ESIP Decision Support Tools Catalog and Community of Practice (DSTCCP): *Platform and Applications*

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Earth Science Information Partners (ESIP) Federation: Vision and Community

To be a leader in promoting the collection, stewardship and use of Earth science data, information and knowledge that is responsive to societal needs.
Common concerns in development, selection, and use of decision tools*

- Transparency
- Quality of data
- Appropriate use of tool output
- Quantification
- Flexibility
- Number of tools developed v. individual tool improvement

*Courtesy of Alison LaBonte (AAAS Fellow at OSTP, now at DOE)
Renewables Site Selection

- DOE is driving renewables growth to provide alternatives to oil and gas dependence and to ensure cleaner environment

- Stakeholders including Federal agencies (DOE, USGS, EPA, DOD, others), project proponents and NGOs are concerned about site selection for new installations
  - Need a framework and methods to assess risks and environmental impacts
    - Solar energy installations can threaten wildlife and detract from nearby historic buildings
    - Wind turbines can pose threats to wildlife and air traffic, interfere with radar operation near military installations

- Myriad of Decision Support Tools (DST) exist but lack transparency (model and data) and interoperability, with overall quality unknown
  - Stakeholder isolation
  - Tools are proprietary and not open source
  - Data hard to access or is completely inaccessible
  - Tools not kept up-to-date
Decision tool Catalog

- Functions and features
  - Base data layers, metadata, and sources
  - Connecting tools to datasets

- User Applications
  - Use cases mapping tools to user applications
  - Collaborative environment
  - Utilization and value maximization

- Updates
  - Ongoing user requirements
  - Gap analysis
  - Tracking/contact information

Community of Practice

- Fed Agencies, NGOs, Users
  - Provide requirements, current implementations, and feedback

- Tool Developers
  - Defining/refining architecture
  - Classify types of functions decision tools may perform
  - Populate the catalog

- Academic and Research Community
  - Innovate/address unmet user needs
  - Engage in education and awareness

Facilitate information sharing of community supported tools, and a partnership among stakeholders, developers and users
Decision Support Tools Catalog and Community of Practice (DSTCCP): Applications

- Renewables Site Selection
  - AWWI partnership
  - Integration with USGS ScienceBase and Data.gov effort
  - Coordination with WGA Wildlife Council

- Extreme Weather/Climate events
  - NASA-USAID SERVIR

DSTCCP Demo: http://dstccp.esipfed.org/esip/
# Contacts

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Appendix
DSTCCP: Request for Information from Developers: Renewables Site Selection

1. **URL**: (Tool details, developers website)

2. **Organization**: (Tool development organization; also identify collaborations and sponsors.

3. **Tags**: wind energy, environment etc.

4. **Intended purpose**: (3 or 4 line summary of goals and objectives)

5. **Potential tool users**: identify (e.g., academic, consultant, government agency, NGO (Environmental/Conservation/Other), Student, Wind Project Developer)

6. **Geographic Coverage**: National, State

7. **Data layers**: Including Wind Resource, Disturbance, and Land Ownership layers, species models, protected area database etc.

8. **Ecosystem-level Parameters**: Vegetation/Biome, Physical components, Flora/Fauna [Species presence/absence]

9. **Species Information [Numbers, Distribution, Status Assessment]**: Distribution (Breeding, Nesting, Roosting, Feeding, Resting), Migratory Pathways, Demographic Information, Population Status, Cumulative Impacts Analysis, Survey and Monitoring Design, Adaptive Management/Structured Decision, Risk Assessment


11. **Geographic Location**: State, Bird Conservation Region, Physiographic Province etc.

12. **Functionality**: Clipping, Cutting, etc., Reporting functions, Permitting & Policy Application

13. **Metadata**

14. **Data Access**: Downloadable data, Data Source Indicated, Free Data

15. **Type of Data Included**: Resolution (Spatial, Spectral, Temporal, Radiometric, Vector, Raster), Satellite/Aerial/Remotely Sensed

16. **Interoperability**: With other similar or related tools? Can data generated or used by this tool be used directly by another tool and vice versa?
DSTCCP: Questions for User Feedback

1. **Informs Decision Making** – actionable information, strengths and weaknesses?

2. **Support for variety of end user skill levels** - support a wide variety of end user skill levels?

3. **Interactivity and accessibility** - tool’s ability to allow the end user to upload and download data, create reports, and easily manipulate data?

4. **Documentation** – user manual - data origin and age, data layers, data formats, metadata, certainty, methodology of collecting data?

5. **Use cases and Case studies** – analysis, relevancy, risk and uncertainty, prioritization, user recommendations etc?

6. **Data Exchange Capability** – ability to confidentially exchange private and public data, use without privacy concerns about their data.

7. **Needs Addressed** – needs well defined, “measure of success”, desirable outcomes?

8. **Clarity of Communication** - value of this tool, has the tool developer defined the terms they use such as “tool,” “system,” and “data.”

9. **Lifecycle** – sustained use, latest available technologies, inform obsolescence of a release

10. **Feedback Mechanism** – user forums to share information, obtain user feedback and opportunities for collaboration?