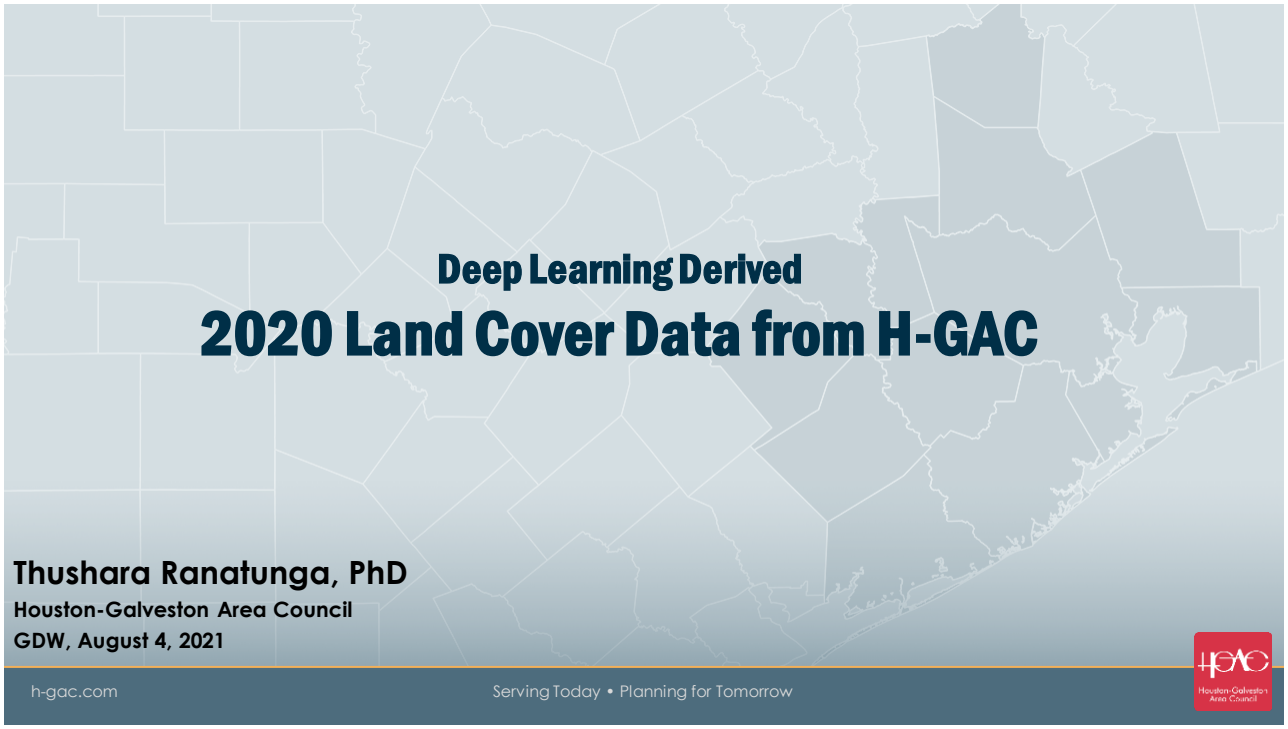


1

Land Cover Data- Overview

- Popular Land Cover Data Types for H-GAC region
  - MRLC - NLCD
  - NOAA – C-CAP
- Land Cover data release frequency
  - Generally, in 5-year interval
    - NLCD: 2001, 2006, 2011, 2016
    - C-CAP: 2001, 2006, 2010, 2016
  - It takes about 3-4 years to release a version
- H-GAC produces in-house LC with less delay
  - Started in 2015, then 2018
  - New release is 2020

2

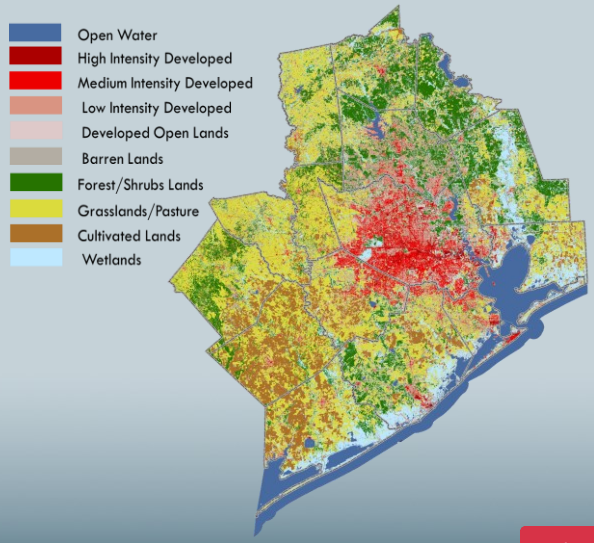
H-GAC Land Cover Data Development

- Use Remote Sensing and Geospatial techniques
  - ENVI – for Image processing
  - ArcGIS Desktop – Classifications and post-classification analysis
- Imagery Source
  - Level 1, Landsat 8 OLI/TIRS
  - H-GAC Aerial imagery
- Image Classification
  - Pixel based classification using both Supervised and Unsupervised classification techniques

3

H-GAC Land Cover Data 2015 and 2018

- Anderson Level 1,10 Major Land Cover classes
  - Compatible with both consolidated NLCD and C-CAP
  - 30-meter (98.425 ft) resolution
  - Over 70% kappa accuracy
  - H-GAC 13 counties + 2 additional counties
  - Available to download with metadata and technical documents



4

H-GAC Land Cover Data 2020

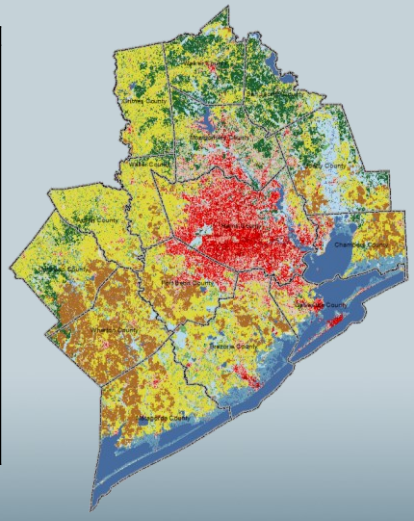
- Deep Learning Image classification technique
  - ArcGIS Pro 2.7
  - Python scripting
  - Deep Learning Libraries for ArcGIS Pro is essential
  - Train Deep Learning Model tool can be used to create Model definition file

5

H-GAC Land Cover Data 2020

- 15 Classes dataset
  - Fully compatible with NLCD
  - 30-meter (98.425 ft) resolution

Level 1 Class	15 Class Classification
Water	
	Open Water
Developed	
	Developed, Open Space
	Developed, Low Intensity
	Developed, Medium Intensity
	Developed High
Barren	
	Barren Land (Rock/Sand/Clay)
Forest	
	Deciduous Forest
	Evergreen Forest
	Mixed Forest
Shrubland	
	Shrub/Scrub
Herbaceous	
	Grassland/Herbaceous-
Planted/Cultivated	
	Pasture/Hay
	Cultivated Crops
Wetlands	
	Woody Wetlands
	Emergent Herbaceous Wetlands



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H-GAC Land Cover Data 2020

- https://www.h-gac.com/land-use-and-land-cover-data

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H-GAC Land Cover Data 2020

- https://www.h-gac.com/interactive-web-applications

8

H-GAC Land Cover Data 2020

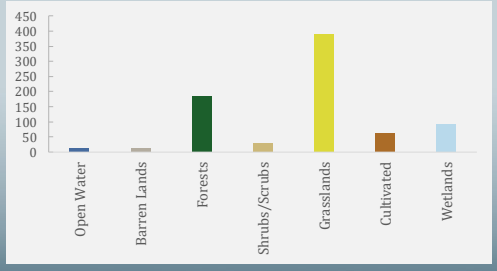
- Land Cover Data applications
  - Change detection
  - LULC forecast
  - Land/Watershed Characterization
  - Watershed/Hydrological Modeling
  - Ecosystem resource planning

9

LC Change Detection: From 2016 to 2020

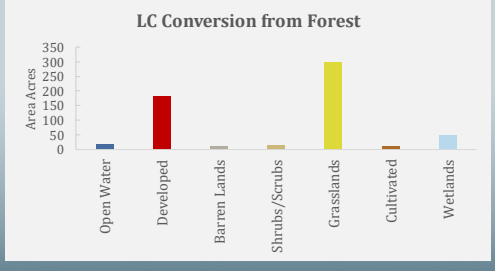
- LC Conversion to Developed

2016	2020	Area _Sq_Miles
Open Water	Developed	11.9
Developed	Developed	2252.4
Barren Lands	Developed	11.7
Forests	Developed	184.3
Shrubs/Scrubs	Developed	29.8
Grasslands	Developed	389.6
Cultivated	Developed	61.9
Wetlands	Developed	91.7



- LC Conversion From Forest

2016	2020	Area _Sq_Miles
Forests	Open Water	16.6
Forests	Developed	184.3
Forests	Barren Lands	11.4
Forests	Forests	1540.7
Forests	Shrubs/Scrubs	14.3
Forests	Grasslands	298.0
Forests	Cultivated	10.1
Forests	Wetlands	50.0



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Contact and links

H-GAC Interactive Tools Page
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