

# SHORT – TERM RESEARCH

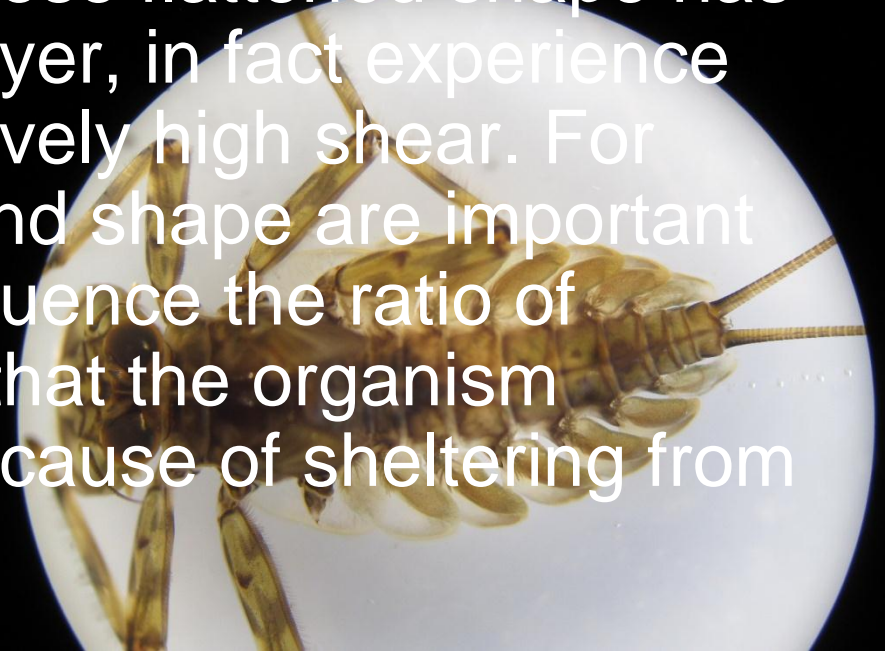
DIWPA International Field Biology Course - Kiso River, August 17 – 24 2012  
Center for Ecological Research - Kyoto University

Influence of current factor to abundance of  
insect family (Ephemerellidae) at Kurokawa  
river, Japan

Nguyen Duc The  
Institute of Marine Environment and Resource,  
Vietnam

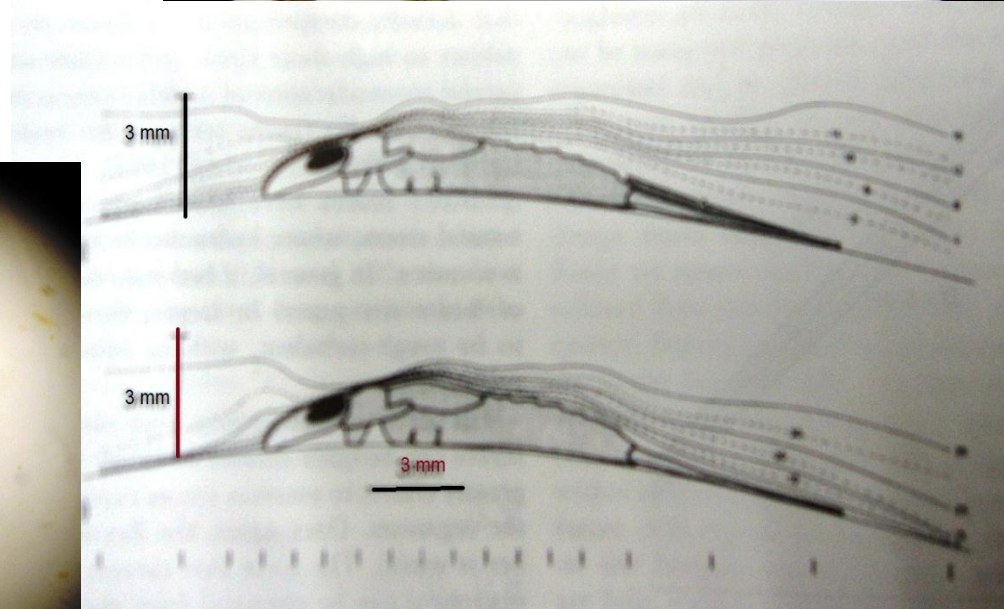
## INTRODUCTION

- Except under low flow over flat surfaces, layers of greatly reduced flow appear to be less than 1mm in height, and perhaps less than 200 - 300µm (Silvester & Sleight, 1985; Statzner Muller, 1989 ). Only the smaller invertebrates, and of course microorganisms, would truly lie within a viscous sublayer. Many invertebrate taxa, including those whose flattened shape has long been viscous sublayer, in fact experience complex flows and relatively high shear. For these organisms, size and shape are important mainly because they influence the ratio of inertial to viscous force that the organism experiences, and not because of sheltering from the current.



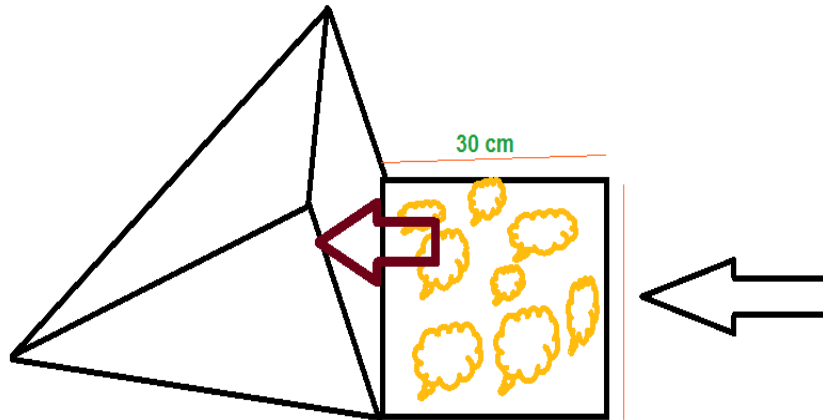
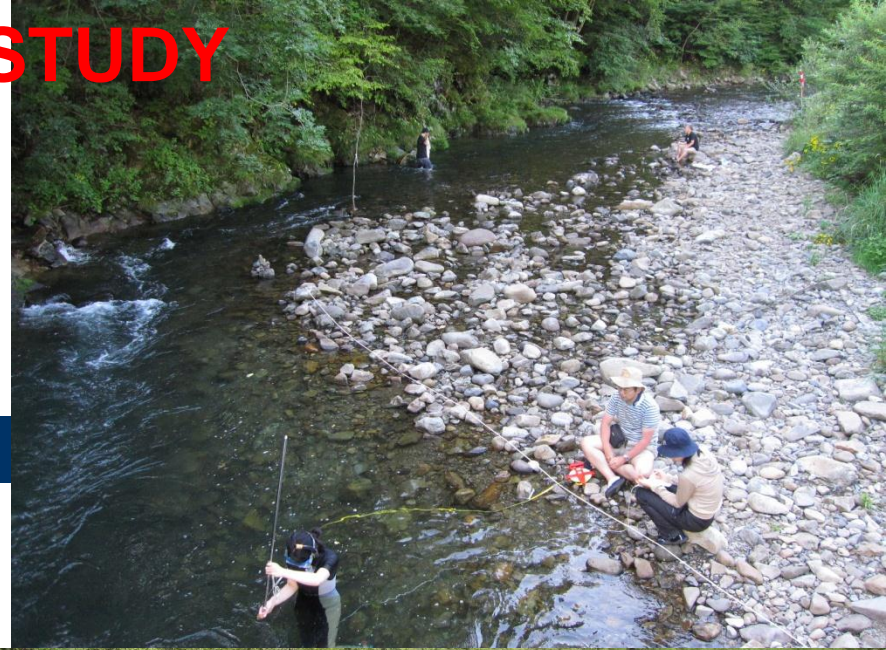
# INTRODUCTION

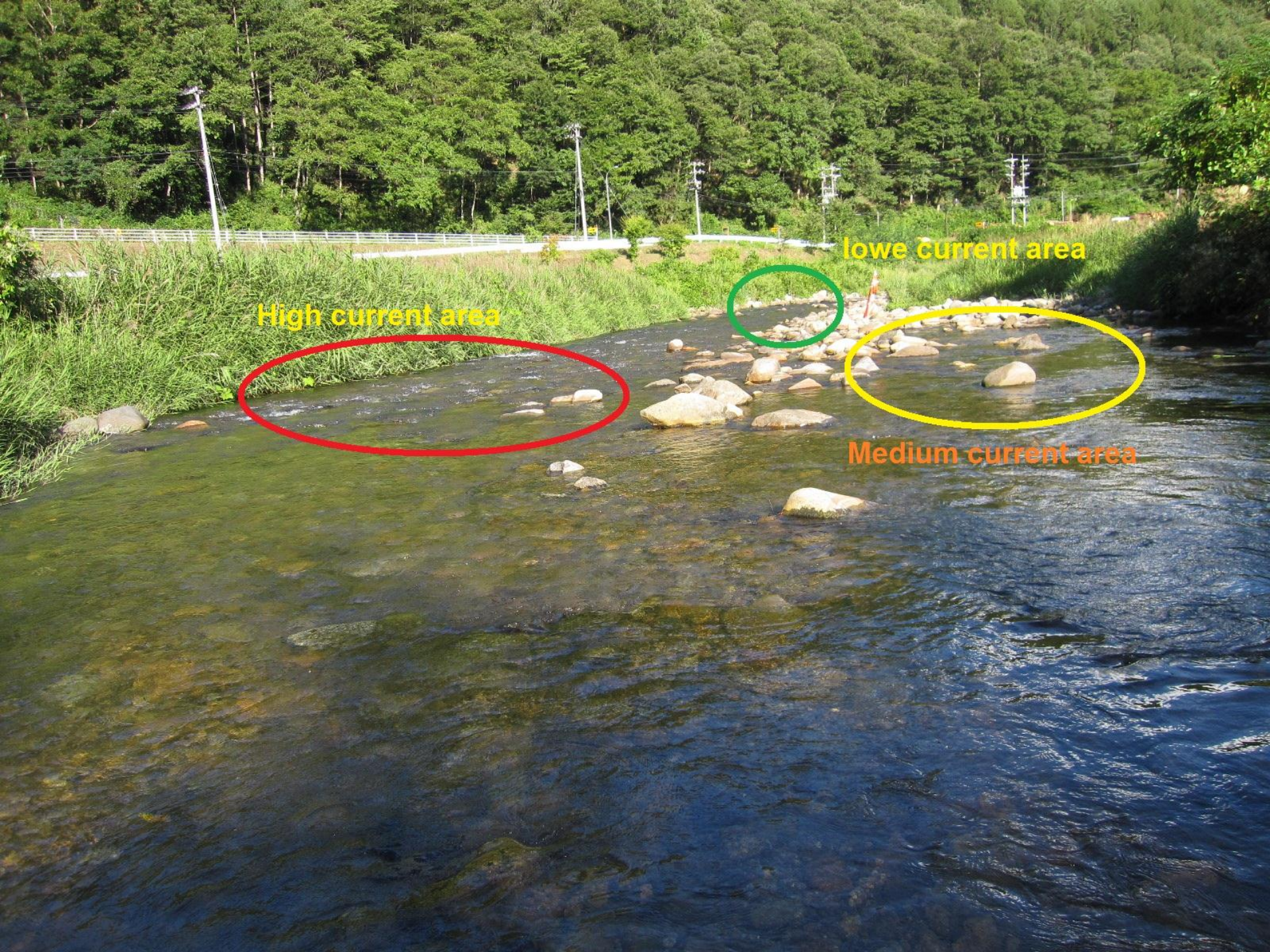
- Addition, some family belong to insect with specific morphology so they could **cling close to stone slit.**
- The family Ephemerellidae is an interesting taxa belong to insect.
- **How is influence of current factor to abundance of insect family (Ephemerellidae)?**



# LOCATION AND METHOD STUDY

- Location research: Kuro river
  - Kisso town – Japan.
- Time: August 22, 2012
- Total 14 sites for collection sample  
**30cm x 30cm squadrates**
- Depth: Limited from 15 cm to 25 cm,
- Collection sample Location is opening area



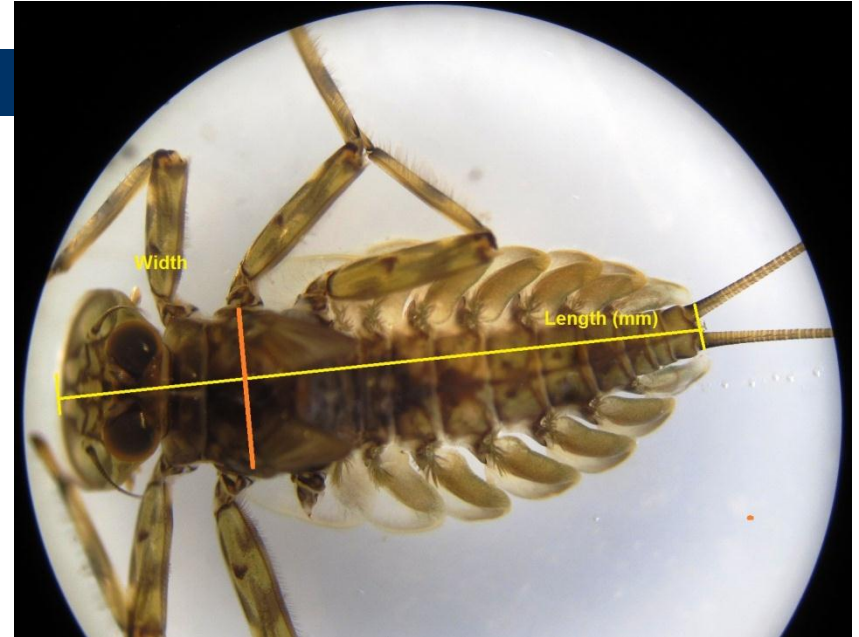


High current area

low current area

Medium current area

## LOCATION AND METHOD STUDY



- Sorting and Measurements sample

# RESULT

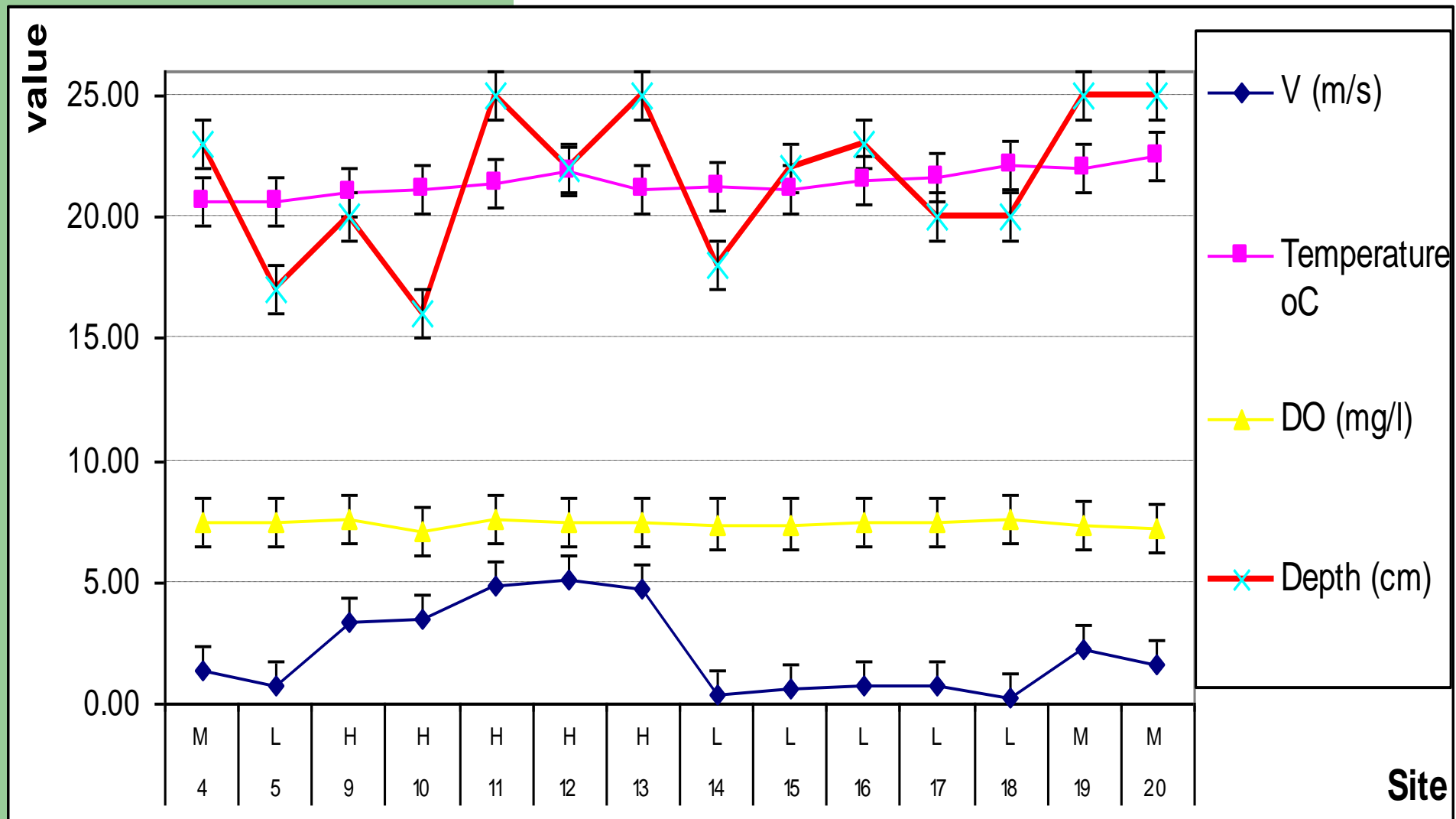


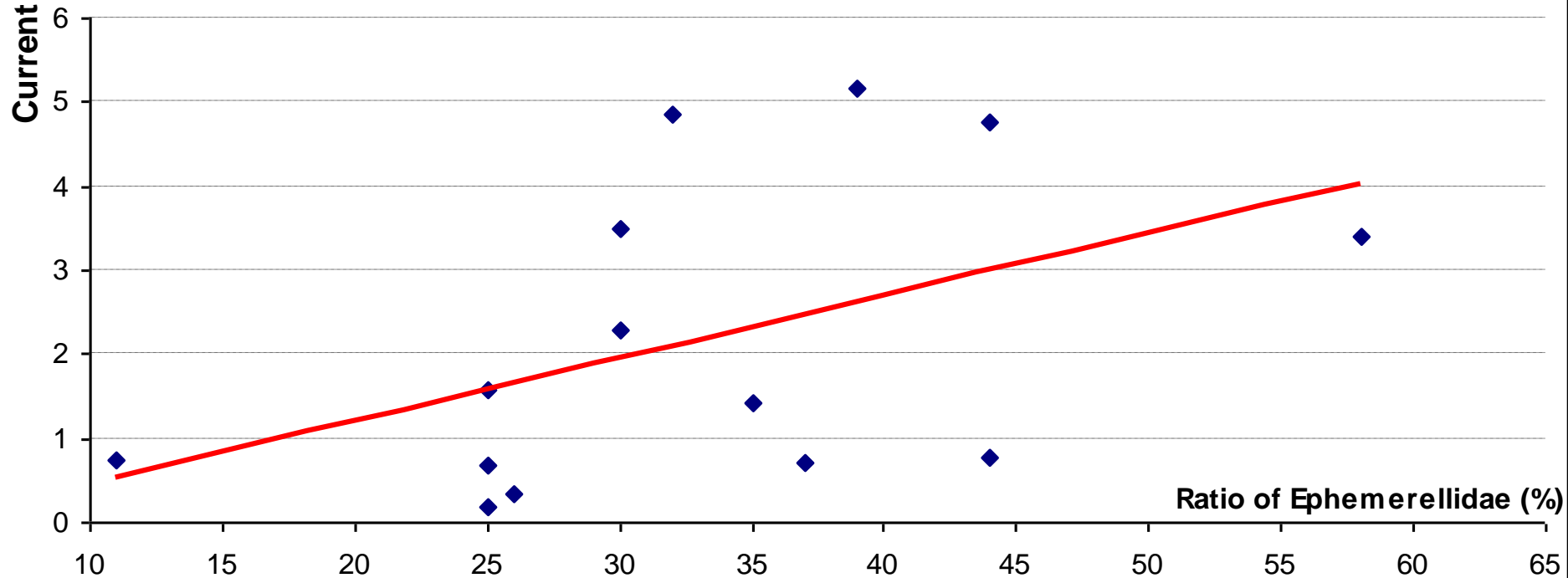
Fig: Environmental indicators of water according to the sampling points

<b>Site</b>	<b>4</b>	<b>5</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>Number of Ephemeroptera individual</b>	<b>23</b>	<b>26</b>	<b>30</b>	<b>17</b>	<b>23</b>	<b>18</b>	<b>32</b>	<b>16</b>	<b>29</b>	<b>44</b>	<b>16</b>	<b>27</b>	<b>10</b>	
<b>Current (m/s)</b>	<b>1.41</b>	<b>0.70</b>	<b>3.40</b>	<b>3.48</b>	<b>4.85</b>	<b>5.16</b>	<b>4.75</b>	<b>0.33</b>	<b>0.68</b>	<b>0.77</b>	<b>0.73</b>	<b>0.19</b>	<b>2.28</b>	<b>1.58</b>
<b>Length (mm) M±SD</b>	<b>6.12 ±2.13</b>	<b>6.02 ±1.45</b>	<b>6.44 ±1.92</b>	<b>5.31 ±2.12</b>	<b>5.76 ±1.44</b>	<b>5.19 ±1.37</b>	<b>4.73 ±1.01</b>	<b>5.96 ±1.47</b>	<b>5.73 ±1.15</b>	<b>5.13 ±1.27</b>	<b>5.74 ±1.57</b>	<b>5.7 ±1.98</b>	<b>5.76 ±1.86</b>	<b>5.25 ±1.44</b>
<b>Width (mm) M±SD</b>	<b>1.81 ±0.13</b>	<b>1.75 ±0.11</b>	<b>1.65 ±0.12</b>	<b>1.66 ±0.11</b>	<b>1.54 ±0.11</b>	<b>1.32 ±0.11</b>	<b>1.41 ±0.11</b>	<b>1.76 ±0.11</b>	<b>1.46 ±0.11</b>	<b>1.46 ±0.11</b>	<b>1.55 ±0.11</b>	<b>1.85 ±0.11</b>	<b>2.02 ±0.11</b>	<b>1.59 ±0.11</b>



# RESULT

The correlation:  
Flow velocity - Ratio individuals belong to family (Ephemeroptera)



- The correlation index: Multiple R = 0.52
- Percentage number of individuals belong to family (Ephemeroptera) in the total number of individual insects increases with flow velocity.

# RESULT

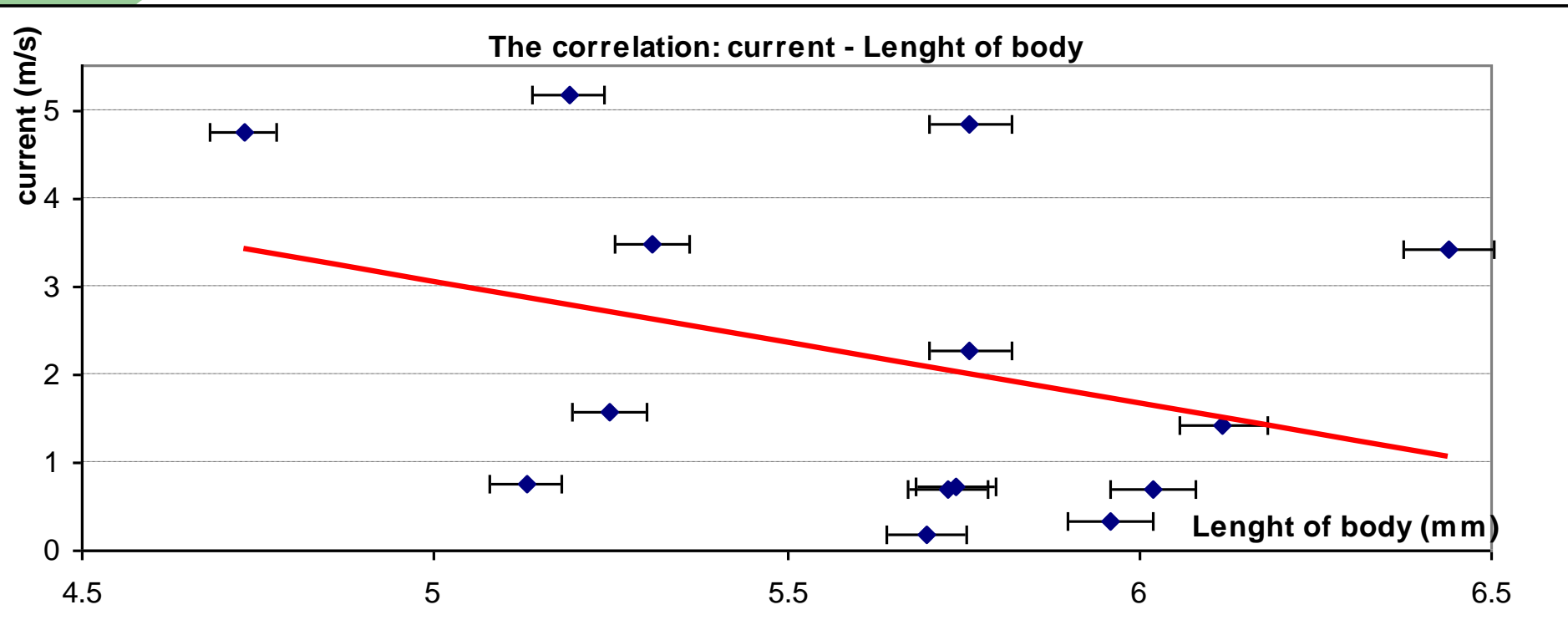


Fig: The correlation: Current factor - width body of family Ephemerellidae

Multiple R = 0.35

# RESULT

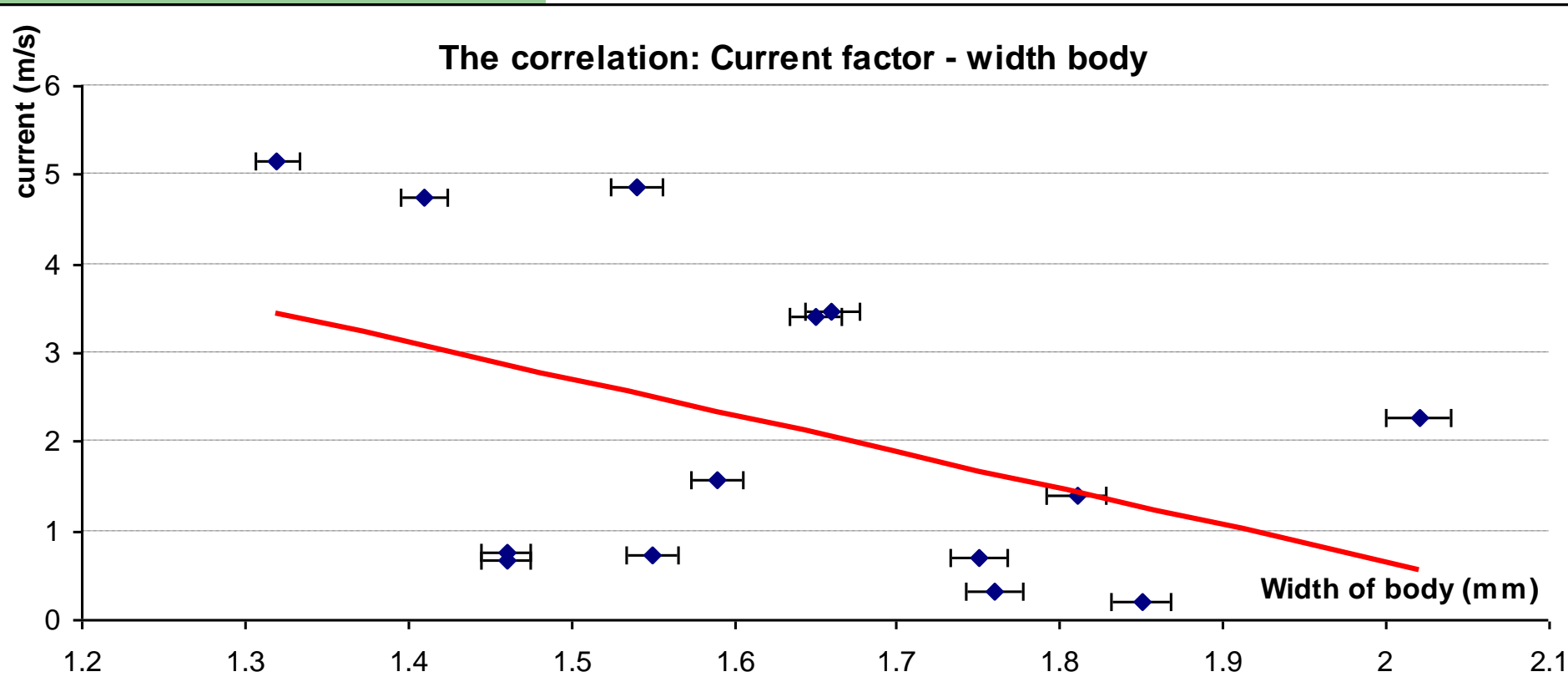


Fig: The correlation: Current factor - width body of family Ephemerellidae  
Multiple R = 0.44

- Discussion: individuals belong to family (Ephemerellidae)
- Suggestion: Should be discussion more than about biology characteristic some insect groups



## Conclusion

Ephemerellidae even can staying in habitat with lower current or higher current

The length body of Ephemerellidae staying in habitat with low current is longer than length body of Ephemerellidae staying in habitat with high current.

THANK YOU VERY MUCH!

