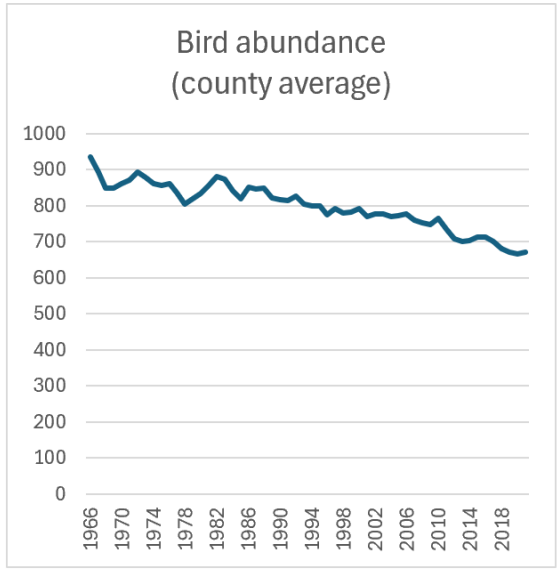
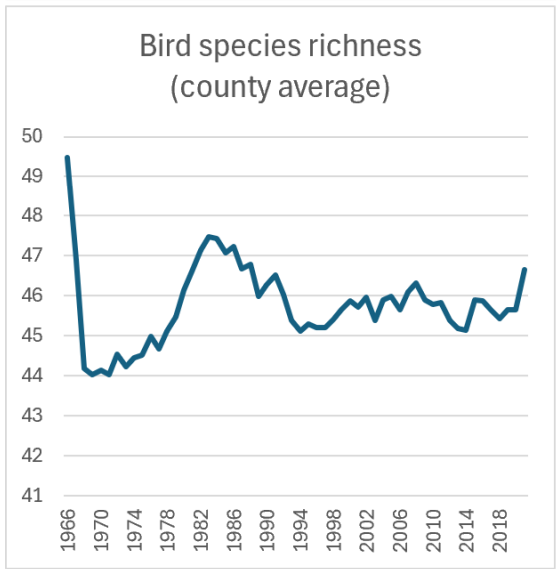
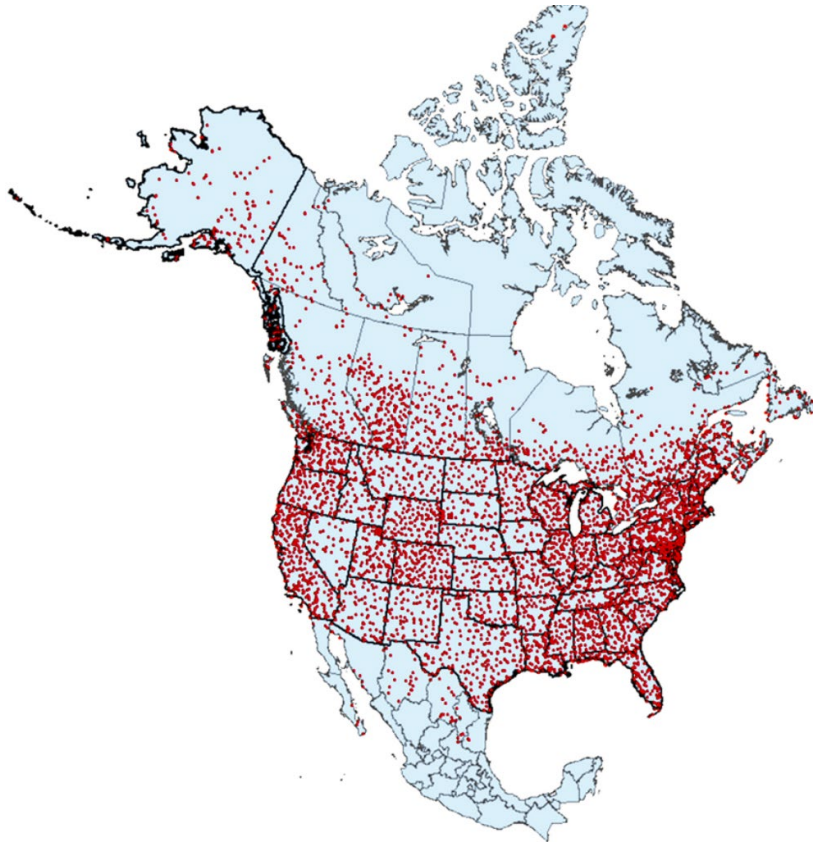
Physical biodiversity metric 1: Bird biodiversity

2024-6-18



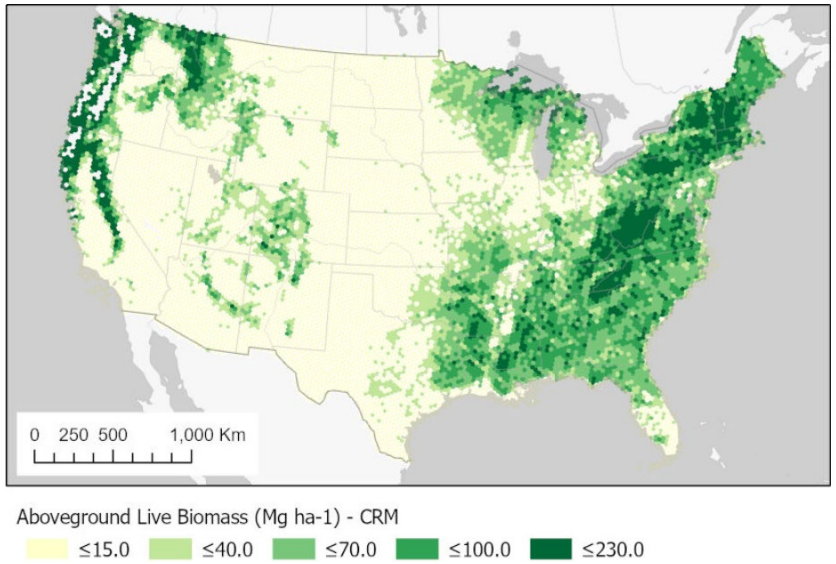




- North American Breeding Birds survey
- Expert observations of bird individual count and species count ..
- .. done annually over the breeding season (May-July) at 1,000s of locations
- Available since 1966

Physical biodiversity metric 2: Tree biodiversity

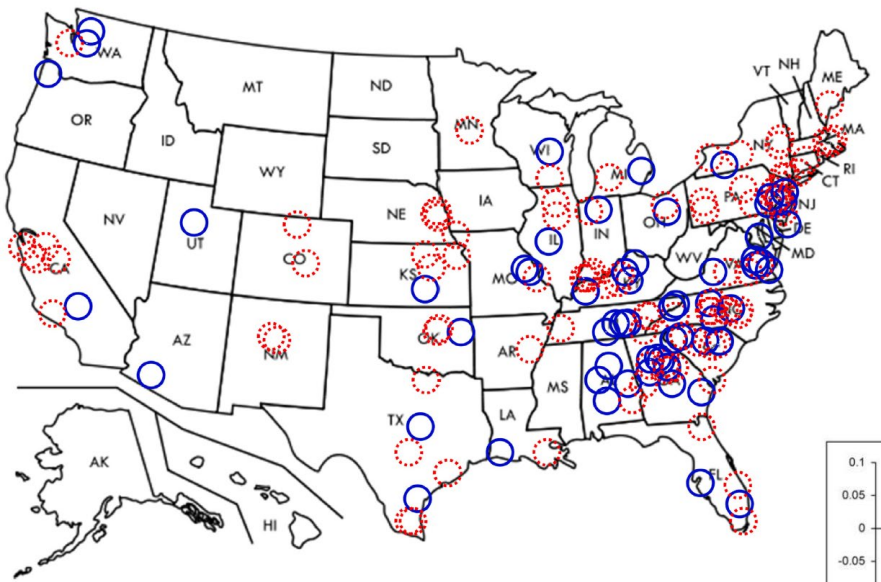
2024-6-18

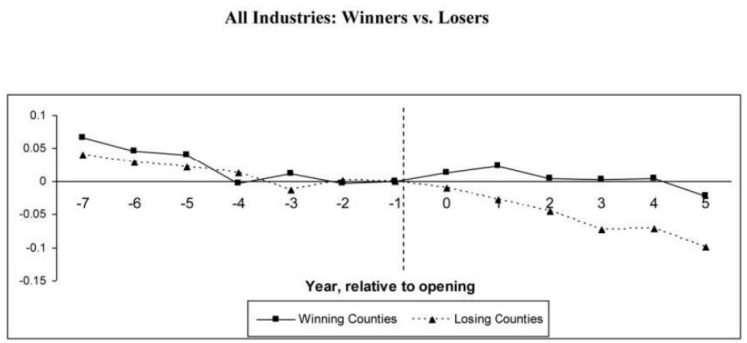


- Forest Inventory & Analysis data from USDA
- Intermittent forest inventory with individual tree-level data
- Available since 1980
- Sampling frequency/intensity seems to change in 2000 (more later)
- We compute county-year level number of trees, and number of distinct tree species

Research design: Million Dollar Plant openings

2024-6-18





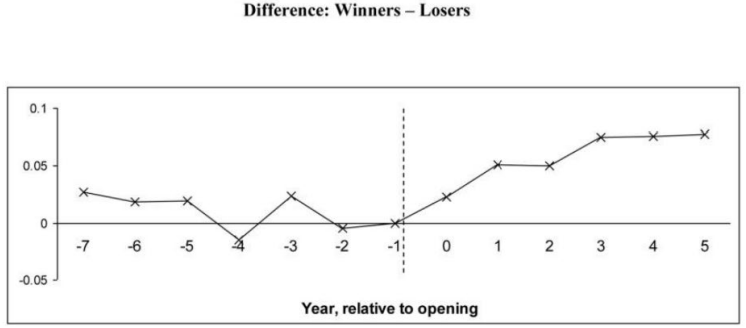
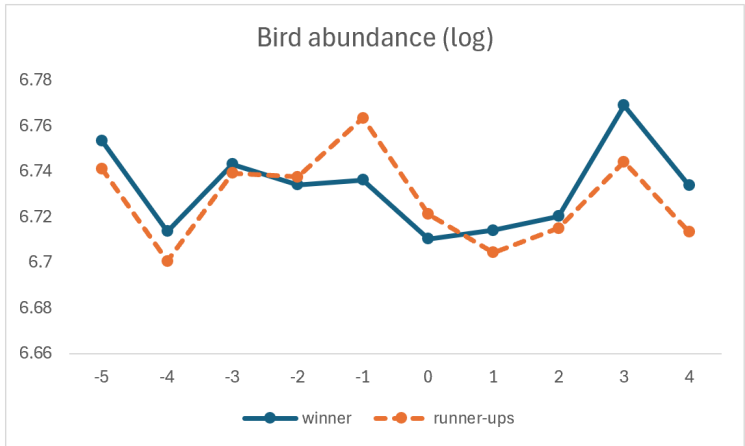
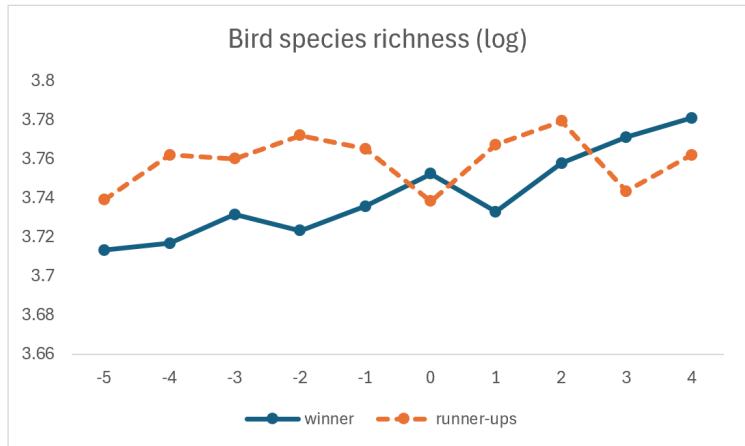
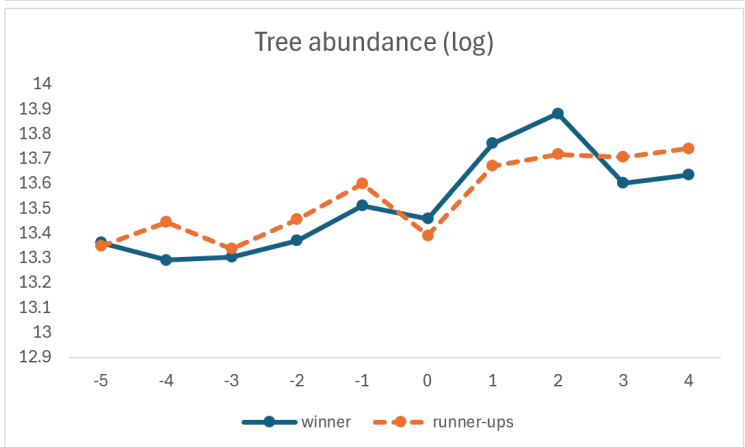


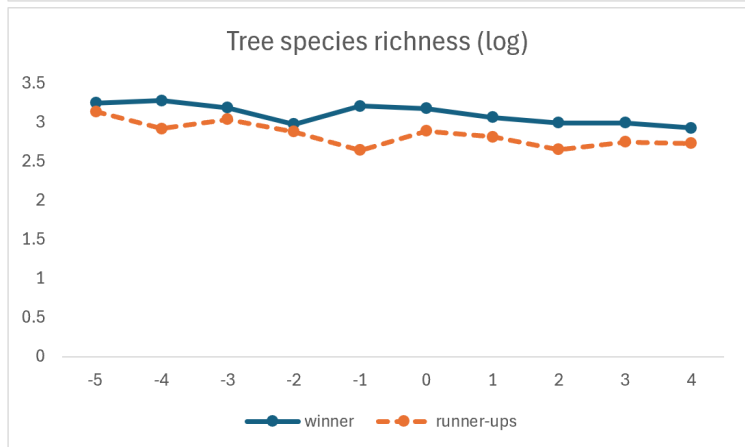
FIG. 1.—All incumbent plants' productivity in winning versus losing counties, relative to the year of an MDP opening. These figures accompany table 4.

- Study context: Million Dollar Plant (MDP) winner vs runner-up counties
- Blue circle = winners (counties with actual plant openings)
- Red circle = runner-ups (counties that were shortlisted to be potential alternative location of the plant, but weren't chosen at the end)
- Research design: compare changes in biodiversity metris in winner vs runner-up counties, before vs after plant opening
- Advantage: clean treated-vs-control type of comparison; very large plants; prior research shows significant effect on local economy
- Disadvantage: relatively small sample









- yaxis = log biodiversity outcome
- Xaxis = year relative to plant opening year ("decision year" in the MDP dataset)
- Solid line = winner counties
- Dashed line = runner-up counties
- These are raw, event-time trends with no underlying control variables
- DID regressions with pair FEs, county FEs, year FEs give rise to similar null results

Qs on FIA dataset

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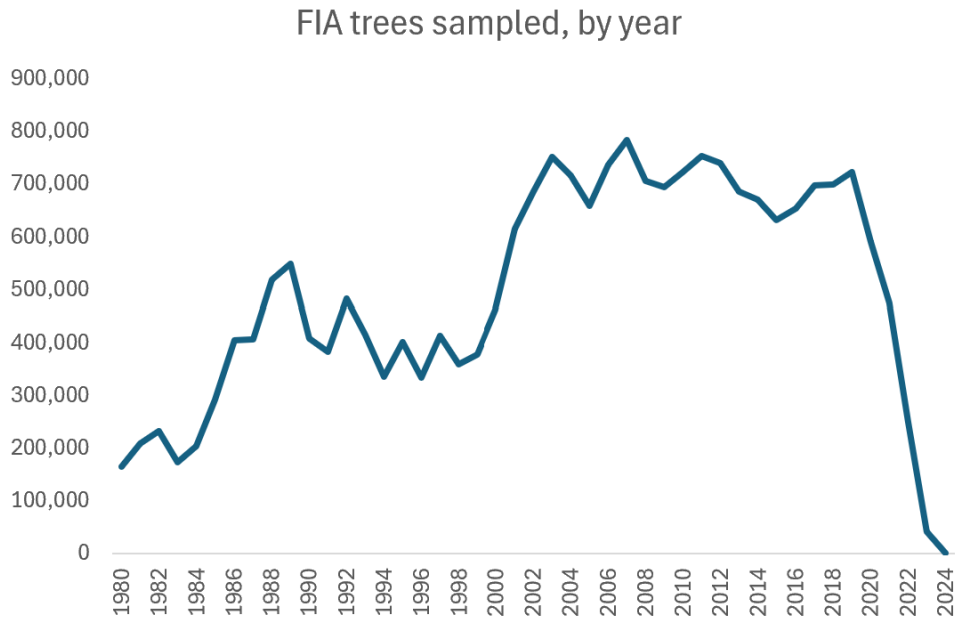

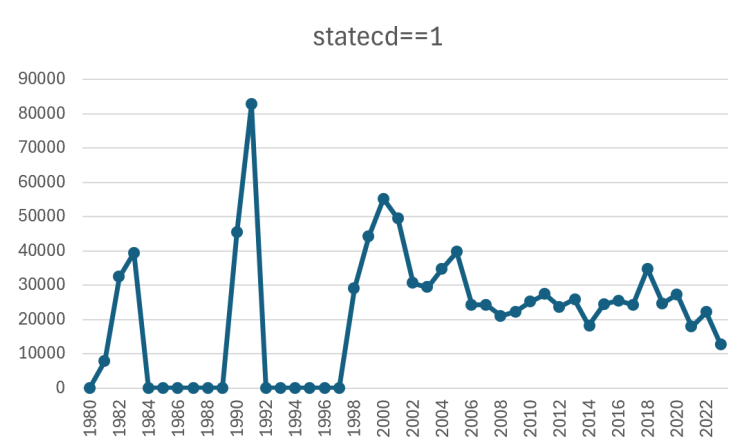

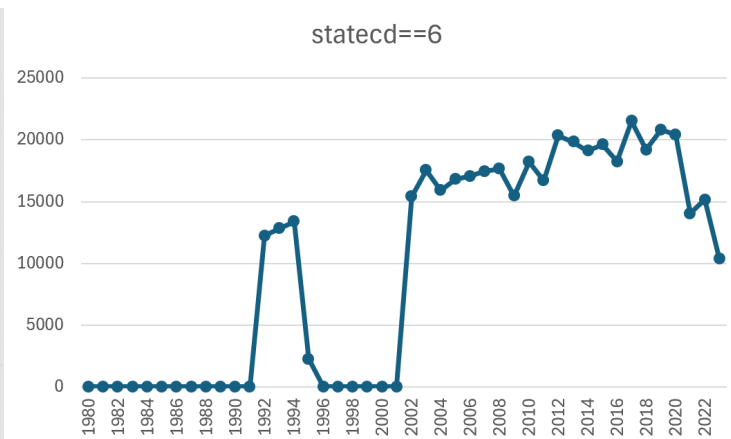

- Number of sampled trees jumps up starting 2000
- Before 2000, most states have intermittent data;
- After 2000, data appears to be available every year