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DOCKET NO. L-00000YY-15-0318-00171 Case No. 171

Exhibits for the Summary Testimony of Vashti "Tice" Supplee, witness for Potential Party/Intervenor Christina McVie.

Exhibit 1 – Resume of Vashti "Tice" Crowninshield Supplee

Exhibit 2 – Map of Arizona Game & Fish Department Region 5

Exhibit 3 – Arizona Game & Fish Department's Arizona HabiMap

Exhibit 4 – Zoomed in, detailed view of the Arizona HabiMap with a portion of the proposed SunZia route superimposed

Exhibit 5a – Radar Graph from MAPPING BIODIVERSITY METRICS REPRESENTING ECOSYSTEM SERVICES AT THE LANDSCAPE SCALE IN THE AMERICAN SOUTHWEST presentation

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Exhibit 5c – Radar Graphs comparing the southwest region, Rio Grande and San Pedro

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Exhibit 6e – Arizona Important Bird Area Program Willcox Playa-Cochise Lakes Global IBA zoomed in

Exhibit 6f – Map of SunZia Proposed Routes Identified by Audubon Arizona as having highest potential impacts to avian species

Exhibit 6g – Map of SunZia's proposed route in reference to regional Arizona Important Bird Areas

Exhibit 7 - April 2012 TNC Map of lower San Pedro Valley Conservation Investments

Exhibit 8 – docketed letter from The Nature Conservancy to the Committee dated 10/6/2015

Exhibit 9 – SunZia Arizona route alternatives overlaid on Southwestern Biotic Communities

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Exhibits for the Summary Testimony of Vashti "Tice" Supplee, witness for Potential Party/Intervenor Christina McVie.

Exhibit 1 – Resume of Vashti "Tice" Crowninshield Supplee

918 W. Roosevelt Street, Phoenix, Arizona, 85007 Phone: 602-380-3722 tsupplee@audubon.org

Experience

- National Audubon Arizona interim Executive Director, January 2015-present
- Arizona Director of Bird Conservation, National Audubon Society, 2005-present
- Phoenix College (Maricopa County Community Colleges), Adjunct Faculty, 2006-present
- Game Branch Chief, Arizona Game and Fish Department, 1988-2004
- Wildlife Habitat Program Manager, Tucson, Arizona Game and Fish Department 1979-1988
- Research Assistant, Arizona Game and Fish Department 1975-1979
- Research Assistant, University of Arizona Environmental Research Lab 1973-1975

Education

- M.S. University of Arizona, Wildlife Management 1981
- B.S. Cornell University, Wildlife Ecology 1973

Certifications

- Arizona Certified Public Manager 1988
- The Wildlife Society - Certified Wildlife Biologist 1983
- Certified Arizona Peace Officer (retired Arizona Game Ranger) 1979-2004

Achievements

- National Audubon Society Fellowship 2008
- U.S. Department of Interior Cooperative Conservation Award-2008
- National Audubon Society ACE Award-2007
- Arizona Wildlife Federation-Thomas E. McCullough Award-2005
- Arizona Wildlife Federation-Wildlife Conservationist Award-1987
- The Wildlife Society Professional Service Award - Arizona Chapter 1985

Boards and Organizations

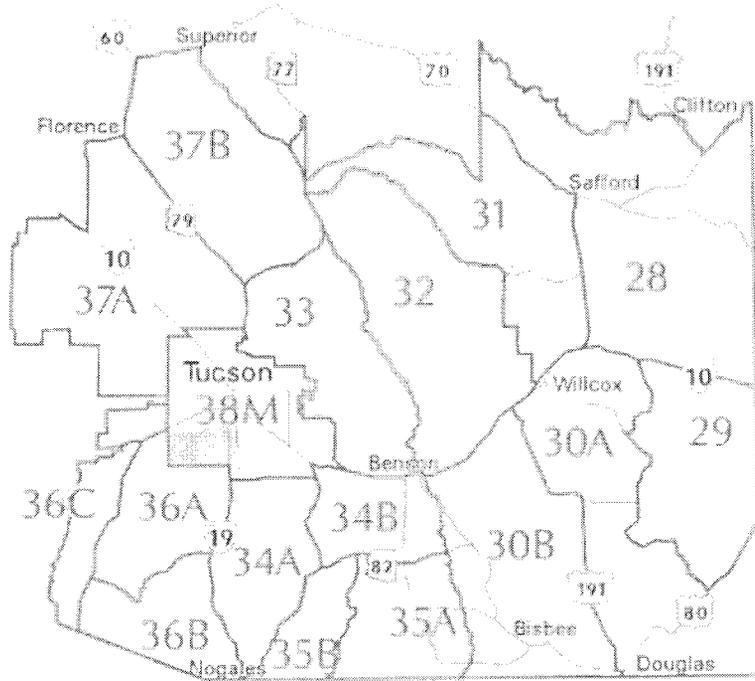
- Arizona Elk Society Board Member, 2005-2007; Vice President 2014 to present
- Phoenix Sonoran Preserve and Mountain Parks/Preserves Committee member 2014 to present
- Arizona Antelope Foundation President, 2008-2009; board member 2005-present
- Audubon Arizona representative Upper San Pedro Partnership Advisory Committee 2007-2010
- Sonoran Joint Venture technical committee member 2005- present
- Sonoran Audubon Society board member, recording secretary, and chapter representative to the Arizona Audubon Council 2000-2004
- Intermountain West Joint Venture - managing board member and technical committee chair 1993-2004
- Southeastern Arizona Environmental Council board member 1980-1988
- The Wildlife Society Southwest Section President 1983 and 2008
- The Wildlife Society Arizona Chapter member 1975-present and President 1981

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Exhibit 2 – Map of Arizona Game & Fish Department Region 5 accessed 10/12/2015

<https://www.bing.com/images/search?q=map+of%ee%80%81+region+5+%ee%80%80azgfd&id=329F1AA421C9954BE7967618139D7BE7E303A4A7&FORM=IQFRBA>



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Exhibit 3 – Arizona Game & Fish Department's Arizona's HabiMap accessed 10/12/2015

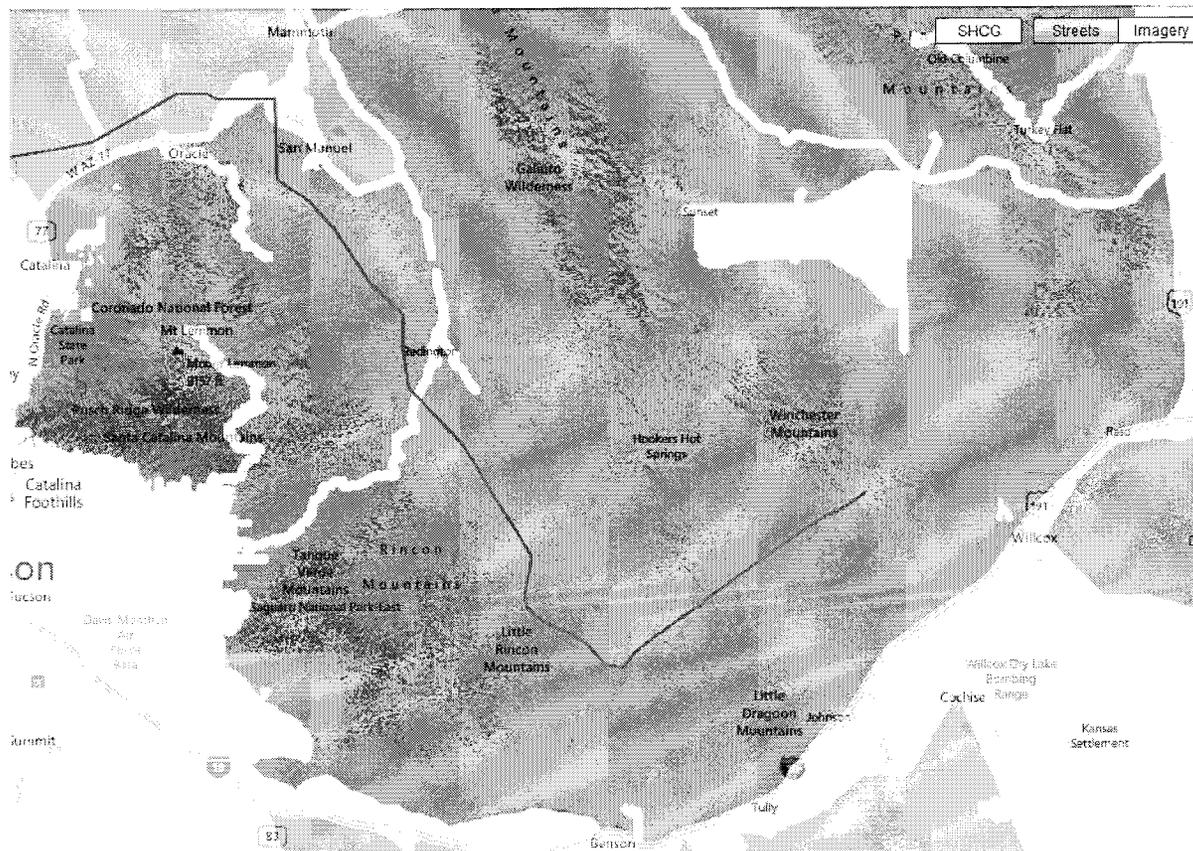
<http://habimap.org/habimap/>

The darker the blue, the less habitat fragmentation. The lower San Pedro watershed/Aravaipa-Galiuro-Santa Teresa region remains the second least fragmented landscape in Arizona, surpassed only by the Grand Canyon area.



Exhibits for the Summary Testimony of Vashti "Tice" Supplee, witness for Potential Party/Intervenor Christina McVie.

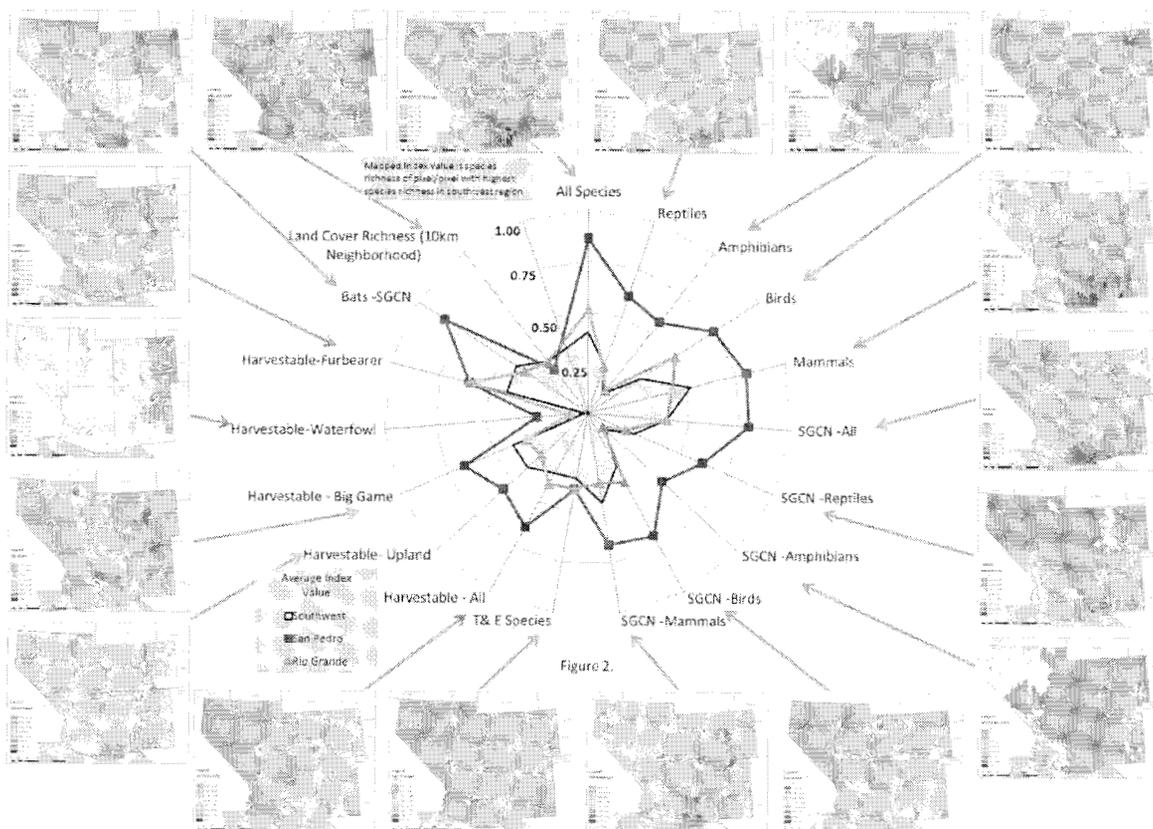
Exhibit 4 – Zoomed in, detailed view of the Arizona HabiMap with a portion of the proposed SunZia route superimposed



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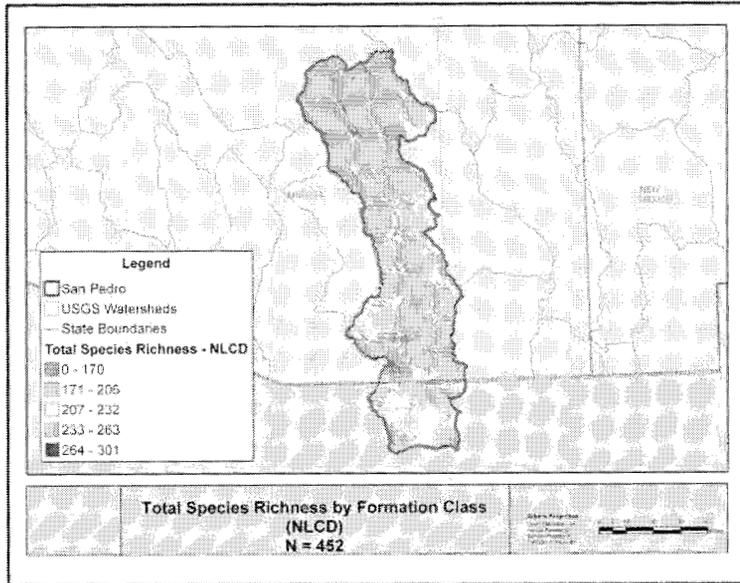
<http://conference.ifas.ufl.edu/aces12/presentations/4%20Thursday/4%20Jacksonville-Tallahassee/Session%207D/YES/1100%20Boykin1.pdf>



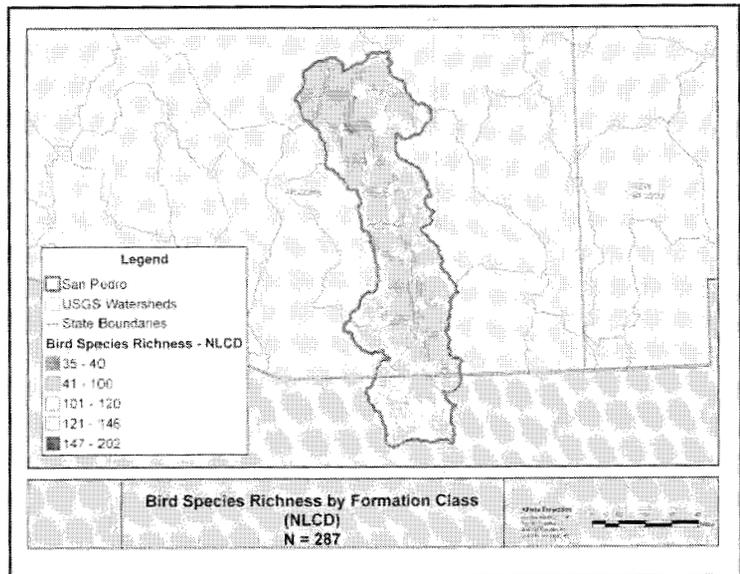
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Exhibit 5b – Total Species Richness Map of the San Pedro Valley Courtesy of Dr. William Kepner, EPA



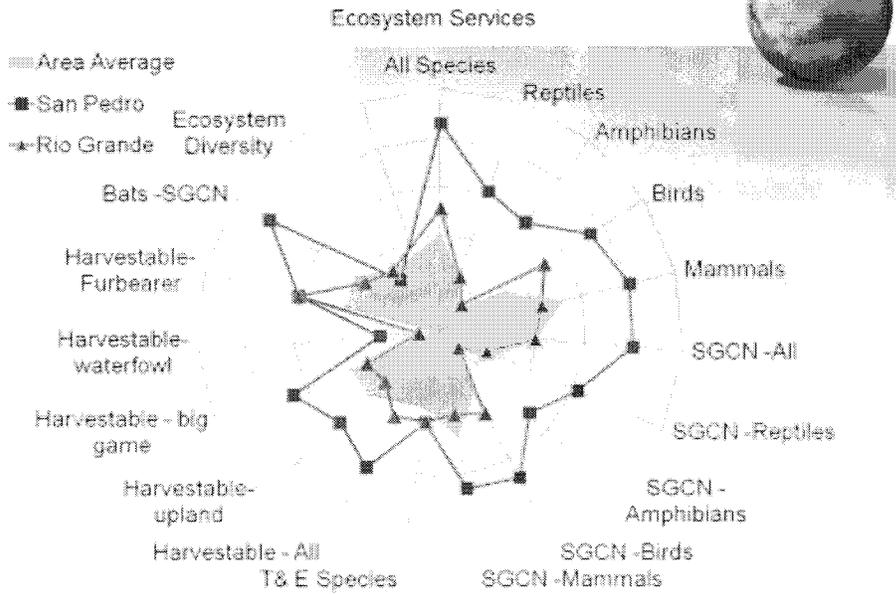
Avian Species Richness Map of the San Pedro Valley Map Courtesy of Dr. William Kepner, EPA



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Exhibit 5c – Radar Graphs comparing the southwest region, Rio Grande and San Pedro

Radar Graphs



Boykin & Kepner, *et al*

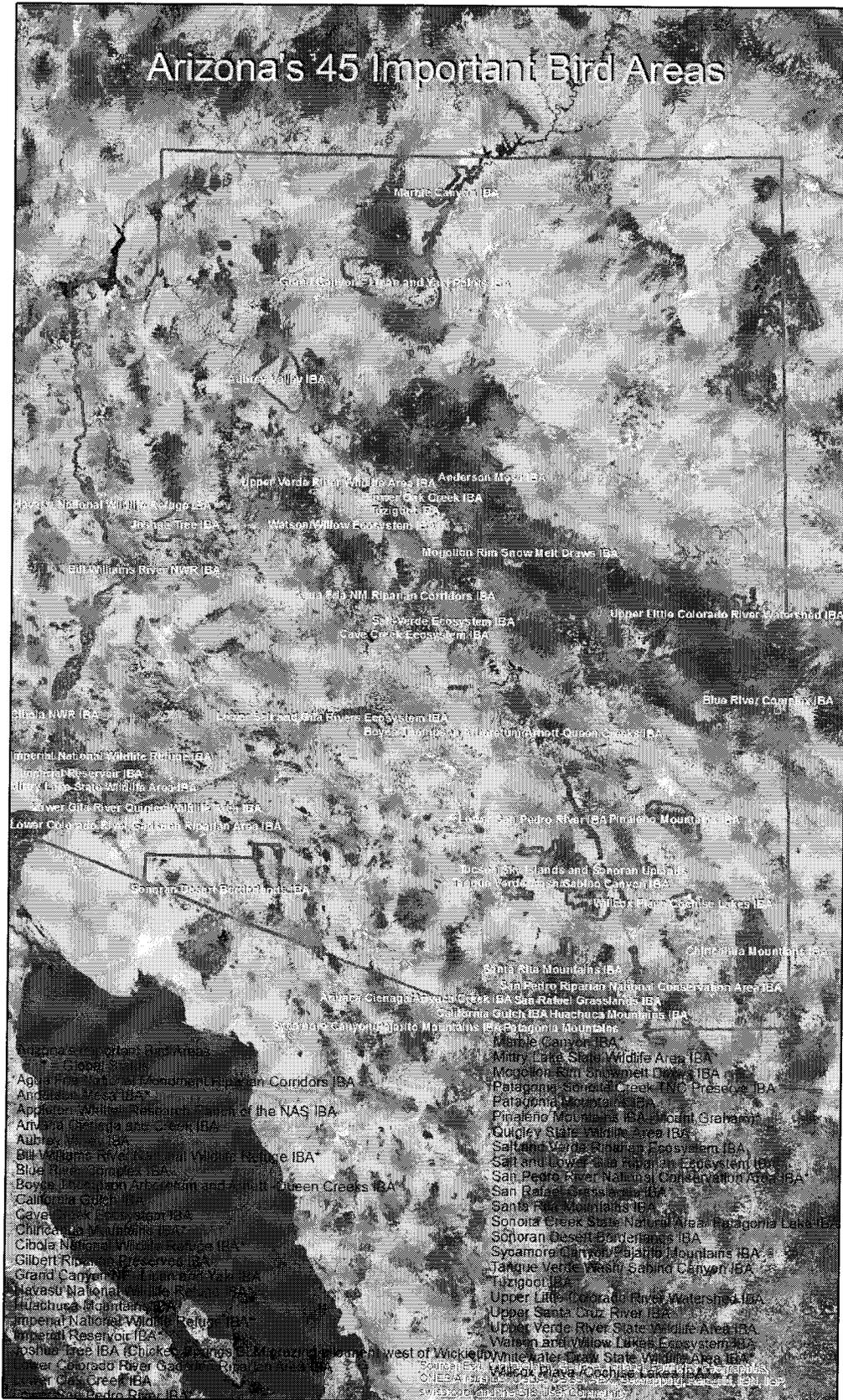
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Exhibit 6a – Arizona Important Bird Area Program State Map accessed 10/12/2015

http://aziba.org/wordpress/wp-content/uploads/2014/07/s-45-IBAs-Map_smaller.png

Arizona's 45 Important Bird Areas



- Arizona's Important Bird Areas
- Agua Fria National Monument Riparian Corridors IBA
 - Anderson Mesa IBA
 - Appleton Wildlife Research Station of the NAS IBA
 - Arizona-Sonora Desert Museum IBA
 - Auhrey IBA
 - Bill Williams River National Wildlife Refuge IBA
 - Blue River Complex IBA
 - Boyce Inland Southwestern and Moffitt-Queen Creeks IBA
 - California Gulch IBA
 - Cave Creek Ecosystem IBA
 - Chiricahua Mountains IBA
 - Cibola National Wildlife Refuge IBA
 - Gilbert Riparian Preserve IBA
 - Grand Canyon National Park IBA
 - Navajo National Monument IBA
 - Huachuca Mountains IBA
 - Imperial National Wildlife Refuge IBA
 - Imperial Reservoir IBA
 - Joshua Tree IBA (Chickadee Springs and grazing allotment west of Wickie)
 - Lower Colorado River Gadsden Riparian Area IBA
 - Lower Gila Creek IBA
 - Lower Gila River

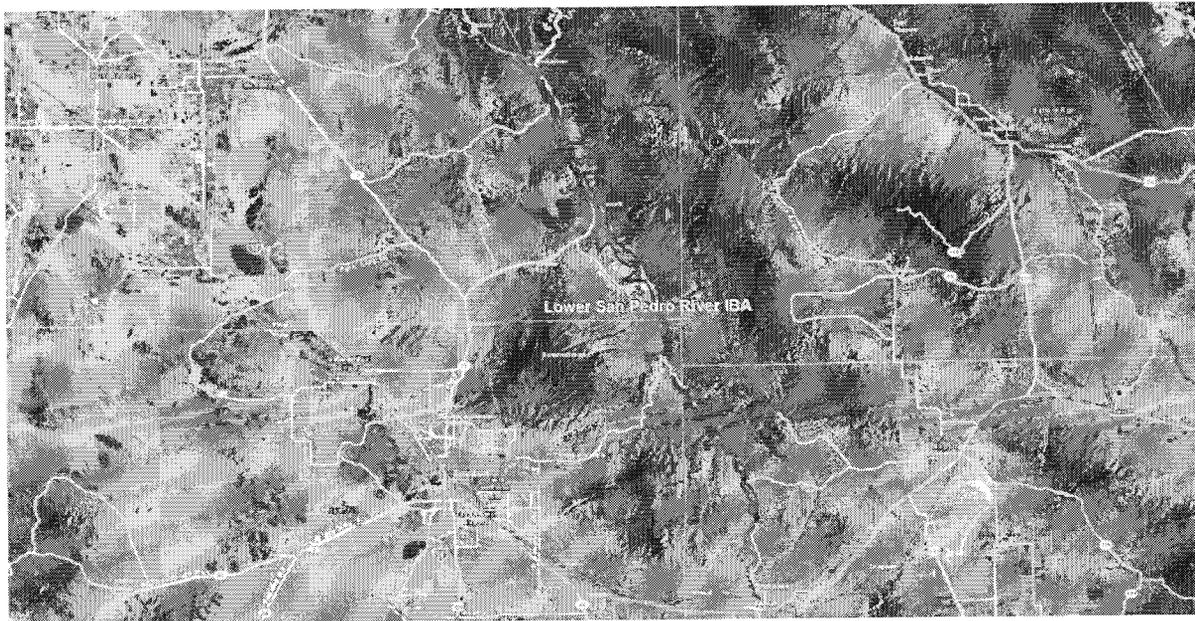
- Mojave Canyon IBA
- North Gila River Wildlife Area IBA
- Patagonia-Santa Cruz TNC Preserve IBA
- Patagonia Mountains IBA
- Pinaleno Mountains IBA
- Quincy State Wildlife Area IBA
- Salt and Verde River Ecosystem IBA
- Salt and Lower Gila River Ecosystem IBA
- San Pedro River National Conservation Area IBA
- San Rafael Conservation Area IBA
- Santa Rita Mountains IBA
- Sonora Creek State Natural Area/Patagonia Lake IBA
- Sonoran Desert Organisms IBA
- Sycamore Canyon/Pajaro Mountains IBA
- Tajique Verde/Wash Sabino Canyon IBA
- Tuzigoot IBA
- Upper Little Colorado River Watershed IBA
- Upper Santa Cruz River IBA
- Upper Verde River State Wildlife Area IBA
- Water and Willow Lakes Ecosystem IBA
- White Water Draw State Wildlife Area IBA
- Willcox Playa/Kochise Lakes IBA

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Exhibit 6b – Arizona Important Bird Area Program State Map Accessed 10/12/2015
http://aziba.org/?page_id=461

Zoomed out view



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Exhibit 6c - Lower San Pedro River Global IBA Map zoomed in view

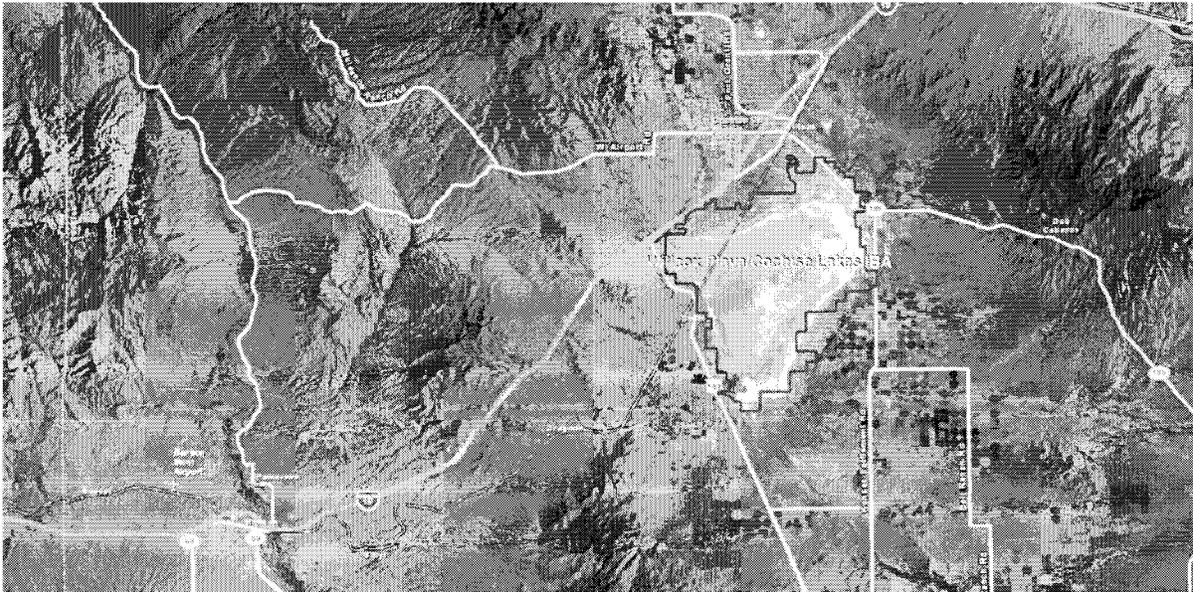


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Exhibit 6d – Arizona Important Bird Area Program Willcox Playa-Cochise Lakes Global IBA accessed 10/12/2015 http://aziba.org/?page_id=712

Zoomed out view

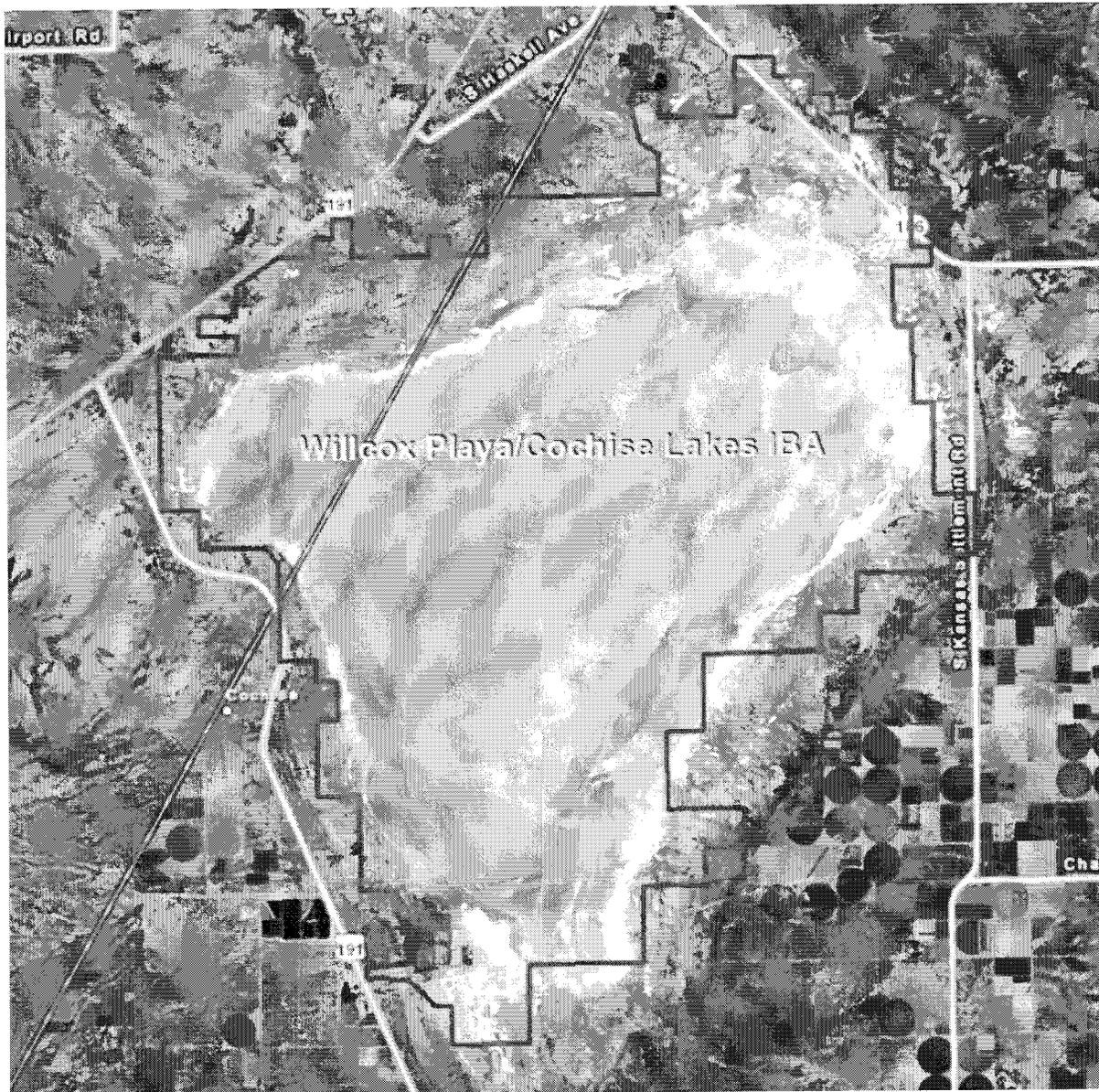


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Exhibit 6e – Arizona Important Bird Area Program Willcox Playa-Cochise Lakes Global IBA accessed 10/12/2015 http://aziba.org/?page_id=712

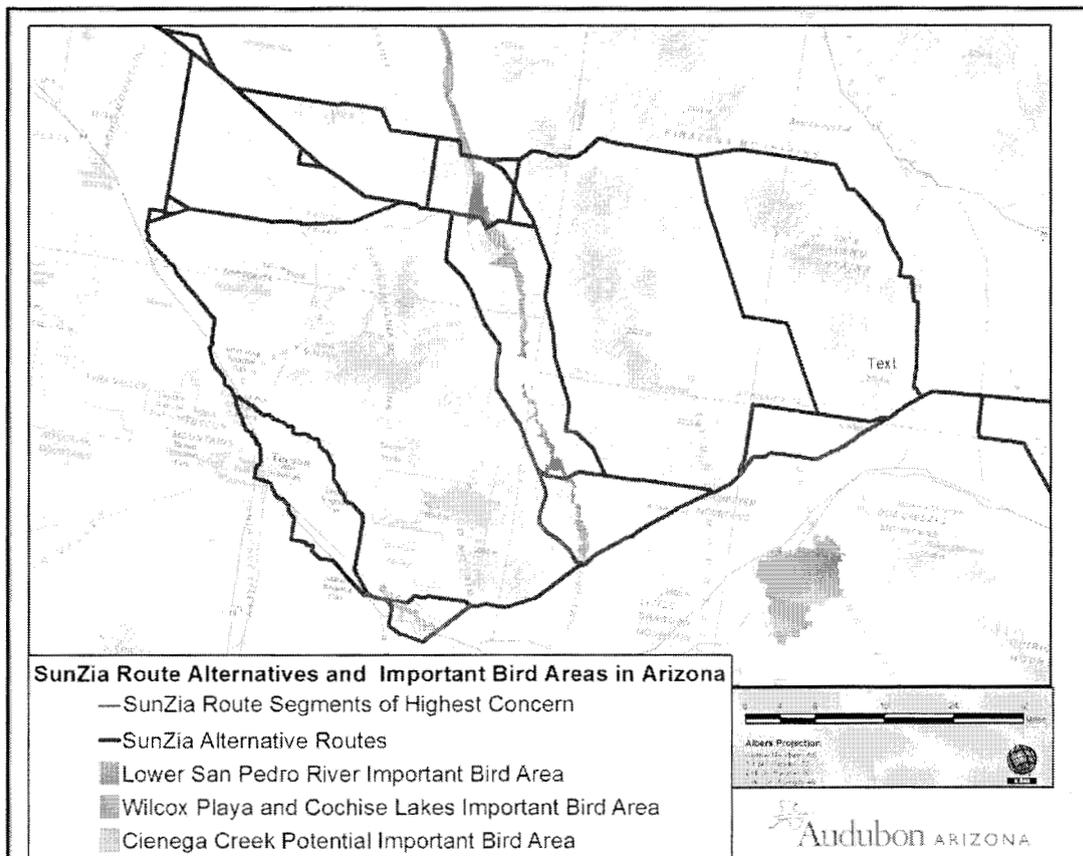
Zoomed in view of the Willcox Playa-Cochise Lakes Global IBA



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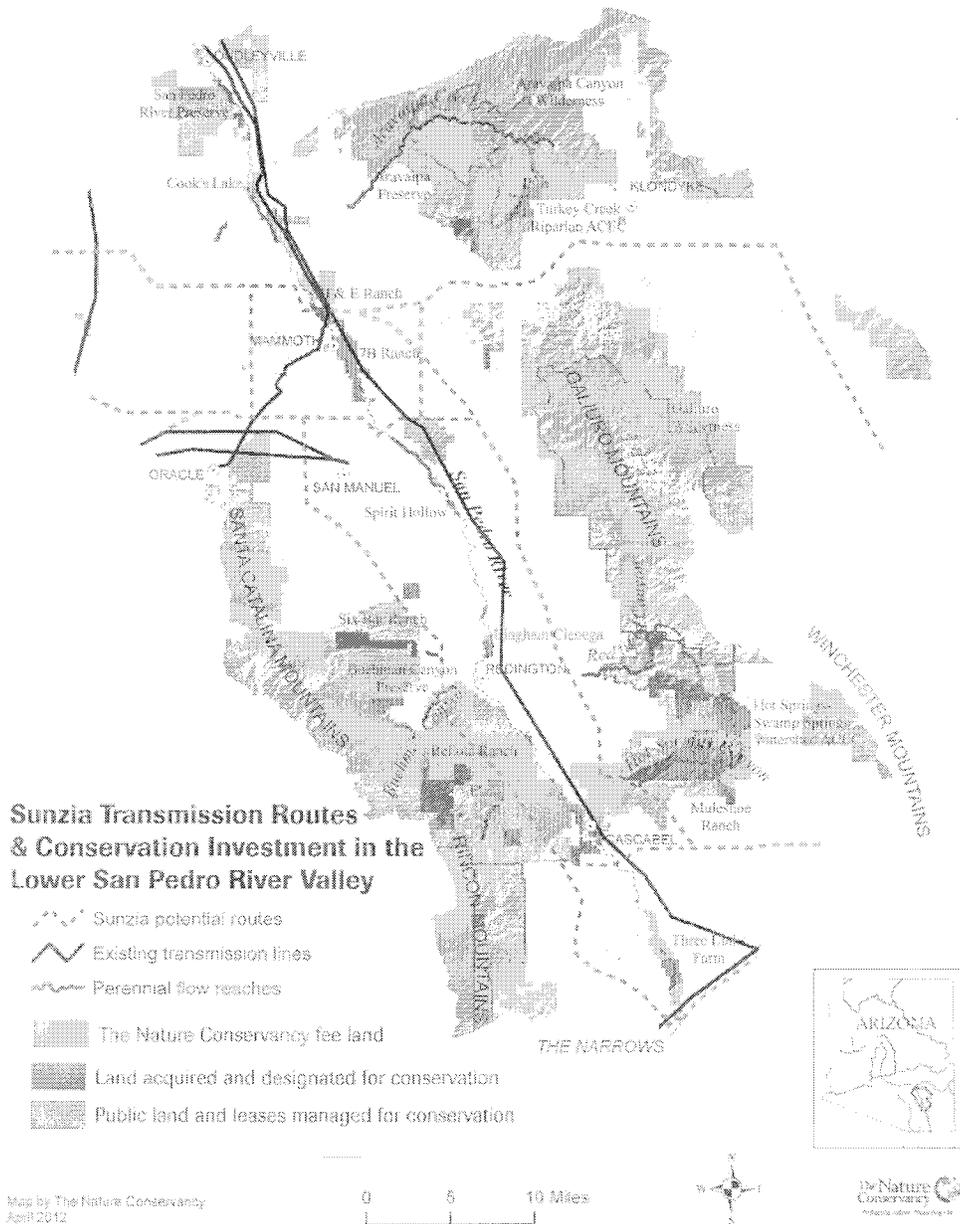
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Exhibit 6f - SunZia Proposed Routes Identified by Audubon Arizona as having highest potential impacts to avian species



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Exhibit 7- April 2012 TNC Map of lower San Pedro Valley Conservation Investments



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Exhibit 8 – docketed letter from The Nature Conservancy to the Committee 10/6/2015



The Nature Conservancy in Arizona
Phoenix Conservation Center
7000 N. 15th Street, Suite 100
Phoenix, AZ 85020-4880

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nature.org/arizona

October 6, 2015

Thomas Chenal, Chairman
Arizona Power Plant & Transmission Line Siting Committee
Attorney General's Office
1275 West Washington Street
Phoenix, Arizona 85007

Re: SunZia Transmission, LLC, application for Certificate of Environmental Compatibility
Docket Number L-00000YY-15-0318-00171

Dear Chairman Chenal,

We appreciate the opportunity to comment on the SunZia Transmission Line Project. We recognize that new transmission lines are integral to managing energy supplies in Arizona, and welcome the chance to participate in their siting.

The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. We have invested considerable resources in developing science-based tools to help site infrastructure that meets the needs of project proponents while minimizing impacts to natural resources. In previous comments on BLM's Environmental Impact Statement we offered our support for the development of this project along existing infrastructure corridors such as the 1-10 corridor.

Given the size and nature of the SunZia project, there will inevitably be significant environmental impacts if built. We appreciate that several potential routes were dropped during earlier phases of this process to avoid some sensitive areas, but remain concerned about the predictable impacts this project will have on the San Pedro River Valley. From a natural resource perspective, the San Pedro Valley is a poor choice for siting large infrastructure projects. Over the last 20 years a number of local, county, state, federal, and private entities have made considerable investments in conservation of the valley to offset the impacts of other infrastructure projects done for the public good. In total, over \$42 million has been spent to protect approximately 192,000 acres. With such a large footprint, a project such as SunZia would jeopardize the long-term viability of those investments, and potentially increase the financial burden placed on those entities to maintain the original intent of their investment. We believe the best alternative would be to route it through other areas with higher levels of existing disturbance. For that reason, we recommend denial of this application.



Should you choose to approve this application, we suggest you include conditions that require explicit mitigation measures that would increase the project's environmental compatibility. We provide some recommendations and rationale below. One point we wish to emphasize is that without mitigation to offset unavoidable impacts, the project increases the likelihood that additional species would receive protection under the Endangered Species Act, which increases costs for all and makes future infrastructure projects more challenging to plan for and implement.

Resources affected in the San Pedro River Valley

The Nature Conservancy and many others have long identified the Lower San Pedro River Valley as a top priority for biological conservation in the Southwest. It supports more than 300 bird species and provides important habitat for millions of migratory birds. The San Pedro River Valley has higher recorded bird species richness (number of species) and density (number of birds per acre) than the Rio Grande Valley. It has been identified by the National Audubon Society as a Globally Important Bird Area. It includes designated Critical Habitat for Southwestern Willow Flycatcher and Yellow Billed Cuckoo. More than 750 plant species have been identified in the riparian corridor and adjacent uplands. The watershed supports more than 80 mammal species, 12 amphibians, 55 reptiles, about 100 butterfly species, and 250 bee species. Historically it supported 13 native fish species, though several have been lost.

Tributary streams with perennial or intermittent flow have similar values to the mainstem San Pedro River. One study found that more species of migrating birds along the San Pedro Valley use isolated wetlands than sites along a continuous riparian corridor, and the relative abundances of most migrating birds were similar. The proposed SunZia route would cross an intermittent reach of Buehman Canyon, which supports a significant riparian community.

Over the last four decades The Nature Conservancy and many other agencies and organizations have been working steadily to protect the Lower San Pedro Basin. Partners in this effort include the Arizona Game & Fish Department, Arizona State Parks Department, Bureau of Land Management, Bureau of Reclamation, Pima County, Saguaro Juniper Corporation, Salt River Project, and U.S. Fish & Wildlife Service. The Resolution Copper Company has offered to protect additional lands in the valley through a Congressionally-approved land exchange. Together, these partners and other private landowners have protected approximately 192,000 acres and invested over \$42.5 million in acquisition of conservation lands and appurtenant water rights. That investment required 70 separate land transactions, beginning in 1970 and continuing through 2014, and does not include adjustments for inflation.

The majority of those investments – about 144,000 acres – were made to satisfy mitigation requirements for habitat losses elsewhere in Arizona that were the unavoidable by-product of projects important to economic development. Jeopardizing the integrity of these conservation projects by construction of the SunZia transmission lines could trigger the need for additional and possibly less-successful mitigation. In particular, the proposed SunZia route would cross

through state trust lands managed by Pima County to provide a mitigation bank as part of their Habitat Conservation Plan; construction of the lines would reduce the conservation credit they receive for those leases.

Habitat loss and fragmentation

Vegetation management under transmission lines has become a major impact due to recent regulatory changes, and contributes to both habitat loss and fragmentation. With the SunZia project, we are particularly concerned about areas where the routes cross riparian areas. Recent construction of other transmission lines in this region has created large openings in previously-continuous riparian forests, which will likely be maintained for the life of those lines. We applaud BLM and the project proponents for designing an alternative that generally avoids perennial stream reaches, but note that several riparian crossings are still proposed. There are currently no required mitigation measures to offset vegetation clearing and maintenance associated with the crossing of riparian habitat. The limited distribution and high biological value of these habitats in the Southwest warrant compensation in cases where sensitive, high value habitat cannot be avoided.

We are very concerned about the direct and indirect effects of new access roads for construction and maintenance of transmission lines. There is direct habitat loss from the footprint of the roads. Where routes cross steep, rocky terrain, road length will be significantly more than the length of the line because construction will require bulldozing circuitous access routes to individual tower sites. We expect these access roads will become permanent features of the landscape to simplify line maintenance, unless their closure and restoration is an explicit mitigation requirement.

Indirect effects of access roads are harder to measure, but no less significant. Roads become vectors for invasive species and sources of soil erosion, especially with frequent use. We anticipate that these access roads will be frequently used by the general public, regardless of structures built to control use. Our experience with managing utility corridors in large landscapes has been that fences and locks are cut, and gates are knocked down or removed on a regular basis. Anything that resembles a road becomes an attractive nuisance and an ongoing management challenge. Those roads then become entry points for further incursions into undeveloped landscapes. The resulting use creates ground disturbance, soil erosion, and noise, fragmenting lands that were formerly continuous habitat for wildlife.

There is a large and growing body of scientific literature on the negative effects of landscape fragmentation. As described in the 2011 Arizona State Wildlife Action Plan, the Arizona Game and Fish Department "has identified the importance of maintaining unfragmented habitats as a critical component in the conservation of wildlife and wildlife habitat as well as addressing existing and predicted global climate change (i.e., protecting blocks of habitat across an elevational and vegetation gradient)."

The construction and maintenance of the SunZia lines would fragment portions of several large intact landscape blocks. The western side of the Lower San Pedro River Valley includes arms of two large blocks: Rincon Mountains (approximately 235,000 acres) and Santa Catalina Mountains (116,600 acres). This route would sever about 31,000 acres off the Rincon block and 17,000 acres off the Santa Catalina block, while reducing the elevation gradient of both.

The ADOT/AGFD Wildlife Linkages Assessment in 2006 identified the portion of the San Pedro River Valley between the Catalina/Rincon Mountains and the Galiuro Mountains as a potential linkage zone and the river corridor as a riparian habitat/linkage zone. It also identified areas south of the Galiuro Mountains. All of these are crossed by the route under consideration. These are areas where protecting the ability of wildlife to move should be considered in the design of fencing and other infrastructure.

The Bureau of Land Management's Final Environmental Impact Statement implies that the impacts of the project extend only to construction and operation of the SunZia lines, but the possibility remains for construction of additional substations and associated development. These could have significant additional impacts by enabling new generation facilities or new load centers such as residential developments, which would merit their own mitigation measures. As part of the cumulative effects analysis and development of mitigation measures, we suggest the Line Siting Committee should preclude placement of interconnections in the most ecologically sensitive segments of this alignment, such as the San Pedro River valley.

Potential for Mitigation

The Nature Conservancy supports a systematic approach to use mitigation for maintaining or enhancing environmental values in situations where development is being planned, despite detrimental environmental impacts. As currently described in federal statute (40 CFR § 1508.20) mitigation includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action;
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

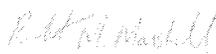
In the BLM's evaluation process, they identified a series of standard and selective mitigation measures (FEIS Tables 2-10, 2-11), but we see those as largely consisting of Best Management Practices. Most notably, they do not include any description of compensation to offset unavoidable impacts.

If avoidance of the San Pedro River Valley is not possible, we recommend the following as a minimum set of mitigation measures that should be required as conditions of the certificate.

- Minimize bird mortality through use of the best available technology to prevent bird collisions with the transmission lines, overhead ground wires, and guy wires. Use tower designs that minimize the need for guy wires.
- Minimize damage to riparian forests along the San Pedro River by requiring the alignment to cross at an ephemeral reach and using sufficiently tall towers to span the riparian trees without vegetation clearing and maintenance.
- Minimize damage to riparian forests in Buehman Canyon by using hilltop placement of towers or sufficiently tall towers to span them without vegetation clearing and maintenance. Avoid construction of roads that would create new access into the canyon.
- Minimize impacts to Paige Canyon by not running parallel down the canyon. This would avoid opening the length of the canyon to recreational off-road driving impacts.
- Minimize the effects of fragmentation by not creating a continuous maintenance road along the route. Use landscape features such as cliffs to maintain permanent barriers to continuous travel.
- Compensation should be required for the loss of mitigation and conservation lands, and for direct and indirect impacts to wildlife habitat.
- Additional substations should not be allowed in the San Pedro Valley, to prevent this project from facilitating major new land development that would alter the rural character of the landscape.

Thank you for the opportunity to comment on this application. We look forward to your decision.

Sincerely,



Robert M. Marshall
Director, Center for Science and Public Policy
The Nature Conservancy, Arizona Chapter

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Arizona Corporation Commission
Docket Control
1200 W. Washington Street
Phoenix, AZ 85007

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Exhibit 9 – SunZia Arizona route alternatives overlaid on Southwestern Biotic Communities

