

Study on water quality composition and its change in Ishigaki Island

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In Ishigaki Island in the Yaeyama Islands, valuable coastal environments such as coral reefs exist, and the impact of land water flowing through the island on the coastal environment is very large. Research has been conducted on the formation of water quality composition by soil, soil and nutrient salts mainly in rivers such as the Nagura River and the Todorogawa River. Our laboratory has been conducting surveys on Ishigaki Island since 2006 –2011 and 2018, and we report a comparison between past research data and recent survey results.

The water quality composition of Ishigaki Island is classified as alkaline earth carbonate type because the dissolved components are overwhelmingly larger than the average river in Japan. In particular, the distribution of the Na-Cl and Ca-HCO₃ forms is remarkable. This can be attributed to the geological condition of being a limestone area, sea salt, and agriculture. Nitrogen pollution was significant in upland farming areas and urban areas, and nitrite and ammonia components were detected in some urban areas. It seems that there are areas where wastewater treatment is insufficient.

In the future, it is necessary to collect more samples in cooperation with local citizens' groups, accumulate data through long-term surveys, clarify changes in water quality composition by comparing with past research data, and conduct research on the effects on the surrounding environment.

Keywords: Ishigaki Island, limestone, Nagura River, nitrogen pollution

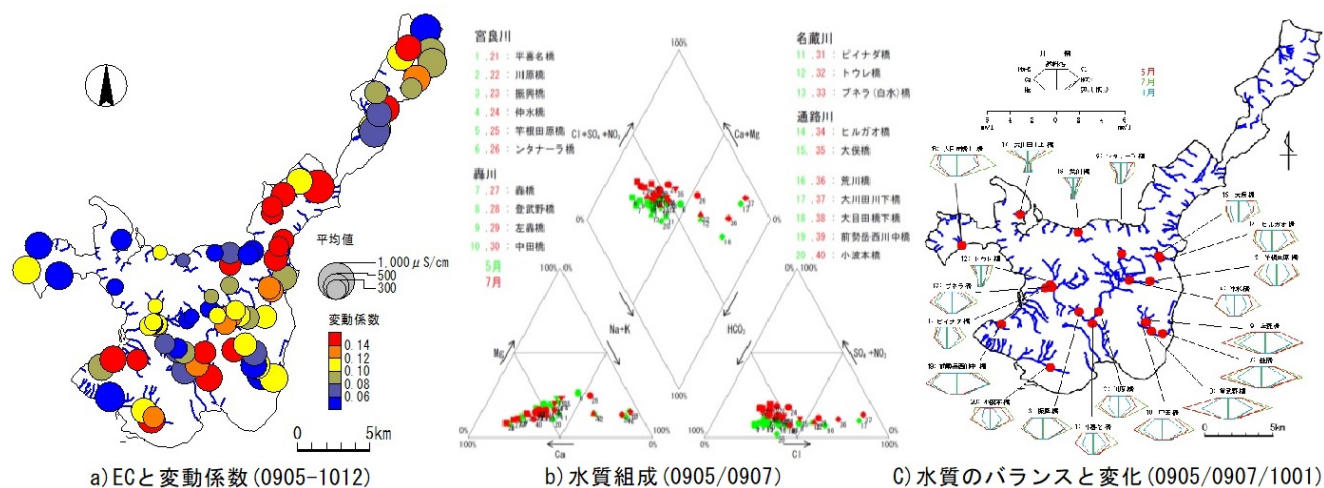


図1 石垣島の河川水質と変化