Land Use Time Series Review 1985-2022

Sarah M. McDonald

USGS, Lower Mississippi Gulf Water Science Center

Land Use Workgroup

September 17, 2025

U.S. Department of the Interior
U.S. Geological Survey

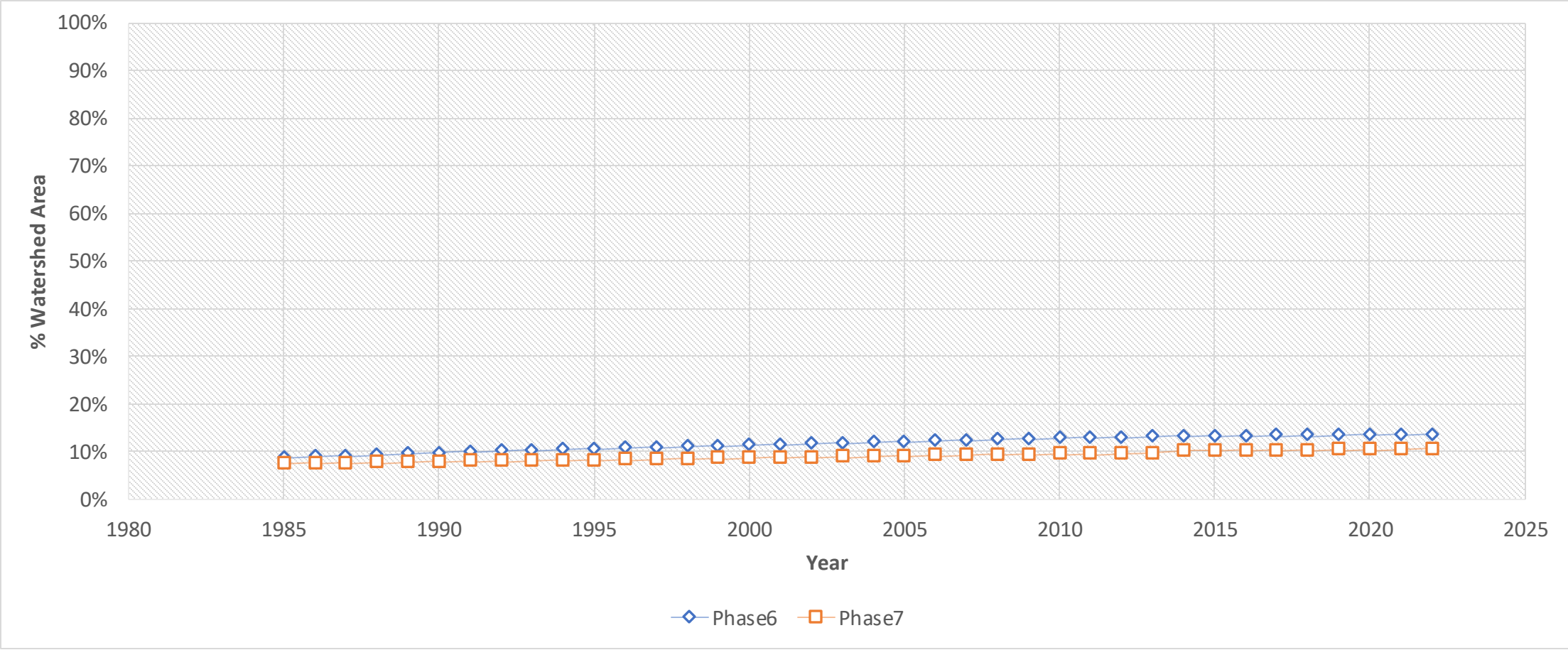
Comparison Methods

- Phase 6 Data
  - Downloaded CAST progress reports for each year with no BMPs applied
  - Aggregated information to watershed portion of states and by watershed
  - Aggregated by sector (agriculture, developed, natural)
- Phase 7 data
  - Aggregated watershed portion of county data by state and watershed
  - Aggregated classes to CAST sector
    - Agriculture = Agriculture
    - Developed = Developed
    - Natural = Natural + Forest + Water
- To address differences in total area (county and watershed boundary changes), the sectors were converted to % total area for the geography (i.e. watershed portion of state and watershed) for apples-to-apples comparisons

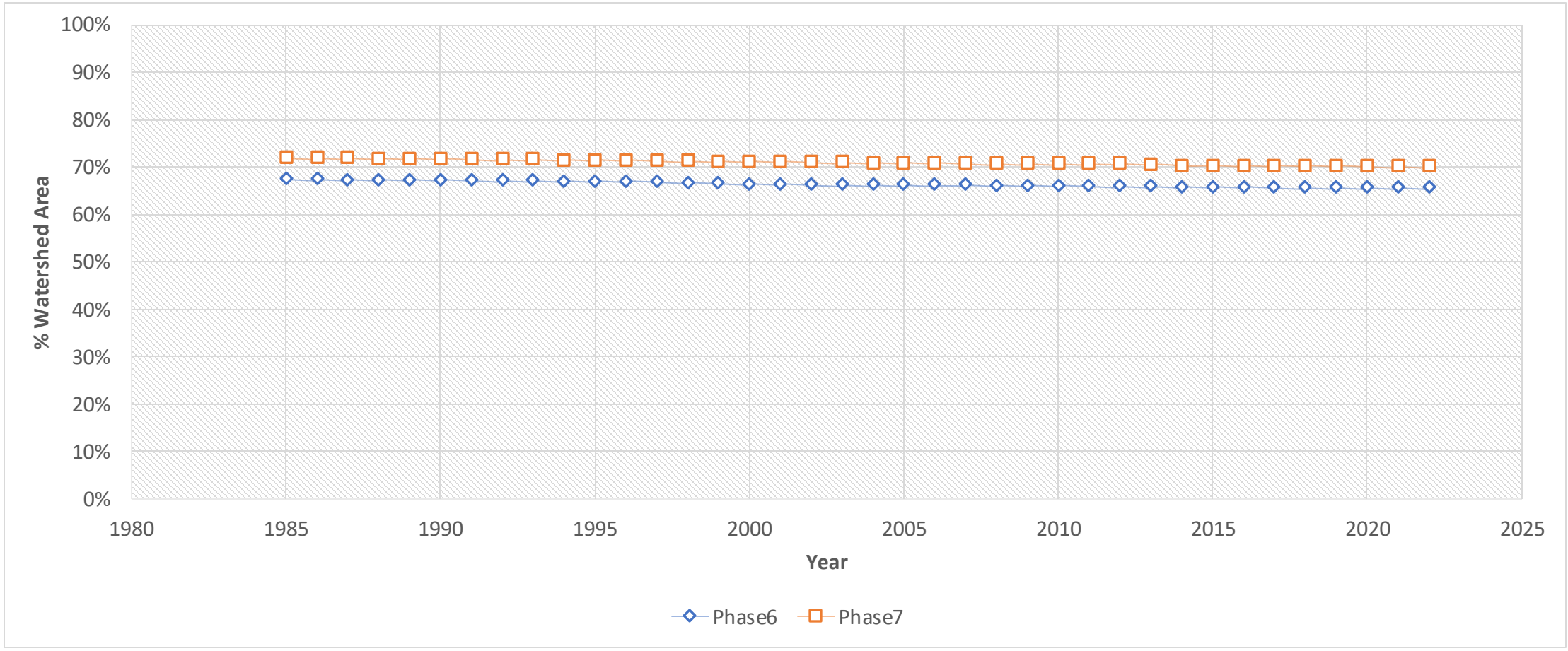
General Findings: Watershed scale

- Less development in Phase 7 compared to Phase 6
  - Less development mapped in 2013, Phase 6 version compared to new high-res land use
- More natural in Phase 7 compared to Phase 6
  - Likely due to improvements in non-forested natural area mapping in the high-res
- Less agriculture in Phase 7 compared to Phase 6
  - Likely due to improved mapping of agriculture in the high-res

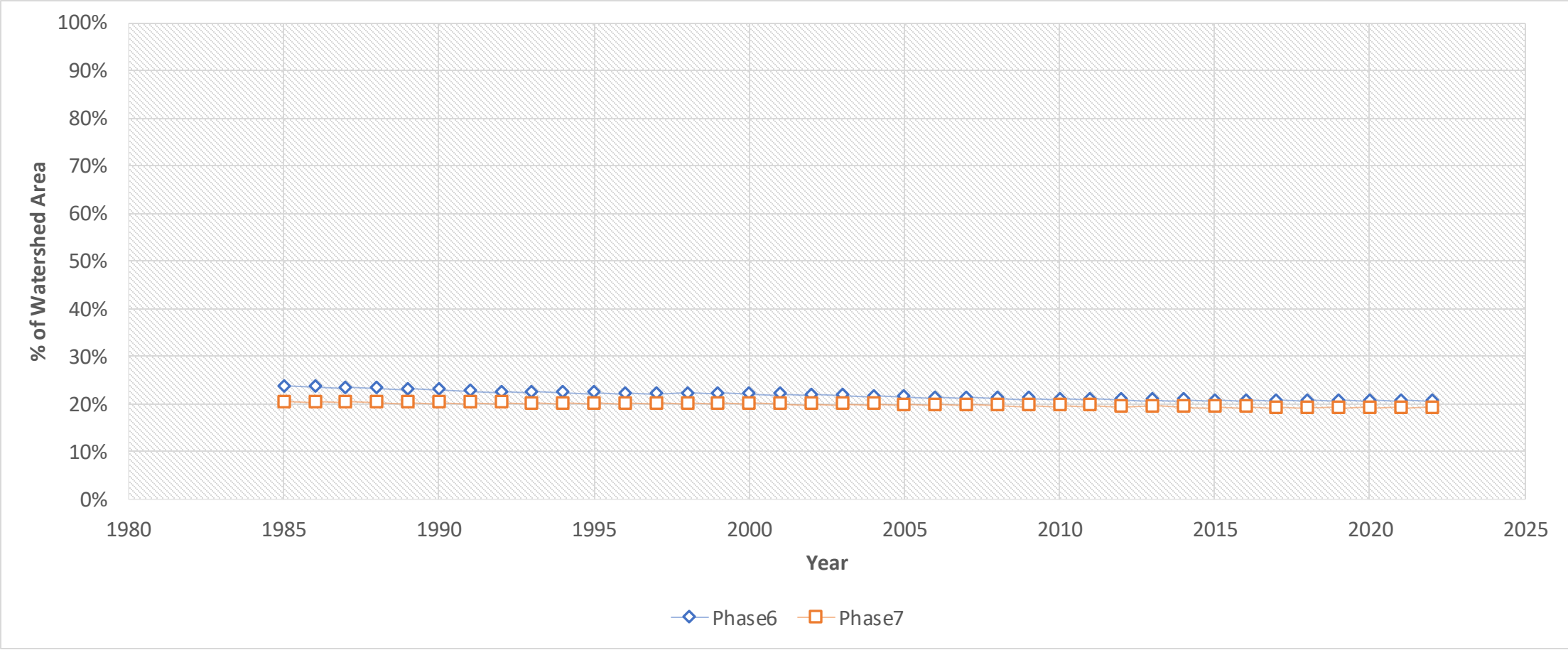
Watershed Trends: Development



Watershed Trends: Natural



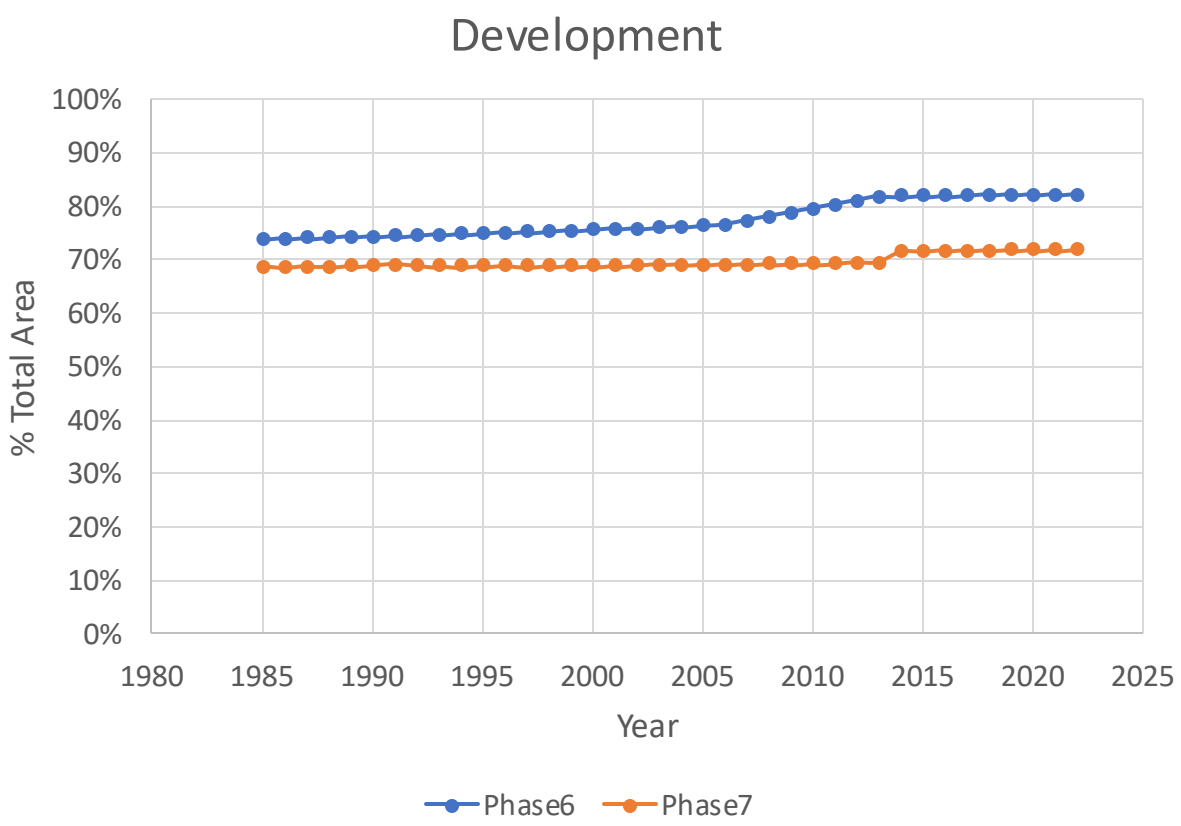
Watershed Trends: Agriculture

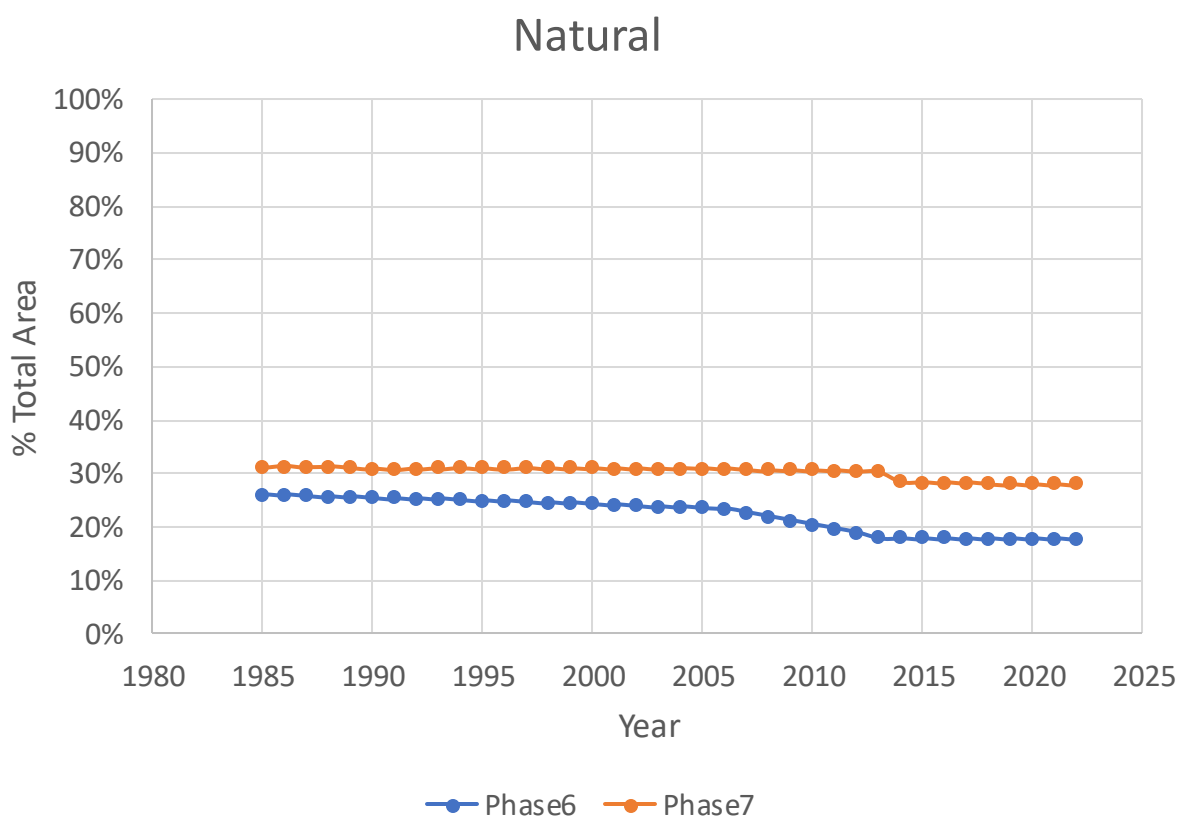


Next Steps and Feedback Received Thus Far

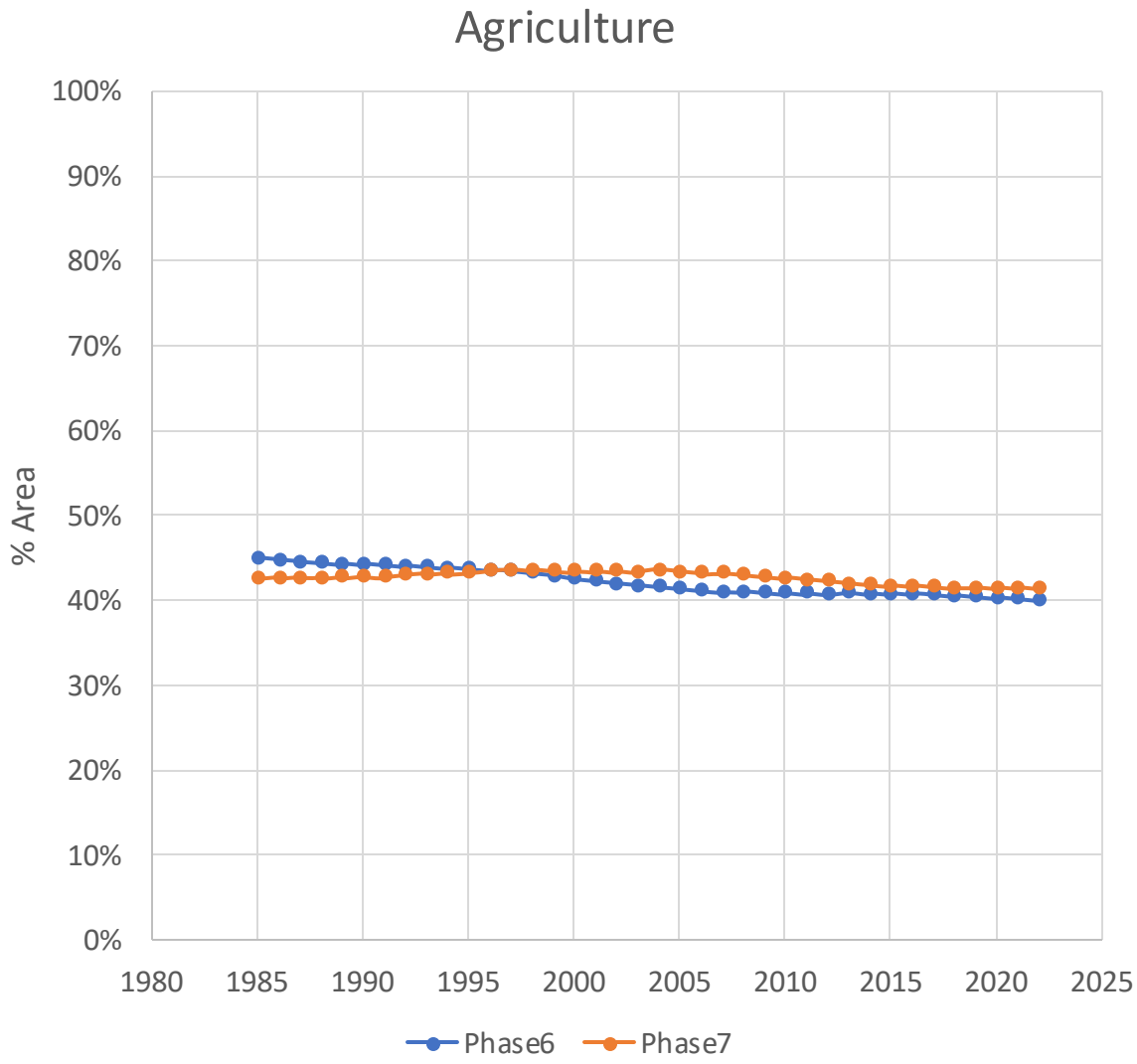
- Fix integration of back-cast (1985-2013) with high-res period (2014-2022)
- Assess Manassas Park City, VA
- Continue to implement methods described in the workplan
- Implement validation methods
- Document methods and results

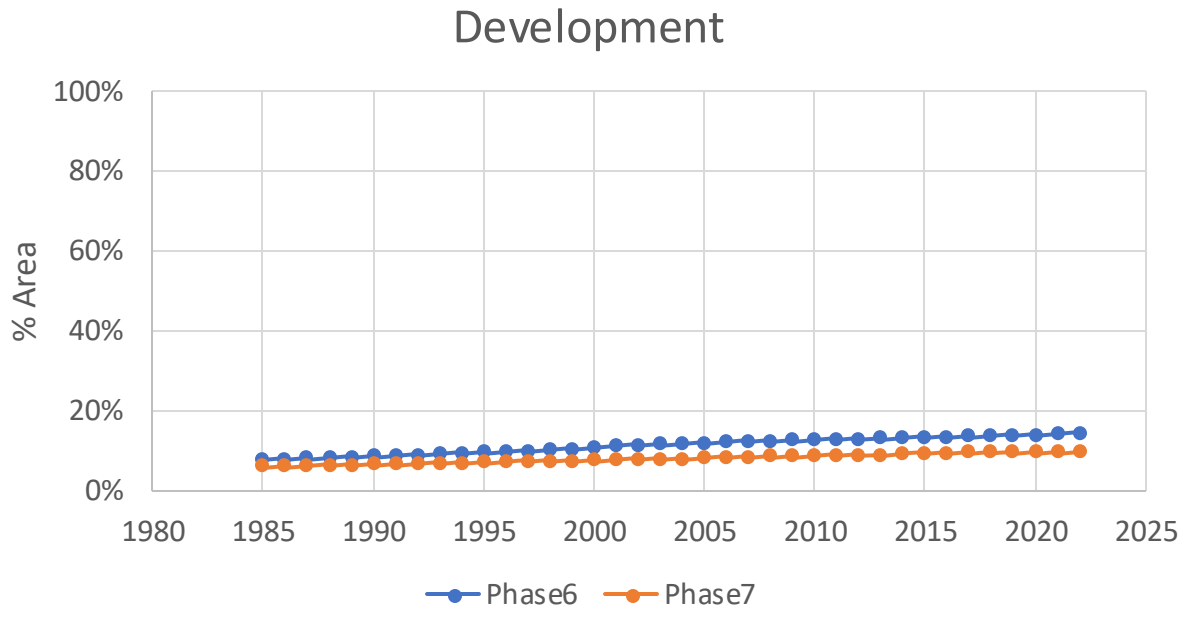
DC Trends

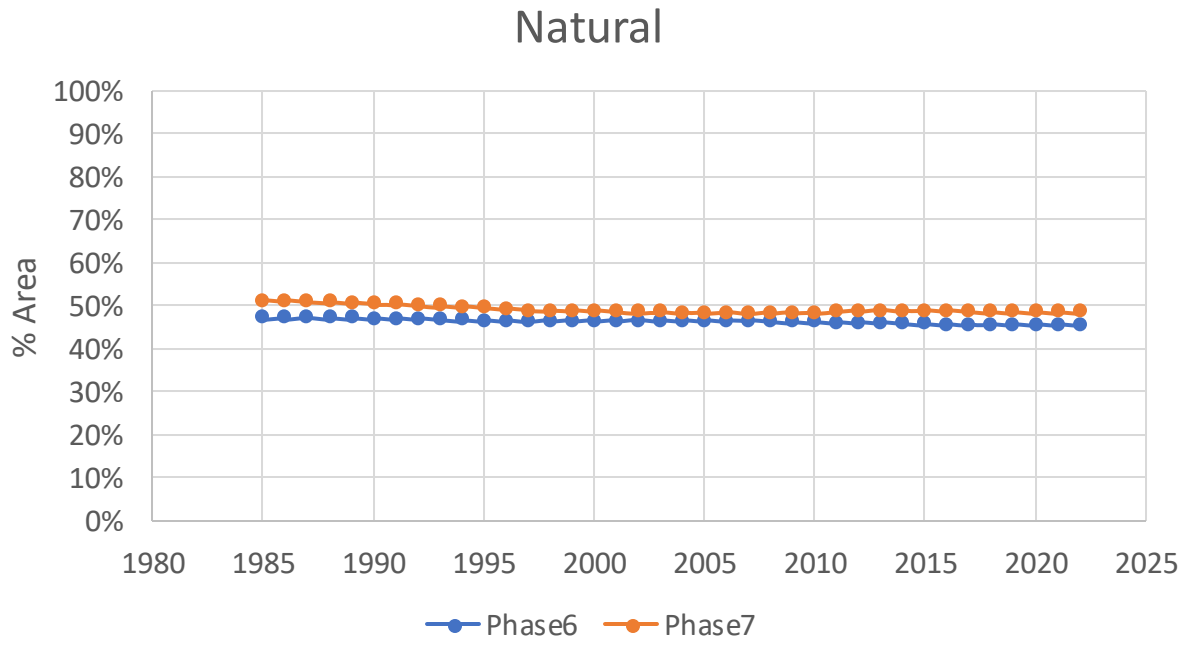

Development
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% Total Area
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025
Year
Phase6
Phase7


Natural
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% Total Area
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025
Year
Phase6
Phase7

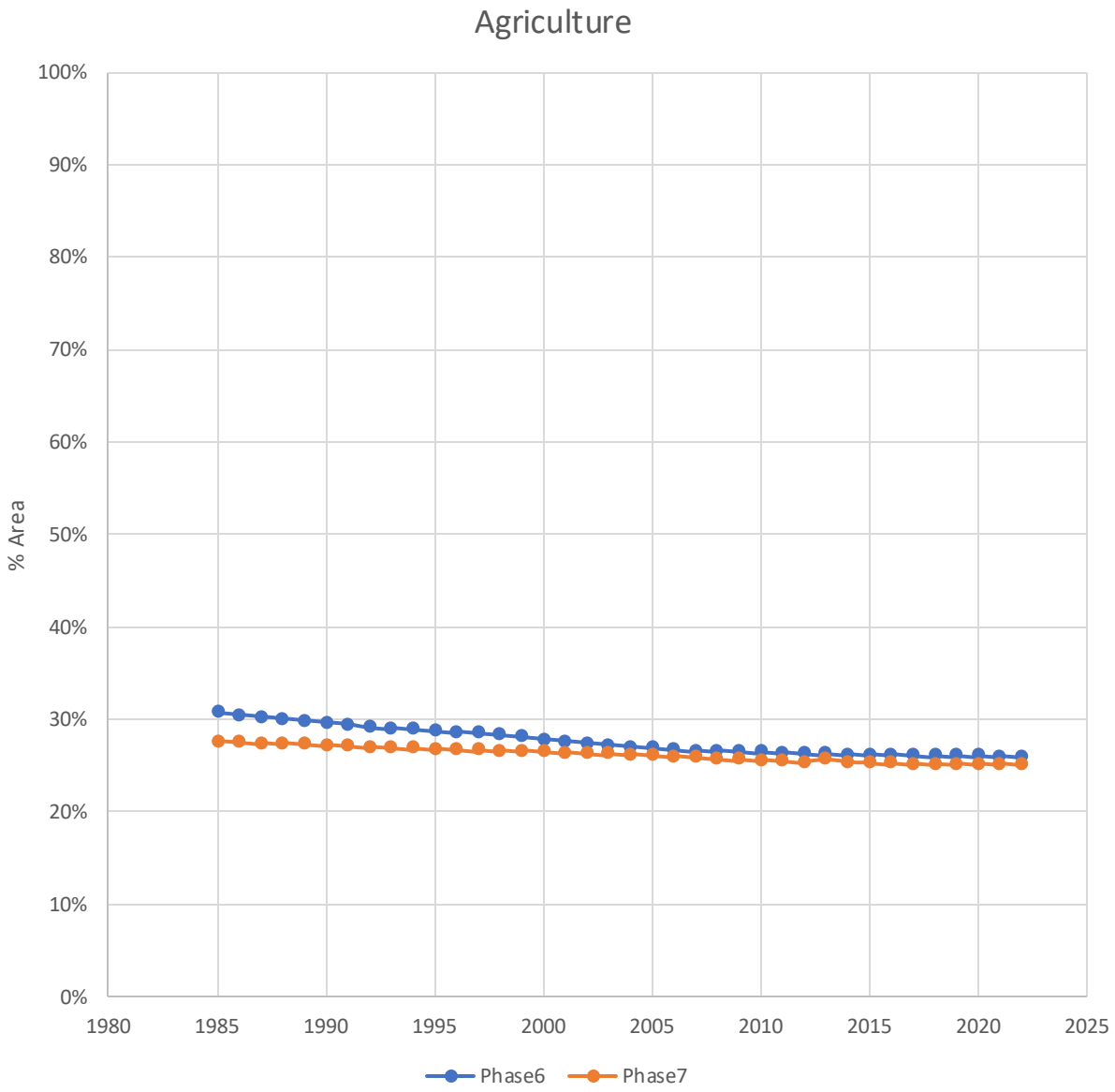
Delaware (CBW) Trends

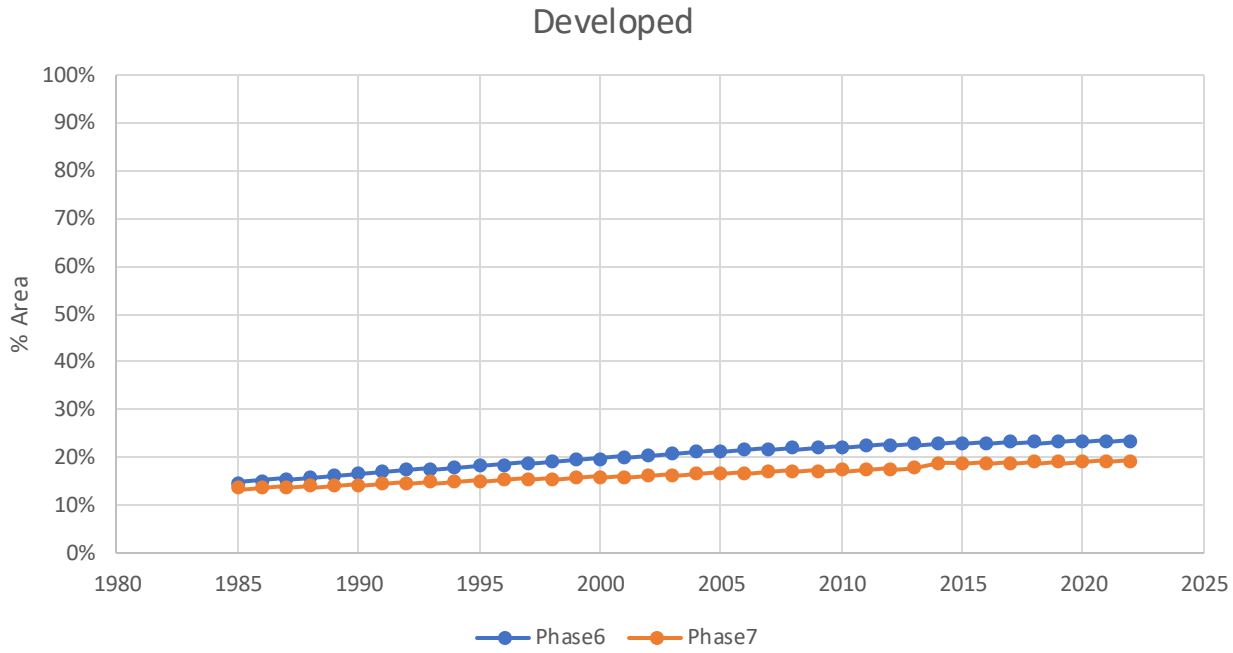


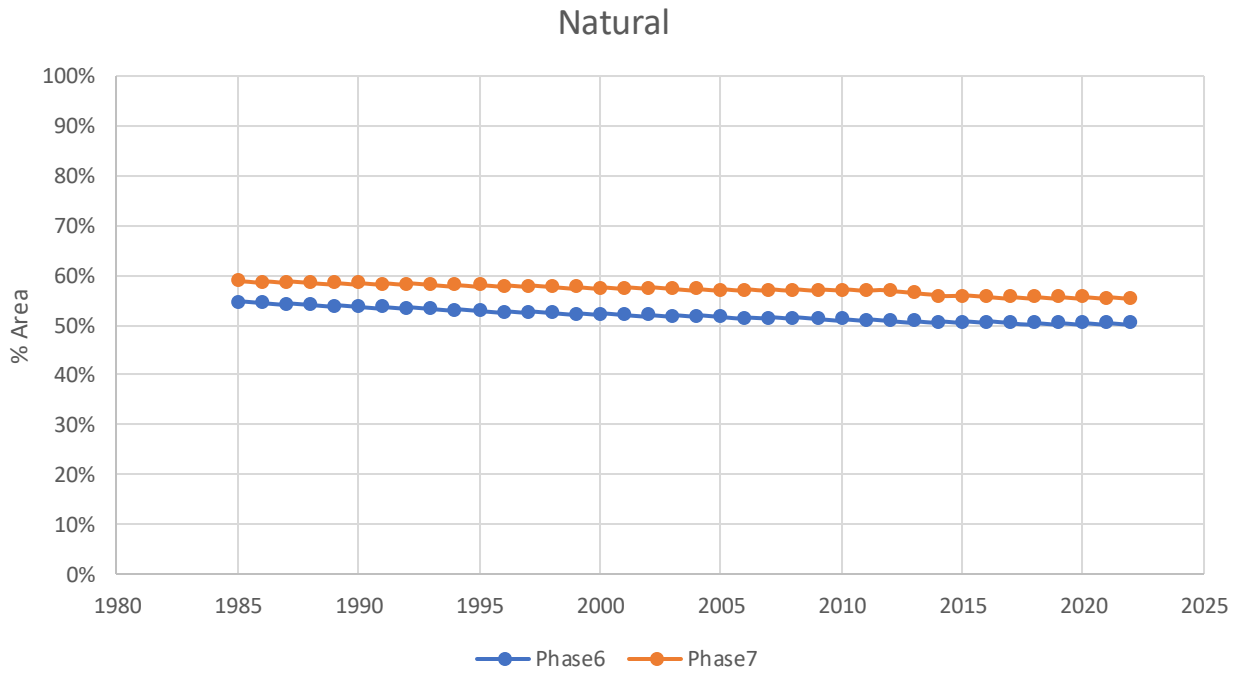




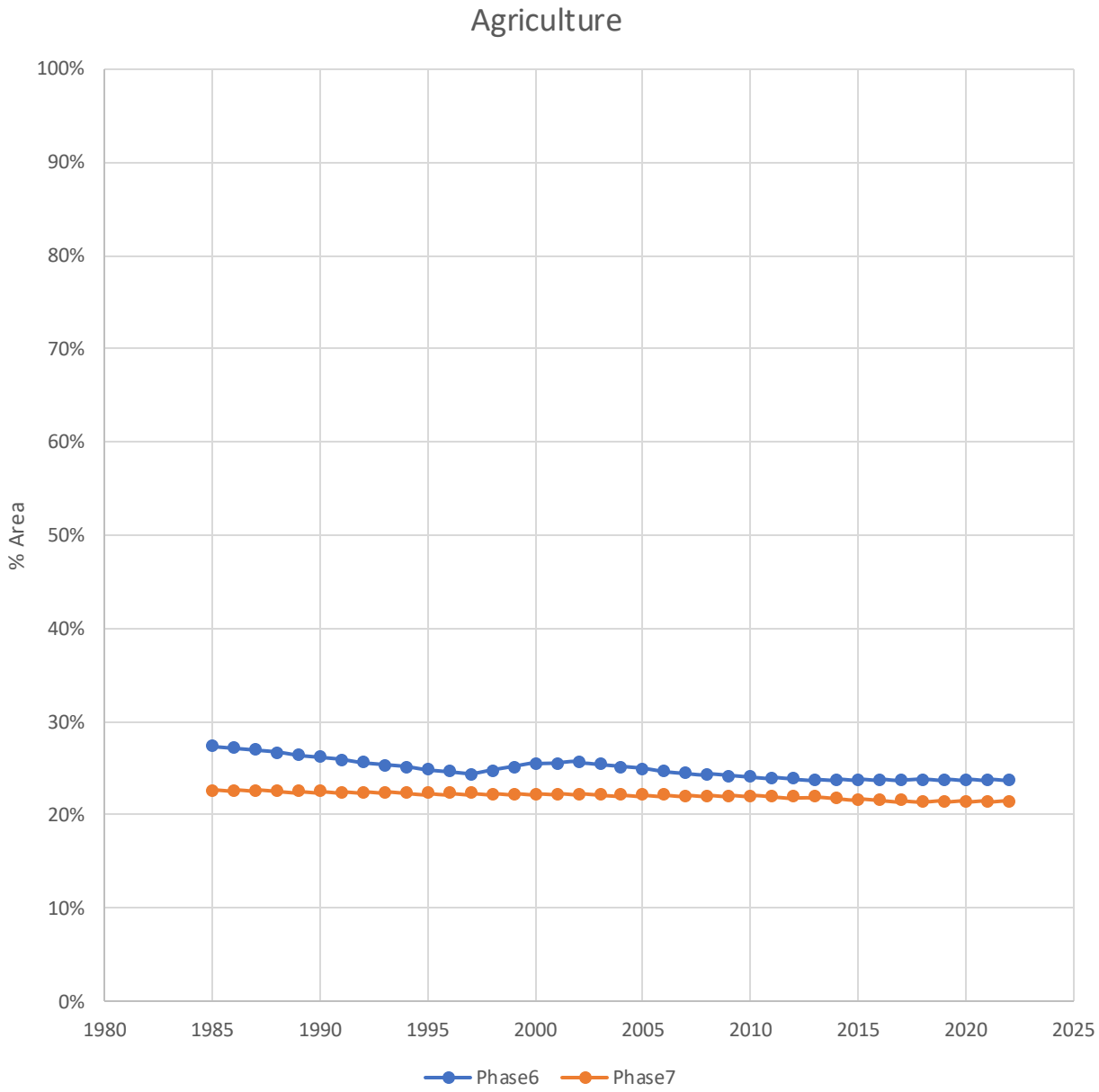
Maryland (CBW) Trends

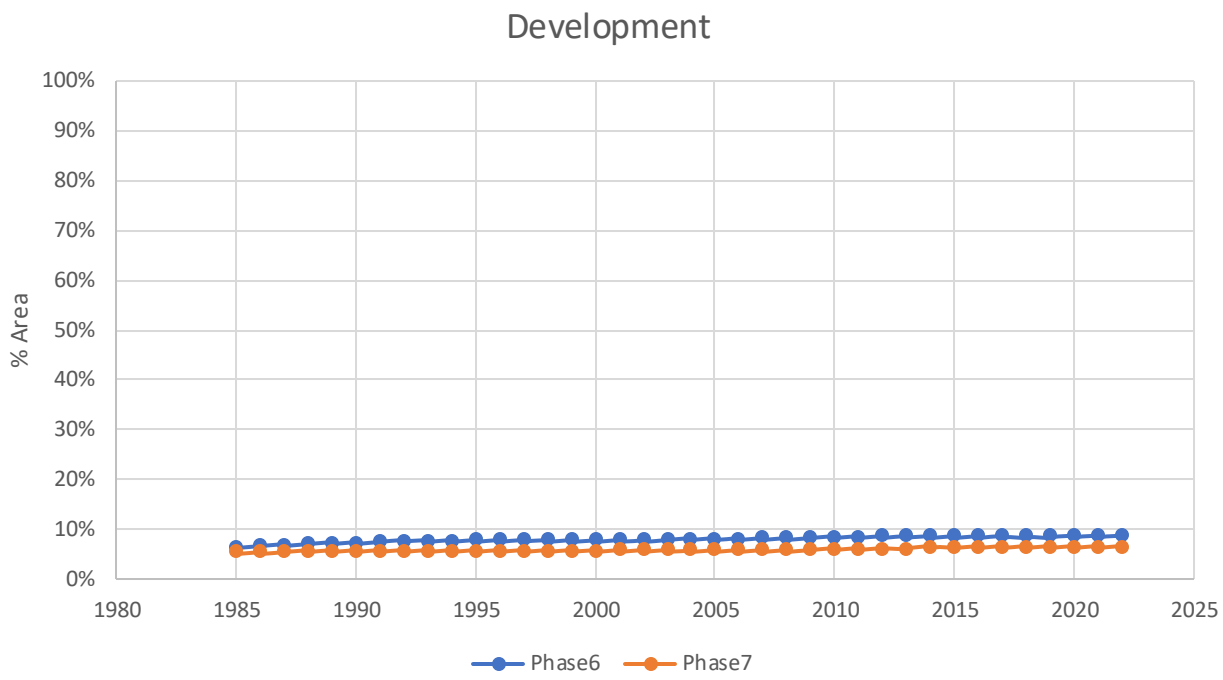


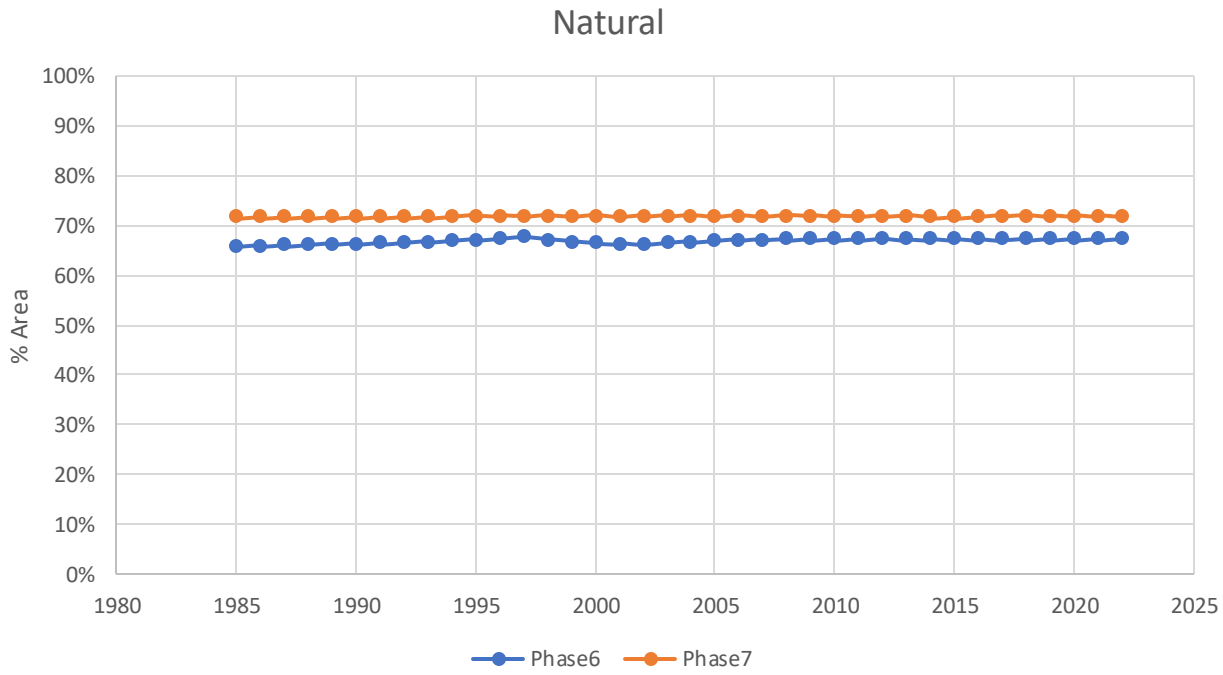




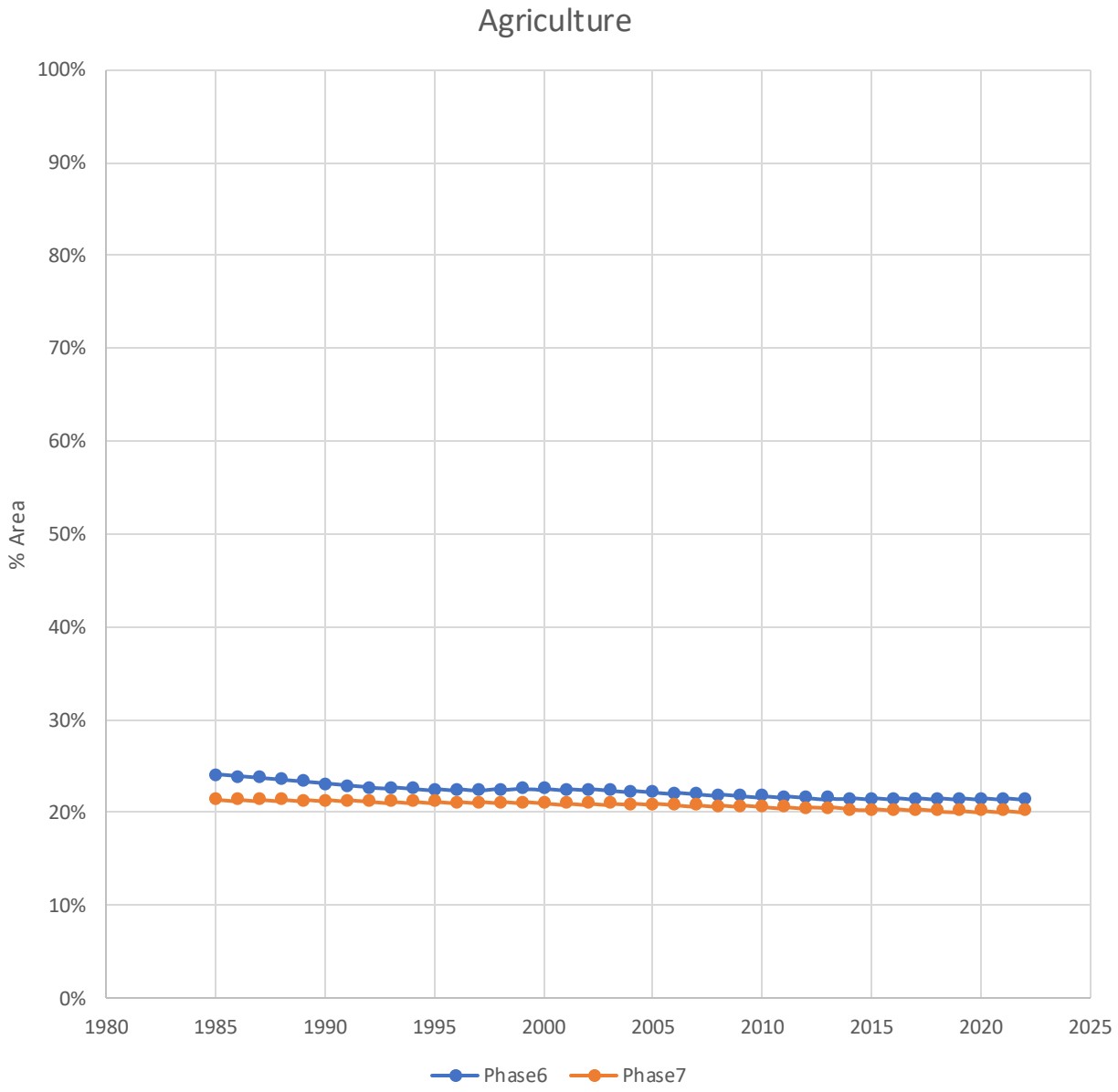
New York (CBW) Trends

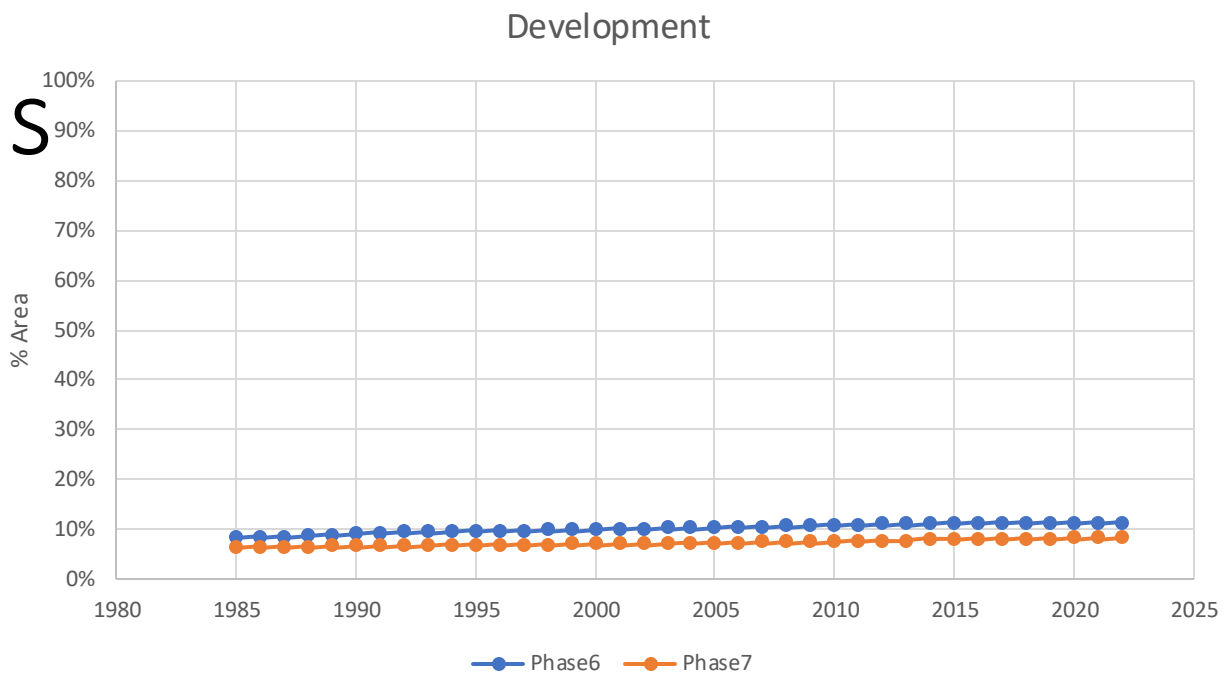


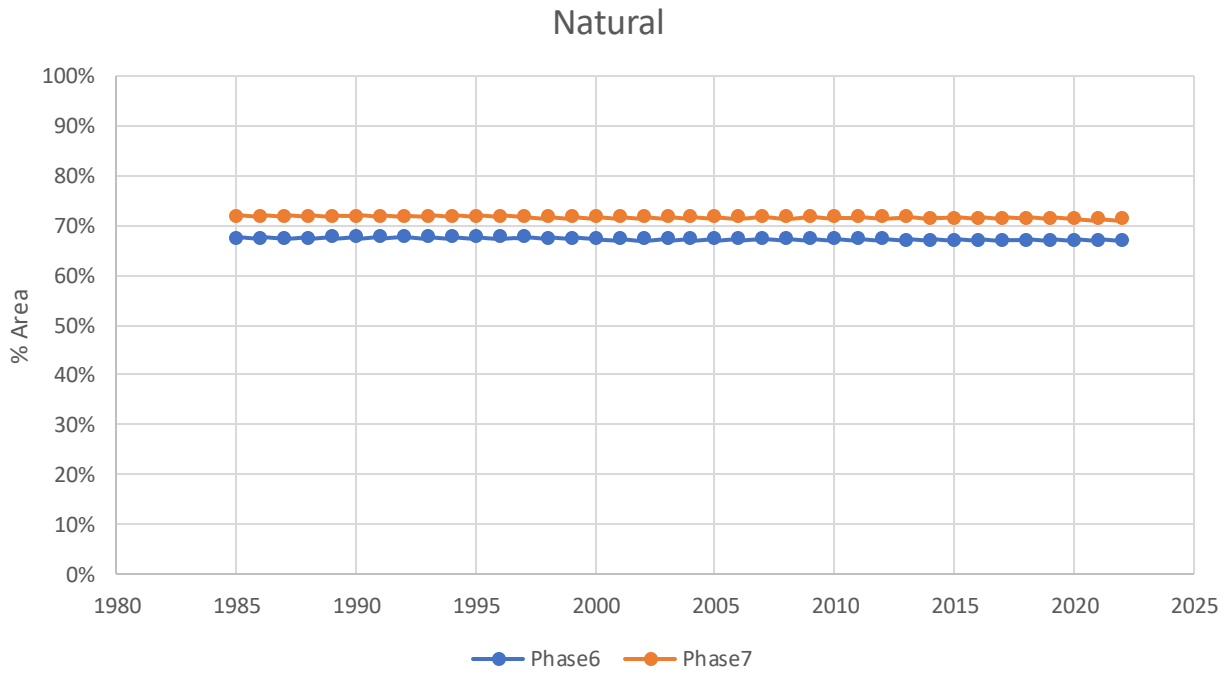




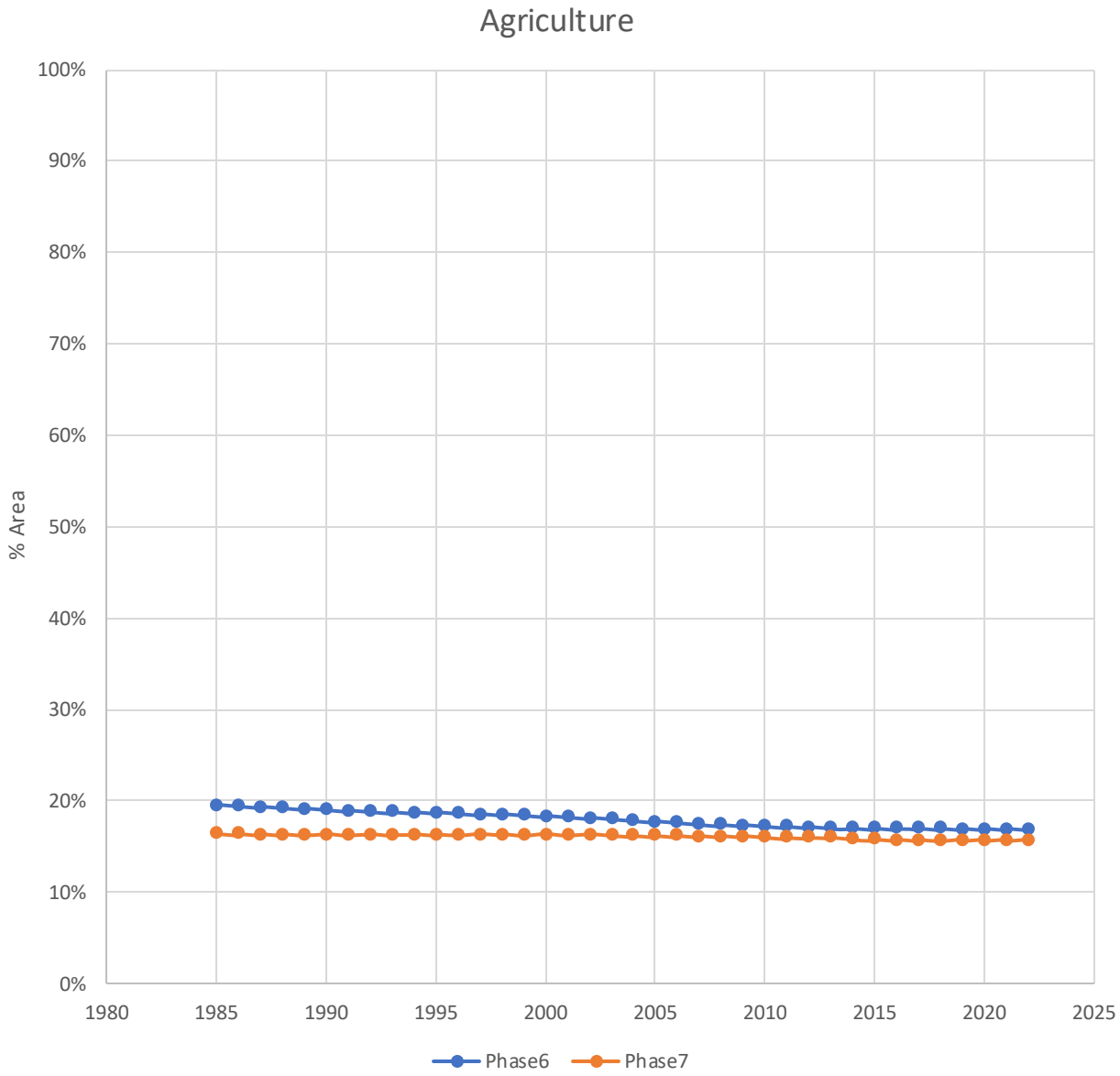
Pennsylvania (CBW) Trends

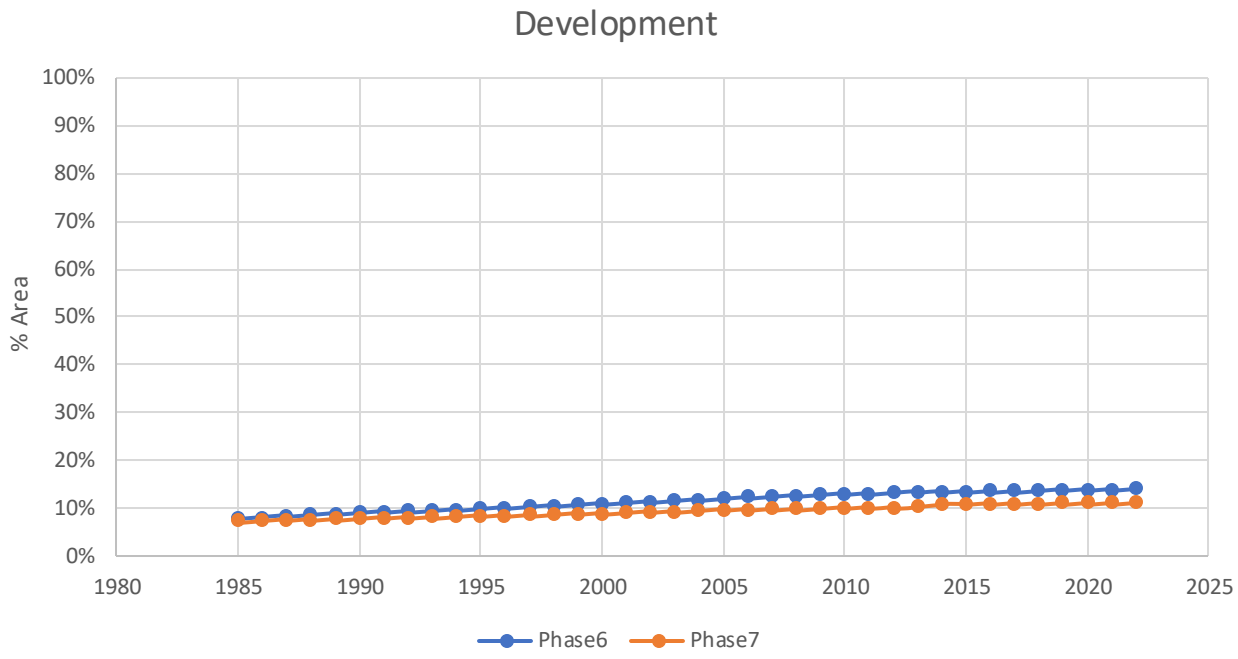


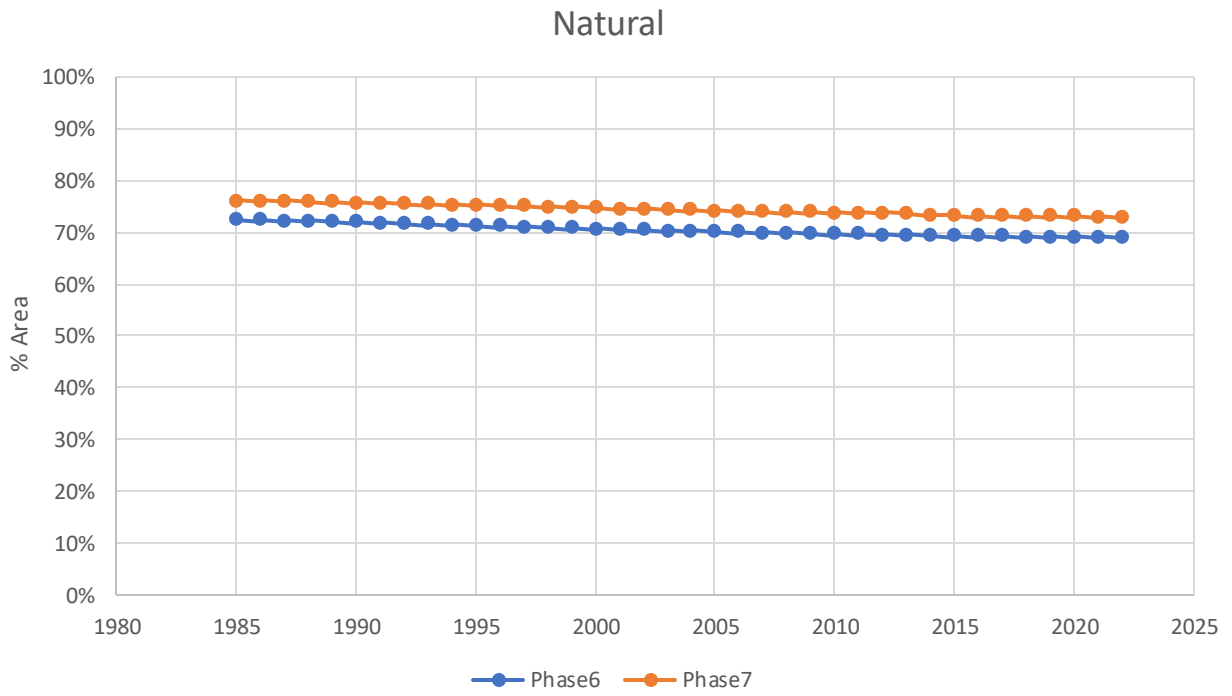
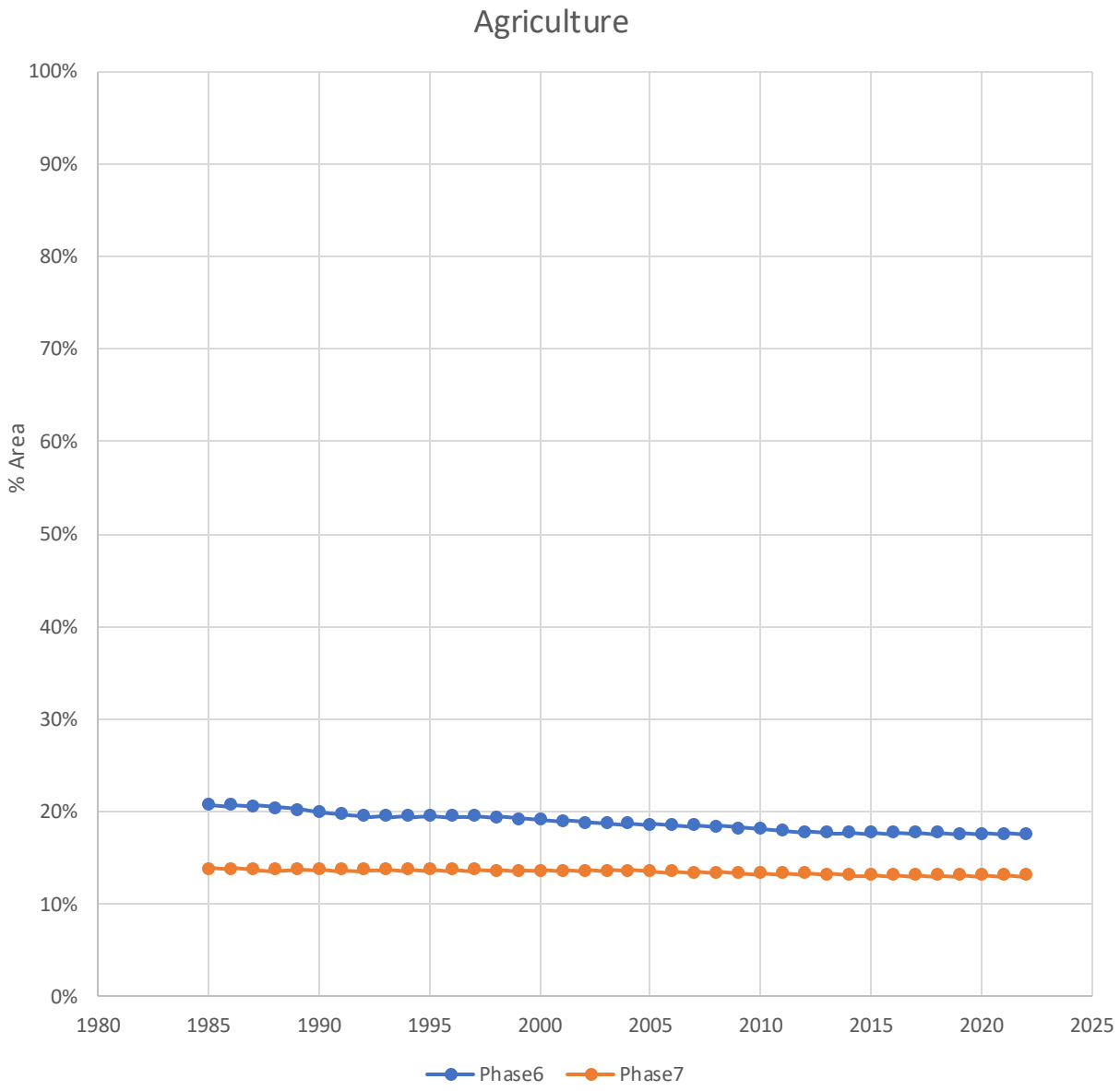
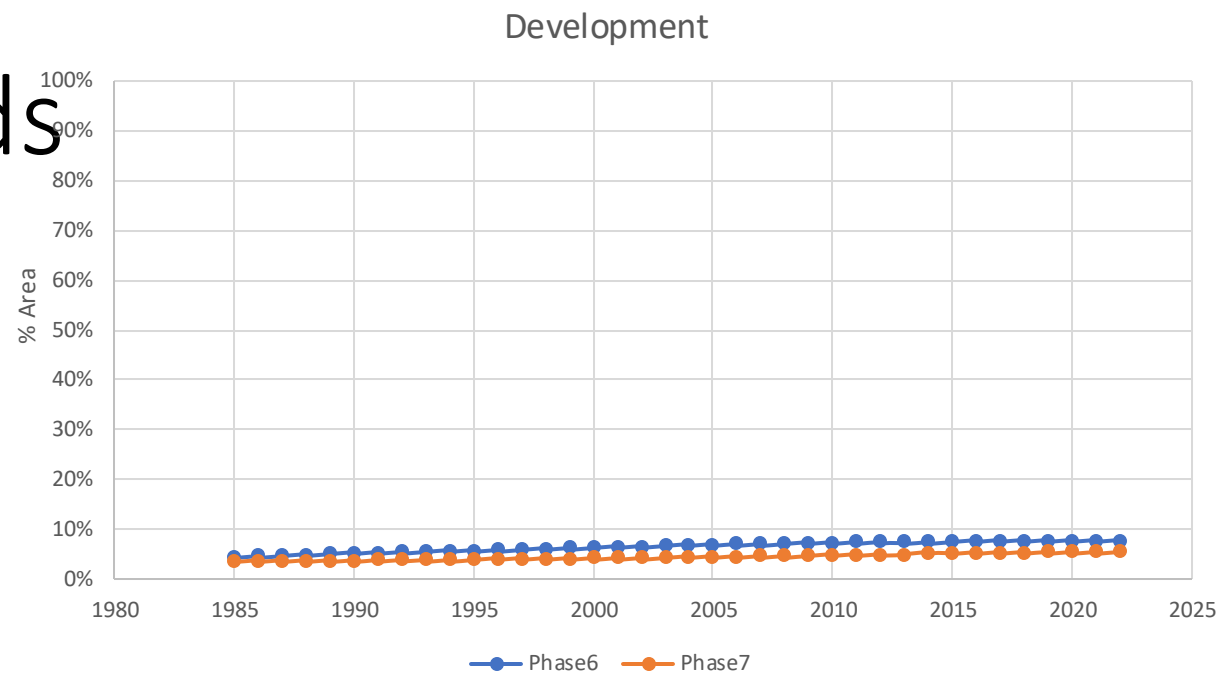
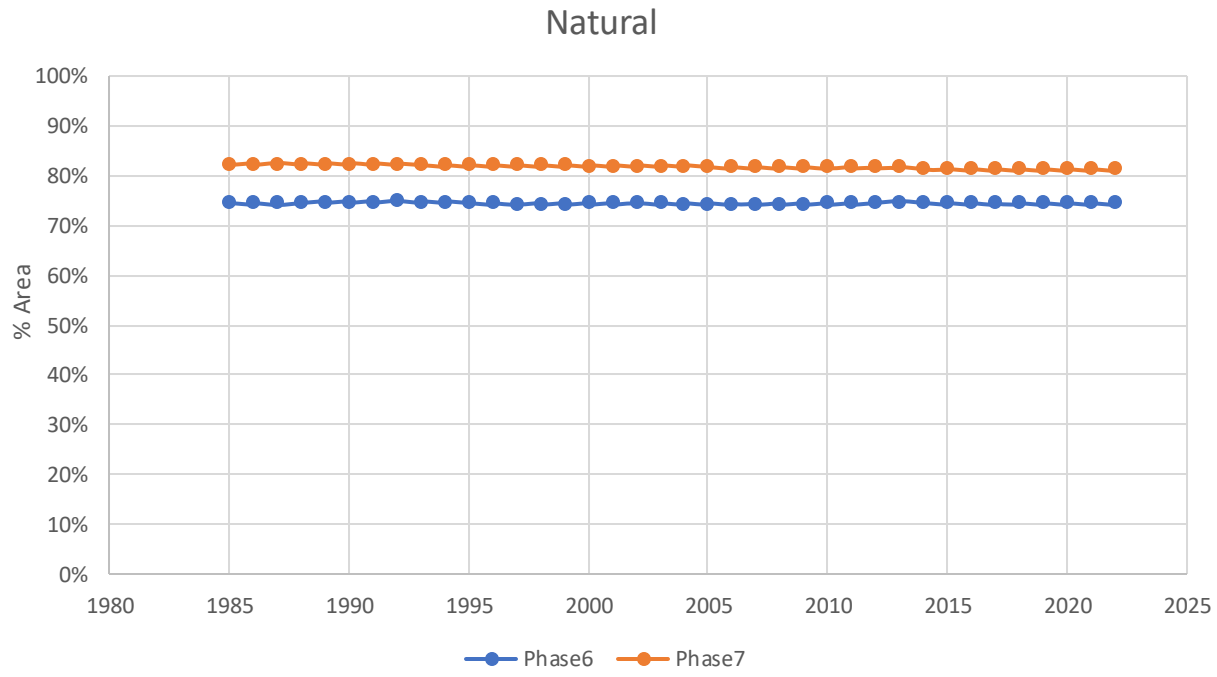




Virginia (CBW) Trends







West Virginia (CBW) Trends