

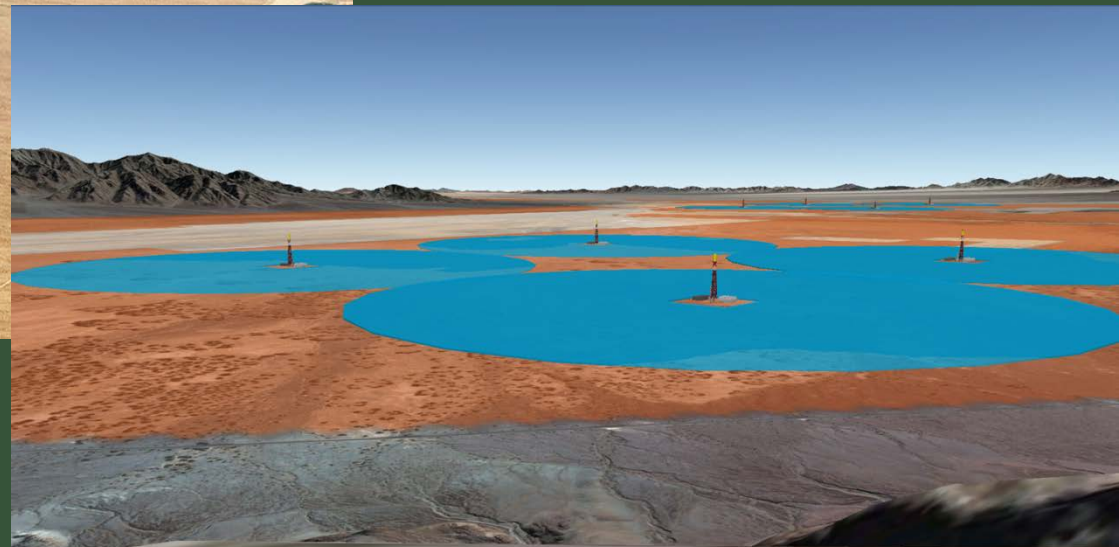


SOLAR ENERGY DEVELOPMENT: THE ROLE OF THE NATIONAL PARK SERVICE

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External Renewable Energy Program Lead
NPS Washington Office

BIA Solar Energy Training – February 2013

Utility Scale = Landscape Level Impacts



Clockwise from left:

1. Simulation of Ivanpah Solar Energy Generation System near Mojave National Preserve
2. Simulation of solar power tower
3. Simulation of concentrated solar thermal project viewed from inside Joshua Tree NP



NPS Resources and Values at Stake

Viewsheds & Air Quality

- Unimpaired views are a hallmark of many parks

Night Skies

- Natural lightscapes, including dark night skies, are a dwindling resource that dominate many parks

Soundscapes

- The acoustical environment includes both natural sounds (wind, water, wildlife) and cultural and historic sounds (quiet reverence) and is an important aspect of the park experience to many visitors

Cultural Resources

- Many parks are rich in cultural and archaeological resources, and have the responsibility to preserve and interpret that history for the American people

Wildlife, Plants, and Habitat

- The majority of parks contain and preserve habitat for and support populations of threatened and endangered species

Water Quality and Quantity

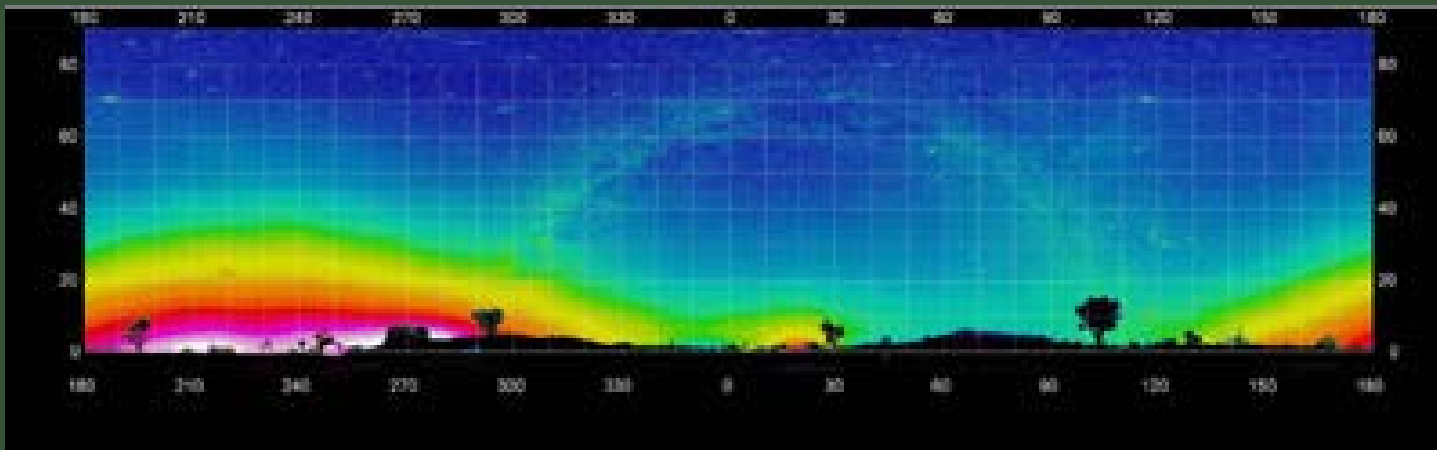
- The availability, quality, and clarity of park water resources define the health of park ecosystems

Visitor Experience

- The visiting public has a high expectation of unimpaired resources and park-related tourism is an important economic factor for surrounding communities

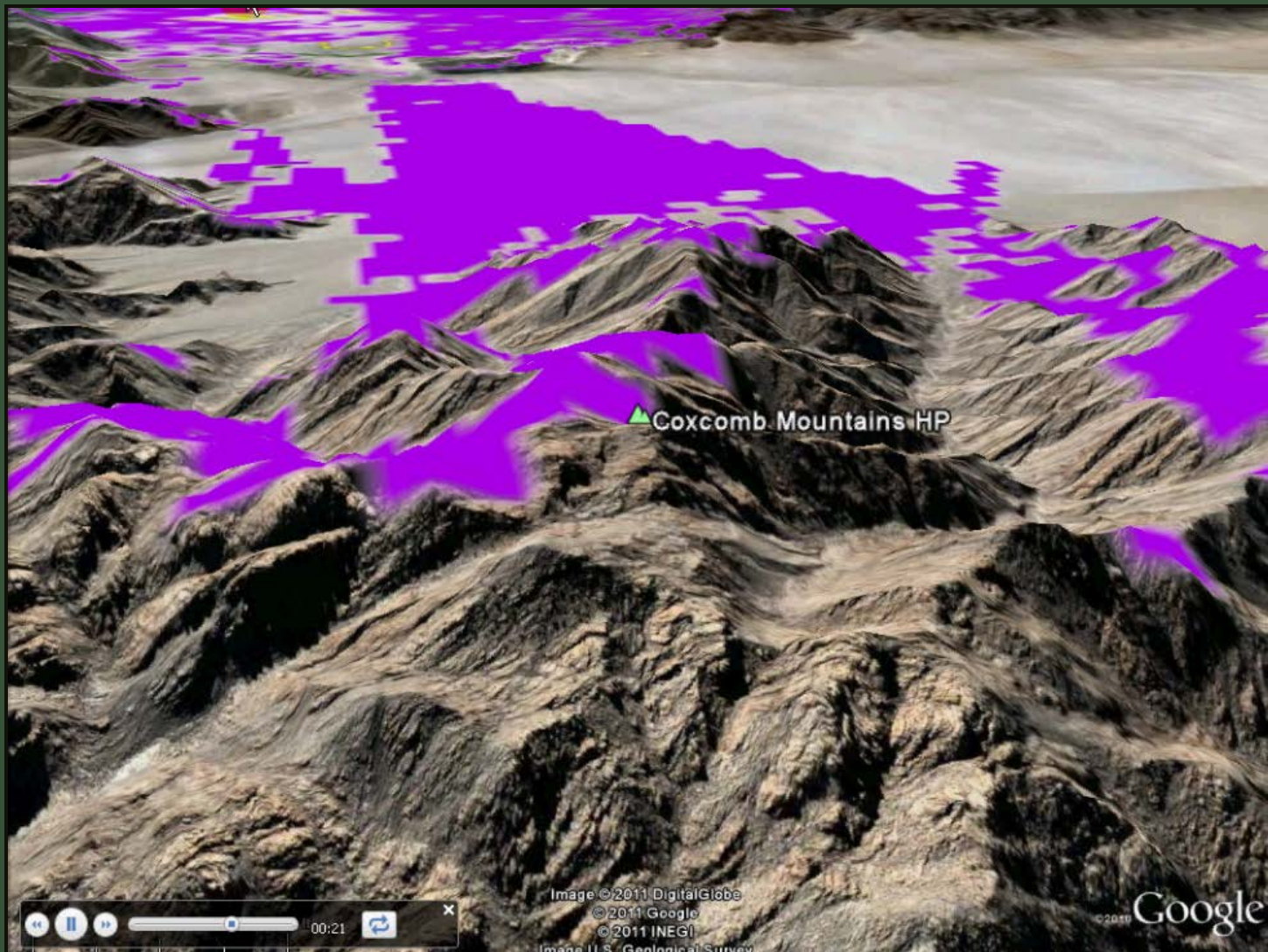


Natural Lightscapes





Geospatial Project Example – Visual Resources





Program Objectives

President Obama and Secretary Salazar have committed to a renewable energy program that is

“Smart from the Start”

1. Avoidance through appropriate *siting*
2. Minimization through use of *design features*
3. Offset of impacts through *mitigation*
4. Increased understanding by *monitoring*



Program Mission

- ❑ Ensure NPS meets its trust responsibility to the public to protect the scenery, natural and cultural resources, and enjoyment of those resources unimpaired for future generations (NPS Organic Act)
- ❑ Ensure the fundamental purposes for which park units are created by Congress, as outlined in their enabling legislation, are protected as Congress intended
- ❑ Ensure the DOI meets its legal obligation to protect parks against an external development threat that is “direct, specific, and credible” and which “relates to a fundamental value or purpose of the park” (DOI Solicitor’s Opinion “Doe Run” at 24)
- ❑ Ensure consideration of impacts to NPS resources and values through the planning and permitting processes under NEPA



6 New Renewable Energy (RE) Specialists



Zach Church
Regional Coordinator
Pacific West Region
San Francisco, CA

Amee Howard
RE Specialist
Pacific West Region
Lake Mead, NV

*Midwest, Alaska,
and National Capitol
Regions receive
support from team*

Lara Rozzell
RE Specialist
Intermountain Region
Denver, CO

Mark Meyer
RE Visual Resource Specialist
Washington Support Office (Air Resources)
Denver, CO

Mary Krueger
RE Specialist
Northeast Region
Boston, MA

Bryan Faehner
RE Specialist
Southeast Region
Washington, D.C.

Legal Protection of NPS Resources and Values



- ❑ The DOI Solicitor's Office Memorandum *Doe Run* states *the Secretary has a legal obligation to protect parks against an external development threat* that is “direct, specific, and credible” and which “relates to a fundamental value or purpose of the park” (Doe Run at 24)
- ❑ There must be consideration of impacts to NPS resources and values through the NEPA process (Doe Run at 25)
- ❑ The enabling legislation of park units outlines the purposes for which the park was created by Congress, and must be protected



NPS Directives and Agreements

- Director's Memo "Renewable Energy Development near Units of the National Park System" (August 2010)
 - Directs parks to become involved in the renewable energy planning and permitting decision-making processes of other agencies to avoid and/or mitigate impacts to parks

- Director's Memo "Implementation Guidance for the Interagency Transmission Memorandum of Understanding" (May 2010)
 - Outlines NPS procedures to implement nine-agency October 2009 MOU "Regarding Coordination in Federal Agency Review of Electric Transmission Facilities on Federal Land", and directs parks to engage on electric transmission projects and become a cooperating agency when appropriate



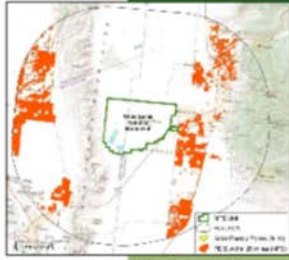
NEPA – Cooperating Agency Status

- Appropriate when park has either “jurisdiction by law” (e.g. transmission through park) or “special expertise” (e.g. park resources and values) (see 42 USC §§ 4331(a), 4332(2) and 40 CFR §§ 1501.6, 1508.5)
- Role in siting and alternatives development
- Allows for early identification of potential impacts, data and analysis needs and modeling needs
- More time to develop alternative configurations, design features and mitigation measures to protect park resources and values



This chart describes: A) NPS analysis of resource conditions on PEIS lands adjacent to parks; and B) the determination of potential resource conflicts and recommend exclusions.

- Area of Analysis (AOA)**
 - Identified PEIS Lands within 25 mile radius around NPS Units
 - NPS Units - 53
 - National Historic Trails - 6
- Resource Data**
 - Obtained best available GIS data
 - Matrix - Potential Resource Conflicts

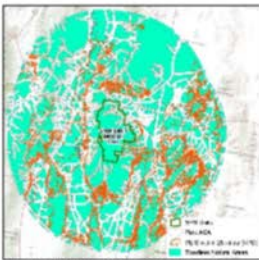


AOA Solar PEIS lands within 25 miles NIP

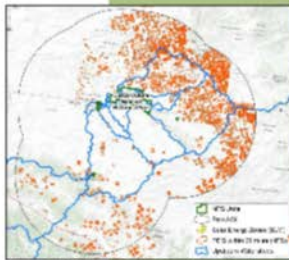
Potential Resource Conflict / Resource Data	Air Quality	Cultural Landscapes	Fugitive Dust	Flood Potential	Habitat Characteristics	Habitat Quality	Historic Integrity	Landscape Precedence	Scenic Values	Visitor Experience	Water Quantity	Water Quality	Wildlife Habitat	Wildlife Mortality
Critical Habitat					X	X								
Land Ownership		X												
Landscape Permeability		X											X	X
Naturalness Index						X	X							
Nighttime Lights							X		X	X				
Protected Areas					X	X	X	X	X	X				X
Roadless Natural Areas	X	X	X											
Upstream Watersheds				X							X	X		
Viewsheds		X							X	X	X	X		
Water Floodability (Soils)				X	X	X					X	X		
Wetlands			X		X	X								
Wind Floodability (Soils)	X													

Resource Matrix Appendix A

- Resource Conditions**
 - Distributed GIS Data & Resource Maps (Appendix B)
 - Critical Habitat
 - Land Ownership
 - Landscape Permeability
 - Naturalness Index
 - Nighttime Lights
 - Protected Areas
 - Roadless Natural Areas
 - Upstream Watersheds
 - Viewsheds
 - Water & Wind Floodability (Soils)
 - Wetlands



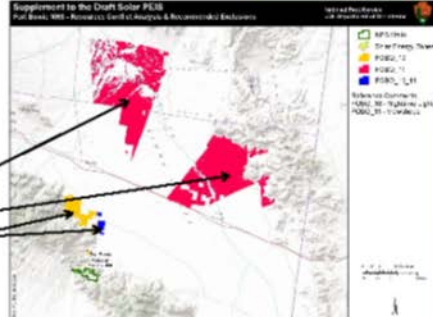
Roadless Natural Areas Great Basin NIP



Upstream Watersheds Chaco Culture NIP

- Resource Conflict Analysis**
 - Parks identified areas of potential resource conflicts within their AOA
 - GIS polygons represent discrete single or combinations of multiple resources that reflect a high potential for conflict.

NPS Units	PEIS CODE	IMPACT	VIEWSHEDS	REFERENCE ID	STATUS
FOBO	FOBO	Y2B	FUSU_1	FOBO_1	click
FOBO	FOBO	Y2B	FUSU_1B_1	FOBO_1B_1	click
FOBO	FOBO	Y2B	FUSU_1B	FOBO_1B	click



- Resource conflicts are annotated to reference the Spatial Reference ID provided in park narratives in Appendix A.

Current Status

- Submitted January 27th to BLM
 - 31 NPS Units and 6 National Historic Trails requested exclusions
 - Overall NPS recommends 3.8 million acres be excluded from the Solar PEIS
- Continued discussion with BLM

Resource Conflict Analysis & Recommended Exclusions - Fort Bowie NHS

Park Name	Unit Name	Impacts	Spatial Reference ID	Exclusion Narrative
Fort Bowie NHS	FOBO 1B	Y2B	FOBO_1B_1	All lands 10-12 miles from the park boundary... (text continues)
	FOBO 1I	Y2B	FOBO_1I	Viewshed areas... (text continues)

Fort Bowie NHS Exclusion Narrative | Prepared by the NPS Inventory & Monitoring GIS Program

Example: NPS Geospatial Analysis for BLM Solar PEIS

Pilot project for 53 park units within BLM Solar Energy PEIS planning area

Problem to be addressed: which areas *outside park boundaries* are most sensitive for cross-boundary impacts *inside park boundaries*

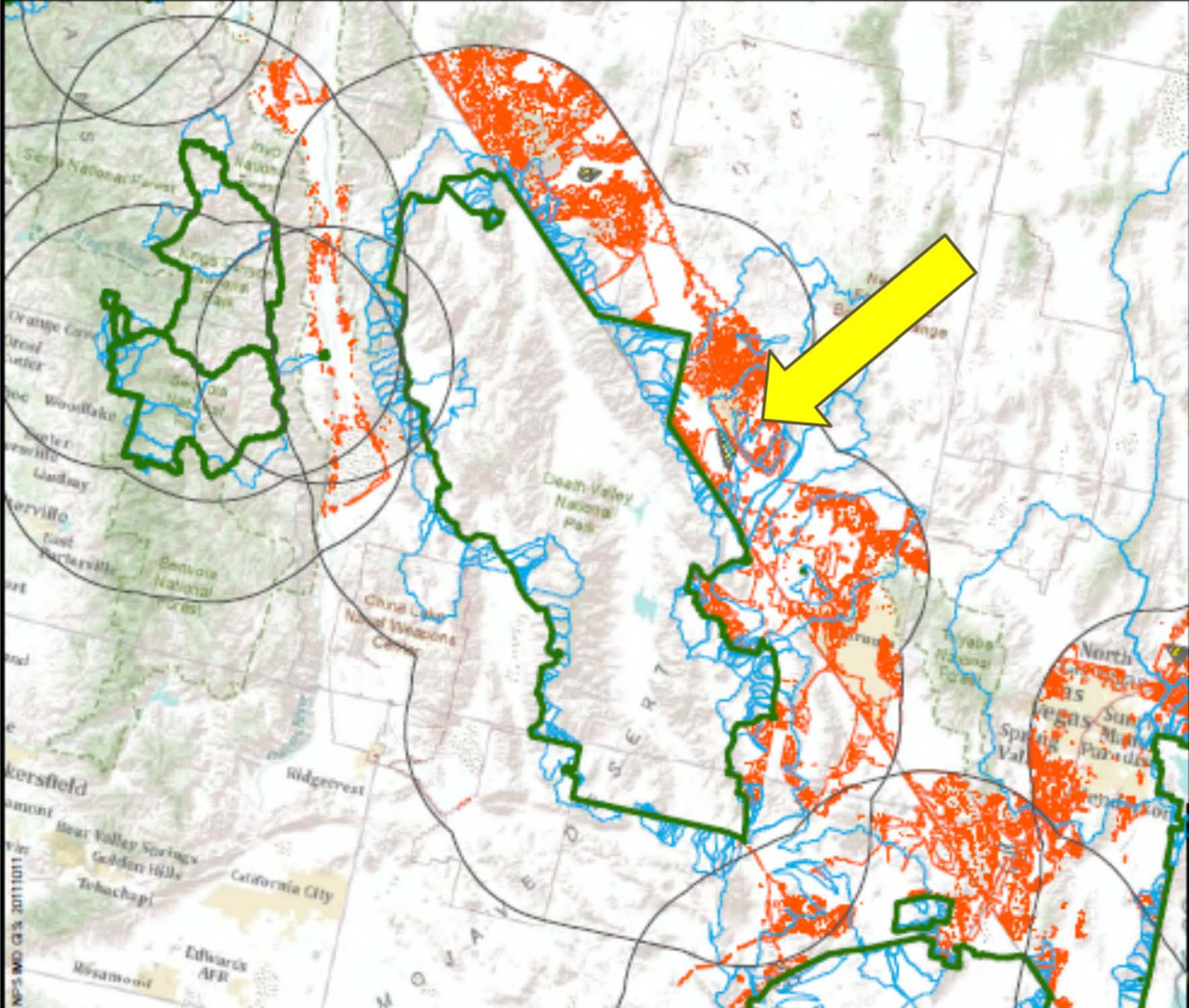
Geospatial analysis of various resources (e.g. watersheds, critical habitat) based on available data

Area of analysis 25 mile radius from park boundaries – this area defined for issue identification only, and does *not* represent any NPS-advocated “buffer”

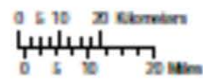
Death Valley NP - Draft PEIS Resources Map

Upstream Watersheds

National Park Service
U.S. Department of the Interior
Inventory and Monitoring Division



- NPS Units
- Park ACl
- Solar Energy Zones (BLM)
- PEIS within 25 miles (NPS)
- Upstream Watersheds

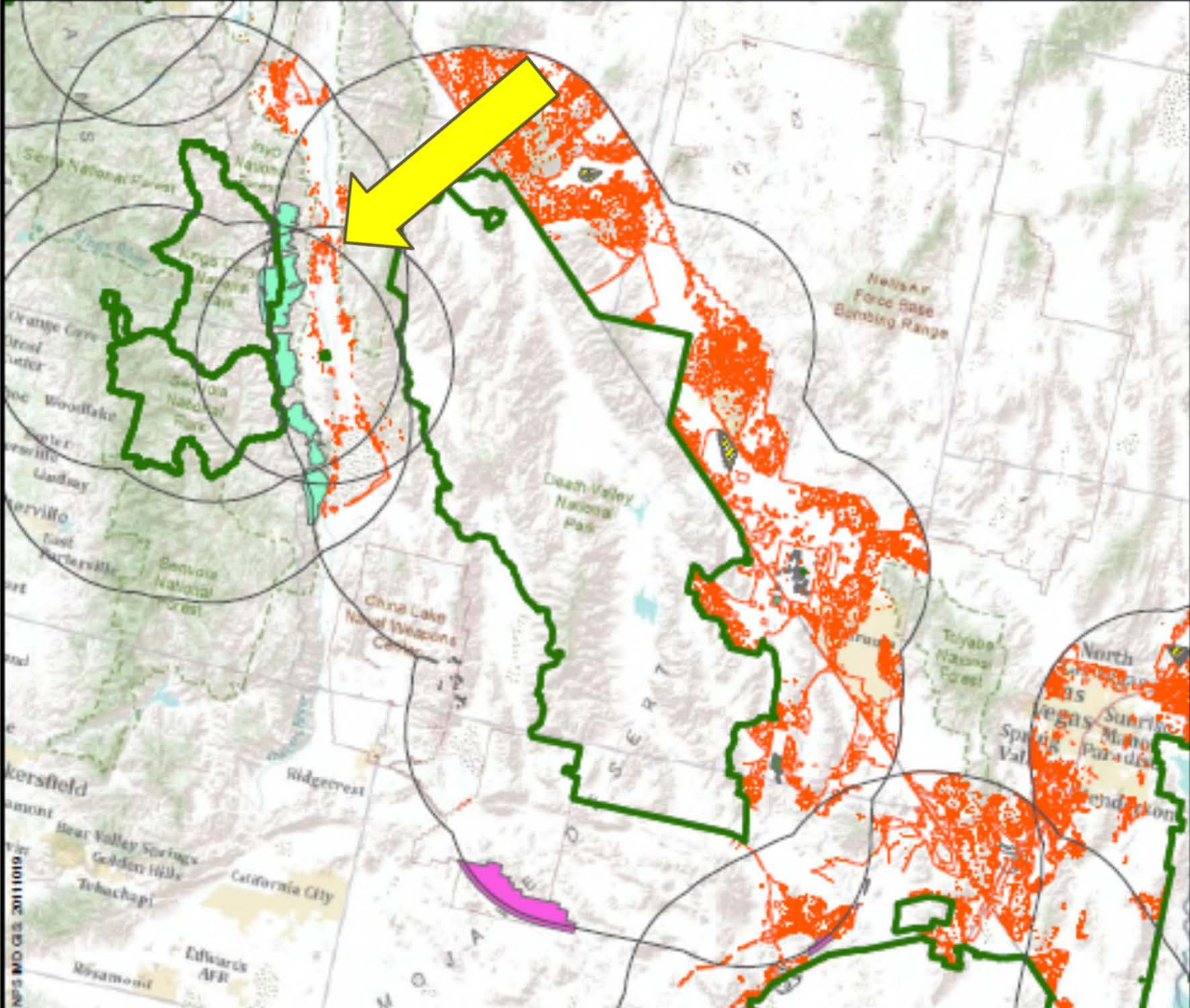


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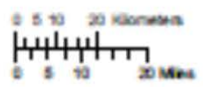
Death Valley NP - Draft PEIS Resources Map

Critical Habitat T & E - U.S. Fish and Wildlife Service

National Park Service
 U.S. Department of the Interior
 Inventory and Monitoring Division



- NPS Units
- Park AOI
- Solar Energy Zones (BLM)
- PEIS within 25 miles (NPS)
- Critical Habitat (USFWS) DEVA**
- Amargosa niterwort
- Amargosa vole
- Ash Meadows A. pupfish
- Ash Meadows blazingstar
- Ash Meadows gumplant
- Ash Meadows ivesia
- Ash Meadows naucorid
- Ash Meadows s. dace
- Ash Meadows sunray
- Ash meadows milk-vetch
- Desert tortoise
- Fish Slough milk-vetch
- Inyo California towhee
- SN bighorn sheep
- Spring-loving centaury



NPS MO GIS, 2011019



Key Points for Coordinating with the NPS

- Park resources and values can be greatly affected by cross-boundary impacts.
- Need to engage with potentially affected parks as early as possible in the process to allow for meaningful contribution.
- NPS specialists can provide knowledge and expertise pertaining to parks and surrounding areas important for understanding and analyzing impacts.
- Transmission and related infrastructure through parks requires a Special Use Permit. Authority for permitting is limited to findings by the NPS that no impairment to park resources and “not incompatible with the public interest.” 16 USC 5 & 79, and Director’s Order #53
- Need to establish avoidance strategies, identify minimization techniques, and design mitigation measures to eliminate, reduce, and offset park impacts.



Questions?

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