

Abstract

The thesis consists of two main parts: a theoretical one which includes a separate chapter about the Jizera Mountains as a whole, introducing their geological structure, climate, botanical and zoological species and three public figures connected with the Jizera Mountains. The second part is a practical one.

The first chapter which is divided into ten sub-chapters, introduces typical vertebrates, especially those which can be included in education at primary schools and grammar schools.

The next chapter mentions nature trails which are later suggested as enriching elements in zoological excursions. These must follow the official paths within the nature conservation area. Certain thought in this thesis is also given to the SPA (Special Protection Area) established to protect the black grouse and the boreal owl.

The last but one chapter involves selected centres of ecological education and other organisations organising programmes focused on vertebrates. Then there is classification of primary and secondary education with emphasizing a short survey of which biology textbooks are used at primary schools around Jablonec nad Nisou. Education at secondary schools is supplemented with international researches called PISA and TIMSS serving as a base for the last chapter, which is about enquiry based science education.

The practical part involves four preparations for inquiry based zoology lessons concerning vertebrates living in the wild in the Jizera Mountains. It employs both elements of excursions and observing birds and marks of animals, not only footprints. There are also anthropogenic influences in the form of fish and frog crossings taken into consideration. The practical part places emphasis on the utilization of nature trails and institutions offering information about vertebrates or those with vertebrate breeding programmes.

In appendices there are four worksheets with solutions for students based on each enquiry and twelve worksheets either for students or teachers with practical articles solving the problems.

Key words: the Jizera Mountains, vertebrates, inquiry based science education, IBSE, nature trails, animal marks, footprints, fish crossing, frog crossing