



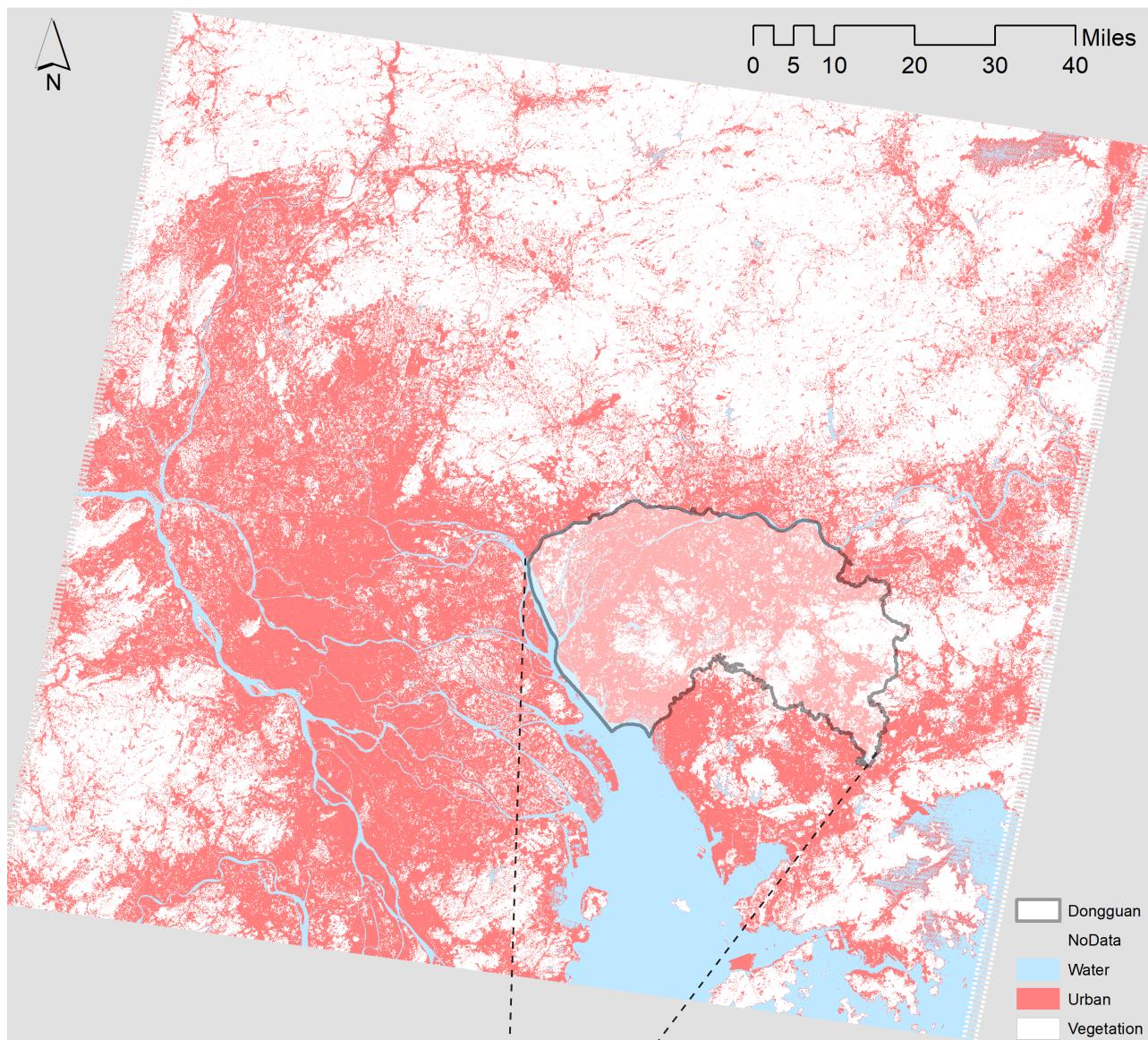
## HW5 - Remote Sensing & Land Use Efficiency

MUSA 507

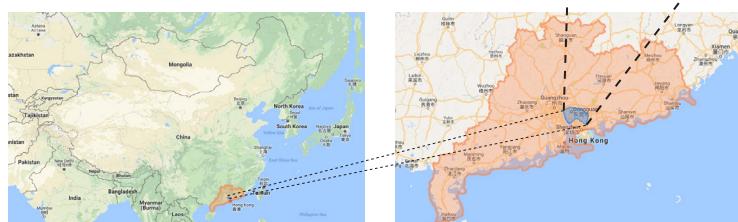
Spatial Analysis for Urban & Environmental Planning

Jiaxin, WU

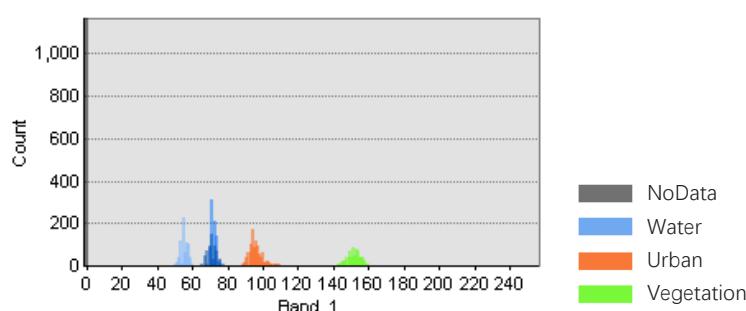
# Urban Areas in Dongguan in 2008



## Location of Dongguan



## Signature Histogram

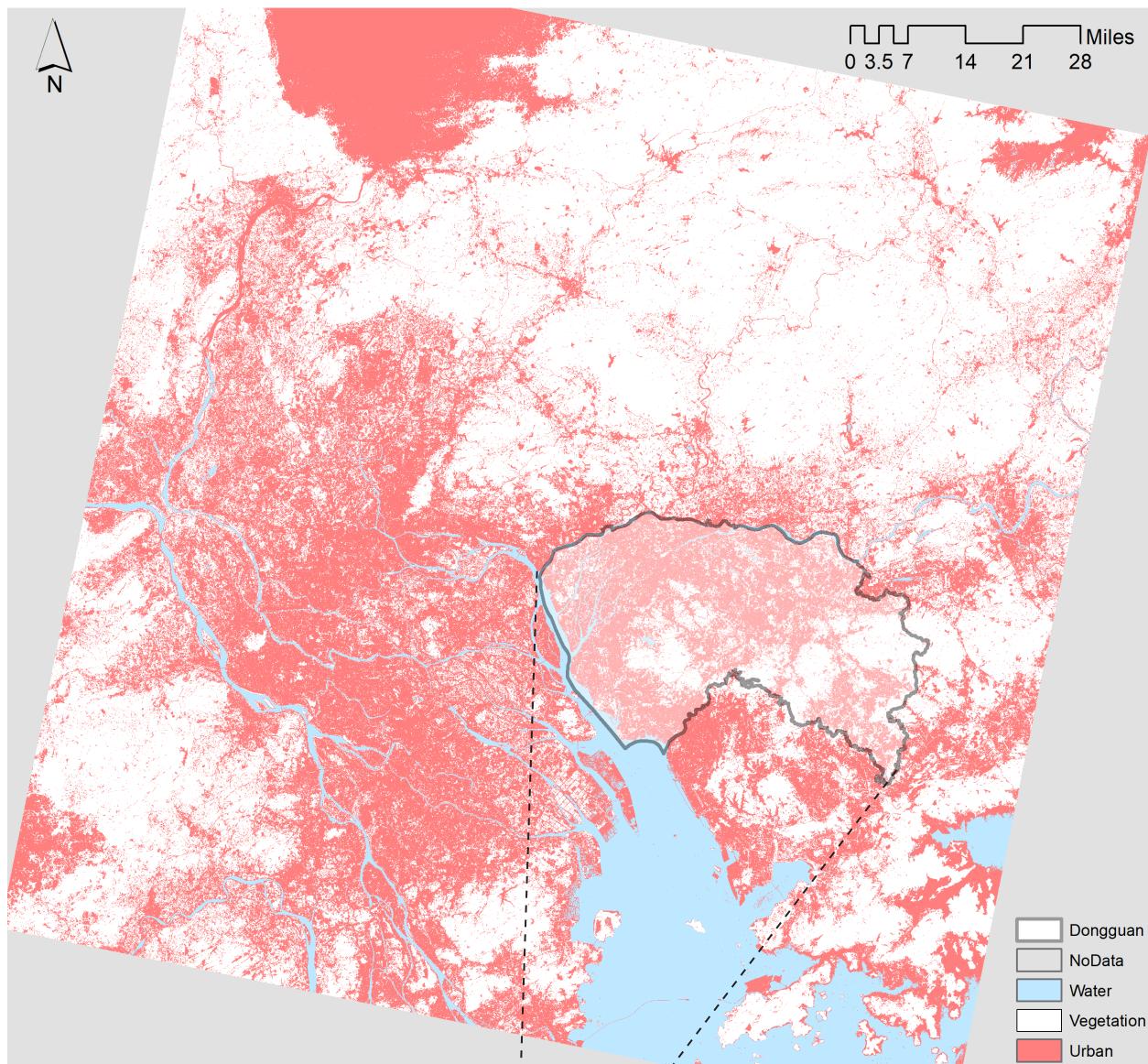


It's a raster map of Dongguan, a city in China and its environs in 2008, classified in different colors by land cover categories, including **Urban Sites**, **Vegetation** and **Water**.

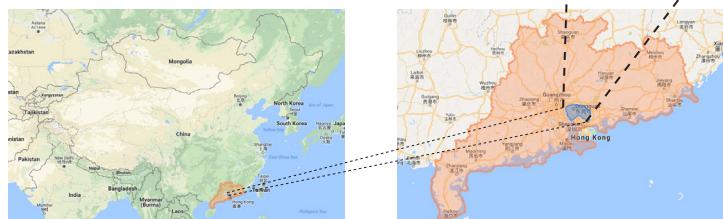
Each color refers to respective category as displayed in the legend. Territory of Dongguan is **Outlined by Black** and **Covered by a Translucent Mask**.

The left histogram indicates **Band Ranges** and **Counts** of colors I used as a training sample to classify the original satellite imagery, where I set 3 types of blue that all refer to water for the purpose of precision, since its color in satellite imagery is the most likely to bleed into others.

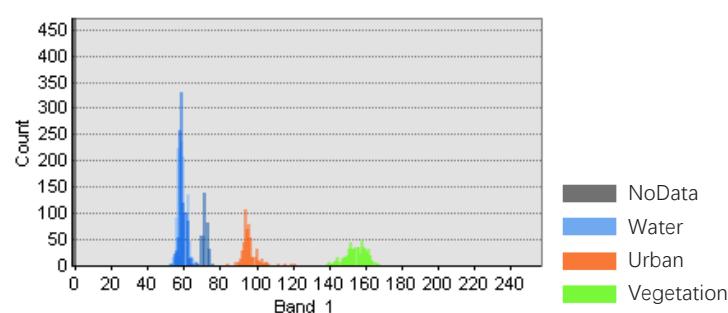
# Urban Areas in Dongguan in 2018



Location of Dongguan



Signature Histogram

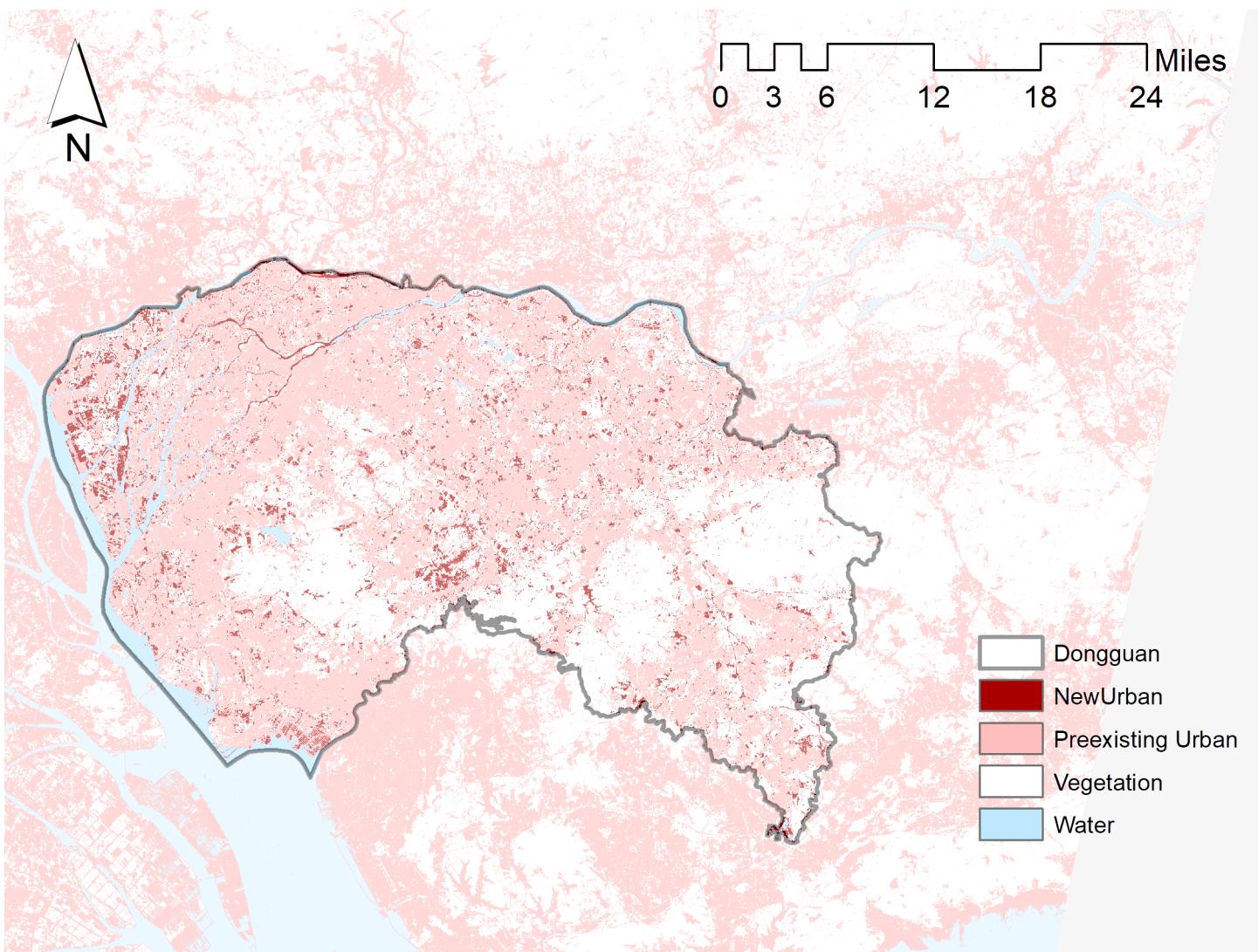


It's a raster map of Dongguan, a city in China and its environs in 2018, classified in different colors by land cover categories, including **Urban Sites**, **Vegetation** and **Water**.

Each color refers to respective category as displayed in the legend. Territory of Dongguan is **Outlined by Black** and **Covered by a Translucent Mask**.

The left histogram indicates **Band Ranges** and **Counts** of colors I used as a training sample to classify the original satellite imagery, where I set 3 types of blue that all refer to water for the purpose of precision, since its color in satellite imagery is the most likely to bleed into others.

# Urban Areas in Dongguan in 2018



<b>Attribute</b>	<b>Units</b>	<b>2008</b>	<b>2018</b>	<b>Growth</b>	<b>Ratio</b>
<b>Urban Land</b>	Counts (Cell Num)	1694791	1877949	183158	10.8%
	Areas (km <sup>2</sup> )	<b>1525.31</b>	<b>1690.15</b>	<b>164.84</b>	
<b>Population</b>	Thousands	6275.11	7570.89	1295.78	20.6%
<b>Land Use Efficiency</b>					<b>52.3%</b>

This map above shows *Preexisting Urban Areas* in light red and *New Urban Areas* in dark red respectively. These emerging urban areas distribute evenly and are close to preexisting ones, which corresponds to the common phenomenon that urbanization tends to favor sites within 6km of existing urban development.

As displayed in the table above, urban land cover in Dongguan increases from **1525.31 km<sup>2</sup>** in 2008 to **1690.15 km<sup>2</sup>** in 2018 with a rate of **10.8%**. Meanwhile, population grows from **6.28 Million** in 2008 to **7.57 Million** in 2018 with a rate of **20.6%**. Considering the rate of population growth is **Twice** as large as that of urban development, it indicates that land use in Dongguan in the past decade is **Considerably Efficient**. In other words, there is **No Trace** of urban sprawl in these areas.