Leveraging Big Data to Manage Extreme Weather Risks
– perspective of an ecological economist –

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Reconstructing High Temperature Extremes in the Past

[with Wolfram Schlenker]

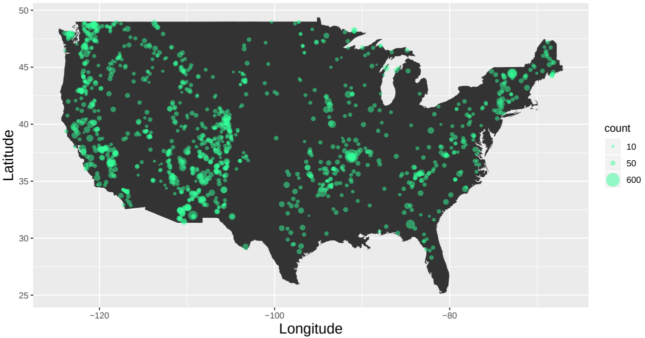

Figure: Locations of tree ring sequences that overlap with the instrumental temperature record. Circle size indicates the number of tree cores sampled at each location.

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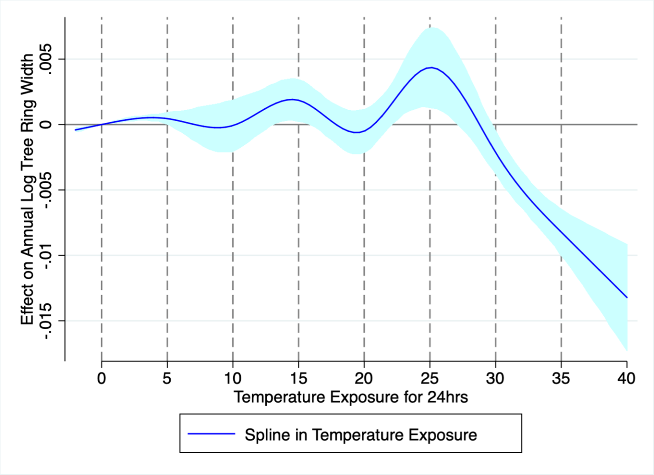
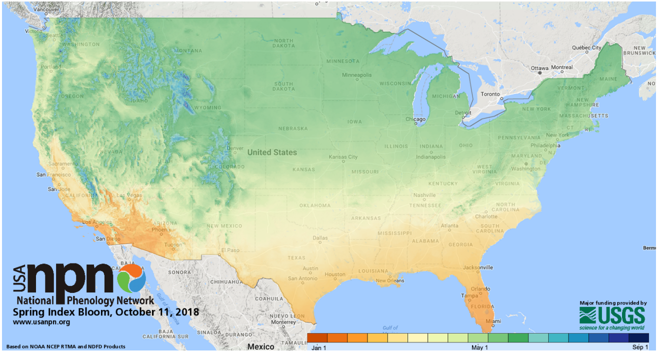


Monitoring Flowering Phenology Using Satellite Imagery and Deep Learning



Monitoring Flowering Phenology Using Satellite Imagery and Deep Learning

Source: Planet data – Location: Carrizo Plain, California – Time: February 2017

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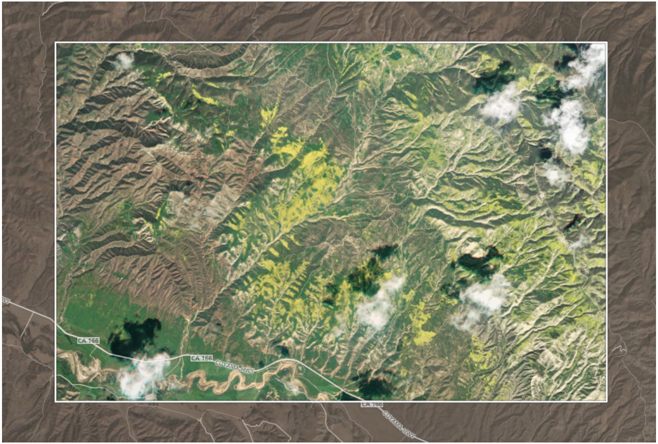

Source: Planet data – Location: Carrizo Plain, California – Time: March 2017 'superbloom'

Panel Topic:

Using Satellite Imagery and Machine Learning to Manage Extreme Weather Risks in Real Time

- Time horizon:
  - short: predict/monitor the next extreme event, improve short-term returns
  - long: characterize the future expected distribution of extreme weather events, build long-term resilience
    - climate risk disclosures: Julian Nyarko and Eric Talley
- Spatial scale:
  - influenced by policy goal
  - correlated nature of extreme events
  - implications for the need for ground-truth data for supervised models