

Diversity and community structure of Ephemeroptera, Plecoptera and Trichoptera in rivers Ruda and Grab

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BACKGROUND

► Aquatic insects as bioindicators of water quality

Spring areas of short dalmatian river Ruda and its tributary Grab are both declared as significant landscape in 2000. These areas have proven to be habitats for some rare and protected species of flora and fauna. However, entomofauna is not well known. Among aquatic insects there are some orders that are recognized as bioindicators of water quality, such as Ephemeroptera (mayflies), Plecoptera (stoneflies) and Trichoptera (caddisflies), so – called EPT taxa. These groups are generally found in streams with good water quality because they are sensitive to water pollution. There are several studies of EPT taxa in these areas but there is a lack of comprehensive research and established monitoring. Since Ruda and Grab have become more attractive for tourists in the last few years, stronger anthropogenic influence is expected, and EPT monitoring may in time indicate disturbance in the ecosystem.

FIELDWORK

January – May 2018

Trapping method



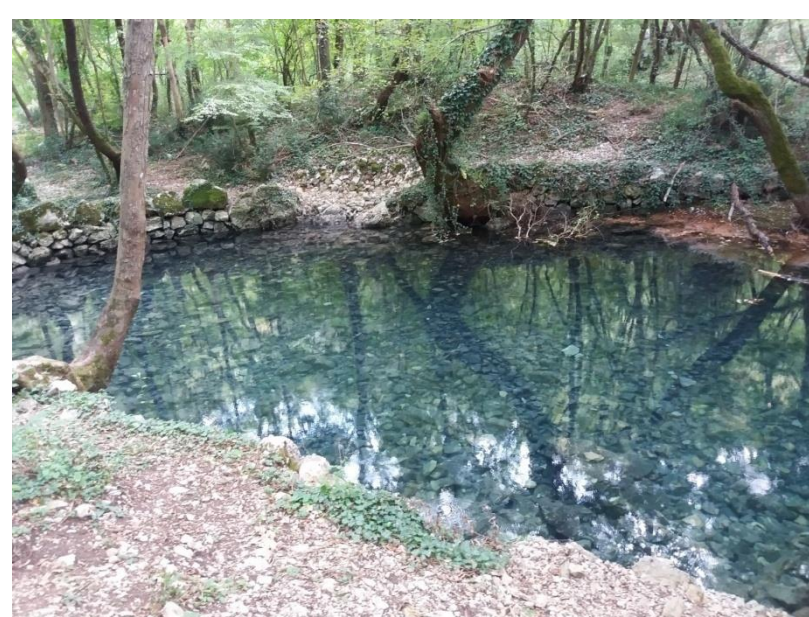
Trapping locations:



RUDA – old mills
unshaded area



GRAB – old mills
unshaded area



GRAB – spring
shaded area

LOCATION	WATER TEMPERATURE
R-om	8°C - 13°C
G-om	9.5°C - 12.5°C
G-sp	10°C - 12°C



The Central Dalmatian main river is Cetina. Ruda is its left tributary, and tributary river of Ruda is river Grab.

Both tributaries are placed near the city of Trlj (43°37'09"N 16°43'25"E).

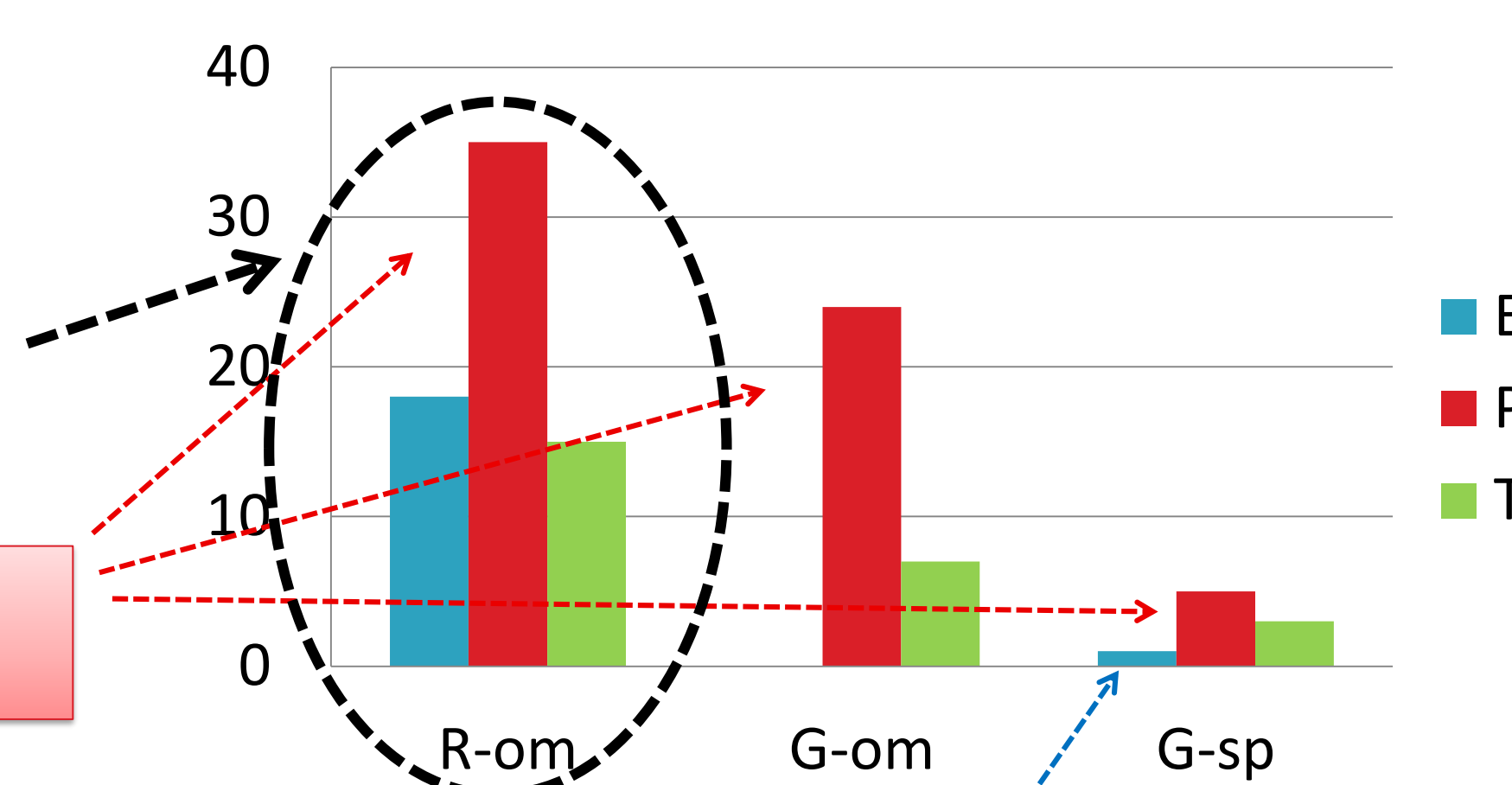
RESULTS

Total number of individuals = 108

R-om location provides more light and several different habitats

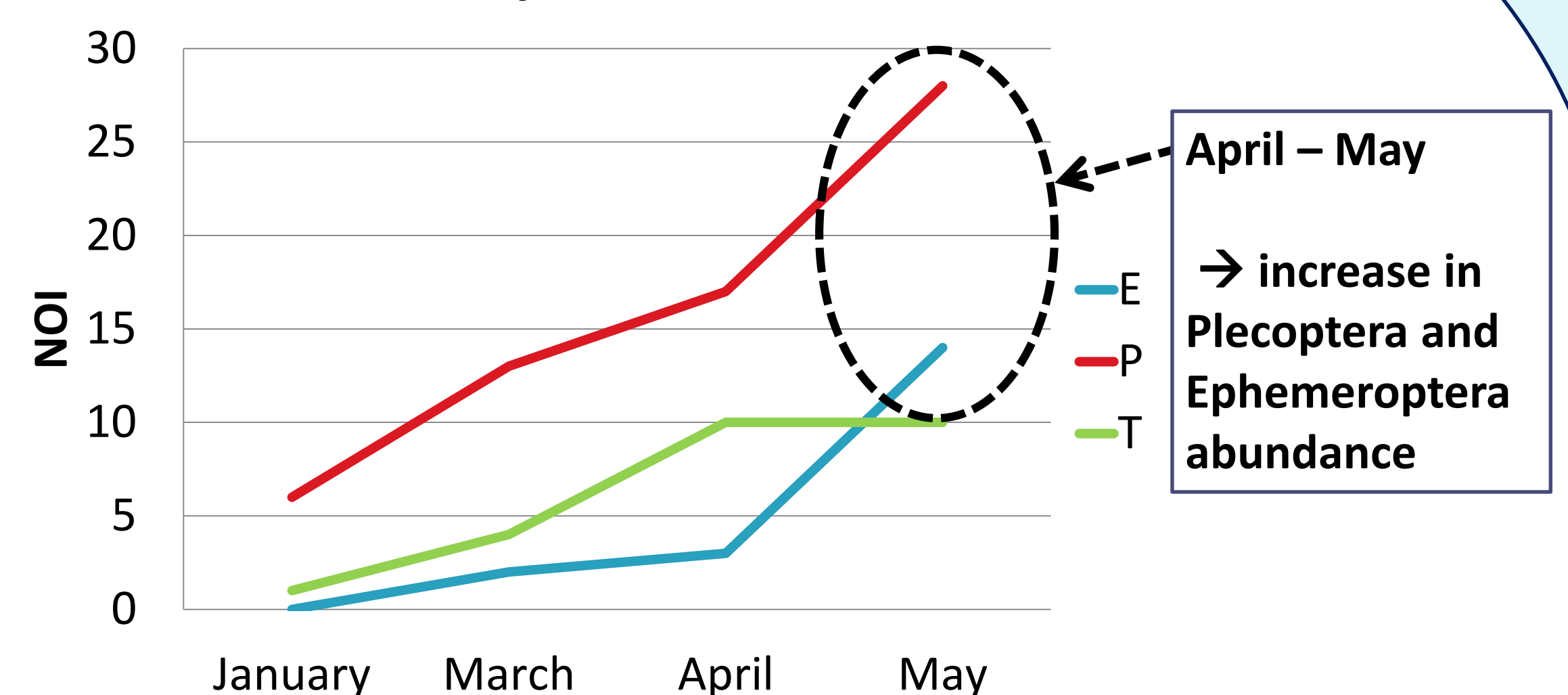
Plecoptera is the most abundant group in the catch

NOI = Number of individuals



Grab - Only 1 individual of Ephemeroptera

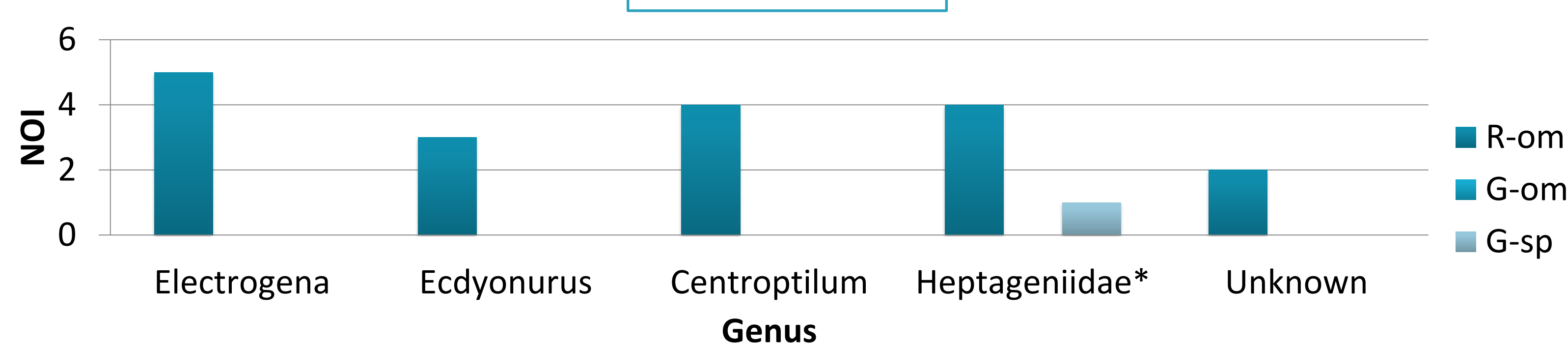
Monthly Abundance



April – May

→ increase in Plecoptera and Ephemeroptera abundance

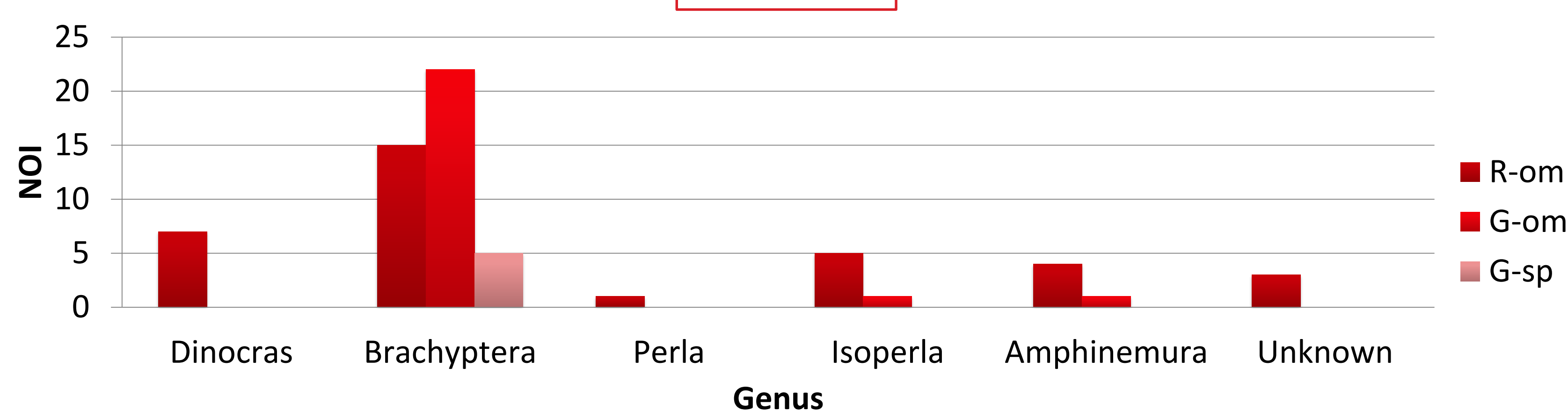
EPHEMEROPTERA



Genus **Electrogena** and species **Centroptilum luteolum** have not yet been recorded in these areas!



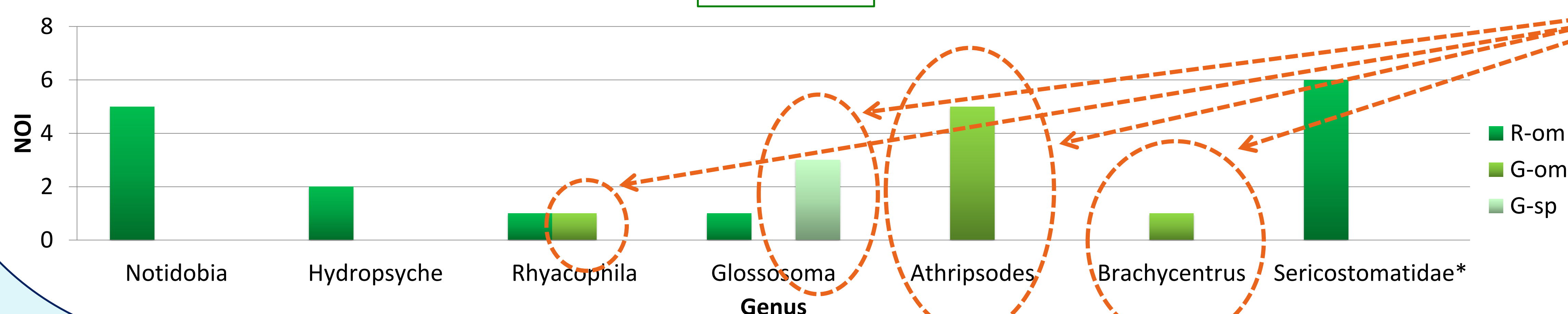
PLECOPTERA



Brachyptera is the dominant genus of Plecoptera in the catch. Spring area of Ruda and Grab provides habitats for genus **Dinocras**, **Perla** and **Isoperla** which are protected by Croatian law of nature protection.

So far there is no data of genus **Notidobia** in the investigated area (river Ruda) according to available literature.

TRICHOPTERA



Data for river Grab (not recorded in available literature)

