IŽICA

Poljane Grammar School
Ljubljana, Slovenia

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Who, when and where?

➢ Poljane Grammar School, class 1.E

➢ 12. 6. 2006

➢ In river Ižica, one of the affluxes of Ljubljanica

➢ Near Ljubljana, on Ljubljana Moors

Geel, 15. – 24. 9. 2006

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Depth

➤ Depth is very important for underground waters and floods

➤ If there are high floods that means that floods will run into underground waters and if there is an other way around, underground waters will run into floods

➤ We measured it with a rope and a measuring rod

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River profile

struga Ižice

globina vode (cm)

oddaljenost od levega brega (m)
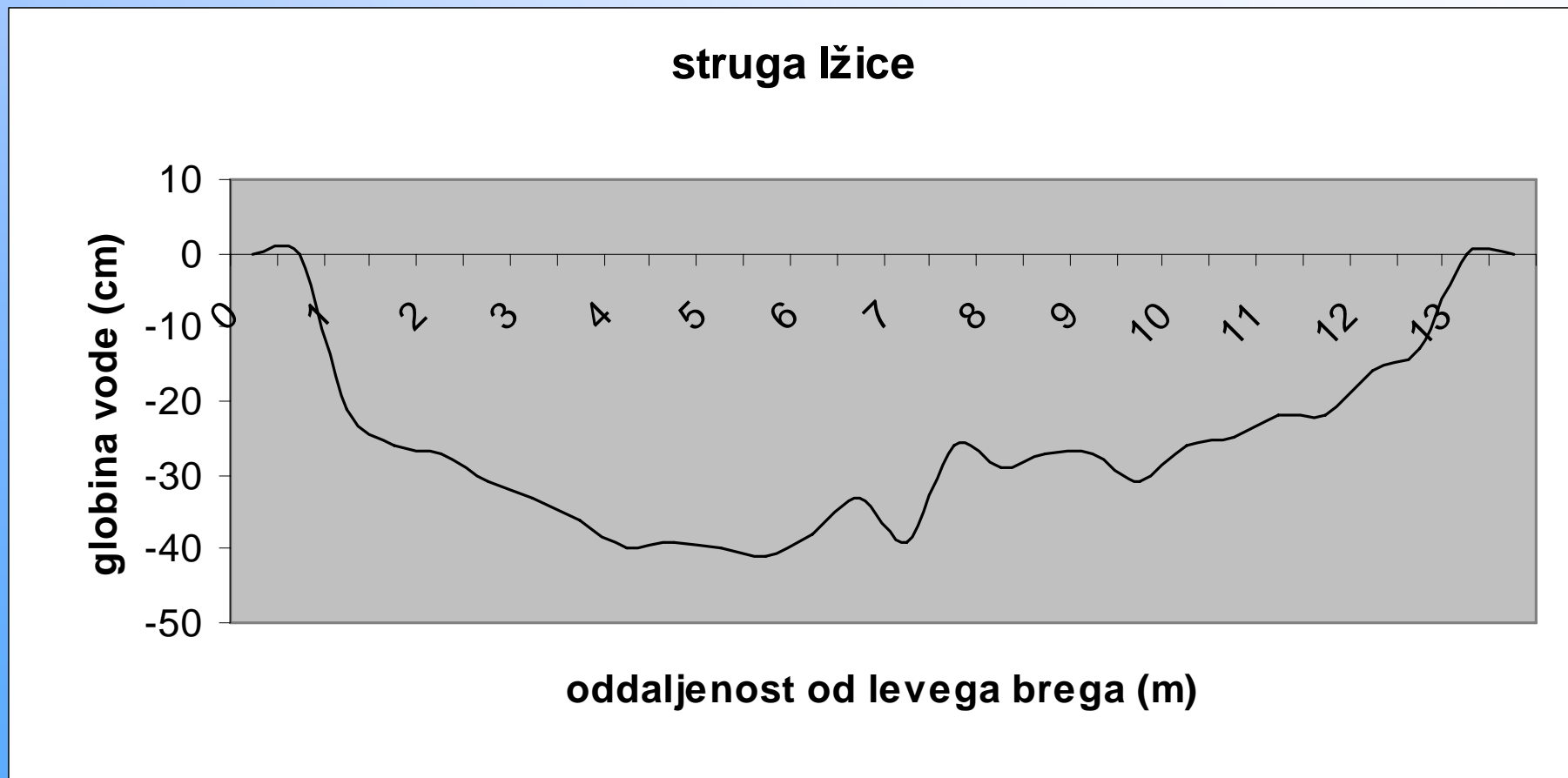
Surface of cross section of the channel

➢ $S_n = (d_n \times (b_{n+1} - b_{n-1})) : 2$
S_n … surface
d_n… depth on the chosen point
b_n… distance of the point from the river bank

➢ Our calculation on Ižica: 3,4 m^2

Current velocity

➢ Important for the life in the river, transport of nutrients and for the type of substrate

➢ It is constantly changing and it's also decreasing from the surface of the water to the bottom and from the middle to the banks of the river

➤ We measured current velocity on the surface of water several times on three locations and calculated the average

➤ On the surface the flow is faster, that is why we must multiply it with 0,67

Speed of the flow (m/s)	
On the middle	0, 47905
On the left bank	0, 30552
On the right bank	0, 2345

➤ Average water current of the river is 0,34 m/s

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Substrate

➢ Important for the transport and exchange of nutrients

➢ Organic and inorganic substrate

➢ We defined it with observation of a specific area and expressed it in percentages

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Organic substrat	Percantage
LIVING ORGANISMS	
Threated algas	15%
Mosses	20%
Macrofits	30%
DEAD ORGANISMS	
Bigger organic parts	15%

Anorganic substrat	Percantage
Rocks	5%
Stones	20%
Gravel	40%
Road metal	20%
Sand	10%
Fine excavated sand	5%

Free
Your
River

Temperature

➢ It depends of sun radiation, floods and outflows

➢ We measured temperature of water and air

Temperature (in °C)	1. measurment	2. measurment	3. measurment	average
water	11,3	11,1	11,2	11,2
air	19	18,3	18,1	18,5

Concentration of dissolved oxygen

➢ It depends of physical, chemical and biochemical processes in water

➢ It is mostly changing on account of photosynthetic activities and temperature

Concentration of dissolved oxygen (in mg/l)	1. meas.	2. meas.	3. meas.	average
	10,86	11,12	10,96	10,98

Conductivity

➢ Ability of water to conduct an electrical current

Conduction (in µS/cm)	1. meas.	2. meas.	3. meas.	average
	464	473	466	467,7

pH

➢ A measure of the acidity or the alkalinity of water

pH	1. meas.	2. meas.	3. meas.	average
	8	7	6	7

Nitrates and nitrites

➤ Presents nitrogen which is important for water plants

➤ Sources of nitrates are volcanic rocks, rinsing from the surface, dead bodies of animal and leftovers of plants

compound	quantity(mg/l)
nitrites (NO_2)	0,02
nitrates (NO_3)	10

Colour, smell and muddiness

➢ Colour and muddiness define the depth to which light comes to

➢ Colour could be a result of dissolved materials, fracture of sun rays or reflection of different parts

➢ Smell is a result of organic materials or waste water

colour	Yelow brown
muddiness	Small (clear)
smell	No smell

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Organisms in Ižica

➢ We defined the quality of water with biological analysis:

  ➢ we used BISEL biotic index (Biotic Index at Secondary Education Level) for macroinvertebrates

  ➢ and biotic index for plants, that were present in the selected area

➢ We found different animals:
  ➢ *mayflies: Heptageniidae,*
  ➢ *caddisflies: Trichoptera,*
  ➢ *Gammaridae,*
  ➢ *leeches: Hirudinea,*
  ➢ *and some fish.*

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➢ We also found different plants in the river:

  ➢ *Callitriche sp. (žabji las)*

  ➢ *Elodea canadensis (vodna kuga)*

  ➢ *Hippurus vulgaris (navadna smrečica)*

  ➢ *Potamogeton sp. (rod dristavcev)*

  ➢ *Veronica sp. (rod jetičnikov)*

➢ *We put Ižica into **second quality class***