



Coalition for Sonoran Desert Protection

300 E. University Blvd., Suite 120
Tucson, Arizona 85705
p (520) 388-9925 • f (520) 791-7709
www.sonorandesert.org

September 4, 2008

Arizona Center for Law in
the Public Interest
Arizona League of
Conservation Voters
Education Fund
Arizona Native Plant Society
Center for Biological
Diversity
Center for Environmental
Connections
Center for Environmental
Ethics
Defenders of Wildlife
Desert Watch
Drylands Institute
Environmental and Cultural
Conservation Organization
Environmental Law Society
Friends of Cabeza Prieta
Friends of Tortolita
Gates Pass Area
Neighborhood Association
Neighborhood Coalition of
Greater Tucson
Northwest Neighborhoods
Alliance
Oro Valley Neighborhood
Coalition
Protect Land and
Neighborhoods
Safford Peak Watershed
Education Team
Save the Scenic Santa Ritas
Sierra Club-Grand Canyon
Chapter
Sierra Club-Rincon Group
Silverbell Mountain Alliance
Sky Island Alliance
Sky Island Watch
Society of Ecological
Restoration
Sonoran Arthropod Studies
Institute
Sonoran Permaculture Guild
Southwestern Biological
Institute
Tortolita Homeowners
Association
Tucson Audubon Society
Tucson Herpetological
Society
Tucson Mountains
Association
The Wildlands Project
Women for Sustainable
Technologies

Chairman Doug McKee and Members
Oro Valley Planning and Zoning Commission
11000 N. La Canada Dr.
Oro Valley, AZ 85737

**RE: Arroyo Grande Conceptual Plan Proposed General Plan Amendment –
September 4, 2008 Public Hearing**

Dear Chairman McKee and Commission Members:

I am writing on behalf of the Coalition for Sonoran Desert Protection (Coalition), an alliance of 35 neighborhood, conservation, and community groups directly representing tens of thousands of residents throughout southern Arizona.

The Coalition submitted comments to the Planning and Zoning Commission on June 30, 2008 (attached) regarding the proposed Arroyo Grande General Plan Amendment and would like to follow up on our last letter to address the current proposal under consideration.

First, I would like to thank the Town staff for including a number of our recommendations in the current plan:

- The current configuration identifies a “hard-line” Wildlife Linkage through the property that will remain as Natural Open Space (NOS). Much of this area was included in Dr. Paul Beier’s linkage design report.
- Public roads will not be constructed in the Wildlife Linkage. This will further limit fragmentation of the area and will reduce the likelihood of wildlife fatalities.
- NOS has been defined as undisturbed, and will include no development.
- The Natural Open Space (NOS) is currently configured in a manner that will provide a viable movement corridor for wildlife through the property. The area in the vicinity of Honey Bee Canyon has been designated as NOS, which will further buffer perennial waters from direct impacts.
- The Oro Valley Town Council has formally adopted the Sonoran Desert Conservation Plan and the associated Conservation Lands System as a Special Area Policy for the Arroyo Grande General Plan Amendment.

I would like to bring special attention to this last point. Oro Valley is the first local jurisdiction other than Pima County to work towards the full adoption of the SDCP and the various implementation tools needed to achieve regional conservation. This is a very important step toward comprehensive and regional planning, cooperation and uniformity, and furthers the protection of the ecological viability of the Sonoran Desert. The Coalition wholeheartedly supports this approach, and commends the Mayor and Council for this significant policy decision.

Secondly, the Coalition’s preferred method of conservation in the Arroyo Grande planning area is the

acquisition of the Tortolita Mountain Park expansion lands through auction, as we wrote to you in our previous letter on June 30, 2008. Pima County is currently considering filing an application to pursue Growing Smarter funds to purchase the Tortolita Mountain Park Expansion (TMPE) lands within Arroyo Grande that were reclassified for conservation under the Arizona Preserve Initiative (API) in August 2003. The TMPE API, comprised of 4, 591 acres, is one of four API project areas currently under consideration for acquisition by the County. The Coalition believes that a unique opportunity currently exists to acquire and conserve State Trust Lands, as committed to voters in 1997 and 2004, when Open Space Bonds were approved that included all of the TMPE API lands. Support from the Town would help immensely in the TMPE acquisition effort.

The Coalition requests that the Oro Valley Planning and Zoning Commission, 1) forward a recommendation to Mayor and Council and the Pima County Board of Supervisors stating that the Commission supports the conservation through acquisition of the Tortolita Mountain Park Expansion API lands, 2) request that Pima County submit an application for Growing Smarter funds for these re-classified API lands, and 3) ask that the Arizona State Land Department resubmit the Arroyo Grande conceptual plan excluding these re-classified API lands.

We were very pleased that in her 2007 State of the State speech Governor Janet Napolitano stated:

“...we must also protect our access to open space, particularly in our urban counties. Without state trust land reform, our ability to protect these lands for their conservation values may be in question. We need time to find the answers. In the meantime, let me assure those communities that have reclassified trust lands under the Arizona Preserve Initiative: we will not move those lands to market for other than conservation purposes without local consent.”

This statement emphasizes the willingness of the Governor to move reclassified lands to market for conservation purposes. As an appointee of the Governor, we believe that the State Land Commissioner will be favorable to these four potential requests to purchase State Trust Lands at public auction, including the Tortolita Mountain Park Expansion lands, should affected local governments, such as the Town of Oro Valley, support conservation.

And lastly, please accept our specific recommendations for the current plan amendment, should the API lands not be acquired. The Coalition is pleased with the progress made toward establishment of a functional wildlife linkage connecting the core preserve areas of the Santa Catalina and Tortolita mountain ranges, as displayed on the latest conceptual land use map. However, for conservation to be assured, specific language needs to be adopted regarding both the open space and the configuration of the development within the plan designations. This language should be included at the Plan Amendment stage as additional “Special Area Policies”.

Our recommendations, outlined below, are intended to provide more certainty for conservation and wildlife connectivity. As development assurances are provided, so should conservation assurances. This should be accomplished as early in the process as possible.

1) Buffer to Tortolita Mountain Park (TMP) and federal land:

The northwest node of Master Planned Community (MPC) is proposed with 50% open space. A Special Area Policy should be adopted that requires that the 50% open space be first located on the western 1/3 of the area designated as MPC. This will provide a more sufficient buffer to the core preserve lands in TMP.

2) Transition Areas:

Special Area Policies should be adopted as part of the plan amendment stating that areas directly adjacent to NOS, including the wildlife corridor and all riparian areas, will be buffered by low density development.

Development densities should transition from these areas, with the highest densities furthest from the linkage and riparian areas.

3) NOS Protected in Perpetuity, Management, and Funding:

Areas identified as NOS should be located within common areas, set aside in perpetuity for conservation, and be included within an Arroyo Grande management plan. An assured funding source should be identified and adopted prior to rezoning(s).

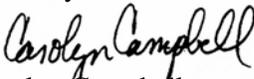
4) Floating Resort(s):

The proposed floating resort(s) should not be located within any areas designated as NOS or Riparian.

Again, the Coalition appreciates that Town staff incorporated many of our previous recommendations into the current plan amendment. We also commend Oro Valley for being the first local jurisdiction within Pima County to officially begin the process of adopting the Sonoran Desert Conservation Plan. We hope our current recommendations will assist in further refining and strengthening the Arroyo Grande plan and we look forward to continuing our work with Oro Valley.

I have attached recommended language for additional Special Area Policies for your consideration, tracked as changes to staff-recommended language. Thank you for considering our recommendations and please do not hesitate to contact me with any questions.

Sincerely,



Carolyn Campbell
Executive Director

Cc: Ms. Sarah More, Planning and Zoning Director
Ms. Michele Muench, Arizona State Land Department
Mayor and Councilmembers

Attachments: June 30, 2008 CSDP letter to Commission
CSDP-proposed Special Area Policy language

Arroyo Grande Special Area Plan Policies

The Arroyo Grande Plan provides an opportunity to incorporate a sustainable development model that includes a mix of housing types and densities, employment centers, and commercial services in balance with environmental preservation.

The Arroyo Grande planning process was a unique collaborative process that included the Arizona State Land Department, Pima County and Oro Valley. Working together the proposed land use map and policies were developed. Input from the community as well as technical experts, in particular from scientific and environmental perspectives, was critical to the development of the plan.

The Arizona State Land Commissioner agreed to an unprecedented 68% open space designation in the planning area. Goals of the plan are to preserve a critical wildlife linkage between the Tortolita and the Santa Catalina mountains, preserve natural riparian areas throughout the plan area, and to preserve significant archeological resources in place.

Land Use and Zoning

1. With the exception of parcels with frontage on Oracle Road, the entire Arroyo Grande area must be master planned prior to any development in the area.
2. Zoning in conformance with this plan shall be in the form of a PAD (Planned Area Development) or, if based on standard Oro Valley zones, the Oro Valley Zoning Code must be amended to include provisions for the Village Center zoning and cluster development.
3. Permitted non-residential land uses shall be determined with a goal of providing significant employment opportunities within the plan area, particularly for local residents, in order to diminish stress on the transportation system. A reasonable goal may be a jobs/housing balance of one job for every two dwelling units in the Village Center area, and one job for every four dwelling units in the overall plan area.
4. Development will emphasize diversity of housing types, a range of densities, and variation in housing prices through the use of mixed-use design and the village model concept.
5. Development within the areas designated as MPC, Village Center, and COP shall be clustered, where feasible, to minimize needed infrastructure and to preserve large areas of contiguous, undisturbed open space and to avoid site specific sensitive resources. Development shall not be allowed in areas designated as natural open space or riparian.
6. There are two "floating resort sites" identified in the Arroyo Grande area. Only one such development is anticipated in the area. Once developed, the other site shall revert to the underlying General Plan land use designation. The resort shall be located and developed in a manner that protects views of the Tortolita Mountains, ~~and~~ otherwise preserves large contiguous areas of undisturbed open

space, and will not be built in areas designated as natural open space or riparian.

Sustainability and Energy Conservation

1. Sustainable development principles and practices should be encouraged and where appropriate incorporated into the project and building design which may include renewable energy production, water harvesting and graywater use, passive solar orientation, multi-modes of transportation, and energy conservation measures.

Open Space and Natural Resources

1. A minimum of 68% of the area will be managed and maintained as **natural open space (NOS)**. The only allowable disturbance will be for access roads, utility crossings, trails, and trailheads. No roads will cross the wildlife linkage area. Any roads crossing a riparian area shall be elevated allowing for wildlife and hydrological movement underneath the roadway.
2. All natural open space is intended to preserve wildlife movement and landscape connectivity between Tortolita Mountain Park and Catalina State Park.
3. 100% of the designated **riparian** areas will be managed and maintained as natural open space and will otherwise comply with the Town of Oro Valley's Riparian Ordinance. Specific delineation of the riparian areas will be ~~established at time of zoning or development~~ based upon the Oro Valley Environmentally Sensitive Lands – Riparian data layer.
4. Within development areas, no new development will adversely affect any riparian areas, or uplands immediately adjacent to the riparian area.
5. A minimum of 50% of this MPC designated area will be managed and maintained as natural open space. ~~Prior to development, studies will be completed to determine the appropriate location(s) for the 50% open space~~ The Natural Open Space shall first be located on the western 1/3 of MPC designation. The ~~remainder of the~~ Natural Open Space requirement will be applied on a project-by-project basis ~~each development unit (Subdivision Plat or Block Plat) will provide a minimum of 50% project level Natural Open Space.~~ Project level development will be designed according to Cluster Development principles in order to consolidate the development footprint and to (1) retain finite and non-renewable cultural resources (2) conserve sensitive on-site biological resources, and (3) maintain a landscape permeable to the movements of biological resources by providing connectivity between the amendment area's NOS and areas north into Pinal County.
6. In that are designated **RLDR** (Rural Low Density Residential) a minimum of 80% of this area will be managed and maintained as natural open space. This Natural Open Space requirement will be applied on a project-by-project basis; each development unit (subdivision plat or block plat) will provide a minimum of 80% project level Natural Open Space. Project level development will be designed

according to cluster development principles in order to consolidate the development footprint and to (1) retain finite and non-renewable cultural resources (2) conserve sensitive on-site biological resources, and (3) maintain a landscape permeable to the movements of biological resources. Project level Natural Open Space will, to the maximum extent possible, be configured in a consolidated, uninterrupted pattern, that connects to other on-site and off-site Natural Open Space areas.

7. Within those areas designated as **MPC, COP, Village Center**, or other commercial designation, a total of 434 acres of floating NOS will be designated for the preservation in place of finite, non-renewable cultural and archaeological resources, or, if not needed for cultural or archaeological resources, will be utilized to further other goals of natural open space.
8. All major riparian and natural open space areas shall be buffered by rural low density development. Development densities shall transition from these areas, with the highest densities furthest from the natural open space and riparian areas.
9. All areas designated as natural open space or riparian shall be set aside in perpetuity by legally binding means.
10. Both a management plan and funding mechanism for management shall be adopted prior to rezoning to protect biological and cultural resources.

Cultural Resource Conservation

These policies address the protection of archaeological and historical sites, as well as the Priority Cultural Resource Complex known as Indian Town, located within the planning area. These policies are intended to preserve finite and non-renewable archaeological sites, historic sites, and traditional cultural places in order to protect their cultural, educational, scientific, recreational, aesthetic, and spiritual values.

1. The entirety of the project must be surveyed for cultural resources and any sites encountered must be recorded with the Arizona State Museum.
2. All cultural resource preservation areas will be monitored through the Arizona Site Stewards Program and others to help ensure the protection of these areas and the preservation of these sites' inherent cultural values.
3. Cultural Resources within Open Space and Riparian areas will be preserved in-place and managed and maintained as natural open space.
4. Archaeological and historical sites determined to be of exceptional importance should be avoided and protected in place.
5. Where avoidance of individual sites cannot be achieved and an impact to the resource will occur, a plan to mitigate the impacts (through site data recovery and documentation, analyses, report preparation, and curation) must be developed and then reviewed and approved by the State Historic Preservation Office and

implemented prior to any ground disturbance

Water and Hydrology

1. Future development of the project will require a detailed strategy to address water conservation for the project ~~may be produced~~. A water conservation program based on reasonable conservation measures will be implemented for residential and non-restricted uses. Interior and exterior water conservation practices for residential and non-restricted uses will include the use of low water use fixture units, low water use landscaping and community water-based recreation centers. The strategy will address opportunities for the use of effluent as a renewable water resource, native plant landscaping, groundwater recharge and minimizing impact to existing private exempt wells in the vicinity of the project.
2. Prior to development a water master plan will be completed identifying: water use demand, fire flow requirements, on-site/off-site water facility location and sizing, loops and proposed connection points to existing water systems, easements and common areas.
3. Consistent with standard Town practice, infrastructure to serve the area must be provided at no cost to the Town. Public infrastructure will be turned over to the Water Utility.

Transportation and Circulation

1. Transportation studies and analyses shall be conducted and completed prior to development, except for Oracle road frontage properties.
2. Future development of the project will require attention to several issues, including the following:
 - Designing the transportation system so as to accommodate and facilitate the mixed-use character of the development
 - Providing for mass transit, for example by means of bus pullouts
 - Providing connectivity for alternate modes of movements, by pedestrians and bicyclists
 - Providing staged capacity improvements, for example, adequate lanes for through and turning movements to accommodate anticipated traffic volumes
 - Designing the roadway network so as to avoid deleterious impacts on the natural and constructed drainage network, to provide all weather access, and to avoid disruption of the roadway network by stormwater.
 - Any roads crossing a riparian area shall be elevated allowing for wildlife and hydrological movement underneath the roadway.
2. A Master Traffic Impact Study shall be completed prior to development of the Master Planned Area.

Proposed Trails and Access Policies for Arroyo Grande Area

1. Prior to development, a Public Trails Master Plan will be detailed within the Arroyo Grande planning area consistent with the Tortolita Mountain Park Master Plan, the Eastern Pima County Trail System Master Plan, Pima Regional Trail System Master Plan and the Town of Oro Valley's Parks and Trails Plan.

Public Facilities, Services, Schools

1. The subject area, upon annexation into the Town of Oro Valley, will be provided with a full range of urban level services including fire and police protection, water/wastewater treatment, transportation facilities/services, and recreational services and facilities. The location of facilities and infrastructure will be fully assessed as part of infrastructure studies specific plan(s) formulation pursuant to the goals, objectives and policies, and will be timed to provide for phased development that can be fully financed as required in responding to changes in market conditions.



**Coalition for
Sonoran Desert Protection**

300 E. University Blvd., Suite 120
Tucson, Arizona 85705
p (520) 388-9925 • f (520) 791-7709
www.sonorandesert.org

June 30, 2008

Arizona Center for Law in
the Public Interest
Arizona League of
Conservation Voters
Education Fund
Arizona Native Plant Society
Center for Biological
Diversity
Center for Environmental
Connections
Center for Environmental
Ethics
Defenders of Wildlife
Desert Watch
Drylands Institute
Environmental and Cultural
Conservation Organization
Environmental Law Society
Friends of Cabeza Prieta
Friends of Tortolita
Gates Pass Area
Neighborhood Association
Neighborhood Coalition of
Greater Tucson
Northwest Neighborhoods
Alliance
Oro Valley Neighborhood
Coalition
Protect Land and
Neighborhoods
Safford Peak Watershed
Education Team
Save the Scenic Santa Ritas
Sierra Club-Grand Canyon
Chapter
Sierra Club-Rincon Group
Silverbell Mountain Alliance
Sky Island Alliance
Sky Island Watch
Society of Ecological
Restoration
Sonoran Arthropod Studies
Institute
Sonoran Permaculture Guild
Southwestern Biological
Institute
Tortolita Homeowners
Association
Tucson Audubon Society
Tucson Herpetological
Society
Tucson Mountains
Association
The Wildlands Project
Women for Sustainable
Technologies

Mr. Doug McKee, Chair
Oro Valley Planning and Zoning Commission
11000 N. La Canada Dr.
Oro Valley, AZ 85737

RE: Arroyo Grande Conceptual Plan Proposed General Plan Amendment

Dear Chairman McKee and Commission Members:

I am writing on behalf of the Coalition for Sonoran Desert Protection (Coalition), an alliance of 35 neighborhood, conservation, and community groups directly representing tens of thousands of residents throughout Southern Arizona. The Coalition's mission is *to achieve the long-term conservation of biological diversity and ecological function of the Sonoran Desert through comprehensive land-use planning, with primary emphasis on Pima County's Sonoran Desert Conservation Plan (SDCP)*. Through this process, biologists have identified and prioritized ecologically-important lands throughout the county. These lands include a preserve system of core lands, connected by important linkage areas to preserve wildlife movement between these core areas. The entire Arroyo Grande planning area has been identified in the SDCP as a key linkage area, the *Catalina-Tortolita Critical Landscape Connection*.

In recent years preservation of critical wildlife linkages has become increasingly important throughout the state as well. While the Arizona Department of Transportation (ADOT), Arizona Game and Fish Department (AGFD) and other collaborating entities have been assessing wildlife linkages throughout Arizona, Pima County and other local jurisdictions have been devoting significant energy and resources to this issue. This includes efforts to accommodate and protect the important wildlife linkage between the Santa Catalina and Tortolita Mountains. Individual Coalition member groups such as Sky Island Alliance, Defenders of Wildlife and Center for Biological Diversity have been very involved with the statewide ADOT and AZGFD-led linkage work.

Over the last two decades, the regional significance of the Catalina-Tortolita wildlife linkage has been established by scientists, planners, and local jurisdictions such as the Town of Oro Valley and Pima County. Noteworthy milestones between 1986 and the present are outlined in our attached comments. Given that the constraints and threats to this linkage are only increasing, it is imperative that all future development decisions be made with the preservation of this linkage as a major priority.

As such, the Coalition for Sonoran Desert Protection respectfully submits the following comments on the proposed General Plan Amendment of the Arroyo Grande Conceptual Plan. I hope you consider these comments and recommendations as the planning process proceeds. Thank you very much.

Sincerely,

Carolyn Campbell
Executive Director

Cc: Ms. Sarah More, Planning Director

INTRODUCTION

The Coalition for Sonoran Desert Protection submits the following comments on the General Plan Amendment proposed by the Arizona State Land Department for their Arroyo Grande Conceptual Plan. To begin, we provide background information on the Santa Catalina-Tortolita wildlife linkage; the State Trust Lands in the Arroyo Grande Conceptual Plan comprise the bulk of this linkage. This background information includes a history of scientific and public recognition of this linkage, along with a more detailed analysis of Pima County's Sonoran Desert Conservation Plan and a recently released report by scientists at Northern Arizona University. Finally, we present a list of recommendations as the Planning and Zoning Commission considers this General Plan Amendment.

BACKGROUND

The preservation of critical wildlife linkages has become an increasingly important issue in the state of Arizona and Pima County in recent years. While the Arizona Department of Transportation, Arizona Game and Fish and other collaborating entities have been assessing wildlife linkages throughout Arizona, Pima County and other local jurisdictions have also been devoting significant energy and resources to this issue. This includes efforts to accommodate and protect the important wildlife linkage between the Santa Catalina and Tortolita Mountains.

Over the last two decades, the significance of this wildlife linkage has been established by scientists, planners, and local jurisdictions such as the Town of Oro Valley and Pima County. Noteworthy milestones include:

- 1986 – A report entitled “Wildlife Habitats in Tucson: A Strategy for Conservation” outlines the important characteristics of this linkage (Shaw, et al. 1986).
- 1997 and 1998 – Pima County and the Town of Oro Valley, respectively, adopt the Tortolita Mountain Park Master Plan.
- 1999 – An application is filed by Pima County through the Arizona Preserve Initiative for conservation classification and acquisition for the Tortolita Mountain Park Expansion / Tortolita East Biological Corridor. This application identifies the Tortolita Mountain Park Expansion as “top priority expansion lands,” and the Tortolita East Biological Corridor as a “biological linkage that will connect the Tortolita Mountain Range with Big Wash, Catalina State Park, the Canada del Oro Wash, the Sutherland Basin and the Coronado National Forest.”
- 2001 – Through Pima County's Sonoran Desert Conservation Plan (SDCP) process, the Catalina-Tortolita Critical Landscape Connection is designated in the Conservation Lands System portion of the County's Comprehensive Land Use Plan. “Critical Landscape Connections” are defined as “areas that provide connectivity for movement of native biological resources, but which also contain potential or existing barriers that tend to isolate major conservation areas” (see below for a more detailed discussion of this designation).

- 2007 – The *Arizona Wildlife Linkages Assessment*, a collaborative effort between the Arizona Department of Transportation, the Arizona Game and Fish and other stakeholders, establishes the Santa Catalina-Tortolita wildlife linkage as one of 16 “highest priority linkages” out of 152 total identified in Arizona based upon multiple criteria including ecological importance, threats, opportunities, etc (Nordhaugen, et al. 2006).
- 2008 – As a result of the statewide *Arizona Wildlife Linkages Assessment*, a report by scientists at Northern Arizona University analyzes the characteristics of the Santa Catalina-Tortolita wildlife linkage via science-based habitat modeling, wildlife linkage design and field assessments (Beier, et al. 2008). This report concludes that “...within 10 years sprawling residential development will sever this linkage unless aggressive measures are taken at once... In our work on 16 linkage designs, we have not seen rates of development of formerly natural land similar to what we have seen in this linkage...**Future urbanization should not occur on private or state land within the linkage design**” (emphasis added).

Thus, the regional significance of this wildlife linkage as natural undisturbed open space has been repeatedly and thoroughly established over the last two decades. Given that the constraints and threats to this linkage are only increasing, it is imperative that all future development decisions be made with the preservation of this linkage as a major priority. This includes the pending decision by the Town of Oro Valley to approve a General Plan Amendment of the Arroyo Grande Conceptual Plan prepared by the State Land Department.

SANTA CATALINA-TORTOLITA WILDLIFE LINKAGE

The Arroyo Grande Conceptual Plan encompasses State Trust Lands (STL) located in Pima County, north of the Town of Oro Valley. The undeveloped lands proposed for a plan amendment lie between two mountain ranges: the Tortolita Mountains to the west and the Santa Catalina Mountains to the east. The Tortolita Mountains wildland block includes the 5,000-acre Tortolita Mountain Park, an essentially roadless area administered by Pima County. The Santa Catalina Mountains wildland block includes over 360,000 acres, primarily administered by the U.S. Forest Service and the Arizona State Parks.

The STL within the proposed conceptual plan have long been recognized as an important landscape-level wildlife corridor that provides habitat connectivity between these two adjacent mountain ranges, as well as suitable habitat for numerous species (Pima County 2001, Marshall, et al. 2000, Beier, et al 2008). Such uninterrupted habitat connectivity is required to sustain viable wildlife populations of sensitive and far ranging species. Wide wildlife linkages are beneficial for several reasons; they: (1) provide adequate area for development of metapopulation structures necessary to allow corridor-dwelling species (individuals or genes) to move through the landscape; (2) reduce pollution into aquatic habitats; (3) reduce edge effects such as pets, lighting, noise, nest predation & parasitism, and invasive species; (4) provide an opportunity to conserve natural fire regimes and other ecological processes; and (5) improve the opportunity of biota to respond to climate change (Beier et al. 2008).

Arizona Wildlife Linkages Assessment

The Santa Catalina-Tortolita wildlife linkage has been identified in the statewide *Arizona Wildlife Linkages Assessment* (Nordhaugen, et al. 2006), spearheaded by the Arizona Department of Transportation and developed by a diverse stakeholder steering committee (See: http://www.azdot.gov/Highways/OES/AZ_WildLife_Linkages/assessment.asp). In fact, of the 152 wildlife linkages identified in this assessment, the Santa Catalina-Tortolita Wildlife Linkage (#81) was identified among a suite of the state's 16 highest-priority wildlife linkages. These high priority linkages have subsequently been analyzed in greater depth via habitat modeling, wildlife linkage design and field assessments conducted by the Beier Lab of Wildlife Ecology and Conservation Biology at Northern Arizona University (Beier et al. 2008). This report, entitled *Arizona Missing Linkages: Tucson – Tortolita – Santa Catalina Mountain Linkages*, details a scientifically-based, multi-species wildlife linkage design that is based upon conservation biology principles and the habitat requirements of badger, black bear, bobcat, desert tortoise, gila monster, javelina, kit fox, mountain lion, and mule deer (See Figure 1).

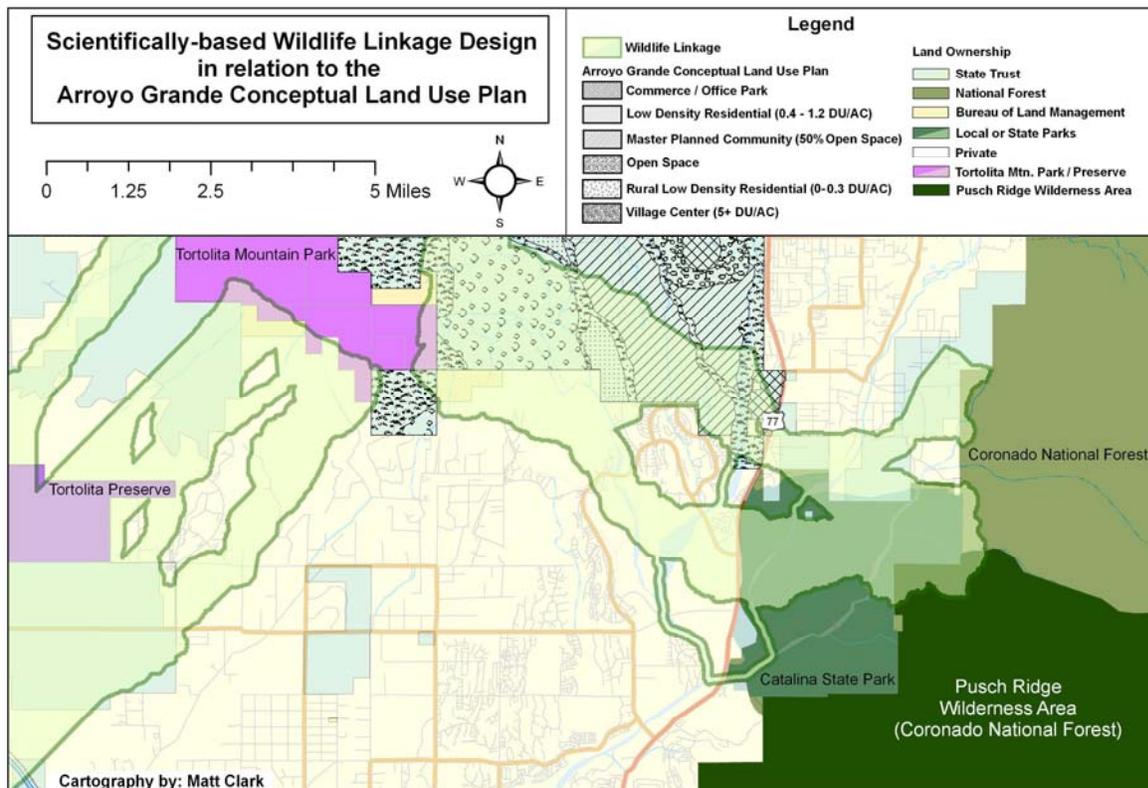


Figure 1. This map depicts a multi-species linkage design connecting 3 mountain ranges. The eastern portion of the linkage, the Santa Catalina-Tortolita Linkage, coincides with the Arroyo Grande Conceptual Plan.

The Tucson – Tortolita – Santa Catalina Mountains Linkage report also cites threats to habitat connectivity within this wildlife linkage that are pertinent to the proposed Arroyo Grande Conceptual Plan -- specifically the urban encroachment, subdividing of rural parcels, improvements to SR-77 and increased vehicular traffic and human disturbance that would result if such a plan were adopted. The report states:

The communities of Oro Valley, Marana, Rillito, Dove Mountain, and Catalina are growing rapidly. Providing connectivity is paramount in sustaining this unique area's diverse natural heritage. Recent and future human activities could sever natural connections and alter the functional integrity of this natural system. Conserving and restoring linkages will ensure that wildlife will thrive in the wildland blocks and the potential linkage area.

The report goes on to caution:

...within 10 years sprawling residential development will sever this linkage unless aggressive measures are taken at once. Given the risk that jurisdictions may fail to conserve the Tucson-Tortolita Linkage, it becomes imperative to conserve the Tortolita-Catalina Linkage. Without it, the Tortolita Mountains will lose much of its species diversity and biotic interactions such as top-down regulation by predators. Species that persist in the Tortolitas will lose much of their genetic diversity. In our work on 16 linkage designs, we have not seen rates of development of formerly natural land similar to what we have seen in this linkage...Future urbanization should not occur on private or state land within the linkage design.

Sonoran Desert Conservation Plan

The Santa Catalina-Tortolita wildlife linkage is also one of six identified "Critical Landscape Connections" in the Sonoran Desert Conservation Plan (SDCP). The Conservation Guidelines for the Critical Landscape Connections state that, "Land-use changes in these broadly defined areas should protect existing biological linkages. Where they occur, barriers to the movement of native fauna and pollination of native flora across and through the landscape should be removed and fragmented corridors of native biological communities should be restored."

The SDCP also cautions that, "[r]oads, other infrastructure services, and residential and commercial land uses within these areas, *depending on configuration*, can result in habitat loss and fragmentation that inhibits the movement of native fauna and interrupts the pollination processes of native flora" (emphasis added). Thus, the *configuration* of the open space used as a wildlife linkage is critical to its ultimate success in allowing the movement of fauna and the pollination of flora across the landscape. This is particularly important in regards to Arroyo Grande. While the State Land Department agreed to allocate 68 percent of their parcels for open space, how this open space is ultimately configured could either lead to a successful or an unsuccessful wildlife linkage.

RECOMMENDATIONS

Given the overwhelming scientific data establishing the importance of the Santa Catalina-Tortolita wildlife linkage and the repeated efforts by local jurisdictions to permanently preserve this assemblage of land, the **Coalition for Sonoran Desert Protection strongly and sincerely recommends that the entire planning area be set aside as natural undisturbed open space. To accomplish this, we recommend that entirety of the state land acreage be acquired from the State Land Department and preserved in perpetuity.**

Should an amendment be approved, however, the Coalition respectfully submits the following recommendations to the Oro Valley Planning and Zoning Commission as they consider a General Plan Amendment of the Arroyo Grande Conceptual Plan:

- 1. Identify a hard-line Wildlife Linkage Area through the property:** The Wildlife Linkage Area shall be Natural Undisturbed Open Space, and shall include all lands identified in the Santa Catalina –Tortolita Linkage report (see Figure 1), which reflects the best available science.
- 2. Adopt the Sonoran Desert Conservation Plan’s Conservation Land System map and associated guidelines:** For example, Important Riparian Area = minimum of 95% open space; Biological Core = minimum 80% open space; Multiple Use = minimum of 66.7% open space.
- 3. Define Natural Undisturbed Open Space (NUOS):** NUOS shall be restricted from any disturbance.
- 4. Configure NIOS to provide for wildlife movement:** NIOS should be configured in a way as to provide for contiguous open space throughout the entire project area
- 5. NIOS parcels shall be in common areas and set-aside in perpetuity:** Conserved land will be established as separate, natural open space parcel(s) from the development area, rather than outside the building envelope of individual lots. Legal safe guards such as conservation easements shall be approved to fully preserve all areas identified as open space in perpetuity.
- 6. Buffer Tortolita Mountain Park with NIOS:** In addition to the wildlife linkage, State Trust Lands in the following sections shall remain as NIOS: Sections 3, 4, 5, and 16 in Township 11 S, Range 13 E.
- 7. Development should avoid the Wildlife Linkage:** Development should be concentrated into the northeastern portion of the lands in question (i.e. Sections 5 and 6 and the northern half of sections 7 and 8 in Township 11 S, Range 14 E., and the northern half of section 1 in Township 11 S, Range 13 E.).
- 8. Provide transition areas to the Tortolita Mountain Park Buffer Area, the Wildlife Linkage Area, Important Riparian Areas, and other preserve lands such as Honey Bee Canyon:** Development adjacent to all of these areas shall be a very low density, and there shall be levels of density transition, with highest densities furthest from NIOS.
- 9. Support construction of span bridges on Oracle Road:** A series of span bridges should be constructed during ADOT’s Oracle Road widening project in order to allow wildlife to safely move under Oracle Road (see also recommendations from Beier et al. 2008, page 23).

- 10. Prohibit construction of new roads across the linkage:** New roads would cause further habitat fragmentation, result in safety hazard associated with vehicle-wildlife collisions, and reduce the overall landscape permeability and habitat suitability for wildlife.
- 11. Adopt a Management Plan:** Areas set-aside as NUOS shall include a management plan in order to ensure the integrity of the conserved area is maintained. The management plan shall have a monitoring component and shall also name the entity responsible for management. Homeowners Associations shall not be the administrators of management, monitoring, or enforcement of NUOS.
- 12. Identify an assured funding source for management:** An endowment or other assured funding should be secured that does not rely on general fund allocations or other discretionary sources.

CONCLUSION

For over two decades, scientists and planners have identified the Santa Catalina-Tortolita wildlife linkage as critical for wildlife in the Arroyo Grande area. From its designation as a “Critical Landscape Connection” in Pima County’s Sonoran Desert Conservation Plan to its classification as one of 16 “highest-priority linkages” in the *Arizona Wildlife Linkages Assessment*, this linkage has repeatedly been identified as a critically important piece of land for wildlife movement and connectivity. With the release of the State Land’s Department Arroyo Grande Conceptual Plan and the pending decision of the Town of Oro Valley to adopt this Conceptual Plan as a General Plan Amendment, we have reached a critical decision-making juncture.

The Coalition for Sonoran Desert Protection urges the Town to consider our recommendations. As currently conceived, the Conceptual Plan threatens to permanently impair the integrity of this vital wildlife linkage and habitats contained therein; therefore, should the General Plan be amended, the Conceptual Plan should not be adopted wholesale. Rather, it should be refined as per the science-based planning efforts. The configuration of development and open space will determine the level to which this linkage is preserved or impaired. The nature of development in this area may determine the viability of diverse wildlife populations, which are valued by both residents and visitors alike, and could either permanently sever this linkage, thus significantly reducing the biodiversity and ecological health of Pima County and the two mountain ranges the linkage connects, or alternatively, could take concrete steps to preserve this linkage in perpetuity.

Works Cited

- Beier, Garding, Majka. *Arizona Missing Linkages: Tucson - Tortolita – Santa Catalina Linkage*. Flagstaff: Northern Arizona University, 2008.
- Marshall, et al. *An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion*. Tucson: The Nature Conservancy, 2000.
- Nordhaugen, et al. "Arizona's Wildlife Linkage Assesment Document." *Arizona Depatment of Transportation*. December 2006.
http://www.azdot.gov/Highways/OES/AZ_WildLife_Linkages/assessment.asp (accessed June 2008).
- Pima County. *Sonoran Desert Conservation Plan*. Tucson: Pima County, 2001.
- Shaw, Burns, Stenburg. *Wildlife Habitats in Tucson: A Strategy for Conservation*. Tucson: University of Arizona, 1986.