Integration of multisource data for chlorophyll-a monitoring in Negombo estuary, Sri Lanka

Dahanayaka, D.D.G.L.
Ibaraki Univ., Hitachi, Japan
Tonooka, H. ; Wijeyaratne, M.J.S. ; Minato, A. ; Ozawa, S.

Abstract

In order to estimate chlorophyll-a concentration (Chl-a) for tropical coastal estuarine environments using satellite optical sensor, observations were conducted from 1987 to 2009 in Negombo estuary, Sri Lanka, with support with available in-situ measurements. Landsat band ratios were regressively analyzed with available in-situ Chl-a data. This relationship was used for correcting MODIS OC3 Chl-a values, and then ASTER band ratios were regressively analyzed with the corrected MODIS values. The regression equations obtained for ASTER and Landsat were used to develop algorithms for generation of 15m and 30m resolution Chl-a distribution maps, respectively, in Negombo estuary using atmospherically-corrected time-series imageries. The results indicate that some parts of the estuary have increased eutrophication conditions during 1987-2009.

Published in:

Geoscience and Remote Sensing Symposium (IGARSS), 2011 IEEE International

Date of Conference:

24-29 July 2011

Page(s): 2149 - 2152

Publisher:

IEEE