

# America's Public Parks and Protected Areas



## Updates from the Protected Areas Database of the United States (PAD-US)

National Trails System GIS Network  
April 18, 2017

# Presenter

**Lisa Johnson**

PAD-US Coordinator, USGS Cooperator

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**PAD-US** is a product of **USGS** Core Science Systems (CSS)

<http://gapanalysis.usgs.gov/padus>

# Roadmap

1. What is **PAD-US**?
2. **Examples** of use
3. How we **build** PAD-US and how to get it
4. **Where** it's going
5. **Q&A**

**Viewer Demo**



# 1. What **is** PAD-US?



# Protected Areas

Database

of the

United States

## PAD-US

*natural, recreational,*

*historic or cultural*

*(public land + nonprofit)*

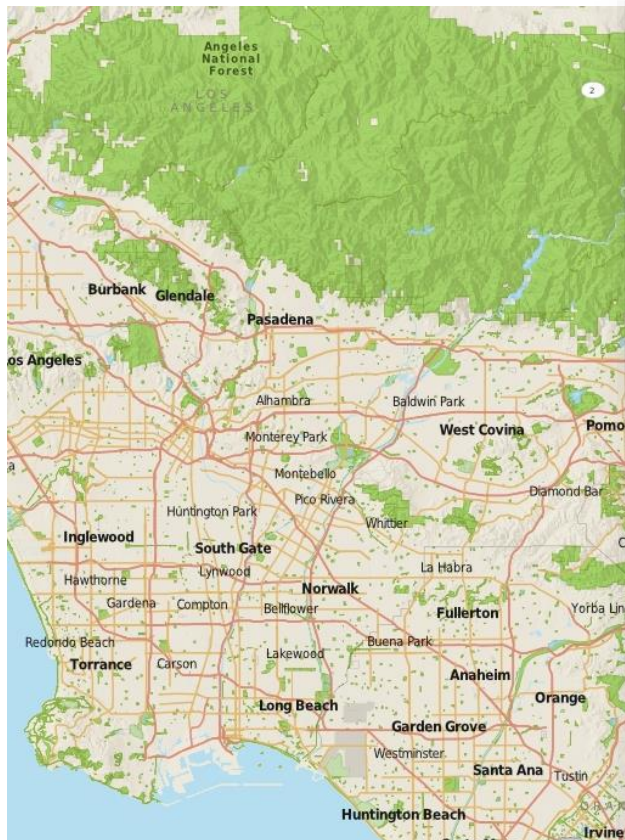


# Includes:

Small sites to huge sites...

Recreation to habitat...

Everything.





# PAD-US is geospatial (GIS) data

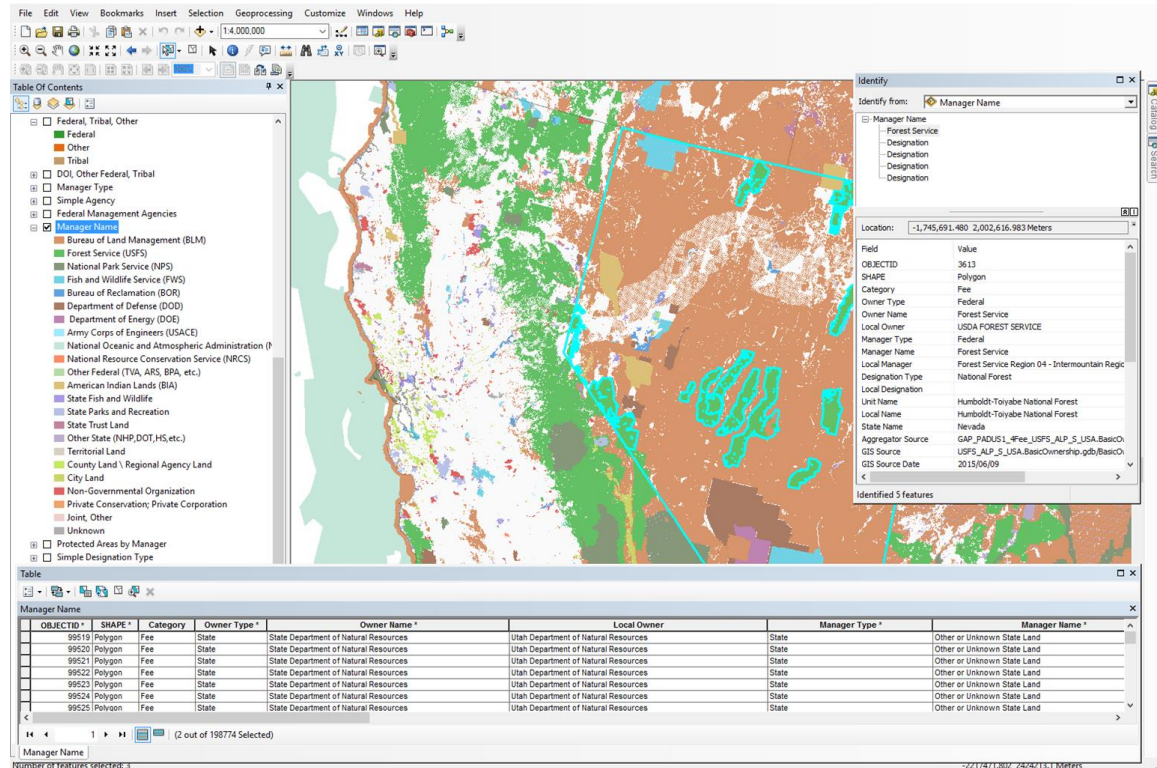
3 billion acres\*

120,000 units

15,000+ agencies

Published by USGS

\*Includes ownership and overlapping designations, plus marine protected areas



# PAD-US is **boundaries**

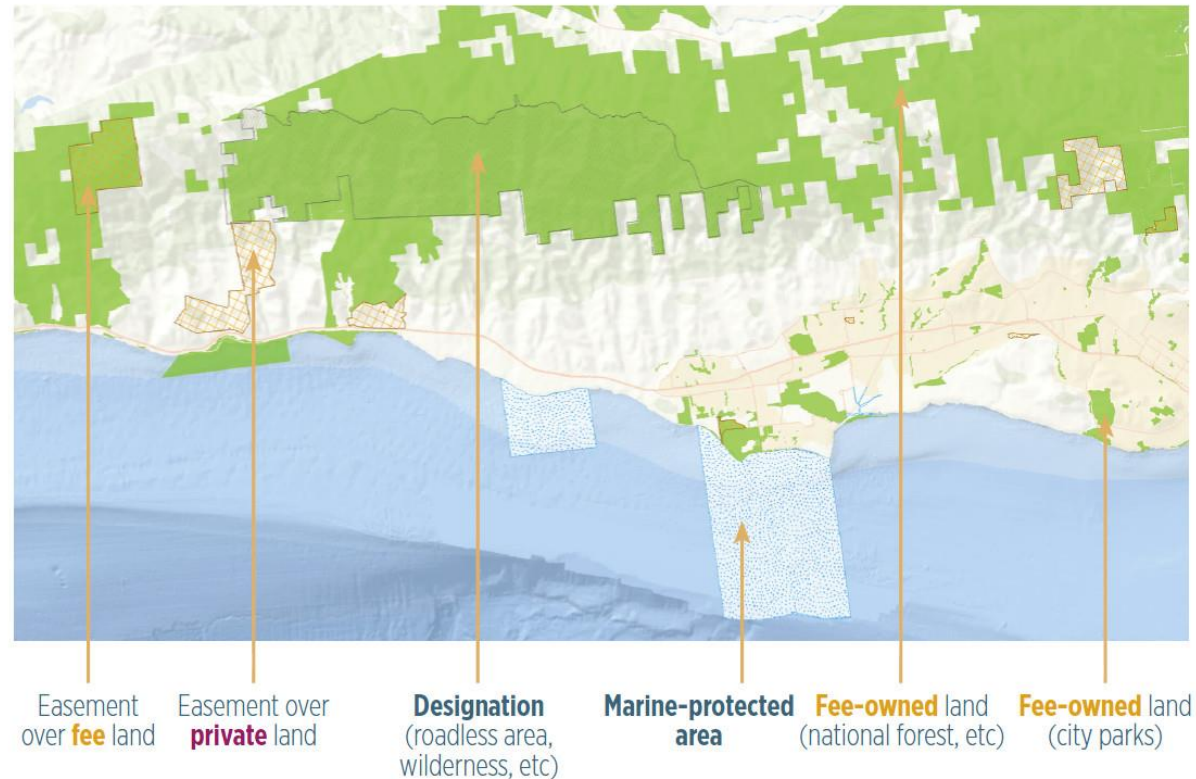
Ownership

Management

Designations

(Fee/easement;

Wilderness, MPAs,  
etc.)



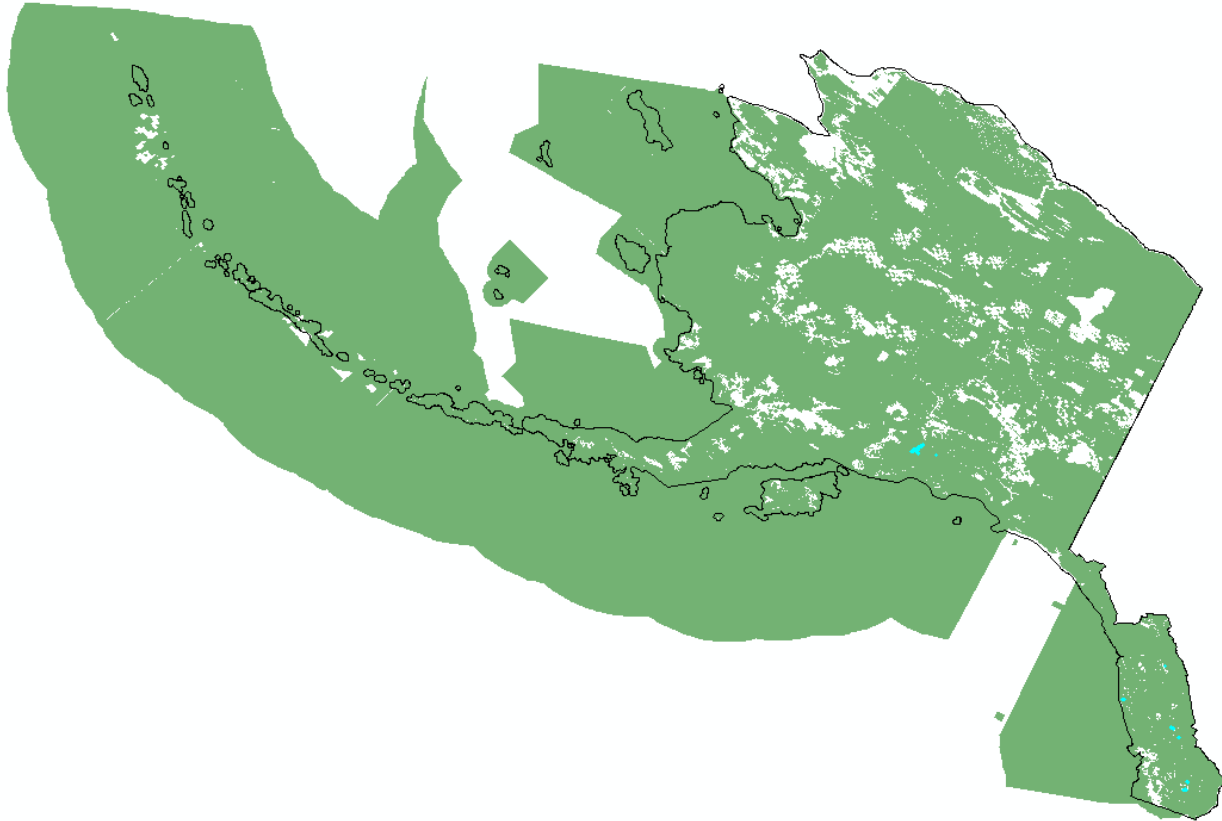




# What can PAD-US tell you?



# National Trails?



## National Trails?

Agency	# of Trails
USFS	161
NPS	1



## 2. Here's how PAD-US is being **used**

Federal

State

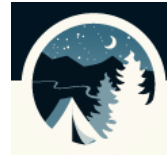
Local/regional

NGO

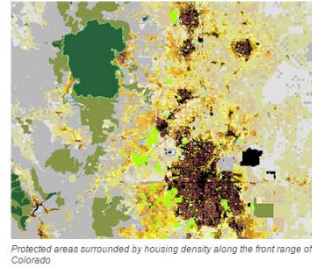
Academic

Business

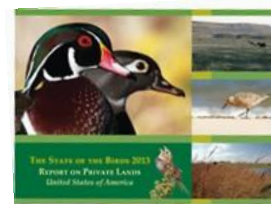
Global



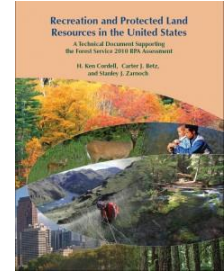
NPScape



United States™  
**Census**  
Bureau



Google



NAWPA Committee

# Five quick examples

1. Species conservation
2. Habitat conservation
3. Wildfire management
4. Emergency response
5. Outdoor Recreation

## Case 1: **Keep Common Species Common**

PAD-US is a key database produced by **USGS Core Science Systems**

Originally developed to fulfill the USGS **Gap Analysis** mission of “Keeping Common Species Common”

PAD-US has **expanded** to serve conservation, recreation, public health and other areas, but still serves this USGS species mission

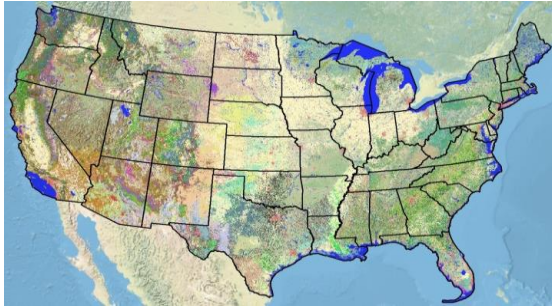
## Case 1: **Keep Common Species Common**

How well protected is the habitat for the Lark Bunting?



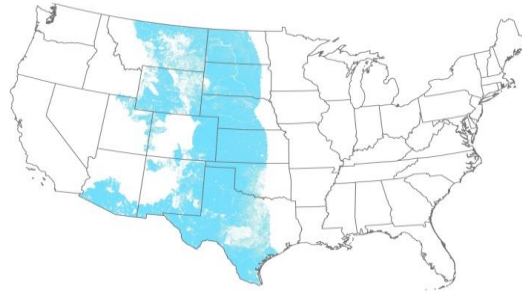
## Case 1: Keep Common Species Common

How well protected is the habitat for the Lark Bunting?



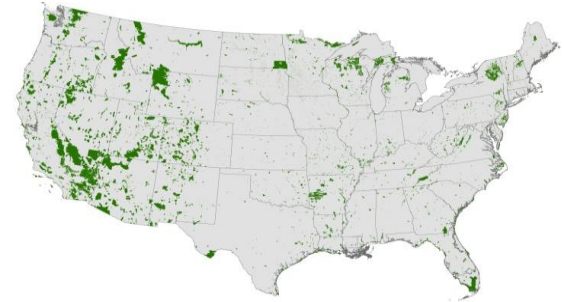
Land Cover

>



Species Distributions

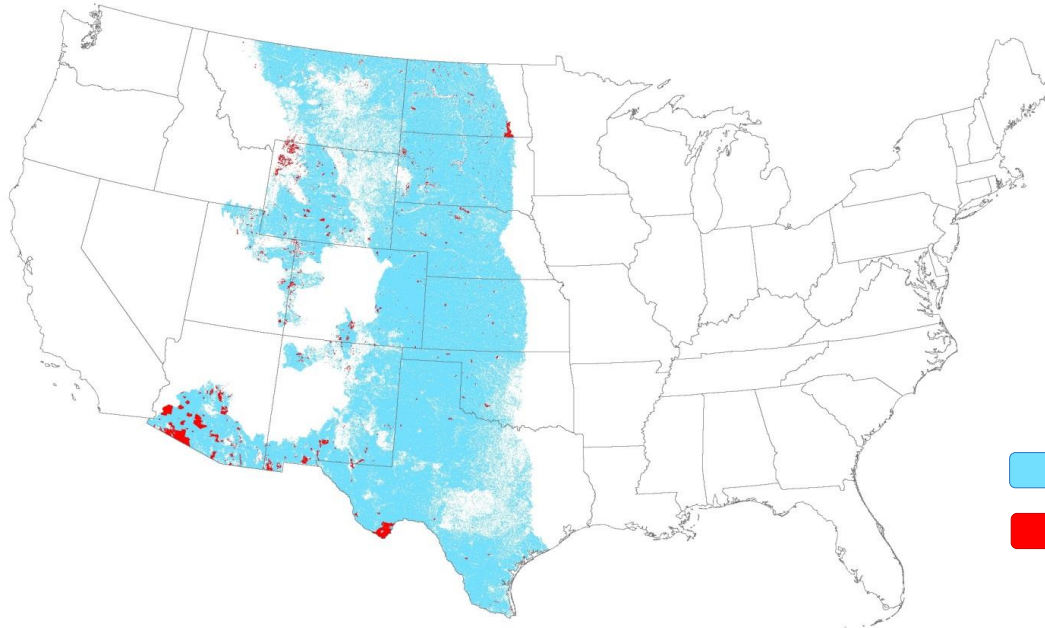
+



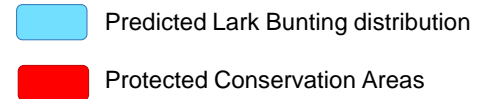
Protected Areas

## Case 1: Keep Common Species Common

How well protected is the habitat for the Lark Bunting?

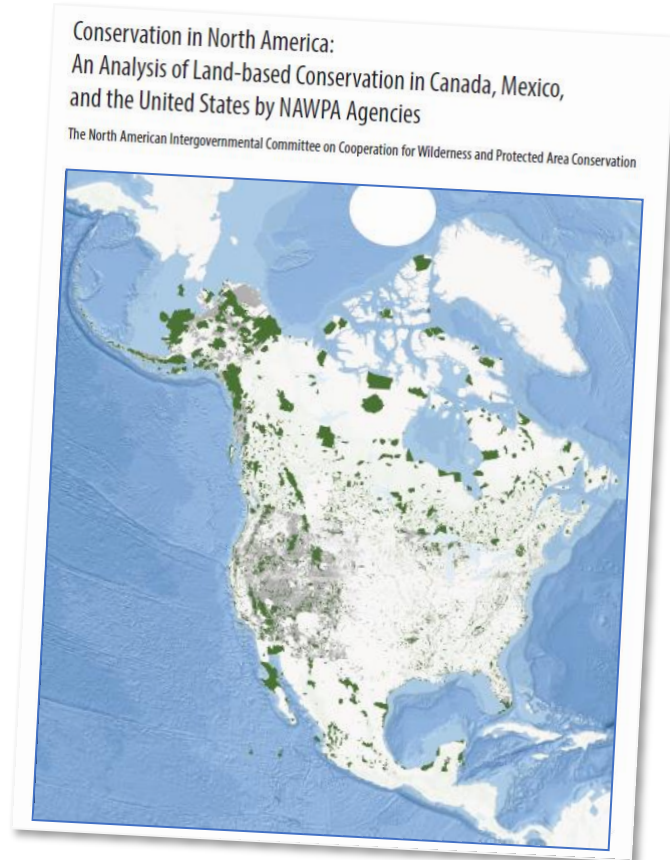


**2.6% of Lark  
Bunting habitat  
is protected**

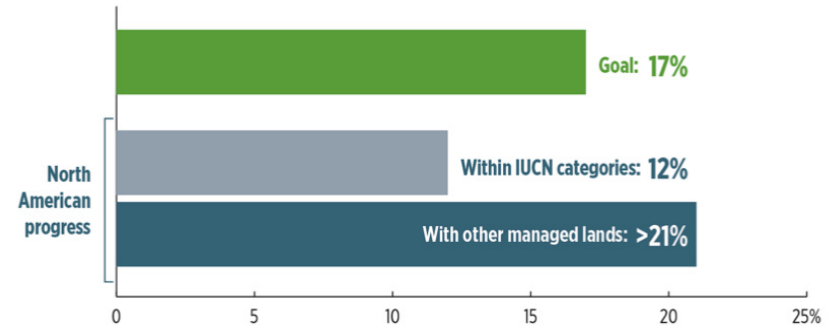




## Case 2: Habitat conservation



### NAWPA 2016 Report Findings (Status of Conservation in North America)



NAWPA Committee



CONANP  
COMISIÓN NACIONAL  
DE ÁREAS NATURALES  
PROTEGIDAS



Parks  
Canada

Parcs  
Canada



The North American Intergovernmental Committee on Cooperation for Wilderness and Protected Area Conservation  
El Comité Intergubernamental de Norteamérica de Cooperación para la Conservación de las Áreas Protegidas y Silvestres  
Comité intergouvernemental nord-américain pour la coopération sur la conservation des milieux sauvages et des aires protégées

Partner:  **USGS**  
science for a changing world



## Case 2: North American Conservation (NAWPA)



[nawpacommittee.org](http://nawpacommittee.org)

## Case 3: **Support for wildland fire decisions**

Andrew Bailey

National Wildfire Coordinating Group, DOI







# Case 3: Wildfire - land mgmt. data crucial



**My Home Incidents Incident Groups Analyses Intelligence Data Management Administration**

Click Icon to Collapse

Menu Map Info

**Information**

Use the Identify Tool (I icon) to click on the map

\*Latitude: 44.55695 \*Longitude: 110.47996

Radius (miles): 5.0

Feature Information  
Fire Danger Rating Graph  
Smoke Dispersion  
Strategic Objectives  
Weather Forecast  
Pred Svcs Sig Fire Potential  
Hourly Weather Forecast

Source: LANDFIRE 2012 1.3.0

Elevation: 2581 meters 8466 feet

Aspect: 170 degrees Slope: 6 degrees

Fuel Model: 165 - TU5

Canopy Cover: 35 percent Bulk Density: 0.06 kg/m<sup>3</sup>

Stand Height: 17.5 meters Base Height: 0.8 meters

**Identify Tool:** Click on the map to identify landscape attributes.

Scale = 1:14M

Latitude: 43.19490 Longitude: -101.33936

**Information on Selected Features - Google Chrome**

wfdss.usgs.gov/wfdss\_proto/jsp/map/FeaturesInformation.faces?tid

**Wildland Fire Decision Support System**

**Selected Feature Information**

Latitude: 44.55695 Longitude: 110.47998

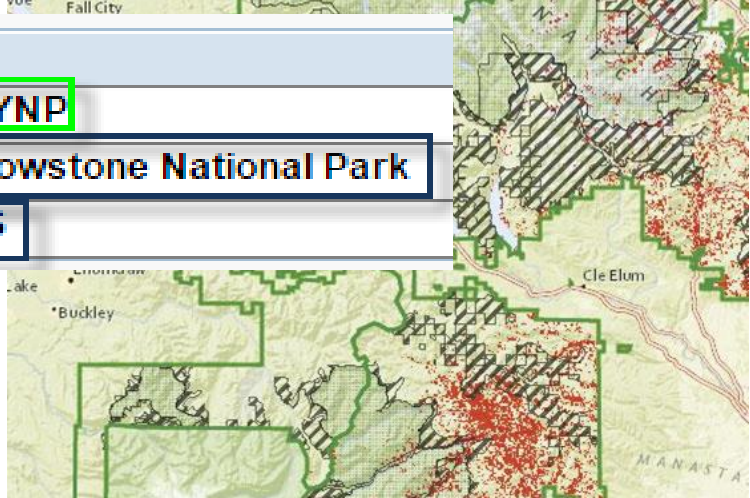
Query Additional Layer: Counties Query Layer

Layers Queried: Jurisdictional Agencies

Jurisdictional Agencies	
Unit Id	WYNNP
Unit Name	Yellowstone National Park
Agency	NPS

## Case 3: Wildland fire - Management status is important!

<input type="checkbox"/> Jurisdictional Agencies		
Unit Id	↓	WYYNP
Unit Name		Yellowstone National Park
Agency		NPS

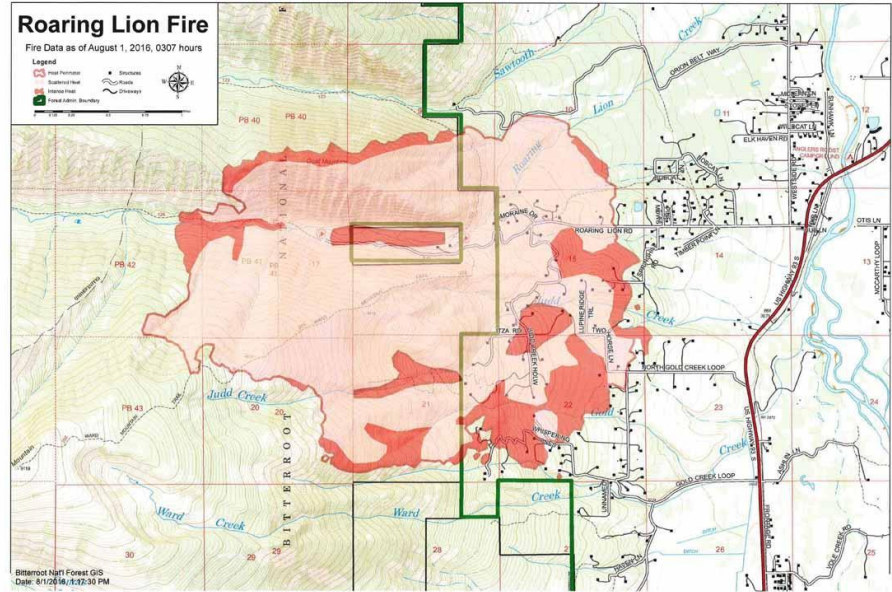


- What do we need to get the job done?
- What we get from PAD-US data?
  - Unit Name (Standards!)
  - Agency Name (Standards!)
  - Designation Type (Standards!)
- What do we link to PAD-US data?
  - Unit ID – NWCG Standard
  - [https://www.nifc.blm.gov/unit\\_id/Publish.html](https://www.nifc.blm.gov/unit_id/Publish.html)
  - Fire Management objectives and requirements



## Case 3: Wildland fire - **PAD-US** is a trusted source

- Developed with **Fed Lands Working Group**
- Using PAD-US as a **base** - and **joining** fire-business specific attribution



## Case 4: DOI Emergency Response

- Interior Operations Center (IOC)
- Situational awareness, incident reports to Secretary
- Share info with NOC, Homeland Security
- Send alerts to bureaus and offices
- PAD-US in IOC system viewer

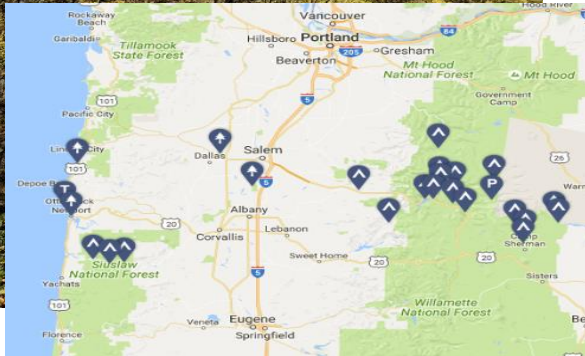




# Helping Visitors Get Active across America's Public Lands

## Case 5: Recreation One Stop and Recreation.gov

- Well-established public service –
  - **16 million+** users per year
- **Self-sustaining** program
  - no appropriated funds
- [Recreation.gov](https://www.recreation.gov) - Park **facility** focus (camp, hike, attend)
- Promotes an active and **healthy** lifestyle

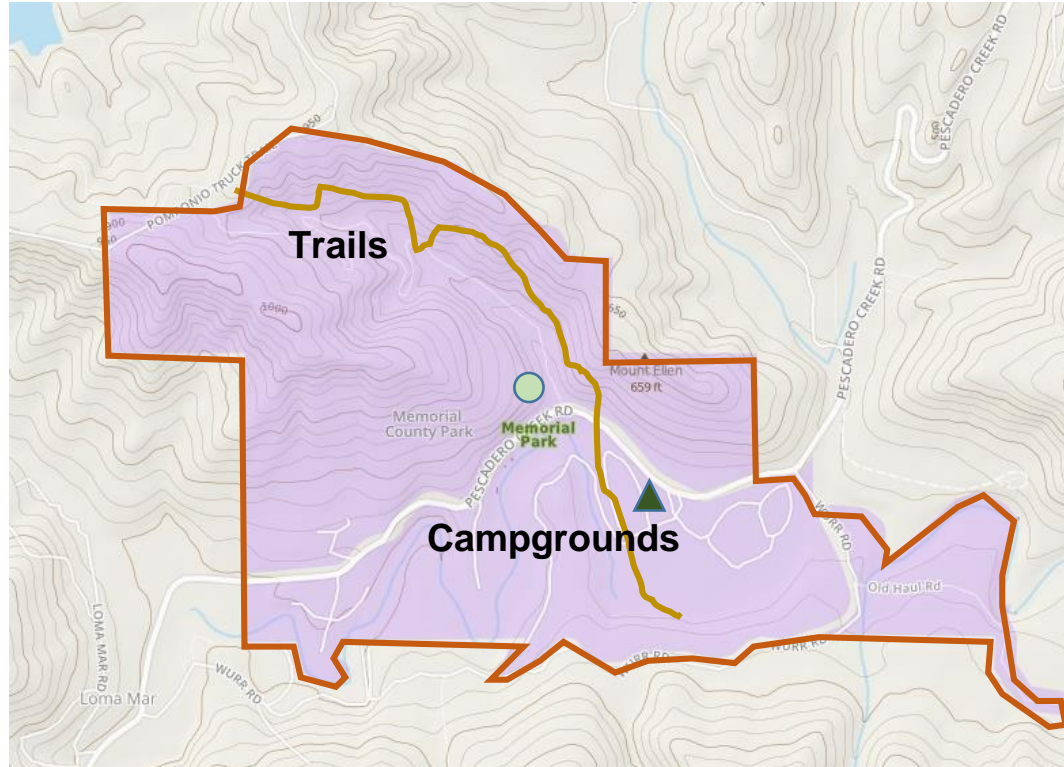




## Case 5: Helping Recreation.gov



**Recreation.gov**  
EXPLORE YOUR AMERICA



### PARK ATTRIBUTES

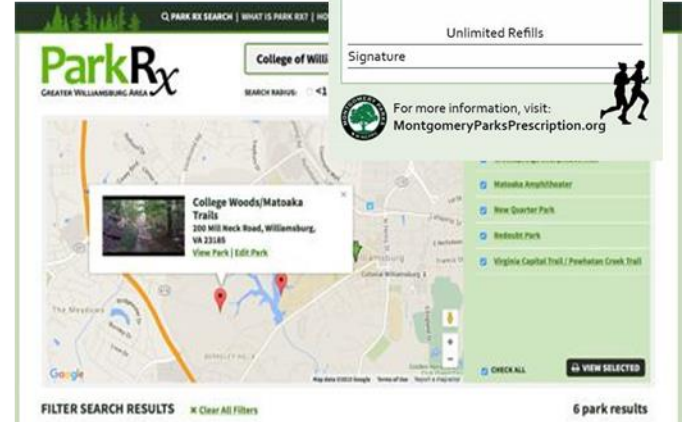
- ✓ Hiking
- ✓ Biking
- ✓ Climbing
- ✓ Fishing
- ✓ Restrooms
- ✓ Trail map avail.
- ✓ Open all year?
- ✓ etc.

# Promising Opportunities – Parks and Health

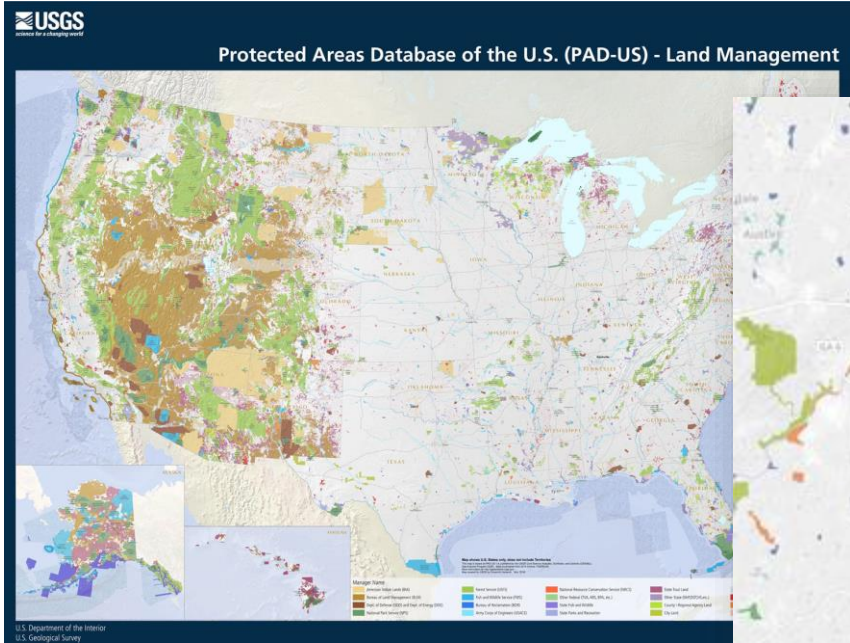


Trust for Public Land  
**ParkServe™**

Goal: every American lives within a **10-minute walk** of a park, playground, or protected natural area

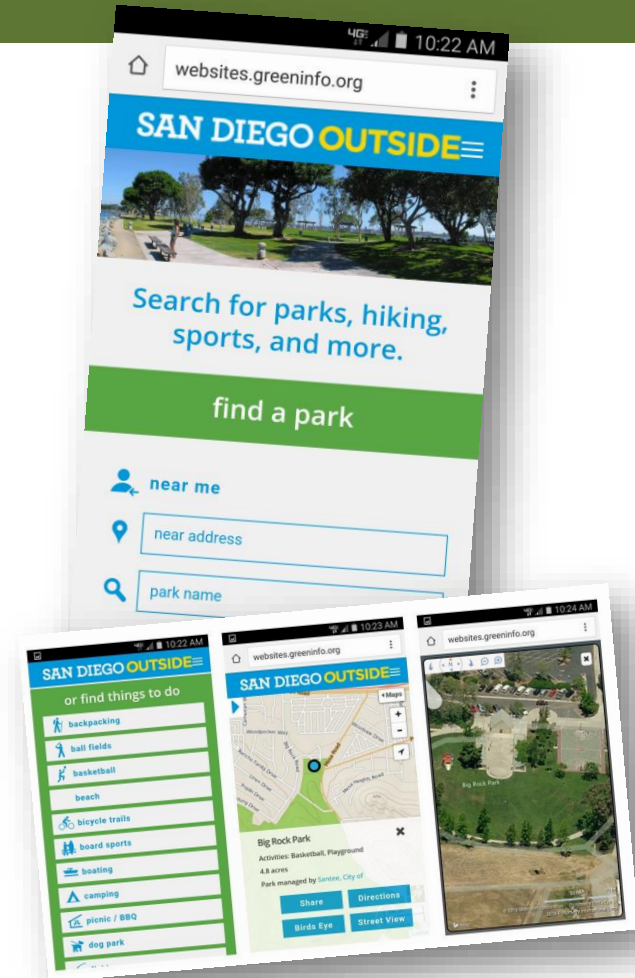
A screenshot of the "PARK Prescription" form. The header includes the title "PARK Prescription" and the tagline "Healthy Habits for a Healthy Life" with icons of a person on a bike and a family. The form fields include: Name, Birth Date, Date, a list of activities (walking, jogging, hiking, bike riding, horseback riding, ice skating, kayaking, fishing, tennis, playground time), Notes, Unlimited Refills, and Signature. At the bottom, it says "For more information, visit: MontgomeryParksPrescription.org" and "6 park results".

# PAD-US – **Great data** helps us do even more . . .



# With **great data**, we can...

- Ensure effective **energy** development siting and mitigation
- Track conservation **assets**
- Avoid expensive **hazards** (flood, fire, hurricane) in our development decisions
- Encourage private **innovation** including mobile apps for recreation
- and **more...**



### 3. What's **under the hood** of PAD-US?



# PAD-US Partnership

Partial list

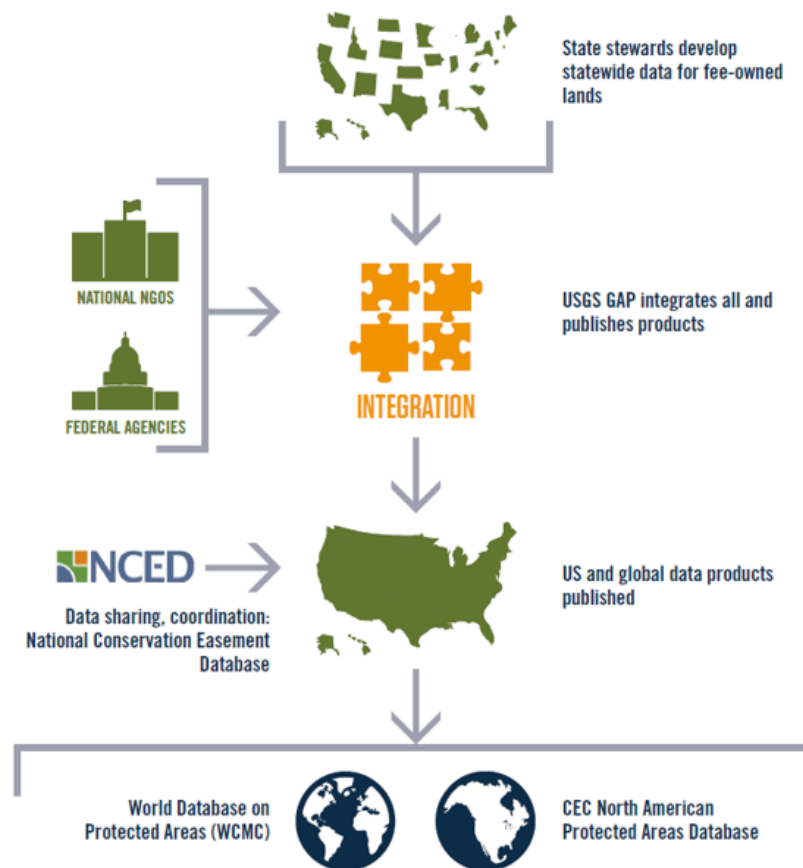


US Army Corps  
of Engineers®



# How PAD-US is built

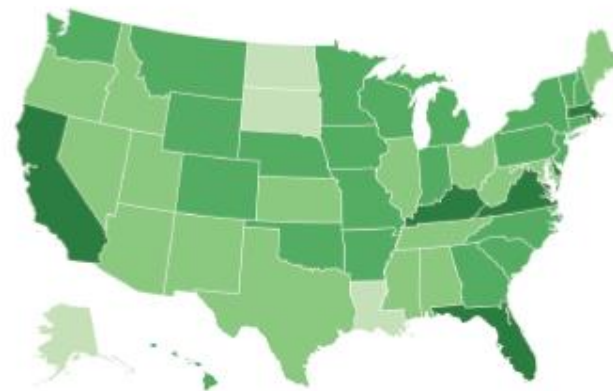
- States
- Feds
- NGOs



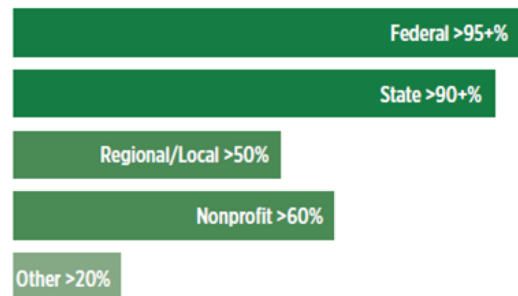
# State Stewards

- In **each** state: 1-2 agencies, universities, NGOs
- Compiles **nonfederal** lands data
- Many states with **effective** systems
- Other states need **improvement**
- [Protectedlands.net/partners](https://protectedlands.net/partners)

## OVERALL COMPLETION LEVELS BY STATE



## COMPLETION BY AGENCY LEVEL



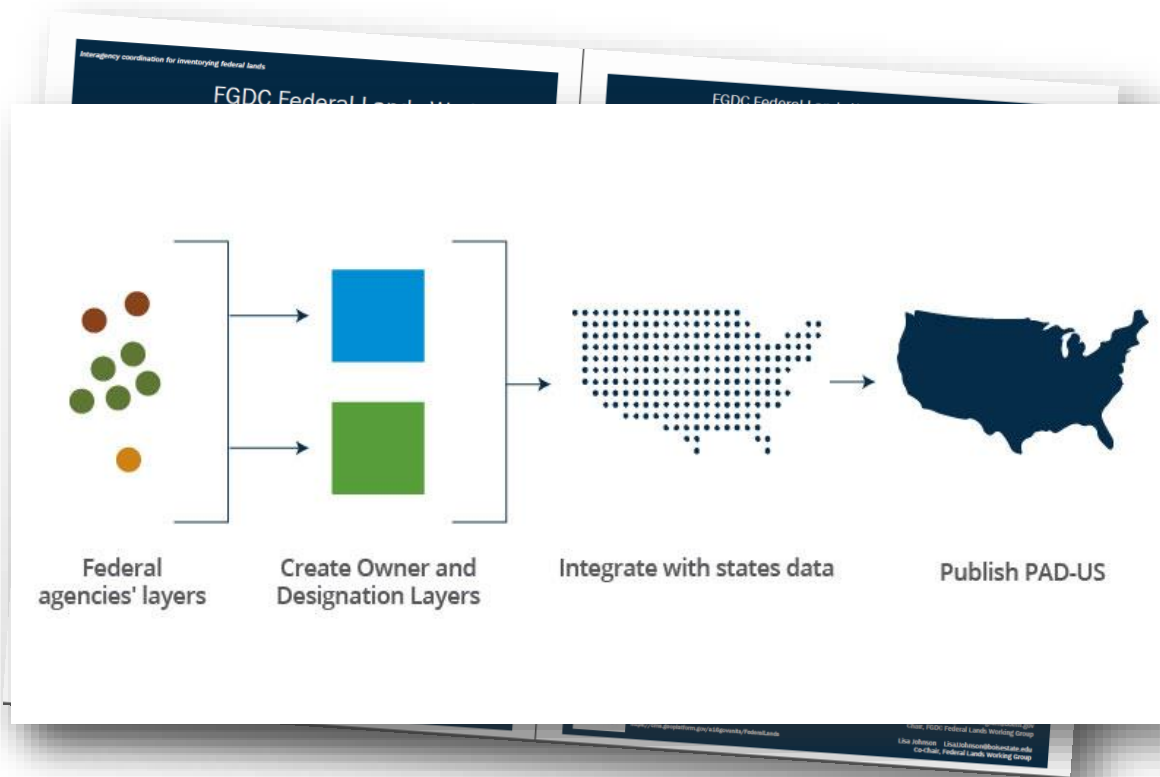
0%

100%




# Federal Lands Working Group (FLWG)

- 14 land managing **agencies** and stakeholders
- **Collaboration** to support aggregation of federal land ownership and management designations into PAD-US
- **Sharing** best practices, improving internal systems, raising awareness



# More Info





USGS Home  
Contact USGS  
Search USGS

National Gap Analysis Program (GAP) | Protected Areas Data Portal

Search this site... Go Sitemap

[GAP HOME](#) [PAD-US HOME](#) [VISION](#) [VIEWER](#) [DATA >](#) [PARTNERS](#) [RESOURCES](#) [NEWS](#) [CONTACTS](#)






Protected Areas Database of the U.S. (PAD-US) - Land Management

### Enhancing data for protected areas in the U.S.

We are creating a spatially explicit inventory that lets any user – from the general public to professional land managers – know exactly what lands are protected anywhere in the United States and allows them to easily use this inventory in conservation, land management, planning, recreation and other uses.

[Learn more: Download PAD-US Factsheet >](#)

#### Best Data Practices



##### Montana

Easement data (along with all other protected lands information) is fully available in this state, where public data access to it is required by law. The state's Land Stewardship data center has... [Learn more >>](#)

1 2 3 4 5

#### PAD-US News

- Webinar Recording Available for PAD-US Presentation to LCCs >>
- Interior's Office of Policy Analysis Seminar to Feature PAD-US >>
- PAD-US Data Used in Fuel Treatment Study >>
- A revised Fact Sheet is available that summarizes the features, uses, and impressions of PAD-US >>

#### Access PAD-US Data

GET DATA  
Protected Areas

GO TO  
Protected Areas Viewer

GET MAPS...

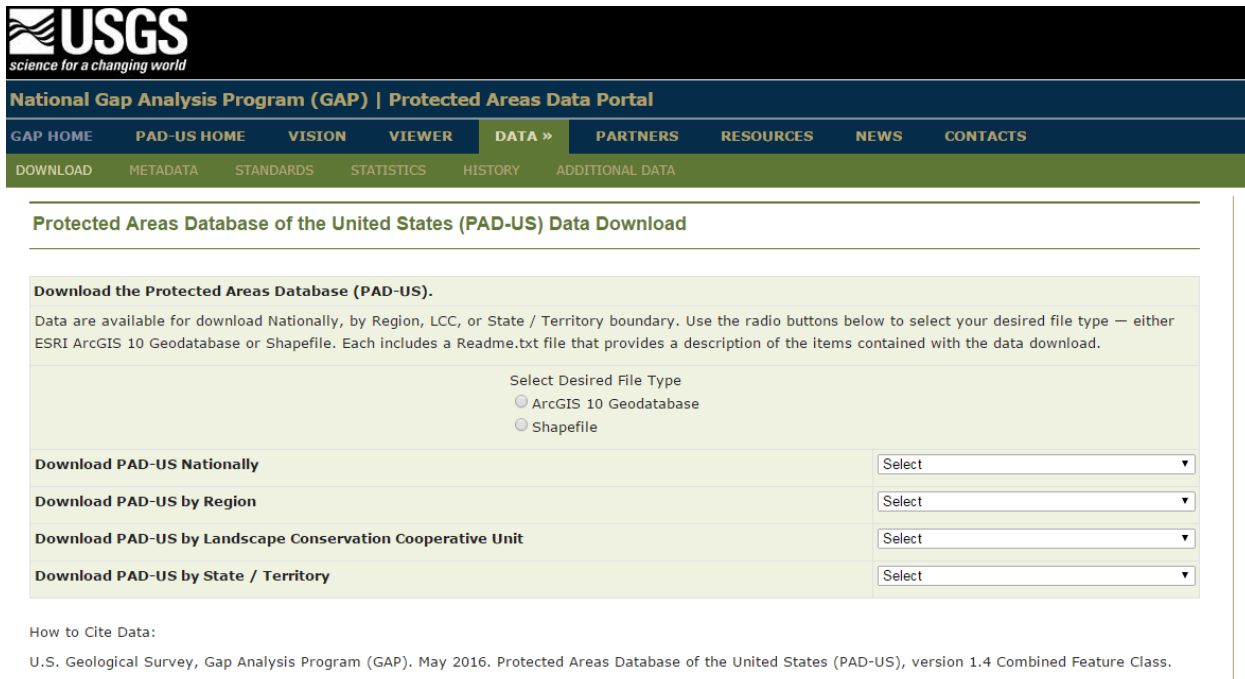
# How to get PAD-US

[gapanalysis.usgs.gov/padus](http://gapanalysis.usgs.gov/padus)

Get:

Data (shape,  
geodatabase,  
Google Earth)

Web services



**USGS**  
science for a changing world

**National Gap Analysis Program (GAP) | Protected Areas Data Portal**

[GAP HOME](#) [PAD-US HOME](#) [VISION](#) [VIEWER](#) [DATA »](#) [PARTNERS](#) [RESOURCES](#) [NEWS](#) [CONTACTS](#)

[DOWNLOAD](#) [METADATA](#) [STANDARDS](#) [STATISTICS](#) [HISTORY](#) [ADDITIONAL DATA](#)

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**Protected Areas Database of the United States (PAD-US) Data Download**

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**Download the Protected Areas Database (PAD-US).**

Data are available for download Nationally, by Region, LCC, or State / Territory boundary. Use the radio buttons below to select your desired file type — either ESRI ArcGIS 10 Geodatabase or Shapefile. Each includes a Readme.txt file that provides a description of the items contained with the data download.

Select Desired File Type

☐ ArcGIS 10 Geodatabase

☐ Shapefile

<b>Download PAD-US Nationally</b>	Select ▼
<b>Download PAD-US by Region</b>	Select ▼
<b>Download PAD-US by Landscape Conservation Cooperative Unit</b>	Select ▼
<b>Download PAD-US by State / Territory</b>	Select ▼

How to Cite Data:

U.S. Geological Survey, Gap Analysis Program (GAP). May 2016. Protected Areas Database of the United States (PAD-US), version 1.4 Combined Feature Class.

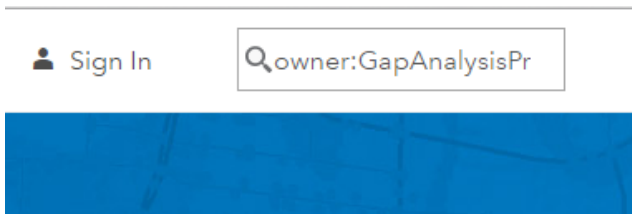
# How to get **PAD-US**

## USGS Web services

[gapanalysis.usgs.gov/data/web-services/](https://gapanalysis.usgs.gov/data/web-services/)

## ArcGIS Online

Groups owned by [GapAnalysisProgram](#)



### Protected Areas (PAD-US) – Version 1.4 web services

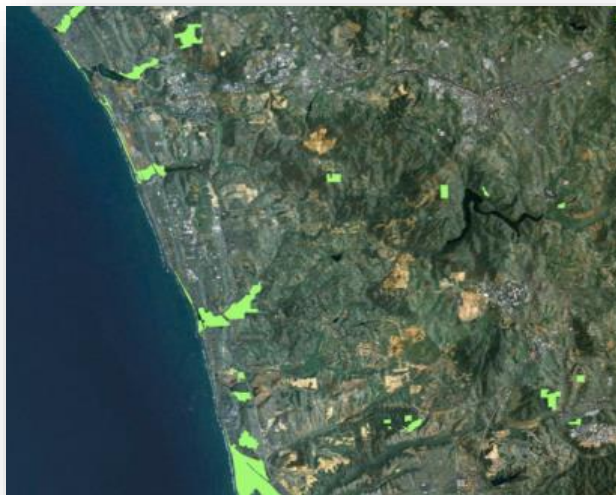
- All Protected Areas – Green
- Terrestrial Protected Areas – Gray
- Terrestrial Protected Areas – Green
- Easements
- Categories – Fee, Easement, Other, MPA
- Categories – Fee, Easement, Other
- Public Open Space
- Public and Private Open Space
- Public Access
- General Agency Level
- Mid Agency Level
- Fine Agency Level
- Federal Management Agencies
- Federal, Tribal, Other
- DOI, Other Federal, Tribal
- Simple Designation Type
- Detailed Designation Type
- Protected Areas by Manager
- Protected Biodiversity Areas
- Protected Multiple Use Areas
- GAP Status Code
- IUCN Category
- IUCN Category and Other Conservation Areas

## 4. What's **next** for PAD-US?



# The PAD-US **Vision** realized . . .

- Every park
- Everywhere



# PAD-US Action Plan

PAD-US report - [www.protectedlands.net/vision](http://www.protectedlands.net/vision)

summary, full reports



## Call to action

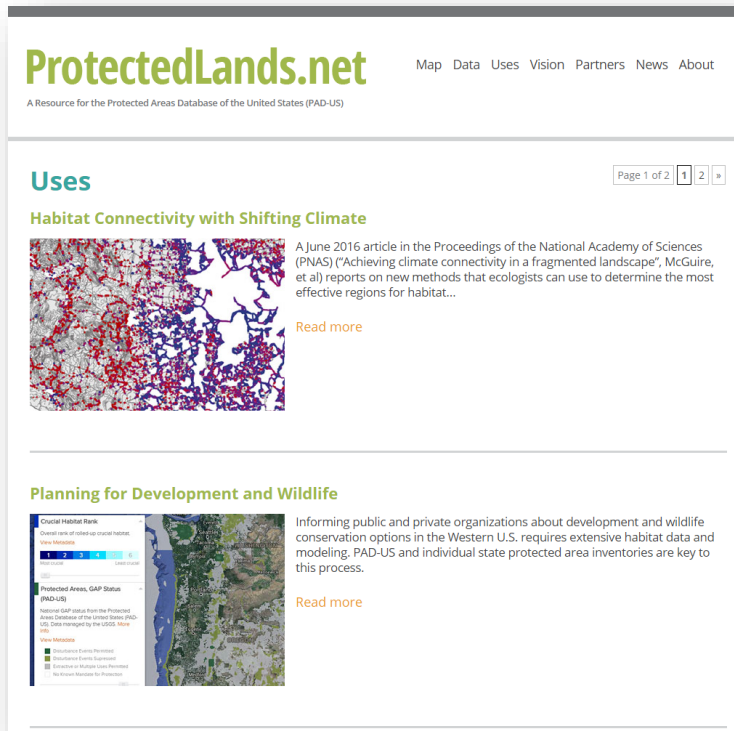
## Seeking **partners** to **complete** PAD-US:

- Finish **local** / regional parks
- Improve **federal** and **tribal** data
- Support **states** and **NCED**
- Make system more **efficient**
- Do more **outreach** and user support



# You can help

- Highlight the **importance** of great geospatial data – data **stewards** need support!
- PAD-US is a **national resource**! Support collaboration, fill **gaps**
- Encourage **use** of PAD-US, and **tell** us about examples
- Help us increase **awareness**, share **news**



## 5. Q&A – Your turn

**Lisa Johnson**

PAD-US Coordinator

[lisajohnson@boisestate.edu](mailto:lisajohnson@boisestate.edu)



# Exploring the **PAD-US Viewer**

# 1. PAD-US Website

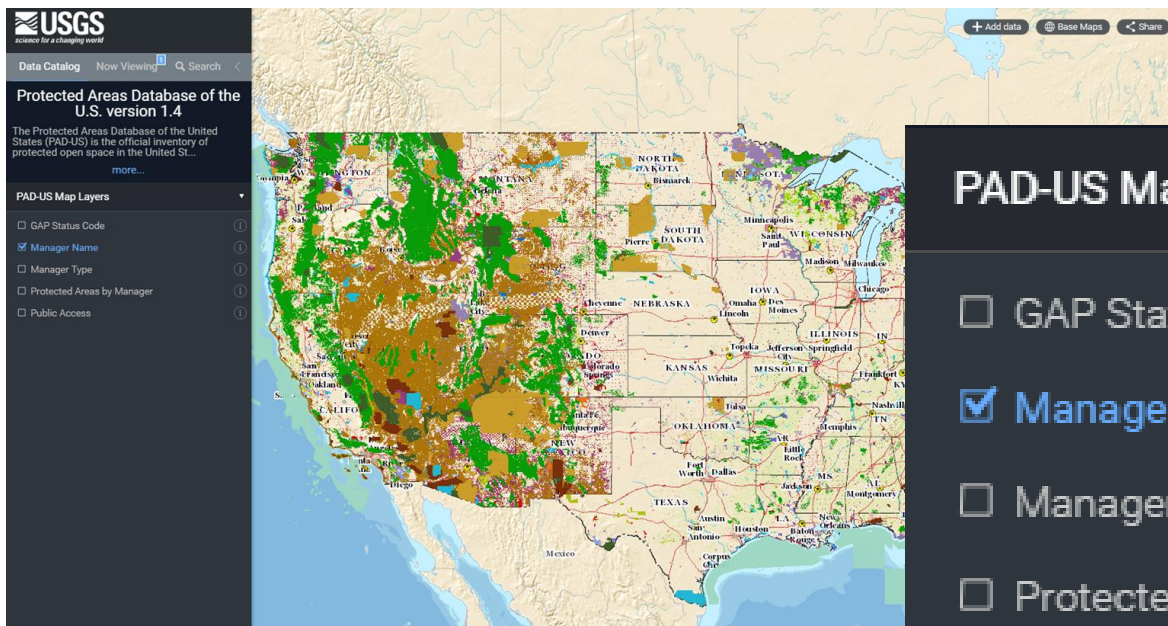
gapanalysis.usgs.gov/padus

The screenshot shows the USGS National Gap Analysis Program (GAP) Protected Areas Data Portal. The header includes the USGS logo and navigation links: USGS Home, Contact USGS, Search USGS. The main navigation bar lists: GAP HOME, PAD-US HOME, VISION, VIEWER, DATA, PARTNERS, RESOURCES, NEWS, CONTACTS. The main content area features a map of the United States titled "Protected Areas Database of the U.S. (PAD-US) - Land Management". To the right of the map is a green box with the text: "Enhancing data for protected areas in the U.S. We are creating a spatially explicit inventory that lets any user - from the general public to professional land managers - know exactly what lands are protected anywhere in the United States and allows them to easily use this inventory in conservation, land management, planning, recreation and other uses. Learn more: Download PAD-US Factsheet »". Below the map is a section titled "Best Data Practices" with a sub-section for "California" describing the California Protected Areas Database (CPAD). To the right of the main content is a section titled "Access PAD-US Data" with two buttons: "GET DATA Protected Areas" and "GO TO Protected Areas Viewer".



The diagram shows a flow from the website to data access options. It features a green arrow pointing right from the website screenshot to a box titled "Access PAD-US Data". Inside this box are two buttons: "GET DATA Protected Areas" and "GO TO Protected Areas Viewer". Both buttons have the text "GAP ANALYSIS PROGRAM" in the top right corner.

# 1. PAD-US Viewer - layers of information

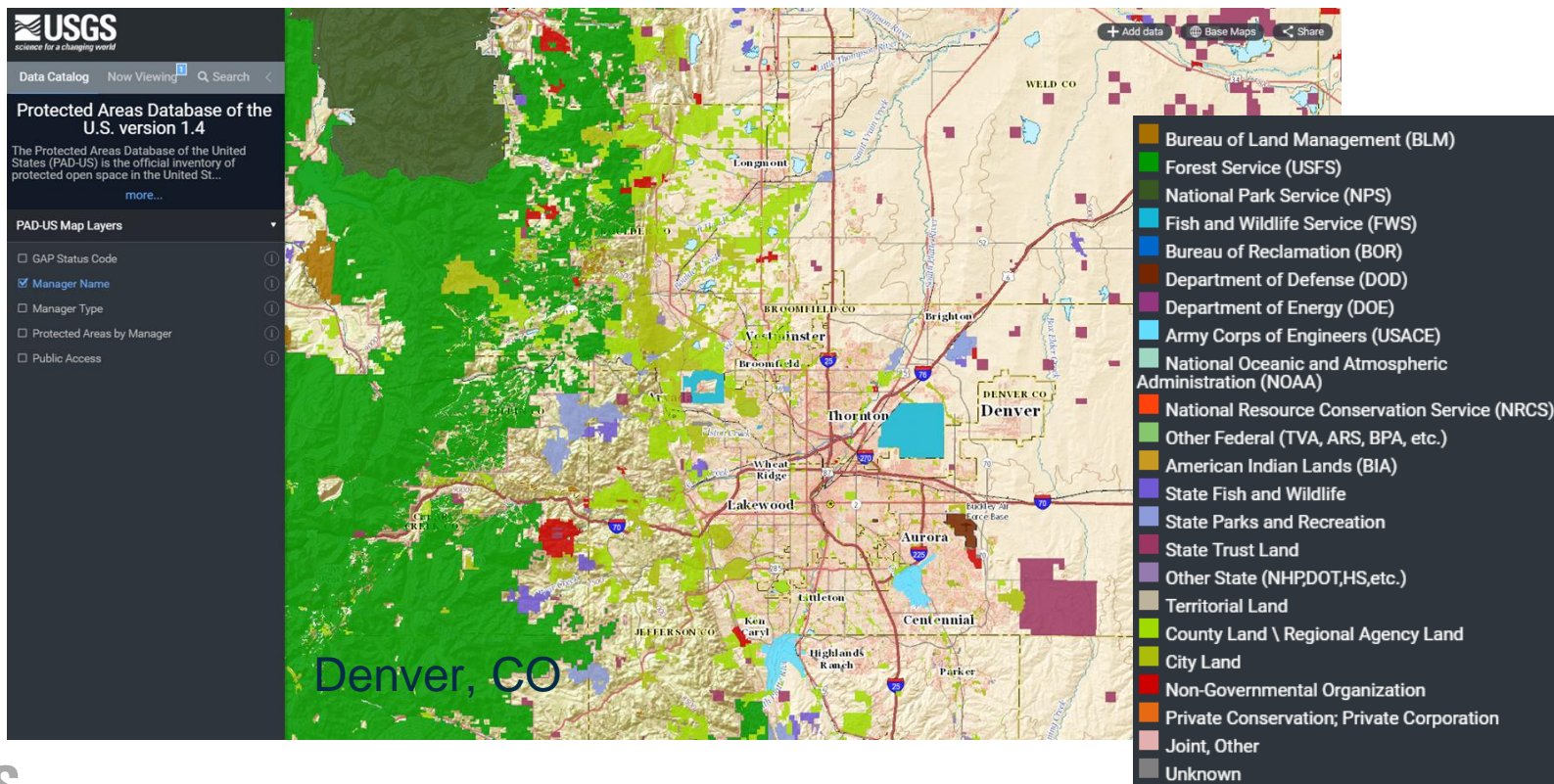


[maps.usgs.gov/padus](https://maps.usgs.gov/padus)

## PAD-US Map Layers

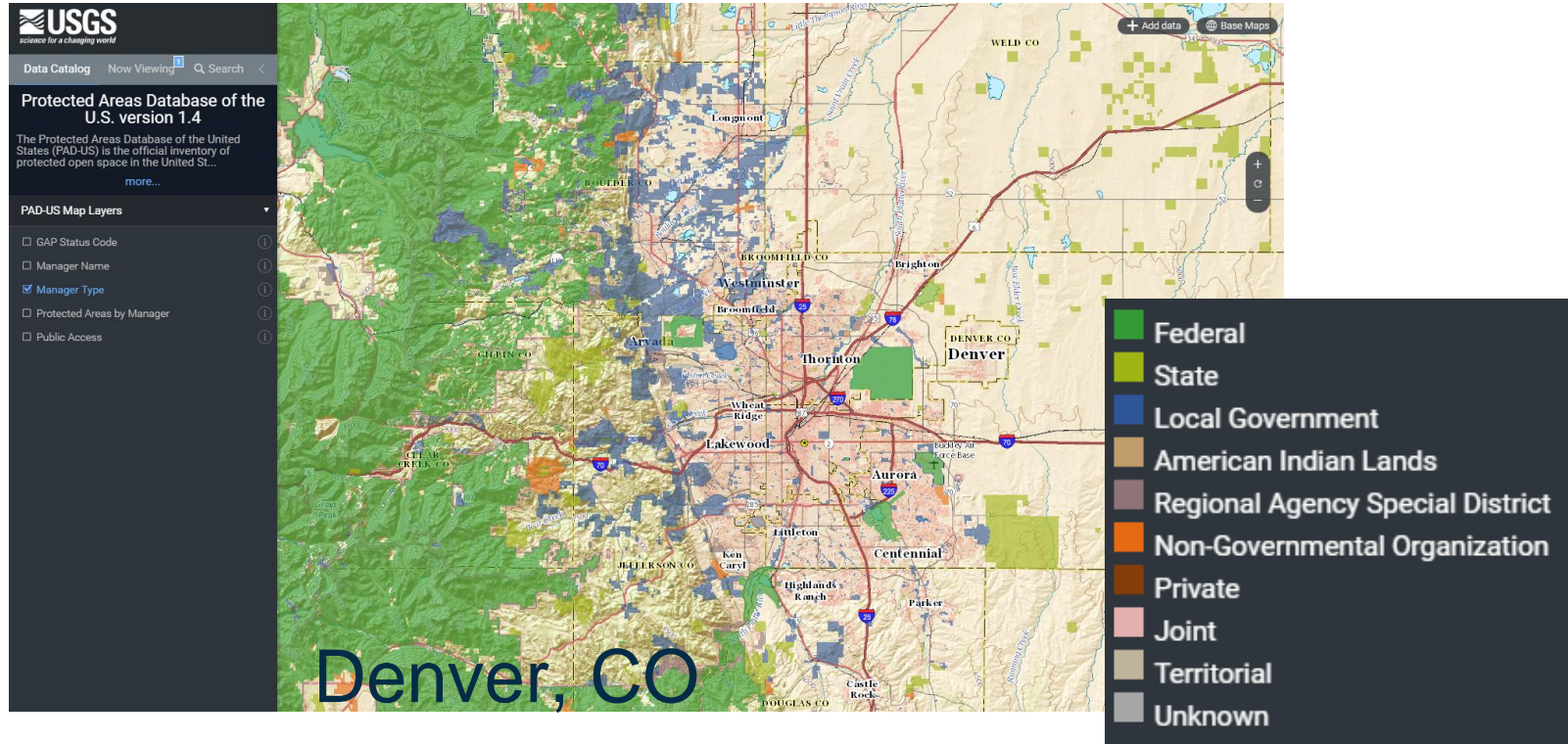
- ☐ GAP Status Code
- ☒ **Manager Name**
- ☐ Manager Type
- ☐ Protected Areas by Manager
- ☐ Public Access

# 1. Fine Level Agency - Manager Name





# 1. General Agency - Manager Type

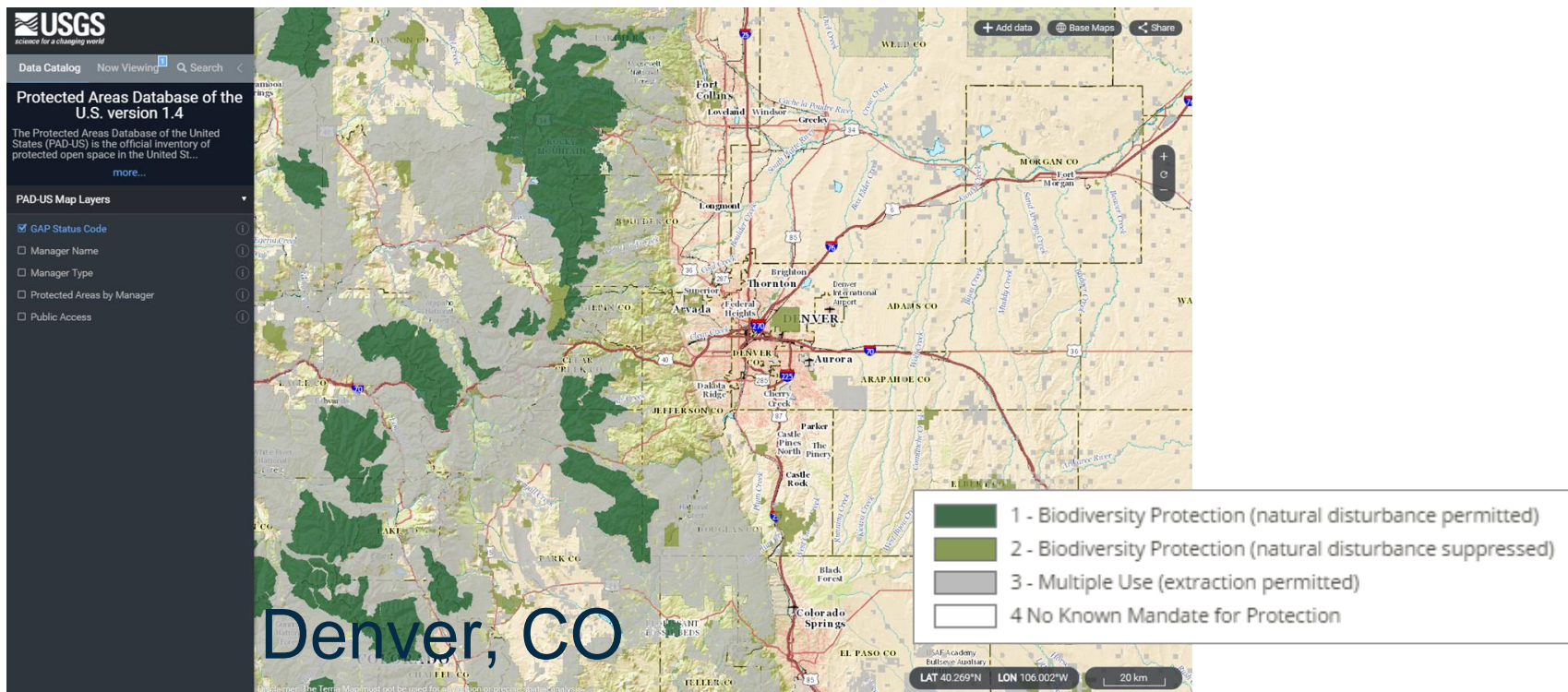




# 1. Level of Public Access



# 1. Protection Status - GAP Code



# 1. PAD-US Viewer - Click map for more info

The screenshot displays the USGS PAD-US Viewer interface. On the left, a sidebar contains the USGS logo, a search bar, and a list of map layers. The main area shows a map with various colored regions representing protected areas. A popup window titled 'Feature Information' is open, displaying details for a selected feature.

**Protected Areas Database of the U.S. version 1.4**  
The Protected Areas Database of the United States (PAD-US) is the official inventory of protected open space in the United States.  
[more...](#)

**PAD-US Map Layers**

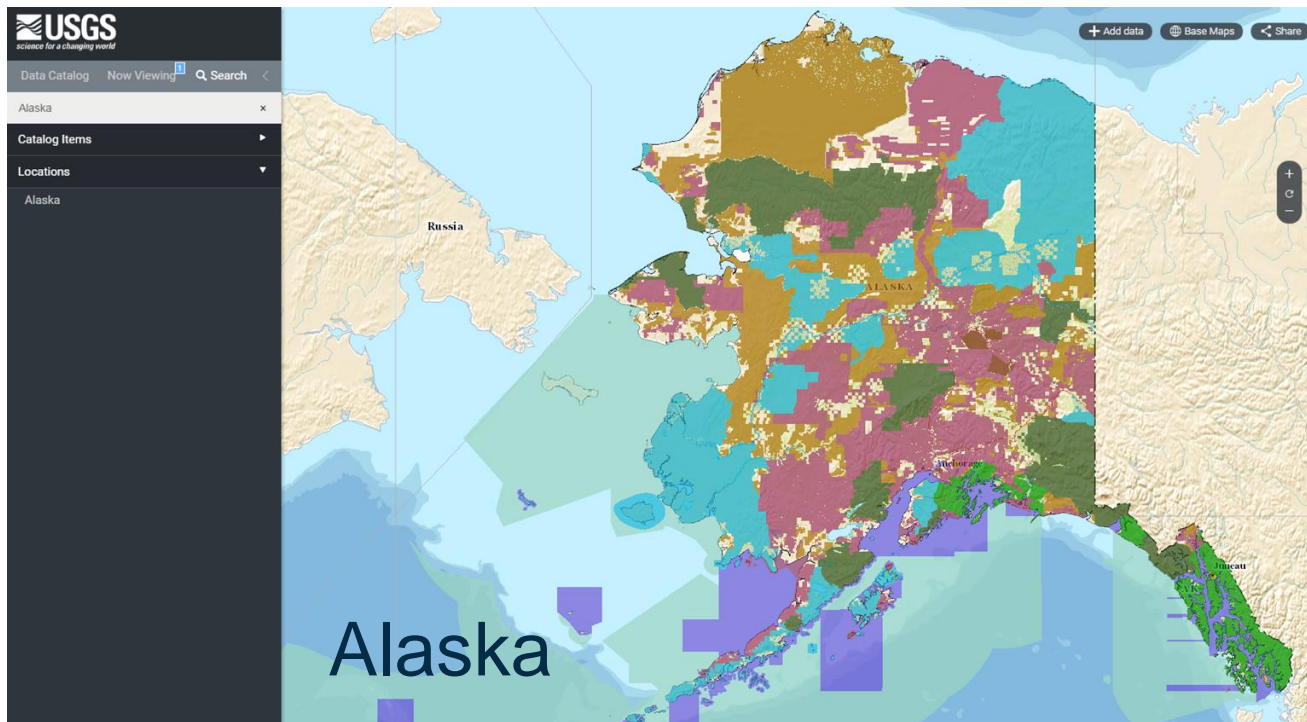
- ☐ GAP Status Code
- ☐ Manager Name
- ☐ Manager Type
- ☒ Protected Areas by Manager
- ☐ Public Access

**Feature Information**

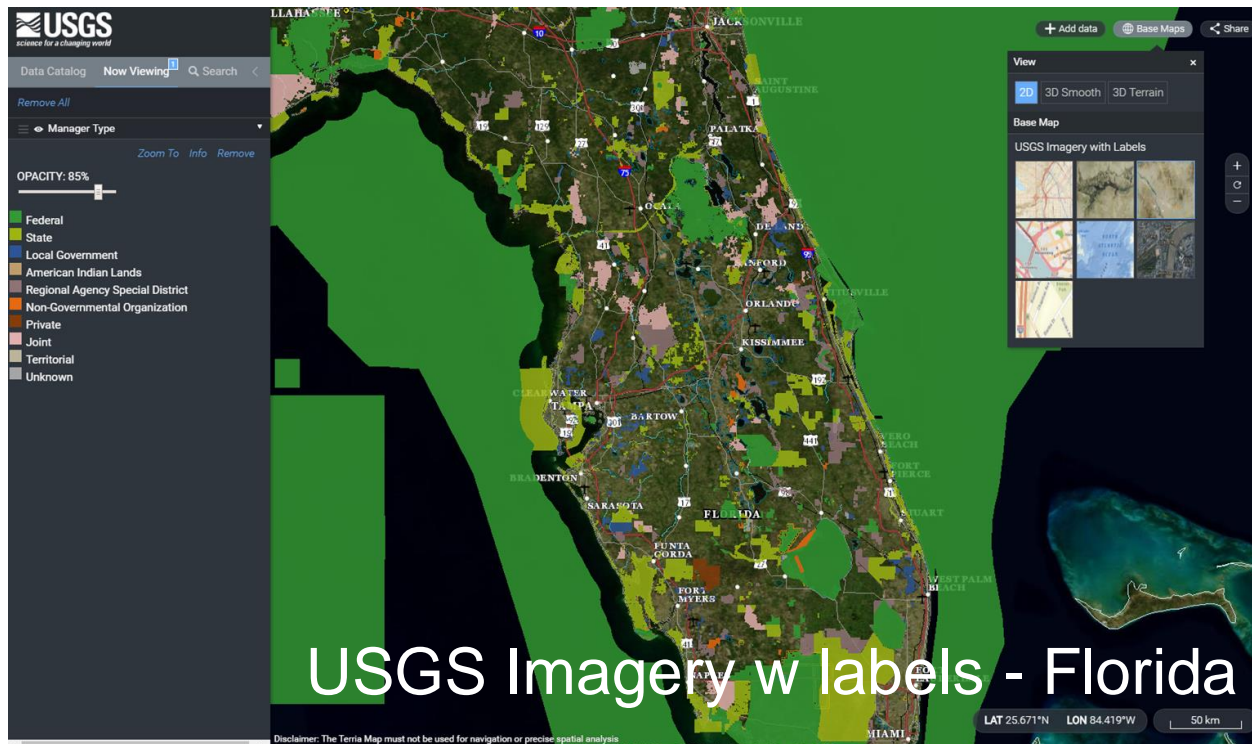
▼ Manager Name	Rocky Mountain National Park
▼ Manager Name	Rocky Mountain National Park Wilderness
▼ Manager Name	Rocky Mountain National Park
Manager Name	National Park Service
Designation	National Park
State	Colorado
Aggregator Source	GAP_PADUS1_4Fee_NPS_Tracts
GIS Acres	265,434
Public Access	Open Access
Gap Status	1 - managed for biodiversity - disturbance events proceed or are mimicked
► Manager Name	Rocky Mountain National Park Wilderness



# 1. PAD-US Viewer **Navigation** - Search



# 1. PAD-US Viewer - Basemaps for context





What's new at **ProtectedLands.net**?

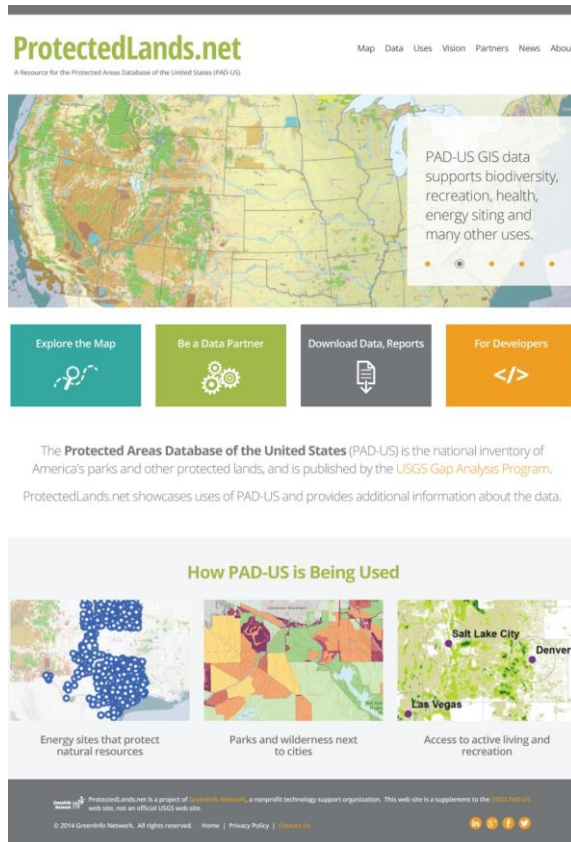
# 1. ProtectedLands.net

[www.ProtectedLands.net](http://www.ProtectedLands.net)

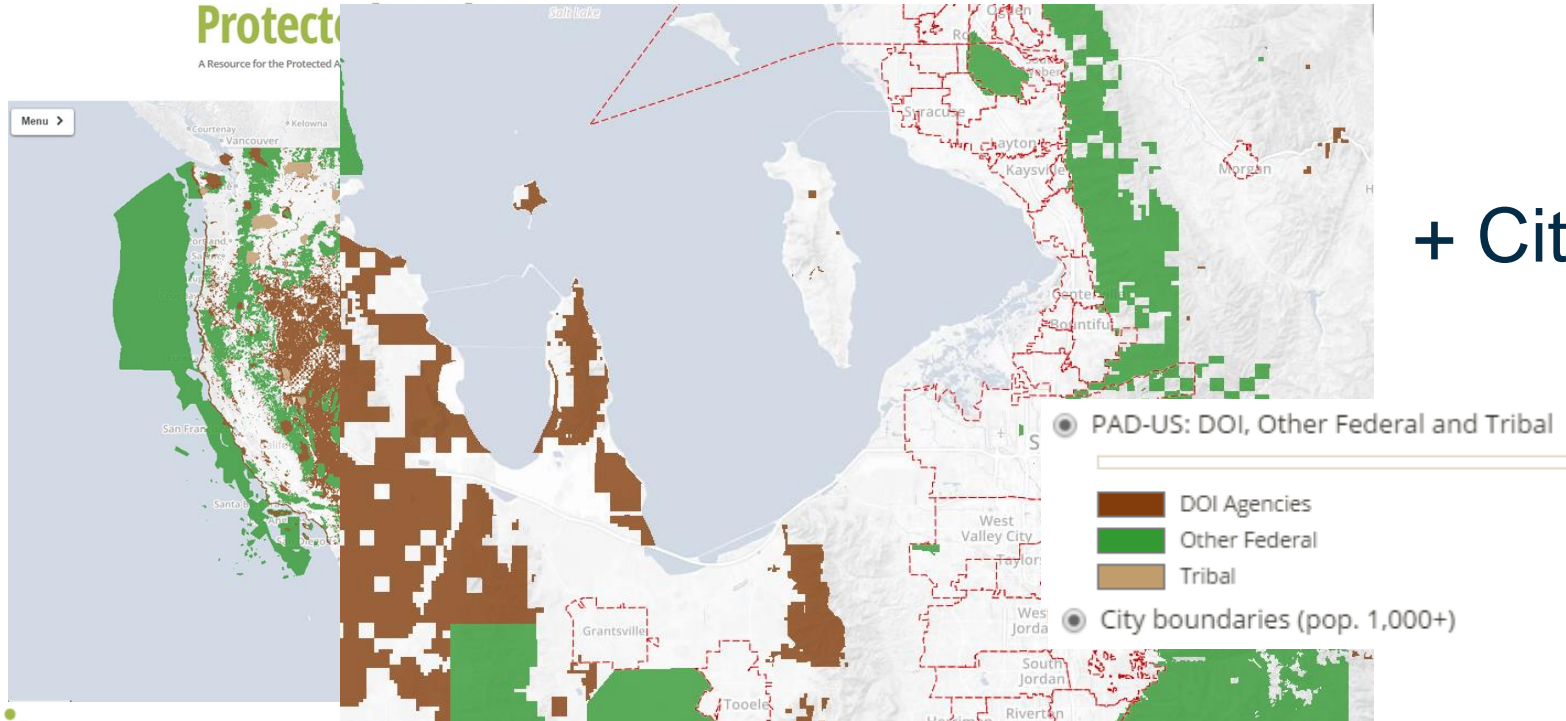
PAD-US companion site

Partners, PAD-US uses and future plans

Uses USGS web services for maps (available for public use!)



# 1. Layers - DOI, Other Federal and Tribal



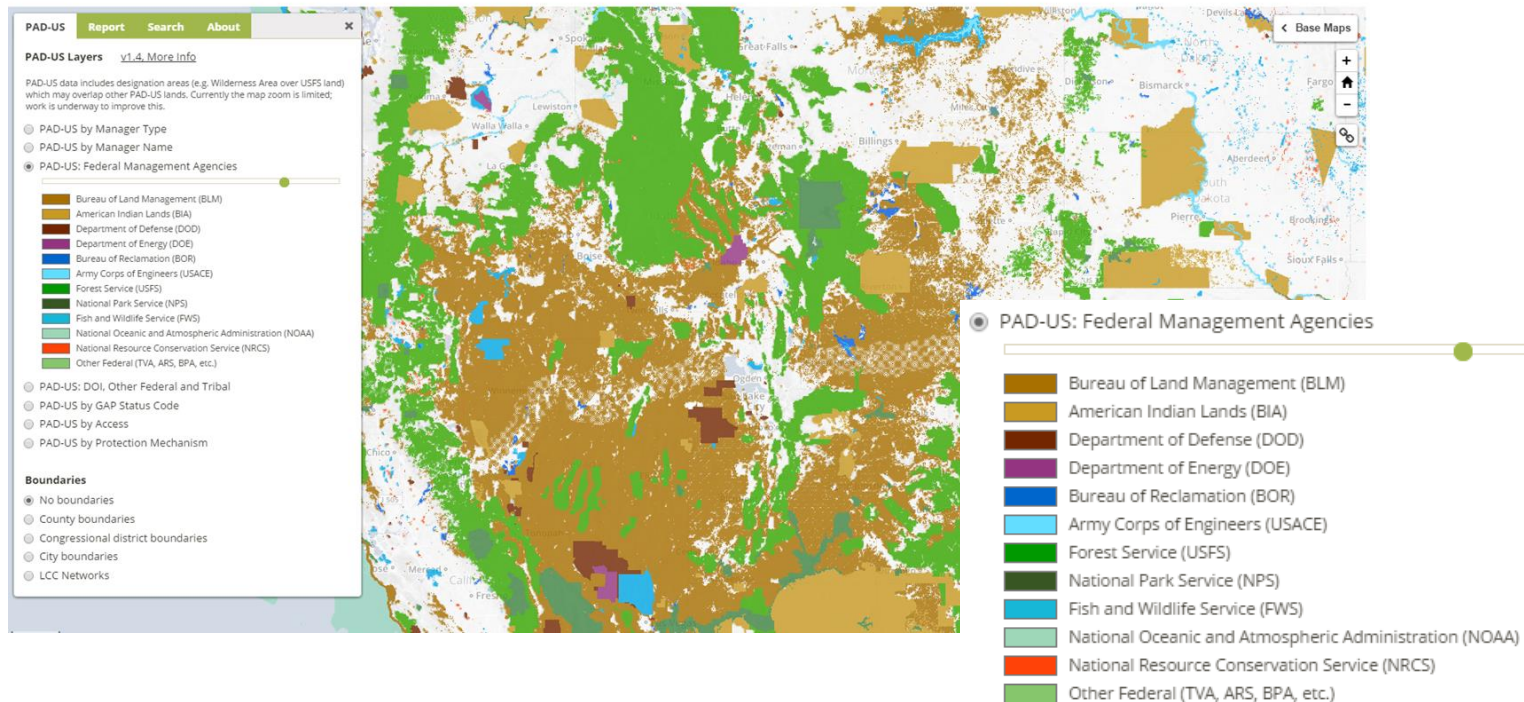
## + Cities

# 1. Federal Management Agencies (in West)

ProtectedLands.net

A Resource for the Protected Areas Database of the United States (PAD-US)

Map Data Uses Vision Partners News About

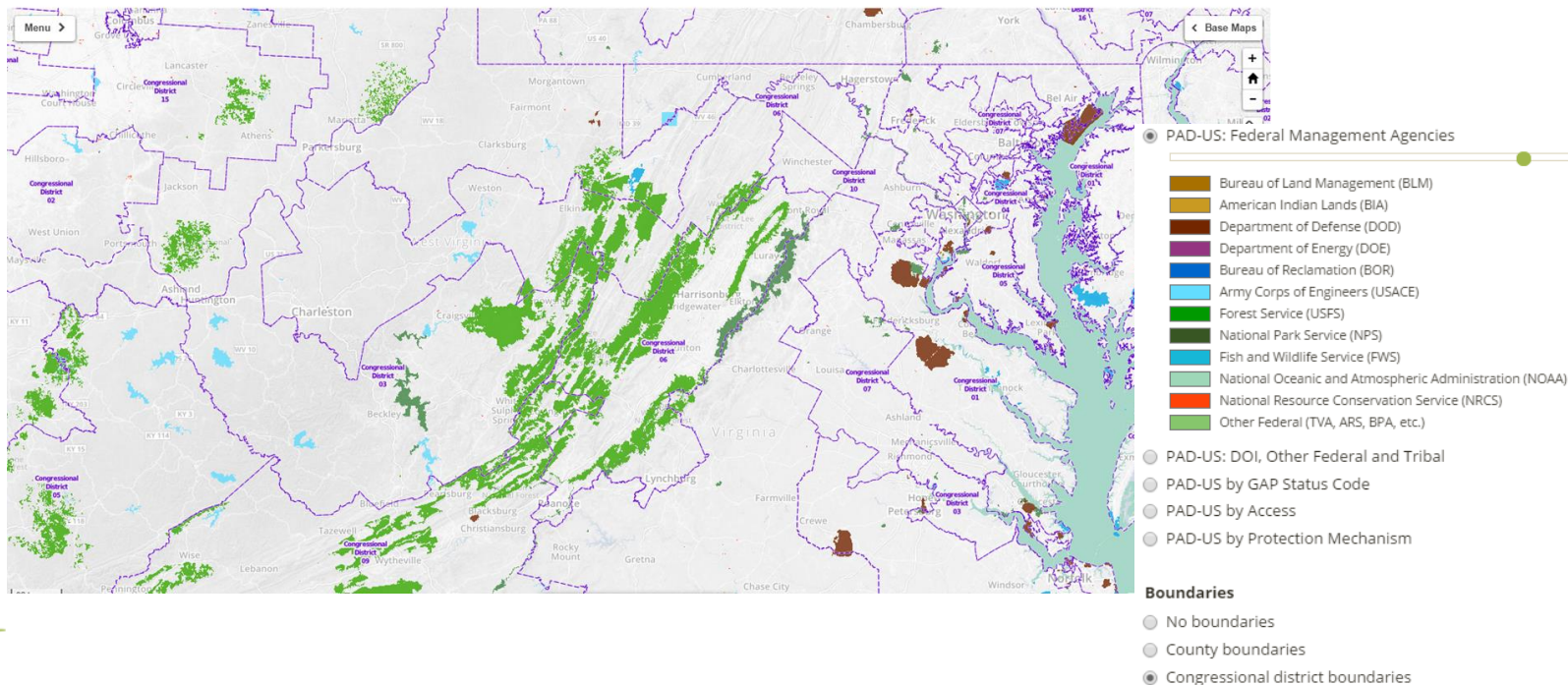


# 1. Federal Management Agencies - East + Congress

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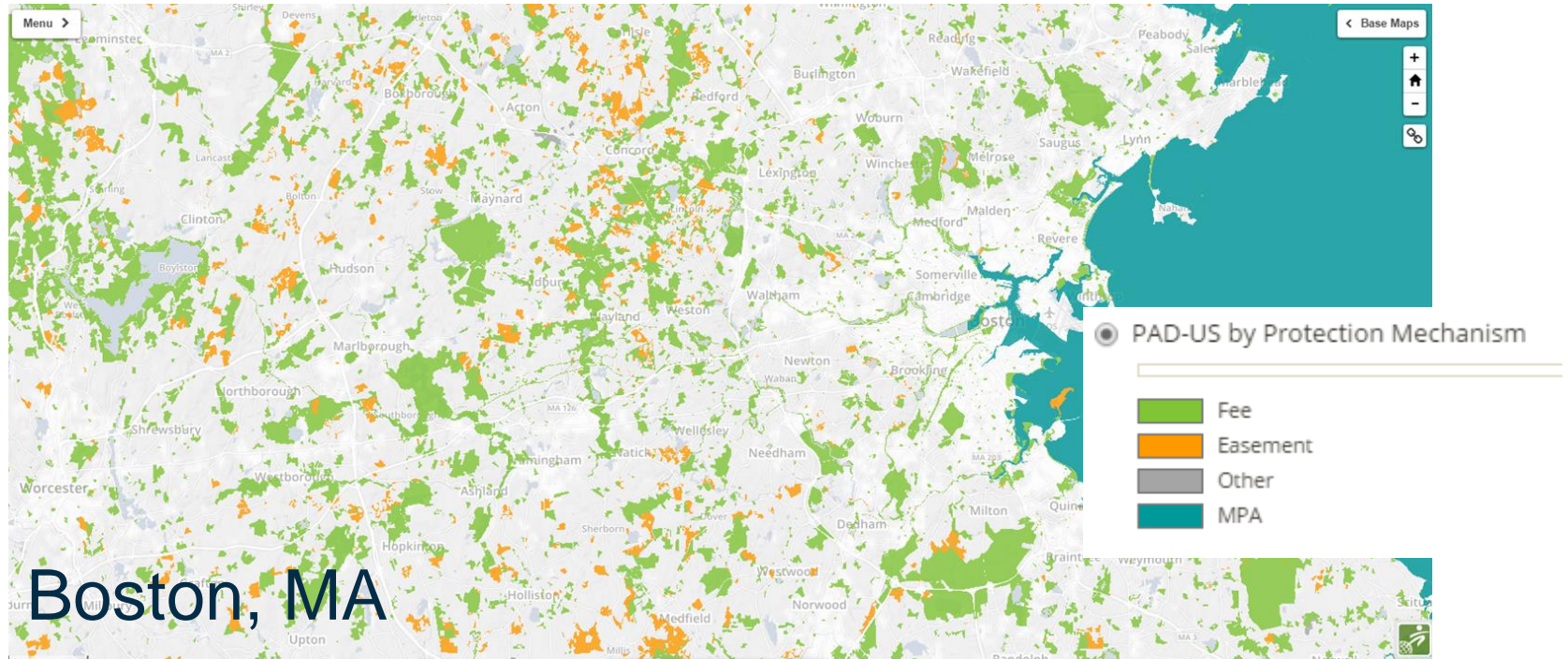
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# 1. Protection Category







# 1. Zoom, BirdsEye, Share

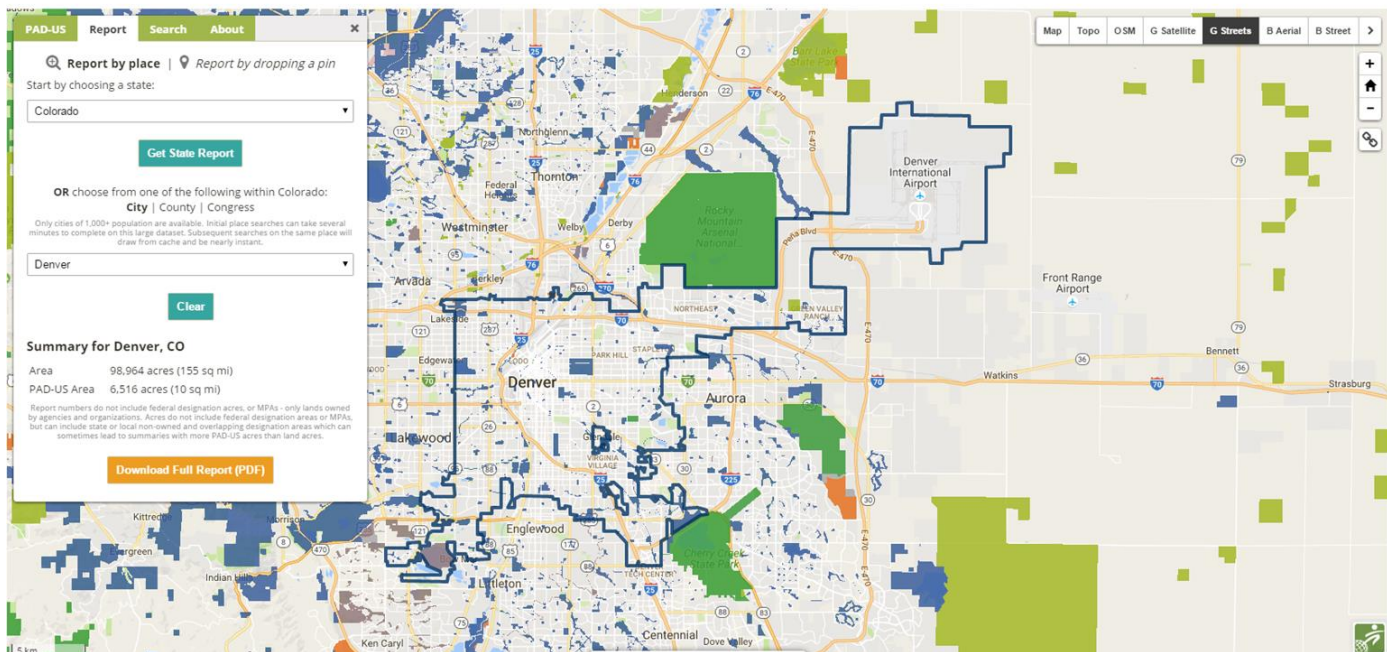


# 1. Reports - coming soon!

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# 1. Reports

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PAD-US v1.4 - AREA REPORT

Denver, CO

PAD-US Area (acres)	6,516
Selected Area (acres)	98,964
PAD-US percent of area	6.6%

**Note:** This report covers fee-owned lands and easements and does not include Designation areas (Wilderness Areas, MPAs, etc.), which are shown on the map - this reduces double counting of federal lands. Slivers and some state designation overlaps may still exist. The next PAD-US will address these issues.

This report is based on PAD-US version 1.4, released May 2016. PAD-US is the official GIS inventory of America's public parks and other protected lands, and is published by the USGS Gap Analysis Program (GAP). Learn more about GAP and PAD-US at <http://gapanalysis.usgs.gov/padus>

ProtectedLands.net is managed by the nonprofit GreenInfo Network ([www.GreenInfo.org](http://www.GreenInfo.org)), in support of PAD-US.

\* GAP Status Codes:

1. Managed primarily for biodiversity - disturbance permitted
2. Managed primarily for biodiversity - disturbance suppressed
3. Managed for multiple uses - extraction permitted
4. No known mandate for protection or private

### Acres by Access

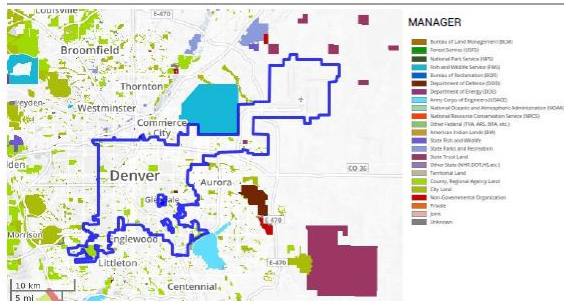
Open	4,155 (4%)
Restricted	823 (<1%)
Closed	1,501 (2%)
Unknown	37 (<1%)

### Acres by Manager Type

Federal	220 (<1%)
State	171 (<1%)
Local	5,314 (5%)
Native American	0
Special Dist.	765 (<1%)
NGO	47 (<1%)
Private	0 (<1%)
Jointly Owned	0
Territorial	0
Unknown Owner	0 (<1%)

### Acres by GAP Status \*

Gap 1	0
Gap 2	31 (<1%)
Gap 3	175 (<1%)
Gap 4	6,310 (5%)



Jan 4, 2017

[www.ProtectedLands.net](http://www.ProtectedLands.net)

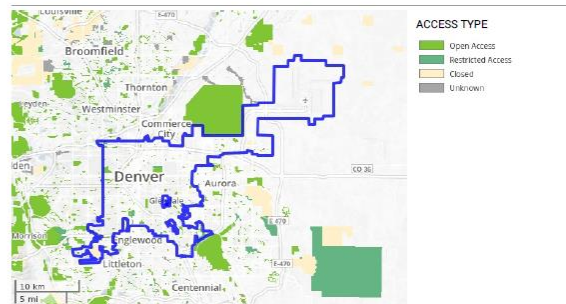
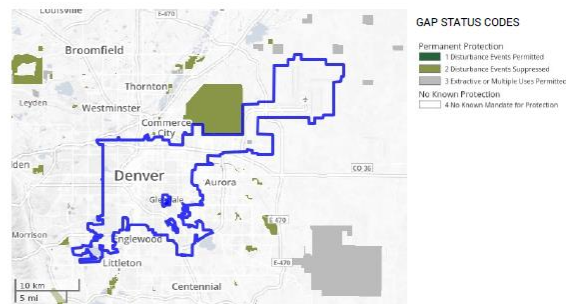
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