

#SHUTDOWNSTEM Hawkins Research Team Activity Summer 2020

**Articles about Black climate scientists**

<https://www.greenmatters.com/p/black-climate-scientists>

<https://www.forbes.com/sites/marshallshepherd/2018/02/02/dr-warren-washington-a-pioneering-black-climate-scientist-that-overcame-more-than-skepticism/#1db7853c78b5>

<https://www.greenpeace.org/usa/8-black-environmentalists-need-know/>

<https://ecologycenter.org/blog/11-black-climate-activists-you-should-know-and-support/>

<https://www.glamour.com/story/want-to-be-an-environmentalist-start-with-anti-racism>

**Articles about inequality and racism in climate change or climate science**

- <https://www.washingtonpost.com/outlook/2020/06/03/im-black-climate-scientist-racism-detrails-our-efforts-save-planet/>
- <https://climatecommunication.yale.edu/publications/race-and-climate-change/>
- <https://www.wbur.org/cognoscenti/2020/06/09/the-links-between-racism-and-the-environment-frederick-hewett>
- <https://www.newyorker.com/news/annals-of-a-warming-planet/racism-police-violence-and-the-climate-are-not-separate-issues>
- <https://thecorrespondent.com/496/the-climate-crisis-is-racist-the-answer-is-anti-racism/65663772944-cc6110b0>
- <https://e360.yale.edu/features/unequal-impact-the-deep-links-between-inequality-and-climate-change>
- <https://gizmodo.com/why-are-there-so-few-black-physicists-a-new-report-des-1841059183>
- <https://grist.org/justice/earth-scientists-shutdownstem-and-reckon-with-racism-in-their-departments/>
- 

**Articles about inequality and racism in air pollution**

- <https://journals.plos.org/plosone/article%3Fid%3D10.1371/journal.pone.0094431>
- <https://www.pnas.org/content/116/13/6001>

Redlining and asthma

<https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities>

<https://www.futurity.org/redlined-neighborhoods-asthma-2075502-2/>

<https://pubmed.ncbi.nlm.nih.gov/31999951/>

## Case Study: Hog Farms in NC

Ben Moul

Hog Farm presentation:

<https://docs.google.com/presentation/d/16hNw3rQX0i5BeiHgNSWJsgtDymEjUTHcfQc9PtV-aeA/edit?usp=sharing>

Environmental Justice introduction, with NC hog farms as example:

<https://ehp.niehs.nih.gov/doi/10.1289/ehp.121-a182>

Hog Lagoon Overtopping:

Hog lagoons are large pools used to hold the feces of millions of NC hogs. Like coal ash pools, they're notorious in the state for busting open in rainstorms and having their owners pinky-promise it won't happen again.

<https://www.npr.org/2018/09/22/650698240/hurricane-s-aftermath-floods-hog-lagoons-in-north-carolina>

<https://pubs.usgs.gov/sir/2015/5080/>

2015 USGS survey reports no difference in downstream water quality between streams with and without lagoons by them, although this is obviously not true in cases where the lagoons overtop or breach; in the above NPR article, downstream crops were declared not safe for human consumption thanks to possible contamination.

NC now has stringent limits (as of 2015) about new and expanded hog lagoons, so 95% of CAFOs use manure spraying to dispose of waste.

<https://www.wisconsinwatch.org/2014/04/manure-spraying-under-scrutiny/>

Article covering spraying in Wisconsin

[http://studentorgs.law.unc.edu/documents/elp/2016/j\\_luebemann.pdf](http://studentorgs.law.unc.edu/documents/elp/2016/j_luebemann.pdf)

UNC law white paper on manure spraying background and law

<http://www.ncpolicywatch.com/wp-content/uploads/2014/09/UNC-Report.pdf>

UNC Epidemiology report on environmental racism in hog farm impacts

“The proportions of Blacks, Hispanics and American Indians living within 3 miles of an industrial hog operation are 1.54, 1.39 and 2.18 times higher, respectively, than the proportion of non-Hispanic Whites ( $p < 0.0001$ ).”

Dirty facility placement inequity in NC

- Coal Ash: Under Research
- Solid Waste Treatment (trash): See file
  - Norton et. al. find adjusted hazard of new facility 2.7 times greater among block groups with  $\geq 50\%$  POC than  $< 10\%$
- Metals Processing: Under Research
- Hog Farms + downriver effects: See above, and

- Edwards and Ladd: Concentrated Animal Feeding Operations (battery farms), or CAFOs, are concentrated in minority communities in NC (Black Belt)
  - ~95% of production and waste is found in this area
  - E & L connect this to the low political power of residents
- 
- Sewage Processing: Under Research

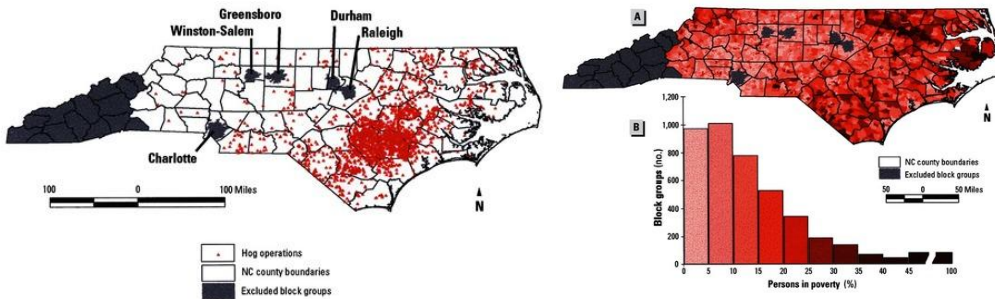


Fig 1 and 2: Hog Farm Placement (L) and Demographics (R) of non-mountainous rural NC (From NIH link above)

[https://environmentalintegrity.org/pdf/publications/CAFOAirEmissions\\_white\\_paper.pdf](https://environmentalintegrity.org/pdf/publications/CAFOAirEmissions_white_paper.pdf)

[http://studentorgs.law.unc.edu/documents/elp/2016/j\\_luebke.pdf](http://studentorgs.law.unc.edu/documents/elp/2016/j_luebke.pdf)

<http://www.ncpolicywatch.com/wp-content/uploads/2014/09/UNC-Report.pdf> : Wing et al, UNC epidemiology

[https://www.nass.usda.gov/Statistics\\_by\\_State/North\\_Carolina/Publications/Annual\\_Statistical\\_Bulletin/AgStat/Section04.pdf](https://www.nass.usda.gov/Statistics_by_State/North_Carolina/Publications/Annual_Statistical_Bulletin/AgStat/Section04.pdf): USDA pork stats

<https://www.epa.gov/npdes/animal-feeding-operations-afos>: EPA CAFO guidelines

<https://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/animal-feeding-operation-permits/afo-program-summary>: NC DEQ CAFO guidelines, notably affected by 1999 Floyd overtoppings, but old lagoons grandfathered

<https://ehp.niehs.nih.gov/doi/10.1289/ehp.121-a182>: Nicole, Environmental Health Perspectives spraying article

<https://www.jstor.org/stable/pdf/4603555.pdf?refreqid=excelsior%3A694ccec9c9a1ecb7a9723f91689909fb>: Bullers, health effects

<https://pubs.usgs.gov/sir/2015/5080/>: USGS downstream water quality survey

<https://www.sierraclub.org/sierra/2017-2-march-april/feature/cafo-industrys-impact-environment>

[and-public-health](#): Sierra club article

[https://environmentalintegrity.org/pdf/publications/CAFOAirEmissions\\_white\\_paper.pdf](https://environmentalintegrity.org/pdf/publications/CAFOAirEmissions_white_paper.pdf):  
Environmental Integrity white paper