

Improving the Mapping of Pasture and Hay

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Problem:

Pasture, hay, and agricultural open space have different nutrient and sediment loading rates and are recipients of different BMPs, yet they are lumped together as one class due to current mapping limitations. Pasture is also unique as a potential source of pathogens in streams.

4. Production (17)

4.1 Agriculture

4.1.1 Cropland

4.1.1.1 Barren

4.1.1.2 Herbaceous

4.1.2 Pasture/Hay

4.1.2.1 Barren

4.1.2.2 Herbaceous

4.1.2.3 Scrub-shrub

4.1.3 Orchard/vineyard

4.1.3.1 Barren

4.1.3.2 Herbaceous

4.1.3.3 Scrub-shrub

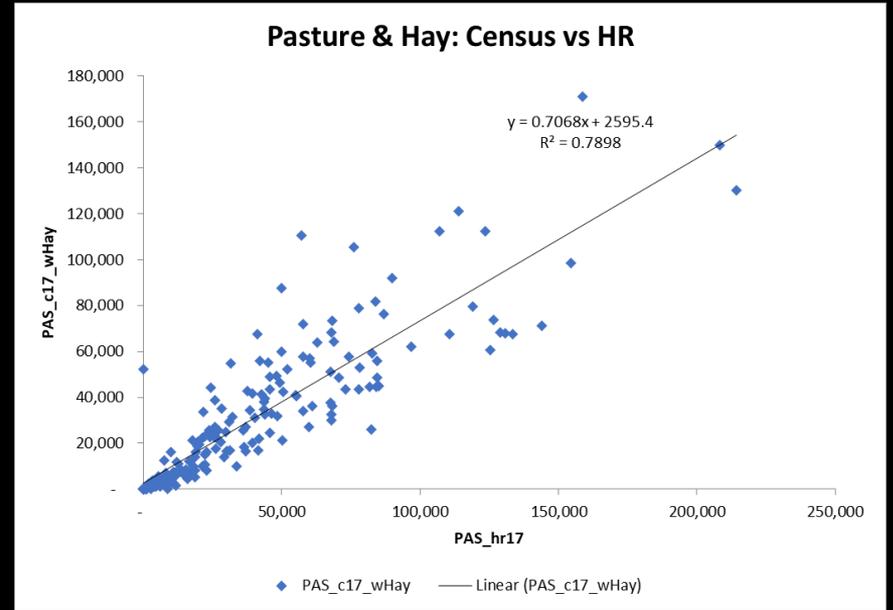
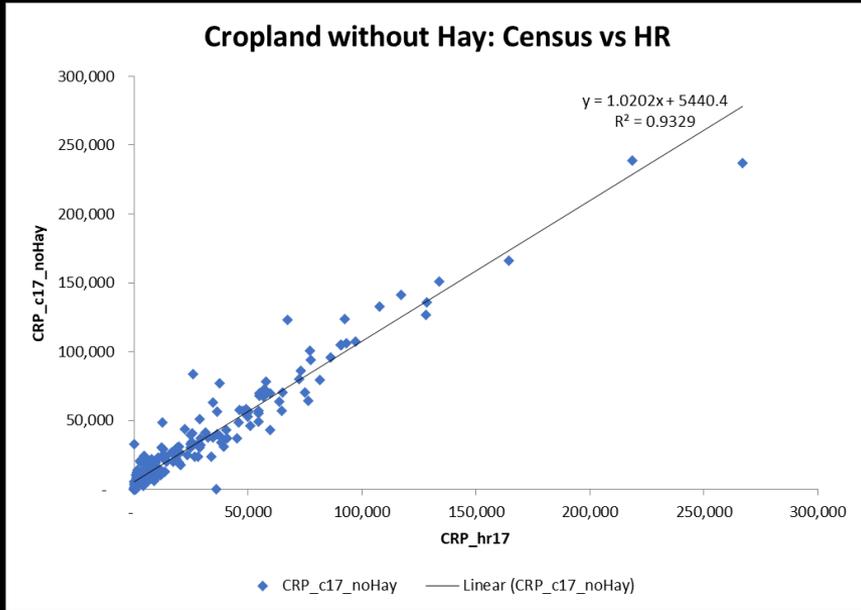
4.1.4 Animal Operations

4.1.4.1 Impervious

4.1.4.2 Barren

4.1.4.3 Herbaceous

2017 Census of Agriculture vs 2017/18 High-res Mapped Land Use



Errors in the Census notwithstanding, the CBP's high-res mapping of cropland (excluding hay) is more accurate than the mapping of pasture and hay. Pasture and hay can be easily confused with each other and with timber harvests and natural succession lands. This confusion can only be partially resolved with the improved mapping of timber harvests and fallow lands.

Solution:

Improve accuracy and separation of pasture, hay, and agricultural open space land use classes, leveraging information from the mapping animal operations.

This is a R&D initiative. It is expected to succeed but is also experimental.

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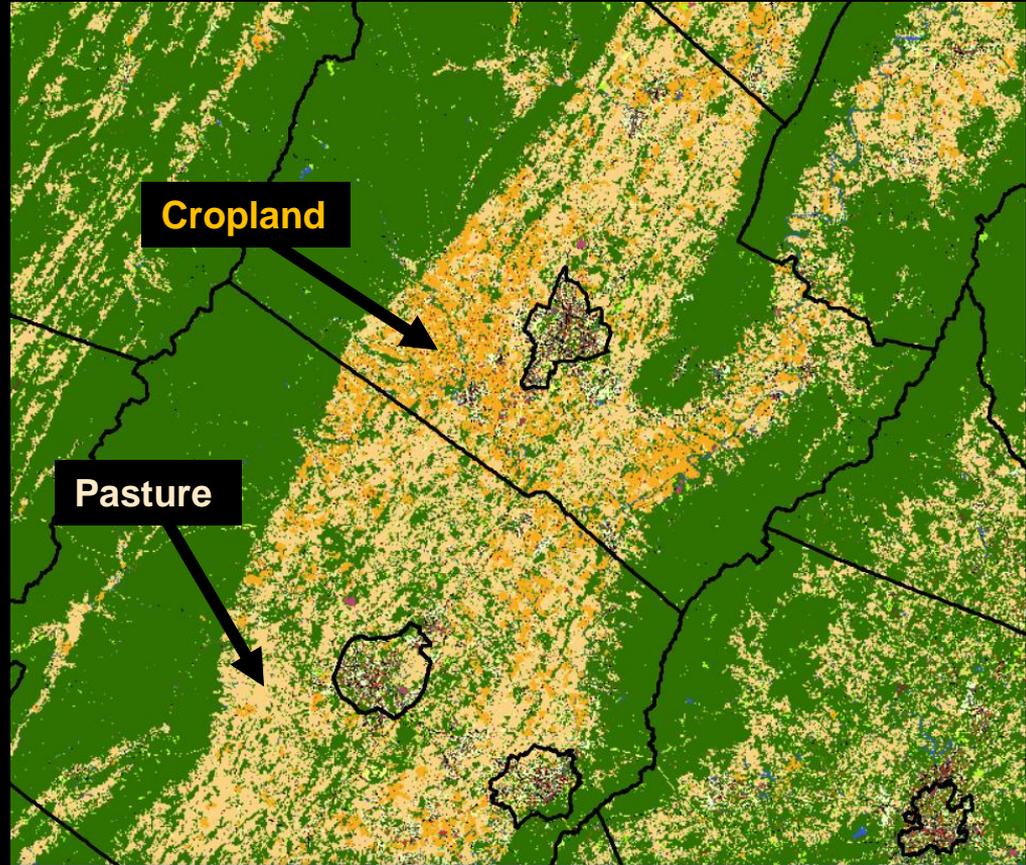
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Improve Mapping of Pasture, Hay, and Ag Open Space

- Consult with AGWG on the land cover/use patterns of pasture, hay, and agricultural open space.
- Use ancillary land use, animal operation, and other data to identify training sites for machine learning.
- Within training sites, use multi-spectral aerial and satellite imagery to identify spectral patterns and seasonality of those patterns and use LiDAR imagery to identify slope and landforms.
- Use deep-learning algorithms (aka “artificial intelligence”) to predict the locations of pasture and hay.





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