

# Using aerial orthophotomaps for the monetary expression value of biotopes on the area affected by industry activities

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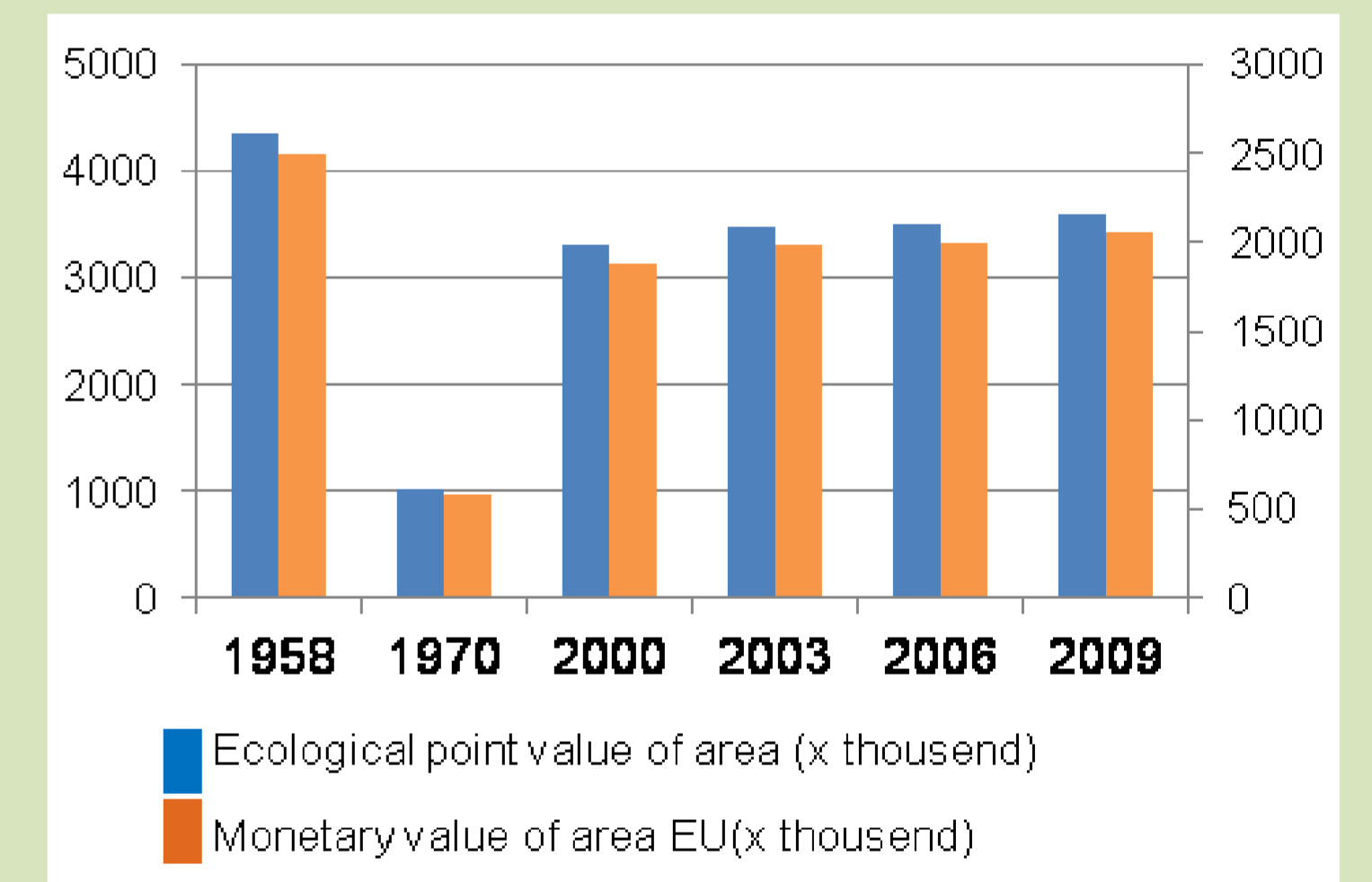
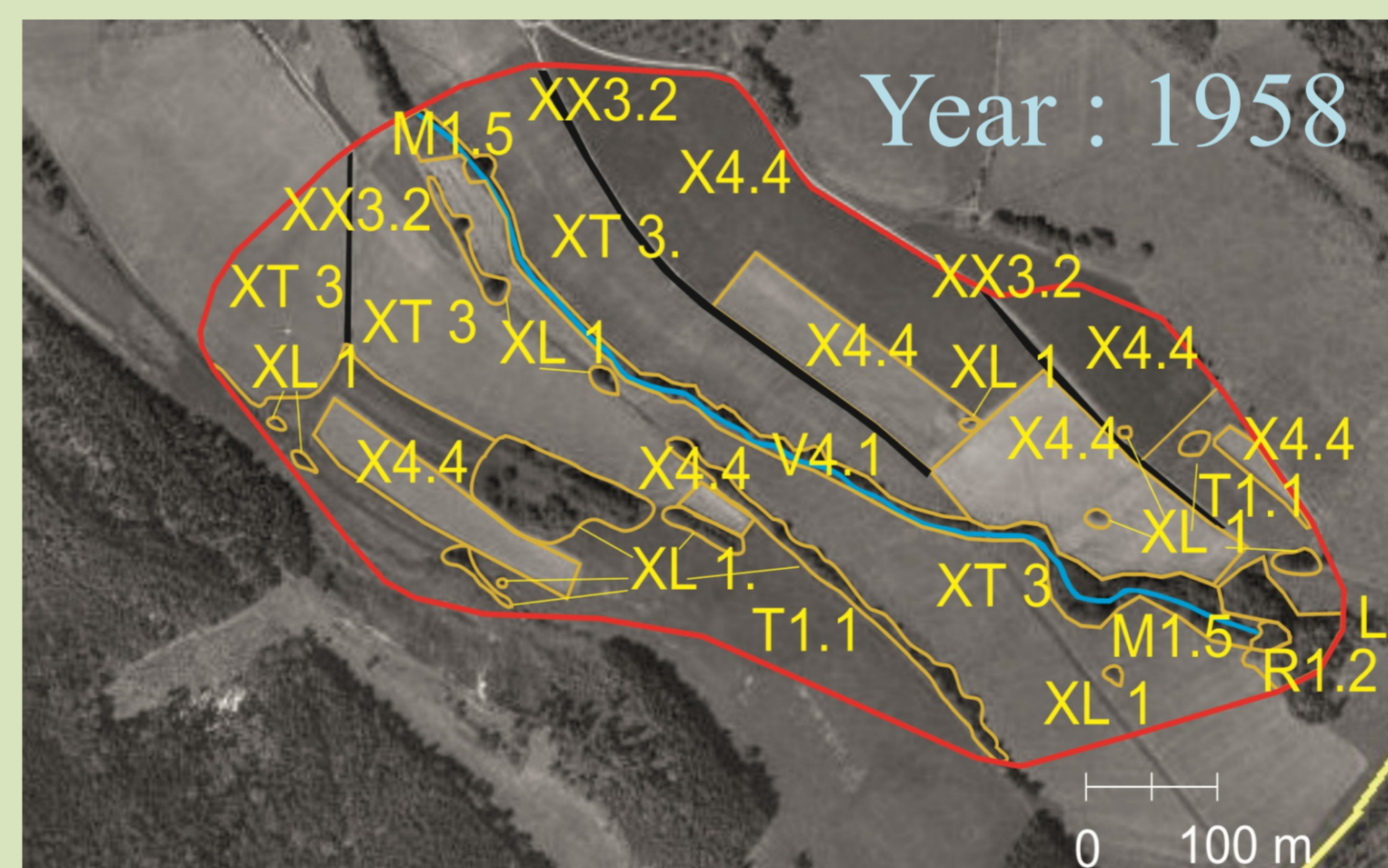
The research area is located in the cadastral area of town Trinec, Dolní Listná in the Northeast of the Czech Republic. The research aimed at the ash pond with a total area of 26.87 hectares. Pond was used from 1964 to 1998, there were 100,000 tons of ash hydraulically deposited per year.

For purposes of determining the ecological and monetary value of area was used the method to evaluate the habitat of several different aspects and assigns them to specific points, which are subsequently converted to cash value. Into the orthophotomaps from different years were drawn polygons (biotopes) with some attribute data (area, name, code, point value of biotope). Each biotope has according to the chosen methodology (Seják & Dejmal 2003) defined a certain number of points on one square meter of its area. 0 points are completely anthropogenic habitats such as sedimentation basins, concretes built-up areas, etc. while the highest values of 80 points / m<sup>2</sup> have the highest quality natural habitats. Subsequently, the point value of biotope is recalculated by the actual size of the biotope in the terrain and this value is multiplied by the value of CZK 14.50 \ point = 0.57 EU (United National Bank, January 25, 2012).



Biotope type	Point value (1m <sup>2</sup> )
R1.2 Meadow springs with tufa formation	56
L1 Alder carrs	55
V4.1 Spring ditchies	41
M1.5 Reed vegetation of brooks	33
T1.1 Mesic Arrhenatherum meadows	33
XL1 Hedgerows and alleys	25
XK2 Fallow land with bushes and trees	24
XL5 Glades, forest plants and restoration forest planting	17
XV1 Vegetation of new water surfaces	16
XT5 Plants of railway or road embankments	15
XV3 Drainage channels	14
XT3 Intensively managed and degraded mesic meadows	13
XK4 Pioneering vegetation of anthropogenic areas	13
X4.4 One-year and autumn plants on arable land	10
X4.5 Herbaceous vegetation on degraded areas, unrecultivated waste dumps	10
XX3.2 Impermeable surfaces and surfaces permanently without vegetation	0
XX1.1 Sedimentation basins, sewage treatment plants (1970)	0

The former ash pond area of coal power plant have been identified with 17 different biotopes which are specific for a mapping year. The highest value was calculated for the year 1958, ie. before building the pond, the lowest value was determined for the year 1970, when the pond was fully functional and its area is occupied almost with 80% of the total surveyed area and 20% were terraces with spontaneous vegetation. In comparison with 1958 this represents a difference 1,913,467.31 EU. Obviously there is a big damage of the landscape, which was caused by anthropogenic intervention. In the years 2000, 2003, 2006 and 2009 the monetary value exponentially increased because of growing ecologically valuable biotopes which increase their size also.



For the year 2009 the monetary value represents the amount of 2,057,968.12 EU and it is assumed that this amount will increase in the following years. Using method (Seják & Dejmal et al. 2003) can easily determine the degree of anthropogenic influence territory or reduce its financial and environmental values. On the other hand, the final amount is very questionable, because as the results show over several years, the monetary value may change. And also the newly created biotopes, mainly semi-natural biotopes have a low point value although we can expect to rise value with respect to self-regulation and the spontaneous regeneration.

**REFERENCES**  
SEJÁK, J., DEJMAL, I. (2003). Evaluation and pricing habitat CR (in Czech). Prague: Czech ecological institute, 450 pp.

