SECONDARY SCHOOL
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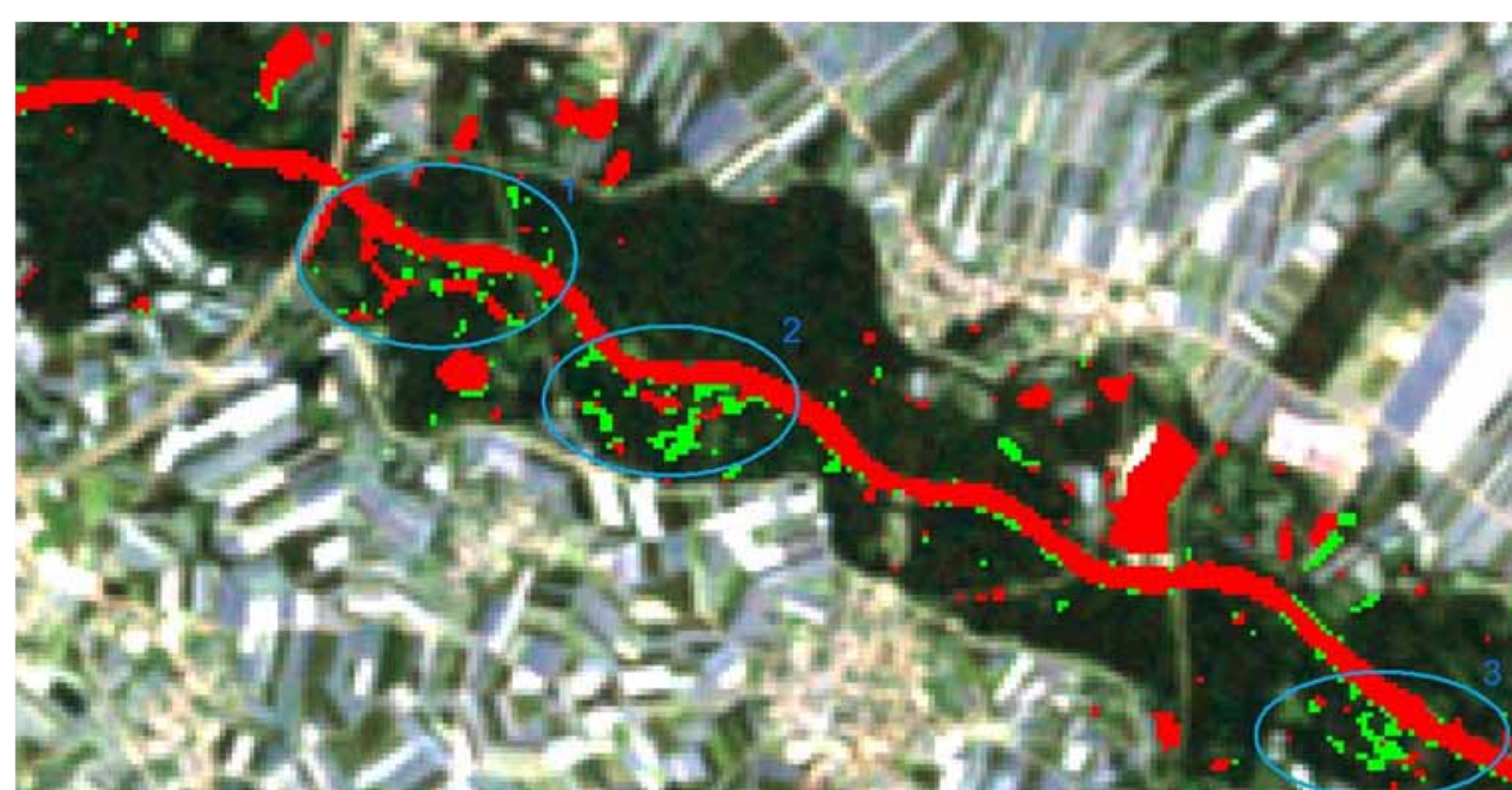Andreja Švab Lenarčič

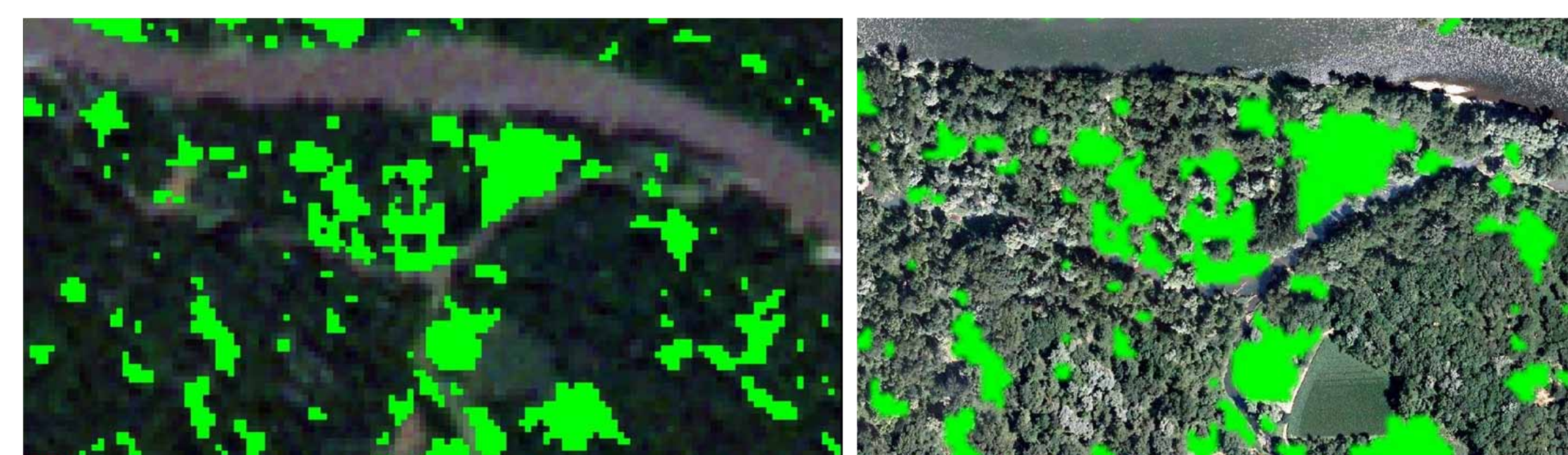# Searching For Beavers On the Banks of the Mura River

The aim of this research was to find the beaver dam. Due to their inaccessibility, remote sensing has been used for their determination. Beavers can be found on the basis of specific characteristic of their living environment.

Possible beaver dams, based on water classification of 1991 (green) and 2011 (red) Landsat images. Background layer is true color Landsat 2011.

Problem overview

In 1990, beavers completely disappeared from the Mura region because of the extermination. However, less than two years ago they repopulated due to favorable conditions.
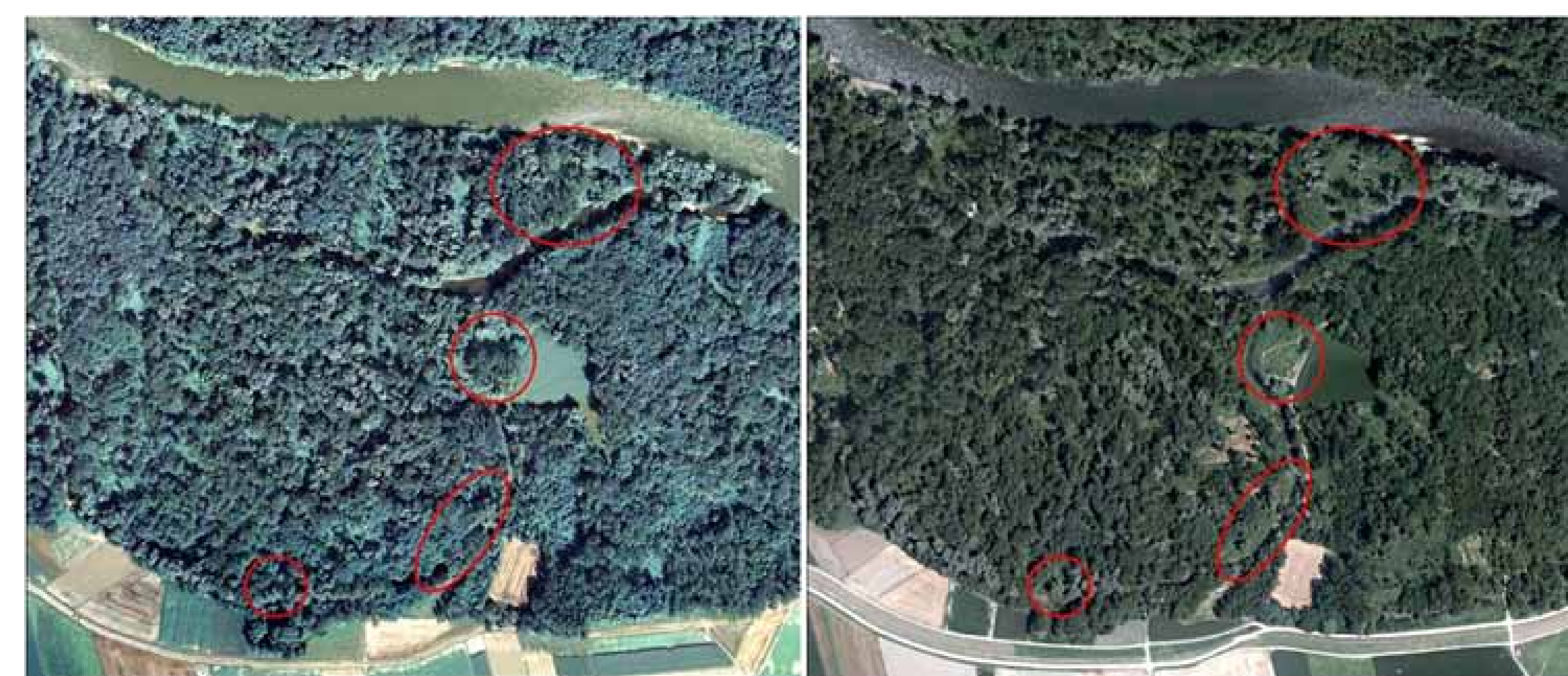

Deforestation determation, based on Rapid Eye image classification. True color Rapid Eye image (left) and digital orthophoto (right) are used as background layers.

Methods and Data

- unsupervised classification of *Landsat 5* image (30 m) for 1991 and 2011 to acquire water areas,
- deforestation area classification of *Rapid Eye* (6.5 m) image for 2011,
- visual interpretation of *digital orthophoto* (0.5 m) for 2010 to get beaver dams,
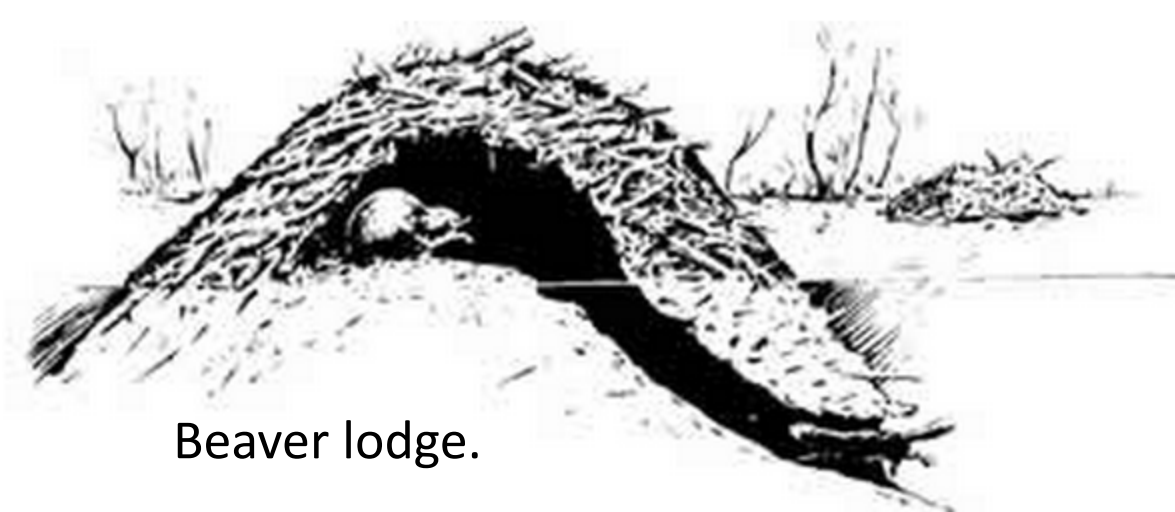- fieldwork to check beaver dams and beavers in live.

Beaver gnawing a tree.

Beaver lodge.

Beaver dam.

How to notice beavers?

Beaver dam area as seen on digital orthophoto of 2005 (left) and 2010 (right).

- They are located in the calm waters (backwaters).
- Tree-felling areas (for food and housing).
- They build dams using branches and mud and log slides which they use to run down to the water.

Digital orthophoto: fallen trees (left) and deposits (right). A tipical work of beavers.

Conclusions

- The hypothesis has been confirmed: all the disorder (such as fallen trees) seen from the satellite images is the work of the beaver.
- Resettlement areas:

  Veržej - river mouth of Besnica in Mura,

  Veržej - 1.300 m away from the railway bridge,

  Petanjci – river mouth of Kučnica in Mura.

Gnawed and fallen trees, found during field work.