

National Geospatial Advisory Committee – Landsat Advisory Group

Comments on NRC Report: *Landsat and Beyond: Sustaining and Enhancing the Nation’s Land Imaging Program*ⁱ

Preface: This review of the National Research Council (NRC) report *Landsat and Beyond: Sustaining and Enhancing the Nation’s Land Imaging Program*ⁱⁱ was prepared by the National Geospatial Advisory Committee Landsat Advisory Group (LAG) at the request of Federal Geographic Data Committeeⁱⁱⁱ. The review focuses specifically on the findings and recommendations of the NRC Committee on Implementation of a Sustained Land Imaging Program that pertain to the current and future role of Landsat as part of a comprehensive national land imaging program.

Major LAG Finding: The LAG concurs with the report's findings and recommendations and finds the report to be well reasoned and thorough in scope.

Major NRC Recommendations:

- “The committee recommends key elements of a successful Sustained and Enhanced Land Imaging Program (SELIP) no matter where the federal government decides it should reside.”
- “The top priorities for the Sustained and Enhanced Land Imaging Program should be to assure that the core program provides for continuity of Landsat products and coverage on a secure and sustainable path.”
- “For the Sustained and Enhanced Land Imaging Program to be successful, the division of program responsibilities between the USGS and NASA should be designated such that the agency responsible for balancing science requirements with mission complexity and cost is also provided with the necessary budget. Both agencies should participate in an iterative process to design missions that meet the needs of research and operational communities, but final decisions should be made by the agency that has been given the budget.”

Specific Recommendations

- Develop a plan for a comprehensive, integrated program that capitalizes on the strengths of USGS and NASA, maintains current capability and the existing archive, and enhances the program as technology enables new imaging capabilities and data products;
- Ensure acquisition of land imaging data continuously from orbital platforms, and periodically from airborne platforms, to respond to the needs of producers and consumers of derived data products along with users who analyze imagery;
- Establish partnerships with commercial firms and international land imaging programs to leverage enhanced capabilities;
- Coordinate land imaging data buys across the U.S. government; and
- Include a research and development component to improve data products based on core measurements and to develop new measurement methods and consider evolving requirements.

Important content pertaining to Landsat:

1. Clear statement that the USGS currently has a limited role in the development of any successive Landsat missions.
2. The NRC committee views Landsat as part of a comprehensive land imaging program that consists of an extensive array of other sensors and data.
3. The NRC committee found that the major value of the medium resolution Landsat data is the continuity of the record for monitoring change.
4. The NRC committee provides a list of applications that require higher resolution data than is provided by cannot be supported by Landsat.
5. The NRC committee states that there is limited commercial interest in Landsat 30 meter data.
6. The NRC committee believes that there are commercial data sources that might be used to augment the Landsat data stream.
7. The NRC committee suggests that if the Landsat program is considered an operational system (rather than research) then the goal should be to continue the existing data stream with the lowest possible cost.
8. The NRC committee believes that there are several low cost alternatives to the deployment of a clone of Landsat 8. These include a block buy of specialized small satellites that capture the existing bands at 30 meters. It also includes a wider scan swath, employing a constellation of smaller satellites and flying as a secondary payload on another mission.
9. The NRC committee notes that Landsat is a global asset that is used to support several programs such as Australia's National Carbon Accounting. They note that while other nations are or will be in a position to provide data that will complement Landsat, none of them will provide a substitute for the fundamental data stream.

ⁱ This paper was approved by the NGAC Landsat Advisory Group on December 3, 2013 and adopted by the NGAC as a whole on December 11, 2013. The members of the Landsat Advisory Group are: Kass Green, Kass Green & Associates (Co-Chair); Roger Mitchell, MDA Information Systems, Inc. (Co-Chair); Peter Becker (ESRI); John Copple, Sanborn Map Co.; David Cowen, Univ. of South Carolina; Joanne Irene Gabrynowicz, Univ. of Mississippi; Rebecca Moore, Google, Inc.; Tony Spicci, State of Missouri; Cory Springer, Ball Aerospace & Technologies Corp.; Darrel Williams, Global Science & Technology, Inc.; Tony Willardson, Western States Water Council.

ⁱⁱ http://www.nap.edu/catalog.php?record_id=18420

ⁱⁱⁱ Federal Geographic Data Committee, Initial 2013 Guidance to the National Geospatial Advisory Committee, March 2013 (<http://www.fgdc.gov/ngac/meetings/april-2013/2013-fgdc-guidance-to-ngac.pdf>)