



LIFE10NAT/SI/142

LJUBLJANICA CONNECTS

enabling fish migration

Restoration of the Ljubljanica River corridor and improvement of the river's flow regime

Katarina ZABRET, Matej SEČNIK, Andrej VIDMAR



FISH PASSAGE 2015

Groningen, 22 June 2015

THE LJUBLJANICA RIVER



- Ljubljanica River is 42 km long, total basin area is 1884 km² of which 1100 km² is karstic.
- It is known also as River with seven names – due to mainly karstic basin river has a large number of streams with different names.
- It is the deepest Slovenian River with a section which is 8 m deep.

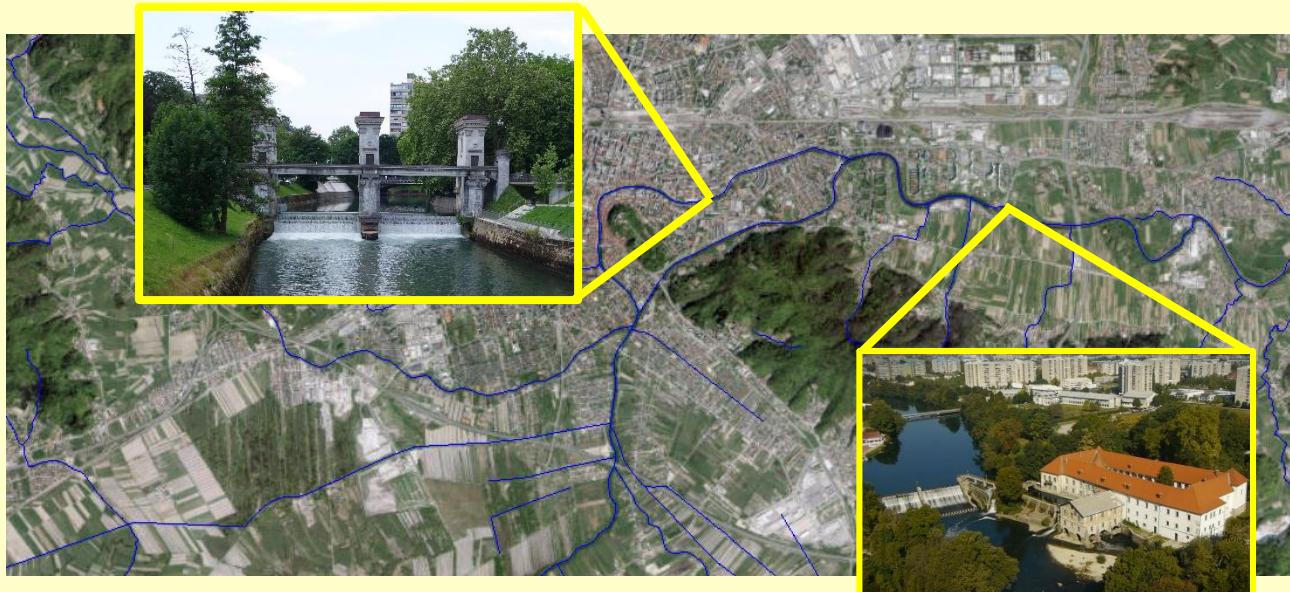


The last river spring near Vrhnika

The river in the city Ljubljana

Ljubljanica in Zalog before confluence

THE OBSTACLES



TARGETED SPECIES



Danube Salmon
(*Hucho hucho*)

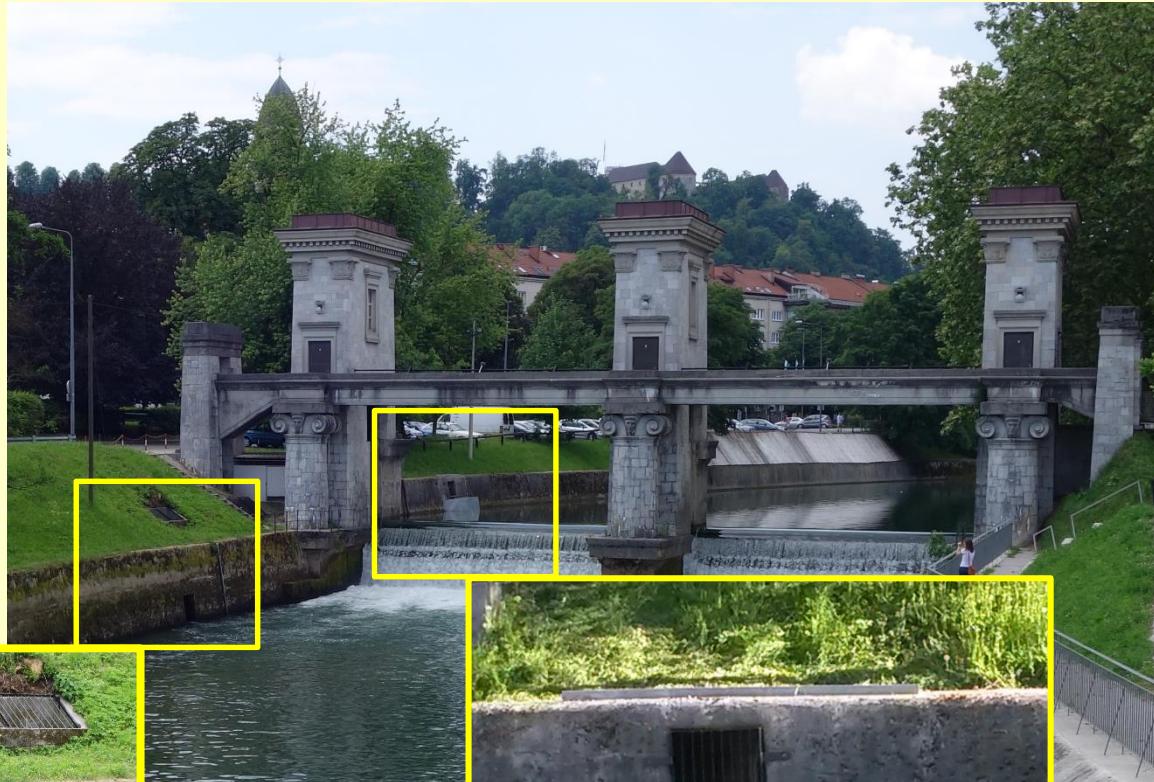


Danube Roach
(*Rutilus pigus*)



Striped Chub
(*Leuciscus souffia*)

FISH PASS AMBROŽEV TRG



Entrance to
the fish pass



Exit from the fish pass



FISH PASS AMBROŽEV TRG



The damaged interior of the fish pass

Floating debris on the barrier at the exit from the fish pass



Water falling over the barrier makes it difficult to find the entrance to the fish pass



Barriers on the openings above the fish pass were restored



Element for preventing accumulation of floating debris



The new pipe which attracts fish to the entrance

FISH PASS FUŽINE



Videokopter.si



Fish pass has collapsed during the high flow in November 2013

FISH PASS FUŽINE



Cleaning of the fish pass

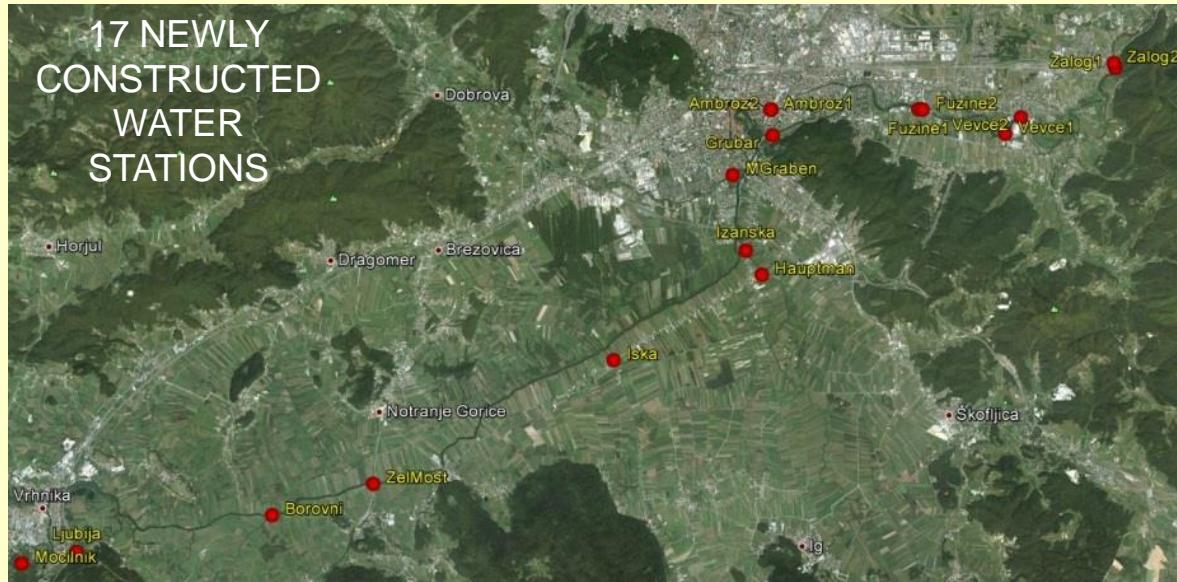


The collapsed part of fish pass was reconstructed using steel pylons filled with wood wall

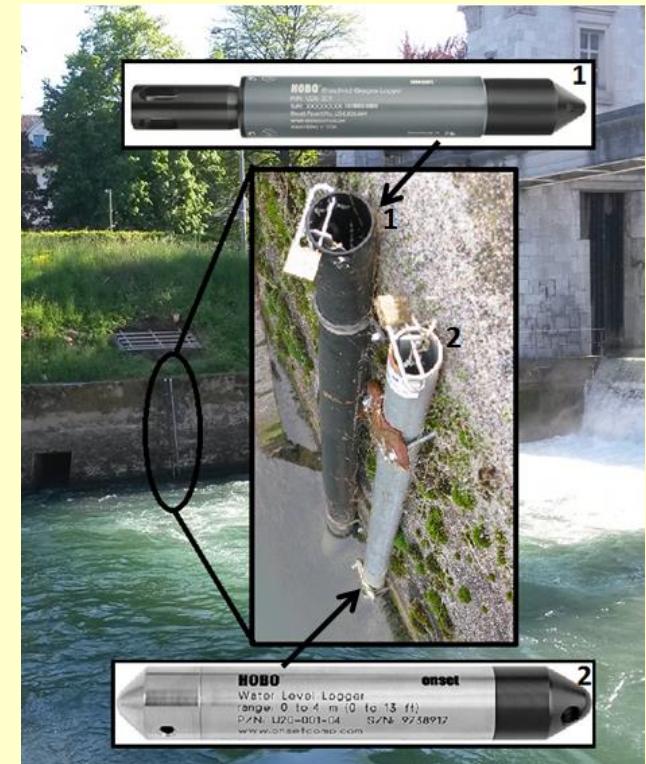
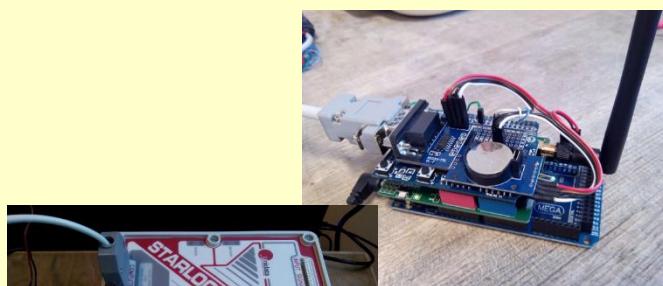
ECOHYDROLOGICAL MONITORING



17 NEWLY
CONSTRUCTED
WATER
STATIONS



ON-LINE
STATION



Measurements of temperature and oxygen concentration (1) and of water level (2)

MONITORING OF FISH MIGRATION



Electrofishing



Tagging of fish with VIE
(Visible Implant Elastomer
Tags)



MONITORING OF FISH MIGRATION

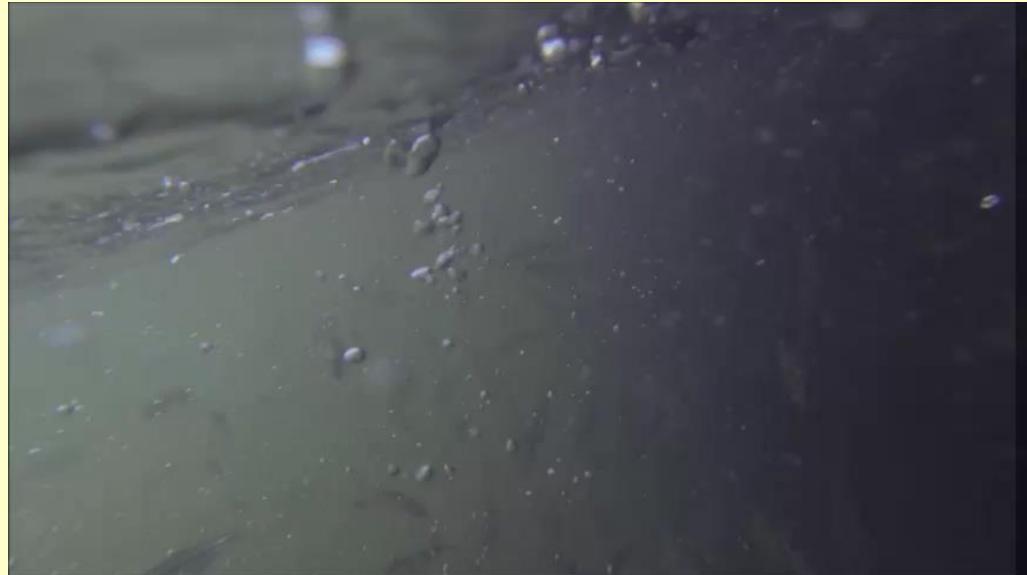


Camera for monitoring migration of fish through the fish pass



Installation of camera in the fish pass

MONITORING OF FISH MIGRATION



Camera in the fish pass:

http://ksh.fgg.uni-lj.si/ljubljanaconnects/ANG/12_camera/default.htm

INSTEAD OF CONCLUSIONS ...

