

SERCON training

22-24.9.2020.



Co-funded by the
Erasmus+ Programme
of the European Union



SERCON metod

SERCON (System for Evaluating Rivers for Conservation)

Metod za procenu konzervacione vrednosti reka

- Izražava se u vidu numeričke vrednosti -SERCON skor

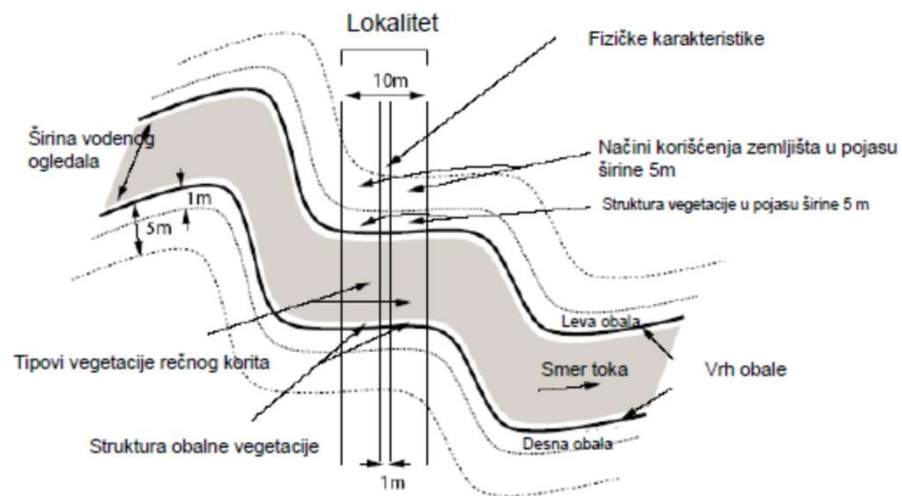
Predviđa najvećim delom prikupljanje već publikovanih relevantnih podataka u vezi sa konzervacionim kriterijumima

Za izračunavanje pojedinih SERCON pod-skorova crpe se podaci iz RHS protokola (Boon, 1997;1998)

[i] Boon, P., J., Holmes, N., T., H., Maitland, P., S., Rowell, T., A., Davies, J. (1997): A System for Evaluating Rivers for Conservation (SERCON): Development, Structures and Function. In: Boon, P., J., Howell, D., L. (Edt.): Freshwater Quality: Defining the Indefinable? Scottish Natural Heritage. Edinburgh. 299-327

[ii] Boon, P., J., Wilkinson, J., Martin, J. (1998): The application of SERCON (System for Evaluating Rivers for Conservation) to a selection of rivers in Britain. Aquatic Conservation: Marine and Freshwater Ecosystems. 8(4):597-616

ECS, RHS, Spot-Check



WFD

CEN, Evropska komisija za standardizaciju

SERCON (System for Evaluating Rivers for Conservation)

RHS (River Habitat Survey)

SESWACON (System for Evaluating Standing Waters for Conservation)

LHS (Lake Habitat Survey)

SERCON obuhvata 4 grupe podataka:

Opisni podaci (ne ulaze u skor):

- PD grupa
- CLT grupa
- WQ grupa

Ulazni podaci iz RHS-a (ulaze u skor):

- PDY grupa
- NA1b, NA2a, NA2b, NA3a, NA3b, NA5, NA6
- SF1, SF2, SF3

Podaci vezani za spiskove vrsta (ulaze u skor):

- Makrofite: NA7, RE1, RA1, RA2, RA3, RA4, RA5, RA6, SR1
- Makroinvertebrate: NA8, SR2, SF5
- Ribe: NA9, SR3
- Ptice: NA10, RA7, SR4, SF4

Nezavisni ulazni podaci (ulaze u skor):

- NA1a, NA4, NA5
- SF5
- IM grupa

River Habitat Survey (RHS)

Metod za karakterizaciju i procenu fizičkih karakteristika tekućih voda
(Raven i sar.^[i], 1997; 1998^[ii])

Terenski rad po ovoj metodologiji ne zahteva temeljna (ekspertska)
znanja iz geomorfologije ili botanike

RHS deonica -500 m
10 podjednako udaljenih lokaliteta

Visoka rezolucija podataka

^[i] Raven, P. J., Fox, P., Everard, M., Holmes, N., T., H., Dawson, F., H. (1997): River Habitat Survey: a new system for classifying rivers according to their habitat quality. In: Boon, P., J., Howell, D., L. (Edt.): Freshwater Quality: Defining the Indefinable? Scottish Natural Heritage. Edinburgh. 215-235

^[ii] Raven, P. J., Holmes, N., T., H., Dawson, F., H., Edvard, M. (1998): Quality assessment using River Habitat Survey data. Aquatic Conservation: Marine and Freshwater Ecosystems.8 (4):477-499

Svaki pojedinačni podatak

- nivo relevantnosti korišćenog literaturnog izvora (A –visok nivo relevantnosti, B –srednji, C –nizak)

U izradi je verzija II SESWACON metode

- ostali akvatični organizmi i hidromorfološke karakteristike jezerskog staništa

SERCON i SESWACON metode pružaju integrativni pristup i ocenu konzervacione vrednosti slatkovodnih sistema

- Ne pružaju uvid u stepen izmenjenosti staništa
- Ekonomski aspekt
 - stepen izmenjenosti staništa

LHS (Lake Habitat Survey) i RHS (River Habitat Survey)

- okvir za procenu hidromorfološke izmenjenosti ovih staništa

Kao i u slučaju SERCON metode, i ovde se krajnji rezultat izražava numerički (u intervalu 0-100) u vidu konzervacionog indeksa, gde se vrednost 0 dodeljuje sistemima bez konzervacionog značaja a 100 ekosistemima od izuzetnog konzervacionog značaja.

Finalnom skor u pridružuje sufiks u vidu slova

- Ukazuje na nivo kompletnosti dobijenog konzervacionog indeksa.

Nivoi kompletnosti:	100%	a*
	>80-100%	a
	>60-80%	b
	>40-60%	c
	>20-40%	d
	0-20%	e

Physical Data

- PD 1: Location of ECS
- PD 2: Length of ECS
- PD 3: Channel Gradient of ECS
- PD 4: Channel Sinuosity of ECS
- PD 5: Stream Order at Downstream Boundary of ECS
- PD 6: Stream Flow Stability at Downstream Boundary of ECS
- PD 7: Mean Daily Flow at Downstream Boundary of ECS
- PD 8: Altitudinal Range of ECS Catchment
- PD 9: Catchment Size at Downstream Boundary of ECS
- PD 10: Soil Types in ECS Catchment
- PD 11: Solid Geology of ECS Catchment

TABELA 1: Kompletna lista karaktera koji se koriste u SERCON 2
Fizičke karakteristike
PD1: Lokacija ECS deonice
PD2: Dužina ECS deonice
PD 3: Gradijent rečnog korita u ECS
PD 4: Sinusoidnost deonice ECS
PD 5: Red vodotoka na nizvodnoj granici deonice ECS
PD 6: Stabilnost protoka na nizvodnoj granici deonice ECS
PD 7: Prosečni dnevni protok na nizvodnoj granici deonice ECS
PD 8: Dijapazon nadmorskih visina u slivu deonice ECS
PD 9: Veličina slivnog područja na nizvodnoj granici deonice ECS
PD 10: Tip zemljišta u slivnom području deonice ECS
PD 11: Geološka podloga u slivnom području deonice ECS

Catchment Land-use

CL 1: Catchment Land Types
CL 2: Human Population Density

Water Quality

WQ 1: National Water Quality Class
WQ 2: Ortho-phosphate Level
WQ 3: Biological Class
WQ 4: Water Quality Class (Scotland)

CONSERVATION CRITERIA

Physical Diversity

PDY 1: Channel Substrates
PDY 2: Flow-types and Habitat Features
PDY 3: Structure of Aquatic Vegetation

Način upotebe zemljišta u slivnom području
CL 1: Tipovi zemljišta u slivnom području
CL 2: Gustina ljudske populacije
Kvalitet vode
WQ 1: Nacionalna klasa kvaliteta vodotoka
WQ 2: Koncentracija orto-fosfata
WQ 3: Biološka klasa
WQ 4: Klasa kvaliteta vode (u Škoskoj)
Konzervacioni kriterijumi
Fizička raznolikost
PDY 1: Tip supstrata (materijala) rečnog korita
PDY 2: Tip toka i habitata
PDY 3: Struktura akvatične vegetacije

Naturalness

Naturalness 'A'

NA 1: Planform and River Profile

NA 2: Extent of Channel and Bank Engineering

NA 3: Channel and Bank Features

NA 3a Habitat Quality Assessment

NA 3b Habitat Modification Class

NA 4: Flow Regime

NA 5: Plant Assemblages on the Banks

NA 6: Riparian Zone

Naturalness 'B'

NA 7: Aquatic and Marginal Macrophytes

NA 8: Aquatic Macroinvertebrates

NA 9: Fish

NA 10: Breeding Birds

Representativeness

RE 1: Aquatic Macrophytes

Prirodnost
NA 1: Horizontalna projekcija i profil rečnog korita
NA 2: Obim preduzetih mera u rečnom koritu i na obalama
NA 3: Objekti u rečnom koritu i na obalama
NA 4: Vodni režim
NA 5: Biljne zajednice na obalama
NA 6: Priobalje
NA 7: Akvatične i marginalne makrofite
NA 8: Akvatični makroinvertebrati
NA 9: Ribe
NA 10: Ptice stonarice
Reprezentativnost
RE 1: Akvatične makrofite

Rarity

RA 1: EC Habitats Directive Species (+ rare in UK)

RA 2: Scheduled Species

RA 3: Red List Macrophyte Species

RA 4: EC Habitats Directive Species (but not rare in UK)

RA 5: Other Nationally Notable Species

RA 6: Macrophyte Species Uncommon in England, Wales, Scotland or Northern Ireland

RA 7: Breeding Bird Species Uncommon in England, Wales, Scotland or Northern Ireland

Species Richness

SR 1: Aquatic and Marginal Macrophytes

SR 2: Aquatic Macroinvertebrates

SR 3: Fish

SR 4: Breeding Birds

Retkost
RA 1: Vrste obuhvaćene EC Habitat Direktivom (+retke u UK)
RA 2: Vrste zaštićene nacionalnim propisom (UK)
RA 3: Vrste sa Crvene Liste
RA 4: Vrste obuhvaćene EC Habitat Direktivom (ali nisu retke u UK)
RA 5: Ostale ugrožene vrste
RA 6: Vrste makrofita neuobičajene za Englesku, Vels, Škotsku i Severnu Irsku
RA 7: Ptice stanarice neuobičajene za Englesku, Vels, Škotsku i Severnu Irsku
Bogatstvo vrsta
SR 1: Akvatične i marginalne makrofite
SR 2: Akvatični makroinvertebrati
SR 3: Ribe
SR 4: Ptice stanarice

Special Features

- SF 1: Complexity and Character of Riparian Zone
- SF 2: Corridor Water-dependent Habitats
- SF 3: Marginal Habitats for Invertebrates
- SF 4: Wintering Birds on Floodplain
- SF 5: Other Vertebrates

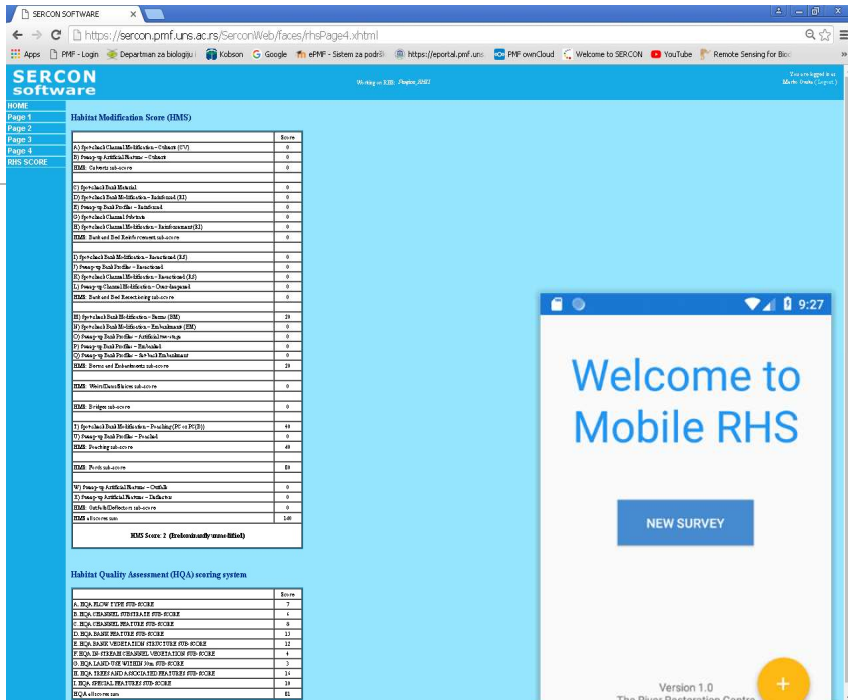
Posebni objekti/pojave
SF 1: Kompleksnost i karakter priobalja
SF 2: Mikrohabitati zavisni od rečnog korita
SF 3: Marginalni habitati za makroinvertebrate
SF 4: Ptice koje prezimljuju u plavnim zonam
SF 5: Ostali kičmenjaci

IMPACTS

- IM 1: Acidification
- IM 2: Urban, Industrial and Agricultural Inputs
- IM 3: Sewage Effluent
- IM 4: Groundwater Abstraction
- IM 5: Surface Water Abstraction
- IM 6: Inter-river and Inter-basin Transfers
- IM 7: Channelization
- IM 8: Management for Flood Defence
- IM 9: Artificial Structures
- IM 10: Recreational Pressures
- IM 11: Introduced Species

Uticaji (pritisci)
IM 1: Zakišeljavanje
IM 2: Uticaj gradova, industrije i poljoprivrede
IM 3: Kanalizacioni ispusti
IM 4: Crpljenje podzemnih voda
IM 5: Vodozahvati površinskih voda
IM 6: Transfer unutar reke i unutar sliva
IM 7: Kanalisanje
IM 8: Upravljanje odbranom od poplava
IM 9: Veštački objekti
IM 10: Uticaji rekreativnih aktivnosti
IM 11: Unete vrste
Dodatni važni objekti/pojave (AFIs)

River Habitat Survey



9/30/2020

SITE REF. RIVER HABITAT SURVEY : 500m SWEEP-UP **Page 3 of 4**

H	LAND-USE WITHIN 50m OF BANKTOP	Use	(present) or E (> 33% banklength)	L	R
	Broadleaf/mixed woodland (semi-natural)(BL)		Natural open water (OW)		
	Broadleaf/mixed plantation (BP)		Rough/unimproved grassland/pasture (RP)		
	Coniferous woodland (semi-natural) (CWO)		Improved/semi-improved grassland (IG)		
	Coniferous plantation (CP)		Tall herb/rank vegetation (TH)		
	Scrub & shrubs (SH)		Rock, scree or sand dunes (RD)		
	Orchard (OR)		Suburban/urban development (SU)		
	Wetland (e.g. bog, marsh, fen) (WL)		Tilled land (TL)		
	Moorland/heath (MH)		Irrigated land (IL)		
	Artificial open water (AW)		Parkland or gardens (PG)		
			Not visible (NV)		

I	BANK PROFILES (present) or E (> 33% banklength)					
	Natural/unmodified		L	R	Artificial/modified	
					L	R
	Vertical/undercut				Resectioned (reprofiled)	
	Vertical with toe				Reinforced - whole	
	Steep (>45°)				Reinforced - top only	
	Gentle				Reinforced - toe only	
	Composite				Artificial two-stage	
	Natural berm				Poached bank	
					Embanked	
					Set-back embankment	

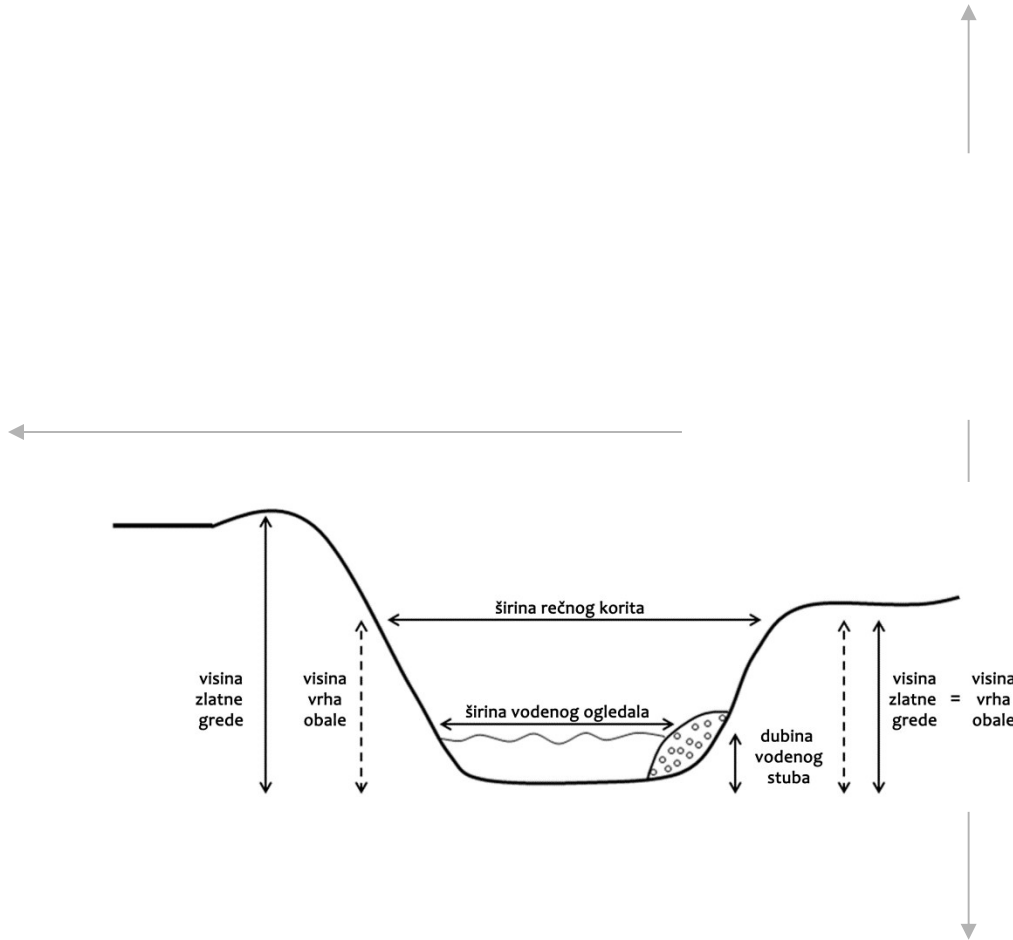
J	EXTENT OF TREES AND ASSOCIATED FEATURES *record even if <1%					
	TREES (tick one box per bank)		Left	Right	ASSOCIATED FEATURES (tick one box per feature)	
					None	Present E (>33%)
	None	<input type="checkbox"/>	<input type="checkbox"/>		Shading of channel	<input type="checkbox"/>
	Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>		*Overhanging boughs	<input type="checkbox"/>
	Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>		*Exposed bankside roots	<input type="checkbox"/>
	Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>		*Underwater tree roots	<input type="checkbox"/>
	Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>		Fallen trees	<input type="checkbox"/>
	Continuous	<input type="checkbox"/>	<input type="checkbox"/>		Large woody debris	<input type="checkbox"/>

K	EXTENT OF CHANNEL AND BANK FEATURES (tick one box for each feature) *record even if <1%					
	None		Present E (>33%)	None		Present E (>33%)
	Free fall flow	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>
	Crute flow	<input type="checkbox"/>	<input type="checkbox"/>	Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>
	Broken standing waves	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated bedrock/boulders	<input type="checkbox"/>	<input type="checkbox"/>
	Unbroken standing waves	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bar(s)	<input type="checkbox"/>	<input type="checkbox"/>
	Rippled flow	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bar(s)	<input type="checkbox"/>	<input type="checkbox"/>
	*Upwelling	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>	<input type="checkbox"/>
	Smooth flow	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar(s)	<input type="checkbox"/>	<input type="checkbox"/>
	No perceptible flow	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar(s)	<input type="checkbox"/>	<input type="checkbox"/>
	No flow (dry)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated point bar(s)	<input type="checkbox"/>	<input type="checkbox"/>
	Marginal deadwater	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated point bar(s)	<input type="checkbox"/>	<input type="checkbox"/>
	Eroding cliff(s)	<input type="checkbox"/>	<input type="checkbox"/>	*Unvegetated silt deposit(s)	<input type="checkbox"/>	<input type="checkbox"/>
	Stable cliff(s)	<input type="checkbox"/>	<input type="checkbox"/>	*Discrete unvegetated sand deposit(s)	<input type="checkbox"/>	<input type="checkbox"/>
				*Discrete unvegetated gravel deposit(s)	<input type="checkbox"/>	<input type="checkbox"/>

Co-funded by the Erasmus+ Programme of the European Union



River Habitat Survey in Britain and Ireland



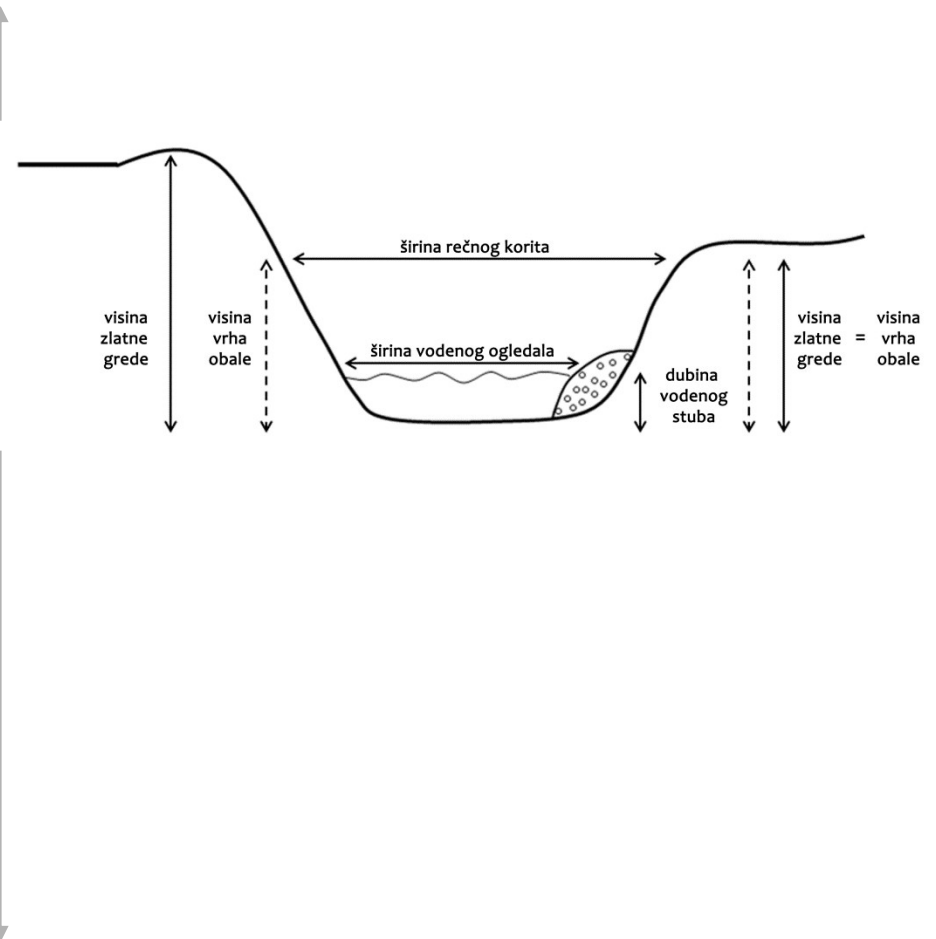
Zlatna gređa predstavlja pojas gde je obalska strmina izravnana tako da je mogu kultivacija i urbanizacija.

Obala predstavlja pojas od trenutnog nivoa vode do vrha zlatne gređe.

Vrh zlatne gređe se ne mora uvek poklopiti sa vrhom obale, koji predstavlja zonu na kojoj se reka izliva u plavno područje.

Vrh obale zapravo odgovara visini najvišeg vodostaja koji reka dostiže, jer se iznad toga izliva u plavnu dolinu. Dakle, vrh obale se može konstatovati na terenu na osnovu granice rasprostiranja emerzne vegetacije ili na osnovu tragova nanosa, u vidu naslaga algi u slučaju kanalisanih reka sa ojačanim obalama gde nije moguć opstanak vegetacije.

Širina rečnog korita predstavlja rastojanje između vrha dve obale. Idući od vrha obale ka terestričnoj sredini, nalazi se priobalna zona.



1. HMS i HQA skorovi za istraživane deonice

HMS skor (skor izmenjenosti staništa)

HQA skor (skor stanišnog diverziteta)

2. Opšti podaci o istraživanim deonicama

Reka

Oznaka deonice

N-lat

E-long

Datum

Sakupljač podataka

Institucija

Br. Licence

Da li je jasno izraženo dno doline?

Aluvijalne ravni?

Bazeni (uspori)

Ravne deonice

Žalo bez vegetacije

Žalo sa vegetacijom

Dominantan tip doline

Da li je očigledno da je rečno korito poravnano?

Da li je rečno korito produbljeno?

Da li je voda pregrađena branom ili ustavom?

RIVER HABITAT SURVEY 2003 VERSION: SITE HEALTH AND SAFETY ASSESSMENT			
Site Number ¹ :	Site Ref:	River Name:	Date:
Grid References/Co-ordinates:	Spot 1 ² :	Mid-site:	End of site ² :
Surveyor Name:		Accredited Surveyor Code:	
<small>¹ Leave blank if new site.</small>		<small>² optional</small>	
Weather Conditions:			
Flow Conditions:			
Site details: (enter comments or circle if applicable and give details)			Risk Level (Low/Mod/High)
Access and Parking: (entry & exit)			
Conditions: comment on ground stability, footing, exposure/remoteness			
Obstacles/Hazards: fencing, stiles, dense vegetation, steep bank			
Occupied/Unoccupied: people, livestock, animals			
Activities/Land-use: agriculture, woodland, residential, industrial, construction, recreational			
Risk if lone-working			
IF THERE ARE ANY HIGH RISKS OR MORE THAN THREE MODERATE RISKS DO NOT CONTINUE WITH THE SURVEY.			
Well's Disease (Leptospirosis)			
<u>Instructions to card holders</u>			
<ol style="list-style-type: none"> As infection may enter through breaks in the skin, ensure that any cut, scratch or abrasion is thoroughly cleansed and covered with a waterproof plaster. Avoid rubbing your eyes, nose and mouth during work. Clean protective clothing, footwear and equipment etc. after use After work, and particularly before taking food or drink, wash hands thoroughly. Report all accidents and/or injuries, however slight. Keep your card with you at all times. 			
Lyme Disease			
<ol style="list-style-type: none"> Dress appropriately with skin covered up. Regularly inspect for ticks when in the field. Check for, and remove, any ticks as soon as possible after leaving the site. Seek medical attention if bitten by a tick. 			



Co-funded by the
Erasmus+ Programme
of the European Union



PHYSICAL ATTRIBUTES (SECTION E)

BANKS		CHANNEL	
<p>Predominant bank material</p> <p>NV = not visible</p> <p>BE = bedrock BO = boulder CO = cobble GS = gravel/sand EA = earth (crumbly) PE = peat CL = sticky clay</p> <p>CC = concrete SP = sheet piling WP = wood piling GA = gabion BR = brick/laid stone RR = rip-rap TD = tipped debris FA = fabric BI = bio-engineering materials</p>	<p>Bank modifications</p> <p>NK = not known NO = none</p> <p>RS = resectioned (reprofiled) RI = reinforced PC = poached PC(B) = poached (bare) BM = artificial berm EM = embanked</p> <p>Marginal and bank features</p> <p>NV = not visible (e.g. far bank) NO = none</p> <p>EC = eroding cliff (EC if sandy substrate) SC = stable cliff (SC if sandy substrate)</p> <p>PB = unvegetated point bar VP = vegetated point bar</p> <p>SB = unvegetated side bar VS = vegetated side bar</p> <p>NB = natural berm</p>	<p>Predominant substrate</p> <p>NV = not visible</p> <p>BE = bedrock BO = boulder CO = cobble GP = gravel/pebble (G or P if predominant) SA = sand SI = silt CL = clay PE = peat EA = earth AR = artificial</p> <p>Predominant flow-type</p> <p>NV = not visible FF = free fall CH = chute BW = broken standing waves (white water) UW = unbroken standing waves CF = chaotic flow RP = rippled UP = upwelling SM = smooth NP = no perceptible flow DR = no flow (dry)</p>	<p>Channel modifications</p> <p>NK = not known NO = none</p> <p>CV = culverted RS = resectioned RI = reinforced DA = dam/weir/sludge FO = ford (man-made)</p> <p>Channel features</p> <p>NV = not visible NO = none</p> <p>EB = exposed bedrock RO = exposed boulders VR = vegetated rock MB = unvegetated mid-channel bar VB = vegetated mid-channel bar MI = mature island TR = Trash (urban debris)</p>
<p>FLOW-TYPES</p> <p>FF: Free fall CH: Chute BW: Broken standing waves UW: Unbroken standing waves CF: Chaotic flow RP: Rippled UP: Upwelling SM: Smooth NP: No perceptible flow DR: No flow (dry)</p>		<p>DESCRIPTION</p> <p>clearly separates from back-wall of vertical feature ~ associated with waterfalls</p> <p>low curving fall in contact with substrate ~ often associated with cascades</p> <p>white-water tumbling waves must be present ~ mostly associated with rapids</p> <p>upstream facing wavelets which are not broken ~ mostly associated with riffles</p> <p>a chaotic mixture of three or more of the four fast flow-types with no predominant one obvious</p> <p>no waves, but general flow direction is downstream with disturbed rippled surface ~ mostly associated with runs</p> <p>heaving water as upwellings break the surface ~ associated with boils.</p> <p>perceptible downstream movement is smooth (no eddies) ~ mostly associated with glides</p> <p>no net downstream flow ~ associated with pools, ponded reaches and marginal deadwater</p> <p>dry river bed</p>	



LEFT Banks are determined by looking downstream RIGHT

CHANNEL MODIFICATION INDICATORS

One or more of the following may be indicative of resectioning:

- | | |
|--|---|
| 1. Uniform bank profile | 4. Uniform/low energy flow-types |
| 2. Straightened planform | 5. No trees/uniformly-aged trees along bank |
| 3. Bankfull width/bankfull height ratio <4:1 | 6. Intensive/urban land-use |

LAND-USE WITHIN 5m OF BANKTOP (SECTION F) & 50m (SECTION H)

BL = Broadleaf/mixed woodland (semi-natural)	AW = Artificial open water	TL = Tilled land
BP = Broadleaf/mixed plantation	OW = Natural open water	IL = Irrigated land
CW = Coniferous woodland (semi-natural)	RP = Rough unimproved grassland/pasture	PG = Parkland or gardens
CP = Coniferous plantation	IG = Improved/semi-improved grassland	NV = Not visible
SH = Scrub & shrubs	TH = Tall herb/rank vegetation	
OR = Orchard	RD = Rock, scree or sand dunes	
WL = Wetland (e.g. bog, marsh, fen)	SU = Suburban/urban development	
MH = Moorland/heath		

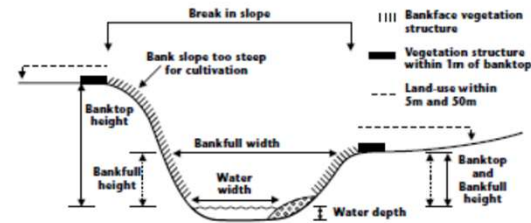
BANKTOP AND BANKFACE VEGETATION STRUCTURE To be assessed within a 10m wide transect (SECTION F)

bare	B	bare earth/rock etc.	vegetation types
uniform 	U	predominantly one type (no scrub or trees)	bryophytes short/creeping herbs or grasses
simple 	S	two or three vegetation types	tall herbs/grasses scrub or shrubs
complex 	C	four or more types	saplings and trees

Channel dimensions guidance (Section L)

- Select location on uniform section.
- If riffle is present, measure there. If not, measure at straightest and shallowest point.
- **Banktop** = first major break in slope above which cultivation or development is possible.
- **Bankfull** = point where river first spills on to floodplain.

Cross-section of channel showing definitions used to define where spot-check recording and channel dimensions measured



3. Prisustvo veštačkih objekata

- Značajan most
- Značajan deflektor
- Značajan gaz
- Značajni ispusti i vodozahvati
- Značajne ustave
- Značajni prelive
- Veoma značajni mostovi
- Veoma značajni cevovodi
- Veoma značajan deflektor
- Veoma značajan gaz
- Veoma značajan ispust i vodozahvat

RIVER HABITAT SURVEY 2003 Version Page 1 of 4

A FIELD SURVEY DETAILS

Site Number: leave blank if new site

Site Reference:

Spot-check 1 Grid Ref:

Spot-check 6 Grid Ref:

End of site Grid Ref:

Reach Reference:

River name:

Date: / /20 Time:

Surveyor name:

Accredited Surveyor code:

Is the site part of a river or an artificial channel? River Artificial

Are adverse conditions affecting survey? No Yes

If yes, state:

Is bed of river visible? barely or not partially ± entirely

Is health and safety assessment form attached? Yes No

Number of photographs taken:

Photo references:








Site surveyed from: left bank right bank channel

When options shown with 'shadow boxes', tick one box only

LEFT banks determined by facing downstream **RIGHT**

B PREDOMINANT VALLEY FORM (within the horizon limit) (tick one box only)

(tick one box only)

 <input type="checkbox"/> shallow vee	 <input type="checkbox"/> concave/bowl
 <input type="checkbox"/> deep vee	 <input type="checkbox"/> asymmetrical valley
 <input type="checkbox"/> gorge	 <input type="checkbox"/> U-shape valley
	 <input type="checkbox"/> no obvious valley sides

Distinct flat valley bottom? No Yes Natural terraces? No Yes

C NUMBER OF RIFFLES, POOLS AND POINT BARS (enter total number in boxes)

Rifle(s) <input type="text"/>	Unvegetated point bar(s) <input type="text"/>
Pool(s) <input type="text"/>	Vegetated point bar(s) <input type="text"/>

D ARTIFICIAL FEATURES (indicate total number of occurrences of each category within the 500m site)

if none, tick box	Major			Intermediate			Minor		
<input type="checkbox"/> Weirs/sluiques									
<input type="checkbox"/> Culverts									
<input type="checkbox"/> Bridges									
<input type="checkbox"/> Other - state									

Is channel obviously realigned? No Yes, <33% of site ≥33% of site
 Is channel obviously over-deepened? No Yes, <33% of site ≥33% of site
 Is water impounded by weir/dam? No Yes, <33% of site ≥33% of site



9/30/2020



SITE REF.	RIVER HABITAT SURVEY: TEN SPOT-CHECKS										Page 2 of 4																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Spot-check 1 is at: upstream end <input type="checkbox"/> downstream end <input type="checkbox"/> of site (tick one box)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
E PHYSICAL ATTRIBUTES (to be assessed across channel within 1m wide transect)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
When boxes 'bordered', only one entry allowed																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
<table border="1"> <thead> <tr> <th></th> <th>1 GPS</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6 GPS</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> <th>GPS</th> </tr> </thead> <tbody> <tr> <td>LEFT BANK</td> <td colspan="11">Ring EC or SC if composed of sandy substrate</td> </tr> <tr> <td>Material NV, BE, BO, CO, GL, EA, PE, CL, CC, SP, WP, GA, BR, RD, TD, SA, BI</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Bank modification(s) NK, NO, RS, RI, PC(B), BM, EM</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Marginal & bank feature(s) NV, NO, EC, SC, PB, VP, SB, VS, NB</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>CHANNEL</td> <td colspan="11">GP- ring either G or P if predominant.</td> </tr> <tr> <td>Channel substrate NV, BE, BO, CO, GP, SA, SI, CL, PE, EA, AR</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Flow-type NV, FF, CH, BW, UW, CF, RP, UP, SM, NP, DR</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Channel modification(s) NK, NO, CV, RS, RI, DA, FO</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Channel feature(s) NV, NO, EB, RO, VR, MB, VB, MI, TR</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>For braided rivers only: number of sub-channels</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>RIGHT BANK</td> <td colspan="11">Ring EC or SC if composed of sandy substrate</td> </tr> <tr> <td>Material NV, BE, BO, CO, GL, EA, PE, CL, CC, SP, WP, GA, BR, RD, TD, SA, BI</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Bank modification(s) NK, NO, RS, RI, PC(B), BM, EM</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Marginal & bank feature(s) NV, NO, EC, SC, PB, VP, SB, VS, NB</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="12">F BANKTOP LAND-USE AND VEGETATION STRUCTURE (to be assessed over a 10m wide transect)</td> </tr> <tr> <td colspan="12">Land-use: choose one from BL, BP, CW, CP, SH, OR, WL, MH, AW, OW, RP, IG, TH, RD, SU, TL, IL, PG, NV</td> </tr> <tr> <td colspan="12">LAND-USE WITHIN 5m OF LEFT BANKTOP</td> </tr> <tr> <td>LEFT BANKTOP (structure within 1m)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>LEFT BANK-FACE (structure)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>RIGHT BANK-FACE (structure)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>RIGHT BANKTOP (structure within 1m)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="12">LAND-USE WITHIN 5m OF RIGHT BANKTOP</td> </tr> <tr> <td colspan="12">G CHANNEL VEGETATION TYPES (to be assessed over a 10m wide transect: use E (≥ 33% area), ✓ (present) or NV (not visible))</td> </tr> <tr> <td>None (✓) or Not Visible (NV)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Liverworts/mosses/lichens</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Emergent broad-leaved herbs</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Emergent reeds/sedges/rushes/grasses/horsetails</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Floating-leaved (rooted)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Free-floating</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Amphibious</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Submerged broad-leaved</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Submerged linear-leaved</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Submerged fine-leaved</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Filamentous algae</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="12">Use end column for overall assessment over 500m, including types not occurring in spot-checks (use ✓, E or NV)</td> </tr> </tbody> </table>													1 GPS	2	3	4	5	6 GPS	7	8	9	10	GPS	LEFT BANK	Ring EC or SC if composed of sandy substrate											Material NV, BE, BO, CO, GL, EA, PE, CL, CC, SP, WP, GA, BR, RD, TD, SA, BI													Bank modification(s) NK, NO, RS, RI, PC(B), BM, EM													Marginal & bank feature(s) NV, NO, EC, SC, PB, VP, SB, VS, NB													CHANNEL	GP- ring either G or P if predominant.											Channel substrate NV, BE, BO, CO, GP, SA, SI, CL, PE, EA, AR													Flow-type NV, FF, CH, BW, UW, CF, RP, UP, SM, NP, DR													Channel modification(s) NK, NO, CV, RS, RI, DA, FO													Channel feature(s) NV, NO, EB, RO, VR, MB, VB, MI, TR													For braided rivers only: number of sub-channels													RIGHT BANK	Ring EC or SC if composed of sandy substrate											Material NV, BE, BO, CO, GL, EA, PE, CL, CC, SP, WP, GA, BR, RD, TD, SA, BI													Bank modification(s) NK, NO, RS, RI, PC(B), BM, EM													Marginal & bank feature(s) NV, NO, EC, SC, PB, VP, SB, VS, NB													F BANKTOP LAND-USE AND VEGETATION STRUCTURE (to be assessed over a 10m wide transect)												Land-use: choose one from BL, BP, CW, CP, SH, OR, WL, MH, AW, OW, RP, IG, TH, RD, SU, TL, IL, PG, NV												LAND-USE WITHIN 5m OF LEFT BANKTOP												LEFT BANKTOP (structure within 1m)													LEFT BANK-FACE (structure)													RIGHT BANK-FACE (structure)													RIGHT BANKTOP (structure within 1m)													LAND-USE WITHIN 5m OF RIGHT BANKTOP												G CHANNEL VEGETATION TYPES (to be assessed over a 10m wide transect: use E (≥ 33% area), ✓ (present) or NV (not visible))												None (✓) or Not Visible (NV)													Liverworts/mosses/lichens													Emergent broad-leaved herbs													Emergent reeds/sedges/rushes/grasses/horsetails													Floating-leaved (rooted)													Free-floating													Amphibious													Submerged broad-leaved													Submerged linear-leaved													Submerged fine-leaved													Filamentous algae													Use end column for overall assessment over 500m, including types not occurring in spot-checks (use ✓, E or NV)											
	1 GPS	2	3	4	5	6 GPS	7	8	9	10	GPS																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
LEFT BANK	Ring EC or SC if composed of sandy substrate																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Material NV, BE, BO, CO, GL, EA, PE, CL, CC, SP, WP, GA, BR, RD, TD, SA, BI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Bank modification(s) NK, NO, RS, RI, PC(B), BM, EM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Marginal & bank feature(s) NV, NO, EC, SC, PB, VP, SB, VS, NB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
CHANNEL	GP- ring either G or P if predominant.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Channel substrate NV, BE, BO, CO, GP, SA, SI, CL, PE, EA, AR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Flow-type NV, FF, CH, BW, UW, CF, RP, UP, SM, NP, DR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Channel modification(s) NK, NO, CV, RS, RI, DA, FO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Channel feature(s) NV, NO, EB, RO, VR, MB, VB, MI, TR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
For braided rivers only: number of sub-channels																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
RIGHT BANK	Ring EC or SC if composed of sandy substrate																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Material NV, BE, BO, CO, GL, EA, PE, CL, CC, SP, WP, GA, BR, RD, TD, SA, BI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Bank modification(s) NK, NO, RS, RI, PC(B), BM, EM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Marginal & bank feature(s) NV, NO, EC, SC, PB, VP, SB, VS, NB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
F BANKTOP LAND-USE AND VEGETATION STRUCTURE (to be assessed over a 10m wide transect)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Land-use: choose one from BL, BP, CW, CP, SH, OR, WL, MH, AW, OW, RP, IG, TH, RD, SU, TL, IL, PG, NV																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
LAND-USE WITHIN 5m OF LEFT BANKTOP																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
LEFT BANKTOP (structure within 1m)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
LEFT BANK-FACE (structure)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
RIGHT BANK-FACE (structure)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
RIGHT BANKTOP (structure within 1m)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
LAND-USE WITHIN 5m OF RIGHT BANKTOP																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
G CHANNEL VEGETATION TYPES (to be assessed over a 10m wide transect: use E (≥ 33% area), ✓ (present) or NV (not visible))																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
None (✓) or Not Visible (NV)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Liverworts/mosses/lichens																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Emergent broad-leaved herbs																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Emergent reeds/sedges/rushes/grasses/horsetails																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Floating-leaved (rooted)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Free-floating																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Amphibious																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Submerged broad-leaved																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Submerged linear-leaved																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Submerged fine-leaved																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Filamentous algae																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Use end column for overall assessment over 500m, including types not occurring in spot-checks (use ✓, E or NV)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

Enter channel substrate(s) not occurring as predominant in spot-checks but present in > 5% of whole site.



Co-funded by the Erasmus+ Programme of the European Union



4. Materijal obale

- 4.1 M. leve obale
- 4.2 M. desne obale

NV	<i>nije vidljivo</i>	CC	<i>beton</i>
BE	<i>stenovito, čvrsto tlo</i>	SP	<i>ojačanja metalnim pločama</i>
BO	<i>krupno kamenje – prečnika ≥ 256 mm</i>	GA	<i>krupno kamenje u žičanim korpama</i>
CO	<i>kamenje prečnika 64 – 256 mm</i>	BR	<i>cigla, slagani kamen</i>
GS	<i>šljunak/pesak</i>	RR	<i>krupno, nepravilno, necementirano kamenje</i>
EA	<i>rastresita zemlja</i>	TD	<i>otpad</i>
PE	<i>treset</i>	FA	<i>sintetička tkanina</i>
CL	<i>glina</i>	BI	<i>bioinženjerski materijali – sadnice, reznice, debla, sađena trska,...- služe za sprečavanje erozije i utvrđivanje obale</i>

5. Modifikacije obale

- 5.1 leve obale
- 5.2 desne obale

NK	<i>nepoznato</i>
NO	<i>bez</i>
RS	<i>izmenjen profil</i>
RI	<i>ojačan</i>
PC	<i>izgažena</i>
PC(B)	<i>izgaženo, bez vegetacije</i>
BM	<i>veštačka terasa - plato</i>
EM	<i>nasip, bent, dolma</i>

. Karakteristike obale

- 6.1 leve obale
- 6.2 desne obale

NV	<i>nije vidljivo</i>
NO	<i>bez</i>
EC	<i>erodirana litica</i>
SC	<i>stabilna litica</i>
PB	<i>žalo bez bilnog pokrivača</i>
VP	<i>žalo obraslo vegetacijom</i>
SB	<i>štrand bez bilnog pokrivača</i>
VS	<i>štrand obrastao vegetacijom</i>
NB	<i>aluvijalna ravan – prirodni nasip / plato</i>

7. Struktura vegetacije

- 7.1 leve obale
- 7.2 na levoj „zlatnoj gredi“
- 7.3 desne obale
- 7.4 na desnoj „zlatnoj gredi“

B	<i>Golo – bez biljnog pokrivača</i>
U	<i>Jednolično</i>
S	<i>Jednostavno</i>
C	<i>Složeno</i>
NV	<i>Nije vidljivo</i>

8. Način upotrebe priobalja –unutar 5 m

- 8.1 od leve obale
- 8.2 od desne

BL	<i>širokolisne / mešane šume (polu-prirodne)</i>
BP	<i>zasadi širokolisnog / mešanog drveća</i>
CW	<i>četinarske šume (polu-prirodne)</i>
CP	<i>zasadi četinara</i>
SH	<i>šipražje i žbunje</i>
OR	<i>voćnjak</i>
WL	<i>močvarno područje</i>
MH	<i>visijska vresišta</i>
AW	<i>veštačko površinsko vodno telo</i>

OW	<i>prirodno površinsko vodno telo</i>
RP	<i>prirodna livada / pašnjak</i>
IG	<i>kultivisani pašnjaci</i>
TH	<i>visoko rastinje</i>
RD	<i>stenovite, kamene ili peščane dine</i>
SU	<i>urbana zona</i>
TL	<i>obradivo zemljište</i>
IL	<i>navodnjavano zemljište</i>
PG	<i>parkovi ili bašte</i>
NV	<i>nije vidljivo</i>

9. Vegetacija rečnog korita

- **Amfibijske vrste**
- **Emerzne širokolisne**
- **Emerzne uskolisne**
- **Končaste alge**
- **Flotantne ukorenjene**
- **Flotantne neukorenjene**
- **Mahovine**
- **Submerzne širokolisne**
- **Submerzne uskolisne**
- **Submerzne sitnolisne**

10. Substrat rečnog korita

NV	<i>nije vidljivo</i>
BE	<i>stenovito, čvrsto dno</i>
BO	<i>krupno kamenje prečnika ≥ 256 mm</i>
CO	<i>kamenje prečnika 64 – 256 mm</i>
GP	<i>sitniji ili krupniji šljunak</i>
G or P	<i>zaokružiti G ako dominira sitniji, P ako dominira krupniji</i>
SA	<i>pesak</i>
SI	<i>mulj</i>
PE	<i>treset</i>
CL	<i>glina</i>
EA	<i>zemlja</i>
AR	<i>veštački materijali</i>

11. Tip toka

NV	<i>nije vidljivo</i>
FF	<i>slobodan pad</i>
CH	<i>slapovi</i>
BW	<i>brzaci – talasi sa krestom</i>
UW	<i>talasi “bez kreste”</i>
CF	<i>haotican tok</i>
RP	<i>bez talasa</i>
UP	<i>cirkularno kretanje i kontra struje</i>
SM	<i>miran tok</i>
NP	<i>uspori, bez vidljivog toka</i>
DR	<i>bez toka, suvo korito</i>

12. Izmenjenost rečnog korita

NK	<i>nepoznato</i>
NO	<i>bez</i>
CV	<i>prirodno korito zamenjeno cevovodom</i>
RS	<i>izmenjena deonica</i>
RI	<i>ojačano</i>
DA	<i>brana, ustava, šlajz</i>
FO	<i>gaz, ford</i>















13. Karakteristike rečnog korita

NV	<i>nisu vidljivi</i>
NO	<i>bez</i>
EB	<i>stene iznad površine</i>
RO	<i>krupno kamenje iznad površine</i>
VR	<i>stene obrasle vegetacijom</i>
MB	<i>sprudovi koji nisu obrasli vegetacijom</i>
VB	<i>sprudovi obrasli vegetacijom</i>
MI	<i>ada</i>
TR	<i>otpad</i>

PHYSICAL ATTRIBUTES (SECTION E)

BANKS		CHANNEL	
<p>Predominant bank material</p> <p>NV = not visible</p> <p>BE = bedrock BO = boulder CO = cobble GS = gravel/sand EA = earth (crumbly) PE = peat CL = sticky clay</p> <p>CC = concrete SP = sheet piling WP = wood piling GA = gabion BR = brick/laid stone RR = rip-rap TD = tipped debris FA = fabric BI = bio-engineering materials</p>	<p>Bank modifications</p> <p>NK = not known NO = none</p> <p>RS = resectioned (reprofiled) RI = reinforced PC = poached PC(B) = poached (bare) BM = artificial berm EM = embanked</p> <p>Marginal and bank features</p> <p>NV = not visible (e.g. far bank) NO = none</p> <p>EC = eroding cliff (EC if sandy substrate) SC = stable cliff (SC if sandy substrate)</p> <p>PB = unvegetated point bar VP = vegetated point bar</p> <p>SB = unvegetated side bar VS = vegetated side bar</p> <p>NB = natural berm</p>	<p>Predominant substrate</p> <p>NV = not visible</p> <p>BE = bedrock BO = boulder CO = cobble GP = gravel/pebble (G or P if predominant) SA = sand SI = silt CL = clay PE = peat EA = earth AR = artificial</p> <p>Predominant flow-type</p> <p>NV = not visible FF = free fall CH = chute BW = broken standing waves (white water) UW = unbroken standing waves CF = chaotic flow RP = rippled UP = upwelling SM = smooth NP = no perceptible flow DR = no flow (dry)</p>	<p>Channel modifications</p> <p>NK = not known NO = none</p> <p>CV = culverted RS = resectioned RI = reinforced DA = dam/weir/sluice FO = ford (man-made)</p> <p>Channel features</p> <p>NV = not visible NO = none</p> <p>EB = exposed bedrock RO = exposed boulders VR = vegetated rock MB = unvegetated mid-channel bar VB = vegetated mid-channel bar MI = mature island TR = Trash (urban debris)</p>
<p>FLOW-TYPES</p> <p>FF: Free fall clearly separates from back-wall of vertical feature ~ associated with waterfalls</p> <p>CH: Chute low curving fall in contact with substrate ~ often associated with cascades</p> <p>BW: Broken standing waves white-water tumbling waves must be present ~ mostly associated with rapids</p> <p>UW: Unbroken standing waves upstream facing wavelets which are not broken ~ mostly associated with riffles</p> <p>CF: Chaotic flow a chaotic mixture of three or more of the four fast flow-types with no predominant one obvious</p> <p>RP: Rippled no waves, but general flow direction is downstream with disturbed rippled surface ~ mostly associated with runs</p> <p>UP: Upwelling heaving water as upwellings break the surface ~ associated with boils.</p> <p>SM: Smooth perceptible downstream movement is smooth (no eddies) ~ mostly associated with glides</p> <p>NP: No perceptible flow no net downstream flow ~ associated with pools, ponded reaches and marginal deadwater</p> <p>DR: No flow (dry) dry river bed</p>		<p>DESCRIPTION</p>	



SITE REF.		RIVER HABITAT SURVEY : 500m SWEEP-UP				Page 3 of 4	
H LAND-USE WITHIN 50m OF BANKTOP Use ✓ (present) or E (≥ 33% banklength)							
	L	R		L	R		
Broadleaf/mixed woodland (semi-natural) (BL)			Natural open water (OW)				
Broadleaf/mixed plantation (BP)			Rough/unimproved grassland/pasture (RP)				
Coniferous woodland (semi-natural) (CV)			Improved/semi-improved grassland (IG)				
Coniferous plantation (CP)			Tall herb/rank vegetation (TH)				
Scrub & shrubs (SH)			Rock, scree or sand dunes (RD)				
Orchard (OR)			Suburban/urban development (SU)				
Wetland (e.g. bog, marsh, fen) (WL)			Tilled land (TL)				
Moorland/heath (MH)			Irrigated land (IL)				
Artificial open water (AW)			Parkland or gardens (PG)				
			Not visible (NV)				
I BANK PROFILES Use ✓ (present) or E (≥ 33% banklength)							
Natural/unmodified	L	R	Artificial/modified	L	R		
Vertical/undercut 			Resectioned (reprofiled) 				
Vertical with toe 			Reinforced - whole 				
Steep (>45°) 			Reinforced - top only 				
Gentle 			Reinforced - toe only 				
Composite 			Artificial two-stage 				
Natural berm 			Poached bank 				
			Embanked 				
			Set-back embankment 				
J EXTENT OF TREES AND ASSOCIATED FEATURES *record even if <1%							
TREES (tick one box per bank)				ASSOCIATED FEATURES (tick one box per feature)			
	Left	Right		None	Present	E (≥33%)	
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	*Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	*Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	*Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Large woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
K EXTENT OF CHANNEL AND BANK FEATURES (tick one box for each feature) *record even if <1%							
	None	Present	E (≥33%)	None	Present	E (≥33%)	
*Free fall flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chute flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Broken standing waves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated bedrock/boulders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unbroken standing waves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bar(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rippled flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bar(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*Upwelling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smooth flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No perceptible flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No flow (dry)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated point bar(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marginal deadwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated point bar(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eroding cliff(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Unvegetated silt deposit(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stable cliff(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Discrete unvegetated sand deposit(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				*Discrete unvegetated gravel deposit(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SITE REF.		RIVER HABITAT SURVEY : DIMENSIONS AND INFLUENCES		Page 4 of 4
L CHANNEL DIMENSIONS (to be measured at one location on a straight uniform section, preferably across a riffle)				
LEFT BANK		CHANNEL		RIGHT BANK
Banktop height (m)		Bankfull width (m)		Banktop height (m)
Is banktop height also bankfull height? (Y or N)		Water width (m)		Is banktop height also bankfull height? (Y or N)
Embanked height (m)		Water depth (m)		Embanked height (m)
If trashline lower than banktop, indicate: height above water (m) = _____ width from bank to bank (m) = _____				
Bed material at site is: consolidated <input type="checkbox"/> unconsolidated (loose) <input type="checkbox"/> unknown <input type="checkbox"/>				
Location of measurements is: riffle <input type="checkbox"/> other <input type="checkbox"/> (state)				
M FEATURES OF SPECIAL INTEREST Use ✓ or E (≥ 33% length) *record even if <1%				
None <input type="checkbox"/>	Very large boulders (>1m) <input type="checkbox"/>	Backwater(s) <input type="checkbox"/>	Marsh(es) <input type="checkbox"/>	
Braided channels <input type="checkbox"/>	*Debris dam(s) <input type="checkbox"/>	Floodplain boulder deposits <input type="checkbox"/>	Flush(es) <input type="checkbox"/>	
Side channel(s) <input type="checkbox"/>	*Leafy debris <input type="checkbox"/>	Water meadow(s) <input type="checkbox"/>	Natural open water <input type="checkbox"/>	
*Natural waterfall(s) > 5m high <input type="checkbox"/>	Fringing reed-bank(s) <input type="checkbox"/>	Fen(s) <input type="checkbox"/>	Others (state) <input type="checkbox"/>	
*Natural waterfall(s) < 5m high <input type="checkbox"/>	Quaking bank(s) <input type="checkbox"/>	Bog(s) <input type="checkbox"/>		
Natural cascade(s) <input type="checkbox"/>	*Sink hole(s) <input type="checkbox"/>	Wet woodland(s) <input type="checkbox"/>		
N CHOKED CHANNEL (tick one box)				
Is 33% or more of the channel choked with vegetation? No <input type="checkbox"/> Yes <input type="checkbox"/>				
O NOTABLE NUISANCE PLANT SPECIES Use ✓ or E (≥ 33% length) *record even if <1%				
None <input type="checkbox"/>	*Giant hogweed <input type="checkbox"/>	bankface <input type="checkbox"/> banktop to 50m <input type="checkbox"/>	*Himalayan balsam <input type="checkbox"/>	bankface <input type="checkbox"/> banktop to 50m <input type="checkbox"/>
	*Japanese knotweed <input type="checkbox"/>		*Other (state)..... <input type="checkbox"/>	
P OVERALL CHARACTERISTICS (Circle appropriate words, add others as necessary)				
Major impacts: landfill - tipping - litter - sewage - pollution - drought - abstraction - mill - dam - road - rail - industry - housing mining - quarrying - overdeepening - afforestation - fisheries management - silting - waterlogging - hydroelectric power				
Evidence of recent management: dredging - bank moving - weed cutting - enhancement - river rehabilitation - gravel extraction - other (please specify)				
Animals: otter - mink - water vole - kingfisher - dipper - grey wagtail - sand martin - heron - dragonflies/damselflies				
Other significant observations: if necessary use separate sheet to describe overall characteristics and relevant observations				
Q ALDERS (tick one box in each of the two categories) *record even if <1%				
*Alders? None <input type="checkbox"/> Present <input type="checkbox"/> Extensive <input type="checkbox"/>		*Diseased Alders? None <input type="checkbox"/> Present <input type="checkbox"/> Extensive <input type="checkbox"/>		
R FIELD SURVEY QUALITY CONTROL (✓ boxes to confirm checks)				
Have you taken at least two photos that illustrate the general character of the site and additional photos of any weirs/slucices and major/intermediate structures across the channel? <input type="checkbox"/>				
Have you completed all ten spot-checks and made entries in all boxes in E & F on page 2? <input type="checkbox"/>				
Have you completed column 11 of section G (and E if appropriate) on page 2? <input type="checkbox"/>				
Have you recorded in section C the number of riffles, pools and point bars (even if 0) on page 1? <input type="checkbox"/>				
Have you given an accurate (alphanumeric) grid reference for spot-checks 1, 6 and end of site (page 1)? <input type="checkbox"/>				
Have you stated whether spot-check 1 is at the upstream or downstream end of the site (top of page 2)? <input type="checkbox"/>				
Have you cross-checked your spot-check and sweep-up responses with the channel modification indicators <input type="checkbox"/>				



Co-funded by the Erasmus+ Programme of the European Union

