

Voluntary Practices for Facility Siting and Heritage Management

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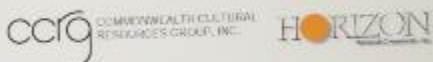
Leaders in Energy and Preservation (LEAP)



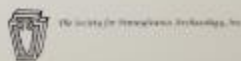
- 501(c)(3) educational nonprofit organization
- Coalition of energy companies and preservation groups supporting efficient energy development and advancing heritage management
- Formerly the Gas and Preservation Partnership (GAPP); name change reflects broader interest across energy industry, including oil & gas, pipelines, utilities, wind, solar and more

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Our Leadership

- Shell
- Southwestern Energy
- Hess Corporation
- Society for American Archaeology
- ... and many others

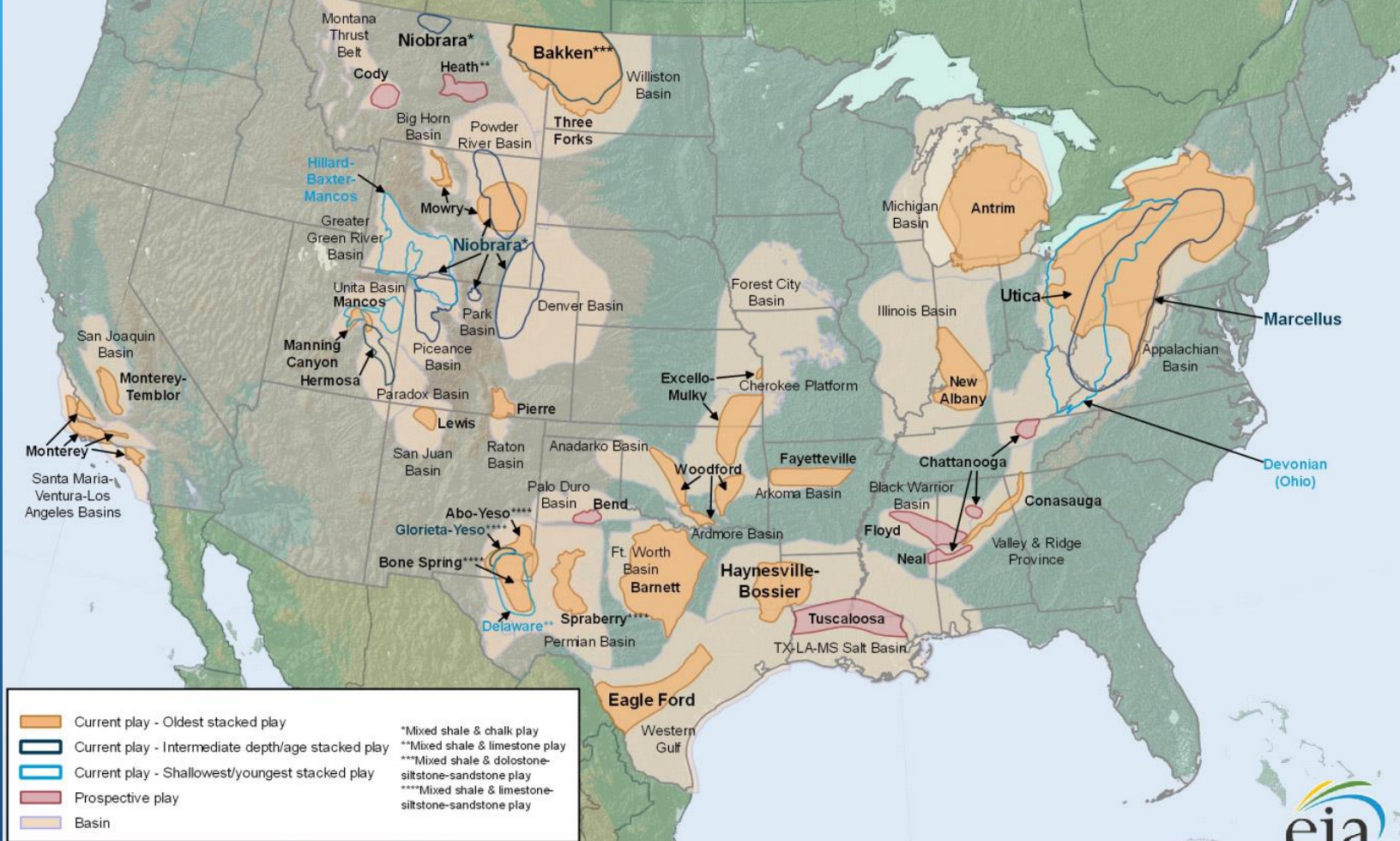
LEAP Value Proposition for Energy Companies

- Manage risk with an efficient approach supported by the preservation community
- Benchmark across the industry and improve practices over time- know when enough is enough
- Support development of and gain access to new tools and training that will make risk management easier and more effective
- Generate community goodwill and demonstrate corporate social responsibility

LEAP Value Proposition for Preservation Orgs / CRM Firms

- Identify previously unknown historic and archaeological resources
- Recommend avoidance, minimization, or mitigation of development impacts to significant sites
- Innovate preservation practice beyond the regulatory model by working with energy companies in a collaborative, mutually beneficial way
- Raise public awareness of the value of cultural and historic resources to improve our knowledge of the past

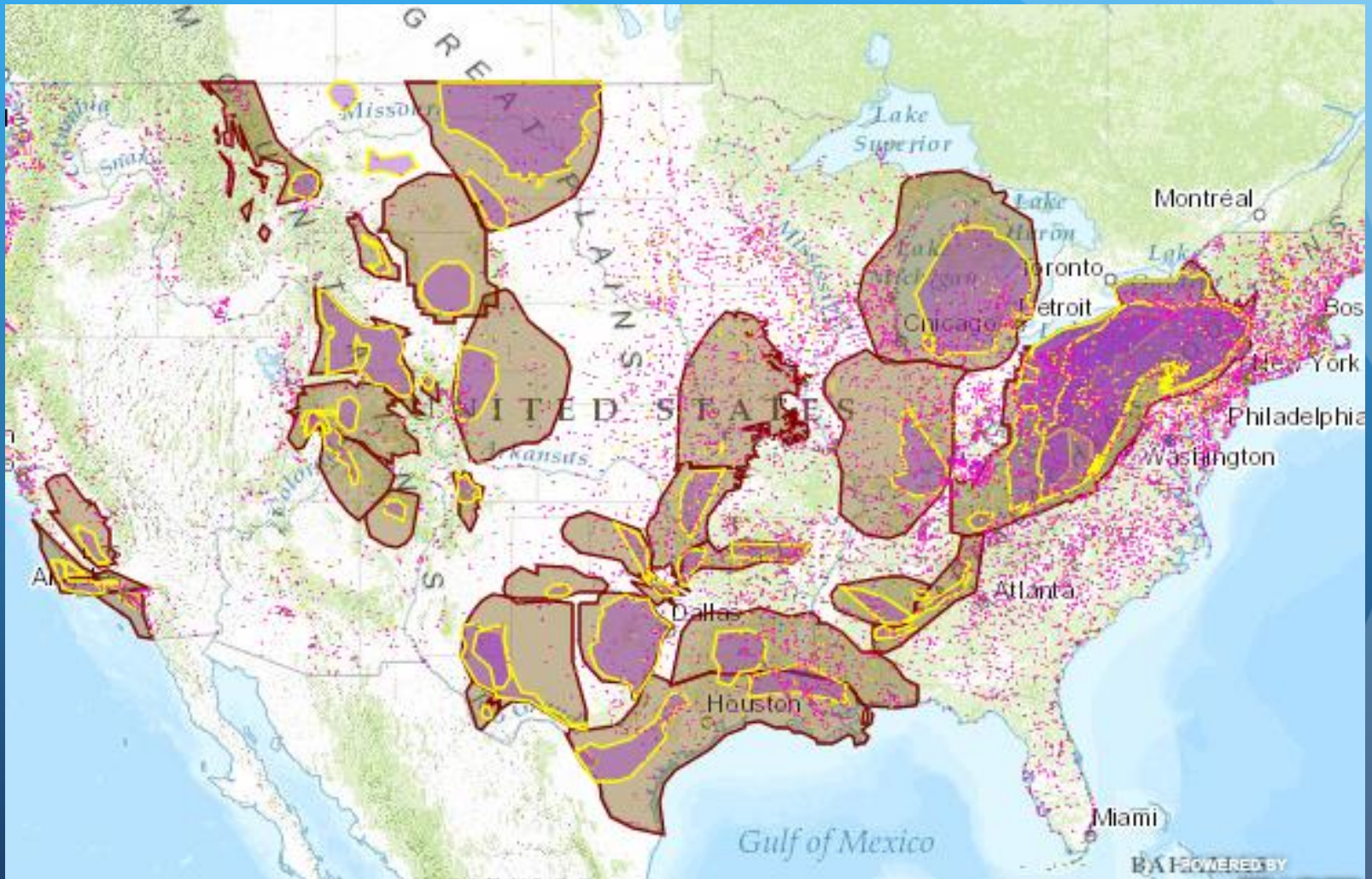
Lower 48 states shale plays



Source: U.S. Energy Information Administration based on data from various published studies.
 Updated: April 13, 2015



Known National Register Sites



The Risk

- Approx. 200,000 archaeological sites are in the path of shale gas development in the nine active shale plays (Society for American Archaeology)
- Vulnerable sites include prehistoric villages, ceremonial sites, cemeteries, and battlefields

**“Gas Wells Threatening
Region’s Archaeological Sites”**

—Herald-Standard, February 11, 2014

**“Gas Firm to Pay for Bulldozed Logan
County Cemetery”**

—West Virginia Gazette, October 17, 2012

**“Pipeline vs. preservation: Spectra route’s path
through landmark sites ‘baffling,’ say stewards”**

—C-Ville.com, July 16, 2014

**“Native American burials...cited as reason to deny
gas pipeline in Lancaster County”**

—Lancaster Online, August 4, 2014

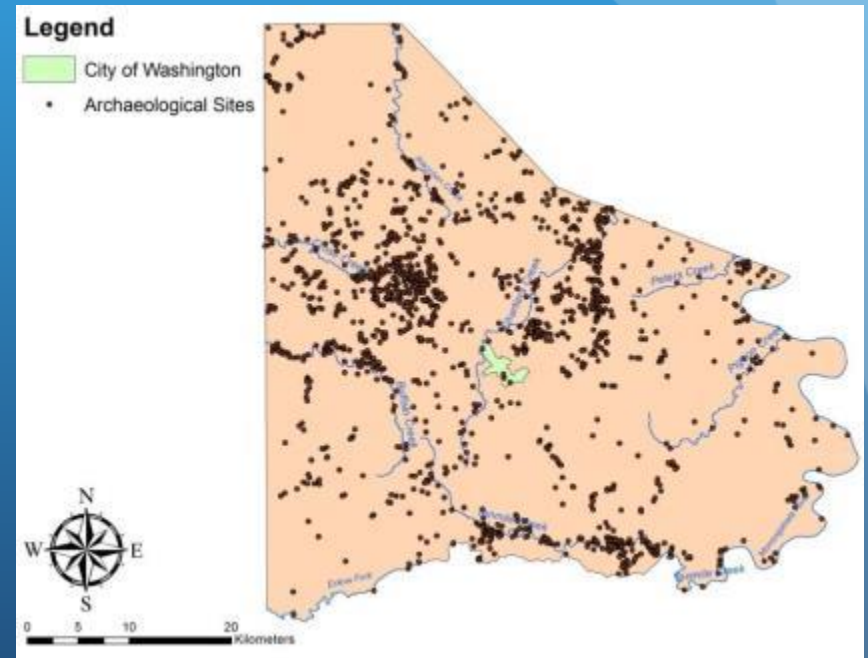
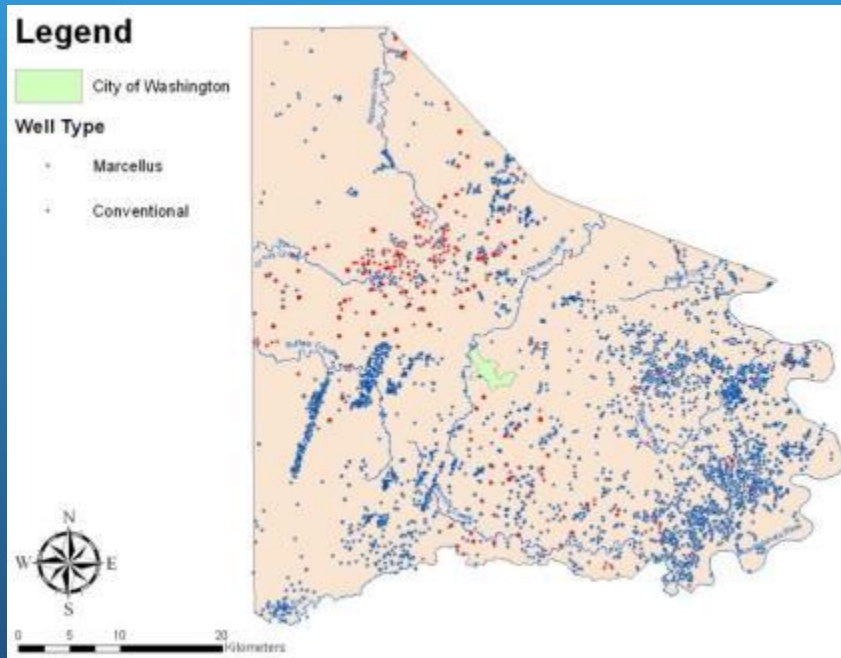
**“Shale Gas Boom Closes
Historic Bridge”**

—The Columbus Dispatch,
October 4, 2013

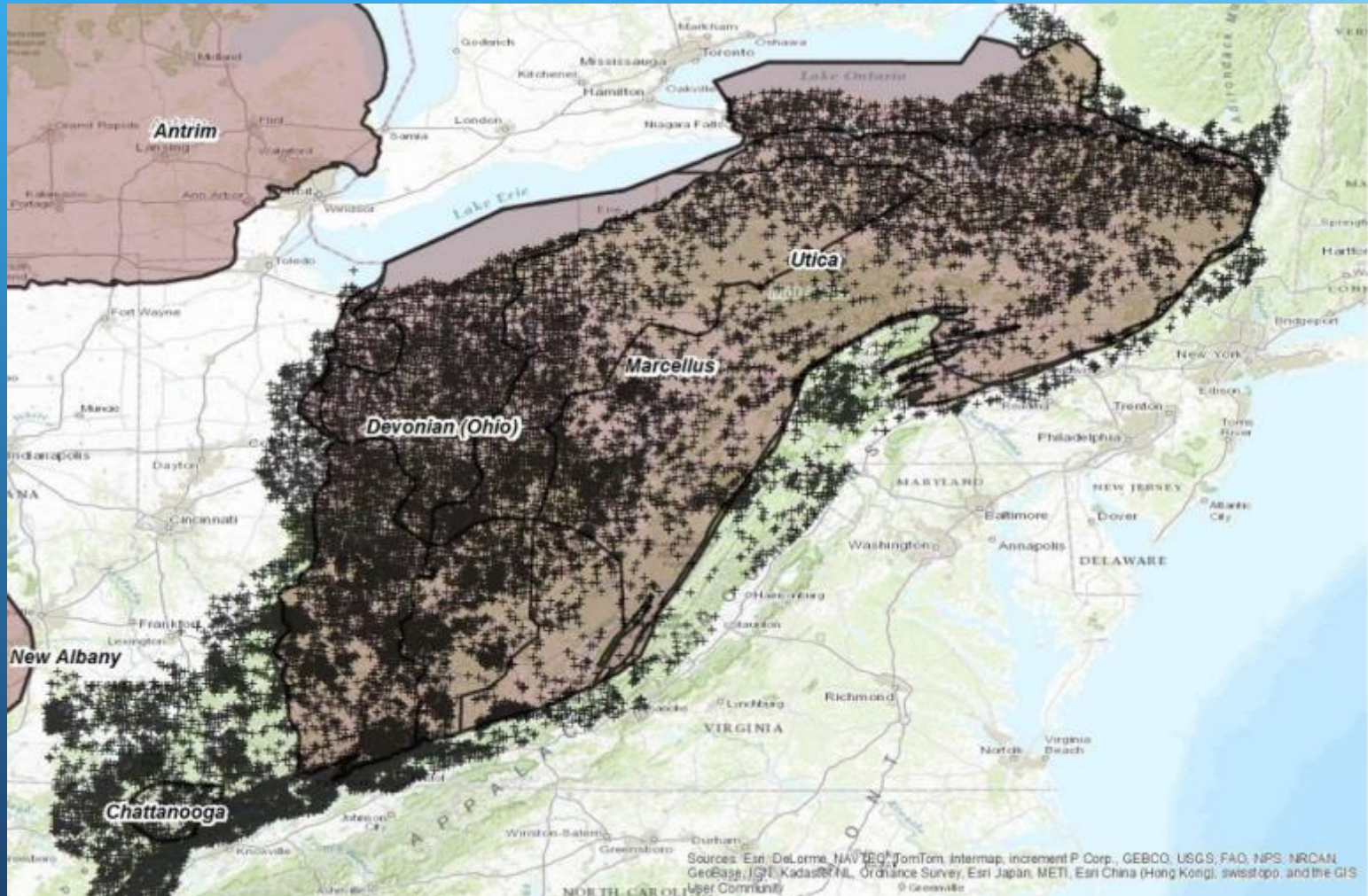
Only 5% of the Marcellus shale land surface has been surveyed for historic and cultural resources

Only 3% of the Utica shale has been surveyed

Gas Well and Archaeological Sites in Washington Co., PA



Historic Cemeteries



Voluntary Practices

LEAP is developing a set of **VOLUNTARY** practices that energy companies can adopt to manage risk to their operations and to protect significant historic and cultural resources on **UNREGULATED** projects.





LEAP's Voluntary Practices are for Unregulated Projects

We're concerned with areas where there are:

- No federal Section 106 hooks
- No state/local laws requiring impact assessment
- But still risks for energy companies if sites are damaged- risks to social license, public relations, and legal liability if human remains are involved

LEAP Voluntary Approach

- Step 1: GIS-based screening tool that allows companies to assess cultural resources risk in early planning
- Step 2: Determine sensitivity
- Step 3: Operationalize risk management

Step 1: Screening Tool

Authorized end-users

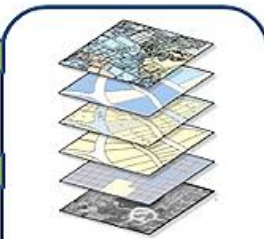


Customized map search



"ArchAlert"

Proposed screening tool



Data integration

LEAP

Professional evaluation, modeling, significance



Supplemental digital archive



Data conversion

SHPO paper archives



New data



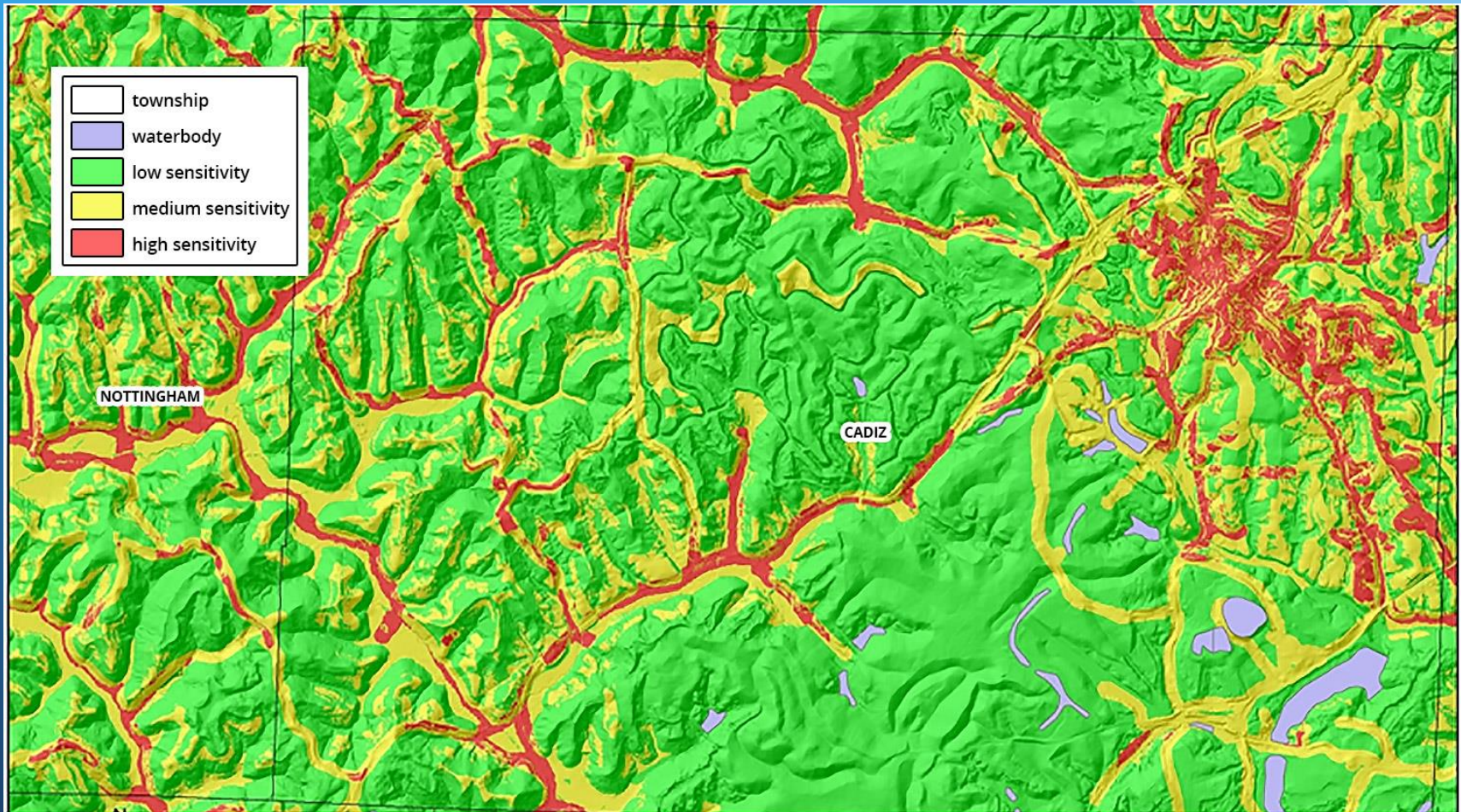
SHPO and other digital archives



Benefits of a Screening Tool

- Access to data early in planning
- Anyone can use the tool, not just an archaeologist
- Data points are not very useful for planning- what you need is a map between the points
- Brings together data that is currently housed in different repositories
- Dynamic- gets better through time

Constraint Map for Cultural Resources





Pennsylvania Conservation Explorer

Conservation Planning and PNDI Environmental Review



Welcome to **Pennsylvania Conservation Explorer**—for conservation planning and PNDI environmental reviews. The web-mapping tool allows anyone to perform online searches for potential impacts to threatened, endangered, special concern species and natural heritage resources.

For conservation planning, users do not



Anyone can view and create maps of natural Map tab. You will need create an account to polygons and generate a PNDI receipt for pr registered user to view known locations of t special concern species and/or submit a pro project may require avoidance measures, co

User login

E-mail *

Password *

- [Create new account](#)
- [Request new password](#)

Log in

Create Project

Select Project Type

Project Type *
Select only one Project Type per project

- Agriculture/Farming
- Aquaculture
- Communication
- Development
- Energy Storage, Production, and Transfer
 - Energy Production (generation)
 - Energy Storage
 - Energy Transfer
 - Other
 - Pipeline (e.g., gas, oil) -- NEW (construction of new line in a new location)
 - Pipeline (gas, oil) - service, replace existing line
 - Power/electric line - New (new location for above/ line)
 - Power/electric line - service, replace existing above



Draw/Edit

Area: 19.983 acres
Segment Length: 1674.117 ft | Total Length: 12866.572 ft

Cancel Accept

Step 2: Determining Sensitivity

Known sites are analyzed and assigned a numeric value based on criteria determined by LEAP cultural resource experts. Step 2 builds an objective and replicable framework for assessing resource significance. Known sites are analyzed and assigned a numeric value based on criteria determined by LEAP cultural resource experts:

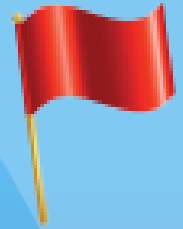
- **Green:** No further archaeological study is warranted
- **Yellow:** Proceed with caution, additional archaeological study may be prudent
- **Red:** Avoid if at all possible



Assessing Site Sensitivity

- Contextualized scoring to isolate those sites of greatest sensitivity to the public and technical specialists
- Follows from literature review or field surveys
- Considers attributes that make sites especially sensitive (i.e., Red Flag):
 - Applies “Red Flag” questions
 - Potential for deep site deposits
 - Previous disturbance to the site
 - Site attribute scoring
- Approach objective, replicable and consistent with landscape approach to assessing and managing resources

Examples of Red Flag Questions



LEAP Site Sensitivity Tool	
Red Flag Questions	Question Response
Is the site known to contain human burials?	No
Is the site a historic cemetery or burial ground?	No
Does the site contain prehistoric mounds or earthworks?	No
Is the site a known and documented "prehistoric village" or is it immediately adjacent to one?	No
Is the site related to a historic battle?	No
Is the site related to the Underground Railroad?	No
Is the site of "Critical Importance" to the local community?	No

Note that Red Flag Questions are contextualized also, based on key stakeholder concerns for the specific geography



Step 3. Operationalizing Risk Management

- Process / decision tree that can be integrated into existing business practices
- Chance finds procedure
- LEAP provides training and technical assistance to both energy companies and cultural resources consultants
- We welcome your expertise!

Recent Activities

- Hosted in 2014 a summit in Pittsburgh for 130 professionals from energy companies, preservation organizations, and cultural resource management industry- Rio Tinto keynote
- API/IPIECA/IOGP has accepted our comments and will include cultural heritage in their sustainability reporting guidance for the first time
- Participated in consultation in 2015 on new World Bank safeguards for cultural heritage
- Launched membership structure in 2015
- Represented LEAP at more than 15 national and international conferences



LEAP

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