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# **NGAC LANDSAT SUBCOMMITTEE UPDATE**

**KASS GREEN  
SEPTEMBER 18, 2012**

# Landsat Advisory Group (LAG) Members

Name	Organization
Kass Green (Subcommittee chair)	Kass Green & Associates
John Copple	Sanborn Map Company
Dave Cowen (NGAC Chair)	University of South Carolina
Joanne Gabrynowicz	University of Mississippi
Rick Landenberger	AmericaView
Roger Mitchell	MDA Federal
Rebecca Moore	Google
Tony Spicci	State of Missouri
Cory Springer	Ball Aerospace & Technologies Corp.
Darrel Williams	Global Science & Technology, Inc.
Tony Willardson	Western States Water Council

# Direction from DOI (April 2012)

The NGAC Landsat Advisory Group (LAG) will provide advice to the Federal Government, through the NGAC, on the requirements, objectives and actions of the Landsat Program as they apply to continued delivery of societal benefits for the Nation and the global Earth observation community. The LAG is requested to provide advice and recommendations on Landsat-related issues for consideration by the NGAC, including the following:

1. **Current and future Landsat data and information product definitions and methods for accessing and distributing these products.**
2. Future Landsat Program plans and efforts in coordination with the National Earth Observations (NEO) Task Force.
3. **Priorities and communication of the Landsat Program.**
4. Review and comment on the National Research Council report on implementing a sustained Land Imaging Program.

(bolded issues are of highest priority)

# Priorities and Communication of the Landsat Program

- Two immediate tasks:
  1. Provide advice on whether or not the US government should charge for Landsat data.
  2. Provide advice concerning the economic benefits of Landsat data.

# Two Subcommittees Formed

## **Economic Value**

Roger Mitchell - Chair

John Copple

Tony Willardson

Tony Spicci

Rick Landenberger

## **Cost Recovery**

Joanne Gabrynowicz – Chair

Cory Springer

# Produced Two Draft White Papers

## National Geospatial Advisory Committee – Landsat Advisory Group Statement on Landsat Data Use and Charges<sup>1</sup>

The value of Landsat data is internationally recognized as indispensable to science, natural resource management, commerce, security, foreign policy, agriculture, and education. Since 1972, Landsat data have become a critical part of U.S. infrastructure. Like GPS, the National Weather Service, and the National Oceanic and Atmospheric Administration's (NOAA) operational weather satellites, Landsat provides a huge return on the taxpayers' investment.<sup>2</sup> Landsat enables more efficient science and natural resources management. Its ability to monitor worldwide land surface changes is a proven public good.<sup>3</sup> Landsat benefits far outweigh the cost. It is in the U.S. national interest to fund and distribute Landsat data to the public without cost now and in the future.

**Overarching recommendation:** Landsat data must continue to be distributed at no cost.

### Impacts of Charging for Landsat Data

1. **Would severely restrict data use.** The Department of the Interior (DOI) stopped charging for Landsat data in 2008 and its use skyrocketed, soaring from 38 to over 5700 scenes per day.<sup>4</sup> Imposing charges will again severely restrict data use.
2. **Would violate existing OMB guidelines, Federal Law, OSTP, and U.S. National Space Policy.** Cost-free Landsat data is consistent with existing Office of Management and Budget (OMB) guidelines, Federal Law, Office of Science and Technology (OSTP), and U.S. National Space Policy. No charge should be made for a service when the service can be considered primarily as benefiting broadly the general public.<sup>5</sup>
3. **Would require statutory changes.** Imposing a data charge requires statutory revision. The Land Remote Policy Act mandates Landsat data be made available at no more than the cost of fulfilling a user request (COFUR). COFUR "shall not include any acquisition, amortization, or depreciation of capital assets originally paid for by the United States Government or other costs not specifically attributable to fulfilling user requests."<sup>6</sup>
4. **Would cost more than the amount of revenue generated by the charges.** Technology has automated the data request and distribution process to operate at virtually no cost for fulfilling orders because the internet cost of filling requests is zero. However, collecting payments incurs costs unrelated to the data because users incur costs from using authorized payment mechanisms and DOI incurs costs to invoice, track, and process payments.
5. **Would create a circular payment basis for public agencies.** Landsat data users are overwhelmingly public agencies. Charging them for data results in circular payments among government entities.
6. **Would stifle innovation and business activity that creates jobs.** Increased use is the starting point of value. Free data catalyzes innovation. It leads to unpredictable applications, products, and decision-making that requires investigation and data analysis within specific disciplines.<sup>7</sup> The Government's and taxpayers' return is downstream of data access. Free data fuels significant business activity that creates jobs, generates tax revenue, protects property, protects the environment, and saves lives.<sup>8</sup>
7. **Would inhibit data analysis in scientific and technical analyses.** Free data availability results in major direct and indirect gains in efficiency. Data analysis in scientific and technical analyses renders information that, in turn, more efficiently applies science and technology to practical problems and issues.<sup>9</sup>
8. **Would negatively impact international relations relating to national, homeland, and food security.** Landsat provides a continuous transparent global view of resources over time, allowing for the

## National Geospatial Advisory Committee – Landsat Advisory Group The Value Proposition for Ten Landsat Applications<sup>1</sup>

Landsat imagery provides the United States and the world with continuous, consistent monitoring of critically important global resources. Supplying an unprecedented record of global land cover status and change for the last 40 years, Landsat imagery is an essential "national asset" which has made and continues to make critical "contributions to U.S. economic, environmental, and national security interests."<sup>2</sup> However, because Landsat imagery is primarily utilized by non-commercial entities – thereby not passing through a market where its value is set by market forces – estimating the economic value of Landsat data is an ongoing challenge. Accordingly, the Department of Interior recently requested that the Landsat Advisory Group of the National Geospatial Advisory Committee provide advice to the Department "concerning the economic benefits of Landsat data."<sup>3</sup> There are thousands of users and hundreds of applications using Landsat in the United States, with strong use internationally as well. This white paper provides estimates of the economic value of ten (10) uses of Landsat data and summarizes recent estimates of the economic value of Landsat data from two large-scale surveys. Both approaches clearly show that the annual economic value of Landsat data far exceeds the cost of building, launching, and managing Landsat satellites and sensors.

### 1. Productivity Savings from Ten Uses of Landsat

The reason people use Landsat is because it is more efficient than any other technology to accomplish the same decision support requirements. After nearly 40 years of operation almost all of the "kick the tire" uses have either proven successful or been discontinued because of higher costs than alternatives. The purpose of this document is to outline ten (10) decision processes that would be significantly more expensive without an operational Landsat-like program. Many of these processes are associated with the U.S. government and save significant amounts of money compared to other methods of accomplishing the same objective. They also include non-governmental science applications where scarce research dollars cannot be wasted on inefficient technologies. The estimates of annual efficiency savings are conservative and can be substantiated upon request. These ten Landsat applications alone produce savings of \$180 million to over \$266 million per year for the Federal and State governments.

Summary Table: Estimated Productivity Savings from Ten Uses of Landsat<sup>\*</sup>

Landsat Application	Estimated Annual Efficiency Savings
1. Monitoring Consumptive Outdoor Water Usage	\$20 - \$73 million
2. U.S. Government Mapping	over \$100 million
3. Forest Health Monitoring	\$12 million
4. National Agricultural Commodities Mapping	over \$4 million
5. Flood Mitigation Mapping	over \$4.5 million
6. Forest Fragmentation Detection	over \$5 million
7. Forest Change Detection	over \$5 million
8. World Agriculture Supply and Demand Estimates	over \$3 - \$5 million
9. Landsat Support for Fire Management	\$28 - \$30 million
10. Coastal Change Analysis Program	\$1.5 million

<sup>\*</sup> This table shows the estimated annual efficiency savings of ten selected Landsat applications. The total annual economic value of Landsat data has recently been estimated at over \$1.7 billion (see Section 2, "Recent Studies on the Economic Value of Landsat Data," Page 6).

# Cost Recovery Paper Findings

## Impacts of Charging for Landsat Data

- ❑ *Would severely restrict data use*
- ❑ *Would violate existing OMB guidelines, Federal Law, OSTP, and U.S. National Space Policy*
- ❑ *Would require statutory changes.*
- ❑ *Would cost more than the amount of revenue generated by the charges*
- ❑ *Would stifle innovation and business activity that creates jobs.*
- ❑ *Would create a circular payment basis for public agencies*
- ❑ *Would inhibit data analysis in scientific and technical analyses*
- ❑ *Would negatively impact international relations relating to national, homeland, and food Security*
- ❑ *Would negatively impact foreign policy and U.S. standing as the leader in space technology.*

# Economic Value Paper Findings

## ■ Annual savings from using Landsat data of 10 operational applications

Landsat Application	Estimated Annual Efficiency Savings
1. Monitoring Consumptive Outdoor Water Usage	\$20 - \$73 million
2. U.S. Government Mapping	over \$100 million
3. Forest Health Monitoring	\$12 million
4. National Agricultural Commodities Mapping	over \$4 million
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*Note: This table shows the estimated annual efficiency savings of ten selected Landsat applications. The total annual economic value of Landsat data has recently been estimated at over \$1.7 billion*



# Sept. 17 LAG Meeting Agenda

- 1:30 pm**      **Meeting Startup – Chair: Kass Green (10 min)**  
Welcome and Introductions  
Review Objectives and Agenda
- 1:40 pm**      **Leadership Perspectives and Update - Anne Castle (20 min)**
- 2:00 pm**      **Final Review of LAG papers & discussion of plans for LAG session at NGAC meeting on 9/18 – Kass Green (20 Min)**
- 2:20 pm**      **Landsat Program Update – Tim Newman (40 min)**  
Status of the Program  
Key Issues and Briefing on Priority Areas
- 3:00 pm**      **Action Planning/Discussion of NGAC Guidance - Group (45 Min)**  
Priority Areas  
Next Research Topics  
Clarification of Expectations and Outputs
- 3:45**          **Wrap-up (15 min)**  
Review of Decisions and Actions  
Outline of NGAC Report