Integrating Remote Sensing Data with Socioeconomic Data: Sensitivity, Confidentiality, Privacy, and Intellectual Property Challenges

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Prepared for Presentation to the 2014 Fall AGU Meeting

December 15-19, 2014, San Francisco, California
Poster Session, Wednesday, December 17, 2014, 8:00 AM
Paper Number: PA31B-4073

Abstract: The integration of remote sensing data with socioeconomic data presents ***new opportunities*** for scientific discovery and analysis that can improve understanding of the environmental sustainability issues that society faces today. Such integrated data products and services can be used to study interdisciplinary issues by investigators representing various disciplines. In addition to the scientific benefits that can be attained by integrating remote sensing data with socioeconomic data, the integration of these data also present ***challenges*** that reflect the complex issues that arise when sharing and integrating different types of science data. When integrating one or more datasets that contain ***sensitive information***, data producers need to be aware of the limitations that have been placed upon the data to protect private property, species or other inhabitants that reside on the property, or restricted information about a particular location. Similarly, ***confidentiality and privacy issues*** are a concern for data that have been collected about individual humans and families who have volunteered to serve as human research subjects or whose personal information may have been collected without their knowledge. In addition, ***intellectual property rights*** that are associated with a particular dataset may prevent integration with other data or pose constraints on the use of the resulting data products or services. These challenges will be described along with approaches that can be applied to address them when planning projects that involve the integration of remote sensing data with socioeconomic data.

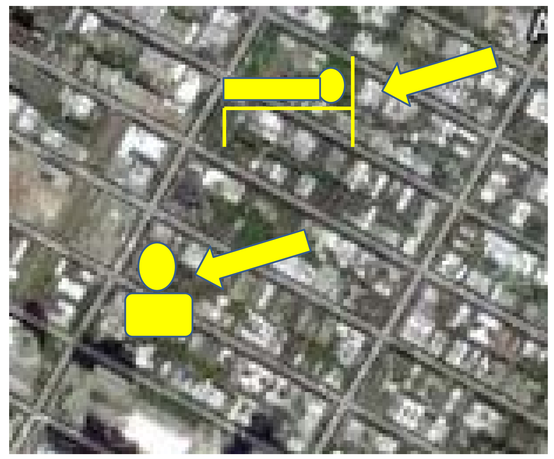
Examples of Protection Needed when Integrating RS and Socioeconomic Data Ask Your Institutional Review Board (IRB)

Entity	Vulnerability	Risk
Human Research Subjects Data	**Personally Identifiable Information (PII)**	**Reputation, Employment, Property Value**
Medical Patient Data	Personal Health Information (PHI)	Property Value, Social Stigma
Endangered Species Data	**Habitat**	**Hunting, Habitat Destruction**
First Settlers Data	Habitat, Food Source	Privacy, Exploitation
Security Vulnerabilities of People or Property	**Access Points**	**Theft, Attack**

Intellectual Property Rights Enabling Integration and Reuse *

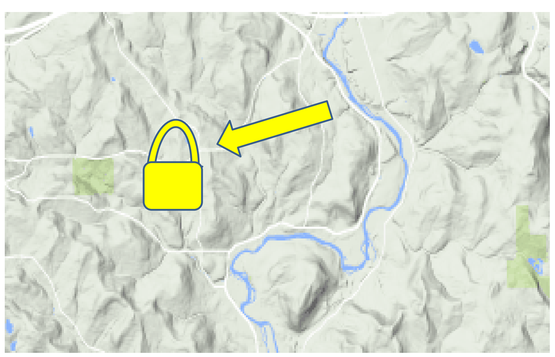
Entity	Open License
Scientific Data	Creative Commons CC By or CC0
Geographic Maps	Creative Commons CC By
Scientific Software	Apache License

* This is not legal advice. For legal advice consult your attorney. Rights differ by country and jurisdiction.

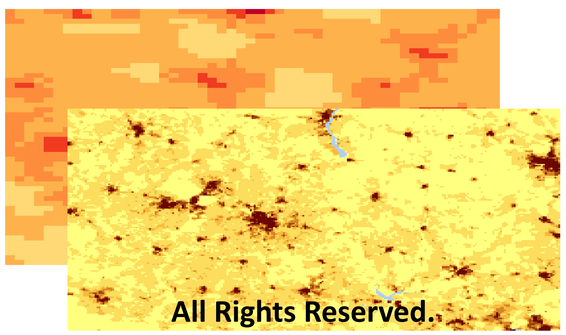


Violating Human Subjects or Patient Confidentiality: Disclosure of Residence or Workplace

Disclosing locations of residences of first settlers or habitats of endangered species confidentiality increases their risks.



Disclosing the locations of security vulnerabilities could increase risks to populations and property .



Combining or disseminating maps and images for which rights have not been acquired violates the owner's rights.

Documentation is Necessary

Document any information about the confidentiality protections, sensitivity concerns, and intellectual property rights assigned to your work.

Additional Information Available Online

Confidentiality Issues in Geospatial Data Applications http://sedac.ciesin.columbia.edu/confidentiality/

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The authors appreciate the support received from the National Aeronautics and Space Administration (NASA) under Contract NNG13HQ04C for the Continued Operation of the Socioeconomic Data and Applications Center (SEDAC).

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