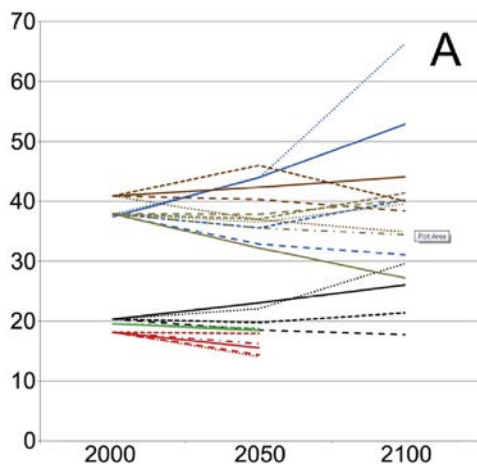


Emissions from Agricultural conversions

Van Butsic, Asst. Specialists, UC
Berkeley

Projected conversions

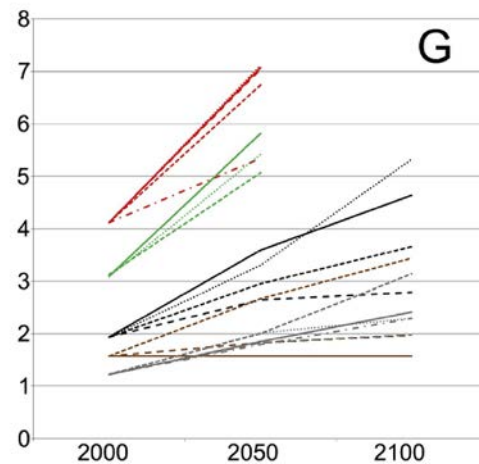
- What are the trends in Agricultural and Urban land uses?



Change in Agricultural Land

Between 1.8 and 6.5 million sq km of Ag Land

Between 0.15 and 0.7 million sq km of Urban land



Urban land

What do conversions mean for carbon?

Direct effects

- Carbon values of agricultural land vs carbon on residential land



Indirect effects

- Impacts on local transportation miles
- Impacts on global transport miles for agriculture



University of California

Agriculture and Natural Resources

Direct Effects

How much carbon is on ag lands?

soil carbon - 23.06 to 55.05 Mg ha

Above ground carbon?

How much carbon is in residential areas?

Soil carbon – typically the same as agricultural areas

Above ground – Higher than agricultural lands if trees are long lived, but only account for about 20% of all carbon

Therefore – there are likely only small (potentially positive) effects on carbon storage

Indirect effects

Impacts of sprawl

- Reducing sprawl can have larger impacts than increasing energy efficiency
- But this likely only works if there are other investments in dense areas (i.e., public transportation)
- And it will depend on the spatial location of the parcel under conversion what conversion looks like and what services reach the location



Indirect effects

Impact of food miles?

25% is already exported out of country

Within US?

99 percent of artichokes, 99 percent of walnuts, 97 percent of kiwis, 97 percent of plums, 95 percent of celery, 95 percent of garlic, 89 percent of cauliflower.....

Impact of food miles is likely relatively small as well

Does preserving agricultural land reduce emissions?

- Probably not through direct channels
- It could reduce emissions if:
 - It reduces transportation miles
 - Leads to density in urban cores
- But
 - This only happens with a plan to *both* preserve agricultural lands and increase urban density and services
- Overall:
 - There are many good reasons to preserve agricultural lands. Reducing emissions is not the strongest argument, but may be complementary, to other benefits.