

SATELLITE IMAGE FUSION FOR SHRIMP FARM AND AQUACULTURE AREA

Surat Jiaranaiwiwat
Burapha University, Chonburi 20131, Thailand
Tel: 6638-745900 Fax: 6638-393474
E-mail: jia_surat@hotmail.com

Assoc. Prof. Dr. Kaew Nualchawee
Burapha University, Chonburi 20131, Thailand
Tel: 6638-745900 Fax: 6638-393474
E-mail: Knualchawee@yahoo.com

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ABSTRACT:

The objective of this research was to study the fused satellite data. Four different fusion techniques namely: Brovey Transformation, HSI (Hue:Saturation:Intensity) Color Transformation, PCA (Principal Component Analysis) and HPF (High Pass Filter), were used in shrimp farm and aquaculture area near Bangpakong River to test the visual interpretation of the fused images. Landsat 5 Thematic Mapper (TM) seven spectral bands were fused with ETM+ Panchromatic band with 15 m resolution, IRS-1C Panchromatic band with 5 m resolution, Radarsat (SAR) with 8 m resolution and SPOT-5 Panchromatic band with 2.5 m resolution to produce fused image with higher spatial resolution than those of the original bands. The results of the visual interpretation of Bangpakong River for dataset of Landsat 5 TM band 1 to 7 and SPOT-5 (PAN) images indicate that the PCA method worked the best. The fused image was able to distinguish boundaries of shrimp farm and aquaculture area very well. It was found that the amount of digitized shrimp farm and aquaculture area on fused image increased by 28.65 percent.