

California Footprint – Sustainability Indicators



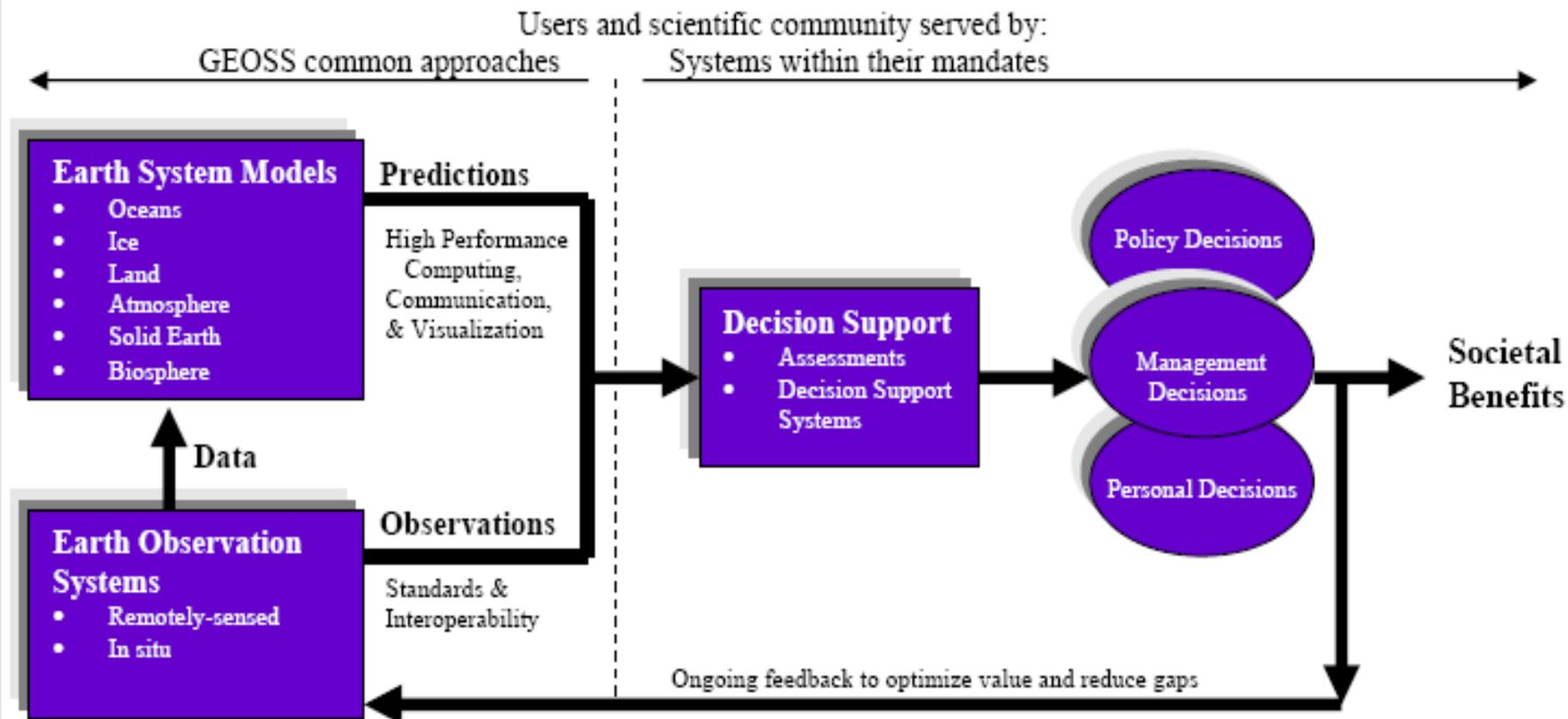
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The Pacific Southwest Region

Linking Earth Observations to Societal Benefits

“I am thrilled with the promise of GEOSS. It can provide us with better information to use in decision-making, producing better decisions that are better informed with more data points. I hope to help make the promise of GEOSS a reality.”

Steve Johnson - Ex EPA Administrator



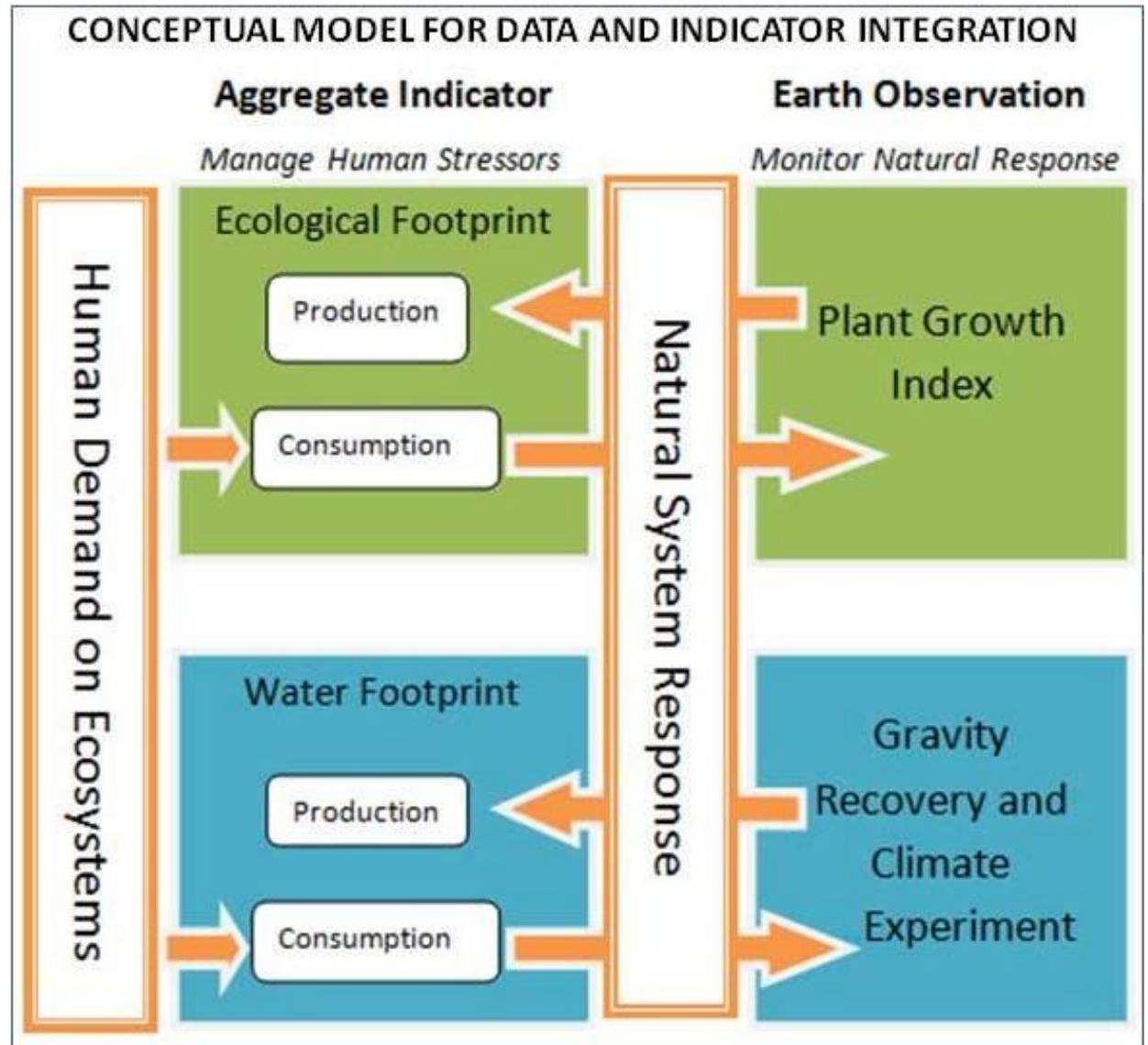
Ecological Footprint

compares the population's use of natural resources with the ecosystem's ability to provide those resources.

Water Footprint compares available sources with uses of freshwater.

Plant Growth Index (PGI), based on earth observation data, measures plant communities' response to stressors.

Gravity Recovery and Climate Experiment (GRACE) is an indicator of groundwater flux based on earth observation data.



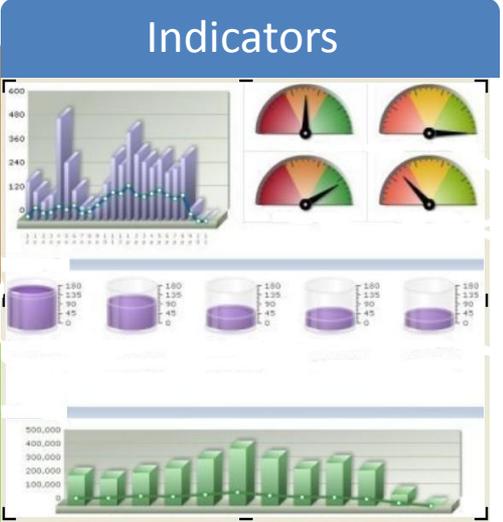
California Footprints Decision Support Tools for Resource Management



Ecological Footprint

Data gathering
Input into model

*Use Footprint to
inform policy*



Plant Growth Index

Processed Data
from NASA/NOAA

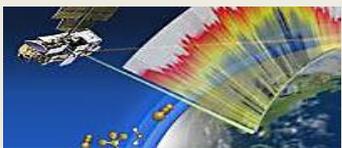
*Using models to
connect with
Eco & H₂O
footprints*



Water Footprint

Data gathering
Input into model

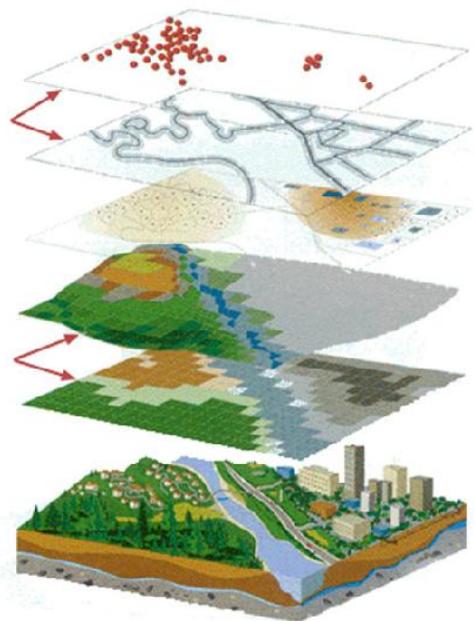
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GRACE

Processed Data
from NASA

*Using models to
connect with
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footprints*



Indicators of California's Sustainability

Why California?

- **History of proactive response to global change**
- **State agency experience with indicators**
- **Availability of data**
- **Methodology pilot for potential projects on other states and the nation as a whole**

Indicators of California's Sustainability

Why Footprints?

- Summarize and convey large body of information
- Use an accessible metaphor

Why Two Footprints?

- Complementary, more comprehensive
 - Ecological Footprint addresses terrestrial resources (and fisheries) in units of area
 - Water Footprint addresses water resources in units of volume

Indicators of California's Sustainability

Why earth-observation indicators?

- To corroborate footprints' resource economic data
- To support geo-spatial data presentation

Potential outcomes

- Decision-maker support
- Public awareness

USEPA's Safe and Sustainable Water Resource Research Program

Theme 1 -- Sustainable Water

Resources: Ensure safe and sustainable water quality and availability to protect human and ecosystem health by integrating social, economic and environmental research for use in protecting and restoring water resources and their designated uses

Theme 2 -- Sustainable Water

Infrastructure Systems: Ensure the sustainability of critical water resources using systems-integrated water resource management



Conceptual Model: goal of sustainable water resource systems

