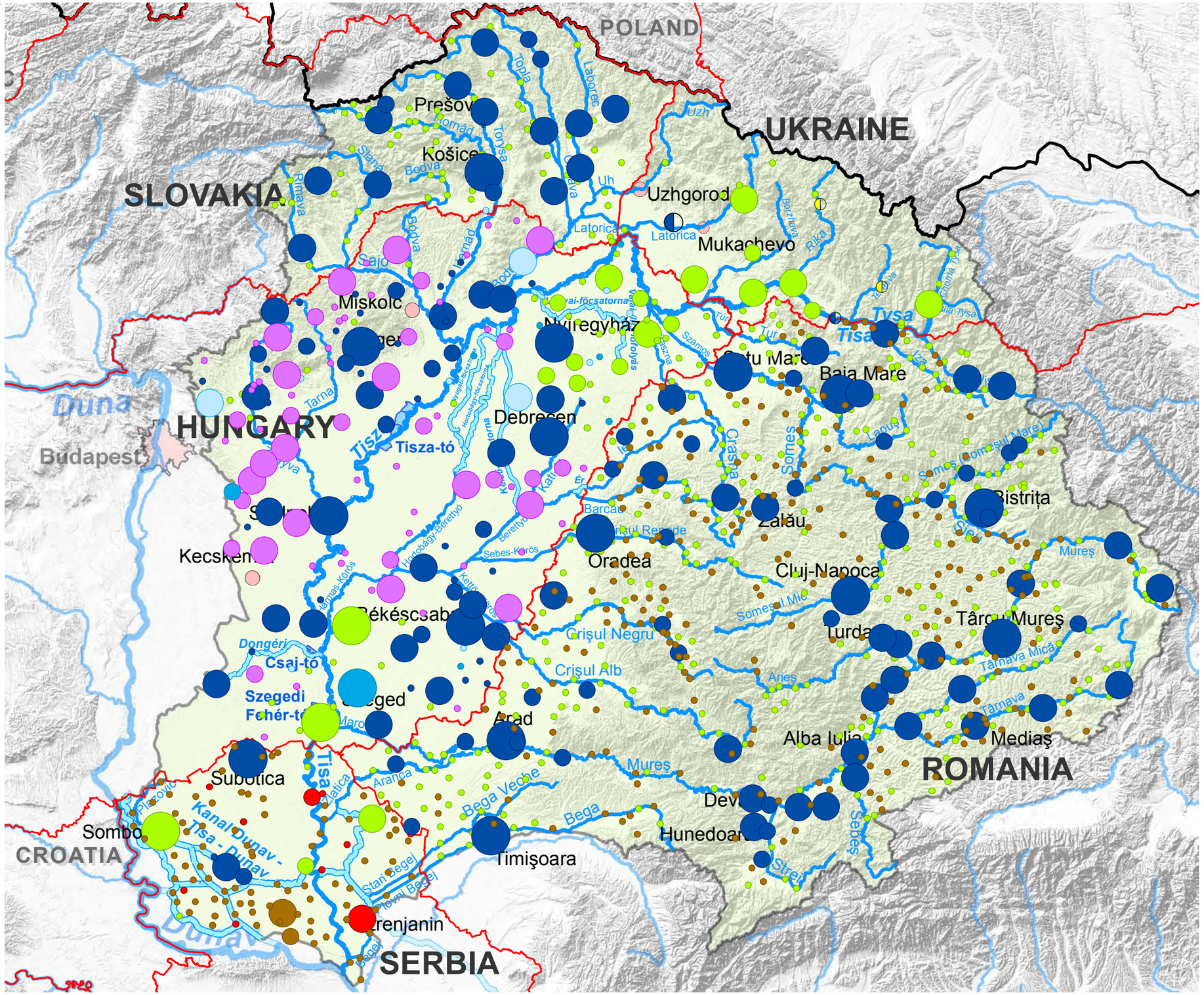
Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)



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Tisza River Sub - Basin:
Urban Wastewater Discharges – Midterm Scenario - UWWT

LEGEND

Treatment type

≥ 80% of the wastewater

- *Not collected and not treated*
- *Collected but without treatment*
- *Mechanical treatment*
- *Biological treatment*
- *Biological and other more stringent treatment than N- and/or P- removal*
- *More stringent treatment: N- removal*
- *More stringent treatment: P- removal*
- *More stringent treatment: N- and P- removal*

< 80% of the wastewater

- *Mechanical treatment*
- *Biological treatment*
- *Biological and other more stringent treatment than N- and/or P- removal*
- *More stringent treatment: N- removal*
- *More stringent treatment: P- removal*
- *More stringent treatment: N- and P- removal*

Size classes

- *2,000 - 10,000 PE*
- *10,001 - 15,000 PE*
- *15,001 - 99,000 PE*
- *≥ 100,000 PE*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

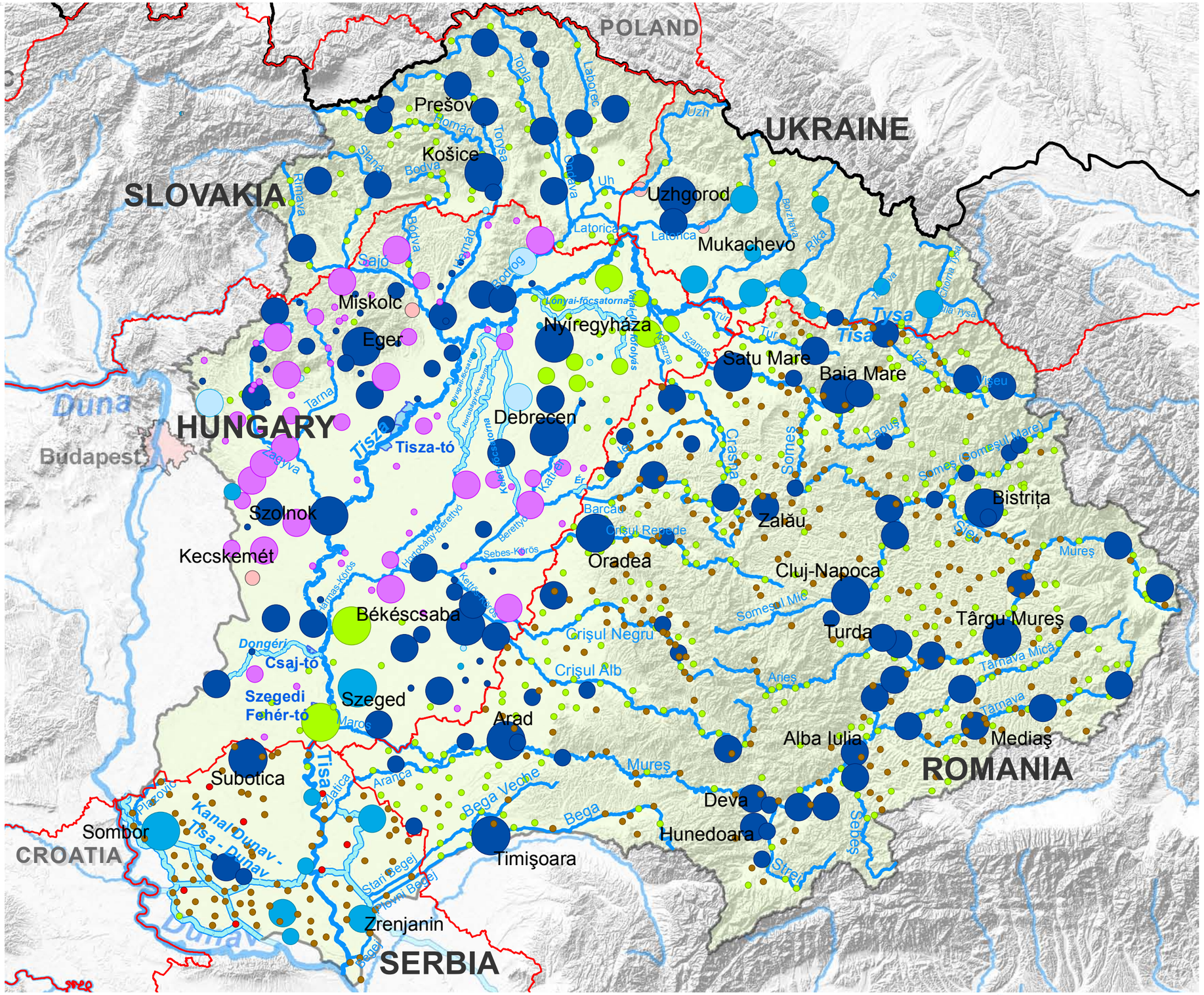
Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)



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Tisza River Sub - Basin:
Urban Wastewater Discharges – Vision Scenario - UWWT

LEGEND

Treatment type

≥ 80% of the wastewater

- *Not collected and not treated*
- *Collected but without treatment*
- *Mechanical treatment*
- *Biological treatment*
- *Biological and other more stringent treatment than N- and/or P- removal*
- *More stringent treatment: N- removal*
- *More stringent treatment: P- removal*
- *More stringent treatment: N- and P- removal*

< 80% of the wastewater

- *Mechanical treatment*
- *Biological treatment*
- *Biological and other more stringent treatment than N- and/or P- removal*
- *More stringent treatment: N- removal*
- *More stringent treatment: P- removal*
- *More stringent treatment: N- and P- removal*

Size classes

- *2,000 - 10,000 PE*
- *10,001 - 15,000 PE*
- *15,001 - 99,000 PE*
- *≥ 100,000 PE*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

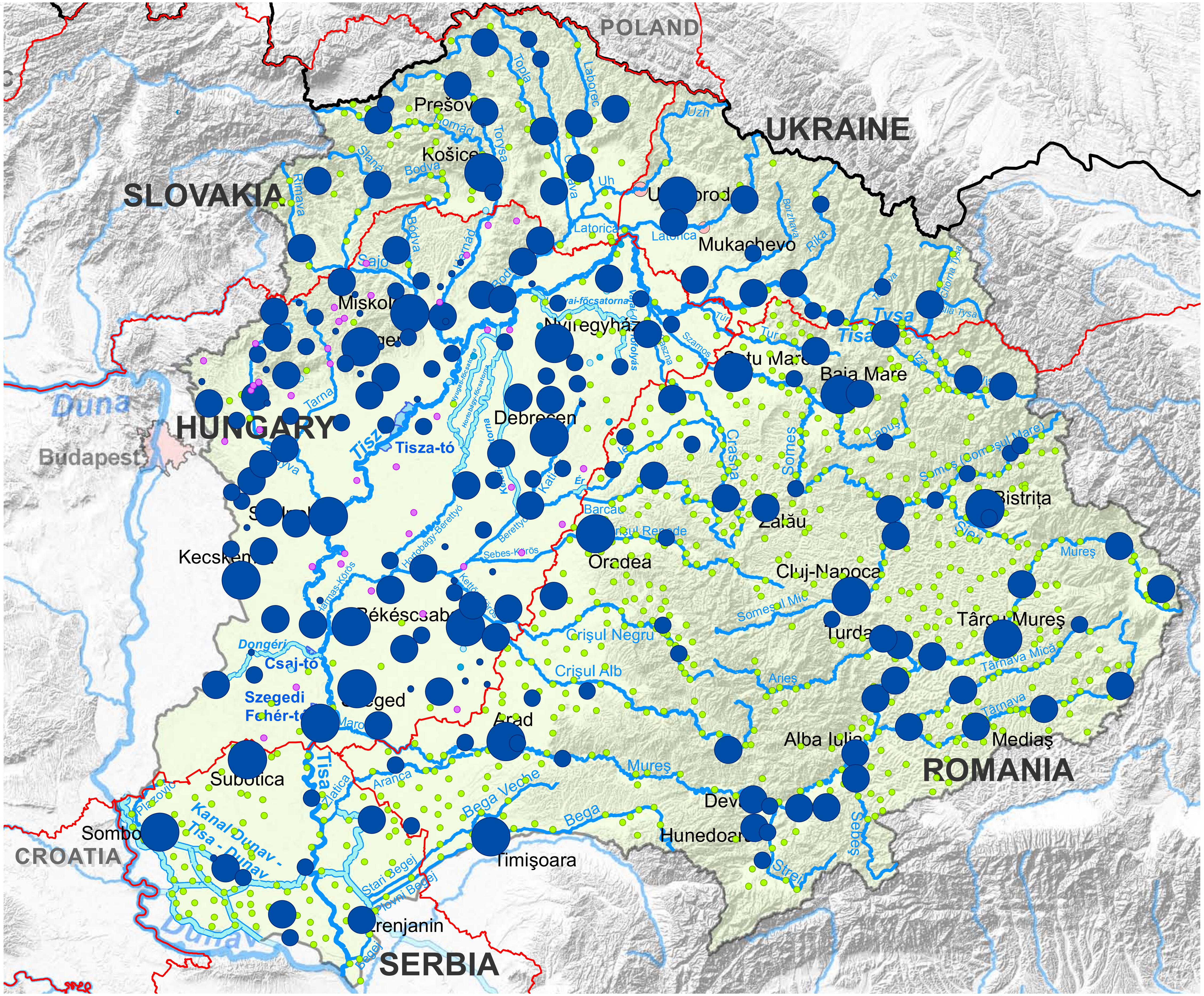
- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)



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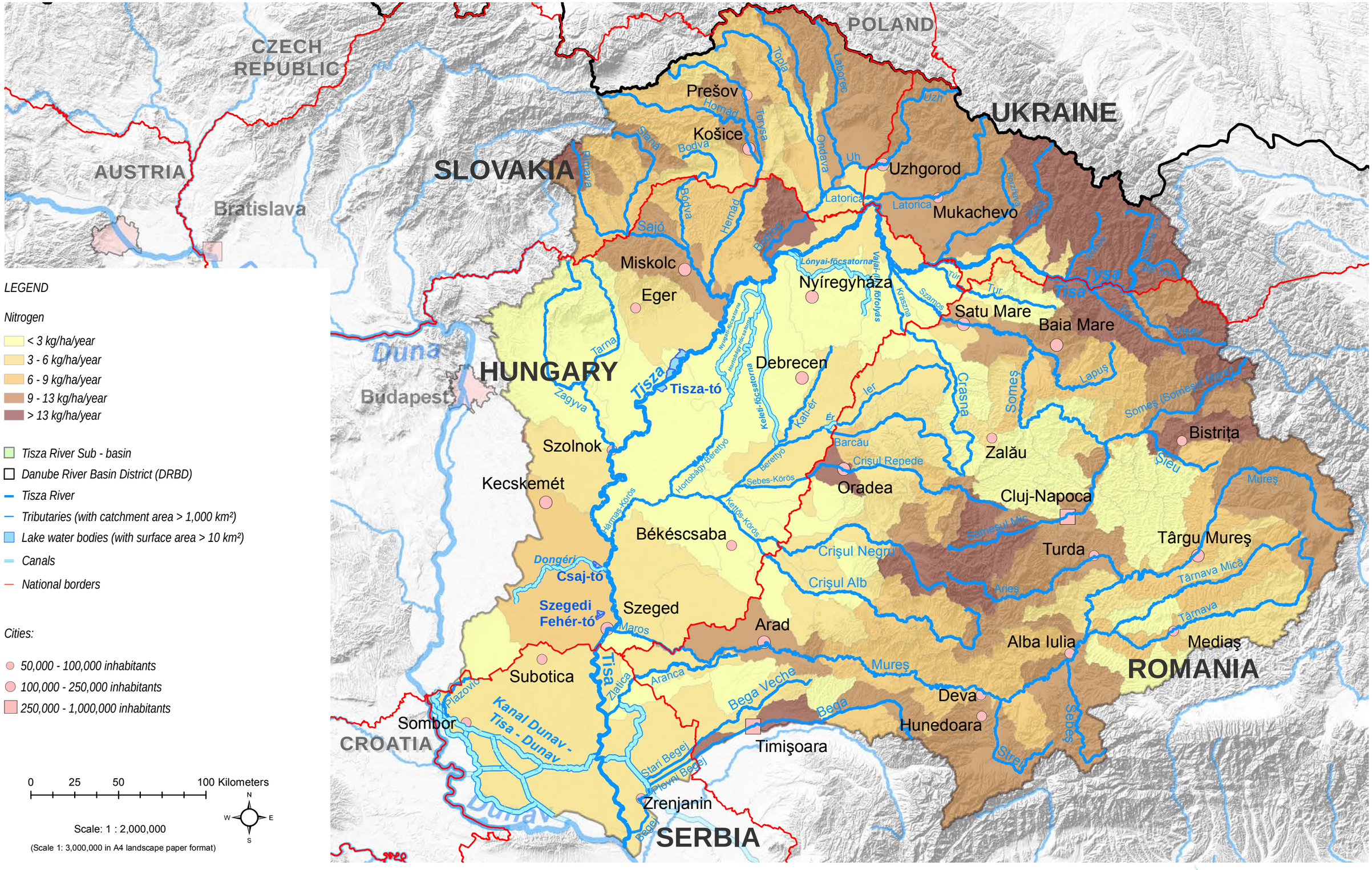
Tisza River Sub - Basin:
Nutrient Pollution from Point and Diffuse Sources - Reference Situation for Nitrogen



LEGEND

Nitrogen

- *< 3 kg/ha/year*
- *3 - 6 kg/ha/year*
- *6 - 9 kg/ha/year*
- *9 - 13 kg/ha/year*
- *> 13 kg/ha/year*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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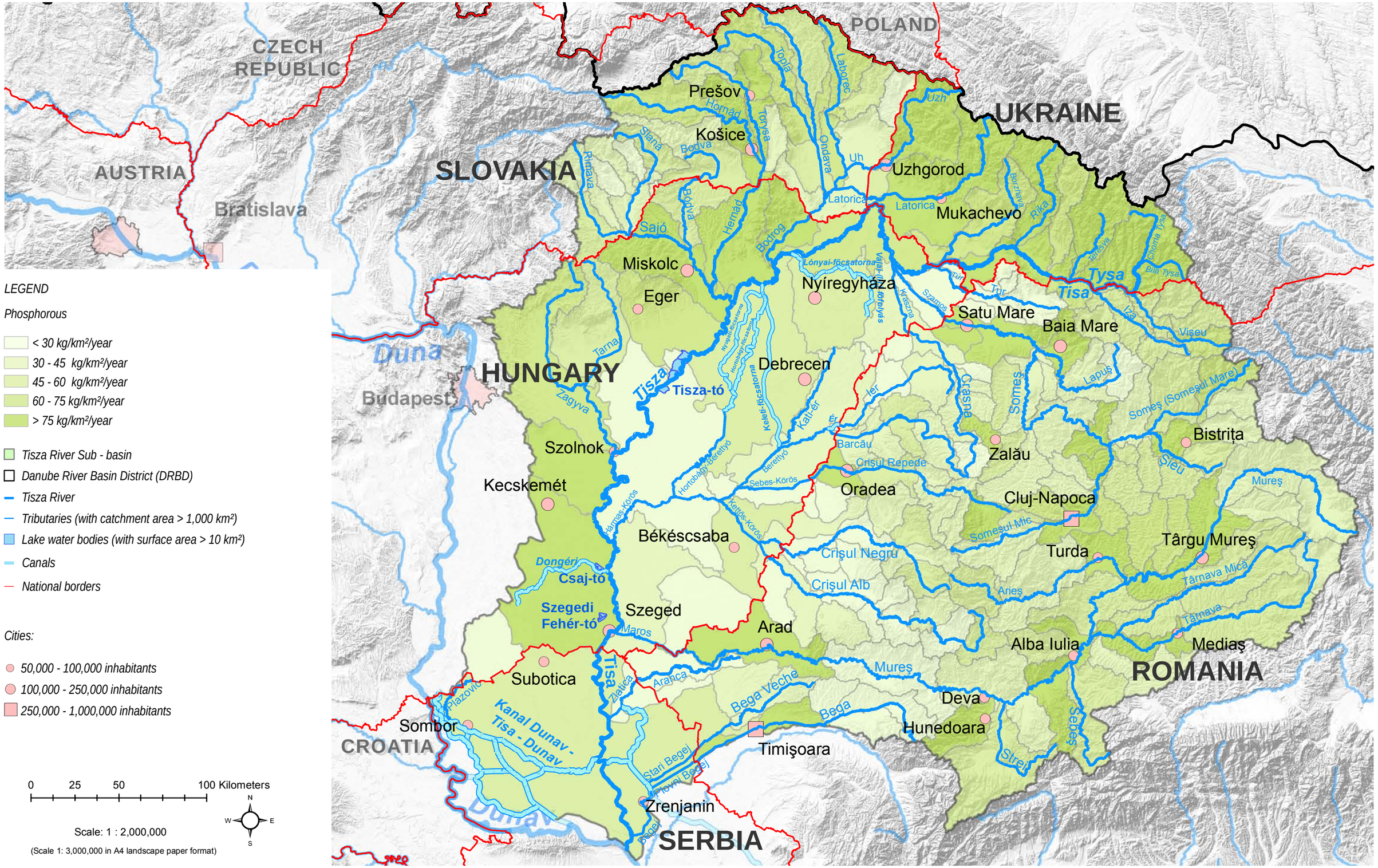
Tisza River Sub - Basin:
Nutrient Pollution from Point and Diffuse Sources - Reference Situation for Phosphorous

MAP 23



LEGEND

Phosphorous

- *< 30 kg/km²/year*
- *30 - 45 kg/km²/year*
- *45 - 60 kg/km²/year*
- *60 - 75 kg/km²/year*
- *> 75 kg/km²/year*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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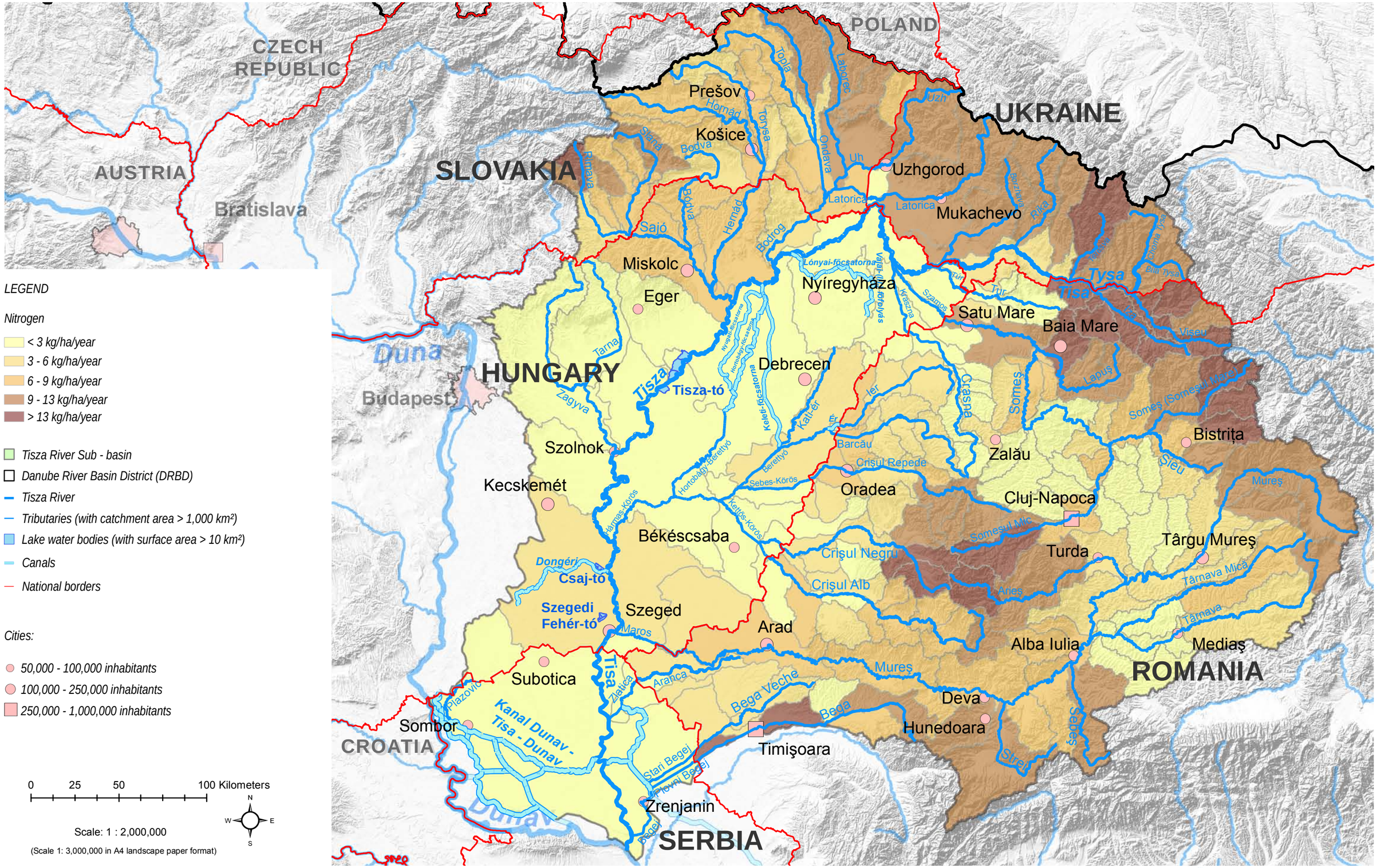
Tisza River Sub - Basin:
Nutrient Pollution from Point and Diffuse Sources - Baseline Scenario 2015 for Nitrogen



LEGEND

Nitrogen

- *< 3 kg/ha/year*
- *3 - 6 kg/ha/year*
- *6 - 9 kg/ha/year*
- *9 - 13 kg/ha/year*
- *> 13 kg/ha/year*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

(Scale 1: 3,000,000 in A4 landscape paper format)

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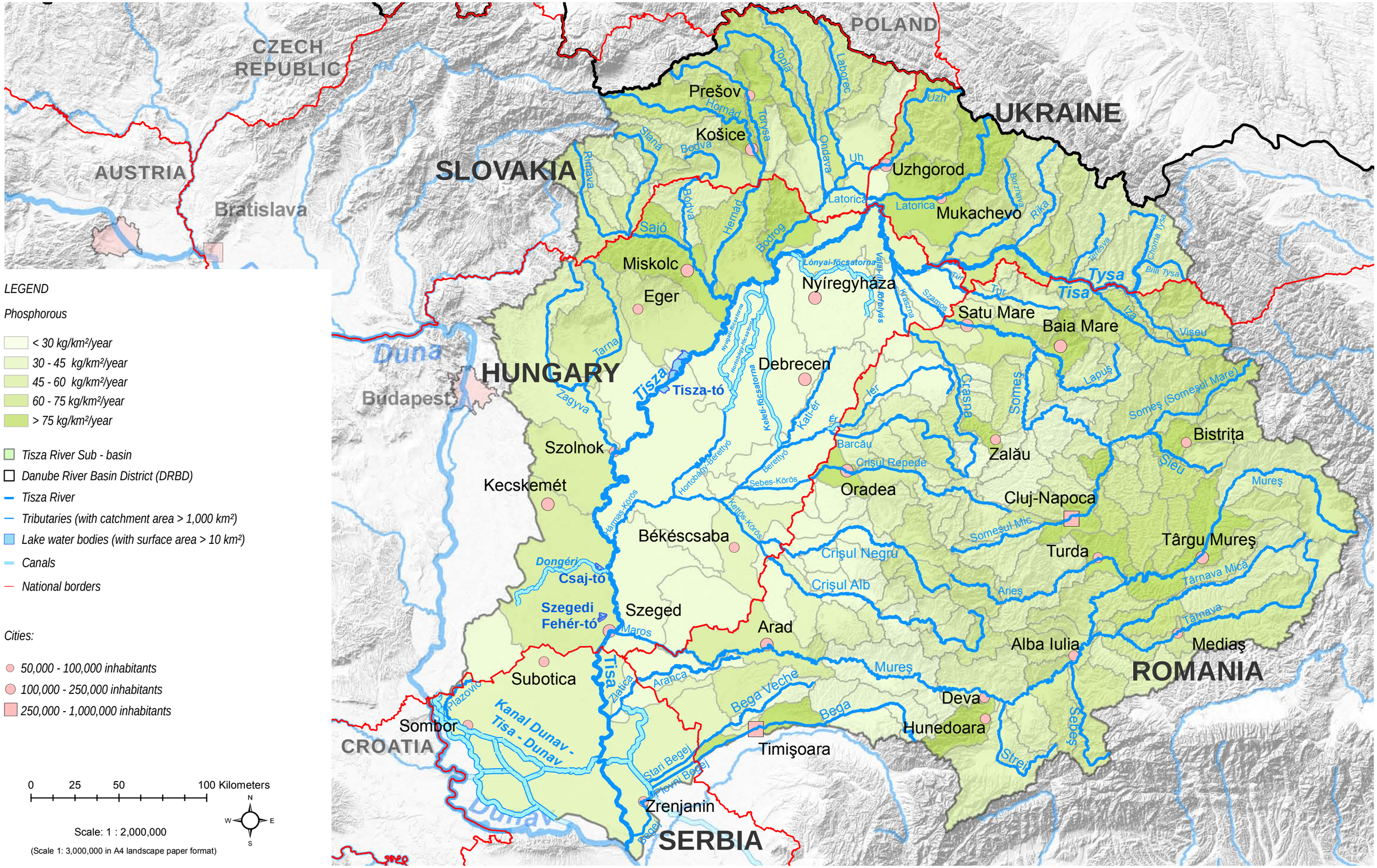
Tisza River Sub - Basin:
Nutrient Pollution from Point and Diffuse Sources - Baseline Scenario 2015 for Phosphorous



LEGEND

Phosphorous

- *< 30 kg/km²/year*
- *30 - 45 kg/km²/year*
- *45 - 60 kg/km²/year*
- *60 - 75 kg/km²/year*
- *> 75 kg/km²/year*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

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(Scale 1: 3,000,000 in A4 landscape paper format)

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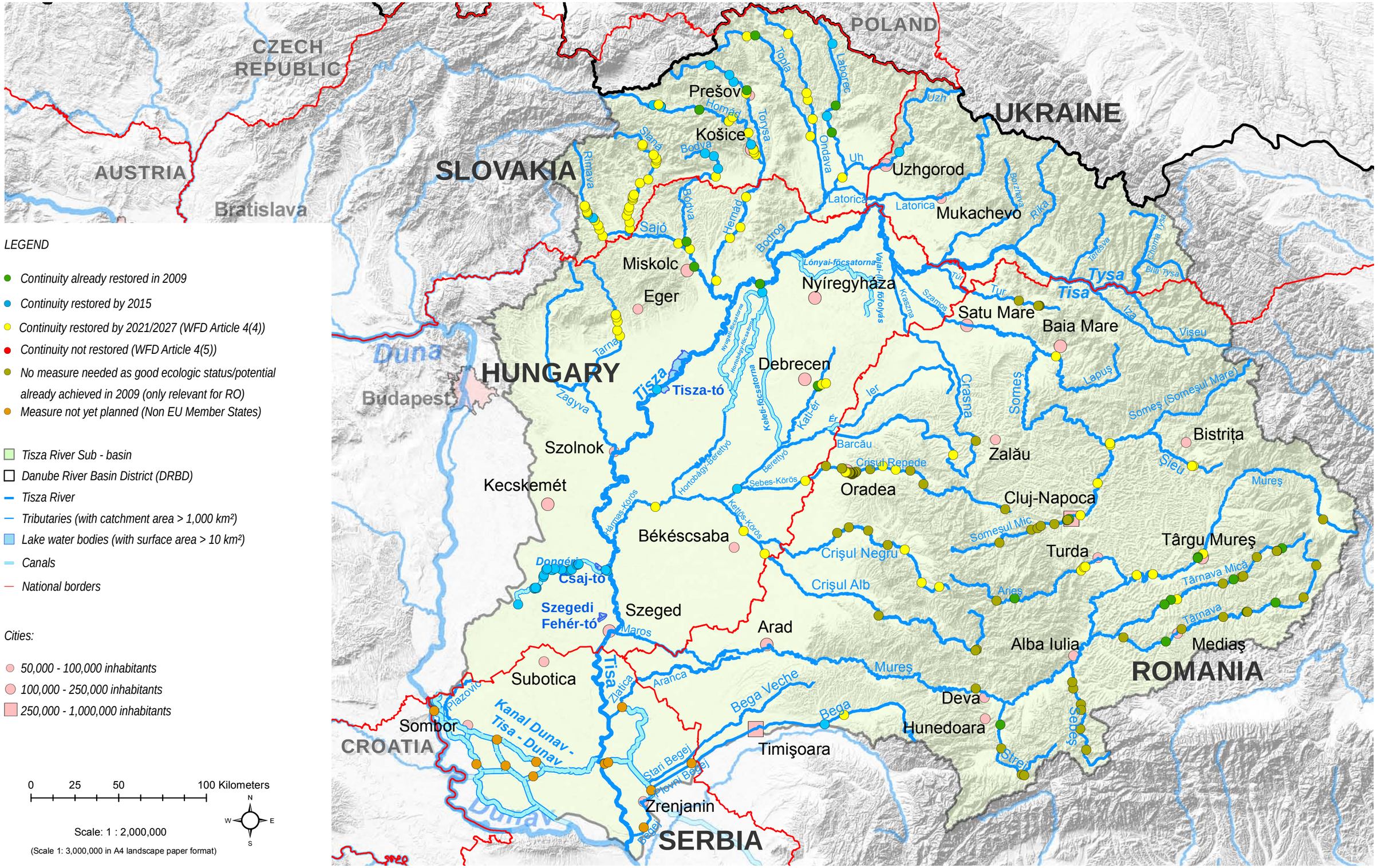
Tisza River Sub - Basin:
River and Habitat Continuity Interruptions 2015 (Expected Improvements)



LEGEND

- *Continuity already restored in 2009*
- *Continuity restored by 2015*
- *Continuity restored by 2021/2027 (WFD Article 4(4))*
- *Continuity not restored (WFD Article 4(5))*
- *No measure needed as good ecologic status/potential already achieved in 2009 (only relevant for RO)*
- *Measure not yet planned (Non EU Member States)*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

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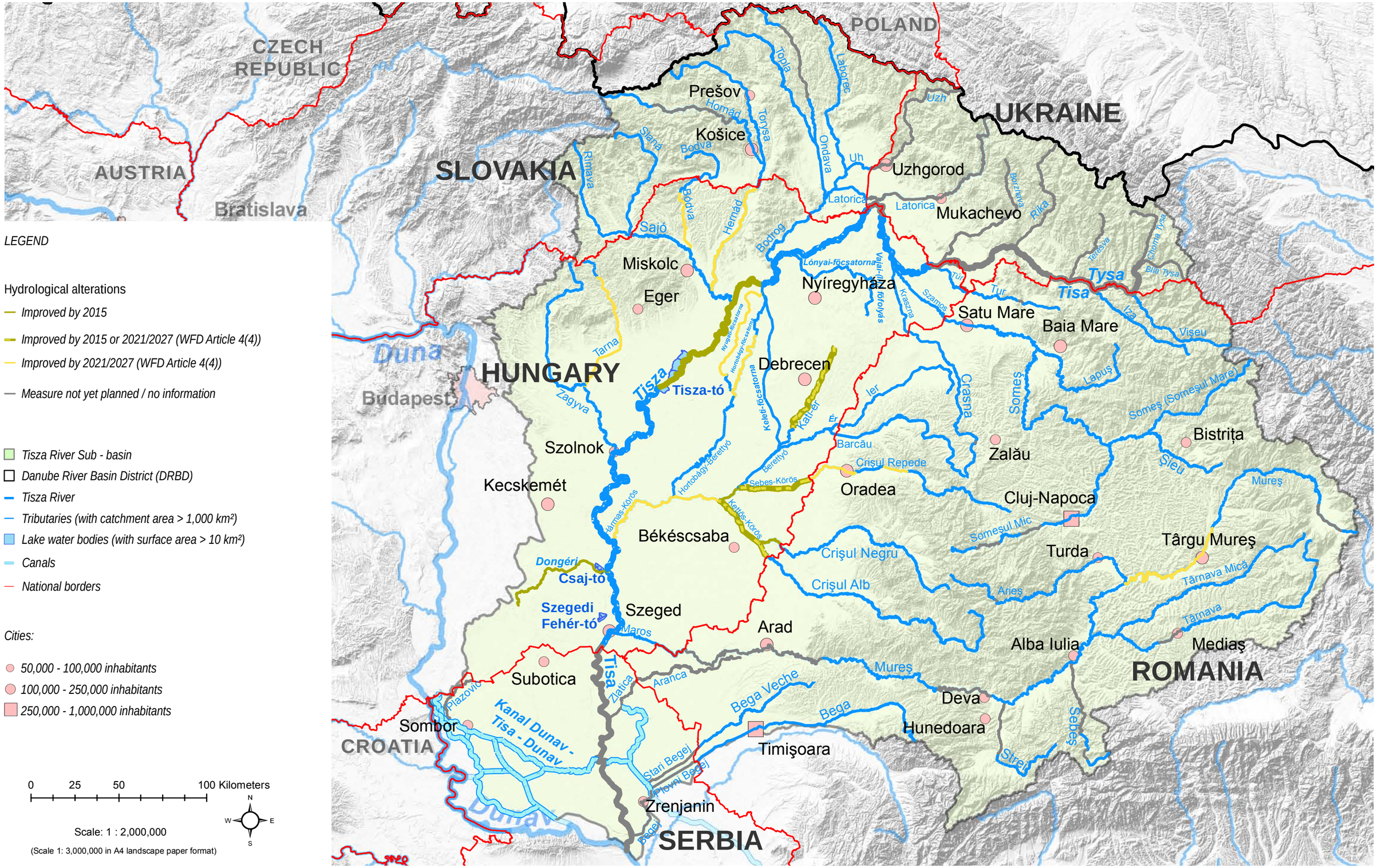
Tisza River Sub - Basin:
Hydrological Alterations - Expected Improvements 2015

MAP 27



LEGEND

Hydrological alterations

- *Improved by 2015*
- *Improved by 2015 or 2021/2027 (WFD Article 4(4))*
- *Improved by 2021/2027 (WFD Article 4(4))*
- *Measure not yet planned / no information*

- *Tisza River Sub - basin*
- *Danube River Basin District (DRBD)*
- *Tisza River*
- *Tributaries (with catchment area > 1,000 km²)*
- *Lake water bodies (with surface area > 10 km²)*
- *Canals*
- *National borders*

Cities:

- *50,000 - 100,000 inhabitants*
- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*

0 25 50 100 Kilometers

N W E S

Scale: 1 : 2,000,000

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