MONITORING AND ASSESSMENT OF ECOLOGICAL CHANGE IN COASTAL CITIES BASED ON RSEI

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二. 成果简介：

Based on Landsat 8 remote sensing images (2016, 2017), and Sentinel-2A remote sensing images (2016, 2017). RSEI values obtained from Landsat 8 and Sentinel-2A images. The Landsat 8 remote sensing image and the Sentinel-2A remote sensing image are compared in terms of ecological monitoring.

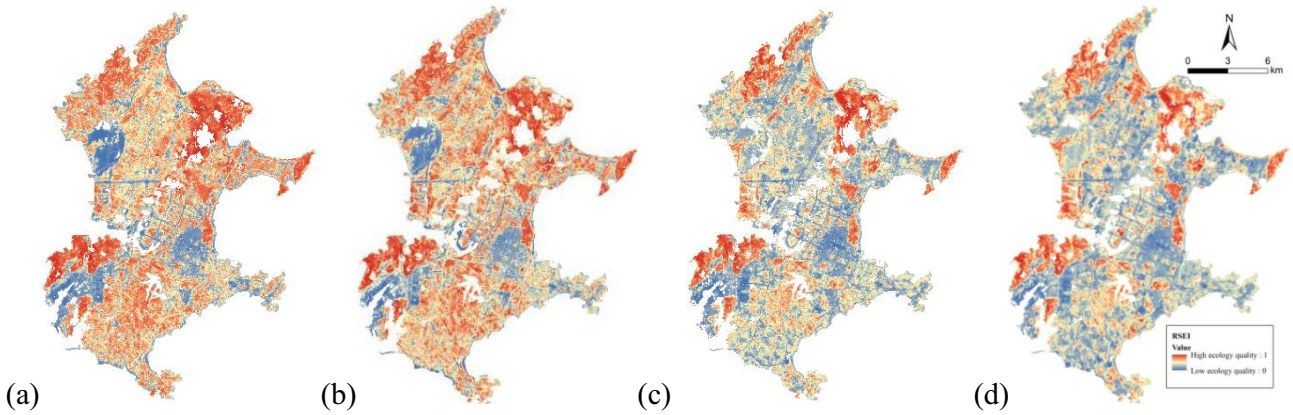
三. 主要研究内容及创新点：

(1) Image preprocessing: The Landsat 8 image was atmospherically corrected using the ENVI Atmospheric Correction Tool (FLAASH). The Sentinel-2A data is directly preprocessed with Sen2cor provided by ESA. The water mask, cloud and shadow mask are applied to the image of the study area after the atmospheric correction. (2) Calculate the remote sensing ecological index: Calculating the ecological index of the preprocessed remote sensing image, obtain the four ecological indicators of the two Landsat 8 images and the two Sentinel-2A images, then normalize the four ecological indicators, calculate PCI, and finally obtain the RSEI images of each phase and the model results are compared and analyzed(Tab1、Fig1).

Tab 1. The normalized values of the four indicators and the mean RSEI of the Pingtan

Index	06-23-2016		07-20-2016		04-29-2017		04-02-2017	
	Sentinel-2A		Landsat 8		Sentinel-2A		Landsat8	
	Mean	PCI	Mean	PCI	Mean	PCI	Mean	PCI
NDVI	0.684	0.765	0.636	0.703	0.716	0.600	0.690	0.539
Wet	0.544	0.104	0.645	0.319	0.704	0.101	0.610	0.273
NDSI	0.443	-0.452	0.487	-0.516	0.475	-0.526	0.471	-0.585
LST	0.496	-0.444	0.496	-0.369	0.473	-0.522	0.473	-0.541
RSEI	0.60		0.56		0.56		0.52	

As shown in Fig1, they are Sentinel-2A and Landsat 8 remote sensing ecological index images.



(a) (b) (c) (d)

Fig 1. Four RSEI images. (a) (b) show the RSEI values of Sentinel-2A and Landsat8 in 2016, (c) (d) show the RSEI values of Sentinel-2A and Landsat 8 in 2017

四. 主要研究成果及应用情况

在 2019 年大数据测绘地理信息科学国际研讨会发表 EI 会议论文 1 篇。

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