# DEVELOPING METHODOLOGY FOR DESCRIPTION OF BIOSPHERE EVOLUTION AT OLKILUOTO DISPOSAL SITE UTILISING FOREST STUDIES AT OTHER LAND UPLIFT SITES

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In Finland, Olkiluoto Island has been selected as the site for final disposal of spent nuclear fuel, in addition to the existing repository for low and intermediate level waste. When creating biosphere models for safety assessments, local main features and processes need to be taken into account. A special characteristic of the site, as well as the coastal area of the Gulf of Bothnia in general, is the land uplift (6-9 mm/a). This continuously exposes new land to soil-formation processes and provides surfaces for colonization by plant communities. The forest vegetation succession on stony, fine-grained till soils starts from deciduous shoreline vegetation and ends in almost pure Norway spruce forests. This has enabled to study ecological and microbiological processes in soils and forests of different developmental stages, to monitor forest condition and the factors affecting it in sites locating close to each other. It has also made possible gradient studies of the succession of boreal mire ecosystems without a need to wait thousands of years. Applying a methodology described in the full paper, a descriptive model on the evolution of the biosphere will be established to indicate possible ecosystem distributions and main characteristics on the area on the basis of above-mentioned studies carried out by Finnish Forest Research Institute, and of results of the site investigations at Olkiluoto. In future, the evolution description will be used as a basis for selection of appropriate ecosystem modules and parameter values in the subsequent coupled assessment model systems.