

# Geographic Information Systems and Remote Sensing For Disaster Recovery

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## SUMMARY

Disaster recovery is focused on the transition of the built environment, business, people, and their communities back to a state of acceptable operation after an event such as an earthquake or hurricane, which requires long-term planning and commitment to achieve recovery goals.

In this paper, the relationship between disaster recovery GIS and remote sensing is discussed in more detail starting with an overview of the general disaster management cycle (response, recovery, mitigation, planning), the role of GIS and remote sensing within disaster recovery at different scales (i.e., town, county, and state), and how the international community such as the United Nations and other entities engage in international disaster recovery.

For recovery efforts, or the rebuilding or improvement of disaster affected areas, GIS and remote sensing can be incorporated through the use of maps and images as the objects of collaboration in community planning dialogues and rebuilding efforts.

Disaster recovery will operate at varying space and time scales subject to the nuances of the places undergoing the recovery.

The paper introduces the ideas of short-term and long-term disaster recovery and the implications these time scales have on specific use of GIS and remote sensing for disaster recovery.

Next, it gives some perspectives on the geographical aspects of disaster recovery via the various transition periods that exist during the recovery phase such as the transition from temporary housing to permanent housing and debris removal

activities.

The paper then presents specific examples of the use of GIS and remote to support disaster recovery.

Next, it demonstrates how GIS and remote sensing can be used for restoring critical infrastructure using an example of the networking algorithm in the ESRI Networking Analyst tool.

The paper then shows examples of how, specifically, the transition from recovery to mitigation can occur.