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Landscape ecological map using LIDAR data

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The authors try to produce of landscape ecological maps for the evaluation of biodiversity supported by the fund of Environment Research Project (D-0805). In this research, we produce the landscape ecological map consists of three dimensional vegetation structure and micro topography under the forest using LIDAR. Two study areas were selected. One is the Shiretoko Peninsula (Mt. Rausu and Shiretoko Corp) as primary forest area. Another is the Chugoku Mountains (north foots of Mt. Dougo) which are many historic iron sand mining sites (Kanna-Nagashi sites) as secondary forest area.

The legend of landscape ecological map is composited the combination of vegetation classification and landform classification. Vegetation is divided into deciduous forest and evergreen forest based on the difference of random points LIDAR data on two seasons, and is classified as three dimensional structures depending on vegetation height. Landform is classified automatically depend on slope degree and convexity of detailed DEM on winter season. Grid size of landscape ecological maps is 4m, because the grid size is corresponding on tree crown size. At first, we produced 1m grid vegetation maps and automated landform classification maps, and then we resampled 4m grid data from 1m grid data. In poster presentation, these maps would be introduced as example of LIDAR application for ecological field.

Keywords: landscape ecological map, LIDAR, biodiversity, Shiretoko Peninsula, Chugoku Mountains