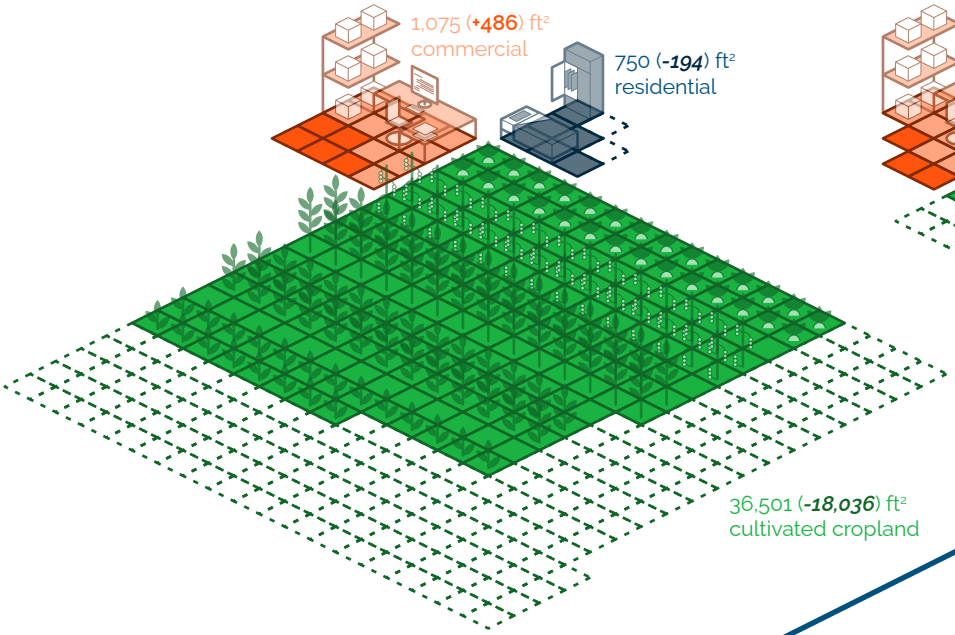
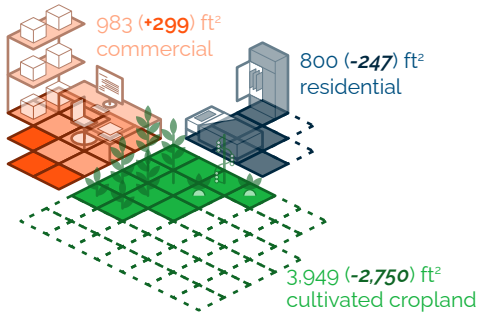
The United States of Office Spaces: Trading Rural Farms for Urban Agriculture

A growing population, increasingly urban, comes at the expense of finite US cropland. The loss of rural and productive farm land to grow food is not equally compensated by the growth of indoor urban space. In increasingly crowded cities, we continue to trade residential spaces at home for work spaces in commercial buildings. How do we grow more food on less land, in offices and warehouses rather than fields and farms?

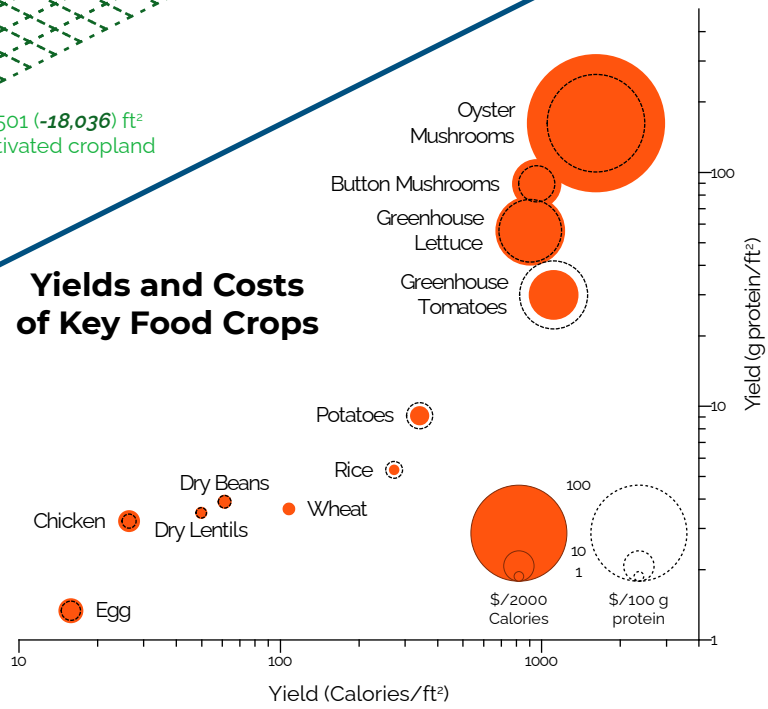
US per capita space 2020 (**2060**):



Northeast per capita space 2020 (**2060**):



Yields and Costs of Key Food Crops



Data sourced for per capita space calculations derived from the Energy Information Administration (https://www.eia.gov/consumption/) Commercial Building Energy Consumption Survey (CBECS) and Residential Energy Consumption Survey (RECS).
Area of cultivated cropland was derived from the 2017 National Resource Inventory (https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/nri/results/) from the USDA Natural Resource Conservation Service (NRCS)
Estimates for the year 2020 and 2060 were calculated by linear regression of available data (1986-2018), compared against US Census population estimates (https://data.census.gov/cedsci/)
Yields for food crops were calculated based on national values from the USDA National Agricultural Statistics Service (NASS) Census of Agriculture (https://www.nass.usda.gov/AgCensus/index.php)
Caloric and nutritional values were derived from the USDA Agricultural Research Service (ARS) FoodData Central (https://fdc.nal.usda.gov/index.html)
Cost of food crops were based on retail market prices available from a mid-range supermarket, Market Basket, in the metropolitan Greater Boston Area.

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