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Challenge of research project Amur-Okhotsuk-Land cover change of the Amur River basin

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Abstract

The Amur River is 4350 km length and drainage area of 2,051,500km². The upstream is in steppe Mongolia. The midstream and lower reaches are belonging to China and Russia which lies in the cool-temperate zone with low winter rainfall. Recent environmental changes originating from land-cover change have been occurring in the Amur River basin and the wetland habitat of the crane has been shrinking because of development and expansion of agriculture zone. The agriculture has been developed and cultivated area has been increased in 20 years in Heilongjiang Province. Russian territory through which the river passes has been in a state of economic depression since the collapse of the old Soviet federation. Therefore, the regional differences in land-cover change in the Amur River basin are remarkable.

Our object is how to evaluate the factors influencing anthropogenic land-cover change in the basin is needed. The only research data that we have on land-use and land-cover change in the area is the results of statistical material analyses of individual regions. PAL dataset offered by DAAC of NASA/GSFC was used to analyze land-cover changes in the study area. In this study, we used fur parameters are analyzed NDVI, NDVImax, NDVIstd and TRJ related with vegetation and land cover last 20years.

NDVI indicates large change depending on years. The value of NDVI is large in the entire Amur river basin in 1989, 1994, and 1995 especially. However, 1985 and 1993 have become small. It is thought that NDVI reflects meteorological conditions of every year, and catches the activity of vegetation certainly because this is a change on the large scale. NDVI extremely becomes small in the northern Amur river of 1983 and 1996 is also seen. Sanjiang Plain and surrounding are one of remarkable land cover change signals. The above area is the low elevation zone where agriculture is being actively done recently. For Songhua River, NDVImax 0.008 and TRJ ?3.0. The changes in these parameters on the floodplain between the Songhua River and the Amur River are plain. The heat budget at ground level is changed by water transmission via irrigation and Ts decreases. TRJ decreased by the factor and the secular variation in each parameter showing land-cover change through the development of agricultural activity.

Keywords: Amur river, GLP, Land cover change, NDVI