

EVENTO INFORMATIVO-DIVULGATIVO / STROKOVNO IZOBRAŽEVANJE NA TEMO

LE ACQUE DELLA PIANURA ISONTINA VODE SOŠKEGA ALUVIJA

IDROGEOLOGIA DELLA PIANURA ISONTINA / HIDROGEOLOGIJA SOŠKE NIŽINE

Francesco Treu

Dipartimento di Matematica e Geoscienze

Trieste, 14.3.2014



UNIVERSITÀ
DEGLI STUDI DI TRIESTE

GEP



2007-2013

cooperazione territoriale europea
programma per la cooperazione
transfrontaliera

Italia-Slovenia

evropsko teritorialno sodelovanje
program čezmejnega sodelovanja

Slovenija-Italija



Investiamo nel
vostro futuro!

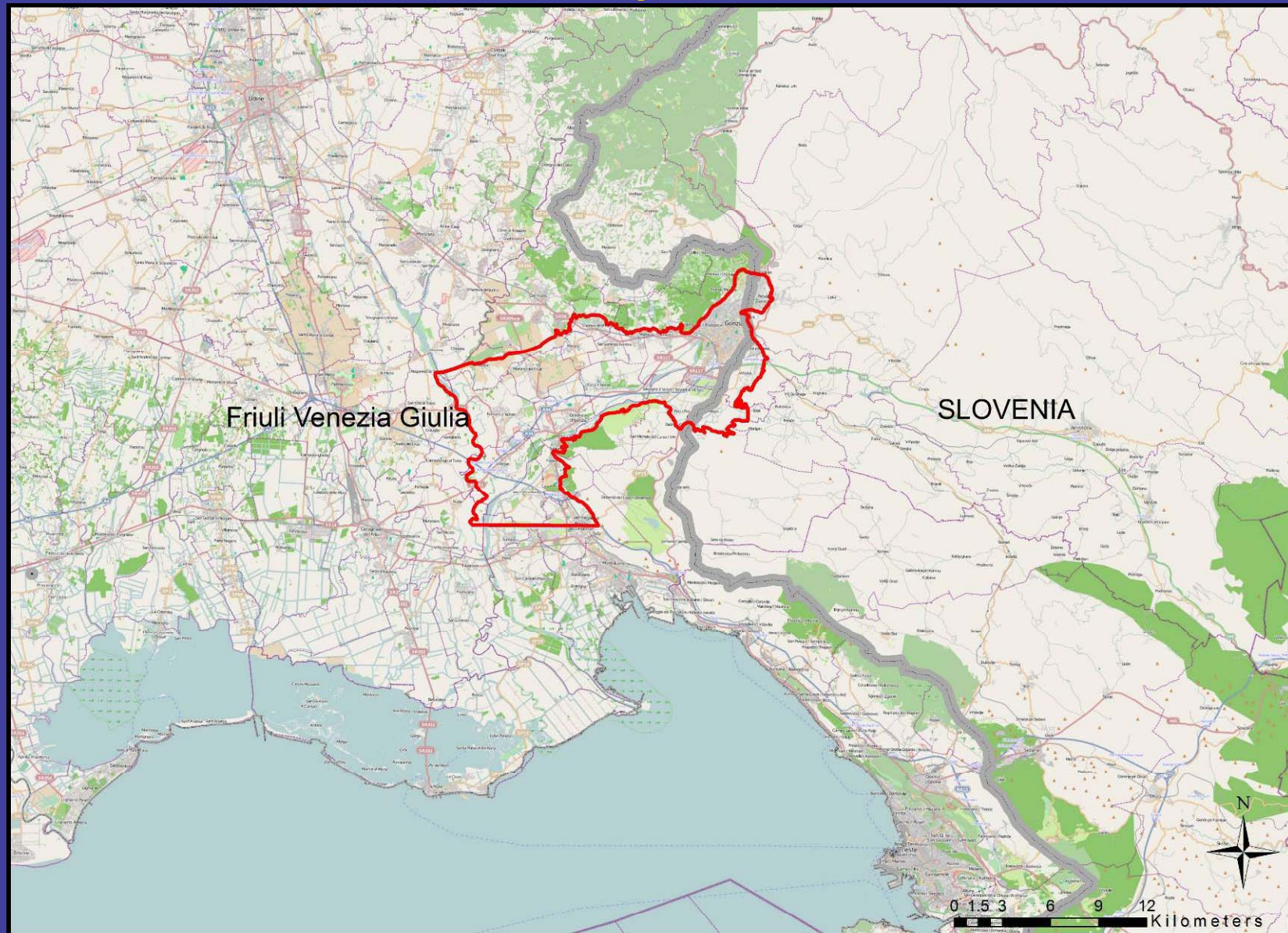
Naložba v vašo
prihodnost!

www.ita-slo.eu

Progetto cofinanziato dal Fondo europeo di
sviluppo regionale

Projekt sofinancira Evropski sklad
za regionalni razvoj

Study area



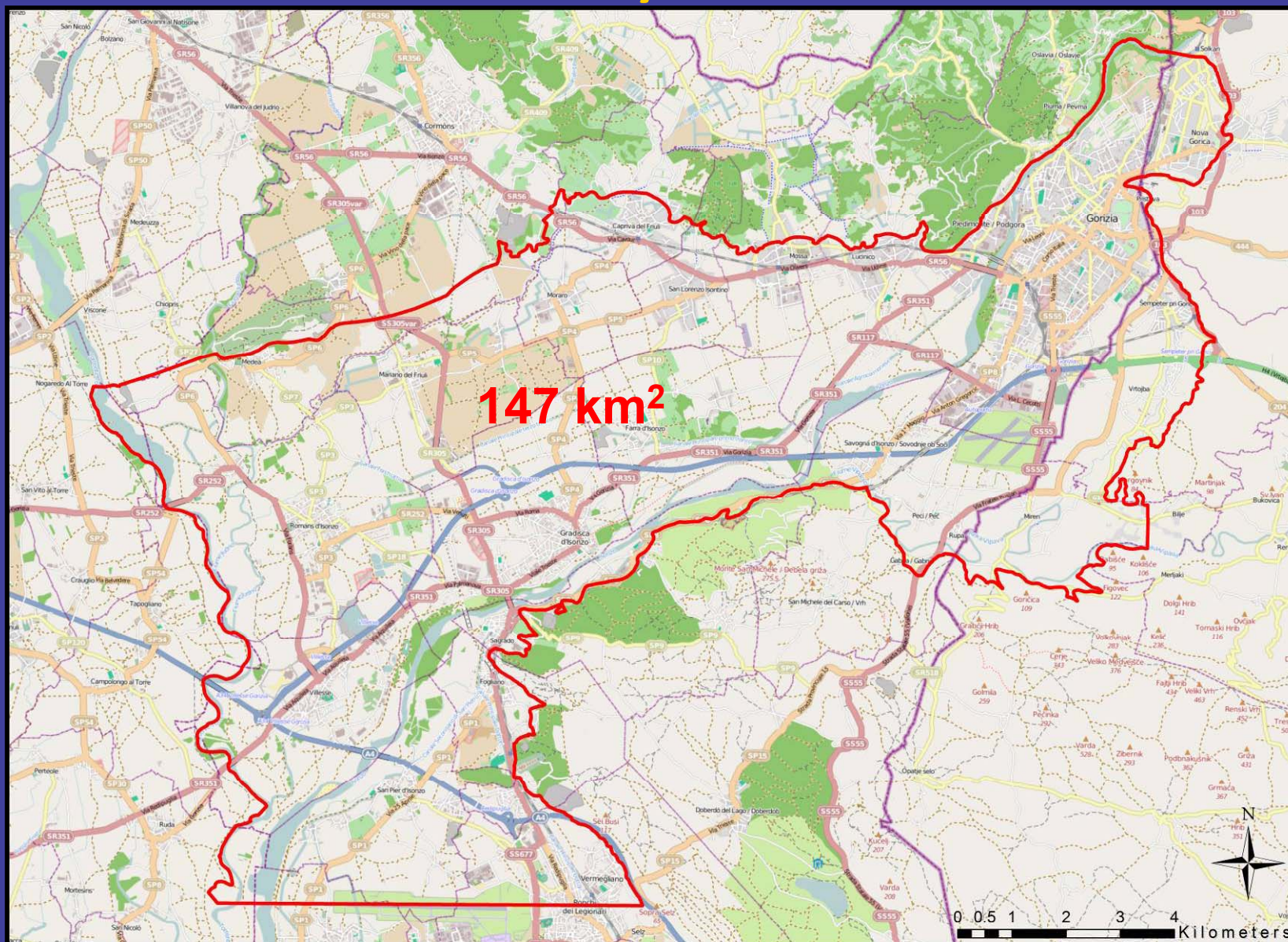
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / *VODE SOŠKEGA ALUVIJA*

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Study area



VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

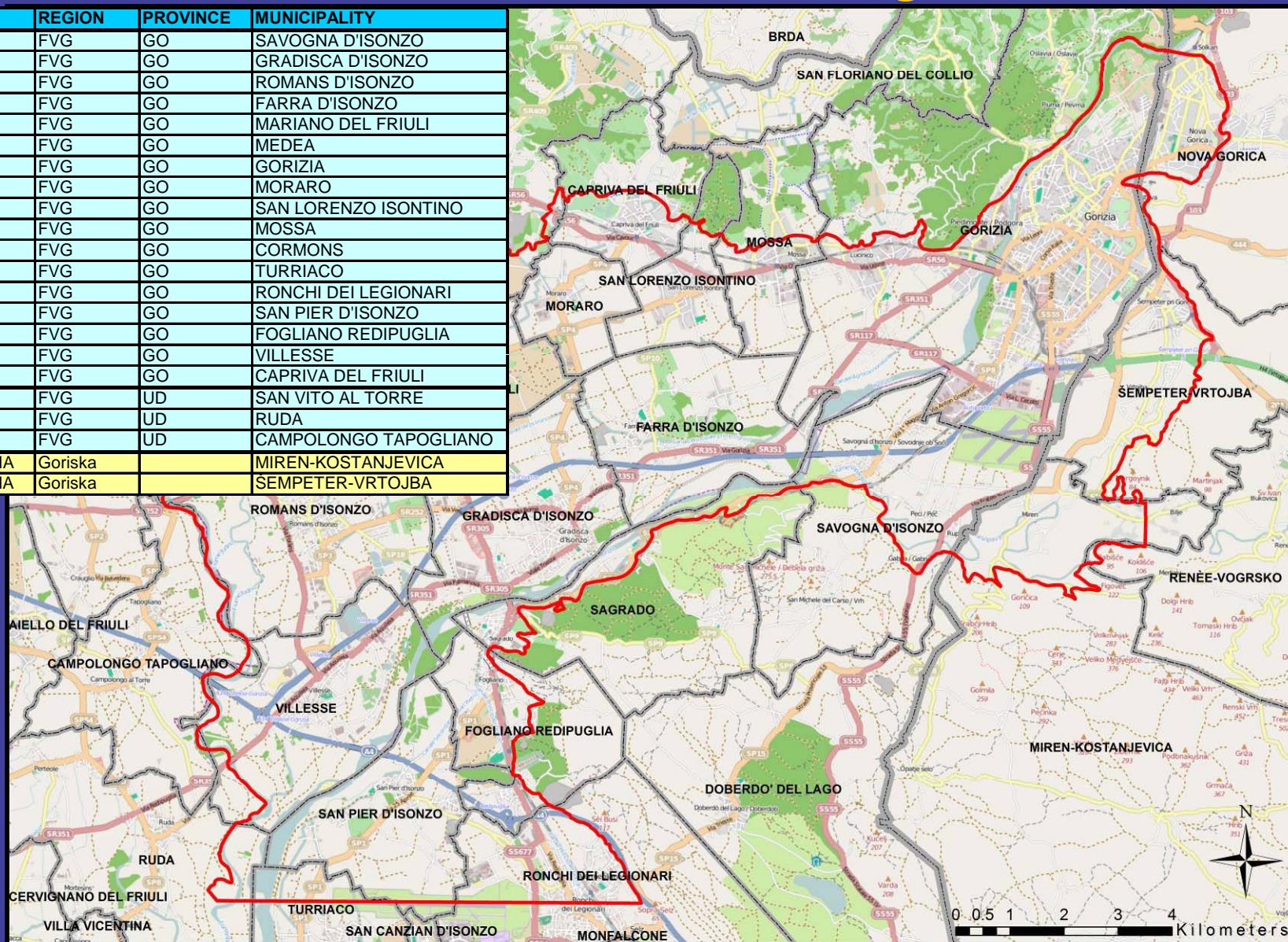
Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Administrative setting

NATION	REGION	PROVINCE	MUNICIPALITY
ITALY	FVG	GO	SAVOGNA D'ISONZO
ITALY	FVG	GO	GRADISCA D'ISONZO
ITALY	FVG	GO	ROMANS D'ISONZO
ITALY	FVG	GO	FARRA D'ISONZO
ITALY	FVG	GO	MARIANO DEL FRIULI
ITALY	FVG	GO	MEDEA
ITALY	FVG	GO	GORIZIA
ITALY	FVG	GO	MORARO
ITALY	FVG	GO	SAN LORENZO ISONTINO
ITALY	FVG	GO	MOSSA
ITALY	FVG	GO	CORMONS
ITALY	FVG	GO	TURRIACO
ITALY	FVG	GO	RONCHI DEI LEGIONARI
ITALY	FVG	GO	SAN PIER D'ISONZO
ITALY	FVG	GO	FOGLIANO REDIPUGLIA
ITALY	FVG	GO	VILLESSE
ITALY	FVG	GO	CAPRIVA DEL FRIULI
ITALY	FVG	UD	SAN VITO AL TORRE
ITALY	FVG	UD	RUDA
ITALY	FVG	UD	CAMPOLONGO TAPOGLIANO
SLOVENIA	Goriska		MIREN-KOSTANJEVICA
SLOVENIA	Goriska		SEMPETER-VRTOJBA



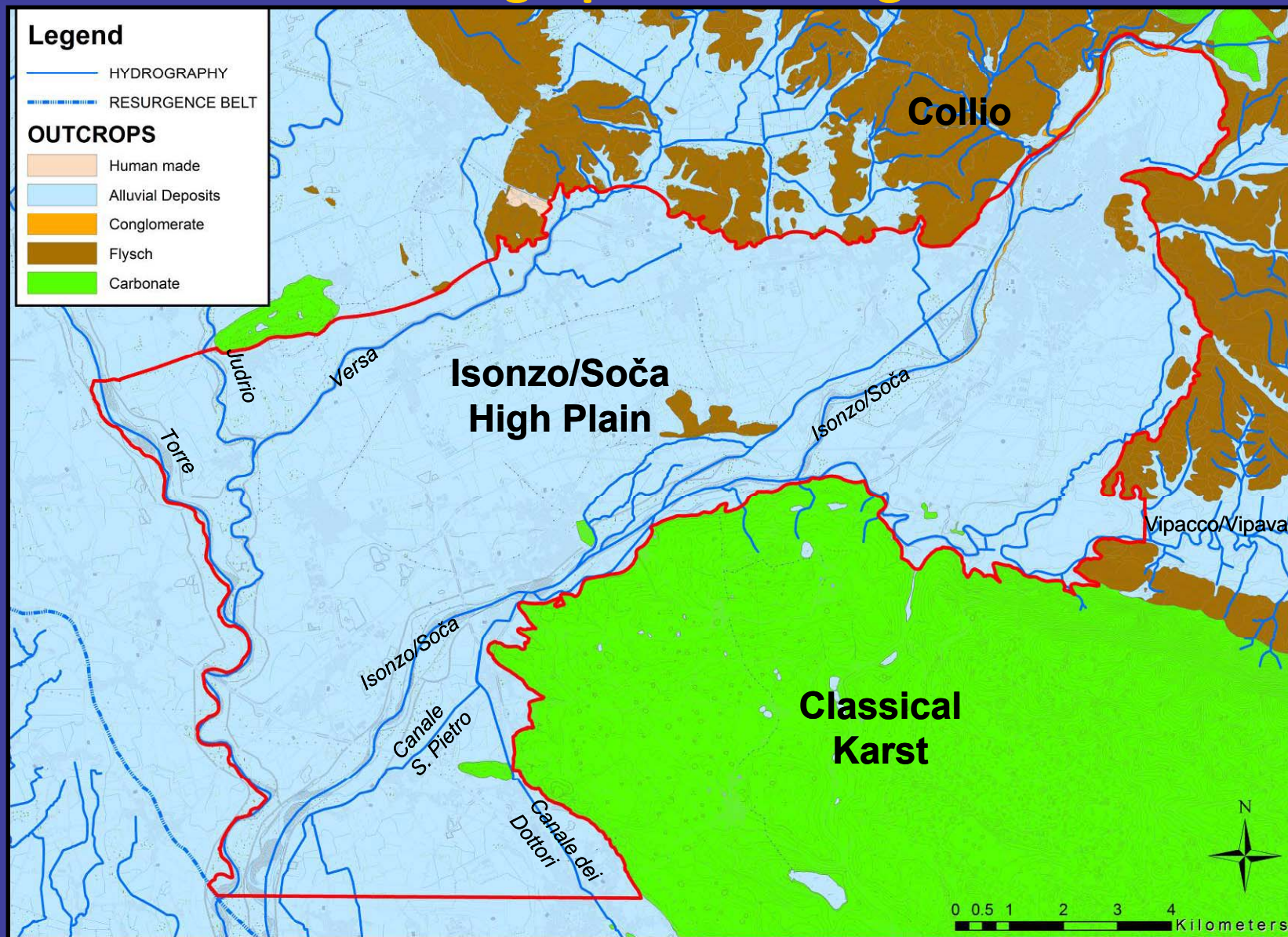
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Geographical setting



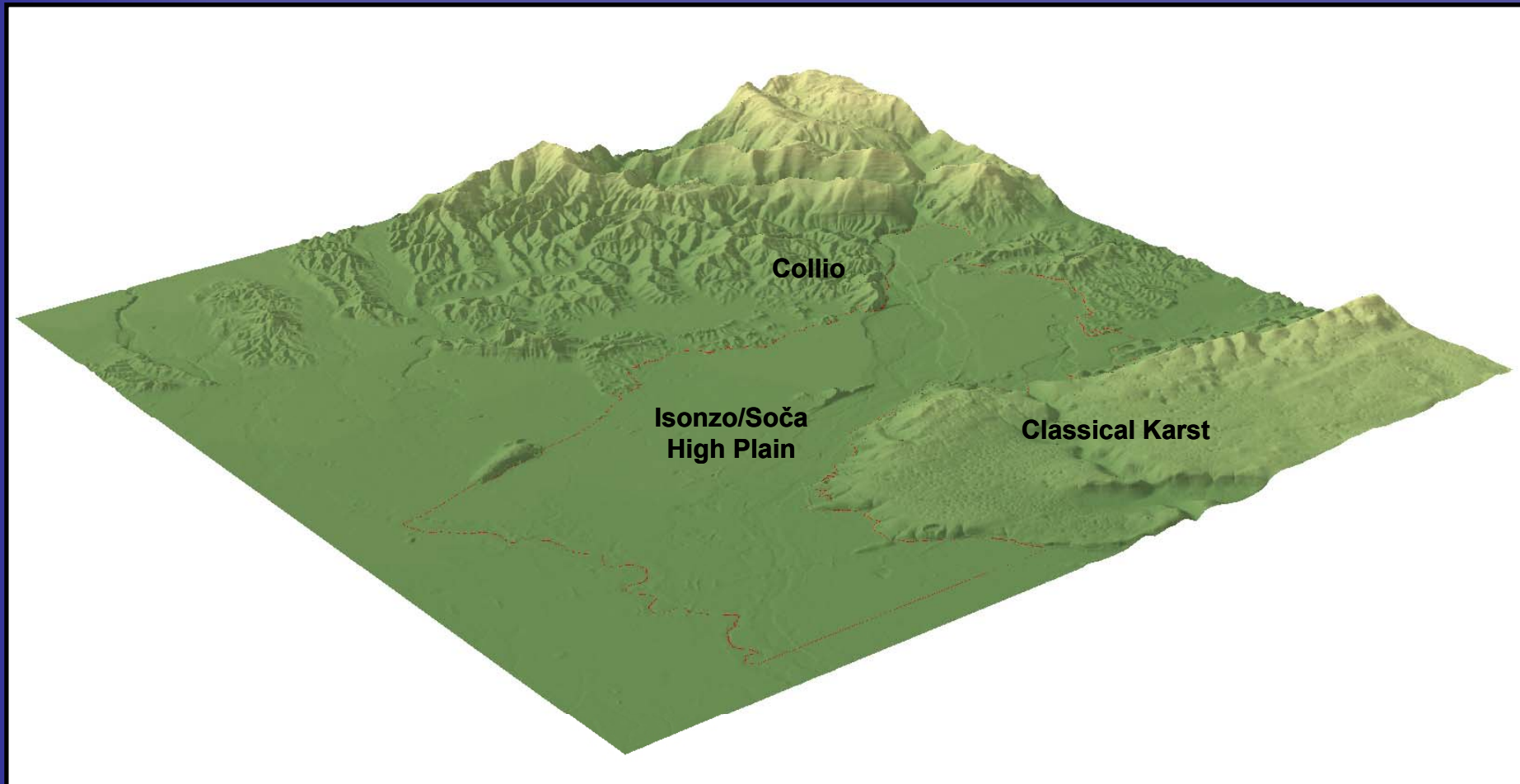
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



DEM (vertical exaggeration 2x)



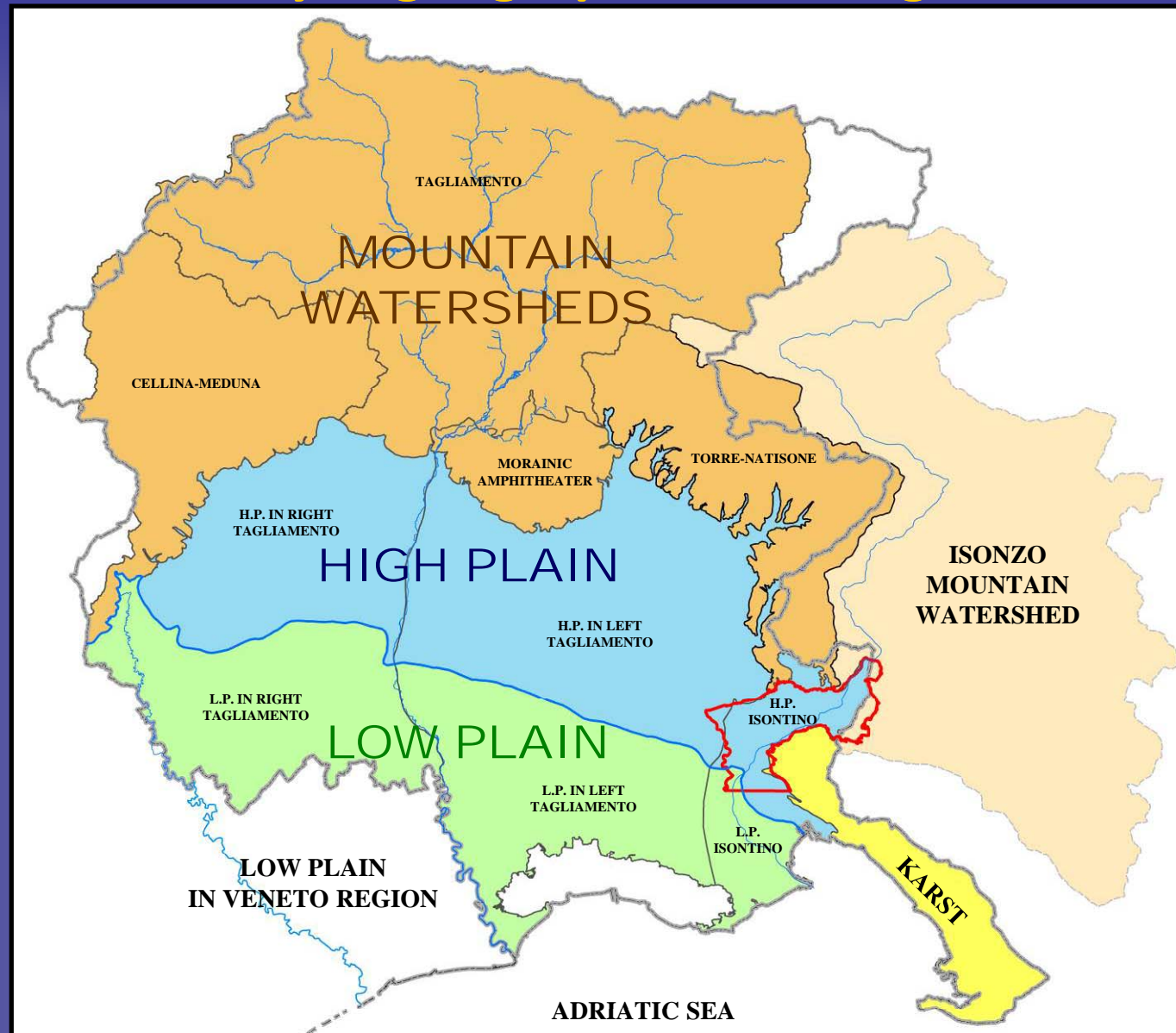
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / *VODE SOŠKEGA ALUVIJA*

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Physiogeographical setting



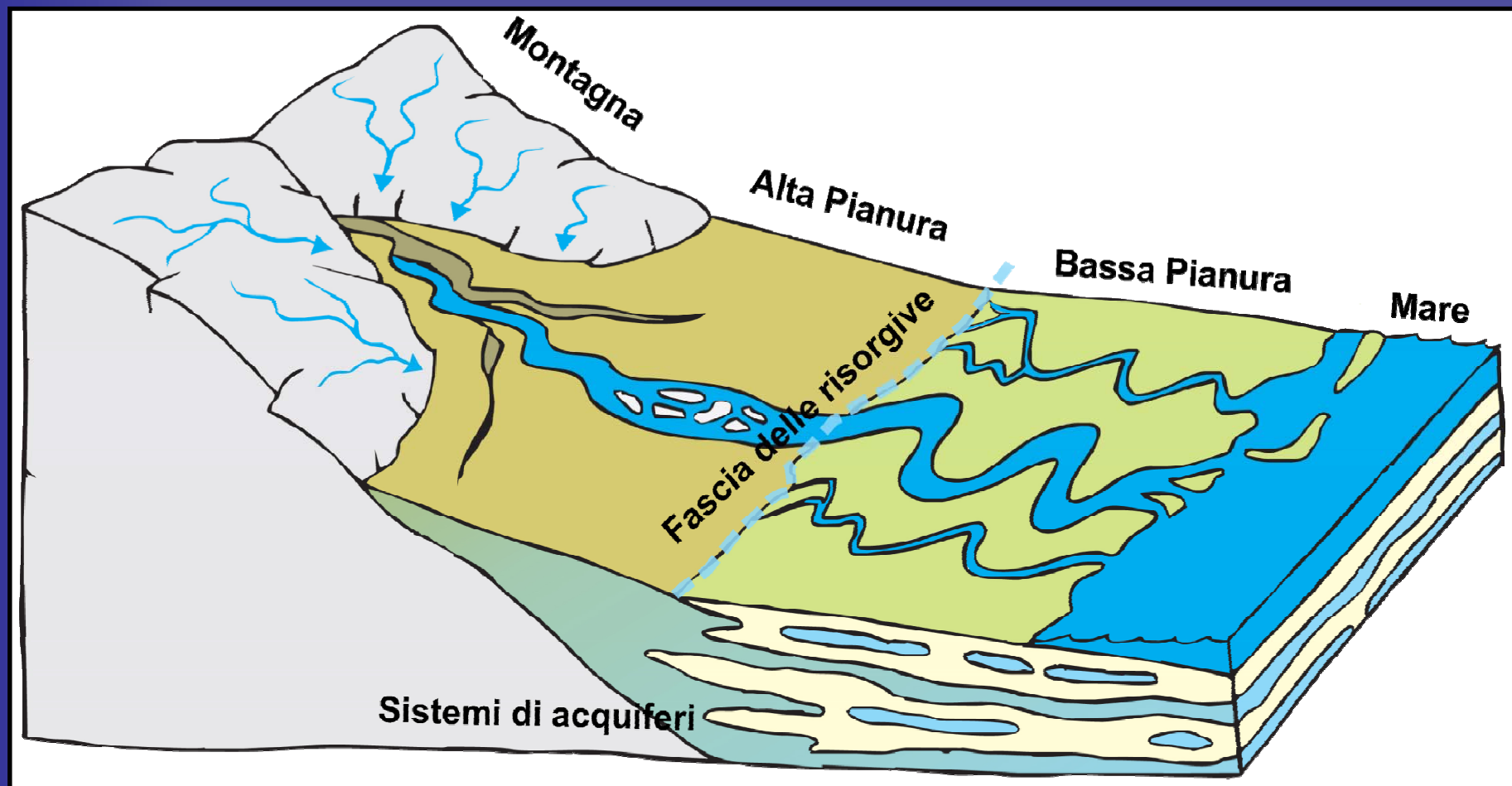
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Hydrogeological setting



VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

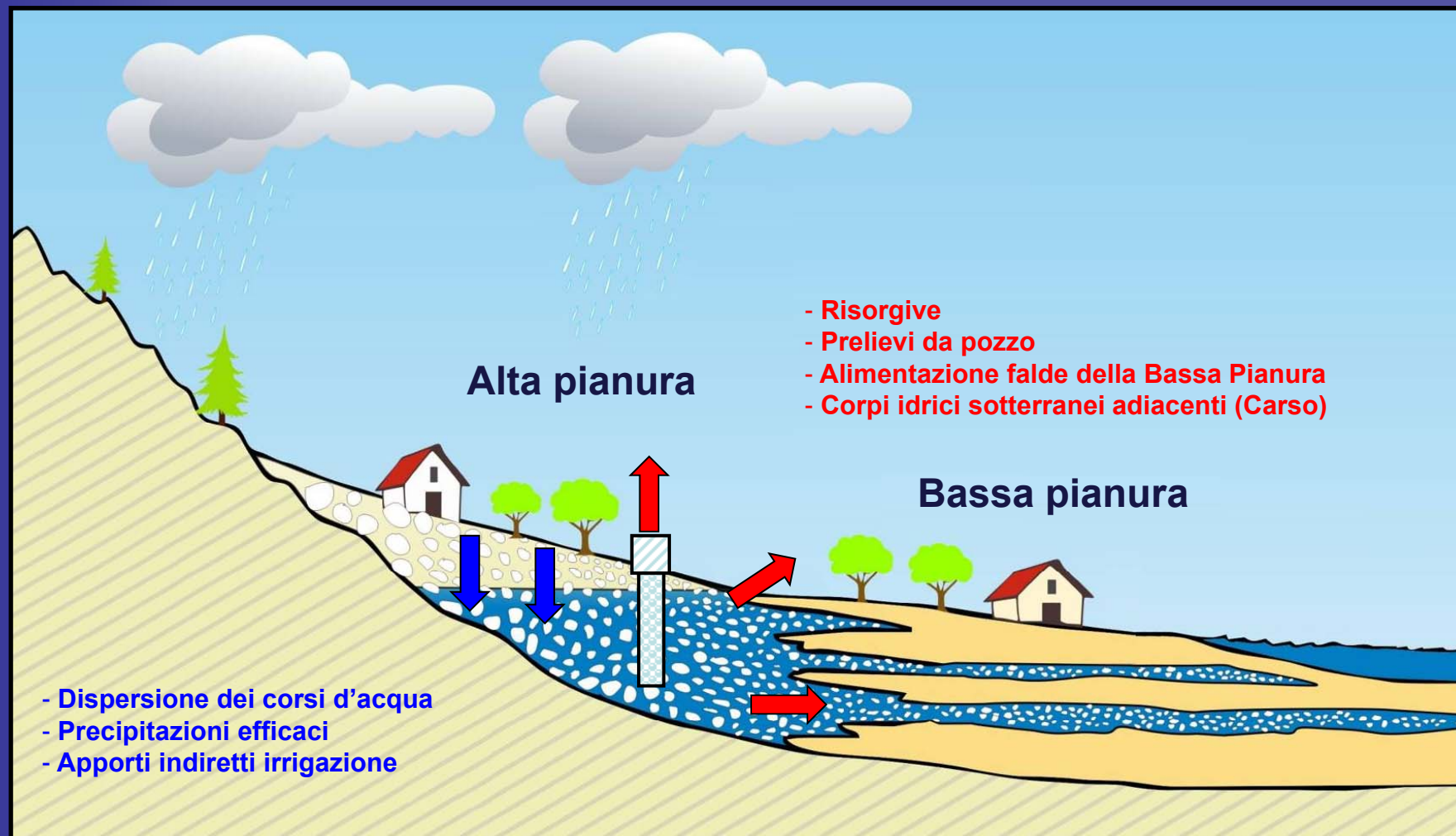
Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP

GEP


Italia-Slovenia 2007
Slovenija-Italija 2013

Hydrogeological setting



VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP

GEP

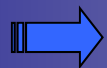

Italia-Slovenia 2007
Slovenija-Italija 2013

Hydrogeological balance

INPUT



RIVER LOSING



UNDERGROUND WATERS



IRRIGATION RETURN
FLOW AND
INFILTRATION

OUTPUT



WELL WITHDRAWALS



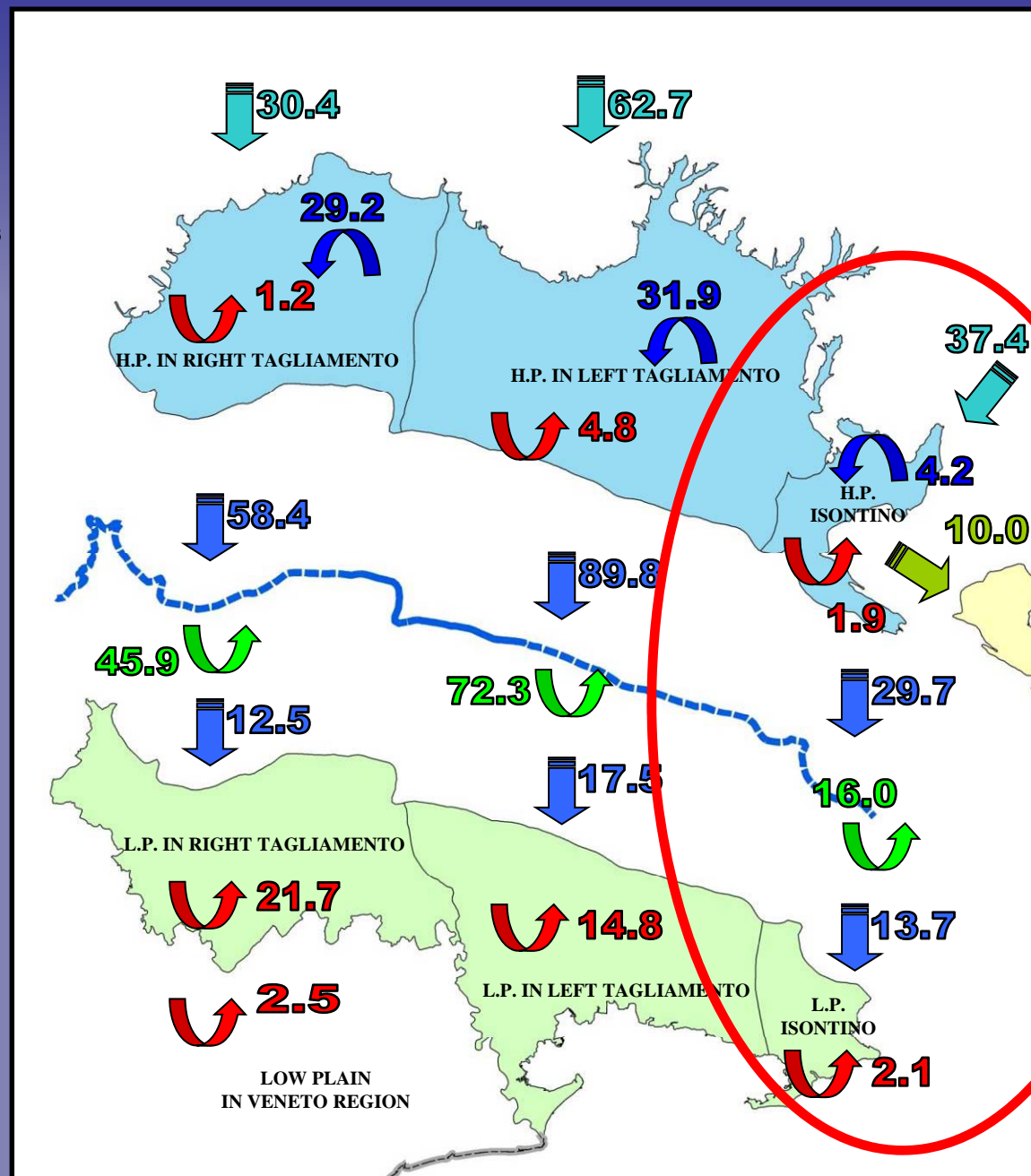
RESURGENCE BELT
DISCHARGE



KARST DRAINAGE

NOTE:

LOW PLAIN WELLS
WITHDRAWALS REFER ONLY
TO THE CONFINED AQUIFERS



The GIS Project and the Geodatabases

INTERREG.mxd - ArcMap - ArcInfo

File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help

1:131562

Snapping

Editor

Table Of Contents

- Layers
 - STUDY AREA
 - HYDROGEOLOGICAL_GDB
 - FEATURE CLASSES
 - WELLS
 - SPRINGS
 - KARST
 - RAINFALL STATIONS_ISOTOPES
 - FAUNA
 - OTHER_ITEMS
 - ADMINISTRATIVE
 - AQUIFERS SYSTEM
 - WATER BODIES
 - HYDROLOGY
 - SINTACS_ISONZO
 - AREA
 - BEDROCK
 - S_SOGGIACENZA
 - I_INFILTRAZIONE
 - N_NON SATURO
 - T_TIPOLOGIA COPERTURA
 - A_AQUIFERO
 - C_CONDUCCIBILITA IDRAULICA
 - S_SUPERFICIE TOPOGRAFICA
 - HYDROGEO_IMPACT_CONDITION
 - TOPOGRAPHIC MAPS
 - ITALY
 - CRN 25000 WGS84
 - CTRN 5000 ETRS90
 - SLOVENIA
 - GEO MAPS ETC
 - GEOLITHOLOGICAL MAPS
 - LAND USE MAPS
 - SOIL MAPS
 - ELEVATION_DTM
 - FVG_SLO
 - INTERREG_AREA
 - INTERREG_AREA_MASK
 - contour_25m
 - dtm_10m
 - hillshade_10m
 - slope
 - tin_5z
 - flow
 - HYDROKARST_AREA
 - ISONZO_PLAIN
 - VARIOUS_ITEMS_GDB
 - FAUNA_HK_NIB
 - GEP_WATER_SOURCES_SLO

358779.21 5096812.548 Meters

The Hydrogeological Geodatabase



VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



The Hydrogeological Geodatabase

WELLS
WELL ID **42493** PROJECT **ASTIS-GEP** MATCHING VERIFIED

LOCATION AND MAIN DATA
OWNER AND USES
DRILLING
GEOLITHOLOGY
SCREENS AND LITHOLOGY
BIBLIOGRAPHY
IMAGES
AQUIFERS SURVEY

COORDINATES

Longitude WGS84 UTM ZONE 33N [m] 380613.6929

Latitude WGS84 UTM ZONE 33N [m] 5074726.4238

Accuracy Bibliography 1:5000

Original Coordinates UTM_Gauss_Boaga

CARTOGRAPHIC LOCATION

TAV Code 088_SO

Section TURRIACO 088140

Flement BEGLIANO 088142

ADMINISTRATIVE LOCATION

	<i>From Source</i>	<i>From GIS</i>
Nation	ITALY	ITALY
Region	Friuli Venezia Giulia	Friuli Venezia Giulia
Province	GO	GO
Municipality	SAN CANZIAN D'ISONZO	SAN CANZIAN D'ISONZO
ISTAT Code	031018	031018
ATO	ORIENTALE-GORIZIA	ORIENTALE-GORIZIA
Location from Source and GIS	Equal	

ELEVATION

Elevation Source [m] a.s.l. 8.3

Elevation GIS [m] a.s.l. 8.5

Elev. Difference [m] 0.2

Elev. Diff. Note <|30| m

Head [m] a.g.l. 0.0 s.l. 8.5

DEPTH

Total Depth [m] a.g.l. 70.1

Base Depth [m] a.s.l. -61.6

WELL TYPE, NAME, SITE, ACCESSIBILITY

Well Type Piezometer

Well Name **Begliano**

Synonym

Site-Village BEGLIANO, VIA S.CANZIAN, FERROVIA

Address VIA S. CANZIAN

Annotation piezometro ACEGAS n. 40

CADASTRE

Section

Sheet n° Parcel n°

WATERSHEDS (from GIS Watersheds Feature Class)

Order 1	Order 2	Order 3	Order 4	Order 5	Order 6	Mechanical Drainage
ID 17 Order GOLFO PANZANO	-	-	-	-	-	-

RIVER (from GIS Hydrography Feature Class)

ID	Name	CTRN Name	RD Name	Forestate Name	Other Name

DATA CORRECTION AND REMARKS

Data Correction

Remarks Elevation Levelled

DATA ENTRY

Added on 22/02/2014 15.02.44

by Francesco Treu

Updated on 22/02/2014 15.02.45

by Francesco Treu

DATA SOURCES

Source	ID Original Source	Code Source	Code Name	Duplicated Code
SIT_CGT_SITI	43140	43140	CUP_CODE_SIT_CGT_SITI	1
RETE_FREATIMETRICA_SI	0253	0253	RETE_FREATIMETRICA_SI	
PERF_DEN_SI	45465	45465	PERF_DEN_SI	
CGT	2_088142	2_088142	CGT	
CATASTO_REG	1560003	1560003	COD_CATASTO_REG	1

Record: 1 di 1 (Filtrati)

CONVERSION TOOLS

FILTERS

REMOVE ALL FILTERS

SOURCE

SUBSOURCE

GOV GIS

PHYSIOGRAPHIC

AQUIFER TYPE

QUERIES

ADD SCREENS LITHOLOGY

CALCULATE HYDRO CHEMICAL PARAMETERS

ALL OTHERS QUERIES

CALCULATE sea level

CREATE NEW QUERY

UPDATE PATH

The Hydrogeological Geodatabase

WELLS
WELL ID **42493** PROJECT **ASTIS-GEP** MATCHING VERIFIED

LOCATION AND MAIN DATA
OWNER AND USES
DRILLING
GEOLITHOLOGY
SCREENS AND LITHOLOGY
BIBLIOGRAPHY
IMAGES
AQUIFERS SURVEY

TOP AND BASE			LITHOLOGIC DATA				GEOLOGIC DATA			
Top	Base	Thickness	Litho Code	Lithologic English	Lithologic Italian	Lithologic original 1	Lithologic original 2	Original Formation Name	Formation Name	Code
0.00	12.00	12.00	4400	gravel	ghiaia	Ghiaia				
[m] a.g.l. [m] a.g. [m]										
8.49	-3.51									
[m] a.s.l. [m] a.s.l.										
12.00	15.00	3.00	3140	sand with gravel	sabbia con ghiaia	Sabbia con ghiaia				
[m] a.g.l. [m] a.g. [m]										
-3.51	-6.51									
[m] a.s.l. [m] a.s.l.										
15.00	38.00	23.00	4130	gravel with sand	ghiaia con sabbia	Ghiaia con sabbia				
[m] a.g.l. [m] a.g. [m]										
-6.51	-29.51									
[m] a.s.l. [m] a.s.l.										
38.00	54.00	16.00	4400	gravel	ghiaia	Ghiaia cementato/a				
[m] a.g.l. [m] a.g. [m]										
-29.51	-45.51									
[m] a.s.l. [m] a.s.l.										
54.00	60.00	6.00	4210	clayey gravel	ghiaia argillosa	Ghiaia argilloso/a				
[m] a.g.l. [m] a.g. [m]										
-45.51	-51.51									
[m] a.s.l. [m] a.s.l.										
60.00	70.10	10.10	4400	gravel	ghiaia	Ghiaia cementato/a				
[m] a.g.l. [m] a.g. [m]										
-51.51	-61.61									
[m] a.s.l. [m] a.s.l.										
*										
[m] a.g.l. [m] a.g. [m]										
[m] a.s.l. [m] a.s.l.										

Record: 1 di 6

Record: 1 di 1 (Filtrati)

CONVERSION TOOLS

FILTERS

REMOVE ALL FILTERS

SOURCE

SUBSOURCE

GOV GIS

PHYSIOGRAPHIC

AQUIFER TYPE

QUERIES

ADD SCREENS LITHOLOGY

CALCULATE HYDRO CHEMICAL PARAMETERS

ALL OTHERS QUERIES

CALCULATE sea level

CREATE NEW QUERY

UPDATE PATH

The Hydrogeological Geodatabase

WELLS
WELL ID **42493** PROJECT **ASTIS-GEP** MATCHING VERIFIED

LOCATION AND MAIN DATA OWNER AND USES DRILLING GEOLOGY SCREENS AND LITHOLOGY BIBLIOGRAPHY IMAGES AQUIFERS SURVEY

ID AQUIFER **507** Rock/Alluvial Alluvial Aquifer Type Phreatic Aquifer Name Unknown Artesian Natural Discharge [L/s] Assignment

HYDROGEOLOGIC PUMPING TEST HYDROCHEMICAL

AQUIFER CHARACTERISTICS

GEOMETRICAL CHARACTERISTICS	HYDROGEOLOGICAL PARAMETERS	REMARKS AND DATA QUALITY
Top Depth [m] <input type="text"/> Top a.s.l. [m] <input type="text"/> Thickness [m] <input type="text"/>	Transmissivity [m2/s] <input type="text"/> Storativity <input type="text"/> Specific Yield <input type="text"/>	Remarks <input type="text"/>
Base Depth [m] <input type="text"/> Base a.s.l. [m] <input type="text"/>	Hydraulic Cond. [m/s] <input type="text"/> Specific Storage <input type="text"/>	Correction <input type="text"/>
	Note <input type="text"/>	Data Quality <input type="text"/>

AQUIFER MONITORING

Survey by	Date [gg-mm-aa-hh-mm-ss]	Acquisition	Instruments	Static Water Level [m] b.g.l.	Temp [m] a.s.l. [°C]	E.C. [µS/cm]	Remarks	Correction
RETE REG FVG	07/01/1985 12.00.00			3.44	5.05			
RETE REG FVG	21/01/1985 12.00.00			3.62	4.87			
RETE REG FVG	25/01/1985 12.00.00			2.52	5.97			
RETE REG FVG	26/01/1985 12.00.00			2.57	5.92			
RETE REG FVG	27/01/1985 12.00.00			2.32	6.17			
RETE REG FVG	02/02/1985 12.00.00			2.67	5.82			
RETE REG FVG	05/02/1985 12.00.00			2.87	5.62			
RETE REG FVG	08/02/1985 12.00.00			3.02	5.47			
RETE REG FVG	11/02/1985 12.00.00			2.96	5.53			
RETE REG FVG	14/02/1985 12.00.00			3.02	5.47			
RETE REG FVG	17/02/1985 12.00.00			3.12	5.37			
RETE REG FVG	20/02/1985 12.00.00			3.22	5.27			
RETE REG FVG	23/02/1985 12.00.00			3.33	5.16			
RETE REG FVG	26/02/1985 12.00.00			3.44	5.05			
RETE REG FVG	02/03/1985 12.00.00			3.52	4.97			
RETE REG FVG	05/03/1985 12.00.00			3.29	5.20			

AQUIFER MONITORING STATISTICS

Min Date	07/01/1985 12.00.00	Max Date	06/02/2014	n of measure	981	Min SWL	0.73	Max SWL	4.61	Min SWL sl	3.880	Max SWL sl	7.760
----------	---------------------	----------	------------	--------------	-----	---------	------	---------	------	------------	-------	------------	-------

Record: 1 di 1

Record: 1 di 1 (Filtrati)

CONVERSION TOOLS

FILTERS

REMOVE ALL FILTERS

SOURCE

SUBSOURCE

GOV GIS

PHYSIOGRAPHIC

AQUIFER TYPE

QUERIES

ADD SCREENS LITHOLOGY

CALCULATE HYDRO CHEMICAL PARAMETERS

ALL OTHERS QUERIES

CALCULATE sea level

CREATE NEW QUERY

UPDATE PATH

The Hydrogeological Geodatabase

WELLS

WELL ID **42509** PROJECT **ASTIS-GEP** MATCHING VERIFIED

LOCATION AND MAIN DATA OWNER AND USES DRILLING GEOLITHOLOGY SCREENS AND LITHOLOGY BIBLIOGRAPHY IMAGES AQUIFERS SURVEY

ID AQUIFER 43629 Rock/Alluvial Unknown Aquifer Type Unknown Aquifer Name Unknown Artesian Natural Discharge [L/s] Assignment

HYDROGEOLOGIC PUMPING TEST HYDROCHEMICAL

Sampling Date 03/07/2013 Source ARPA Code Weather Survey by Sampling Depth [m]
 Sampling Year 2013 Sub Source Project ASTIS-GEP Hydro Conditions Sampling Artesian Sampling Note

MAIN PARAMETERS CONTAMINANTS SCHOELLER AND PIE DIAGRAM

IN SITU SURVEY

T Air [°C] pH 7.50 EC [µS/cm] 423.0 CO2 [mg/L]
 T Water [°C] 13.80 Eh [mV] O2 [mg/L] 8.8
 Instruments Note

LABORATORY DATA

Lab Name ARPA Sample Code
 Analysis Date Analytical Method
 Lab Note

PHYSICAL PARAMETERS

T [°C] pH 7.5 Eh [mV]
 Turbidity [NTU] 0.3 RF 180 °C
 TDS [mg/L] EC [µS/cm] 423.0
 Calc TDS [mg/L]
 TDS Difference as %
 Ratio EC /TDS EC /CalcTDS
 Mineral. Class
 TH [mg/L] TH [°f]
 Hardness Class:
 Alkalinity [mg/L] Alkalinity [°f]
 Organoleptic_Character

MAJOR IONS CONC.

	[mg/L]	[meq/L]	[meq%]
Ca	51.9		
Mg	9.6		
Na	5.0		
K	0.6		
NH4	0.050		
HCO3	196.5		
CO3			
SO4	7.7		
Cl	4.2		
NO3	7.4		

SECONDARY ELEMENTS

SiO2 [mg/L]	FeII [µg/L]	2.000	d.l.
O2 [mg/L]	Mn [µg/L]	3.000	d.l.
CO2 [mg/L]	T.O.C. [mg/L]		
NO2 [mg/L]	B.O.D. [mg/L]		
H2S [mg/L]	C.O.D. [mg/L]		

CHEMICAL INDEXES

SAR
 RSC [meq/L]
 Na % SSP

Remarks Bicarbonate calculated Data Quality

SATURATION INDEXES

Calcite
 Dolomite
 Aragonite
 Gypsum
 Anhydrite
 Halite
 Quartz
 Chalcedony
 Talc
 Fluorite

IONS RATIO

Ca/Mg
 Ca/SO4
 Mg/SO4
 Na/Cl
 (Na+K)/Cl

IONS BALANCE

∑ cations
 ∑ anions
 Balance [%]

PIPER CATIONS %

Ca [%]
 Mg [%]
 Na+K [%]

PIPER ANIONS %

HCO3+CO3 [%]
 SO4 [%]
 Cl [%]

PIPER WATER TYPE AND FACIES

KURLOV WATER TYPE

WATER QUALITY (CIVITA CLASSIFICATION)

Human Consumption Quality GR1
 Human Consumption GR2
 Agricultural Quality

MICROBIOLOGY

Lab Name Sample Code
 Analysis Date Analytical Method
 Instruments Note

Total Coliforms *
 Fecal Coliforms *
 Fecal Streptococci *
 Colony sum 20 °C **
 Colony sum 22 °C **
 Colony sum 36°C Agar **
 Colony sum 37 °C **
 Clostridi spores **

Clostridium Perfringens *
 Pathogens Enterobacteria
 Salmonella
 Pseudomonas Aeruginosa *
 Aeromonas Hydrophyla
 Pathogens Staphylococci
 Fungi
 * [UFC/100mL] ** [UFC/mL]

ISOTOPES

Lab Name UNIPD
 Sample Code Analysis Date
 Analytical Method
 Instruments
 Note

δ18O AND δ2H		OTHERS	
δ18O [‰] V-SMOW	-7.25	δ15N	
δ2H [‰] SMOW	-47.31	δ43S	
d		3H [UT]	
		87Sr/86Sr	

RADIOCARBON

δ13C
 δ13C-DIC [‰]
 14C-DIC [%-modern]

Uncorrected Age 14C
 Corrected Age 14C
 Correction Method

CONVERSION TOOLS

FILTERS

REMOVE ALL FILTERS

SOURCE
 SUBSOURCE
 GOV GIS
 PHYSIOGRAPHIC
 AQUIFER TYPE

QUERIES

ADD SCREENS LITHOLOGY
 CALCULATE HYDRO CHEMICAL PARAMETERS
 ALL OTHERS QUERIES
 CALCULATE sea level
 CREATE NEW QUERY
 UPDATE PATH

The Hydrogeological Geodatabase

WELLS

WELL ID **42509** PROJECT **ASTIS-GEP** MATCHING VERIFIED

LOCATION AND MAIN DATA OWNER AND USES DRILLING GEOLITHOLOGY SCREENS AND LITHOLOGY BIBLIOGRAPHY IMAGES AQUIFERS SURVEY

ID AQUIFER 43629 Rock/Alluvial Unknown Aquifer Type Unknown Aquifer Name Unknown Artesian Natural Discharge [L/s] Assignment

HYDROGEOLOGIC PUMPING TEST **HYDROCHEMICAL**

Sampling Date 03/07/2013 Source ARPA Code Weather Survey by Sampling Depth [m]
 Sampling Year 2013 Sub Source Project ASTIS-GEP Hydro Conditions Sampling Artesian Sampling Note

MAIN PARAMETERS CONTAMINANTS SCHELLER AND PIE DIAGRAM

IN SITU SURVEY

T Air [°C] pH 7.50 EC [µS/cm] 423.0 CO2 [mg/L]
 T Water [°C] 13.80 Eh [mV] O2 [mg/L] 8.8
 Instruments Note

LABORATORY DATA

Lab Name ARPA Sample Code
 Analysis Date Analytical Method
 Lab Note

PHYSICAL PARAMETERS

T [°C] pH 7.5 Eh [mV]
 Turbidity [NTU] 0.3 RF 180 °C
 TDS [mg/L] EC [µS/cm] 423.0
 Calc TDS [mg/L] 274.9
 TDS Difference as %
 Ratio EC/TDS EC/CalcTDS
 Mineral. Class
 TH [mg/L] 169.1 TH [°f] 16.91
 Hardness Class: POORLY HARD
 Alkalinity [mg/L] 161.1 Alkalinity [°f] 16.11
 Organoleptic_Character

MAJOR IONS CONC.

	[mg/L]	[meq/L]	[meq%]
Ca	51.9	2.5899	35.81
Mg	9.6	0.7900	10.92
Na	5.0	0.2175	3.01
K	0.6	0.0153	0.21
NH4	0.050	0.0028	0.04
HCO3	196.5	3.2196	44.51
CO3			
SO4	7.7	0.1603	2.22
Cl	4.2	0.1185	1.64
NO3	7.4	0.1193	1.65

SECONDARY ELEMENTS

SiO2 [mg/L]	Fell [µg/L]	2.000	d.l.
O2 [mg/L]	Mn [µg/L]	3.000	d.l.
CO2 [mg/L]	T.O.C. [mg/L]		
NO2 [mg/L]	B.O.D. [mg/L]		
H2S [mg/L]	C.O.D. [mg/L]		

CHEMICAL INDEXES

SAR	0.167
RSC [meq/L]	-0.160
Na % SSP	6.015

Remarks Bicarbonate calculated Data Quality High Quality (ions balar)

SATURATION INDEXES

Calcite
Dolomite
Aragonite
Gypsum
Anhydrite
Halite
Quartz
Chalcedony
Talc
Fluorite

IONS RATIO

Ca/Mg	3.28
Ca/SO4	16.16
Mg/SO4	4.93
Na/Cl	1.84
(Na+K)/Cl	1.97

IONS BALANCE

Σ cations	3.62
Σ anions	3.62
Balance [%]	-0.03

PIPER CATIONS %

Ca [%]	71.63
Mg [%]	21.85
Na+K [%]	6.44

PIPER ANIONS %

HCO3+CO3 [%]	89.00
SO4 [%]	4.43
Cl [%]	3.27

PIPER WATER TYPE AND FACIES

BICARBONATE-CALCIC

KURLOV WATER TYPE

Calcium Bicarbonate

WATER QUALITY (CIVITA CLASSIFICATION)

Human Consumption Quality GR1	A1
Human Consumption GR2	B2
Agricultural Quality	1a Quality

MICROBIOLOGY

Lab Name Sample Code
 Analysis Date Analytical Method
 Instruments Note

Total Coliforms * Clostridium Perfringens *
 Fecal Coliforms * Pathogens Enterobacteria
 Fecal Streptococci * Salmonella
 Colony sum 20 °C ** Pseudomonas Aeruginosa *
 Colony sum 22 °C ** Aeromonas Hydrophyla
 Colony sum 36°C Agar ** Pathogens Staphylococci
 Colony sum 37 °C ** Fungi
 Clostridi spores ** * [UFC/100mL] ** [UFC/mL]

ISOTOPES

Lab Name UNIPD
 Sample Code Analysis Date
 Analytical Method
 Instruments
 Note

δ18O AND δ2H

δ18O [‰] V-SMOW	-7.25	δ15N	
δ2H [‰] SMOW	-47.31	δ43S	
d		3H [UT]	
		87Sr/86Sr	

OTHERS

RADIOCARBON

δ13C	Uncorrected Age 14C	
δ13C-DIC [‰]	Corrected Age 14C	
14C-DIC [%-modern]	Correction Method	

CONVERSION TOOLS

FILTERS

REMOVE ALL FILTERS

SOURCE

SUBSOURCE

GOV GIS

PHYSIOGRAPHIC

AQUIFER TYPE

QUERIES

ADD SCREENS LITHOLOGY

CALCULATE HYDRO CHEMICAL PARAMETERS

ALL OTHERS QUERIES

CALCULATE sea level

CREATE NEW QUERY

UPDATE PATH

The Hydrogeological Geodatabase

WELLS

WELL ID **42509**
PROJECT **ASTIS-GEP**
MATCHING
VERIFIED

LOCATION AND MAIN DATA
OWNER AND USES
DRILLING
GEOLITHOLOGY
SCREENS AND LITHOLOGY
BIBLIOGRAPHY
IMAGES
AQUIFERS SURVEY

ID AQUIFER **43629**
Rock/Alluvial
Unknown
Aquifer Type
Unknown
Aquifer Name
Unknown
Artesian
Natural Discharge [L/s]
Assignment

HYDROGEOLOGIC
PUMPING TEST
HYDROCHEMICAL

Sampling Date **03/07/2013**
Source **ARPA**
Code
Weather
Survey by
Sampling Depth [m]

Sampling Year **2013**
Sub Source
Project **ASTIS-GEP**
Hydro Conditions
Sampling **Artesian**
Sampling Note

MAIN PARAMETERS
CONTAMINANTS
SCHOELLER AND PIE DIAGRAM

SCHOELLER DIAGRAM (mod.) [meq/l]

Ion	Concentration [meq/l]
Ca	~2.5
Mg	~0.8
Na	~0.2
Cl	~0.12
SO4	~0.15
HCO3	~3.0
NO3	~1.5

PIE DIAGRAM [meq/l]

Ion	Percentage
Ca	36%
Mg	11%
Na	3%
Cl	2%
SO4	2%
NO3	2%
HCO3	44%
NH4	0%
K	0%
CO3	0%

Record: 1 di 2

Record: 1 di 1

Record: 1 di 1 (Filtrati)

CONVERSION TOOLS

FILTERS

REMOVE ALL FILTERS

SOURCE

SUBSOURCE

GOV GIS

PHYSIOGRAPHIC

AQUIFER TYPE

QUERIES

ADD SCREENS LITHOLOGY

CALCULATE HYDRO CHEMICAL PARAMETERS

ALL OTHERS QUERIES

CALCULATE sea level

CREATE NEW QUERY

UPDATE PATH

The Hydrogeological Geodatabase

WELLS

WELL ID **42509** PROJECT **ASTIS-GEP** MATCHING VERIFIED

LOCATION AND MAIN DATA OWNER AND USES DRILLING GEOLITHOLOGY SCREENS AND LITHOLOGY BIBLIOGRAPHY IMAGES AQUIFERS SURVEY

ID AQUIFER 43629 Rock/Alluvial Unknown Aquifer Type Unknown Aquifer Name Unknown Artesian Natural Discharge [L/s] Assignment

HYDROGEOLOGIC PUMPING TEST HYDROCHEMICAL

Sampling Date 03/07/2013 Source ARPA Code Weather Survey by Sampling Depth [m]
 Sampling Year 2013 Sub Source Project ASTIS-GEP Hydro Conditions Sampling Artesian Sampling Note

MAIN PARAMETERS CONTAMINANTS SCHOELLER AND PIE DIAGRAM

LABORATORY DATA			
Analysis Date	Sample Lab Code		
Laboratory Name	ARPA		
Instruments			

OTHERS MINOR COMPONENTS			
B [µg/L]	I.d.	F [µg/L]	100.00 I.d.
Ba [µg/L]	I.d.	PO4 [µg/L]	12.00 I.d.
Br [µg/L]	I.d.	P2O5 [µg/L]	I.d.
CN [µg/L]	I.d.	Sr [µg/L]	89.00 I.d.

METALS			
Ag [µg/L]	I.d.	Hg [µg/L]	I.d.
Al [µg/L]	I.d.	Ni [µg/L]	2.00 I.d.
As [µg/L]	I.d.	Pb [µg/L]	3.00 I.d.
Be [µg/L]	I.d.	Rb [µg/L]	I.d.
Cd [µg/L]	0.10 I.d.	Sb [µg/L]	I.d.
Cr VI [µg/L]	I.d.	Se [µg/L]	I.d.
Cr tot [µg/L]	2.00 I.d.	Tl [µg/L]	I.d.
Co [µg/L]	I.d.	V [µg/L]	I.d.
Cu [µg/L]	6.00 I.d.	Zn [µg/L]	2.00 I.d.

PESTICIDES	
Metolachlor [µg/L]	Chloridazon [µg/L]
Pendimetalin [µg/L]	Lenacil [µg/L]
Propazine [µg/L]	Metribuzin [µg/L]
Diuron [µg/L]	Linuron [µg/L]

PESTICIDES	
Alachlor [µg/L]	
Aldrin [µg/L]	
Atrazine [µg/L]	
Simazine [µg/L]	0.02
Terbutylazine [µg/L]	
Cyanazine [µg/L]	
Desethylatrazine [µg/L]	
Desisopropylatrazine [µg/L]	
Desetilterbutylazine [µg/L]	
Alfa-esachlorhexane [µg/L]	
Beta-esachlorhexane [µg/L]	
Gamma-esachlorhexane [µg/L]	
Chlordane [µg/L]	
DDD, DDT, DDE [µg/L]	
Dieldrin [µg/L]	
Endrin [µg/L]	
Pesticides Sumi [µg/L]	
PCDD and PCDF Sum [µg/L]	
PCB [µg/L]	
Acrylamide [µg/L]	
n-hexane [µg/L]	
Paraphthalic Acid [µg/L]	
Asbestos [µg/L]	
Bromacile [µg/L]	
Terbutrine [µg/L]	

ORGANIC COMPOUNDS			
Benzene [µg/L]		Hexachlorobutadiene [µg/L]	
Ethylbenzene [µg/L]		1,1 Dichloroethane [µg/L]	
Styrene [µg/L]		1,2 Dichloroethylene [µg/L]	
Toluene [µg/L]		Tribromomethane [µg/L]	
Para-xylene [µg/L]		1,2 Dibromoethane [µg/L]	
Benzo (a) anthracene [µg/L]		Dibromochloromethane [µg/L]	
Benzo(a)pyrene [µg/L]		Bromodichloromethane [µg/L]	
Benzo(b)fluoranthene [µg/L]		Nitrobenzene [µg/L]	
Benzo(k)fluoranthene [µg/L]		1,2 Dinitrobenzene [µg/L]	
Benzo(g,h,i)perylene [µg/L]		1,3 Dinitrobenzene [µg/L]	
Chrysene [µg/L]		Chloronitrobenze [µg/L]	
Dibenzo(a,h)anthracene [µg/L]		MonoChlorobenzene [µg/L]	
Indenopyrene [µg/L]		1,2 Dichlorobenzene [µg/L]	
Pyrene [µg/L]		1,3 Dichlorobenzene [µg/L]	
Chloromethane [µg/L]		1,2,4 Trichlorobenzene [µg/L]	
Trichloromethane [µg/L]	0.10	1,2,4,5 Tetrachlorobenzene [µg/L]	
Vinyl Chloride [µg/L]		Pentachlorobenzene [µg/L]	
1,2 Dichloroethane [µg/L]		Esachlorobenzene [µg/L]	
1,1 Dichloroethylene [µg/L]		2 Chlorophenol [µg/L]	
1,2 Chloropropane [µg/L]		2,4 Dichlorophenol [µg/L]	
1,1,1 Trichloroethane [µg/L]		2,4,6 TriChlorophenol [µg/L]	
Trichloroethylene [µg/L]	0.10	PentaChlorophenol [µg/L]	
1,2,3 Trichloropropane [µg/L]		Aniline [µg/L]	
1,1,2,2 Tetrachloroethane [µg/L]		Diphenylamine [µg/L]	
Tetrachloroethylene (PCE) [µg/L]	0.10	p-Toluidine [µg/L]	
Chloroform [µg/L]		Methylenechloride [µg/L]	

Record: 1 di 2

Record: 1 di 1

Record: 1 di 1 (Filtrati)

CONVERSION TOOLS

FILTERS

REMOVE ALL FILTERS

SOURCE

SUBSOURCE

GOV GIS

PHYSIOGRAPHIC

AQUIFER TYPE

QUERIES

ADD SCREENS LITHOLOGY

CALCULATE HYDRO CHEMICAL PARAMETERS

ALL OTHERS QUERIES

CALCULATE sea level

CREATE NEW QUERY

UPDATE PATH

The Hydrogeological Geodatabase

WELLS


WELL ID **52159** PROJECT MATCHING VERIFIED Yes

LOCATION AND MAIN DATA | OWNER AND USES | DRILLING | GEOLITHOLOGY | SCREENS AND LITHOLOGY | BIBLIOGRAPHY | IMAGES | AQUIFERS SURVEY

Author	Pietro Benedetti dott. geol.	Pages	22
Title	Relazione geologica per la realizzazione di un pozzo per uso potabile presso l'acquedotto Farra d'Isonzo		
Editor	<input type="text"/>	ISBN	<input type="text"/>
Year	2007		
Cataloging	<input type="text"/>		
Biblio Code	<input type="text"/>	Note	<input type="text"/>
Doc Name	RELAZIONE GEOLOGICA GIUGNO 2007 IRIS ACQUA FARRA ISONZO.pdf		
Doc Path	D:\INTERREG\INTERREG GIS\GIS\GDB\ANNEX\ANNEX DOCS\WELLS\RELAZIONE GEOLOGICA GIUGNO 2007 IRIS ACQUA FARRA ISONZO.pdf		
* Author	<input type="text"/>	Pages	<input type="text"/>
Title	<input type="text"/>		
Editor	<input type="text"/>	ISBN	<input type="text"/>
Year	<input type="text"/>		
Cataloging	<input type="text"/>		
Biblio Code	<input type="text"/>	Note	<input type="text"/>
Doc Name	<input type="text"/>		
Doc Path	<input type="text"/>		

Record: 1 di 1 (Filtrati)

CONVERSION TOOLS

 POMA

FILTERS

REMOVE ALL FILTERS

SOURCE

SUBSOURCE

GOV GIS

PHYSIOGRAPHIC

AQUIFER TYPE

QUERIES

ADD SCREENS LITHOLOGY



CALCULATE HYDRO CHEMICAL PARAMETERS

ALL OTHERS QUERIES

CALCULATE sea level

CREATE NEW QUERY

UPDATE PATH

The Hydrogeological Geodatabase

The screenshot displays the 'WELLS' application interface. At the top, the 'WELL ID' is 52159 and the 'PROJECT' is 'MATCHING'. The 'VERIFIED' status is 'Yes'. The interface is divided into several sections:

- LOCATION AND MAIN DATA:** Contains fields for Author (Pietro Benedetti dott. geol.), Title (Relazione geologica per la realizzazione di un...), Editor, Cataloging, Biblio Code, Doc Name (RELAZIONE GEOLOGICA GIUGNO 2007 IRIS ACC...), and Doc Path (D:\INTERREG\INTERREG GIS\GIS\GDB\ANNEX...).
- OWNER AND USES:** Contains fields for Author, Title, Editor, Cataloging, Biblio Code, Doc Name, and Doc Path.
- DRILLING, GEOLITHOLOGY, SCREENS AND LITHOLOGY, BIBLIOGRAPHY, IMAGES, ACQUIFERS SURVEY:** These are tabs for different data categories.
- CONVERSION TOOLS:** A section on the right with a 'POMA' logo.
- FILTERS:** A section on the right with options to 'REMOVE ALL FILTERS' and dropdown menus for 'SOURCE', 'SUBSOURCE', 'GOV GIS', 'PHYSIOGRAPHIC', and 'AQUIFER TYPE'.
- QUERIES:** A section on the right with buttons for 'ADD SCREENS LITHOLOGY', 'CALCULATE HYDRO CHEMICAL PARAMETERS', 'ALL OTHERS QUERIES', 'CALCULATE sea level', 'CREATE NEW QUERY', and 'UPDATE PATH'.

The central part of the interface shows a PDF document viewer displaying a geological report. The document is titled 'Regione Autonoma Friuli Venezia Giulia Provincia Gorizia Comune Farra d'Isonzo' and is committed by 'IRISACQUA'. The report is dated '20 GIU. 2007' and includes a stamp from the 'REGIONE DEL GIUGNO'.

The Hydrogeological Geodatabase

WELLS


WELL ID: 46649 PROJECT: ASTIS-GEP MATCHING VERIFIED

LOCATION AND MAIN DATA OWNER AND USES DRILLING GEOLITHOLOGY SCREENS AND LITHOLOGY BIBLIOGRAPHY IMAGES AQUIFERS SURVEY

Image Type: Photo Author: Enrico Zavagno Note: |

Image Name: 46649_0079_peci.jpg

Image Path: D:\INTERREG\INTERREG GIS\GIS\GDB\ANNEX\ANNEX IMAGES\WELLS\46649_0079_peci.jpg



Record: 1 di 2

Record: 1 di 1 (Filtrati)

CONVERSION TOOLS

POMA

FILTERS

REMOVE ALL FILTERS

SOURCE

SUBSOURCE

GOV GIS

PHYSIOGRAPHIC

AQUIFER TYPE

QUERIES

ADD SCREENS LITHOLOGY

CALCULATE HYDRO CHEMICAL PARAMETERS

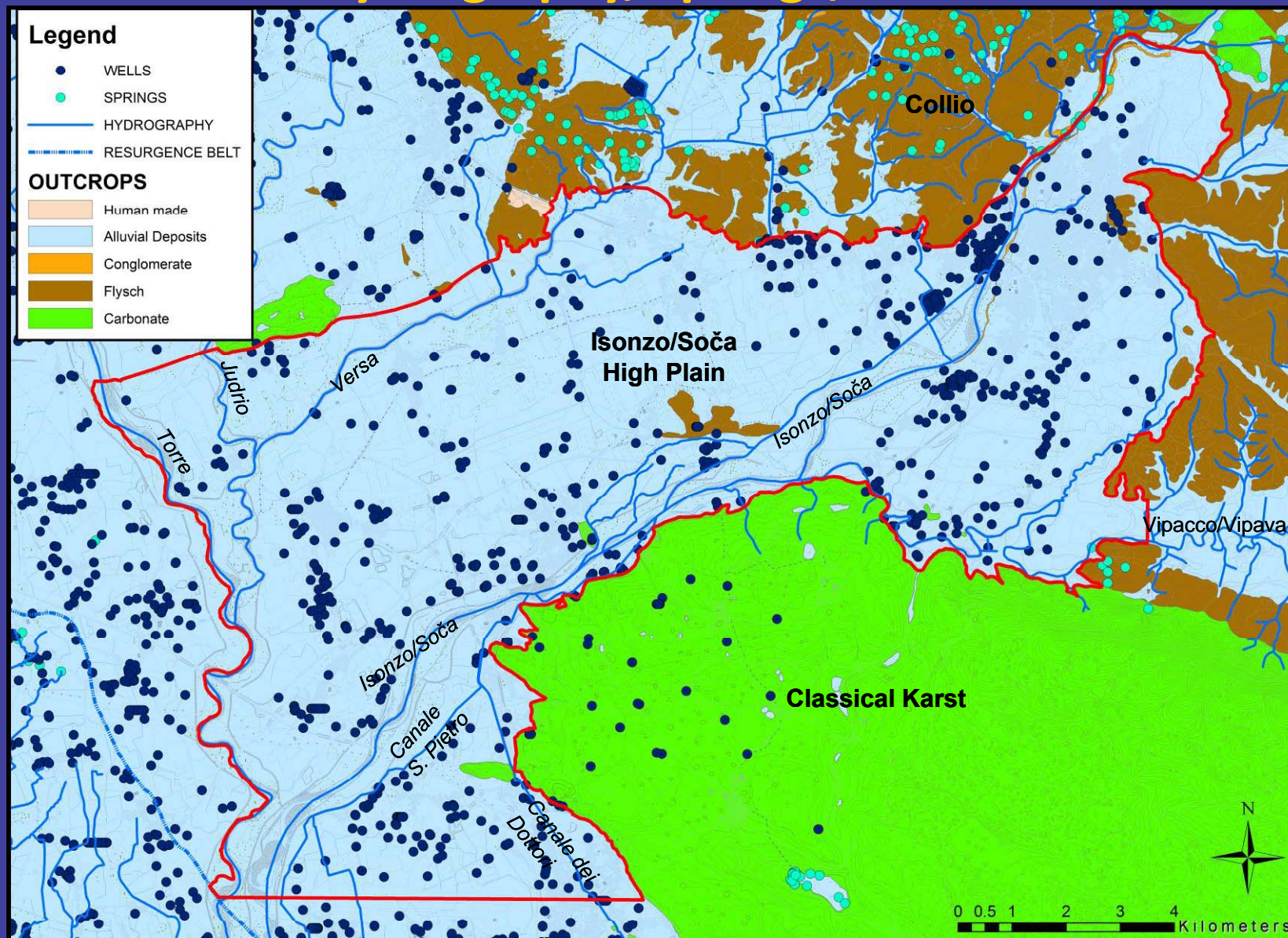
ALL OTHERS QUERIES

CALCULATE sea level

CREATE NEW QUERY

UPDATE PATH

Hydrography, Springs, Wells



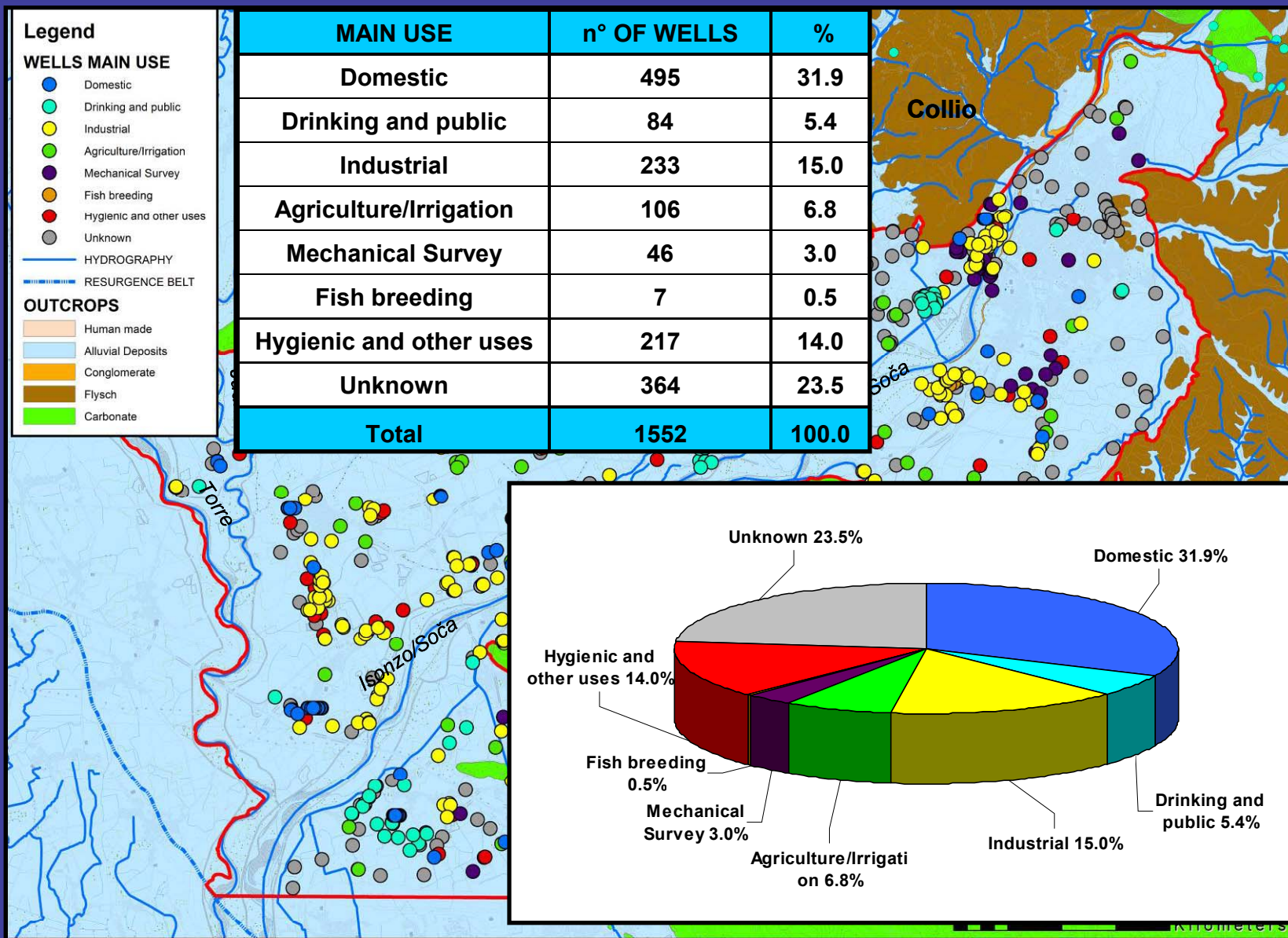
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Wells main uses



VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Hydrochemical Analysis: 243 analysis, 40 monitoring points

WELL_ID	n° of analysis	From Year	To Year	EC	TDS	Ca	Mg	Na	K	HCO3	SO4	Cl	NO3
42519	1	2012	2012	668.00	530.83	103.70	16.78	5.35	2.31	378.60	16.84	9.58	16.99
42739	2	2012	2013	568.50	459.11	83.57	18.36	7.08	1.85	334.50	9.57	6.03	10.27
42777	1	2012	2012	407.00	313.98	61.55	10.12	2.45	0.86	228.95	7.30	3.60	6.20
42790	1	2012	2012	325.00	266.92	52.25	8.68	1.80	0.60	181.27	16.83	6.09	16.40
42813	1	2012	2012	370.00	369.04	69.55	13.23	7.80	3.30	268.02	7.99	2.46	3.39
46575	1	2012	2012	547.00	389.52	70.65	16.19	5.55	1.11	288.62	6.13	2.37	3.97
46591	2	2012	2013	750.00	546.70	93.54	25.01	7.42	1.47	394.06	12.87	13.80	16.29
46626	1	2012	2012	620.00	361.93	60.65	16.98	7.53	2.90	251.58	14.45	10.75	17.01
46627	1	2012	2012		316.27	60.95	11.19	1.79	0.74	234.73	5.54	2.07	3.20
46743	1	2012	2012	600.00	421.51	76.55	17.39	6.05	3.70	310.06	8.12	3.35	5.29
46756	1	2012	2012	330.00	302.90	58.45	10.36	2.49	0.75	219.73	8.08	3.80	5.23
51966	14	2002	2013	453.84	348.80	67.23	16.35	6.00	2.16	237.05	15.06	7.11	16.13
52001	11	2003	2013	358.00	266.25	52.25	11.44	3.00	0.95	186.19	9.53	3.84	7.70
52022	6	1996	1998	446.42	326.57	60.07	13.20	13.35	1.05	209.28	14.17	16.50	10.55
52772	10	2001	2013	453.92	351.03	70.54	16.13	2.37	0.81	248.69	10.55	3.99	19.62
53179	12	1996	2013	406.39	308.01	54.68	13.41	10.16	0.88	203.25	11.40	15.12	7.53
54529	4	2011	2013	393.68	329.54	59.05	13.80	5.15	0.93	238.87	8.05	4.63	7.95
54765	14	2001	2013	283.73	224.13	43.98	9.56	3.00	0.74	157.36	7.17	3.56	4.84
58484	12	1996	2006	651.15	530.03	101.76	20.65	5.27	2.32	374.69	18.10	9.57	26.27
58486	10	1996	2005	461.53	373.05	66.17	17.55	3.16	1.17	269.50	11.60	5.07	15.31
58576	6	1996	1998	380.08	282.50	53.97	12.75	7.08	0.78	186.97	11.38	10.35	7.10
58578	4	1996	1998	315.96	244.95	46.83	10.78	4.00	0.75	168.45	8.98	5.93	4.75
58674	27	1997	2011	662.54	541.89	106.66	21.24	4.34	1.47	383.52	18.08	8.04	26.86
58681	17	2001	2013	711.82	535.52	112.77	21.64	3.69	1.08	372.26	18.34	8.02	34.87
58684	4	2004	2006	406.32	291.66	62.88	13.75	2.89	1.37	198.50	9.30	4.35	12.40
58692	17	2001	2013	327.04	248.55	50.05	10.36	2.81	0.84	176.15	6.50	3.12	5.80
58699	3	2003	2005	288.62	206.03	44.53	9.00	2.00	0.57	140.33	7.37	2.80	5.17
58778	8	2003	2006	713.14	567.43	108.66	23.44	4.38	0.78	401.75	13.26	15.94	31.55
58949	3	2012	2013	551.00	324.31	65.72	8.57	3.52	0.49	224.86	14.38	7.26	33.10
58956	13	2007	2013	665.87	509.81	96.25	19.89	6.16	2.11	359.81	19.33	8.37	26.92
58957	2	2013	2013	714.50	405.21	65.40	15.22	17.68	4.24	242.05	26.38	38.49	46.85
58958	14	2007	2013	612.46	467.82	94.12	14.69	5.42	2.13	333.20	13.54	6.84	29.58
58959	3	2012	2013	623.50	349.84	62.27	15.08	4.74	1.35	251.00	11.29	5.46	31.88
58960	2	2013	2013	631.00	314.84	65.04	7.07	4.89	0.93	218.19	12.08	7.58	21.50
58961	3	2012	2013	263.00	309.36	61.88	8.20	8.28	7.24	224.10	4.33	2.57	3.60
58962	3	2012	2013	742.00	544.76	105.48	13.29	16.56	33.84	356.93	24.36	28.15	20.41
58963	1	2012	2012		592.90	124.40	13.02	9.31	19.19	433.67	8.26	4.24	6.48
58964	3	2012	2013	545.50	495.49	104.20	7.67	17.92	7.50	335.47	15.98	14.25	15.25
58965	3	2012	2013	463.50	383.38	79.17	8.69	10.59	12.35	263.15	16.95	4.83	28.98
59334	1	2012	2012		207.92	27.14	13.95	13.61	4.47	145.18	5.91	2.14	4.19

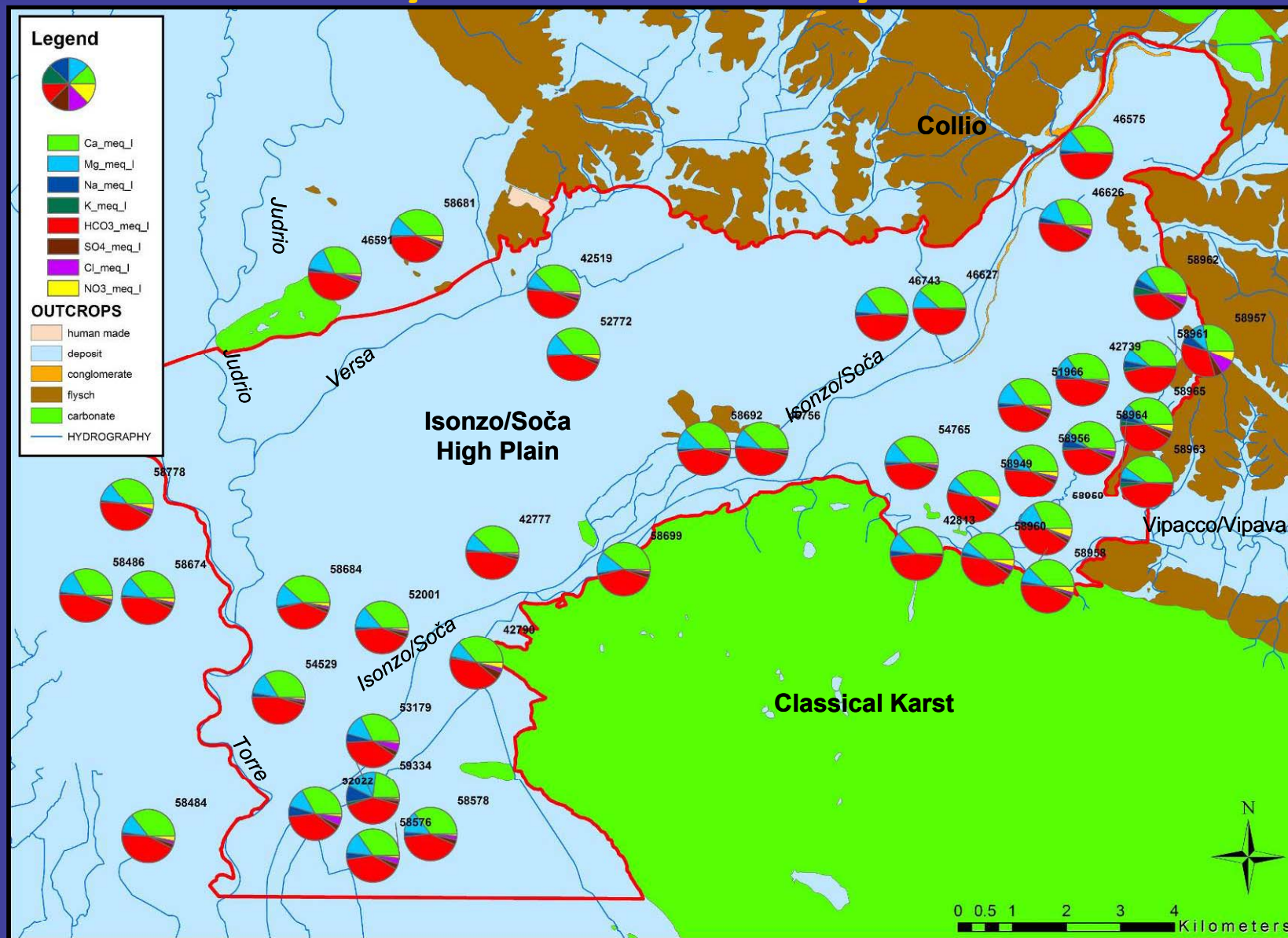
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Hydrochemical Analysis



VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

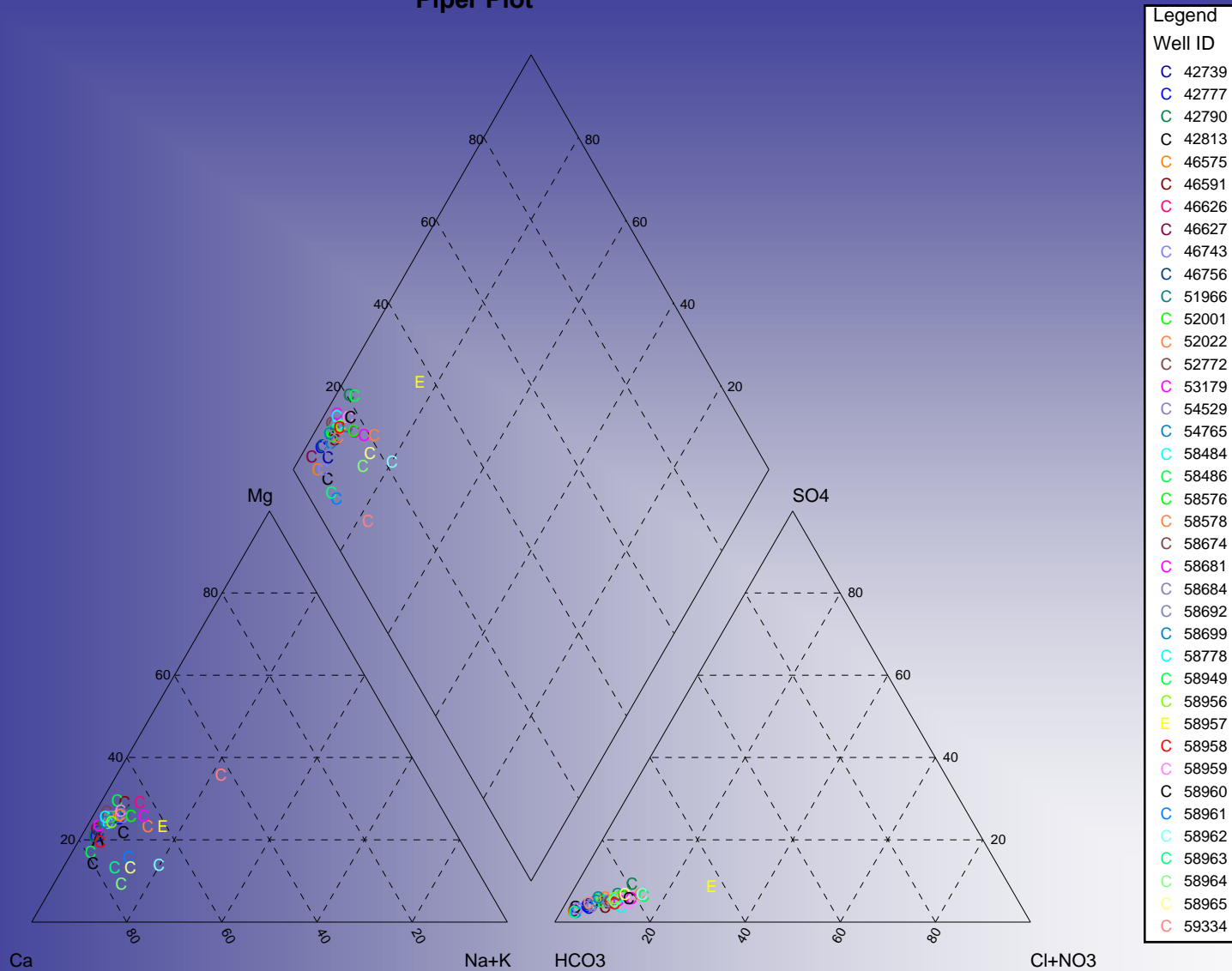
Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Hydrochemical Analysis: Piper diagram

Piper Plot



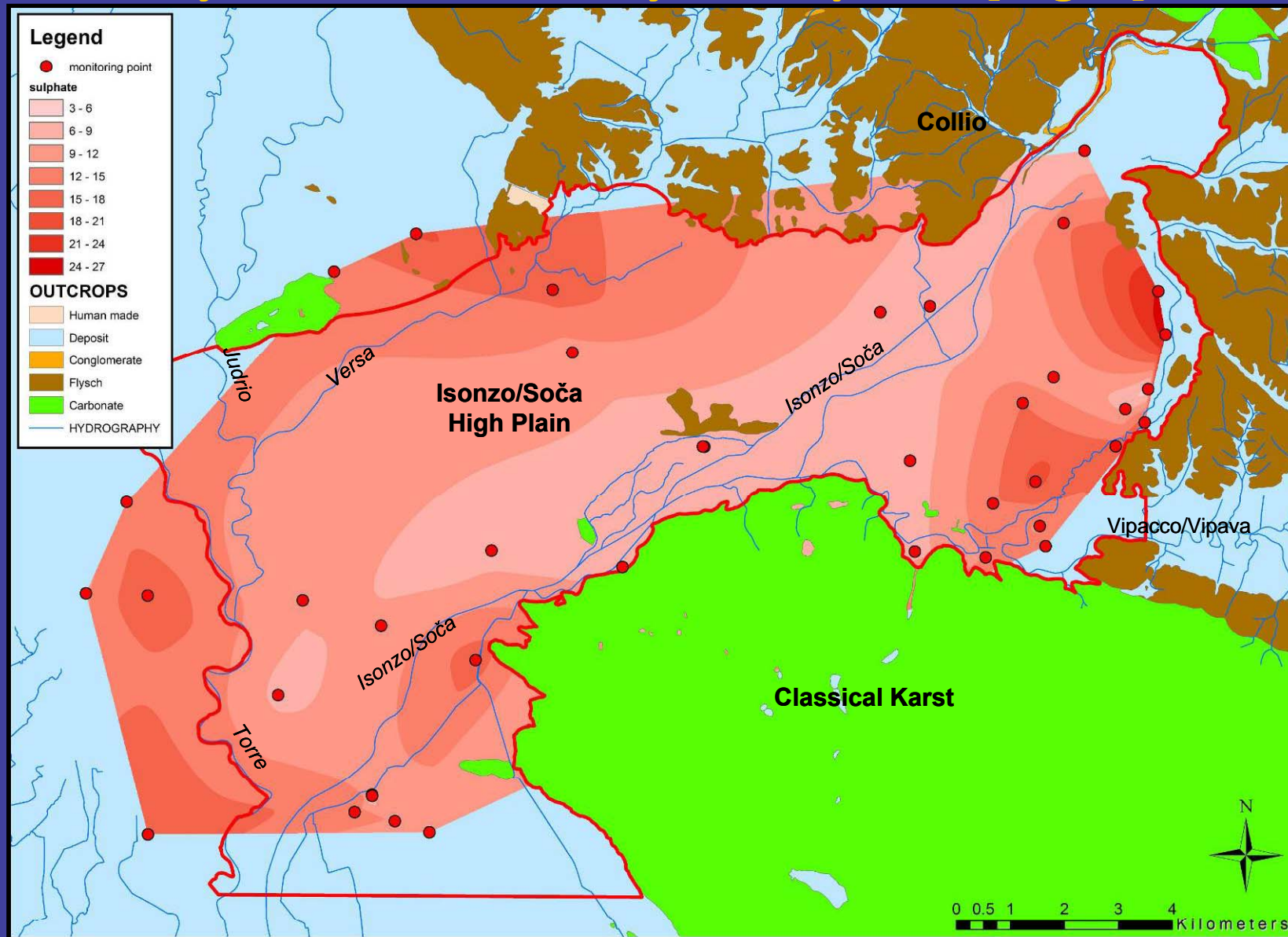
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Hydrochemical Analysis: sulphate [mg/L]



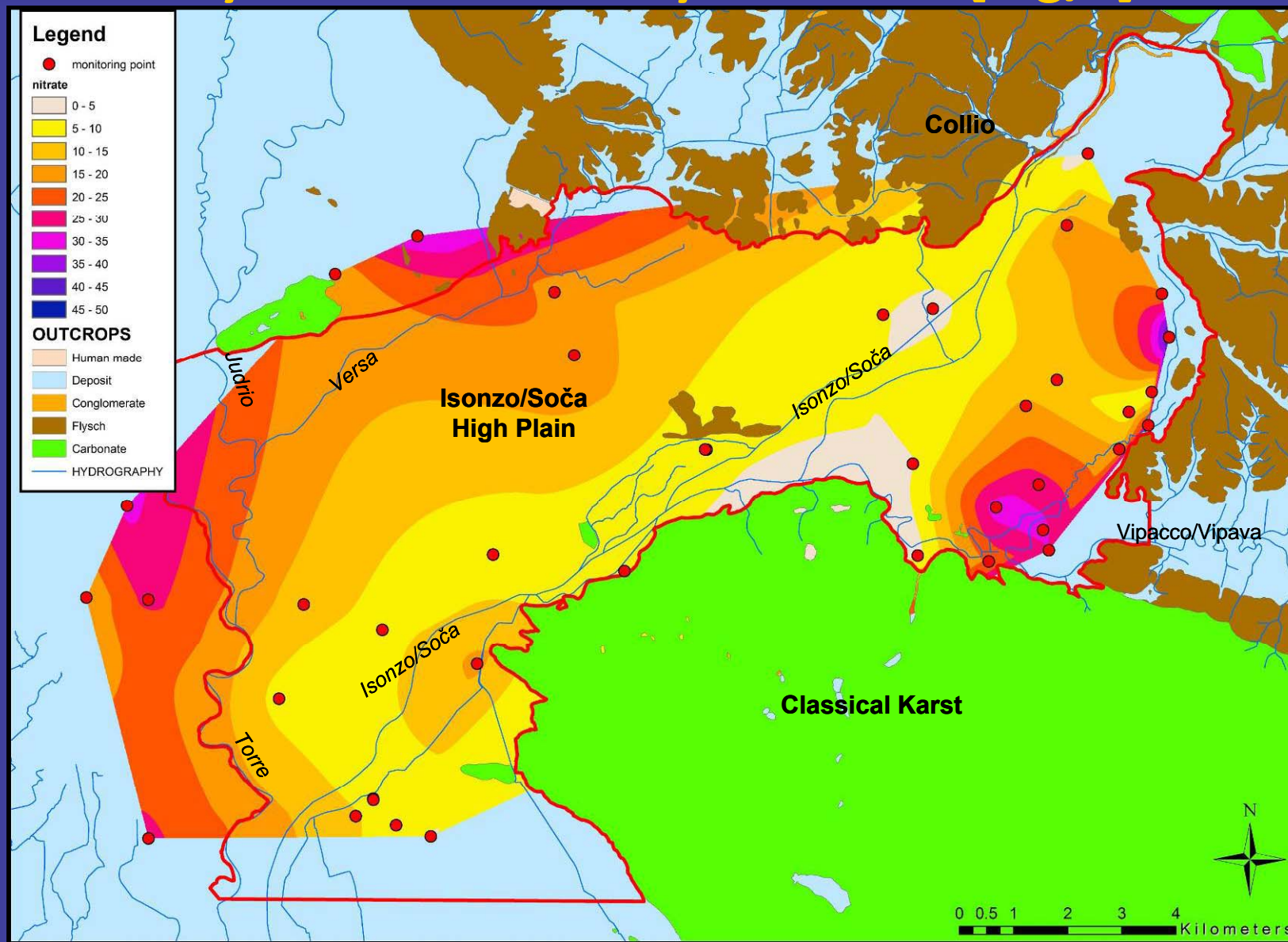
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Hydrochemical Analysis: nitrate [mg/L]



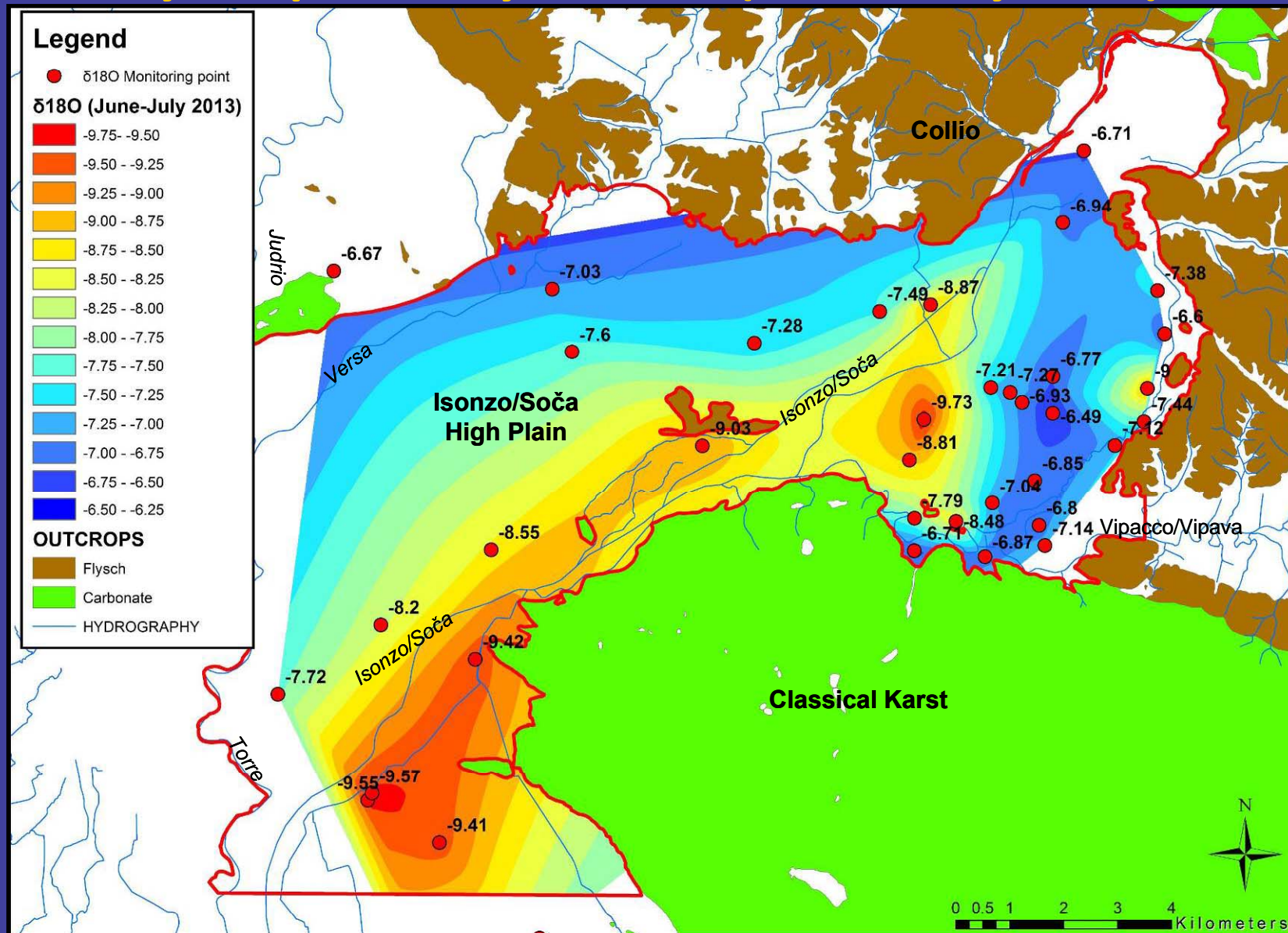
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Hysotopes Analysis: $\delta^{18}\text{O}$ (June – July 2013)



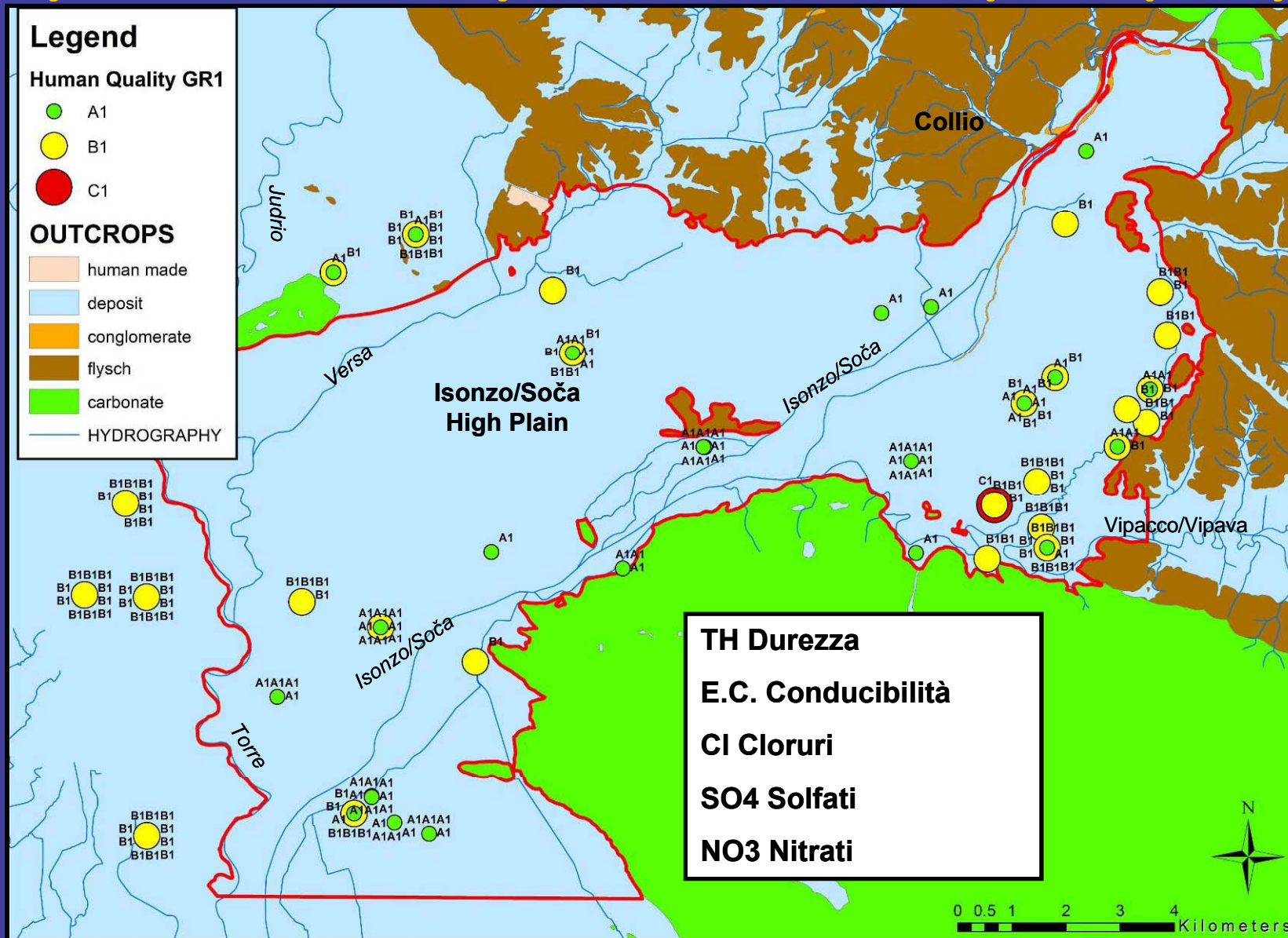
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / *VODE SOŠKEGA ALUVIJA*

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Hydrochemical Analysis: human consumption quality



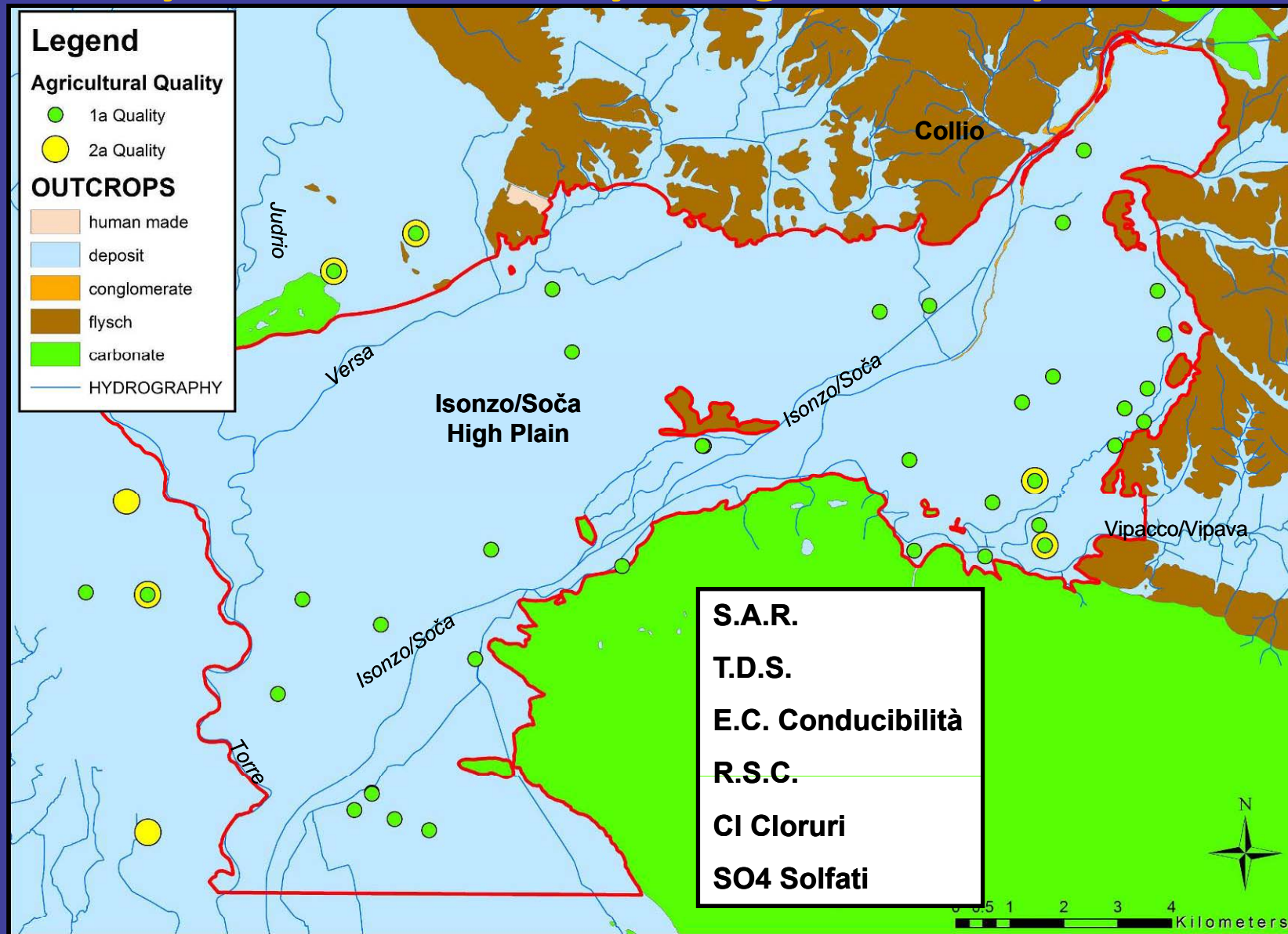
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



Hydrochemical Analysis: agricultural quality



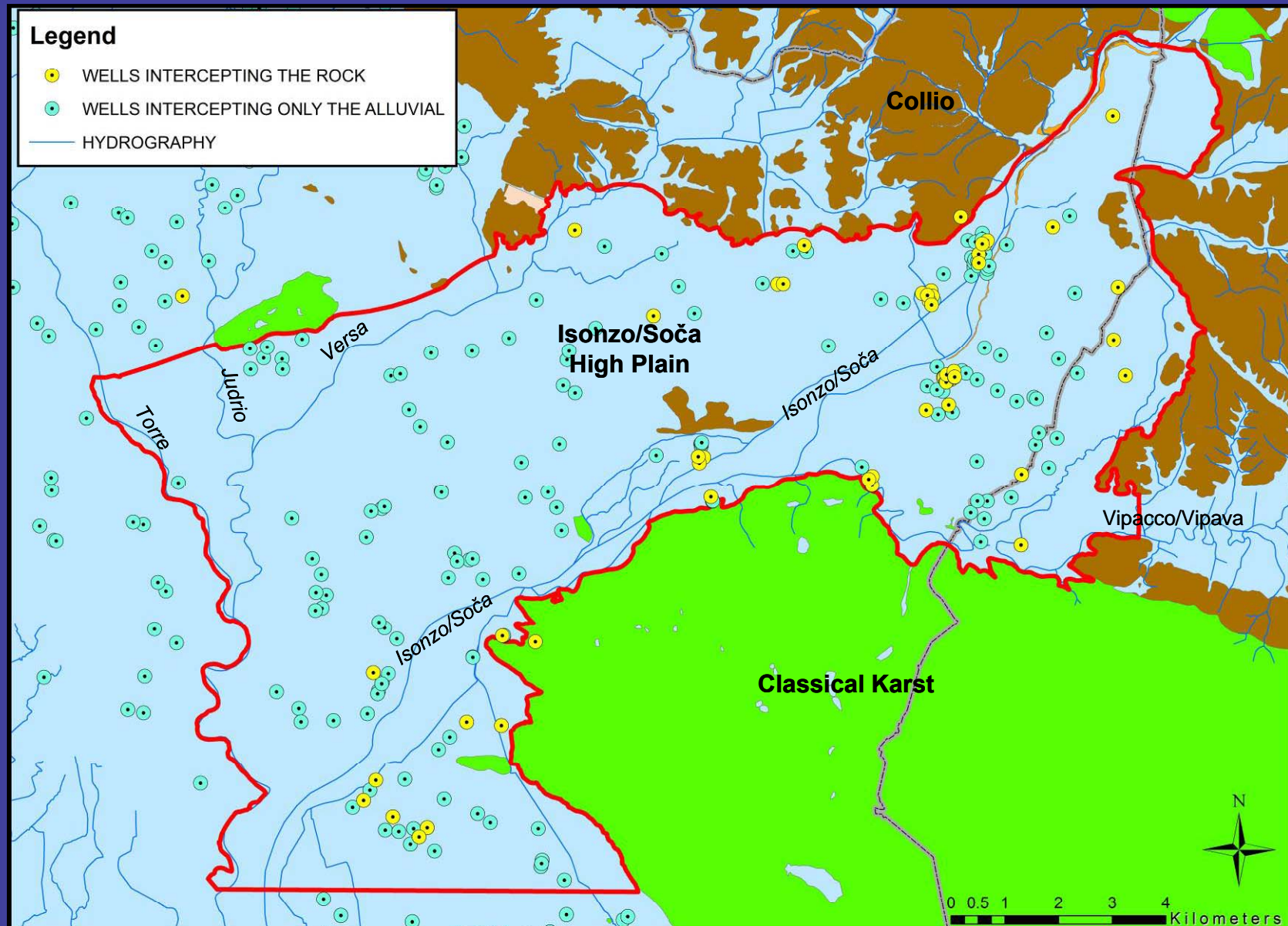
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



ISOBATHS AND BEDROCKS RECONSTRUCTION: WELLS DATA



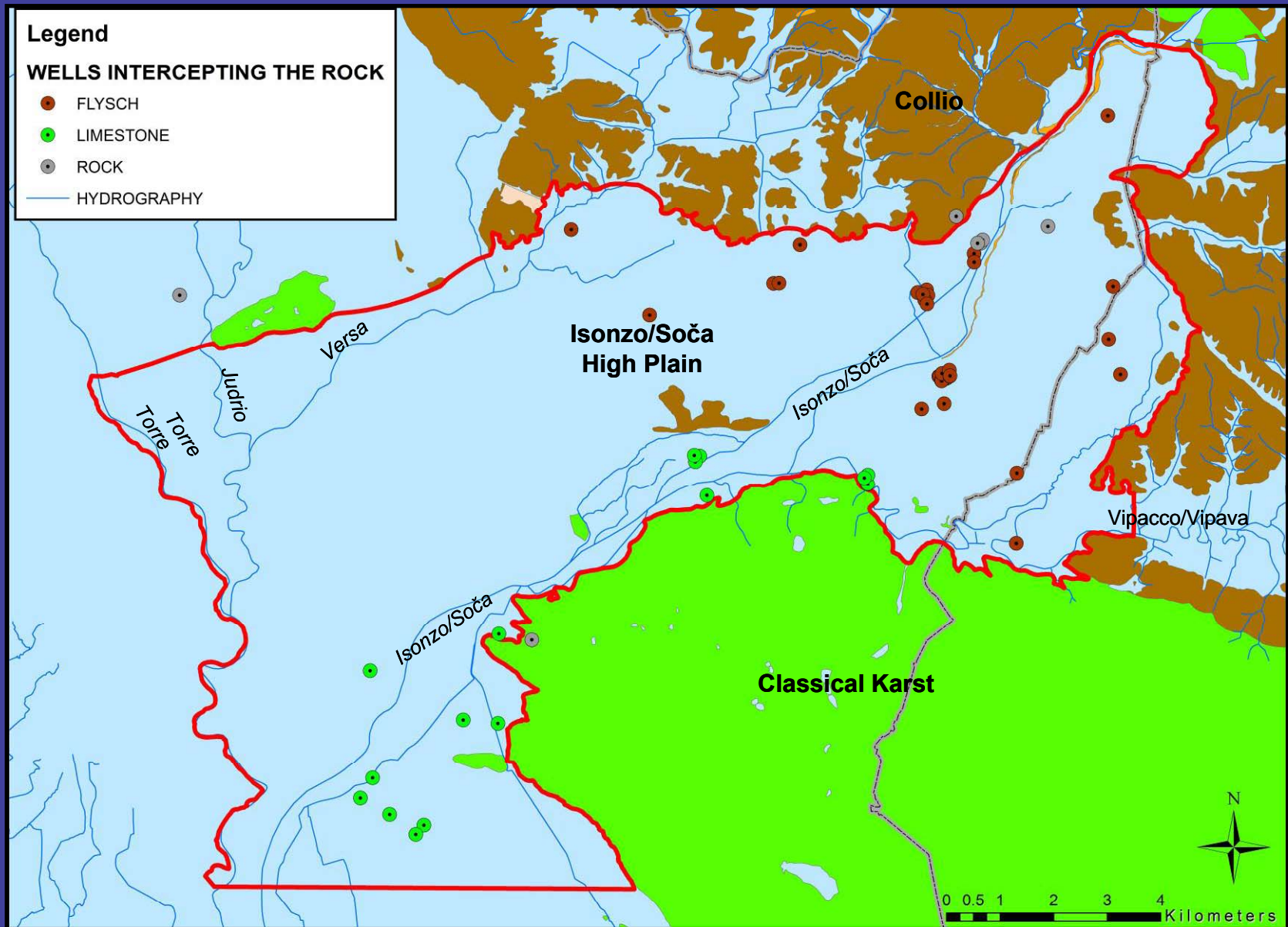
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



ISOBATHS AND BEDROCKS RECONSTRUCTION: WELLS DATA



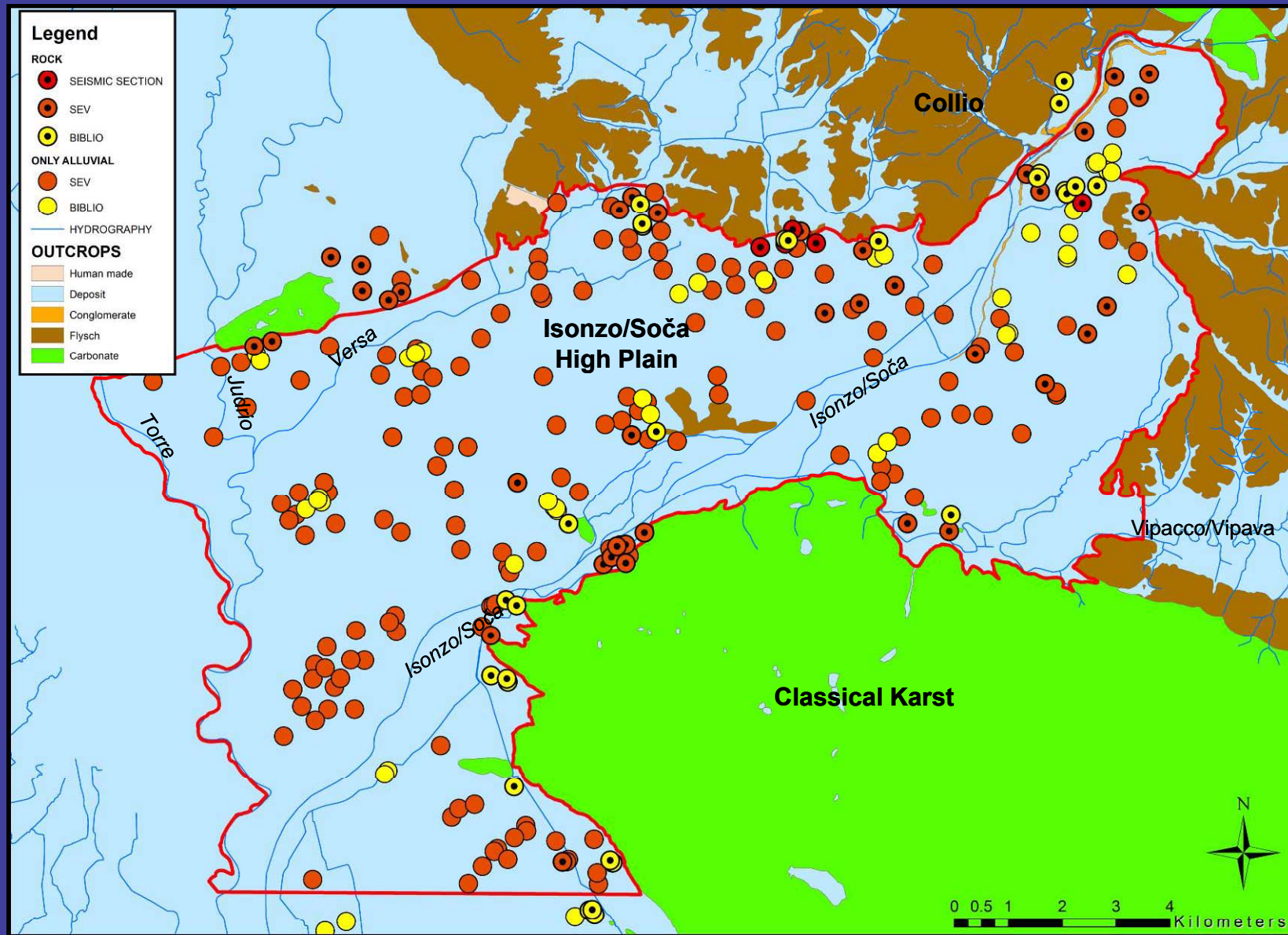
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



ISOBATHS AND BEDROCKS RECONSTRUCTION: GEOPHYSICAL DATA



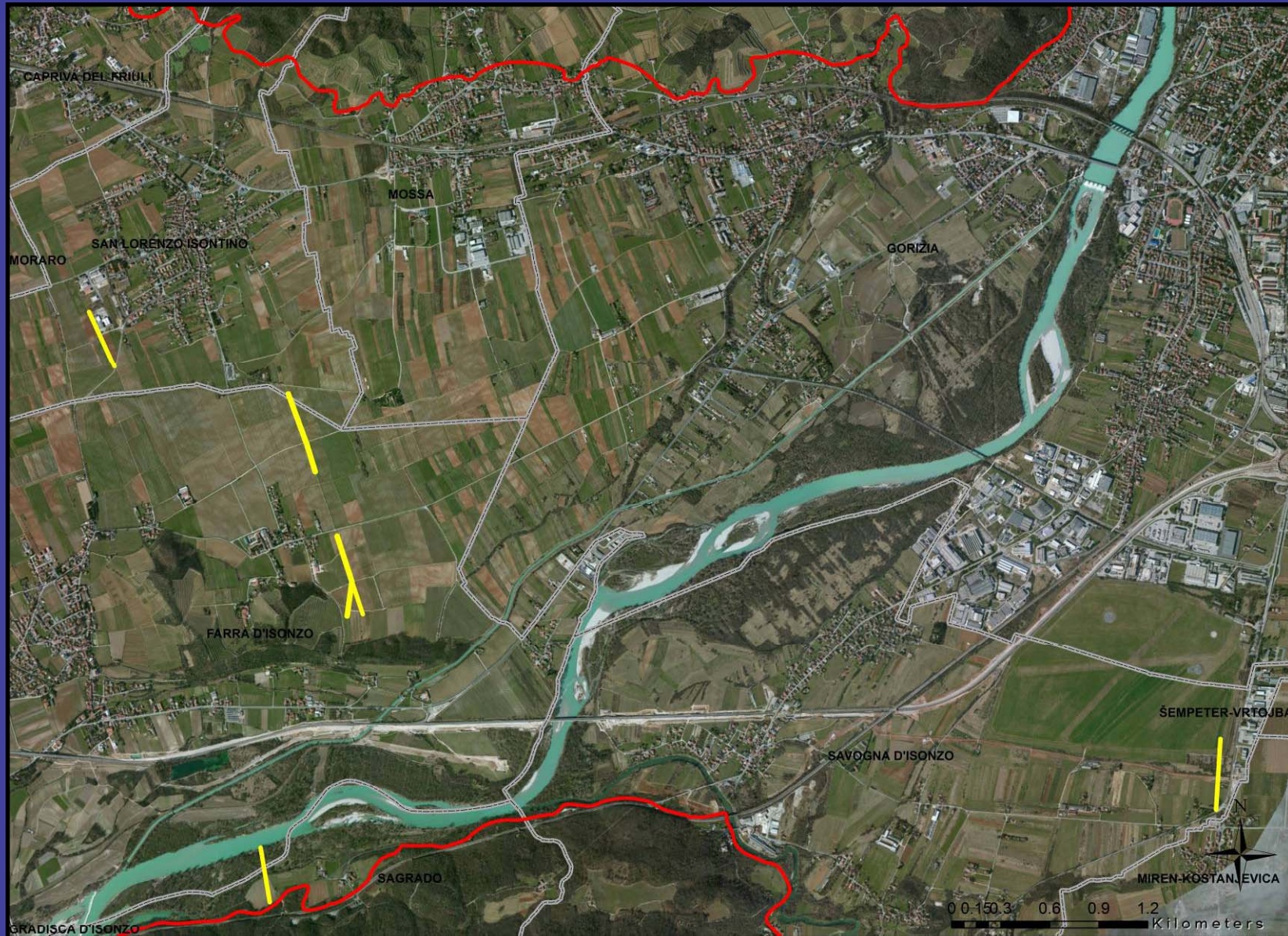
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / *VODE SOŠKEGA ALUVIJA*

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



ISOBATHS AND BEDROCKS RECONSTRUCTION: GEOPHYSICAL DATA



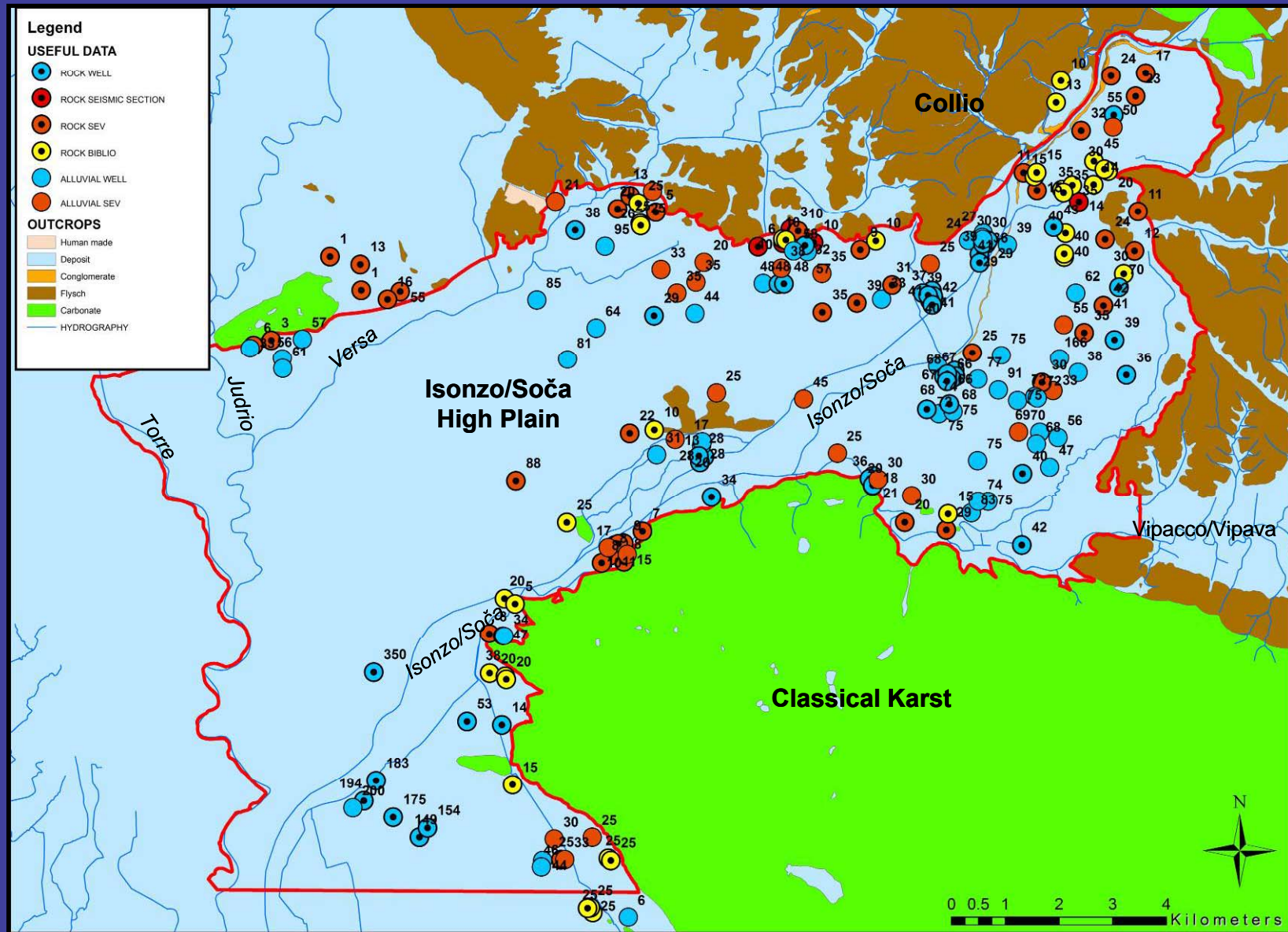
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



ISOBATHS AND BEDROCKS RECONSTRUCTION: USEFUL DATA



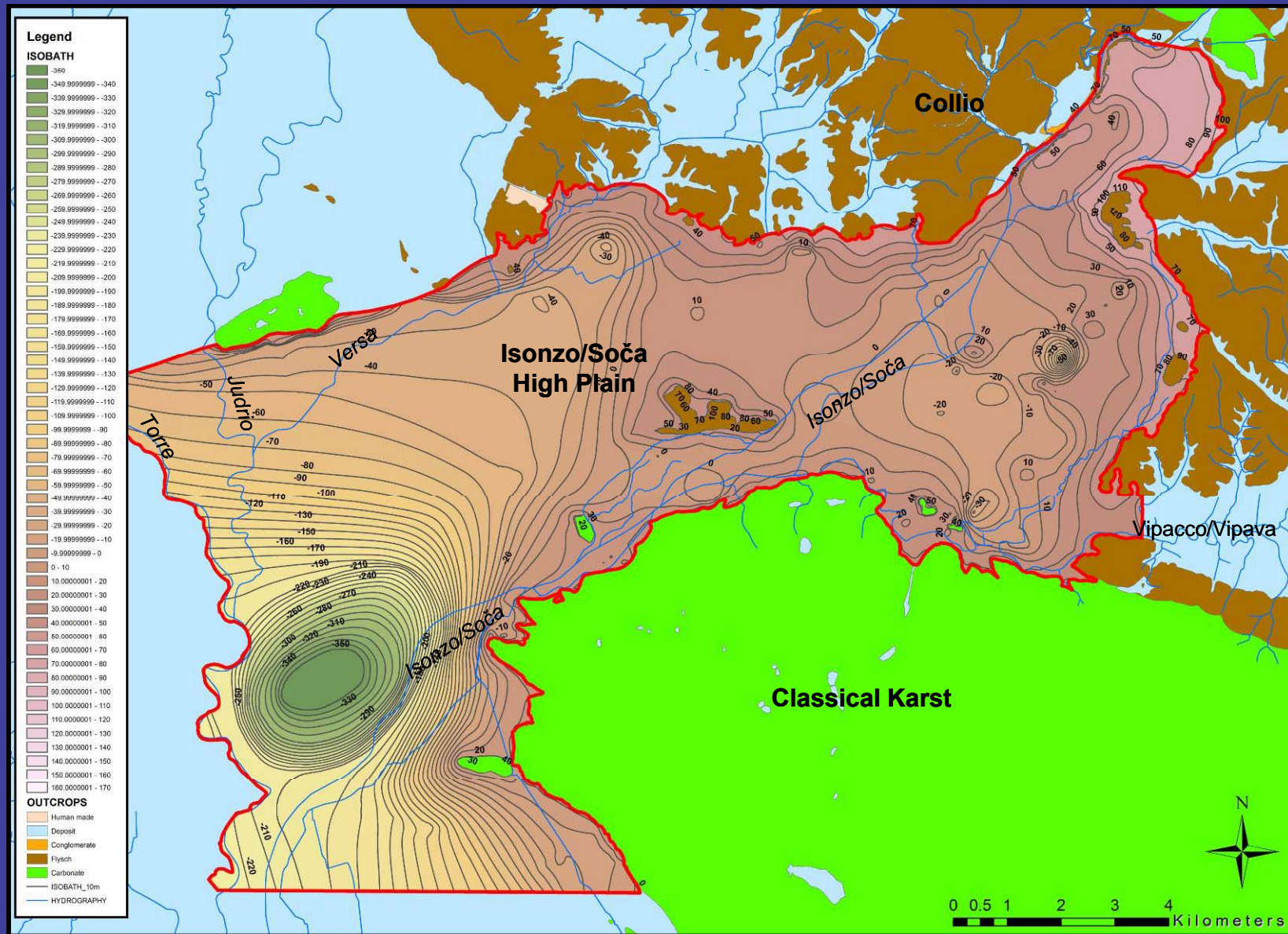
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



ISOBATHS AND BEDROCKS



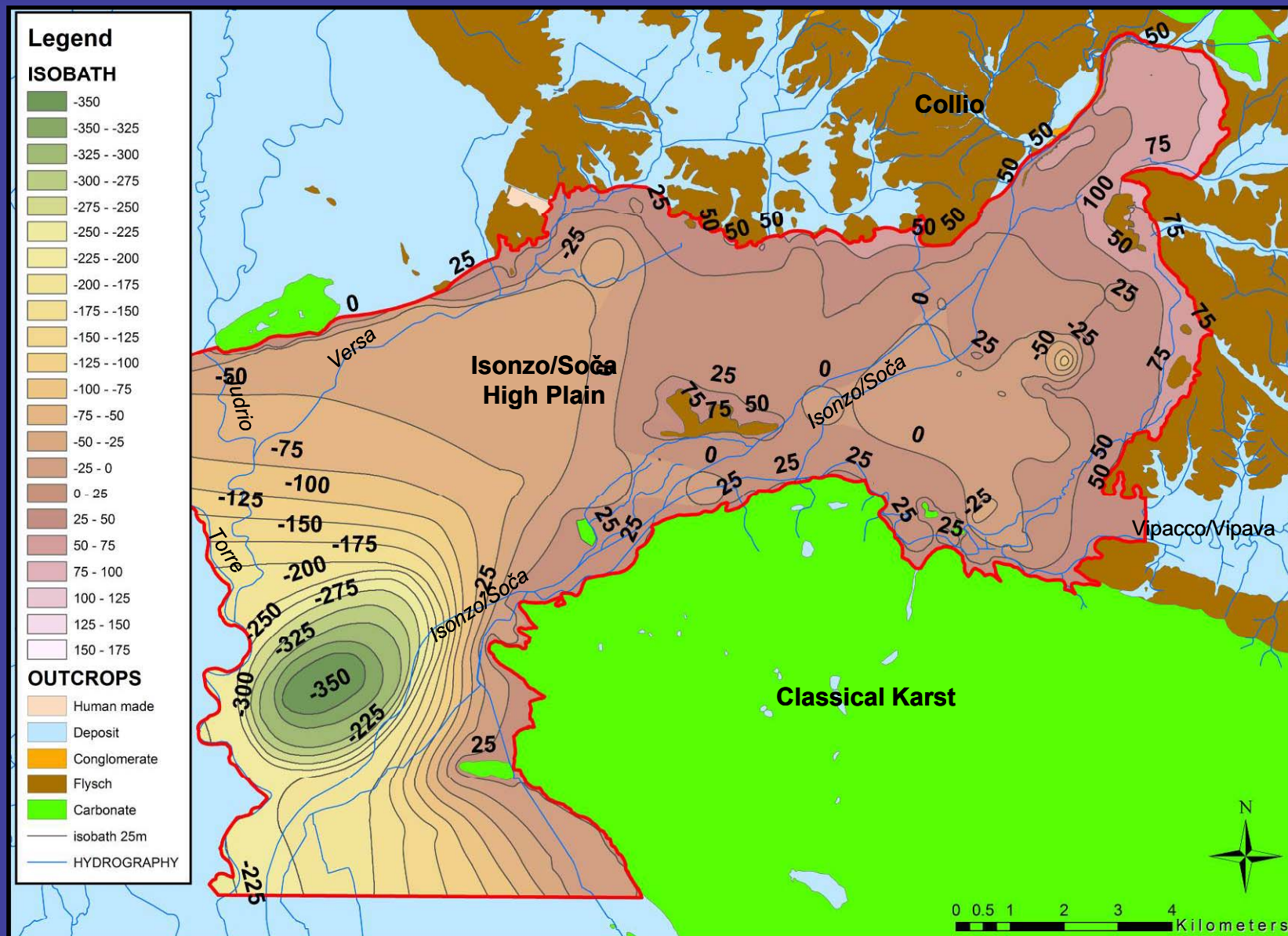
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



ISOBATHS AND BEDROCKS



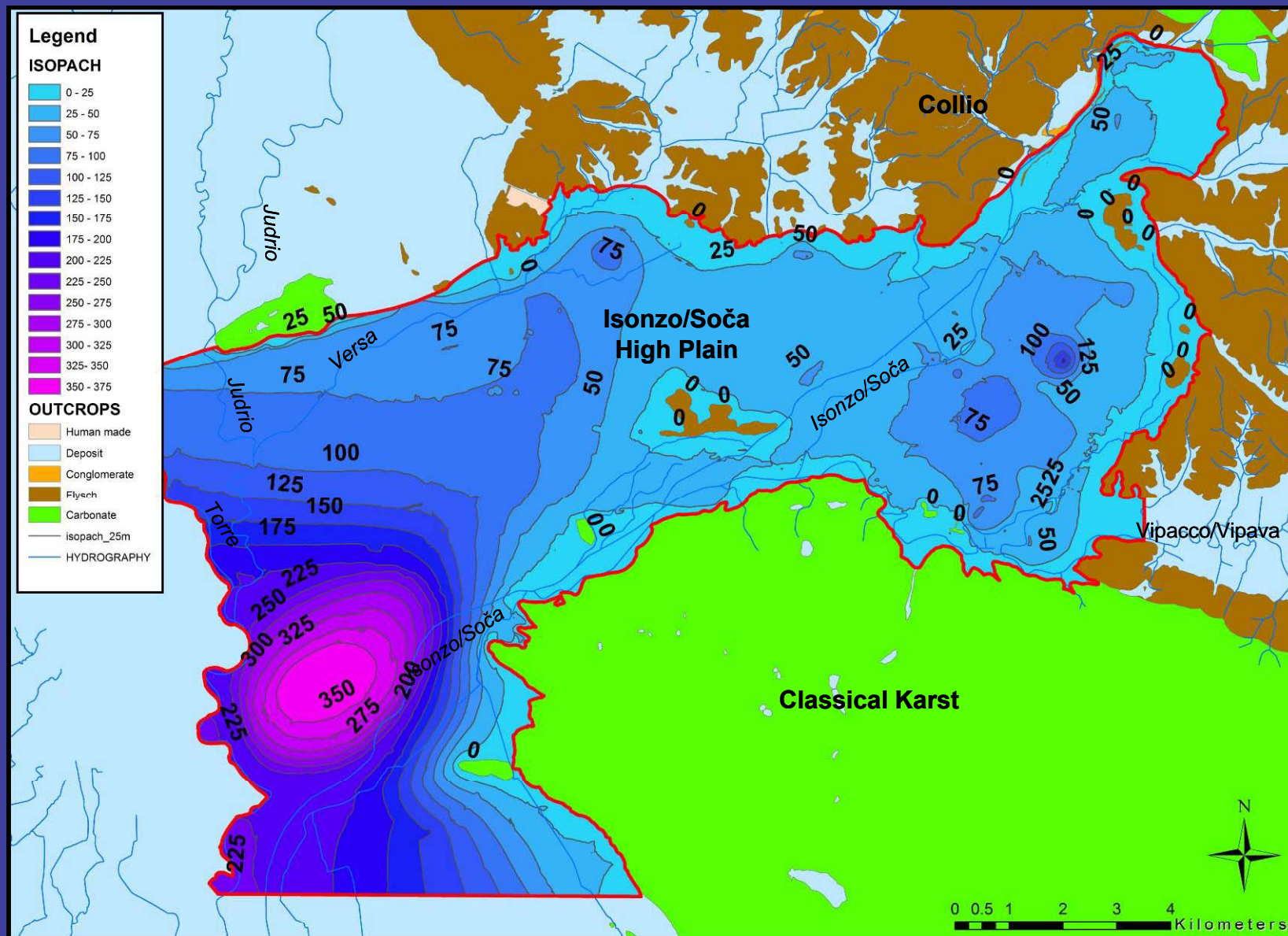
VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



ISOPACH AND BEDROCKS



VAROVANJE VIROV PITNE VODE V IZREDNIH DOGODKIH / VODE SOŠKEGA ALUVIJA

Evento informativo-divulgativo/Strokovno izobraževanje

Bando Pubblico per la presentazione di progetti standard n. 02/2009 / Javni razpis za predložitev standardnih projektov št. 02-2009: GEP



EVENTO INFORMATIVO-DIVULGATIVO/STROKOVNO IZOBRAŽEVANJE NA TEMO

LE ACQUE DELLA PIANURA ISONTINA VODE SOŠKEGA ALUVIJA

Idrogeologia della Pianura Isontina

ftreu@units.it

Dipartimento di Matematica e Geoscienze



Progetto GEP finanziato nell'ambito del Programma per la Cooperazione Transfrontaliera Italia-Slovenia 2007-2013, dal Fondo europeo di sviluppo regionale e dai fondi nazionali.

Projekt GEP sofinanciran v okviru Programa čezmejnega sodelovanja Slovenija-Italija 2007-2013 iz sredstev Evropskega sklada za regionalni razvoj in nacionalnih sredstev



Ministero dell'Economia
e delle Finanze



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA GOSPODARSKI
RAZVOJ IN TEHNOLOGIJO



2007-2013 cooperazione territoriale europea
programma per la cooperazione
transfrontaliera
Italia-Slovenia
evropsko teritorialno sodelovanje
program čezmejnega sodelovanja
Slovenija-Italija



Investiamo nel
vostro futuro!

Naložba v vašo
prihodnost!

www.ita-slo.eu

Progetto cofinanziato dal Fondo europeo di
sviluppo regionale

Projekt sofinancira Evropski sklad
za regionalni razvoj