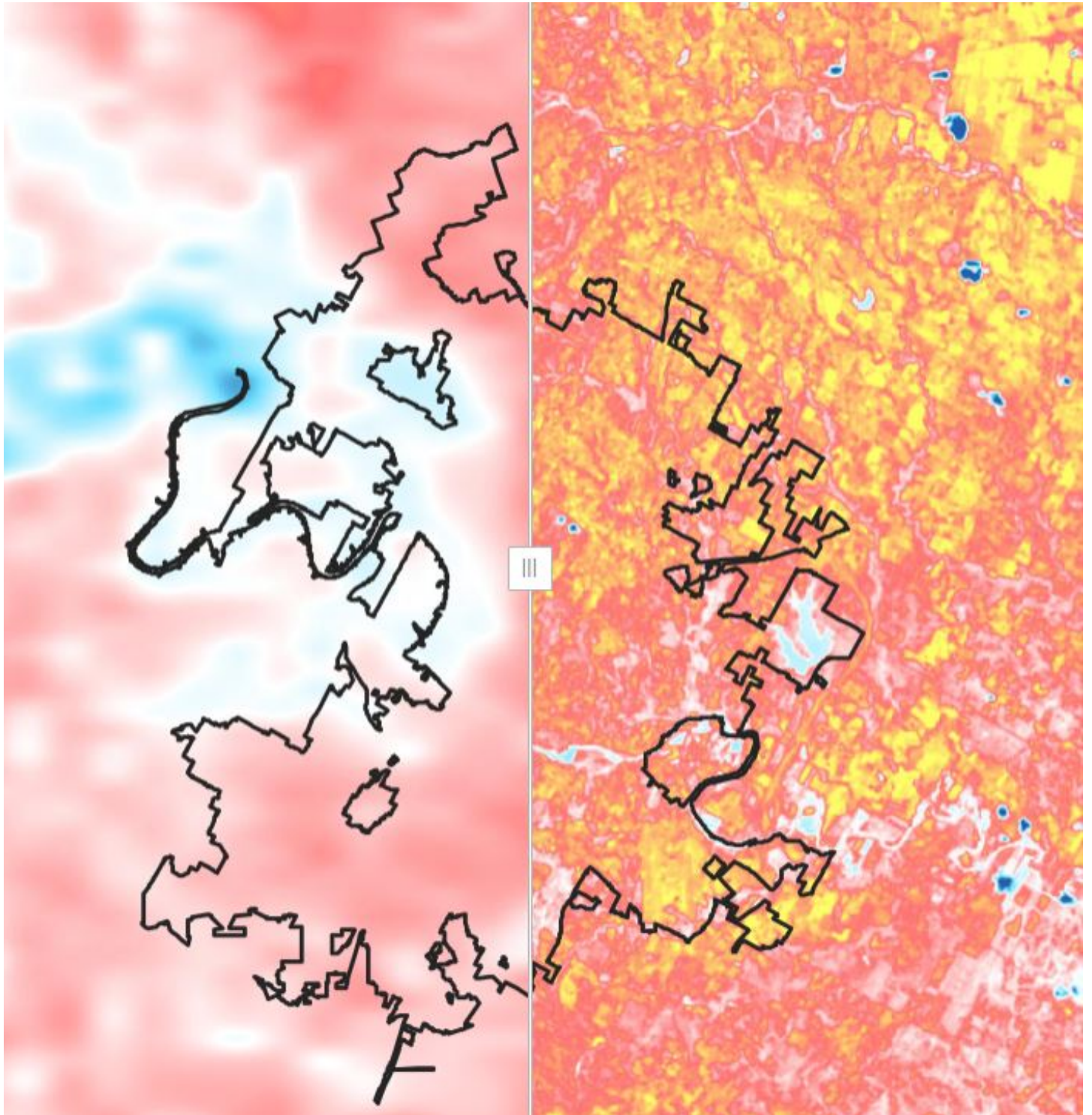


## My NASA Data - Interactive Models

### Exploring the Tradeoffs of Surface Temperature Models



Heat islands form as vegetation is replaced by asphalt and concrete for roads, buildings, and other structures necessary to accommodate growing populations. These surfaces absorb—rather than

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reflect— the sun's heat, causing surface temperatures and near-surface air temperatures to rise near these surfaces. Displacing trees and vegetation minimizes the natural cooling effects of shading and evaporation of water from soil and leaves (evapotranspiration).

To learn more, visit:

- The [Urban Heat Island Phenomena](#) page for background information.



**Virtual Teachers:** Make a copy of the Google Form of your choice so that you may assign it directly from your Google Drive into your Learning Management System (e.g., Google Classroom, Canvas, Schoology, etc.). Do you need help incorporating these Google Forms into your Learning

Management System? If so, read this  [Guide to Using Google Forms with My NASA Data](#).

Teachers who are interested in receiving the answer key, please complete the [Teacher Key Request and Verification Form](#). We verify that requestors are teachers prior to sending access to the answer keys as we've had many students try to pass as teachers to gain access.

## Grade Band

- 3-5
- 6-8
- 9-12

## Supported NGSS Performance Expectations

- [3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.](#)
- [MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.](#)
- [HS-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental](#)

## NGSS Disciplinary Core Ideas

- ETS1B: Developing Possible Solutions

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## Science and Engineering Practices

- Developing and Using Models
- Analyzing and Interpreting Data
- Constructing Explanations and Designing Solutions

## Crosscutting Concepts

- Scale, Proportion, and Quantity
- Interdependence of Science, Engineering, and Technology

## Related Resources

- [Patterns in Earth's Surface Temperature Interactive Model](#)
- [Human Impact and the Creation of Urban Heat Islands](#)