A New Comparison of Greenhouse Gas Emissions from California Agricultural and Urban Land Uses

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Acknowledgements

William Salas & Pete Ingraham
Applied GeoSolutions
Denitrification-Decomposiion Model

Daniella Malin
Sustainable Food Lab/Ag Innovations Network
Cool Farm Tool
Greenhouse Gas Emissions for Leading California Crops

4 million acres = ~50% of California irrigated cropland
Greenhouse Gas Emissions from California Cities 2005

Source: Greenhouse Gas Inventories of Individual Cities
## Comparison

<table>
<thead>
<tr>
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<th>MTCO$_2$e/Acre/Year</th>
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<tbody>
<tr>
<td><strong>Agriculture</strong></td>
<td><strong>Urban</strong></td>
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<td>Jackson, et al.</td>
<td>0.81</td>
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<td>AFT</td>
<td>0.89</td>
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*American Farmland Trust*  
*Saving the Land That Sustains Us*
Annual Climate Impact of Farmland Urbanization

Acres Developed        39,500
Increase in Tons of CO$_2$  1.98 million
= Number of Vehicles    390,400
= Vehicle Miles Travelled 4.7 billion
Climate gains from reducing VMT, improved farming practices and preservation of grasslands are being negated by conversion of cropland to urban uses.
Relative Impact of Changes in Agricultural Land Uses

Per Acre impact on Greenhouse Gas Emissions

- Conversion of Cropland to Urban
- Improved Farming Practices (50% Reduction)
- Conversion of Grazing Land to Almonds
Conserving farmland is one of the most important things we can do to ameliorate climate change. Indeed, it is essential to secure the benefits of other climate actions.
Policies Innovations to Conserve Farmland

- Greenprinting
- Farmland Mitigation (Density Based)
- Sustainable Agricultural Land Conservation Program