

## 2023 Research Problem Statement: Environmental Sciences, Forestry, and/or Agriculture

The South Mountain Research Corps will support academic and student-focused research in environmental sciences, forestry, agriculture and related life-science disciplines in the South Mountain region of southcentral Pennsylvania in Adams, Cumberland, Franklin, and York counties. The topography, climate, soils, geology, and society and culture of the South Mountain region supports a unique confluence of forests, plant communities, wildlife, and agricultural landscapes and practices. The region's wild, managed, and agricultural lands are also challenged by residential and commercial development, expanding energy and transportation infrastructure, climate change, and intensive recreational and extractive uses.

Within these disciplines, the following is a list of potential research and monitoring priorities provided by local partners that could be conducted on public or private lands within the South Mountain region.

### Invasive Species, Native Species, Ecological Communities and Wildlands Management

- **Management Issues at Mount Holly Preserve Natural Resources:**
  - For more information contact Stephanie Williams at the Cumberland County Planning Office [sjwilliams@ccpa.net](mailto:sjwilliams@ccpa.net)
- **Timber rattlesnakes in Michaux State Forest.**
  - Contact Aura Stauffer ([astauffer@pa.gov](mailto:astauffer@pa.gov)) for more information.
- **Vernal pools within the South Mountain landscape**
  - Contact Aura Stauffer ([astauffer@pa.gov](mailto:astauffer@pa.gov)) or Larry Klotz ([lhklot@retiree.ship.edu](mailto:lhklot@retiree.ship.edu)) for more information.
- **Declining early successional habitat (ESH) game species (ruffed grouse, woodcock, wild turkey) are declining.** Contact DCNR biologists Emily Domoto ([edomoto@pa.gov](mailto:edomoto@pa.gov)) or PGC turkey biologist Mary Jo Casalena ([mcasalena@pa.gov](mailto:mcasalena@pa.gov)) for more information.
- **Coldwater fisheries and species like the brook trout.**
  - Contact Fish & Boat commission fisheries biologist Bryan Chikotas ([bchikotas@pa.gov](mailto:bchikotas@pa.gov)) for more information.
- **Watershed-level water quality assessments, monitoring, and best practices**
  - Contact Julie Vastine ([vastine@dickinson.edu](mailto:vastine@dickinson.edu))
- **Understanding and controlling invasive plant species in the South Mountain landscape.**
  - Contact DCNR botanist Kelly Sitch ([kesitch@pa.gov](mailto:kesitch@pa.gov)).
- **Survey and monitoring of several state-listed plant species.**
  - Contact DCNR botanist Kelly Sitch ([kesitch@pa.gov](mailto:kesitch@pa.gov)) or Larry Klotz ([lhklot@retiree.ship.edu](mailto:lhklot@retiree.ship.edu))
- **Synthetic research and monitoring within the South Mountain Important Bird Area (IBA).**
  - Contact: Aura Stauffer ([astauffer@pa.gov](mailto:astauffer@pa.gov))
- **Inventory and evaluation of prescribed burns.**
  - Contact: Aura Stauffer ([astauffer@pa.gov](mailto:astauffer@pa.gov))
- **Best practices research and inventory work to address the problem of habitat and population isolation and connectivity :**
  - Contact: Aura Stauffer ([astauffer@pa.gov](mailto:astauffer@pa.gov))
- **Inventory and research efforts to gather and analyze data on the effects of intensifying recreational use on public land:**

- Contact: Aura Stauffer ([astauffer@pa.gov](mailto:astauffer@pa.gov))

### Agriculture and Forestry

- **Anticipated changes to forest communities from climate change.**
  - For more information, please contact Michael Wright ([michawrigh@pa.gov](mailto:michawrigh@pa.gov)) or Michelle Blevins ([mblevins@pa.gov](mailto:mblevins@pa.gov))
- **Regenerative agricultural practices.**
  - For more information, please contact Katie Hess at [khess@appalachiantrail.org](mailto:khess@appalachiantrail.org) .
- **Maintaining a diverse and vibrant agricultural landscape/economy while adapting to climate change, invasive pest species (e.g. Spotted Lantern Fly), evolving market/labor conditions, and aging of farmers.**
  - For more information, please contact Katie Hess at [khess@appalachiantrail.org](mailto:khess@appalachiantrail.org) .

### Hydrology and Stormwater

- **Stormwater management.**
  - For more information, please contact Julie Vastine ( [vastine@dickinson.edu](mailto:vastine@dickinson.edu))
- **The study and management of flooding and floodplains**
  - For more information please contact Julie Vastine ( [vastine@dickinson.edu](mailto:vastine@dickinson.edu))
- **Subterranean movement and chemistry of water within the karst topography of the Cumberland Valley**
  - For more information contact Joe Baker ([southmountainscience@gmail.com](mailto:southmountainscience@gmail.com) ).