R for Climate Change Analytics

How many classes: 4+7+10+9+3 = 33

1. General
   1. Focus on Georgia, and
      1. Arizona for impacts/drought
      2. Florida for impacts/hurricanes
      3. Iowa for mitigation/onshore wind
      4. Massachusetts for mitigation/offshore wind
      5. Charleston SC or Boston MA for adaptation/sea level rise
   2. What’s crucial
      1. Substance
      2. Methods
      3. Data
2. Causes
   1. Lab a1: egrid plants, R, RStudio, dplyr
   2. Lab a2: egrid plants, dplyr, filter, select, mutate
   3. Lab a3: egrid plants, group\_by, summarize, pivot
   4. Lab a4: flight, tmap basics
   5. Lab a5: SEDS, ggplot, bars, points, lines
   6. Lab a6: transportation?
   7. US and GA ghg inventories
   8. Electricity

egrid and dplyr filter, select, and mutate  
Compare Georgia, Massachusetts, Arizona, Iowa

Tmap points  
Lecture material on electricity system and CO2 coefficients

* 1. Transportation  
     SEDS for mg and

1. Impacts
   1. Lab b1: NCA LOCA, basics of raster data
   2. Lab b2: NCA LOCA, raster analysis and aggregation to polygons
   3. Lab b3: Hsiang
   4. Lab b4: sea level rise
   5. Lab b5: CEJST
   6. Lecture material on climate models and RCPs
   7. People
      1. Hsaing dataset and probabilistic forecasts
      2. Equity with binary, quartiles, and Gini coefficients
2. Solutions
   1. Lab c1: raster and sf spatial analysis basics for utility-solar suitability
   2. Lab c2: population access & transmission line buffers
   3. Lab c3: ghi, dems, slope, aspect
   4. Lab c4: map algebra, polygon overlay, solar suitability
   5. Mitigation
      1. Lecture material on solar
      2. Lecture material on wind, comparison to Iowa
      3. Lecture material on nuclear power
      4. Lecture material on electric vehicles
      5. Lab on solar land suitability analysis
   6. Adaptation
      1. Lecture material on sea level rise
      2. Lab comparing Massachusetts and Georgia
3. Policies?
4. Next steps:
   1. Bill: (bdatlanta3)
      1. Organize and collate current CCA rmds an scripts and datasets
      2. Create full repository on github and clone locally, add jono as collaborator
      3. Review and organize lecture/text sections
      4. Update outline with lab changes we’ve discussed
      5. Review markdown and bookdown (R4DS last chapter)
   2. Jonathan (jdrummond92)
      1. Review and organize lecture/text sections
      2. Update outline with lab changes we’ve discussed
      3. Review markdown and bookdown (R4DS last chapter)