Workplan Action 1.2 Progress Report

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LAND USE WORKGROUP STAFFER

MARCH 6, 2019

Workplan Action 1.2

- Assess land use change throughout the Bay Watershed and Bay States from the early 1980's through mid-2010's using the CBP 2013 high-res land use coupled with the Land Change Analysis and Monitoring Program Database and National Land Cover Database, the NRCS National Resources Inventory, and the USFS's Forest Inventory and Assessment data.
- Responsible party: USGS, CRC Staffers
- Expected timeline: Summer 2019

Methodology

- USGS National Land Cover Dataset (2001, 2006, 2011) + 2016 when released
- All Mid-Atlantic states by state (DC, DE, MD, NJ, NY, PA, VA, WV)
- Combine all rasters and export to Excel
- Sort by state, change, count

Count	MidAtlState_ras	nlcd_2001_landco	nlcd_2006_landco	nlcd_2011_landco	No Change
23899	1	82	21	21	FALSE
18822	1	81	82	82	FALSE
14456	1	82	22	22	FALSE
11508	1	52	42	42	FALSE

Methodology (cont.)

- Chose the top 10 combinations with the largest areas from each state
- Primary class and secondary class when necessary
- Used Google Earth to help identify classes

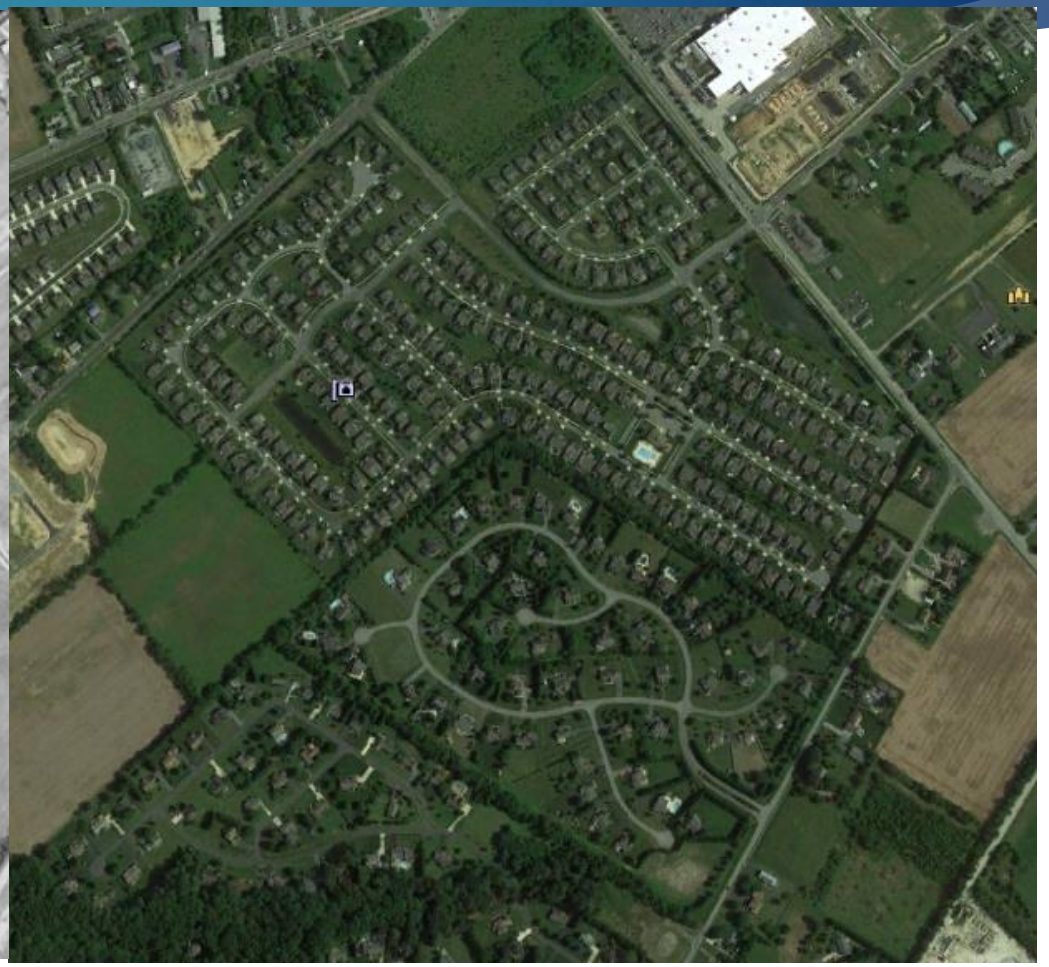
From	To	To	Primary	Secondary
Cultivated Crops	Developed Open Space	Developed Open Space	Farmland Conversion	
Pasture/Hay	Cultivated Crops	Cultivated Crops	Confusion	
Cultivated Crops	Developed Low Intensity	Developed Low Intensity	Farmland Conversion	
Shrub/Scrub	Evergreen Forest	Evergreen Forest	Silviculture	Succession
Developed Open Space	Developed Medium Intensity	Developed Medium Intensity	Intensification	

Delaware

- Of the total change, the top 10 = 46%
- The majority of change is farmland conversion (55%)
- Followed by silviculture (20%)
  - Succession (53%) and harvest (47%)

Delaware Farmland Conversion

1992



2018

Maryland

- Of the total change, the top 10 = 38%
- The majority of change is confusion (51%)
- Followed by intensification (15%)
- Followed by silviculture (12%)
  - Succession (59%) and harvest (41%)

Maryland Confusion

cultivated crops vs. pasture/hay

District of Columbia

- Of the total change, the top 10 = 84%
- The majority of change is intensification (97%)

1999

2018

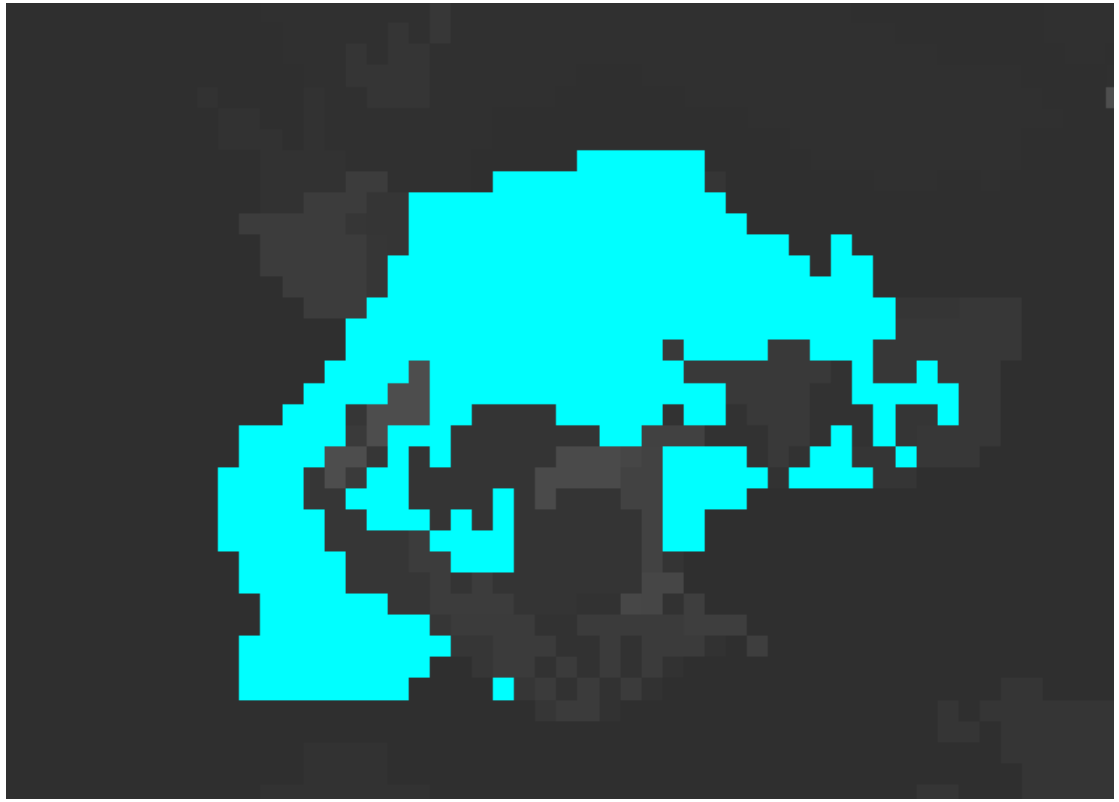
New York

- Of the total change, the top 10 = 36%
- The majority of change is silviculture (30%)
  - Succession (27%) and harvest (73%)
- Followed by confusion (30%)
- Followed by intensification (17%)

Pennsylvania

- Of the total change, the top 10 = 41%
- The majority of change is silviculture (63%)
  - Succession (30%) and harvest (70%)
- Followed by fracking (10%)

Pennsylvania Fracking



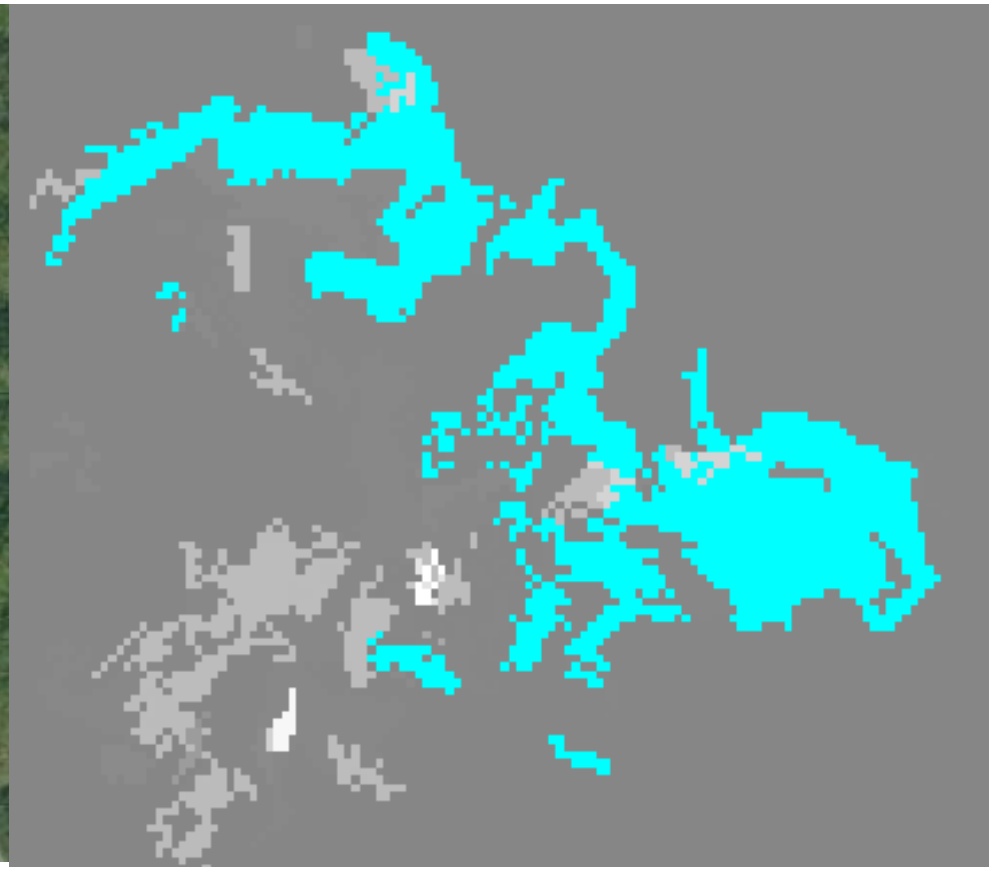
Virginia

- Of the total change, the top 10 = 48%
- Majority of change is Silviculture (94%)
  - Succession (19%) and harvest (81%)
- Followed by confusion (6%)

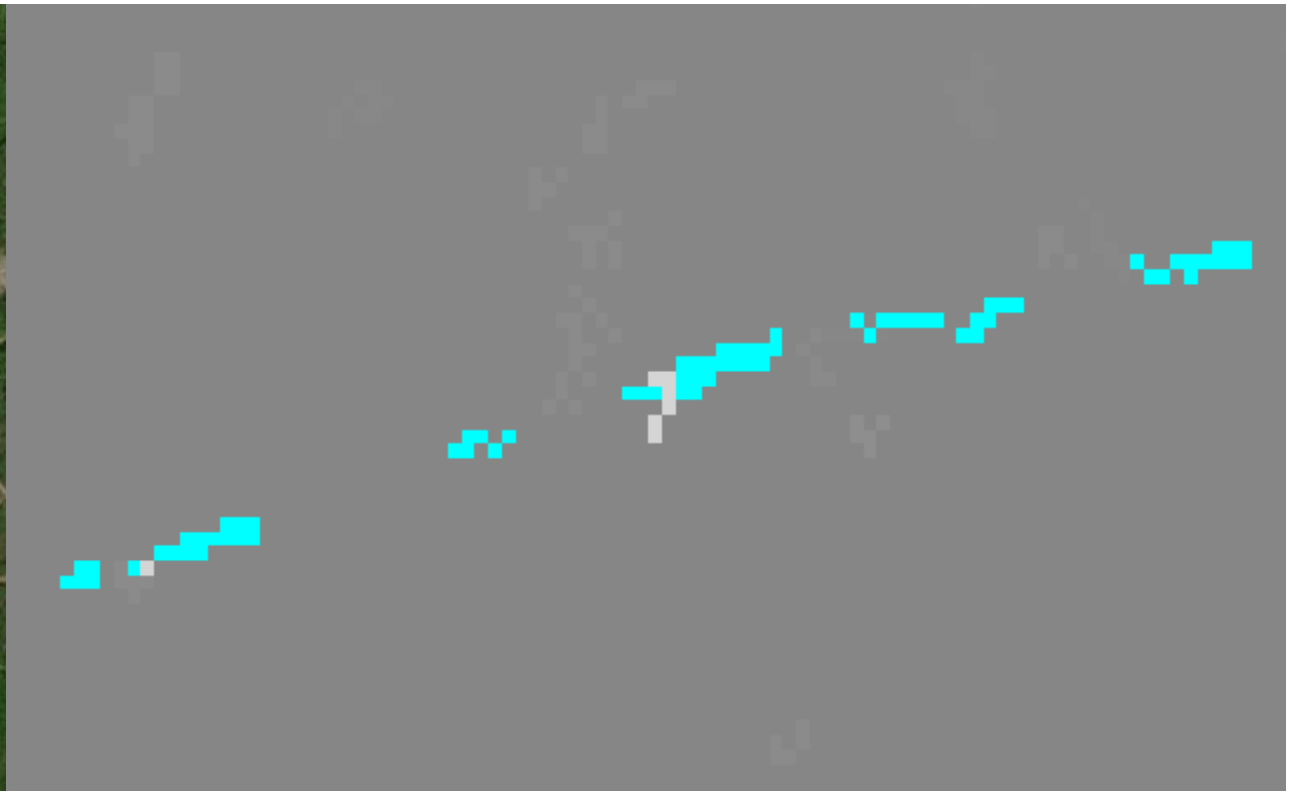
West Virginia

- Of the total change, the top 10 = 61%
- Majority of change is silviculture (61%)
  - Succession (15%) and harvest (85%)
- Followed by mining (36%)
  - Secondary potentially utility

West Virginia Mining



West Virginia Utility



Challenges/ Next Steps

- The % change captured in the top 10 is not sufficient
- Incorporate 100% of the change
- Reclassify NLCD data in a simpler way
  - Pasture/hay and cultivated crop = agriculture
  - 16 classes to 10 classes
- Develop a method to classify by individual pixel
- Perform similar analysis using NRCS National Resources Inventory, USGS Land Change Monitoring, Assessment, and Projection (LCMAP), and USFS Forest Inventory and Analysis National Program