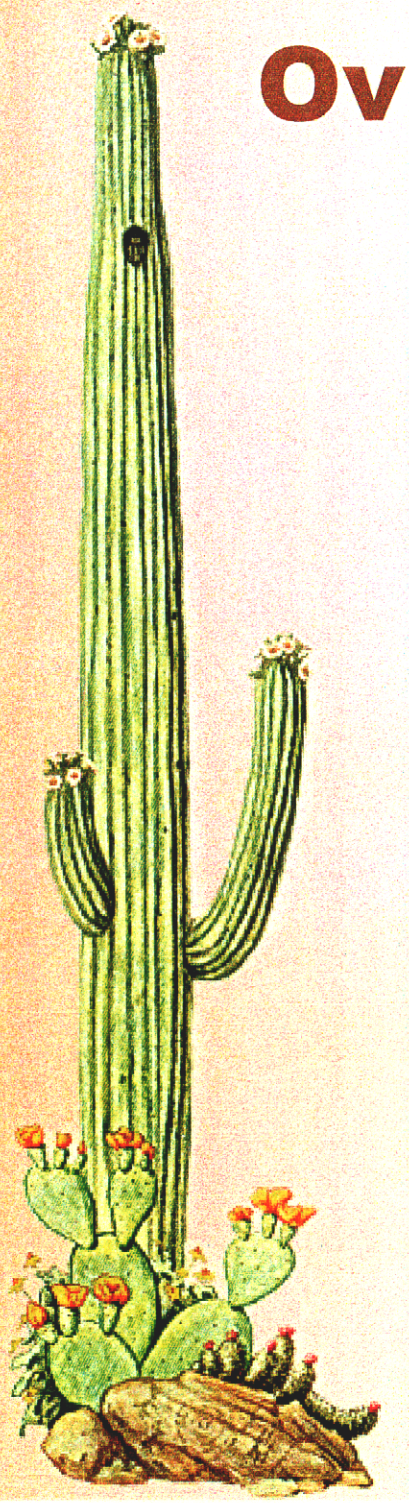
Sonoran Desert Conservation Plan

A long term vision for protecting the heritage and natural resources of the west



Overview:

- Thinking Differently about Land Planning and Urban Growth
- Defining Local Resource Values
- What is the Sonoran Desert Conservation Plan?
- Science based Natural Resource Planning
- Implementation

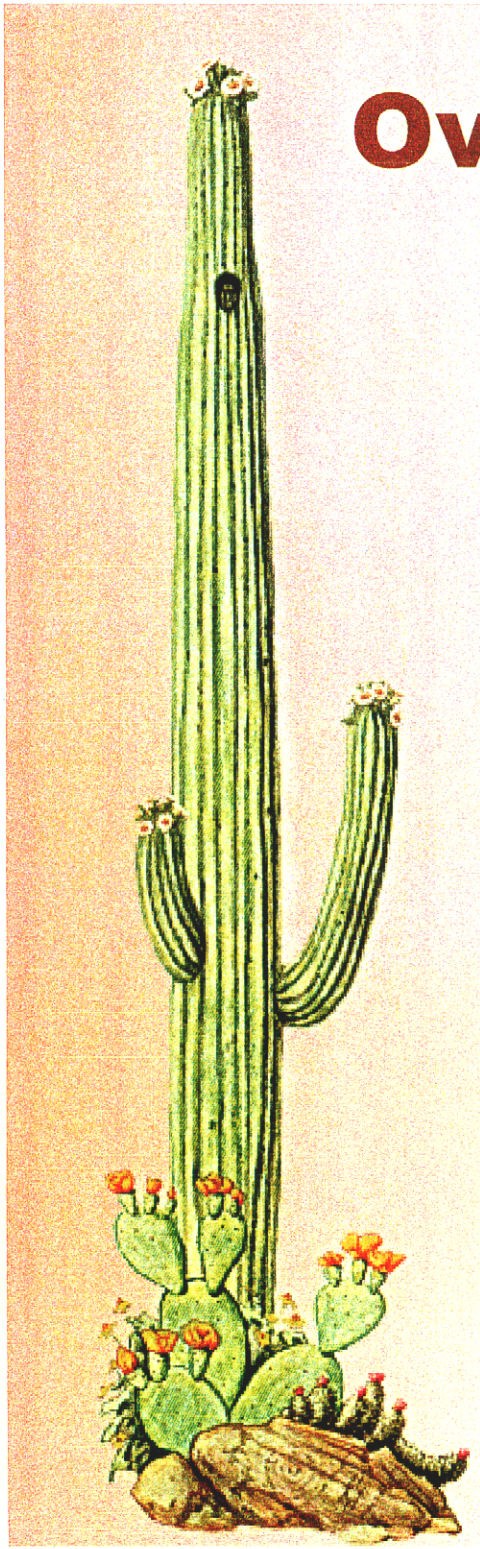
Thinking Differently about Land Planning and Urban Growth

Thinking Differently about Land Planning and Urban Growth

- Natural Resources as a benefit versus a hazard
- Biodiversity as a community benefit
- Determining which lands and resources should be excluded or protected from conventional urban development

Traditional Environmental Planning: avoiding potential hazards

- Antiquities Act, 1906, President Theodore Roosevelt
- National Environmental Policy Act (NEPA), 1969, President Richard Nixon
- Clean Air Act, 1970, President Richard Nixon
- Endangered Species Act, 1973, President Richard Nixon
- Safe Drinking Water Act, 1974, President Gerald Ford



Overview:

- Thinking Differently about Land Planning and Urban Growth
- **Defining Local Resource Values**
- What is the Sonoran Desert Conservation Plan?
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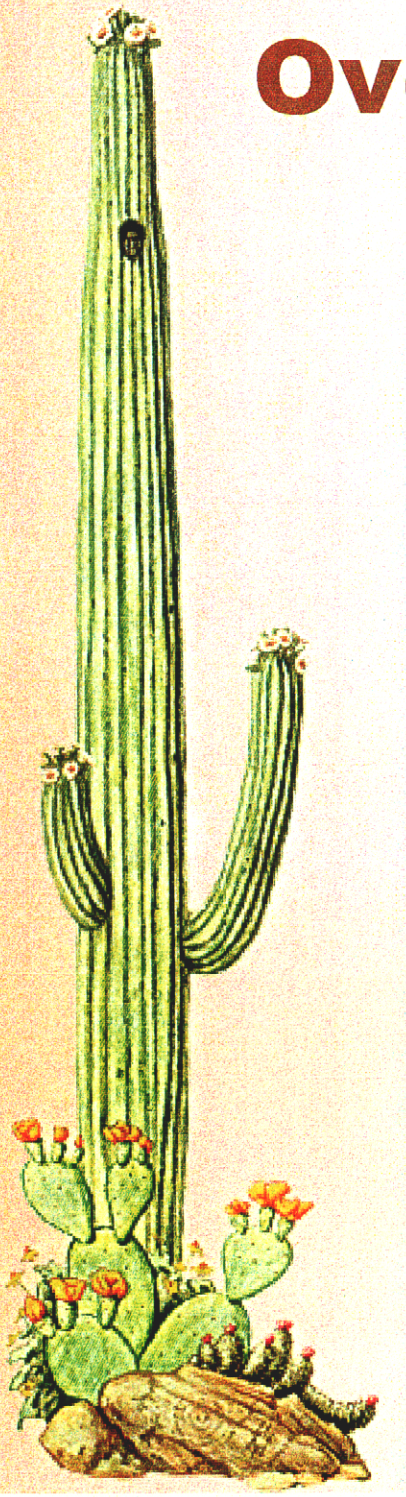
Defining Local Resource Values

- Scenic
- Historic
- Cultural
- Biological or
- Ecosystem



Overview:

- Thinking Differently about Land Planning and Urban Growth
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- **What is the Sonoran Desert Conservation Plan?**
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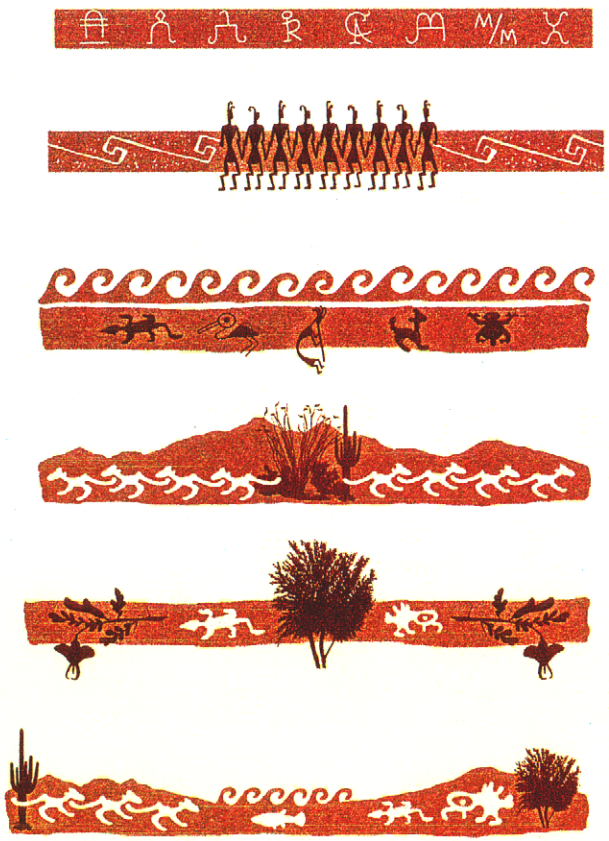
What is the Sonoran Desert Conservation Plan?

The Sonoran Desert Conservation Plan is a long term vision for protecting the heritage and natural resources of the West in Pima County.

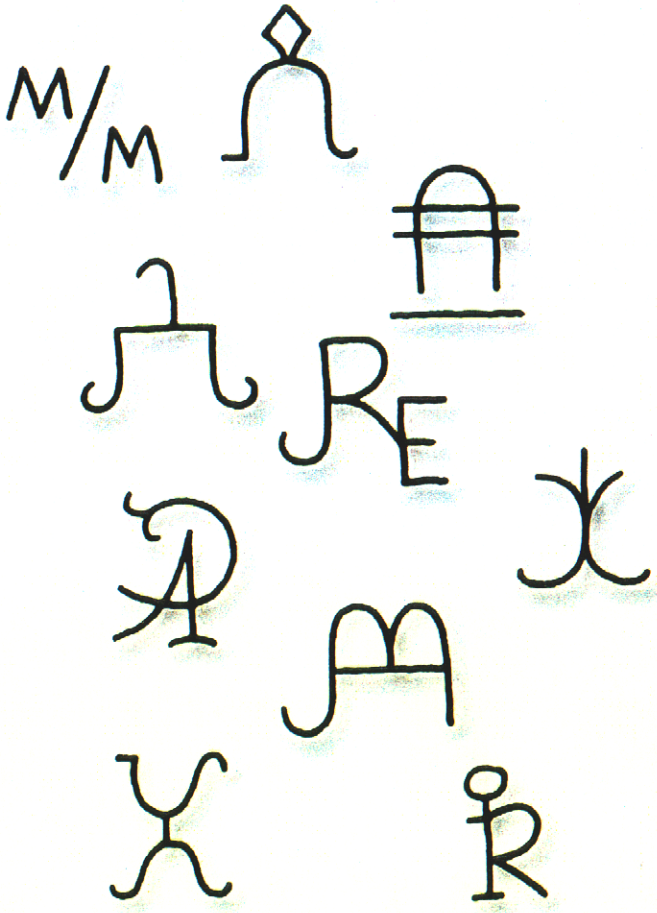
Elements of the Sonoran Desert Conservation Plan



- Ranch Conservation
- Historical and Cultural Resources
- Riparian
- Mountain Parks
- Critical and Sensitive Habitat
- Biological Corridors

Ranch Conservation Element

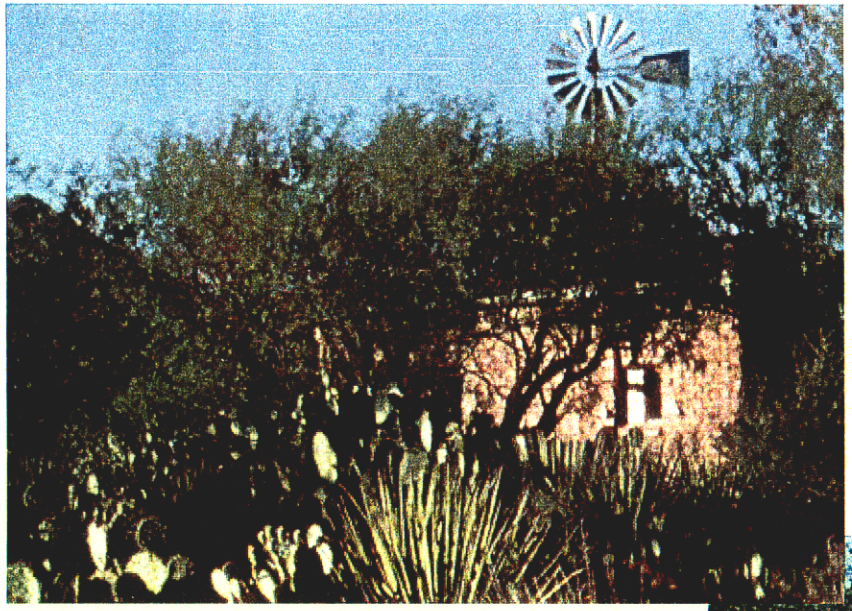
- Prevents land fragmentation
- Maintains an important traditional industry
- Maintains the heritage and culture of the rural West
- Conserves water resources
- Defines the urban boundary

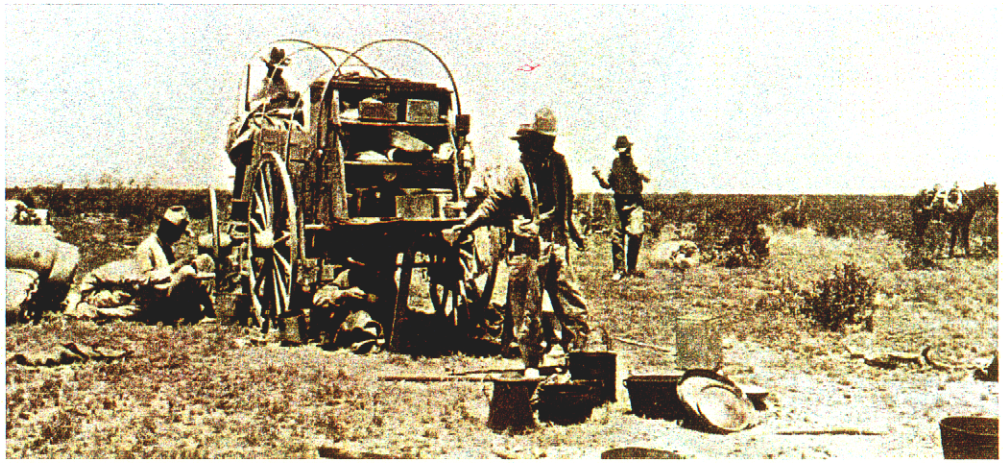


Prevents Land Fragmentation

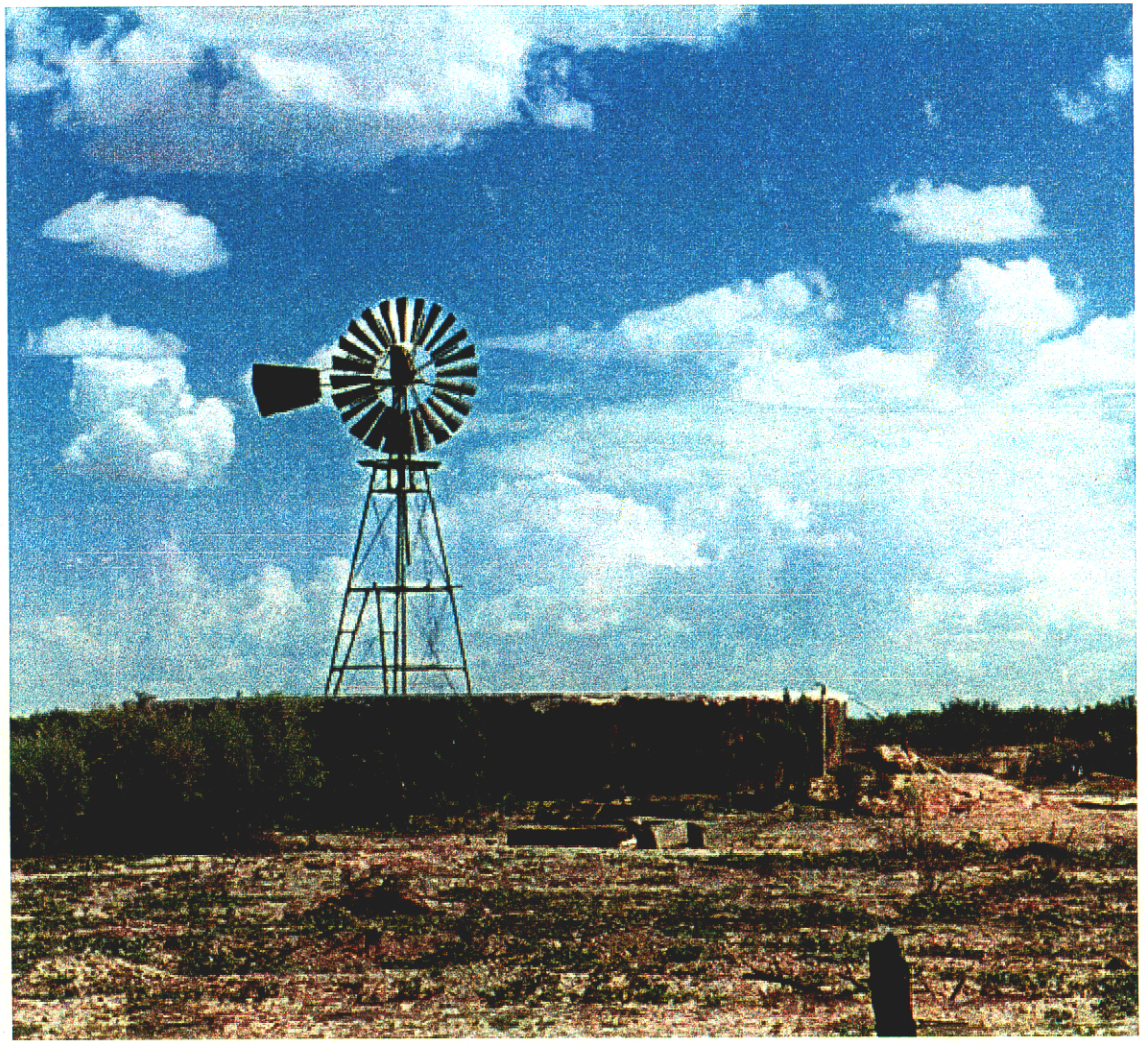
Maintains an Important Traditional Industry

Maintains the Heritage and Culture of the Rural West

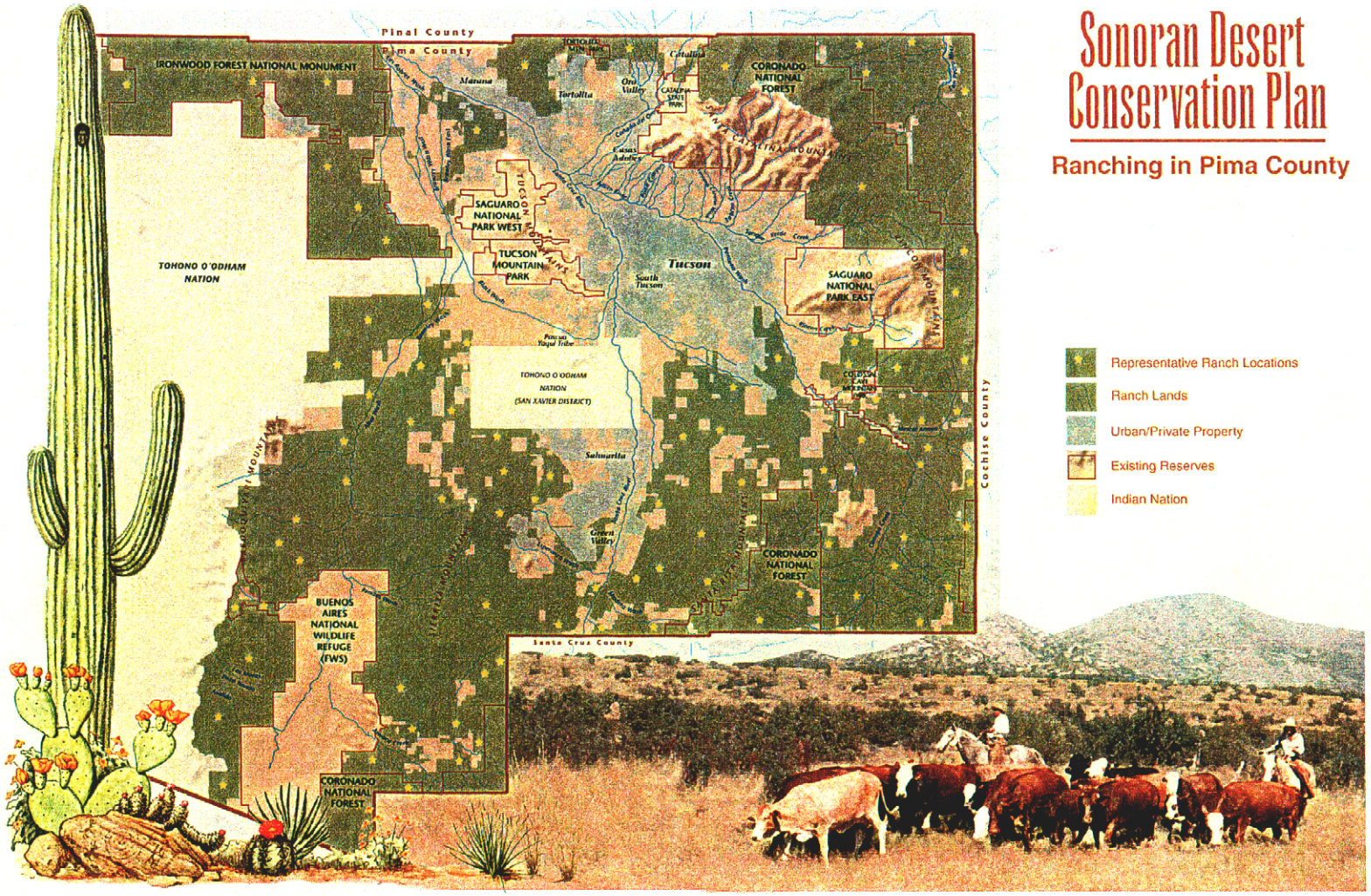




Conserves Water Resources



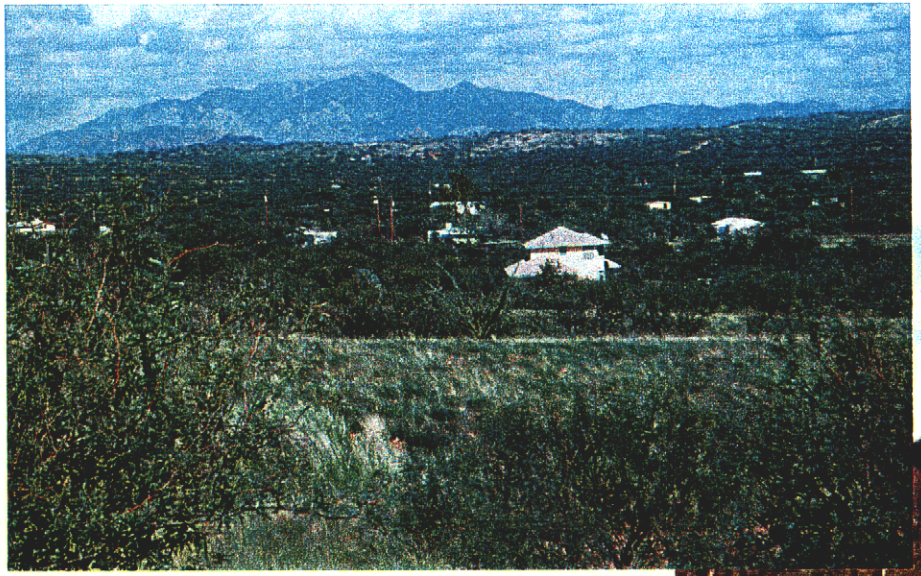
Defines the Urban Boundary



Sonoran Desert Conservation Plan

Ranching in Pima County

Without Ranch Conservation...



Sonoran Desert Conservation Plan

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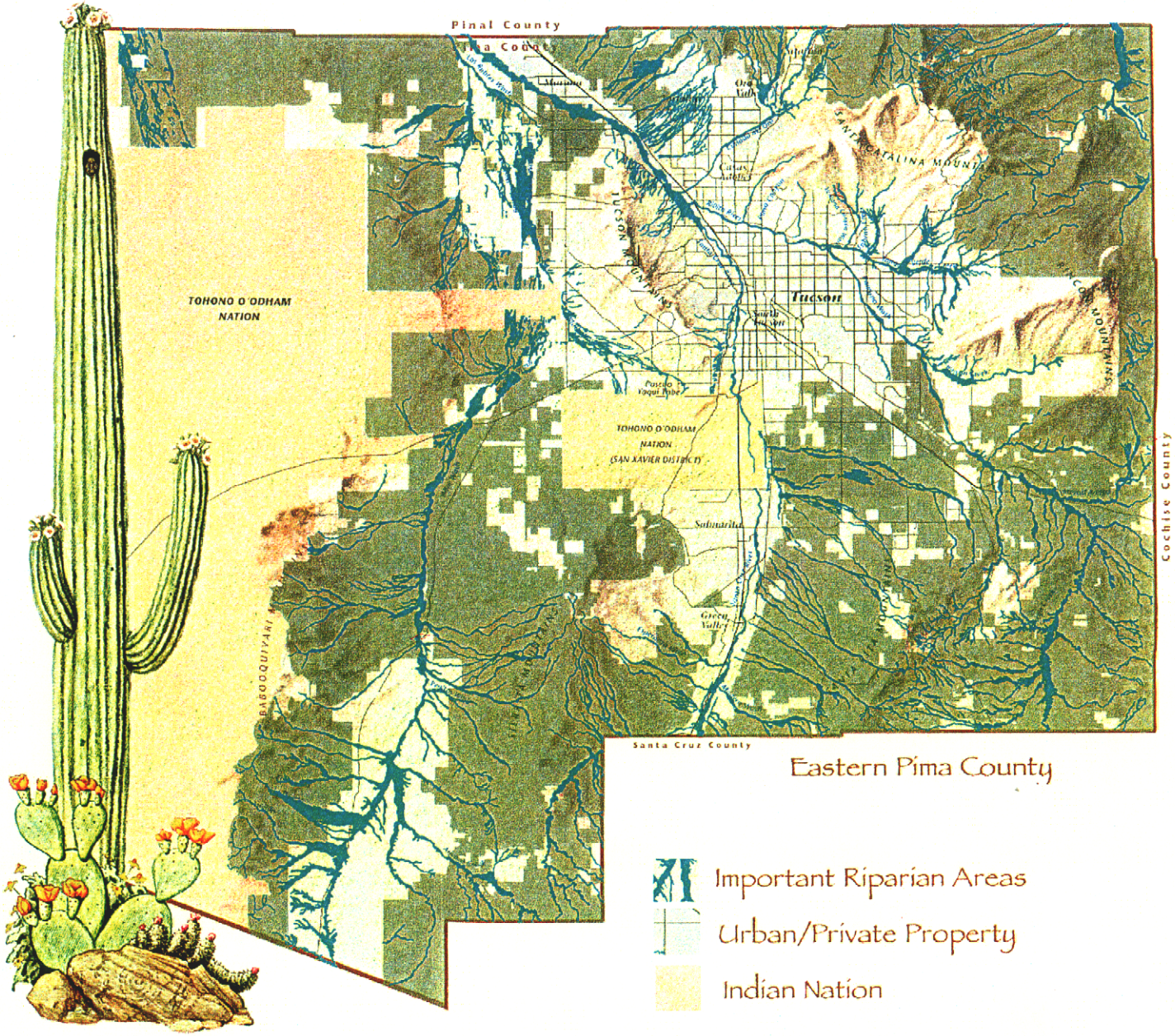


Eastern Pima County

Ranch Lands in Eastern pima County

Important Riparian Areas

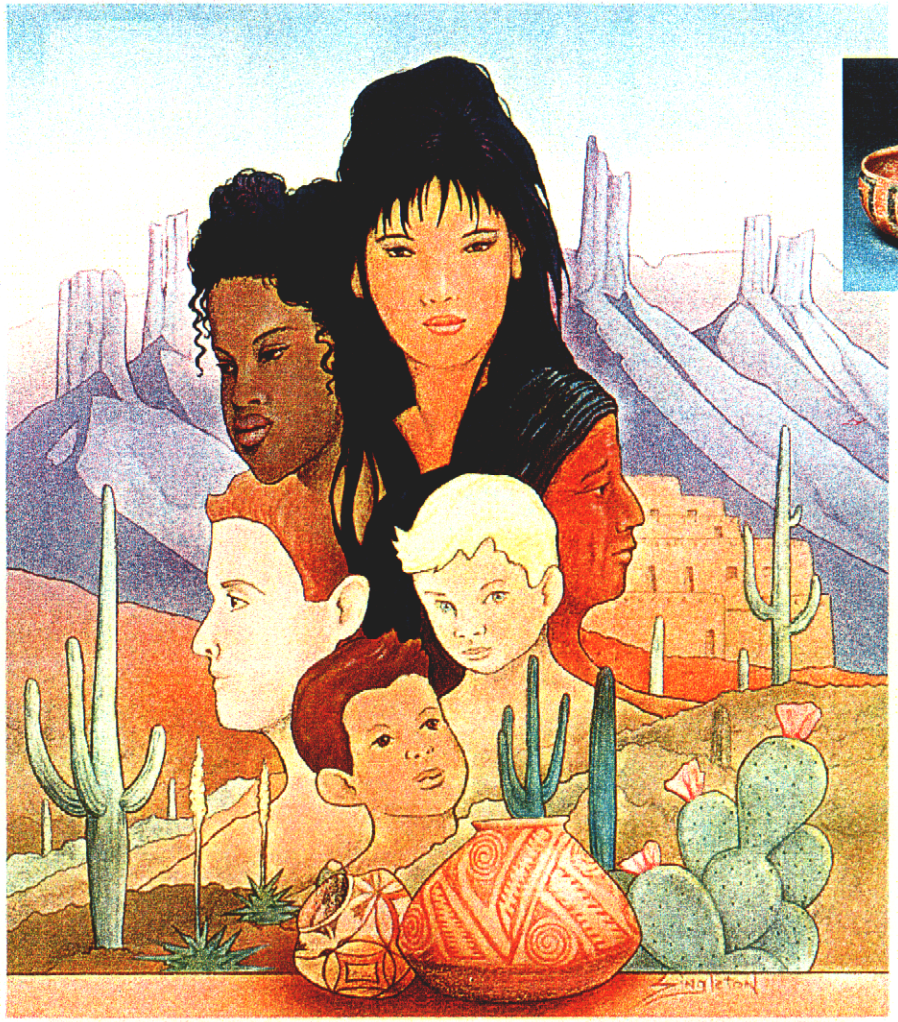
Urban/Private Property

Indian Nation

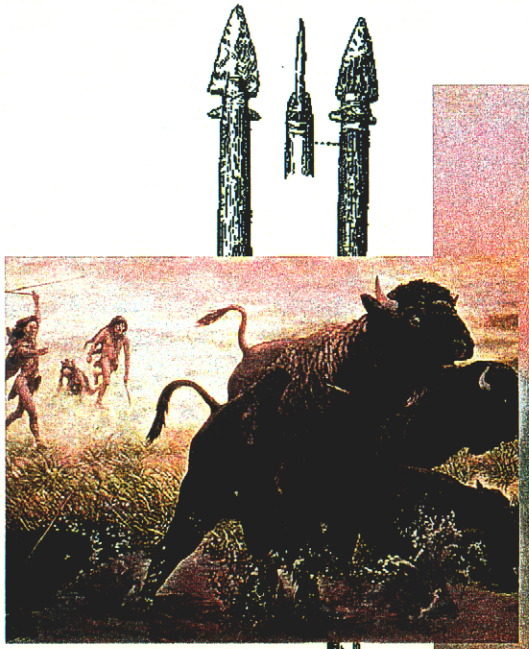
Historic and Cultural Resources Element

- Protects our cultural identity
- Preserves our cultural and historic heritage
- Retains and maintain cultural diversity
- Saves the past for the future

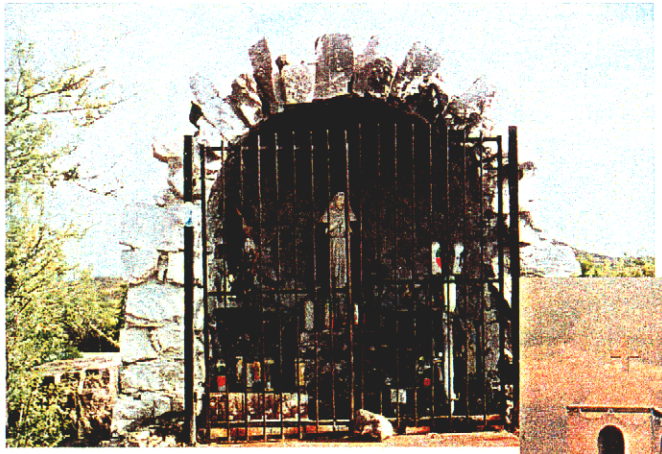
Protects Our Cultural Identity



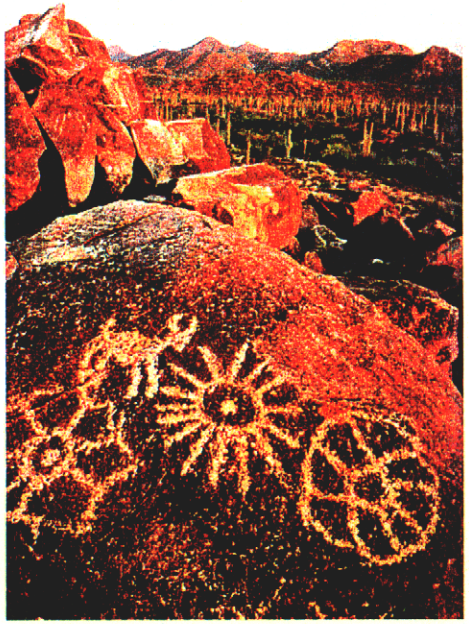
Preserves Our Cultural and Historic Heritage



Retains and Maintains Cultural Diversity



Saves the Past for the Future



Without Historic and Cultural Resources...

Sonoran Desert Conservation Plan

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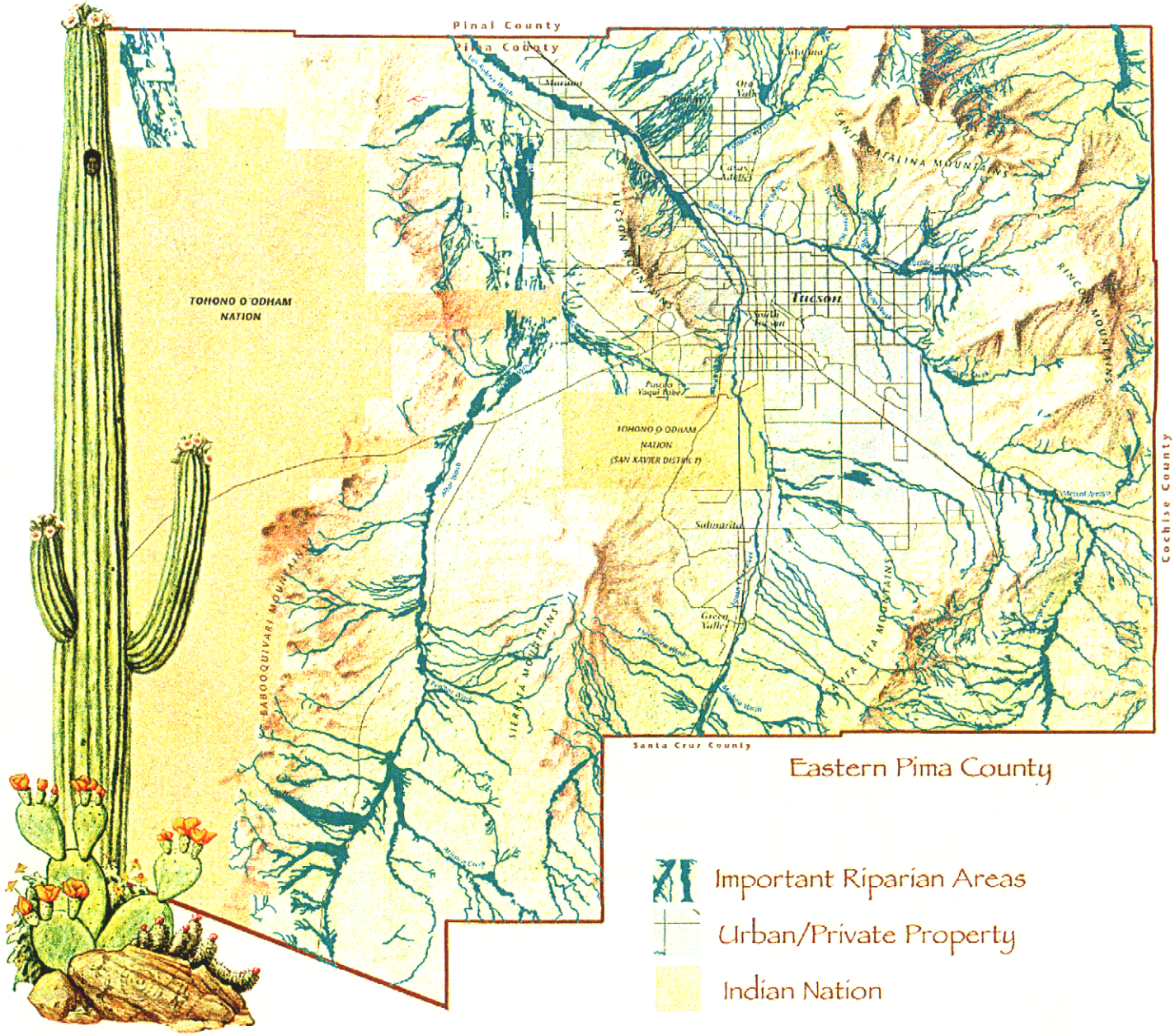

Eastern Pima County

Important Riparian Areas

Urban/Private Property

Indian Nation

Cultural Resources

- High Sensitivity Archaeological Zone
- Medium Sensitivity Archaeological Zone
- Sensitive Archaeological Zone
- Priority Archaeological Sites
- Archaeological Sites
- Priority Historical Sites
- Ghost Towns
- Historic Communities

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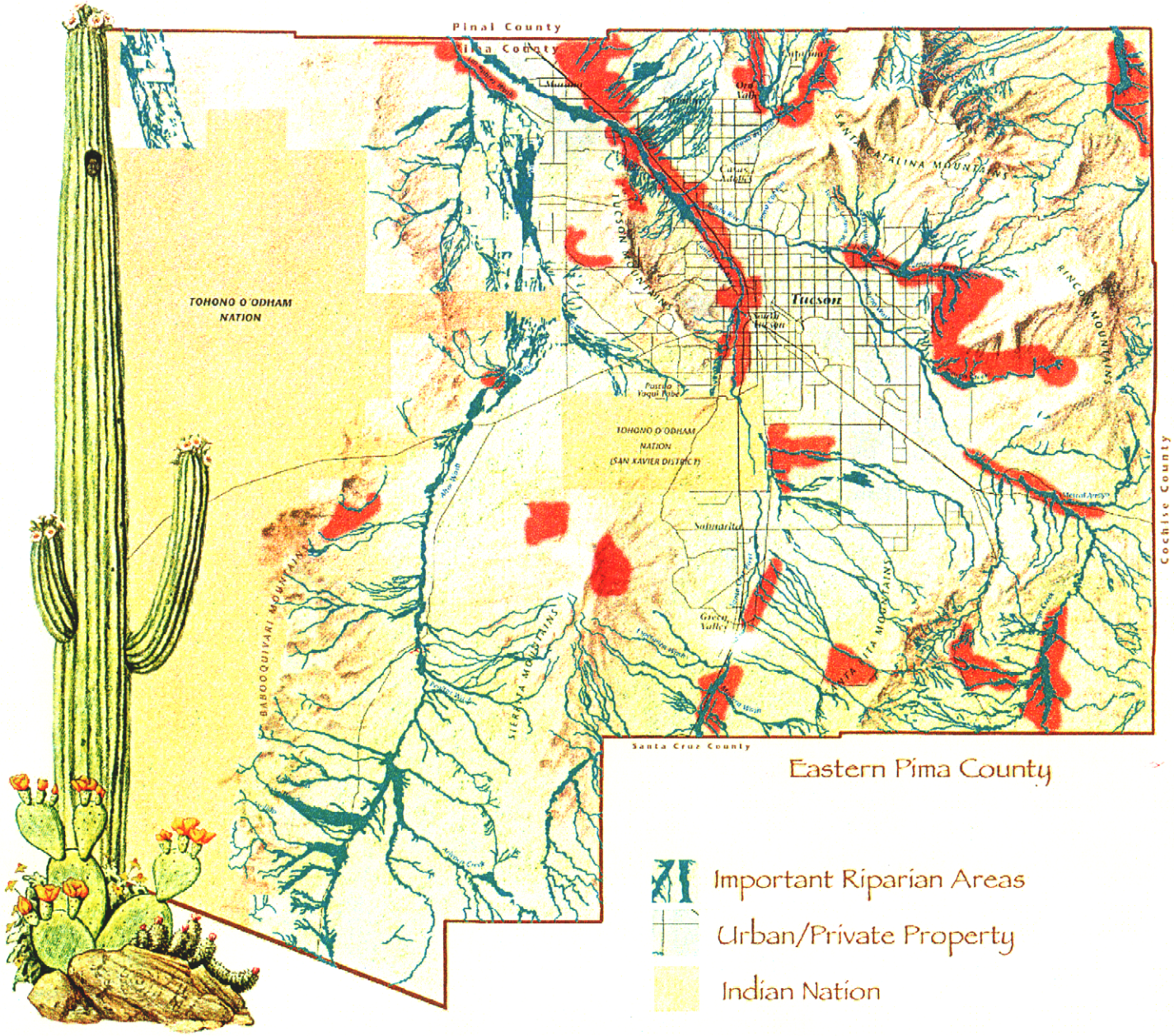

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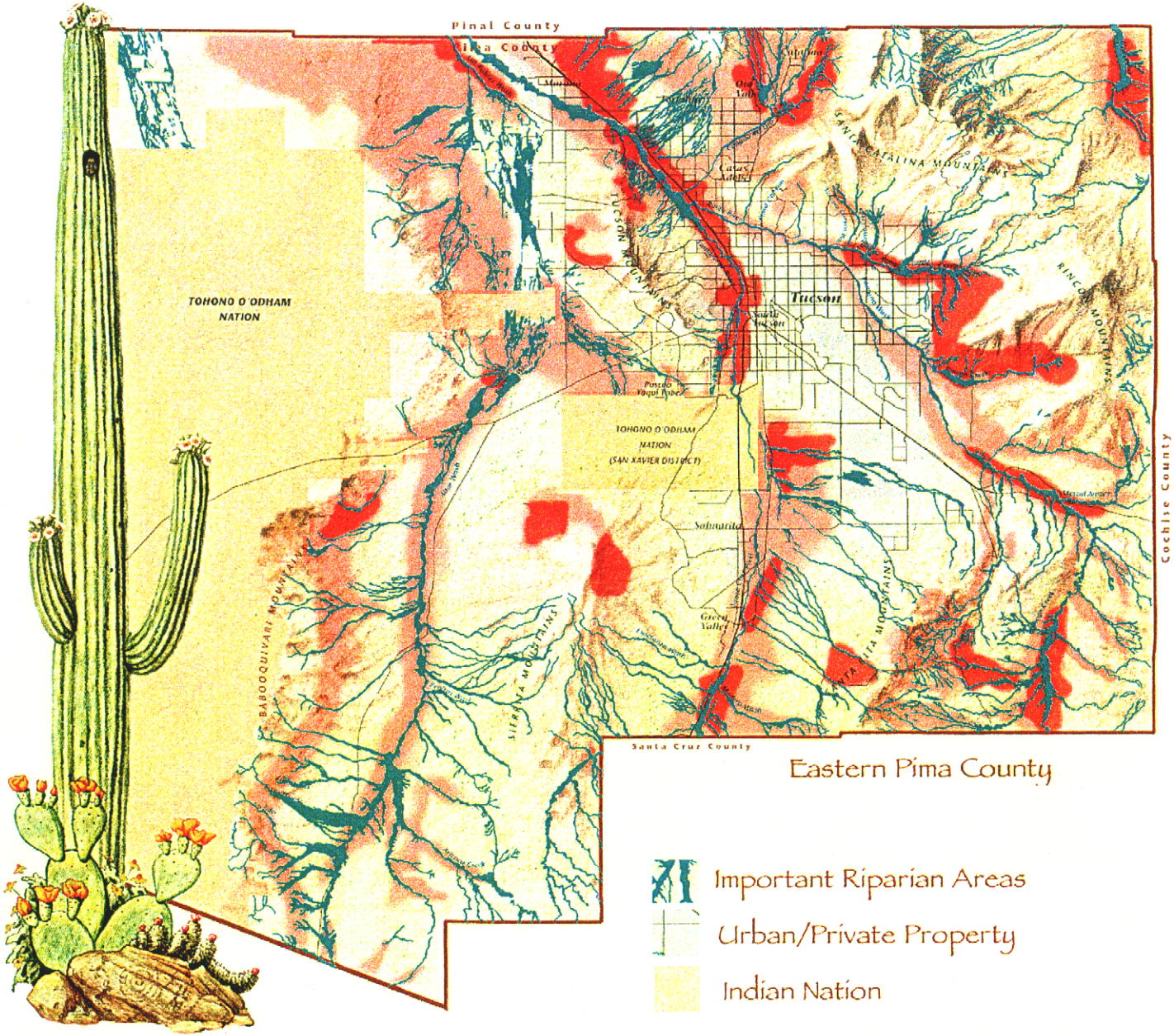

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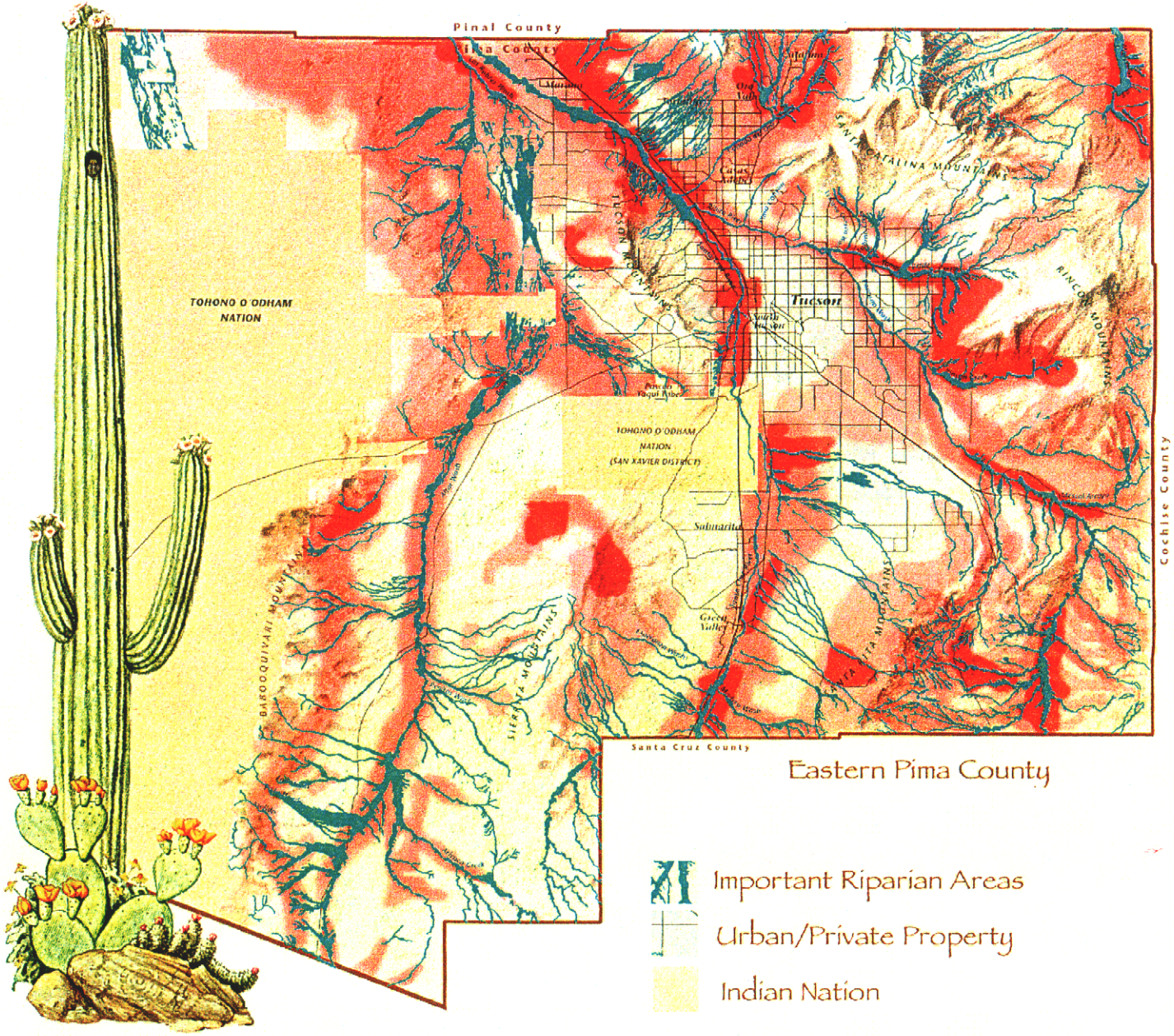

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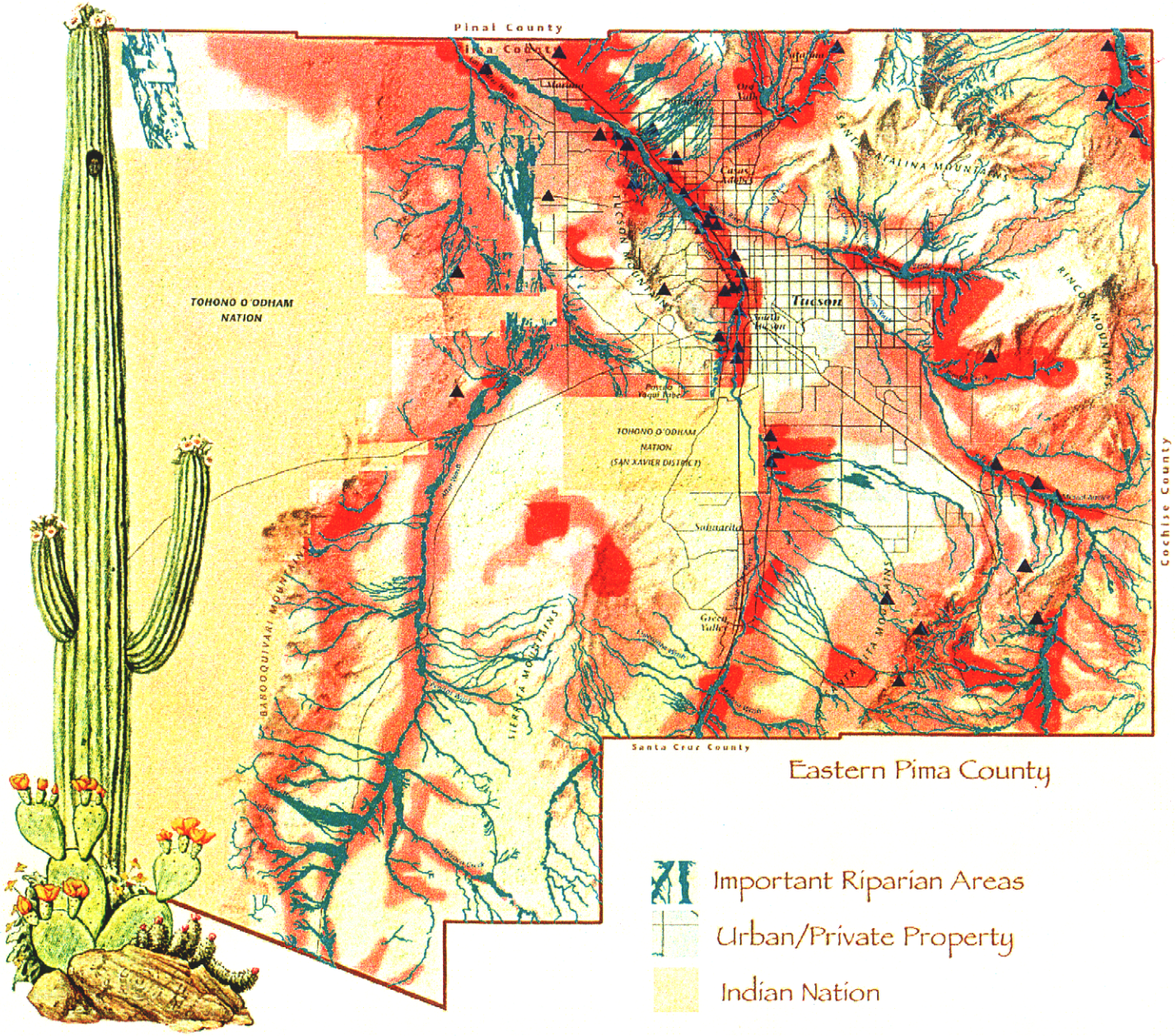

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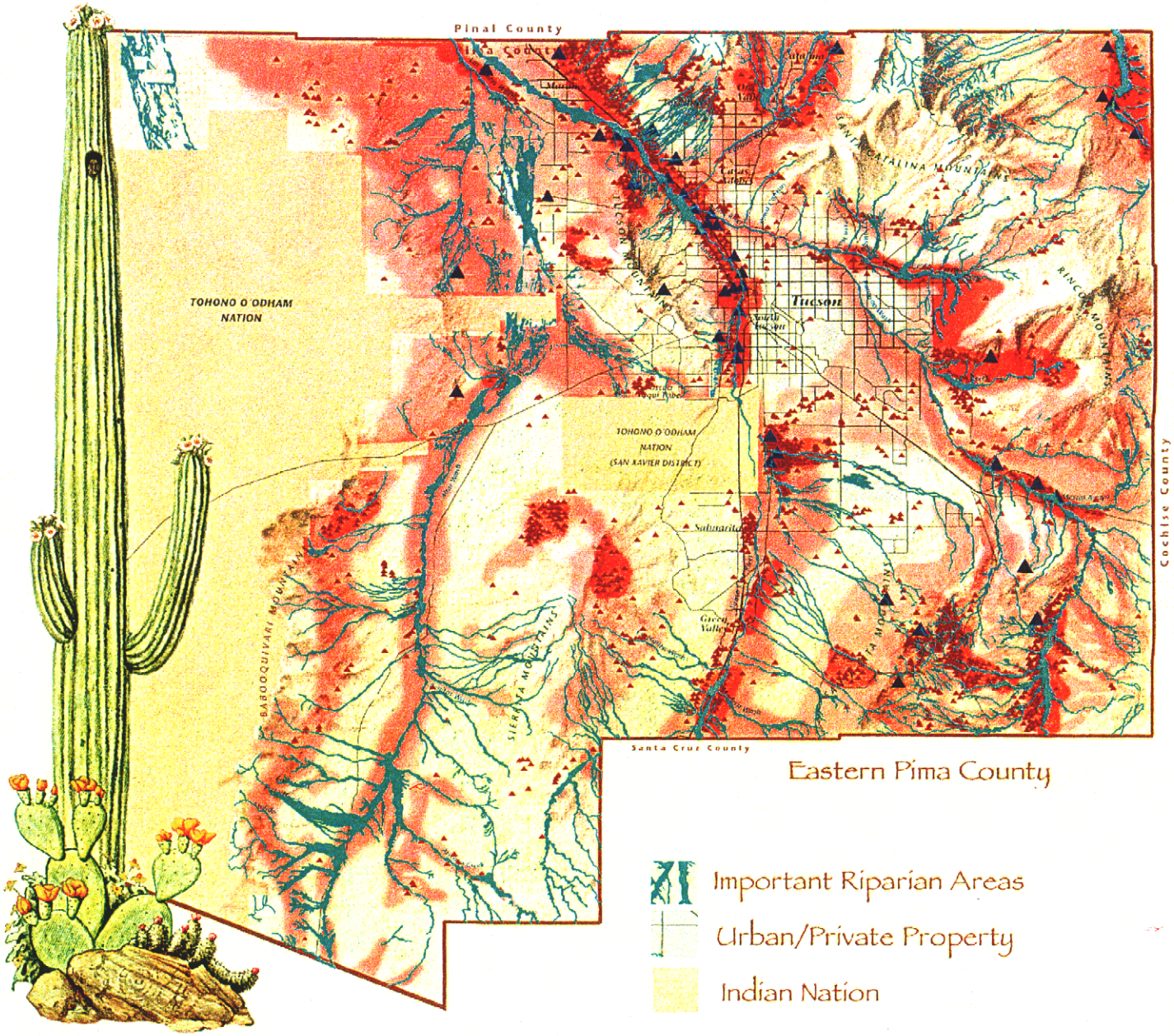

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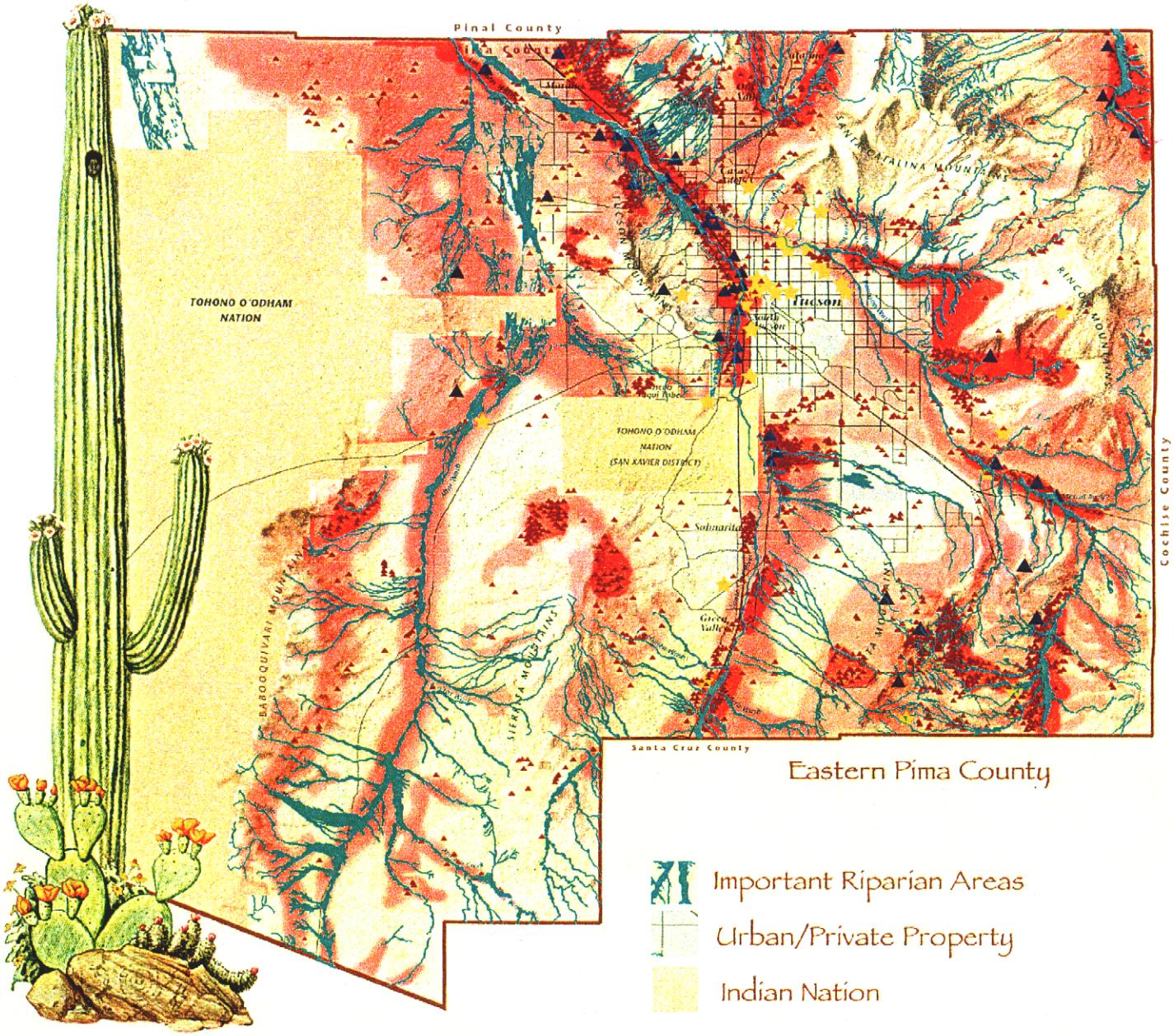

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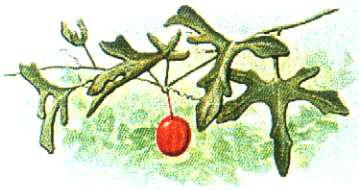

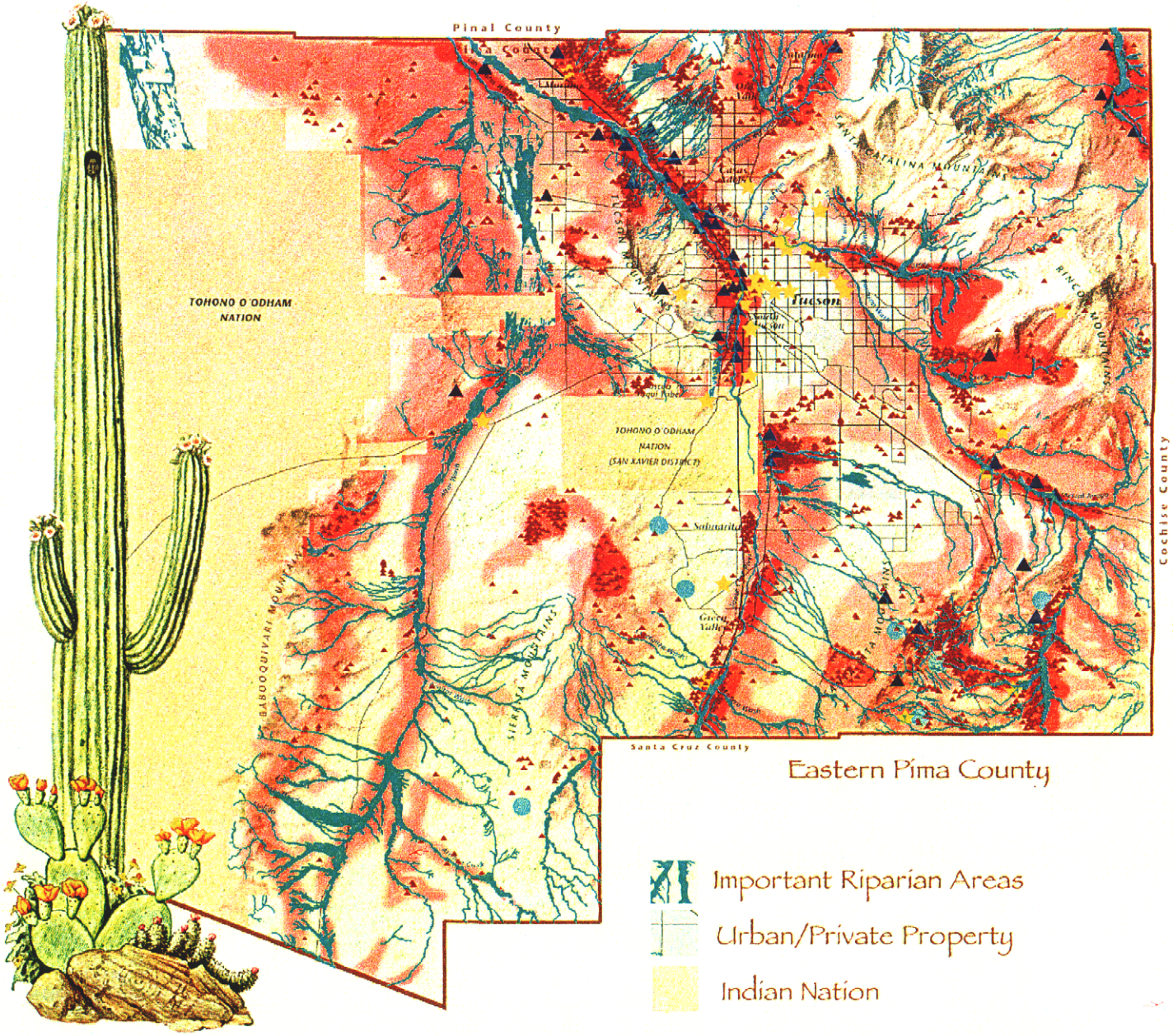

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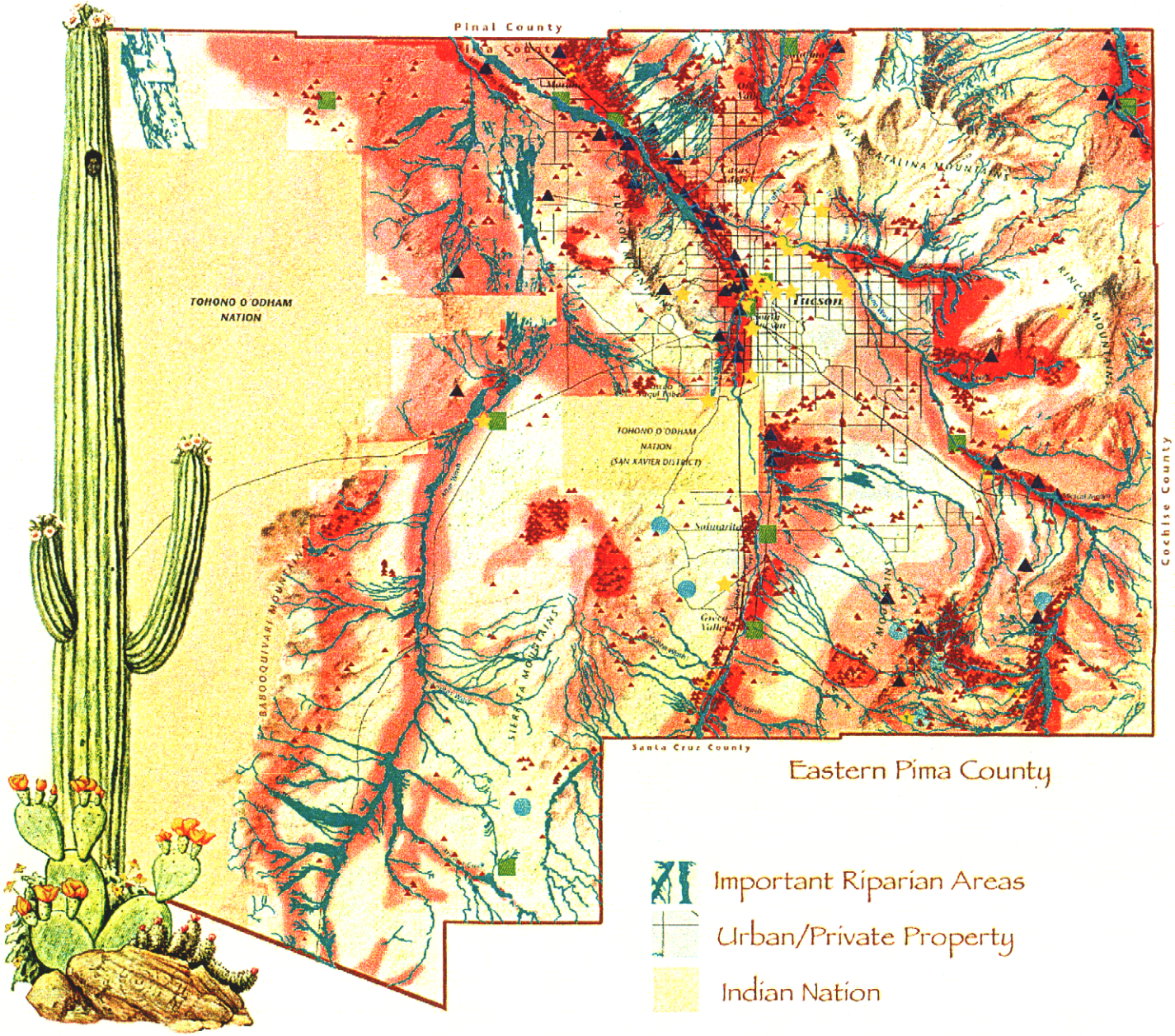

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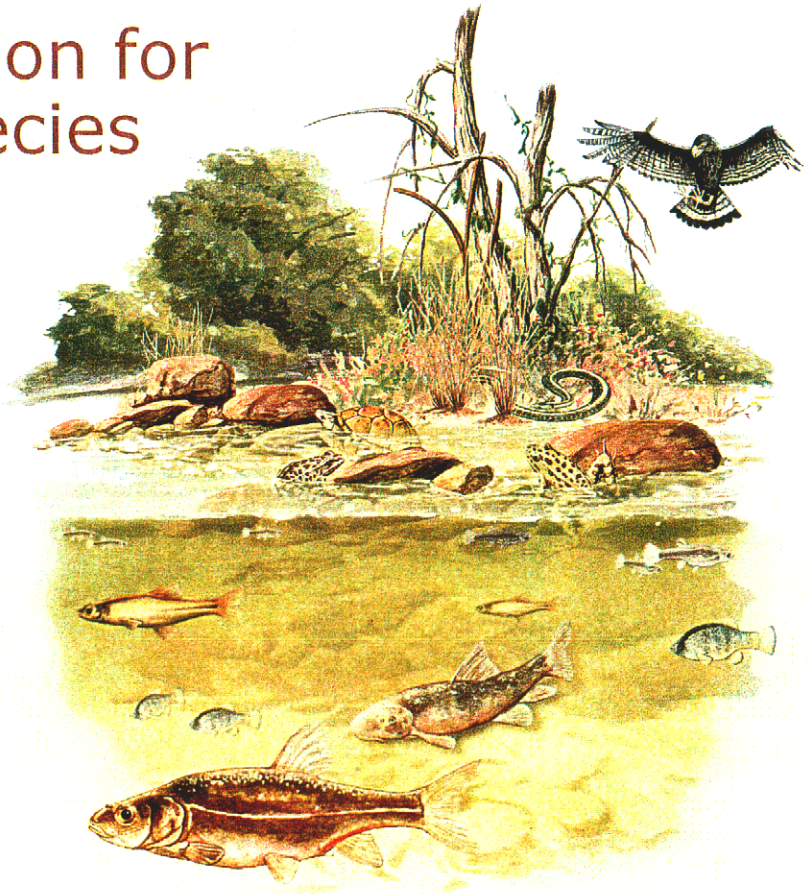
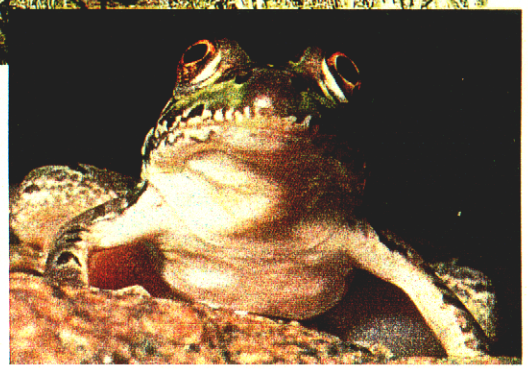
Riparian Element

- Maximum habitat protection for the largest number of species
- Flood prevention
- Water quality protection
- Groundwater recharge enhancement
- Habitat linkage
- Riparian Restoration



Maximum Habitat Protection for the Largest Number of Species



Flood Prevention

Water Quality Protection

Groundwater Recharge Enhancement

Habitat Linkage

Riparian Restoration

Cienega Creek 1988

Cienega Creek 1995

Cienega Creek 1998

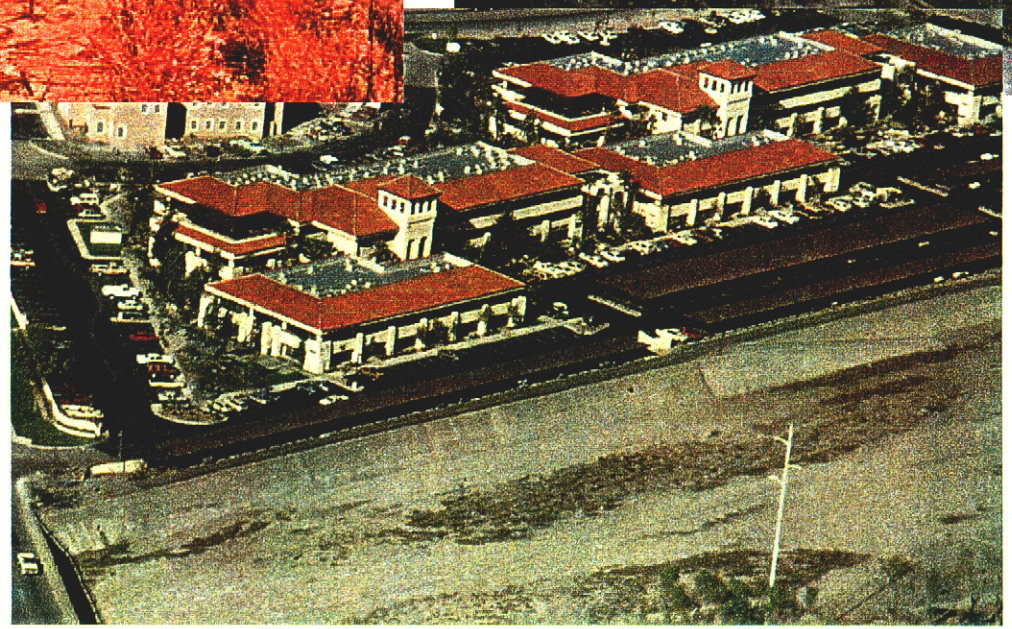
Without Riparian Protection...

Healthy Mesquite Bosque

Bosque in decline

Final result

Without Riparian Protection...

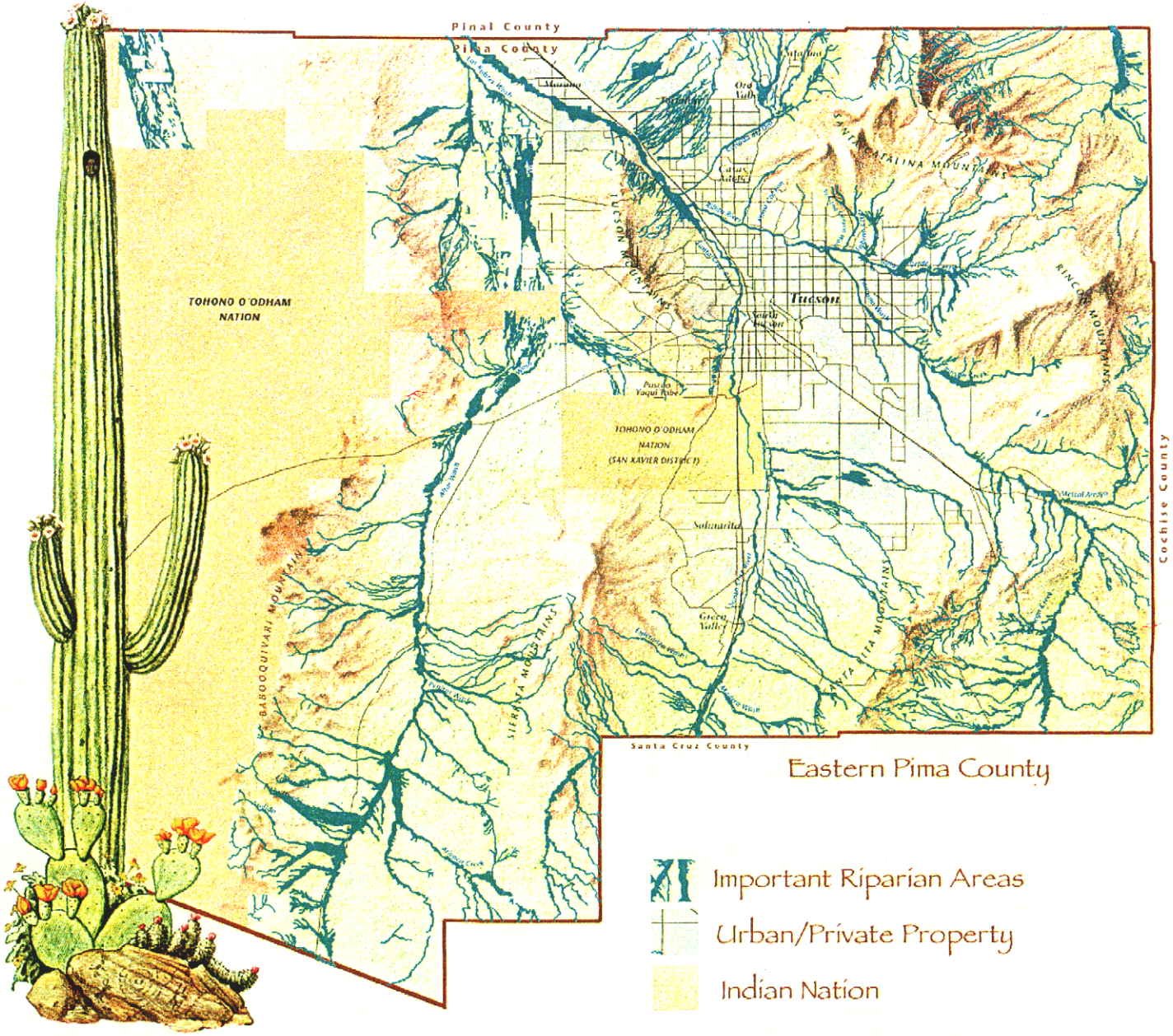


Sonoran Desert Conservation Plan

A long term vision for protecting the heritage and natural resources of the west.

Riparian Conservation

- Riparian Restoration/Rehabilitation
- Effluent Based Riparian projects
- Stream based Potential Native Fish & Frog Projects
- Spring based Potential Native Fish & Frog Projects
- High Priority Watersheds
- Effluent Dominated Reach



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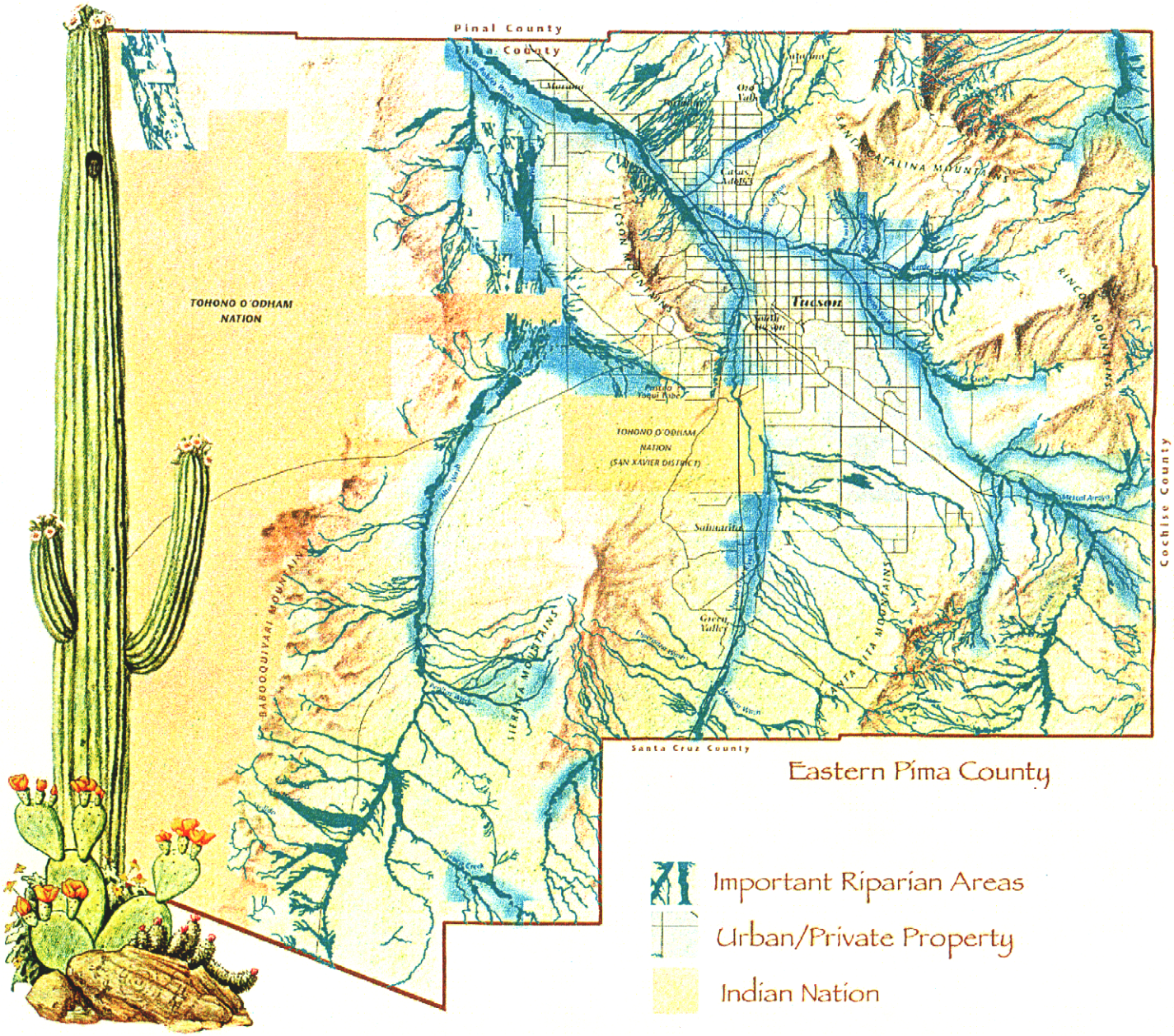

Eastern Pima County

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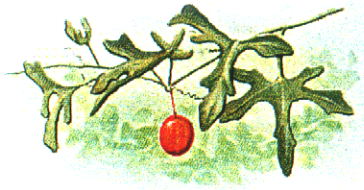

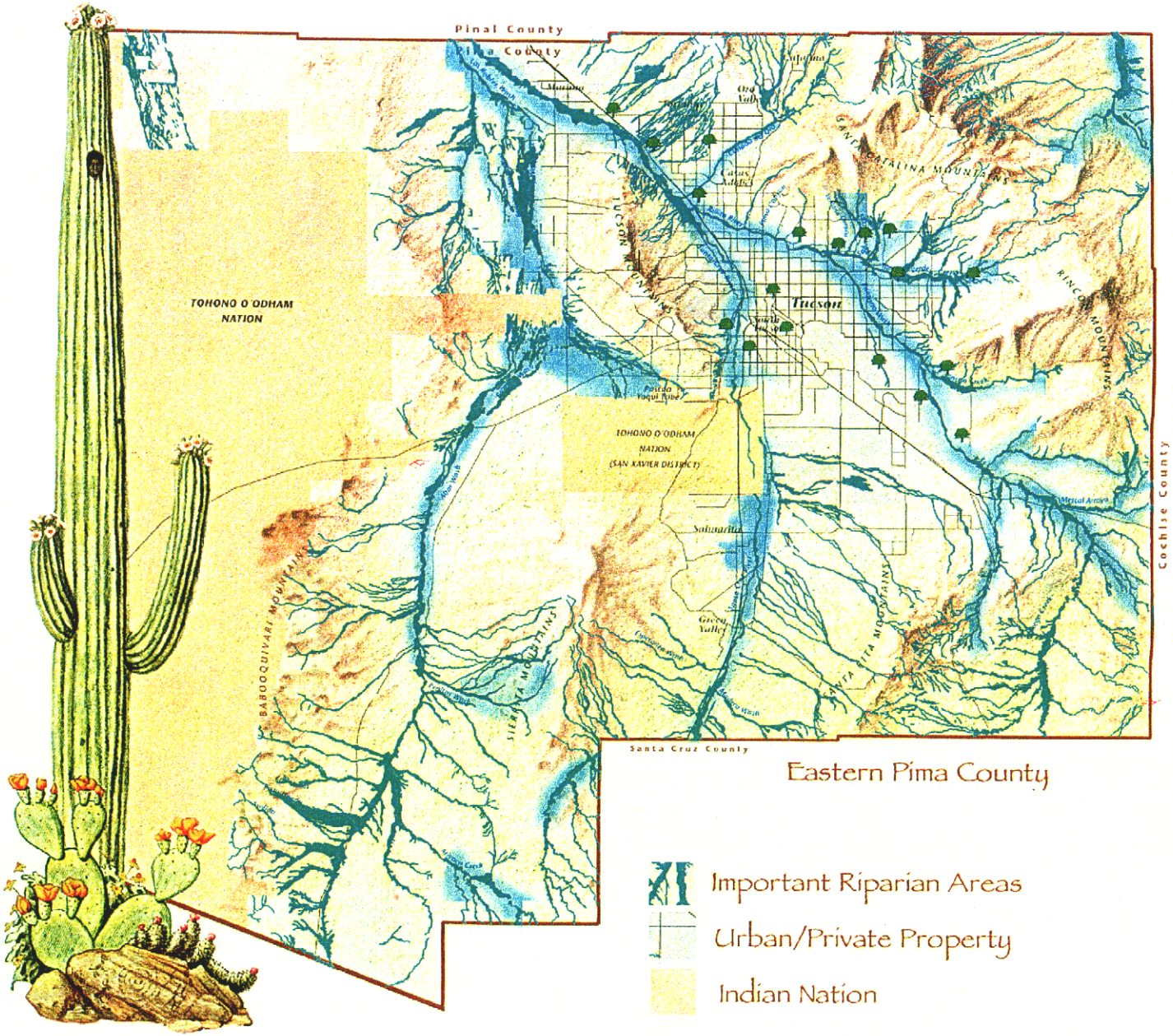

Eastern Pima County

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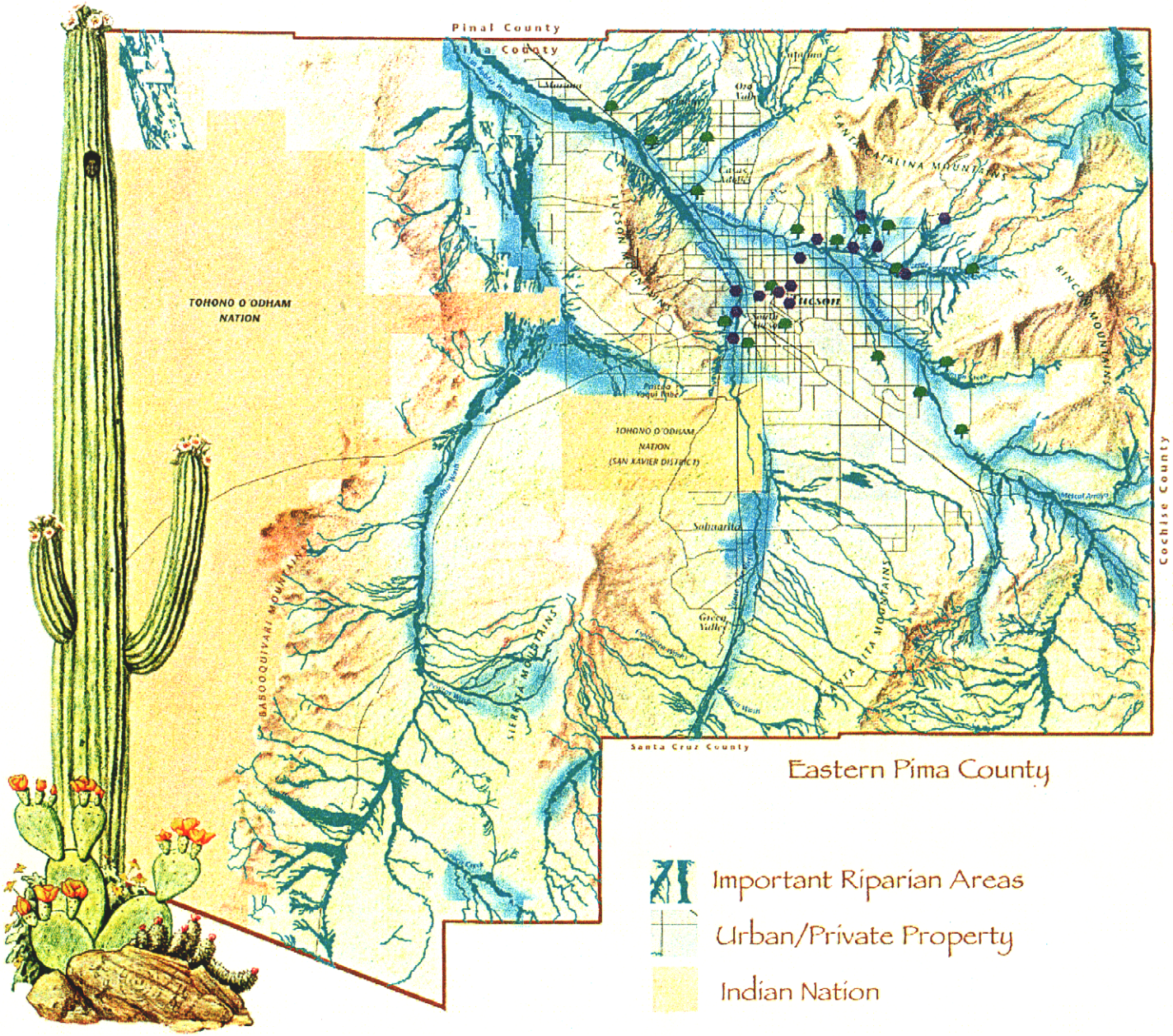

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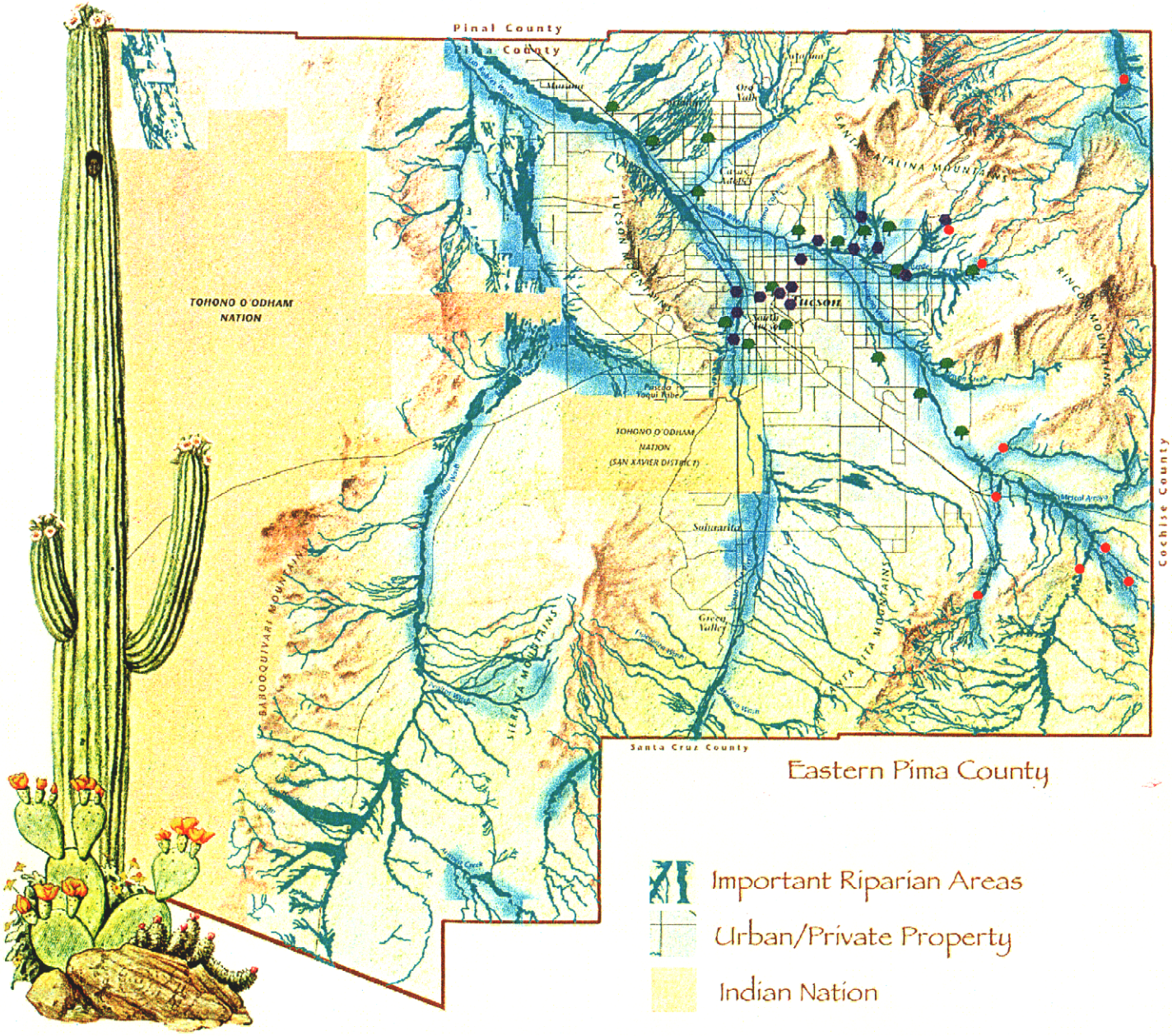

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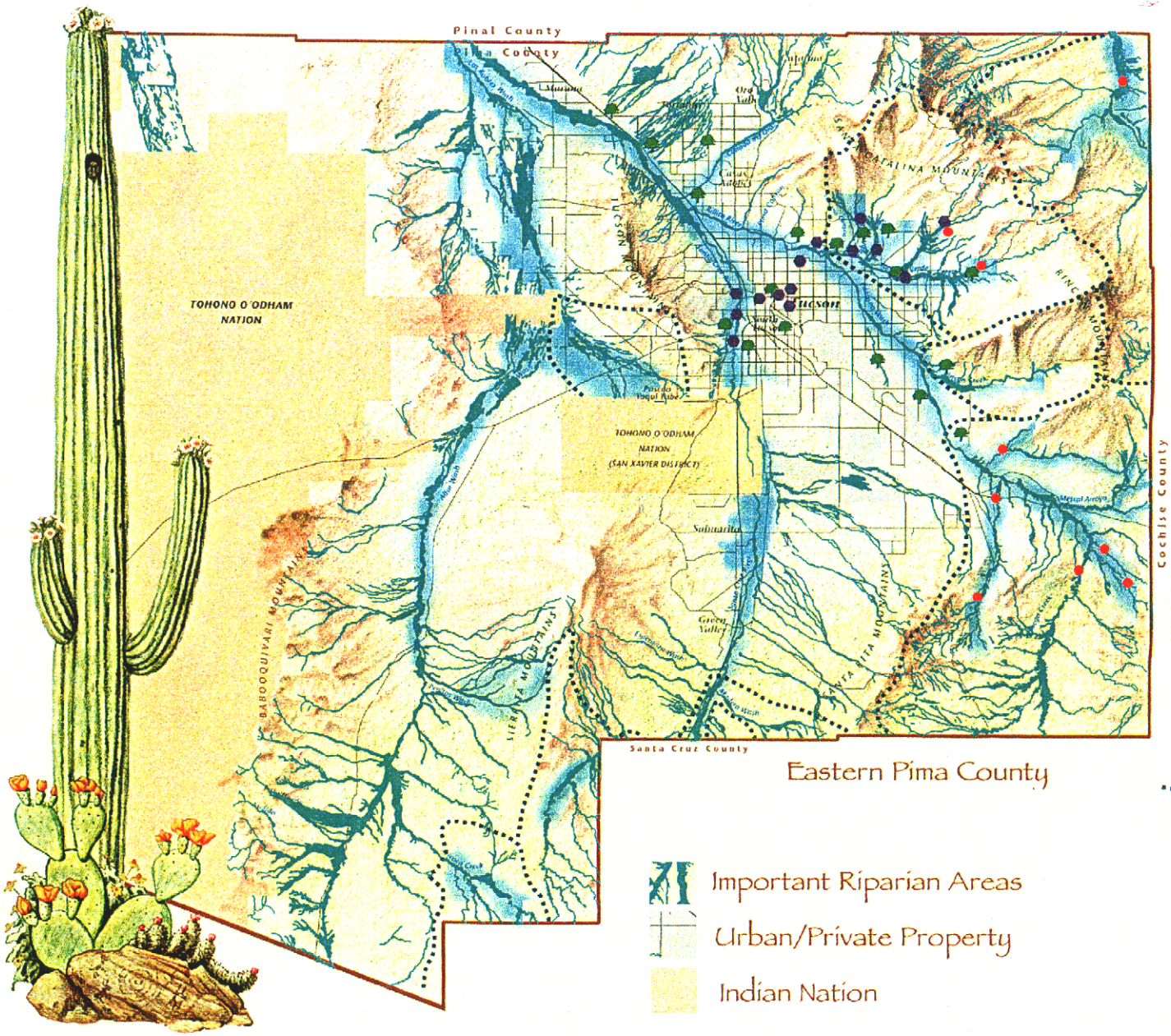

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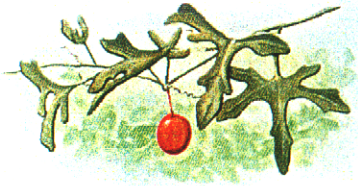

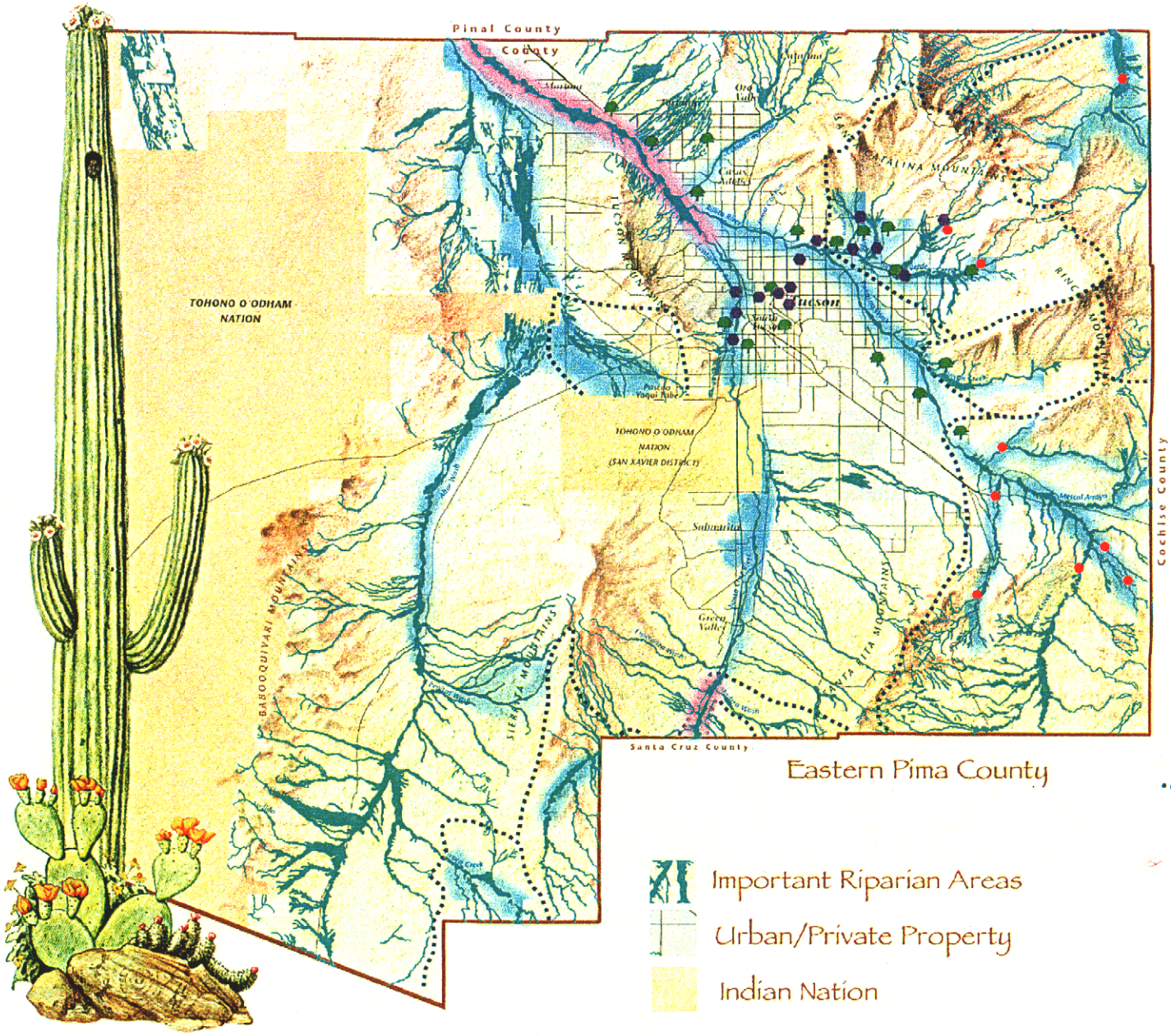

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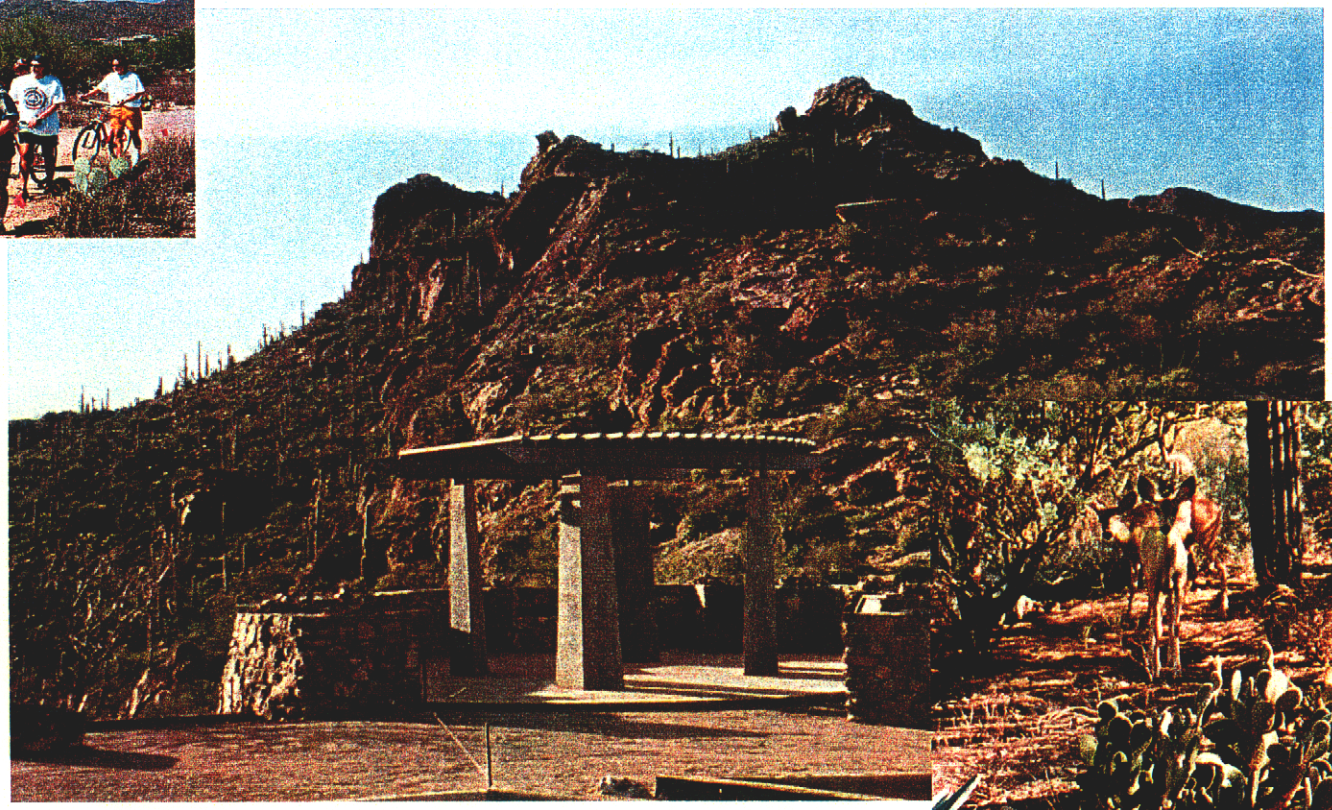
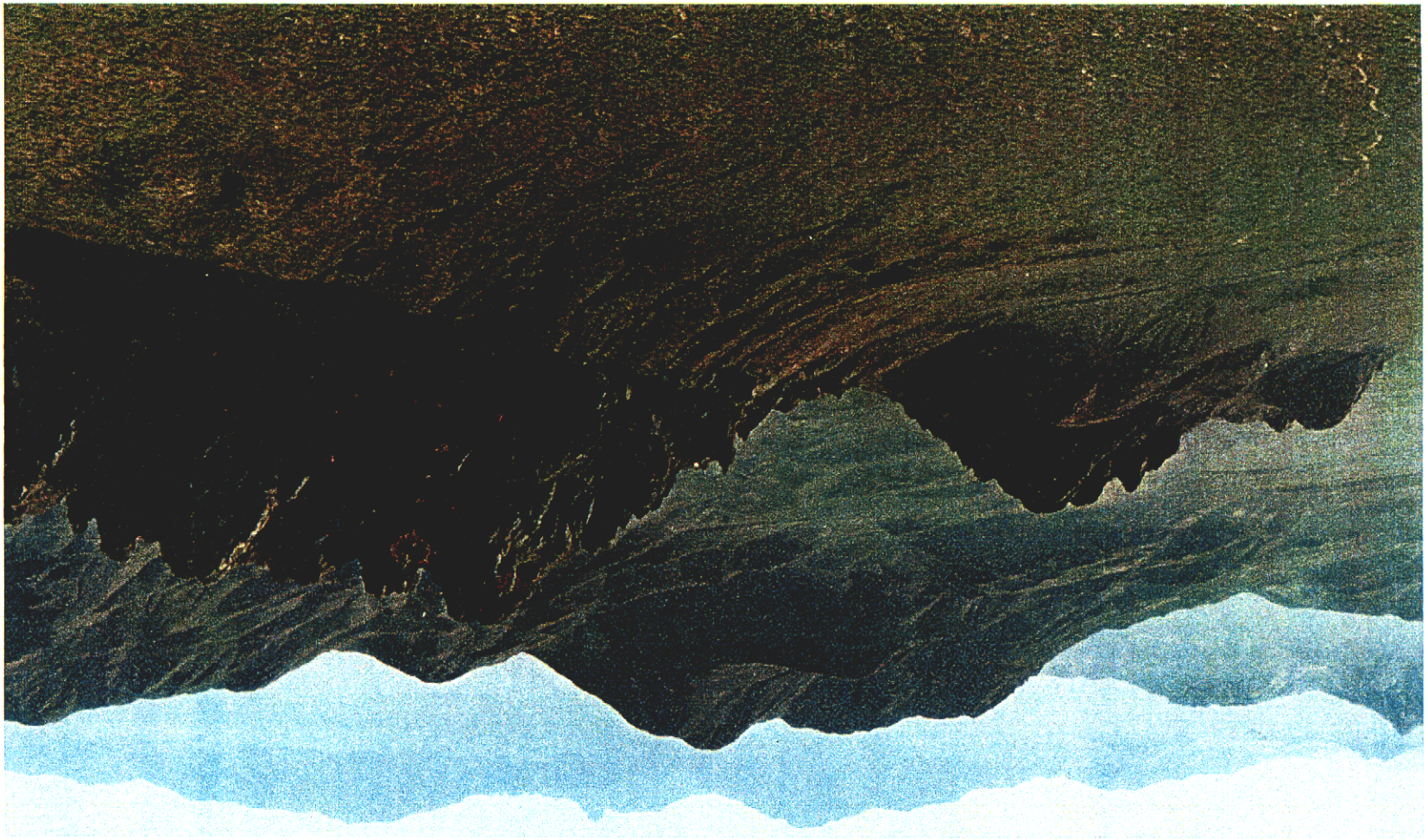
Mountain Parks Element

- Viewshed protection
- Preserve natural recreational opportunities
- Scientific Research
- Environmental Education

Viewshed Protection

Preserve Natural Recreational Opportunities

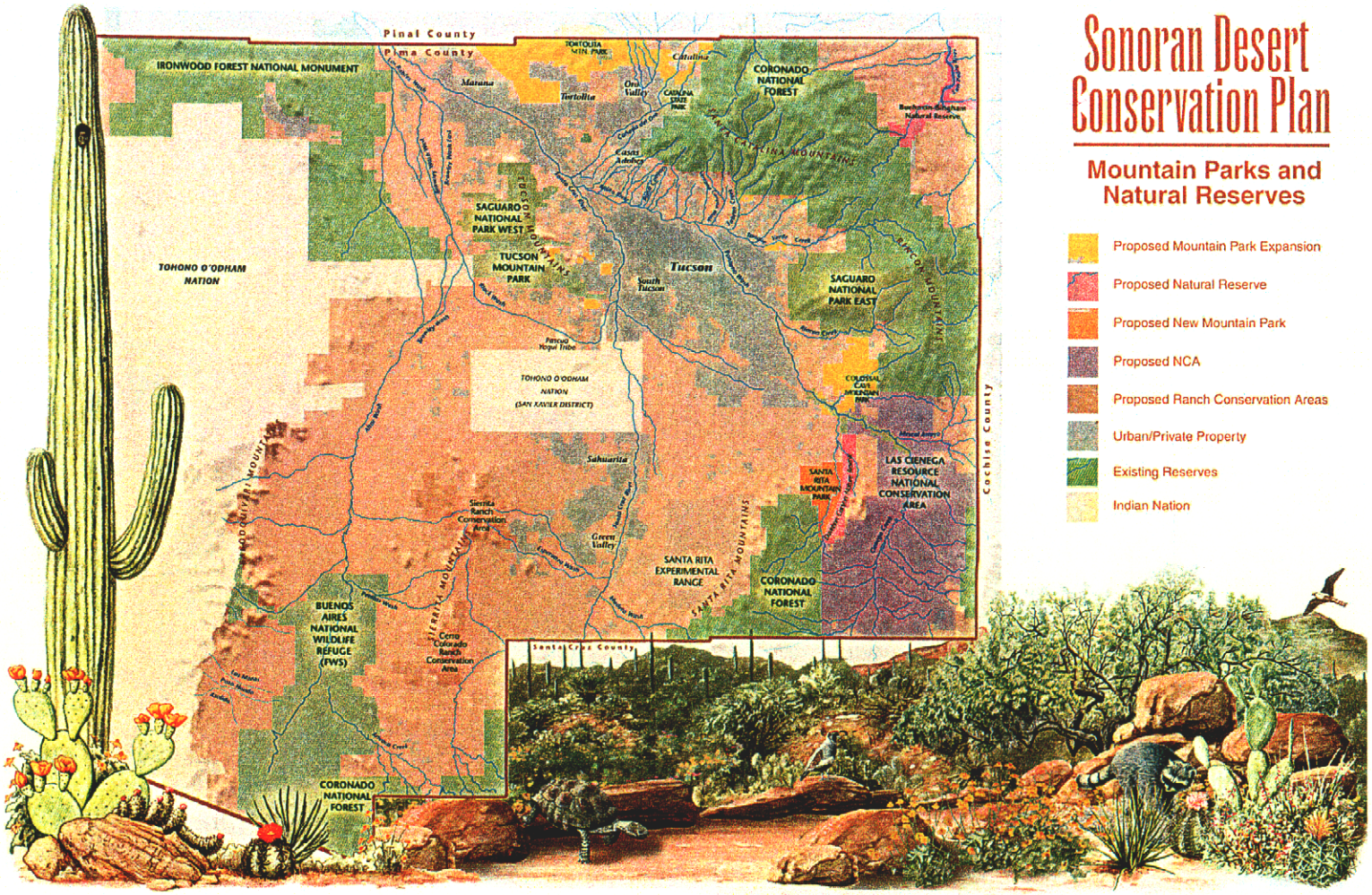




Scientific Research

Environmental Education

Without Mountain Parks...



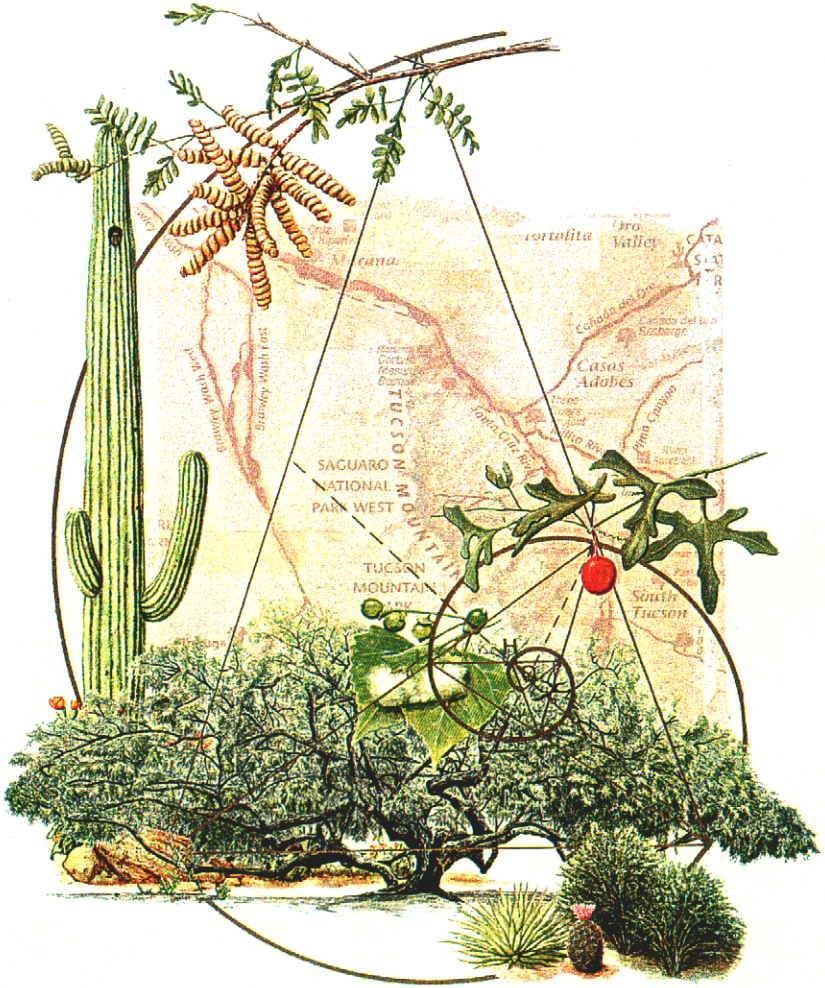
Sonoran Desert Conservation Plan

Mountain Parks and Natural Reserves

- Proposed Mountain Park Expansion
- Proposed Natural Reserve
- Proposed New Mountain Park
- Proposed NCA
- Proposed Ranch Conservation Areas
- Urban/Private Property
- Existing Reserves
- Indian Nation

Habitat and Corridors Elements

- Conserves biologically connected patches of land
- Preserves habitat crucial to species recovery
- Supports biodiversity

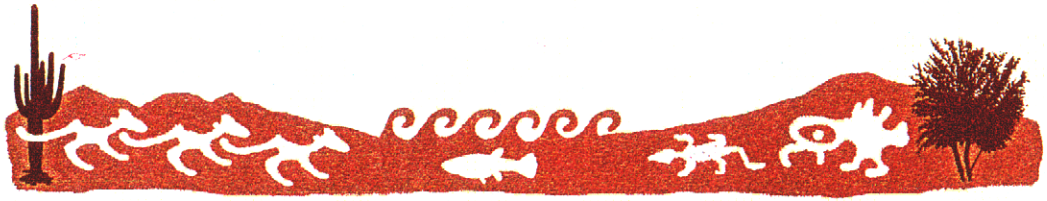


Conserves Biologically Connected Patches of Land

Preserves Habitat Crucial to Species Recovery

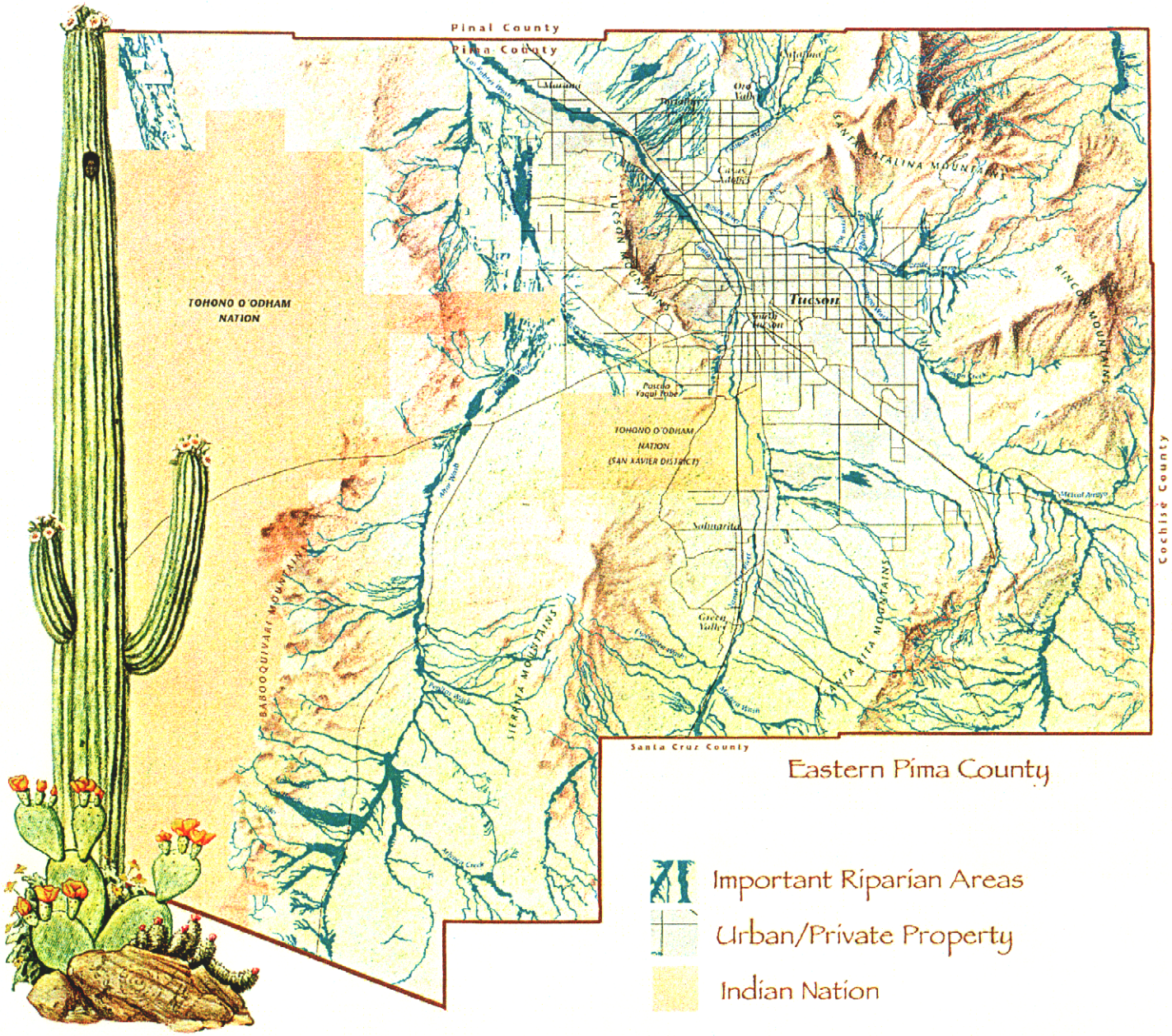
Supports Biodiversity

Without Protection of Habitat and Corridors...



Sonoran Desert Conservation Plan

A long term vision for protecting the heritage and natural resources of the west.



Eastern Pima County

Important Riparian Areas

Urban/Private Property

Indian Nation

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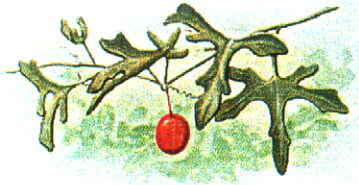
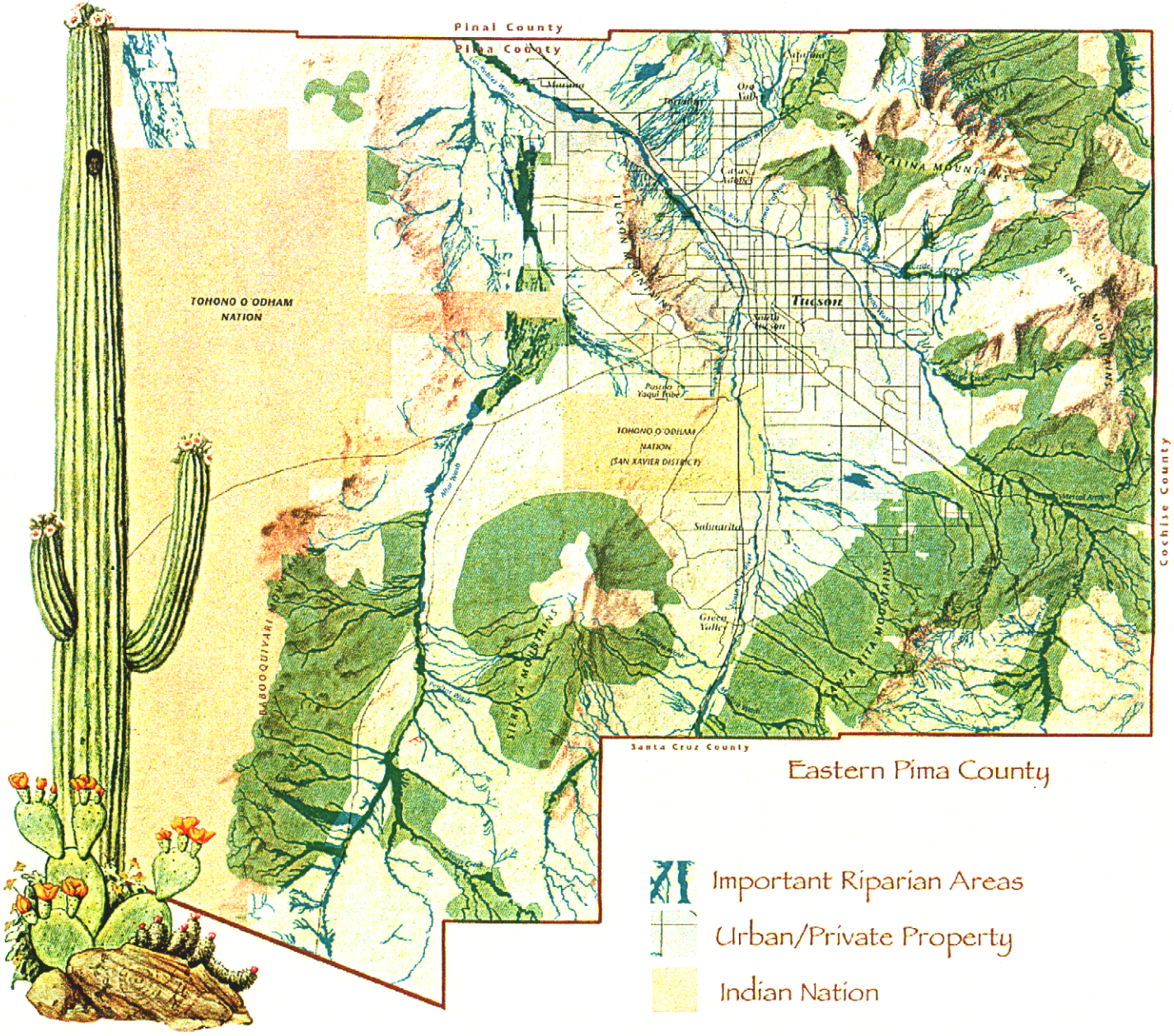


Biological Core



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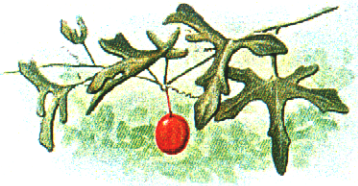
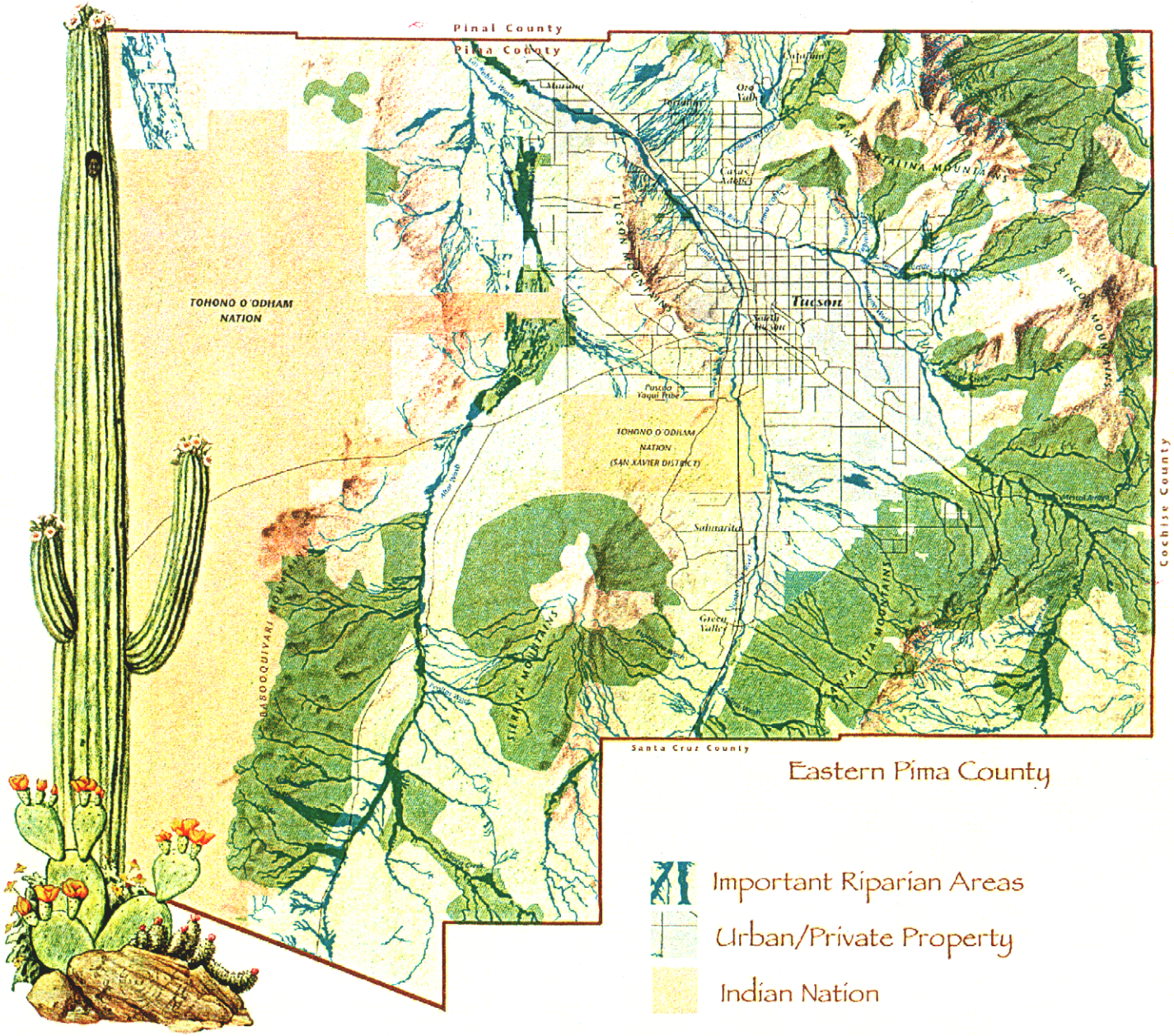


Biological Core
Scientific Research



Eastern Pima County

Important Riparian Areas
Urban/Private Property
Indian Nation

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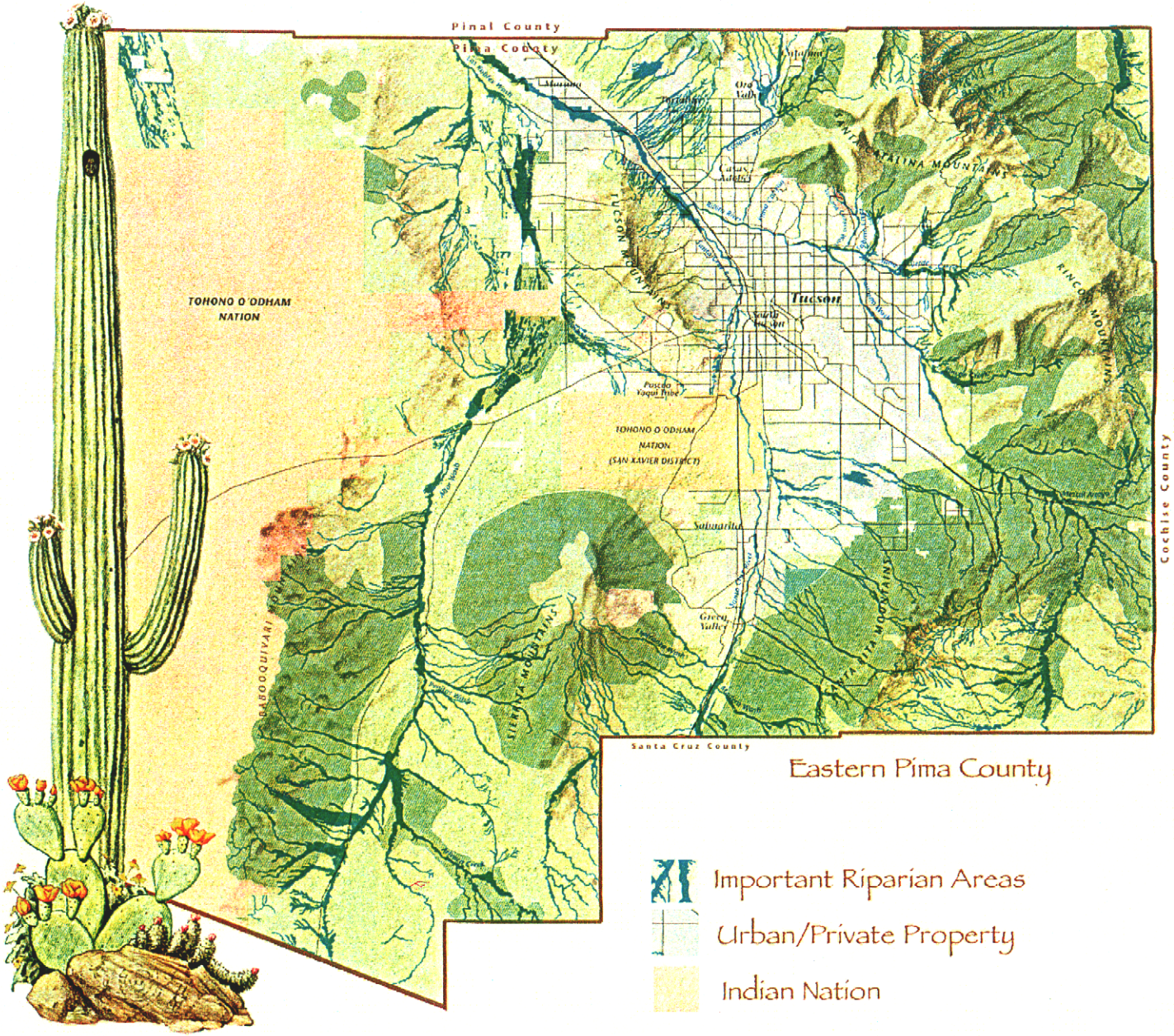

Eastern Pima County

Important Riparian Areas

Urban/Private Property

Indian Nation

Biological Core

Scientific Research

Multiple Use or Recovery Management Areas

Sonoran Desert Conservation Plan

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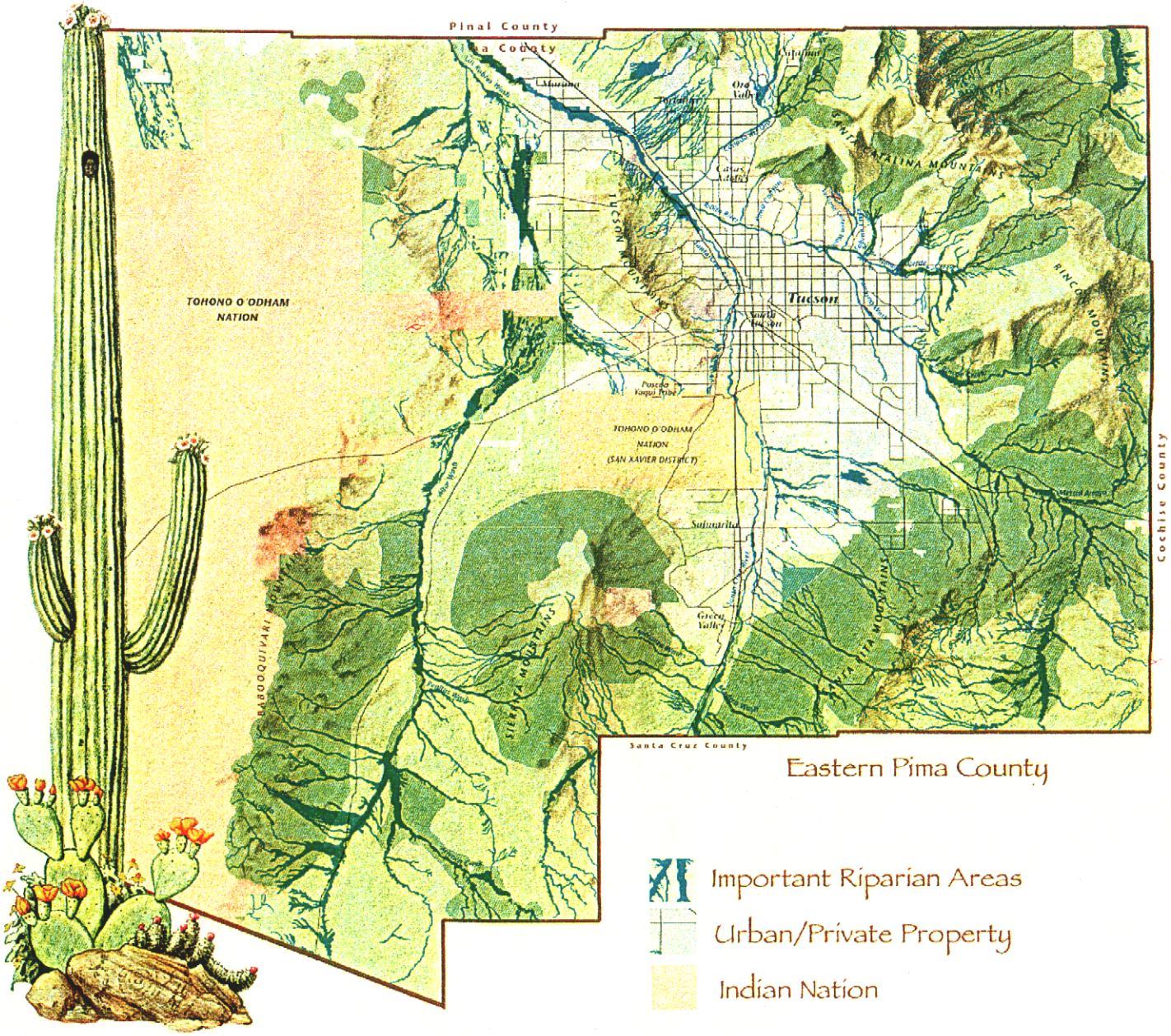

Biological Core
Scientific Research
Multiple Use or Recovery Management Areas
Agricultural within Recovery Management Areas

Sonoran Desert Conservation Plan

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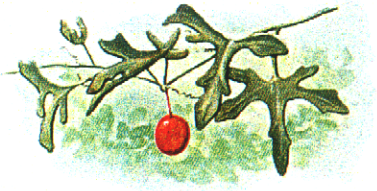
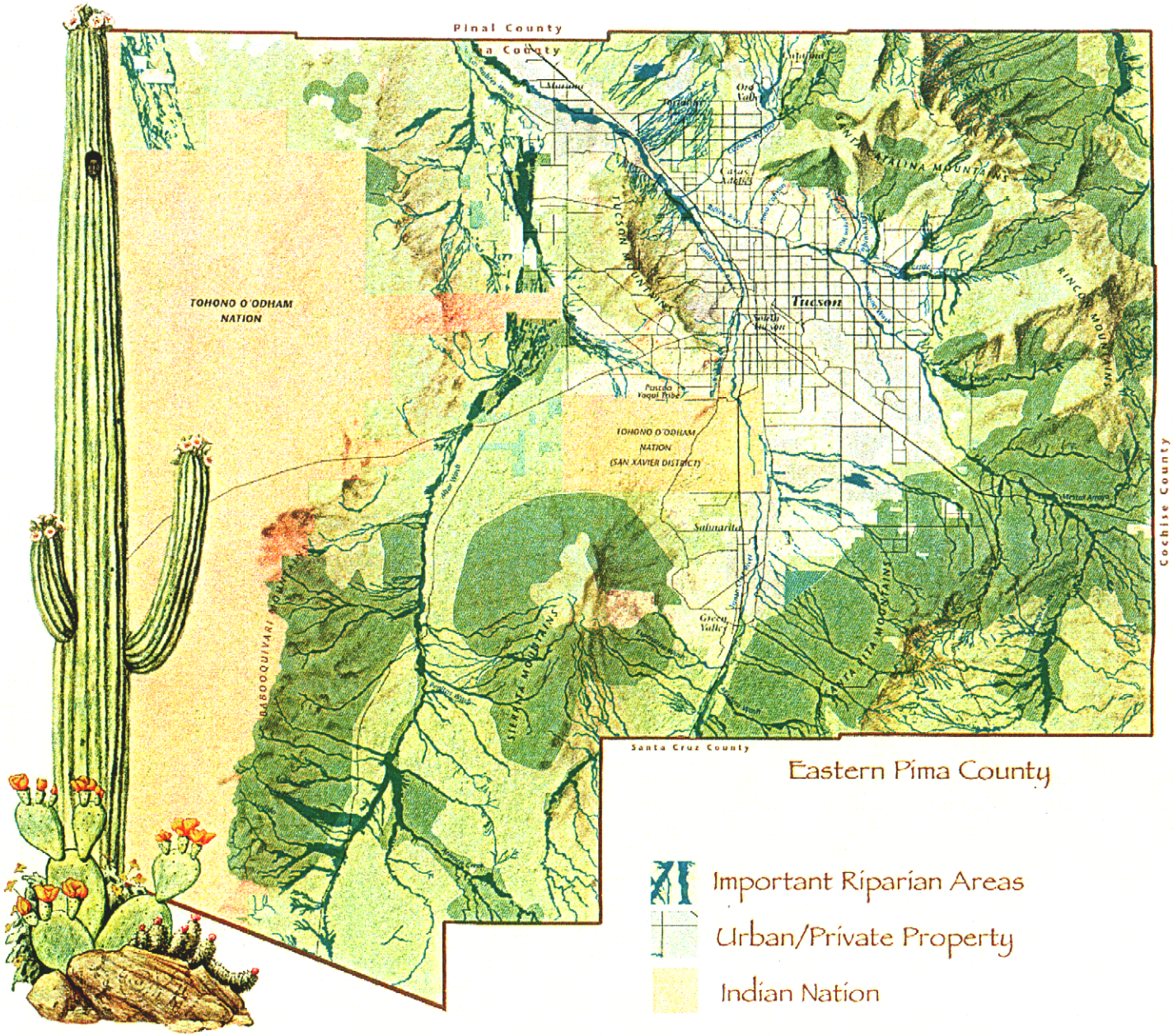




Eastern Pima County

Important Riparian Areas

Urban/Private Property

Indian Nation

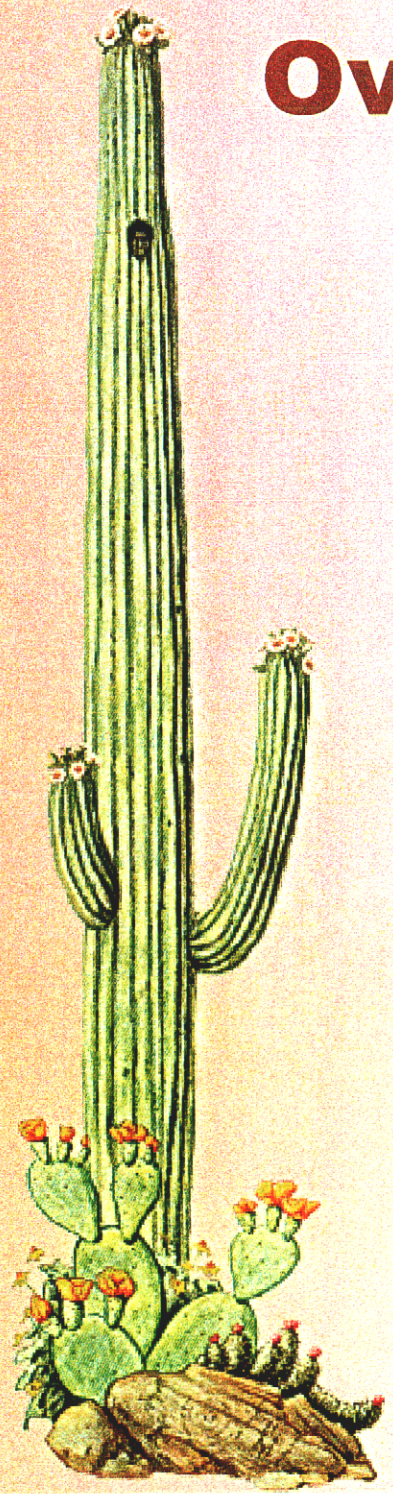
Biological Core

Scientific Research

Multiple Use or Recovery Management Areas

Agricultural within Recovery Management Areas

Existing Development within Conservation Land System



Overview:

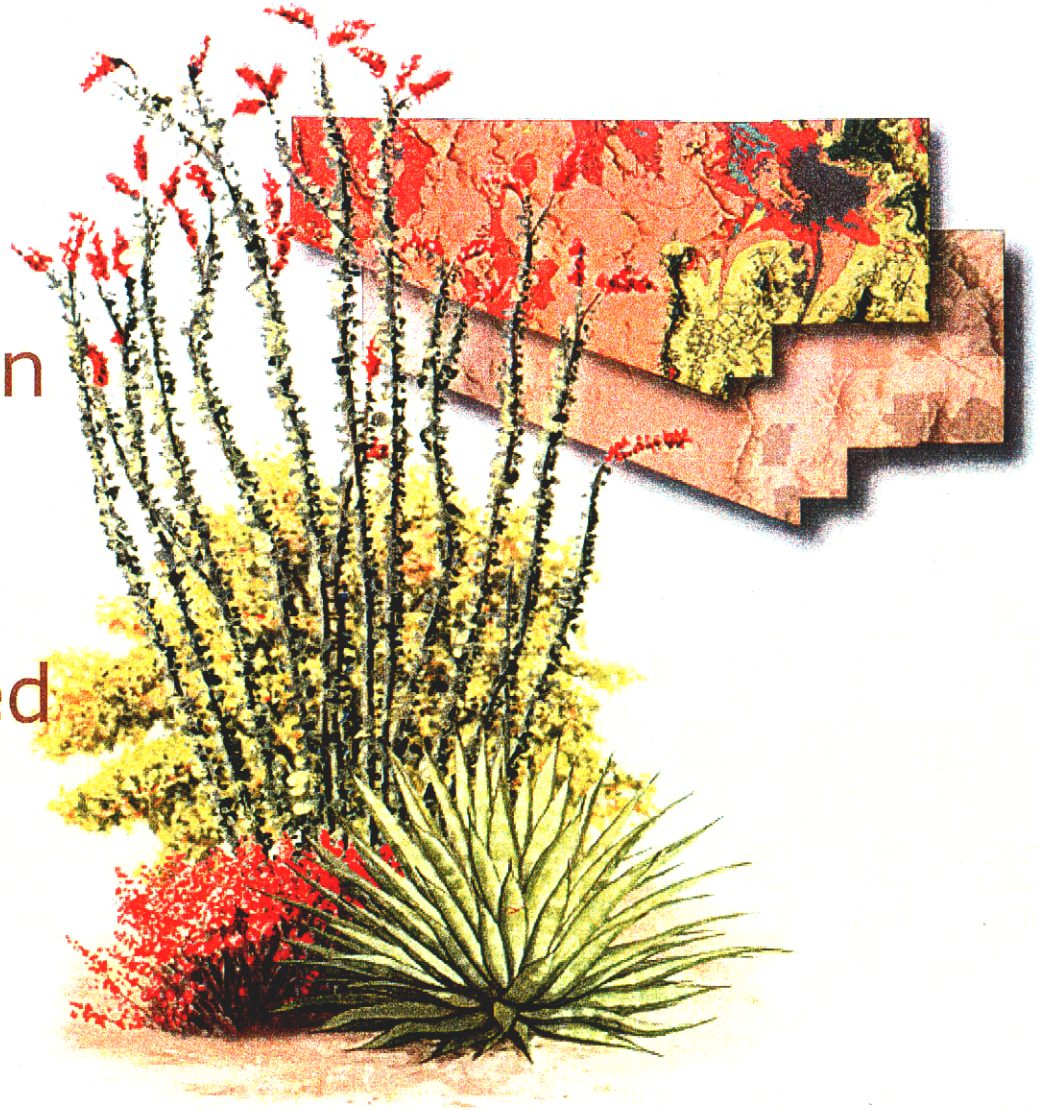
- Thinking Differently about Land Planning and Urban Growth
- Defining Local Resource Values
- What is the Sonoran Desert Conservation Plan?
- **Science based Natural Resource Planning**
- Implementation

Science based Natural Resource Planning

- Defining plant and animal communities at risk
- Determining ecosystem and habitat associations necessary for survival of a full spectrum of species
- Biodiversity is a measure of community health

Defining Biological Resources

- Protected Species
- Vulnerable species
- Priority Conservation Areas
- Reserve Design
- Biologically Preferred Reserve
- Conservation Lands System



Protected Species

Lesser Long Nosed Bat

Southwestern Willow Flycatcher

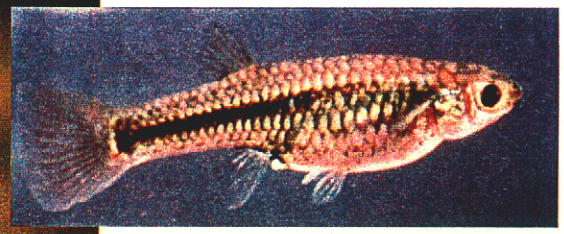
Pima Pineapple cactus

Nichol's Turk's head cactus

Cactus Ferruginnous Pygmy Owl

Gila Topminnow

Desert Pupfish

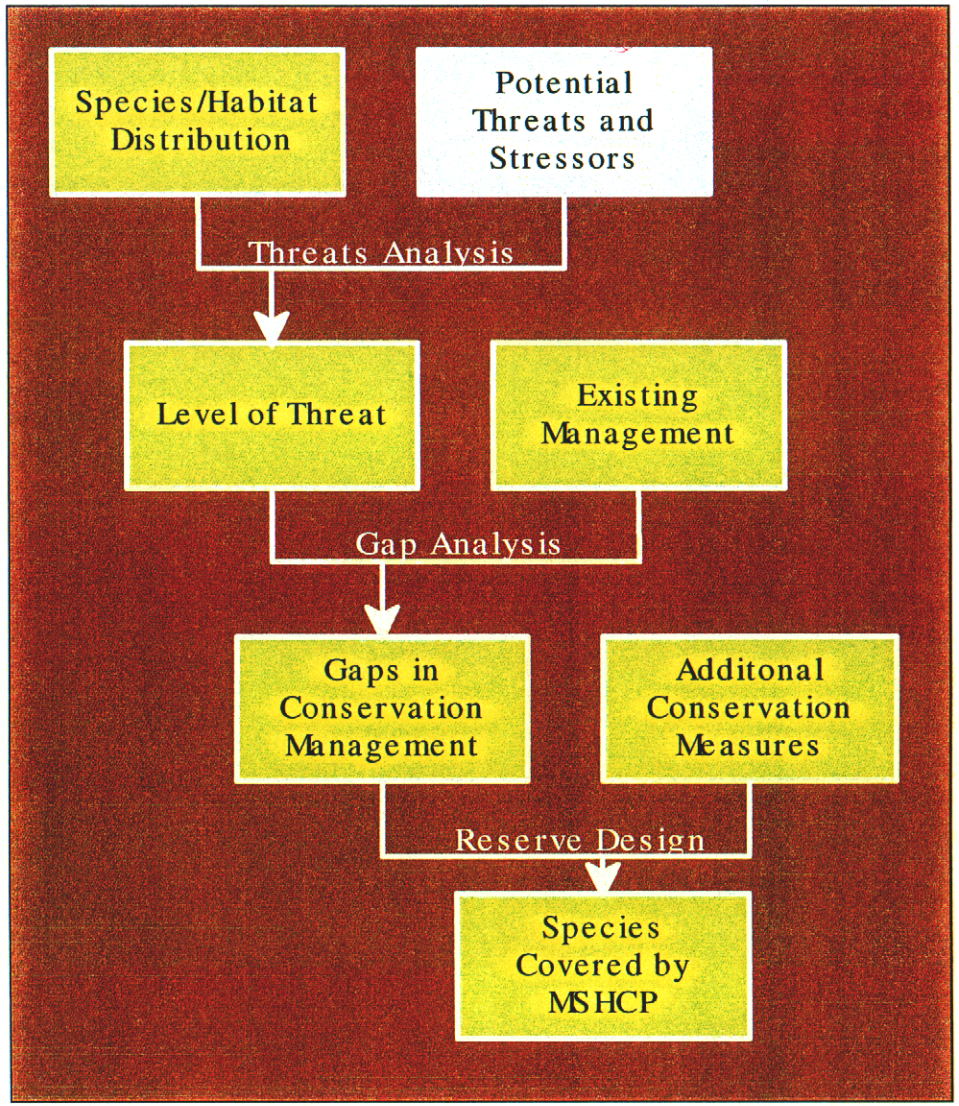


Huachuca Water Umbel

Vulnerable Species

- Species at risk in Pima County and for whom habitat in Pima County is crucial for their existence;
- Species at risk in Pima County and/or are generally declining throughout their range;
- Species that are rare in Pima County, but the overall status is unknown; and
- Species at risk in Pima County, but are not at risk overall.

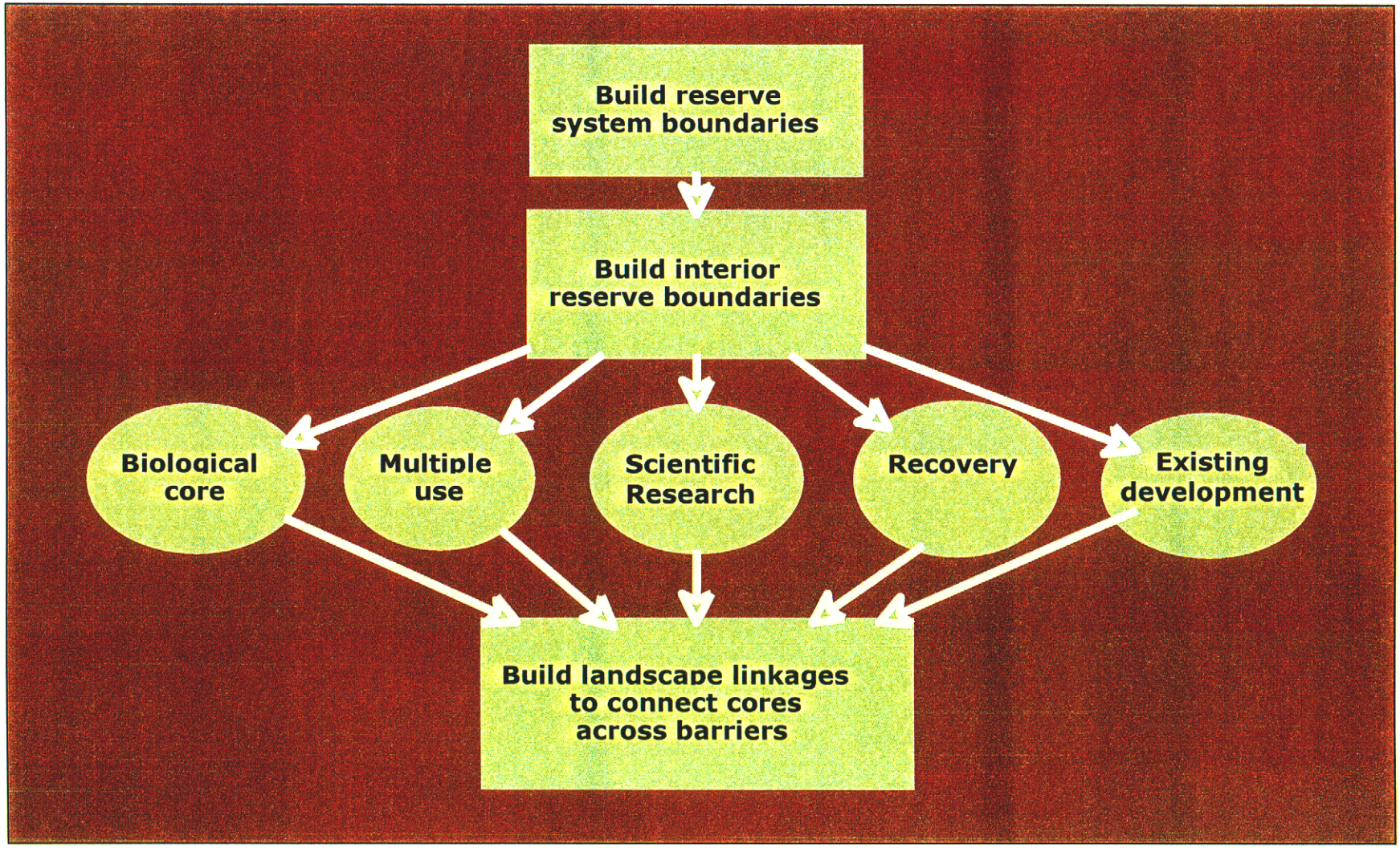
Biological Stress Assessment



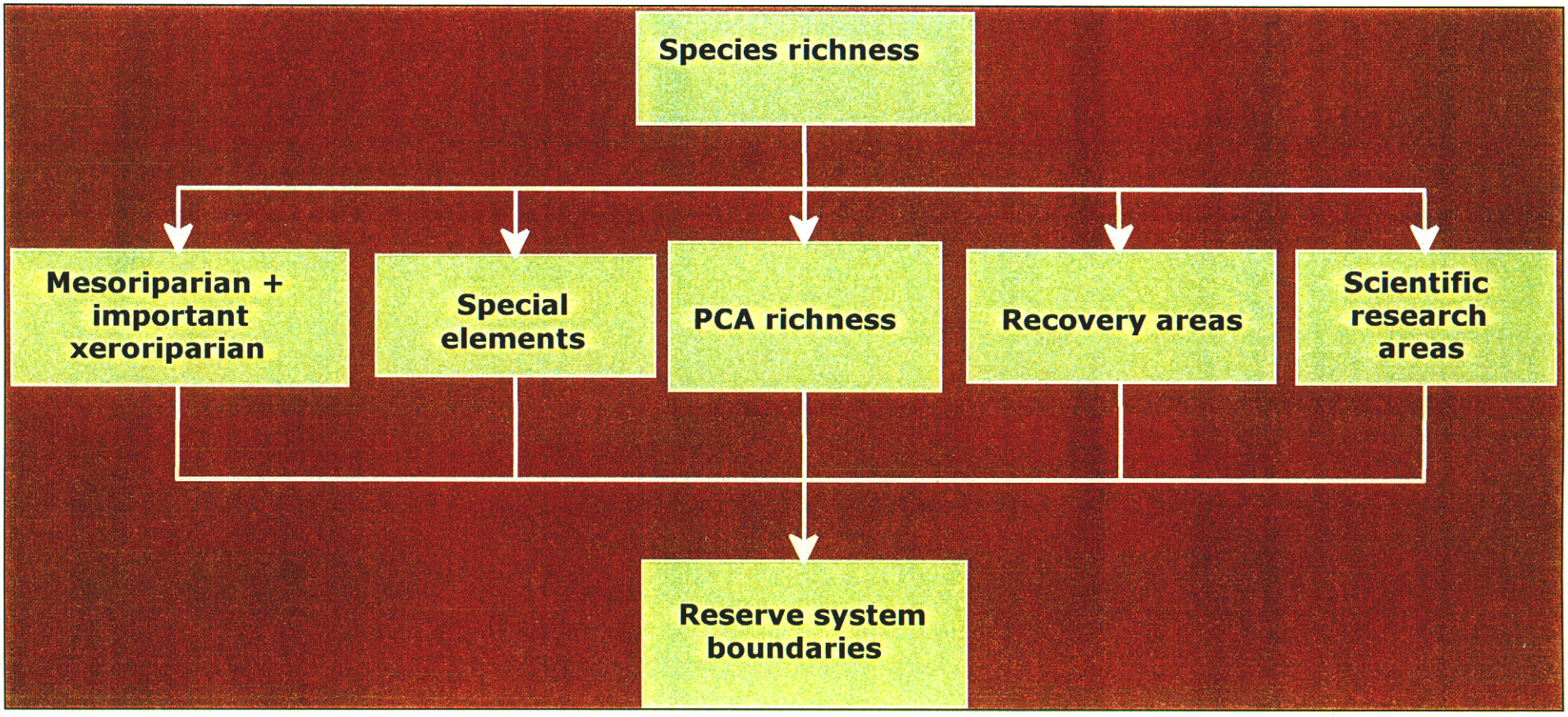
Priority Conservation Areas

- Areas most critical for conservation of species
- Areas that would be of value to a reserve system
- Critical landscape linkages
- Areas with potential for habitat restoration or enhancement

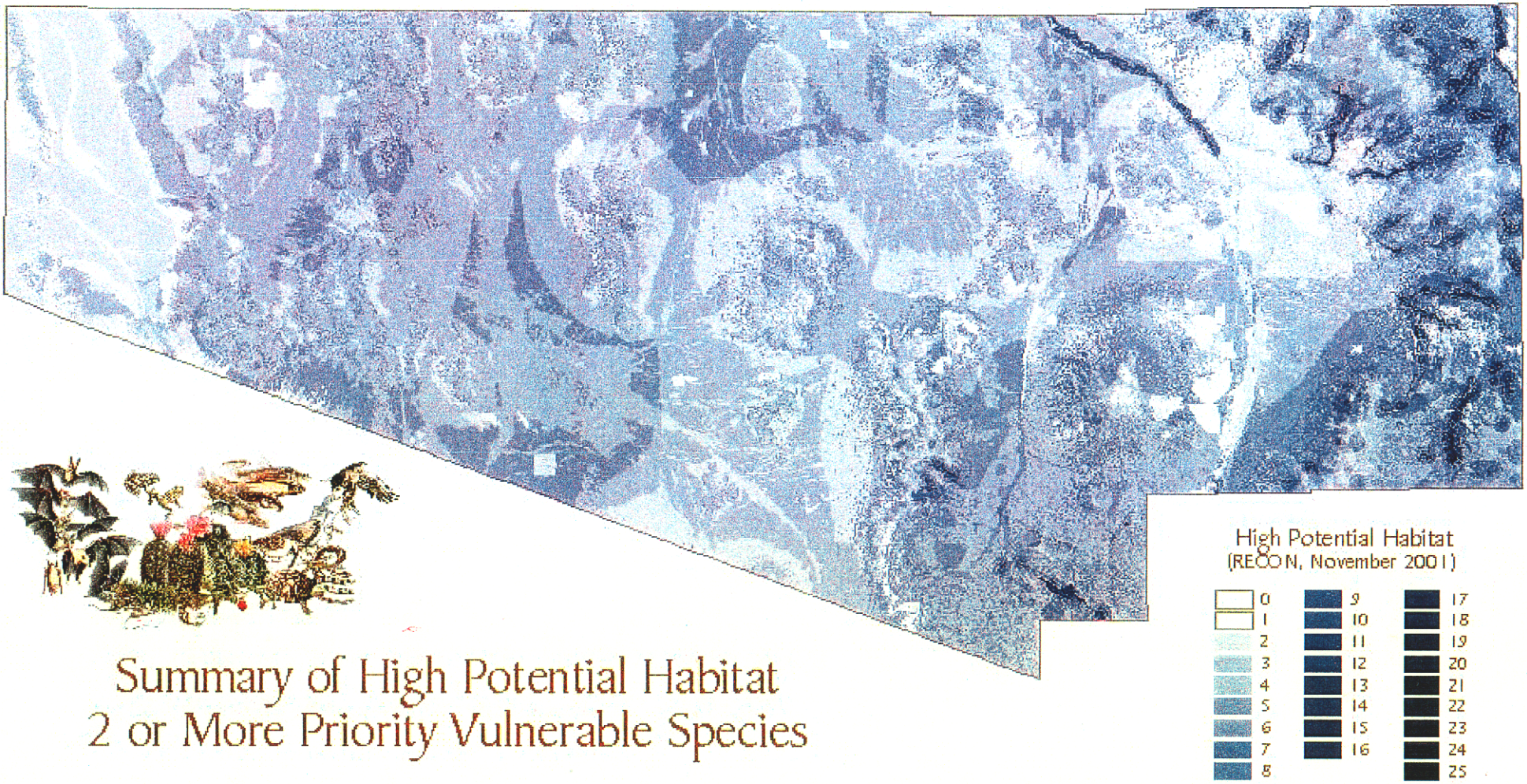
Reserve Design Overview



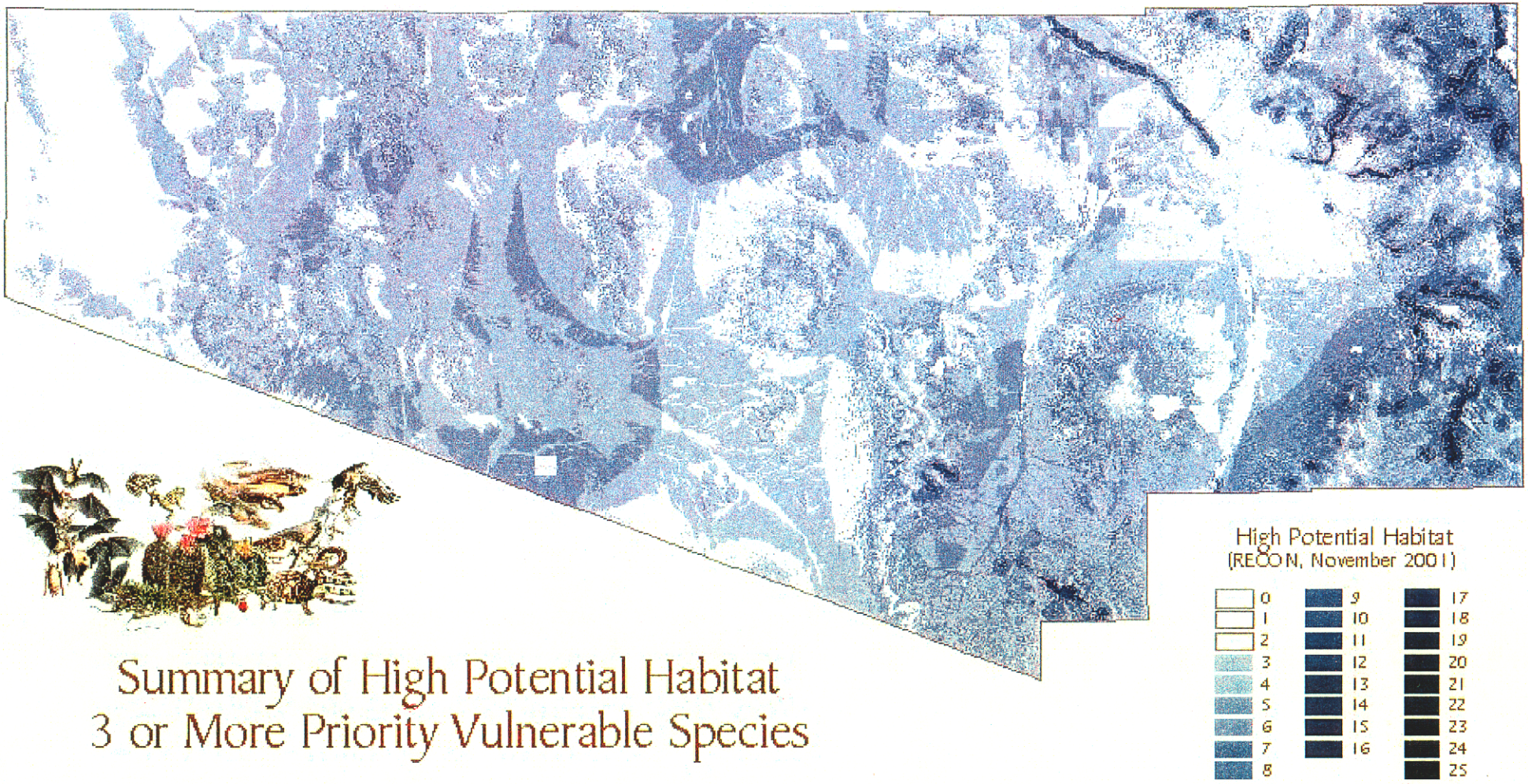
Building Exterior Reserve Boundaries



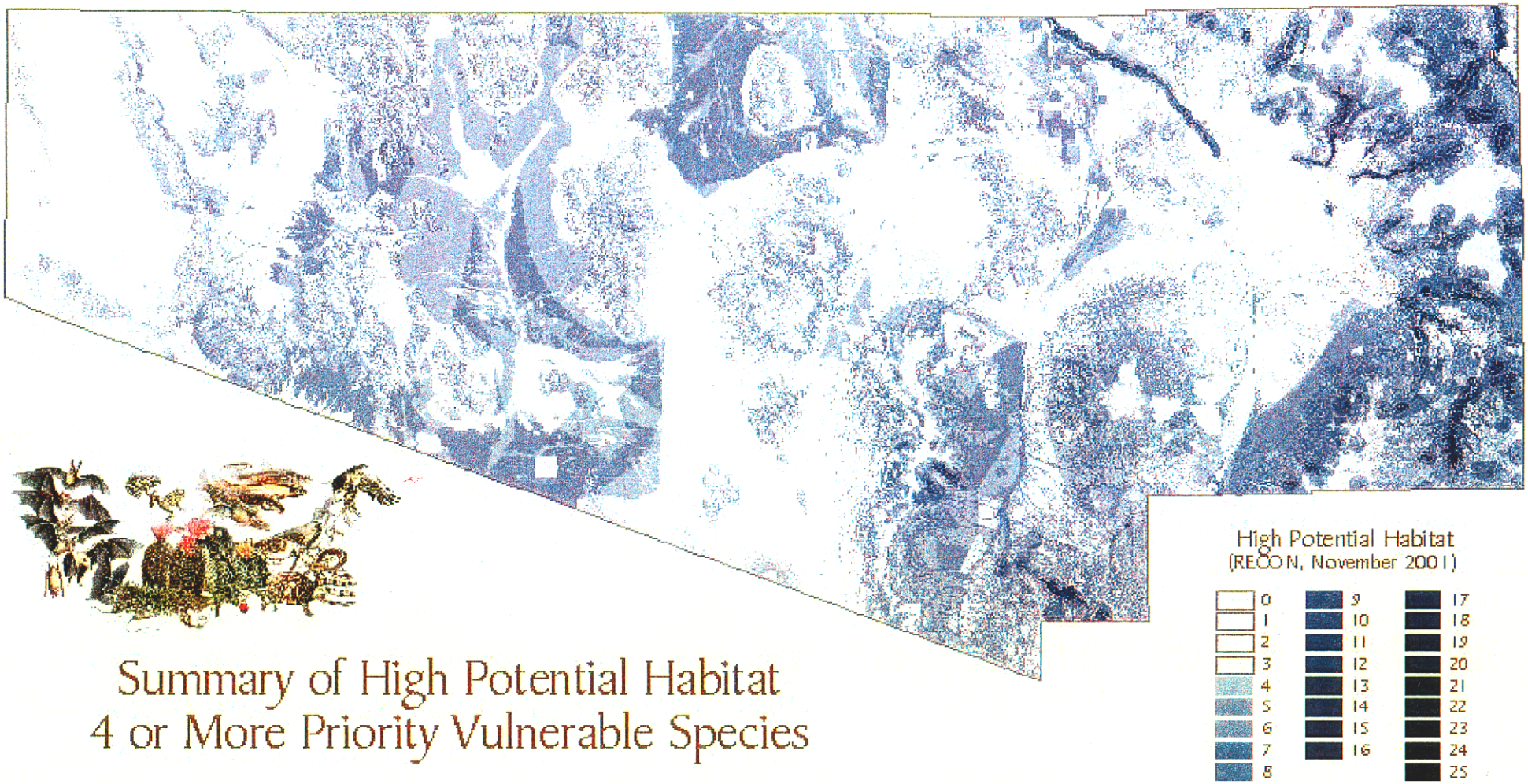
Summary of High Potential Habitat
All Priority Vulnerable Species



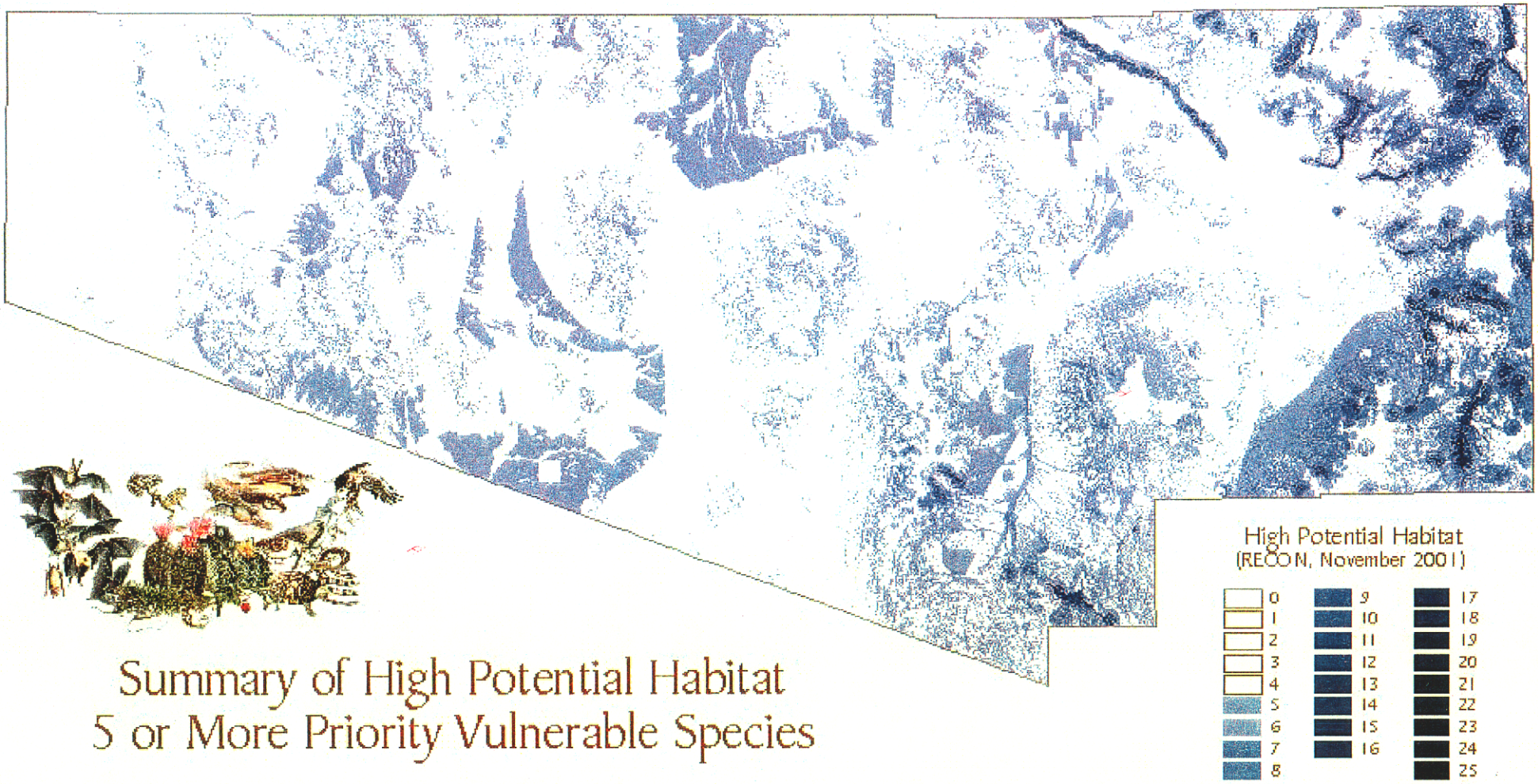
Summary of High Potential Habitat
2 or More Priority Vulnerable Species



Summary of High Potential Habitat
3 or More Priority Vulnerable Species

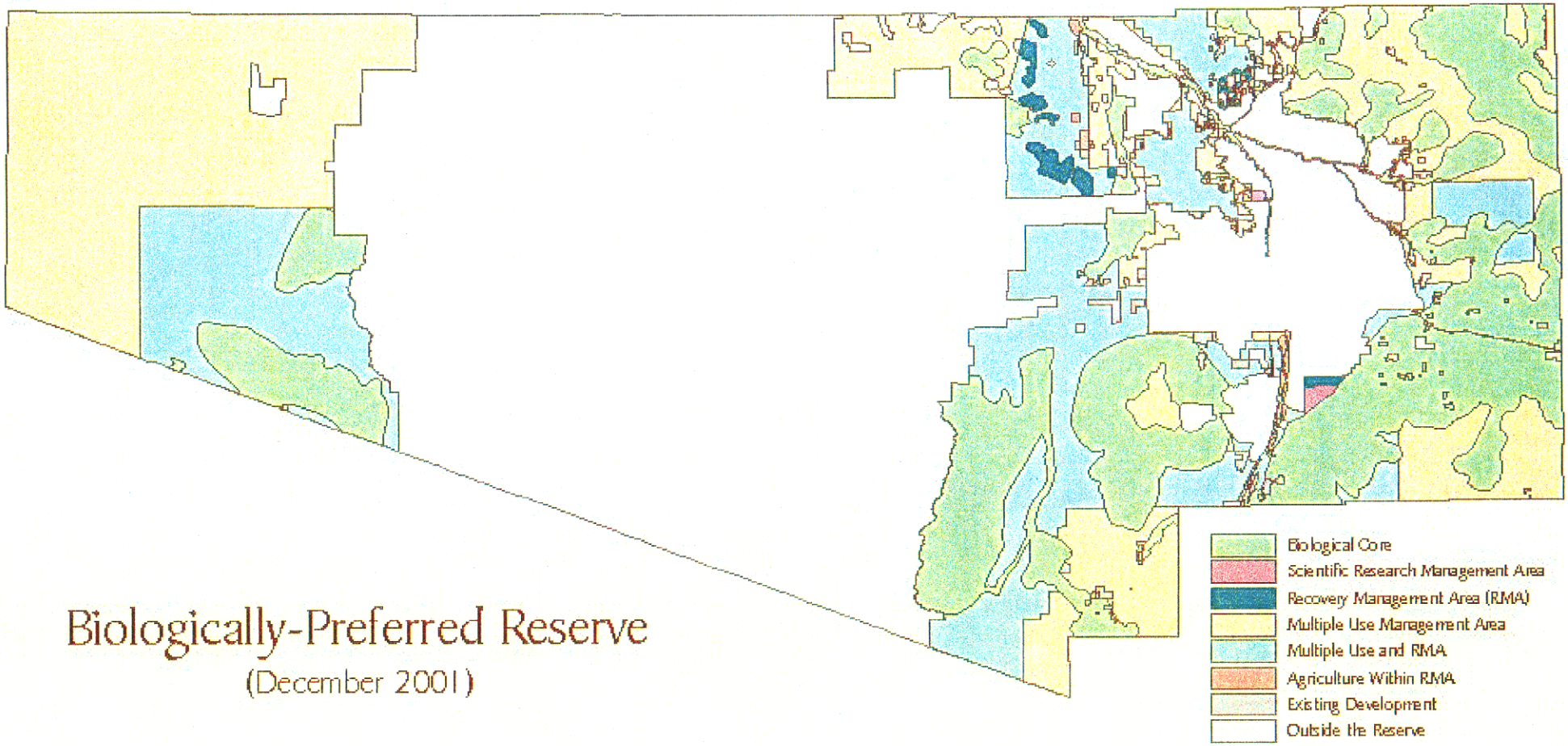


Summary of High Potential Habitat
4 or More Priority Vulnerable Species



Summary of High Potential Habitat
5 or More Priority Vulnerable Species

Biologically Preferred



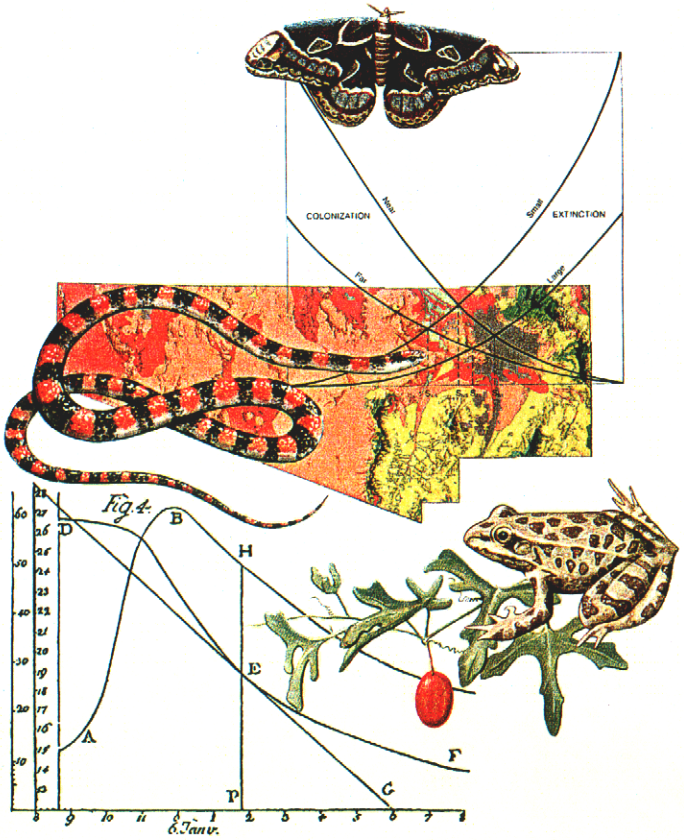
Biologically-Preferred Reserve
(December 2001)

Conservation Lands System

The Conservation Lands System, adopted in the local land use plan in December 2001, incorporates the biological reserve recommended by more than 200 members of the science community after 3 years of study. The biological reserve will allow the community to stop the decline of 55 native species and protect the overall biodiversity of the region.

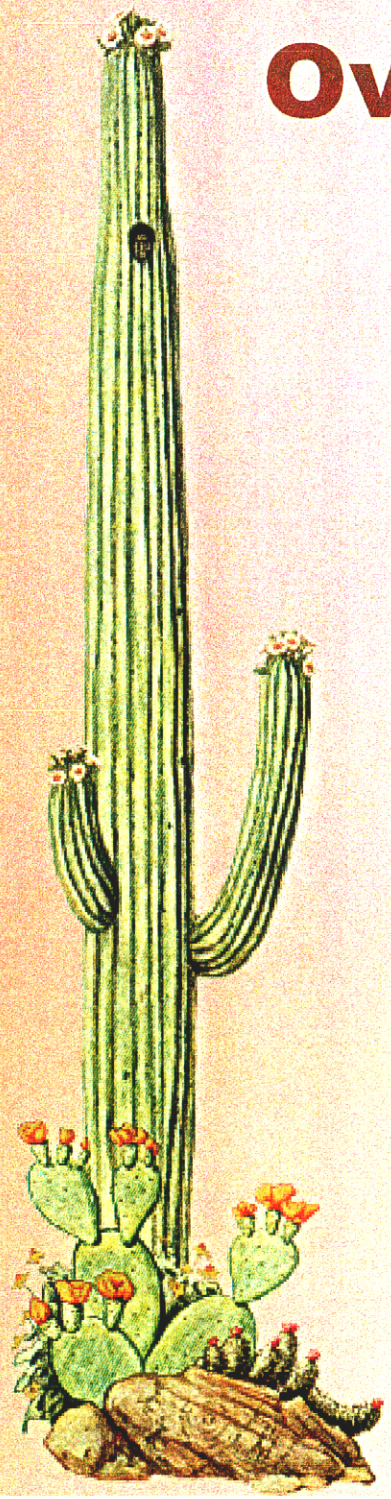
Developing Local Conservation Standards

- Comprehensive land use planning
- Defining a conservation land system
- Ties to Federal ESA and permitting
- Adaptive management planning
- Defining local resource values
- Science based Natural Resource Planning



Regional Bio Planning

- Large landscape protection
- Contemporary growth management concepts
- Science based open space planning



Overview:

- Thinking Differently about Land Planning and Urban Growth
- Defining Local Resource Values
- What is the Sonoran Desert Conservation Plan?
- Science based Natural Resource Planning
- **Implementation**

Implementation

A lot has already been done…

Ranch Conservation

- Empire-Cienega Ranch - 119,462 acres
- Empirita Ranch - 23,834 acres
- Posta Quemada Ranch - 8,200 acres
- Carpenter Ranch - 200 acres

Cultural and Historic Resources

- Los Morteros - 33 acres
- Pantano Town site - 34 acres
- Mission San Augustine - 4.82 acres
- Tumamoc Hill - acquisition in progress
- Robles Ranch - restoration of ranch house complete
- Agua Caliente Ranch - restoration of main house underway
- Canoa Ranch - stabilization of ranch houses complete
- Anza Trail - grants secured and planning proceeding
- Empirita Ranch - inventory of cultural resources complete
- Colossal Cave - restoration planning underway

Mountain Parks

- Tucson Mountain Park - 21,000 acres
- Tortolita Mountain Park - 3,446 acres
- Colossal Cave Mountain Park - 2,038 acres

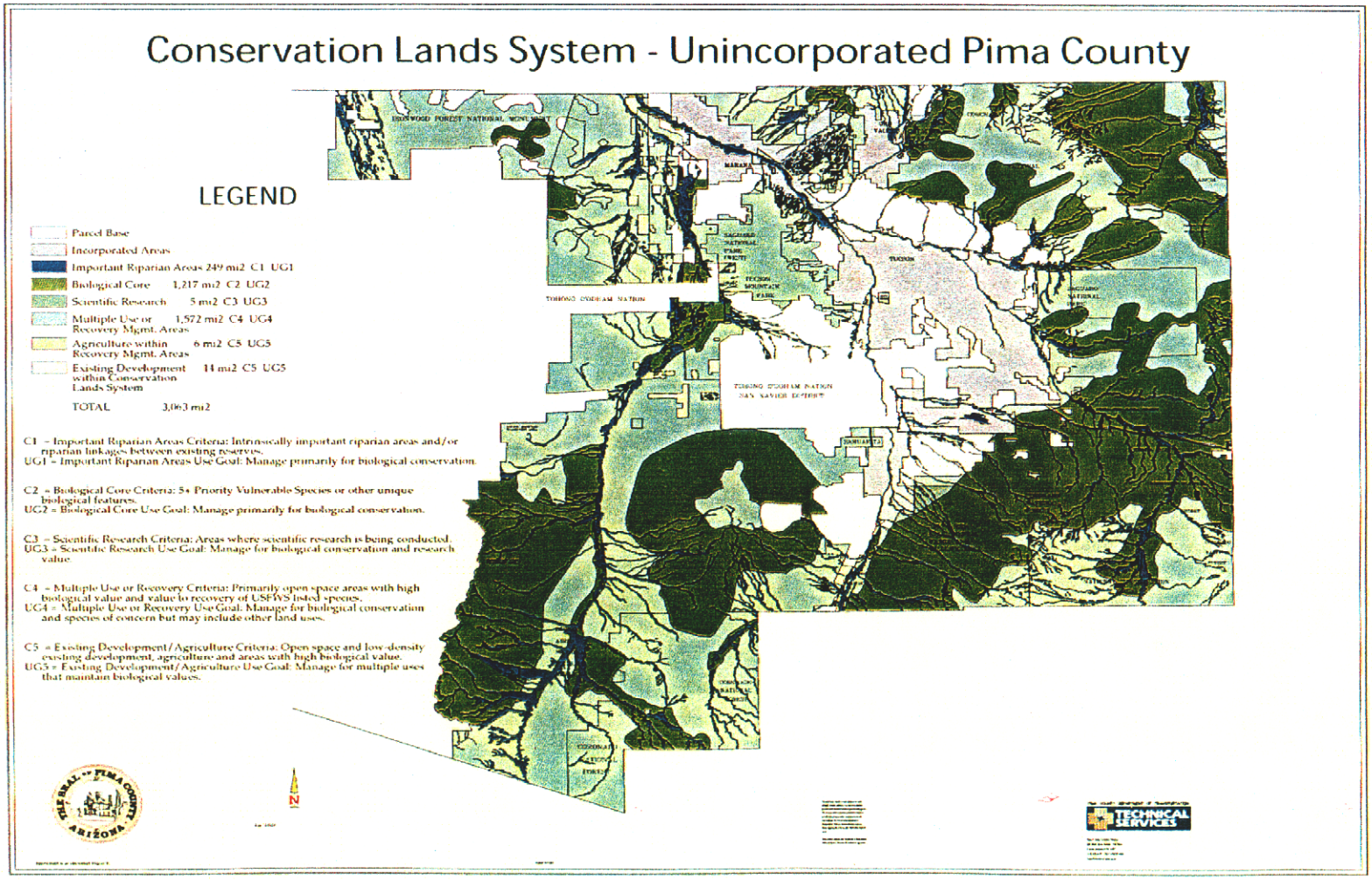
Riparian

- Rillito River Park - 10 miles
- Santa Cruz River Park - 4.5 miles
- West Branch of the Santa Cruz River - 56 acres
- Effluent conservation pool - 10,000 acre feet per year for riparian projects
- Increased protection for riparian areas - 2001 Comprehensive Plan

Biological

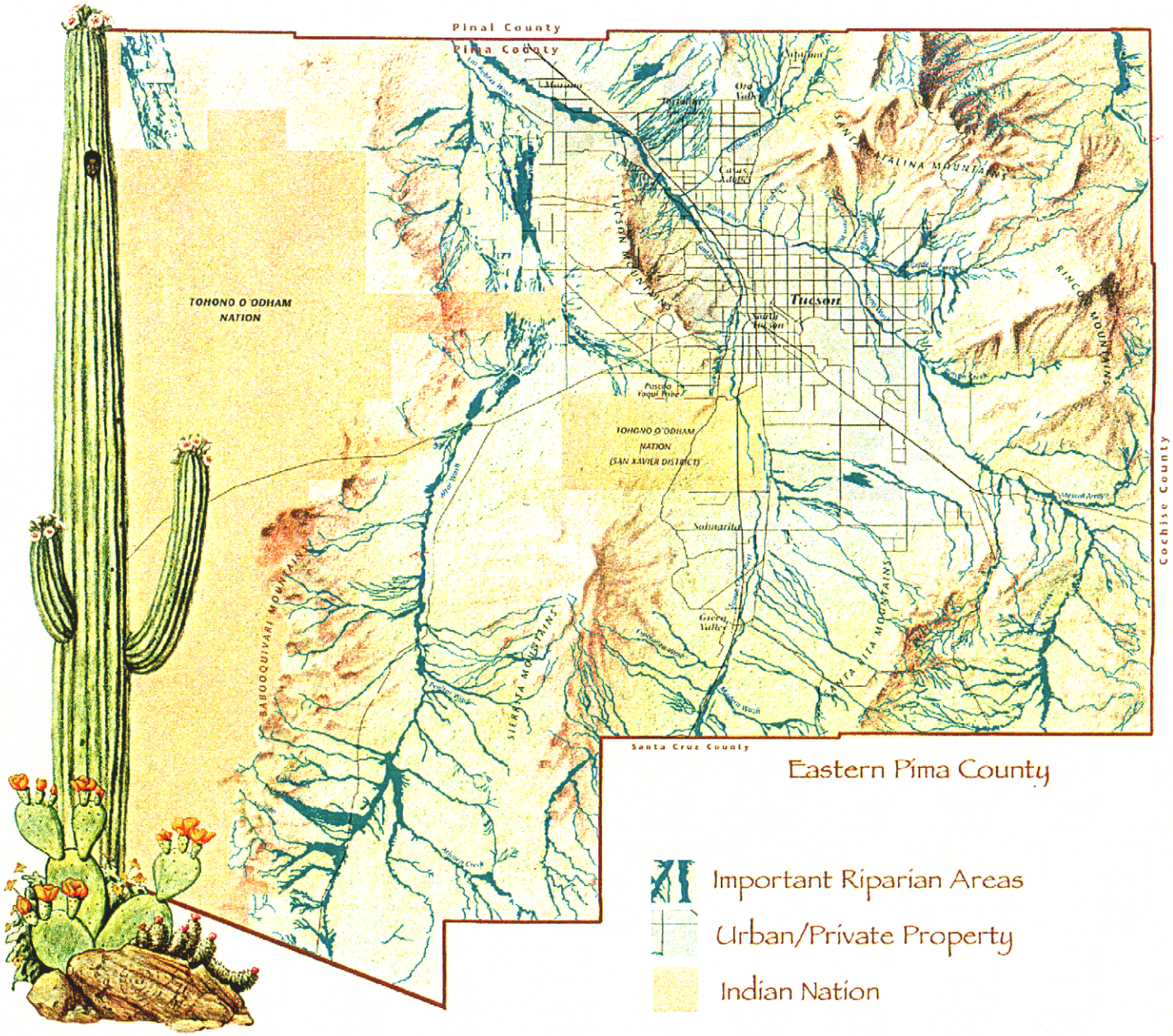
- Ironwood Forest National Monument - 129,000 acres
- Las Cienegas National Conservation Area - 40,000 acres
- Cienega Creek Natural Preserve - 3,979 acres

Implementation: Large Landscape Conservation



Sonoran Desert Conservation Plan

A long term vision for protecting the heritage and natural resources of the west.



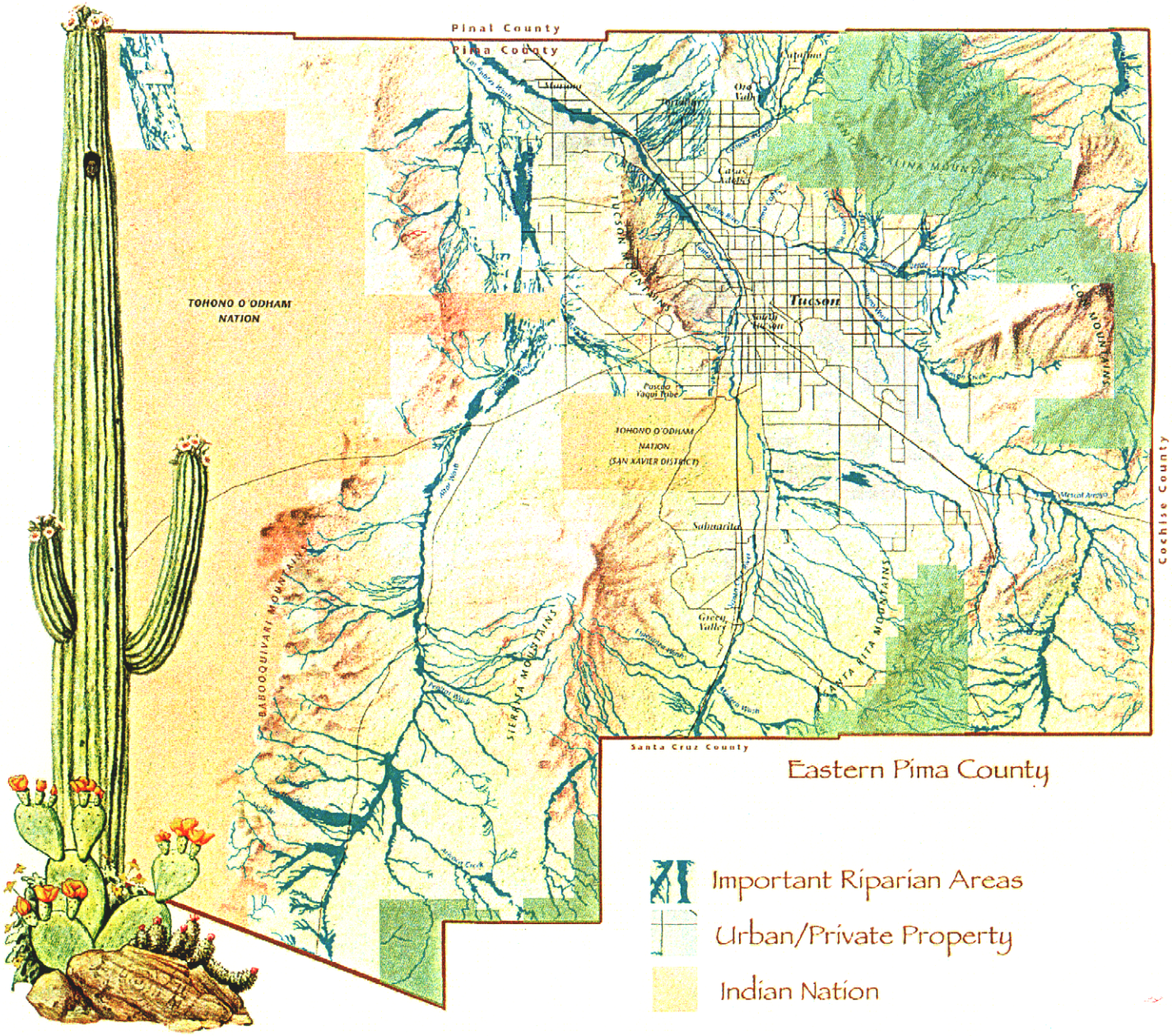
Eastern Pima County

Important Riparian Areas

Urban/Private Property

Indian Nation

National Forests



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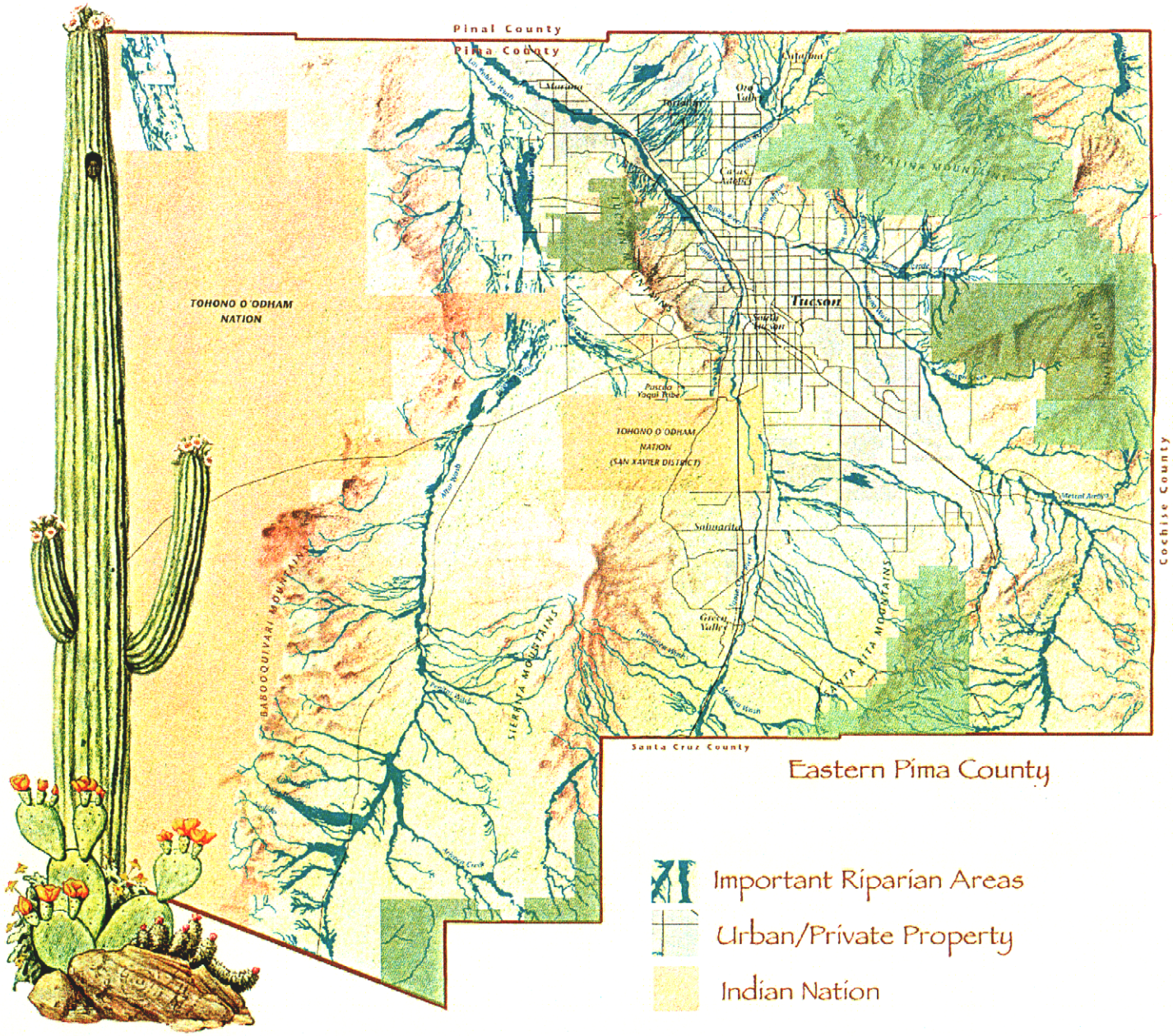
National Forest

National Parks



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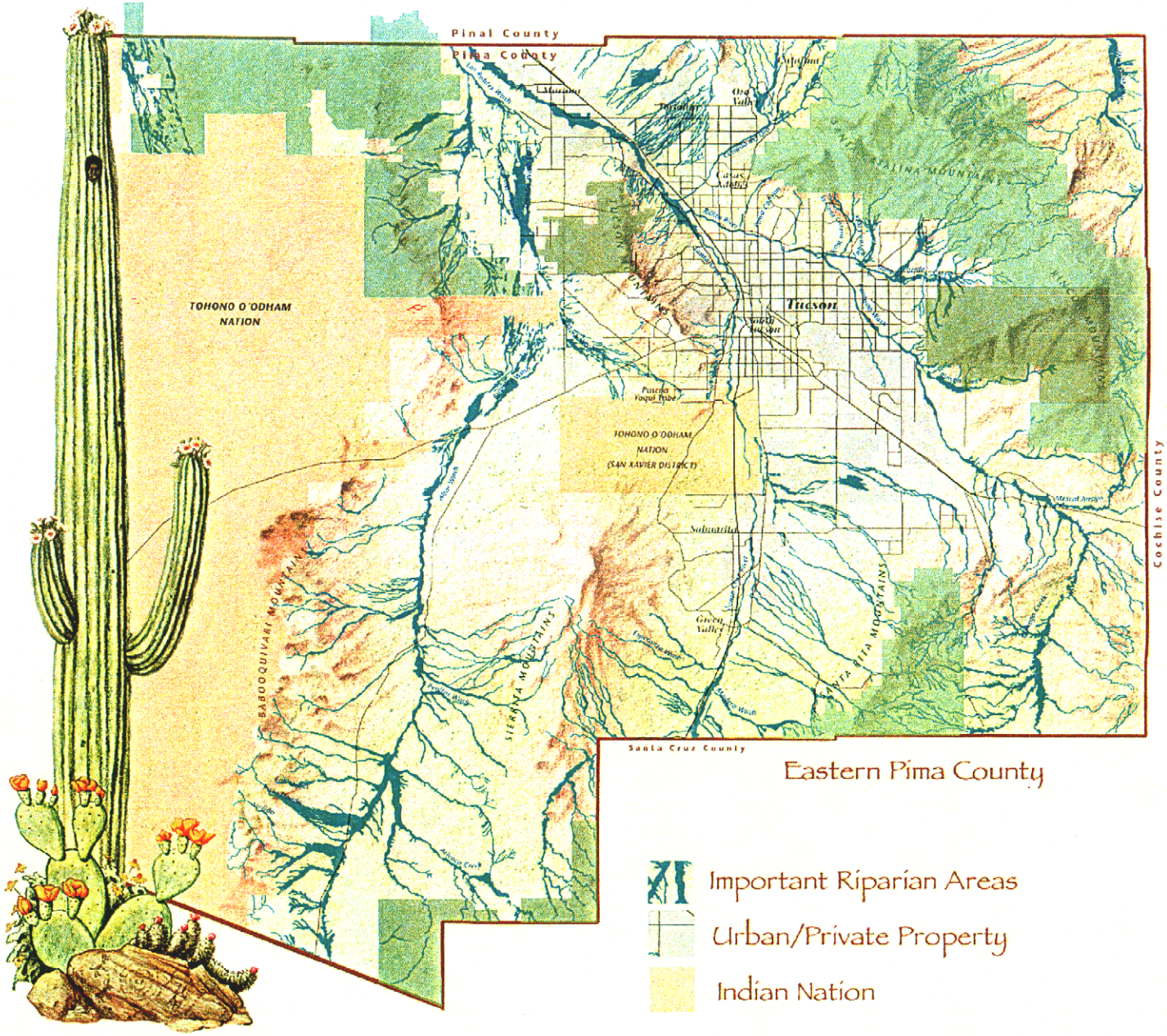
National Forest
National Parks

National Monuments



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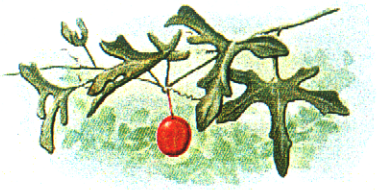
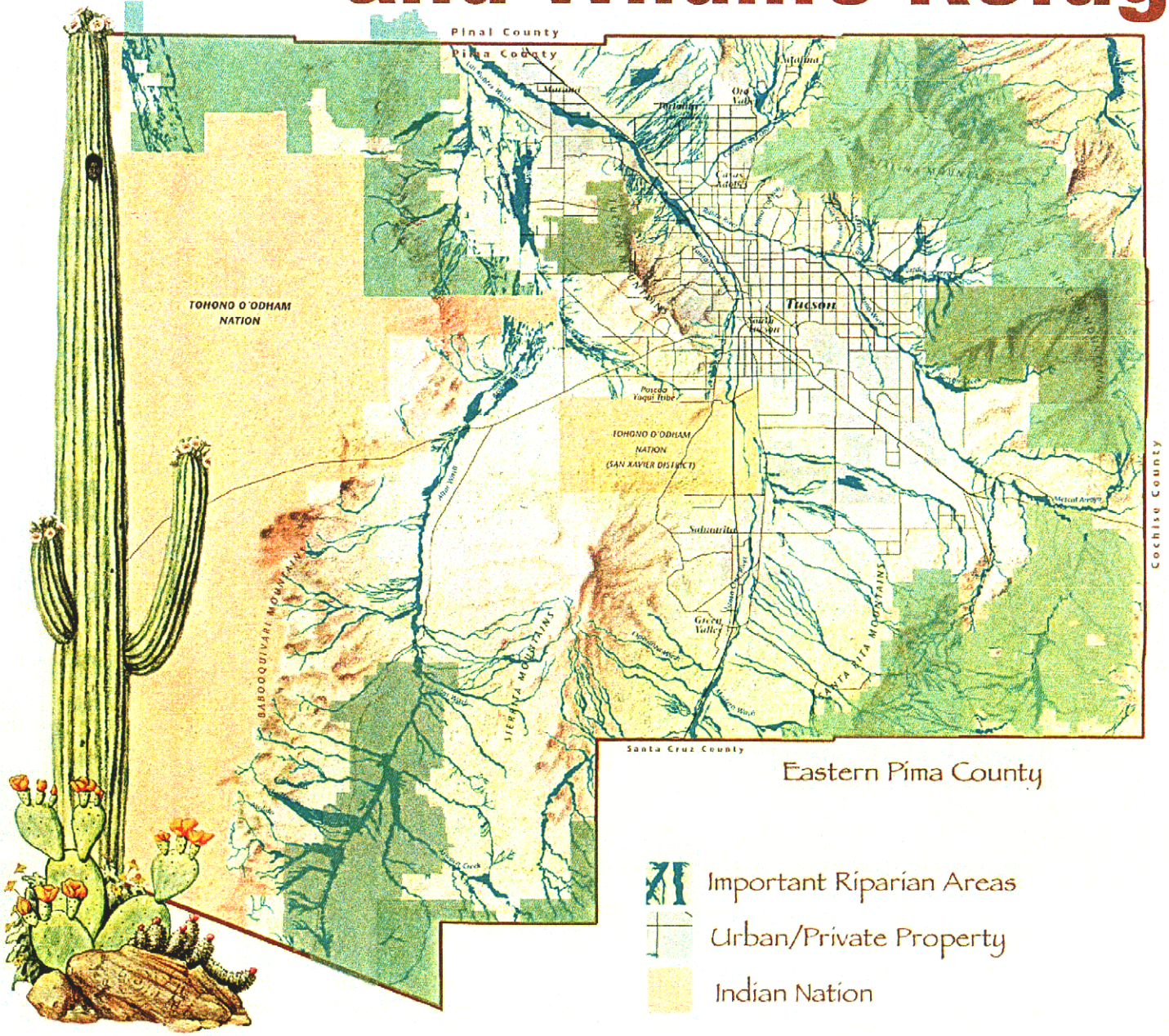


National Forest
National Parks
National Monuments

National Conservation Areas and Wildlife Refuge



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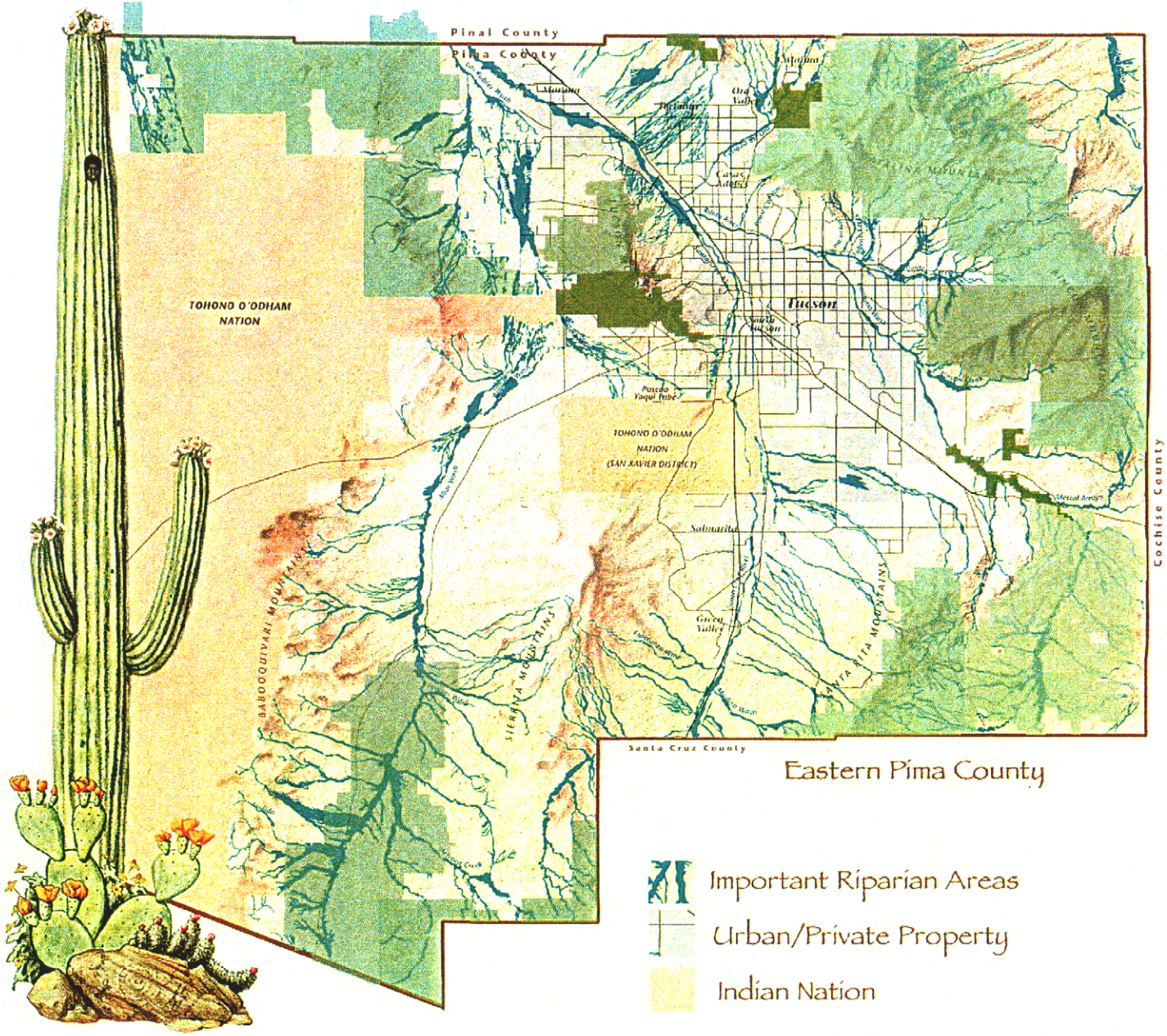
National Forest
National Parks
National Monuments
National Conservation Areas

State, County, and City Parks



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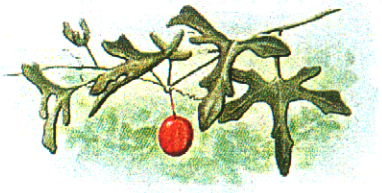
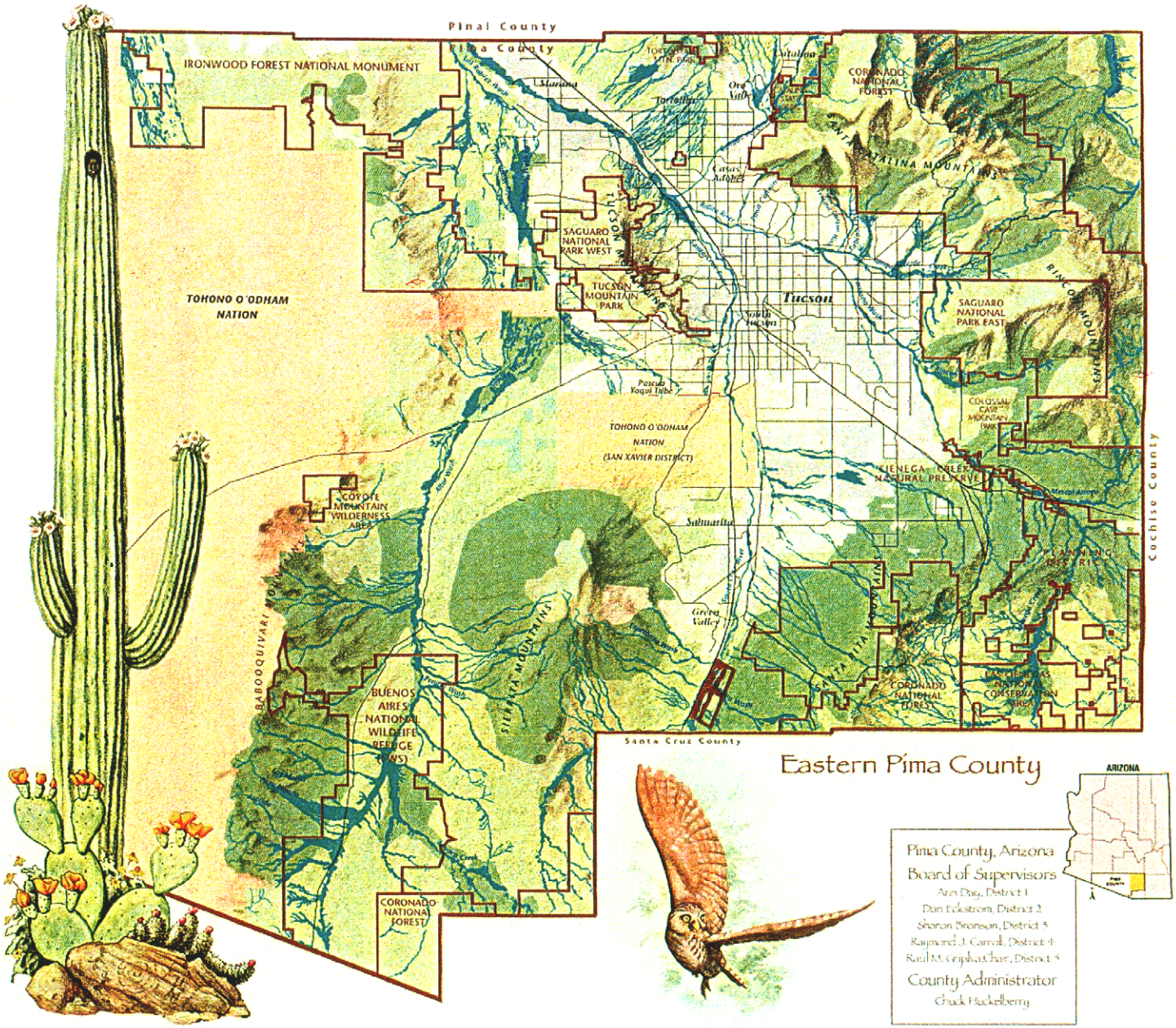


National Forest
National Parks
National Monuments
National Conservation Areas
State, County, and City Parks

Conservation Lands System



Eastern Pima County

Pima County, Arizona
Board of Supervisors
Ann Day, District 1
Dan Eckstrom, District 2
Sharon Bronson, District 3
Raymond J. Carroll, District 4
Raul M. Grijalva, Chair, District 5
County Administrator
Chuck Huckelberry

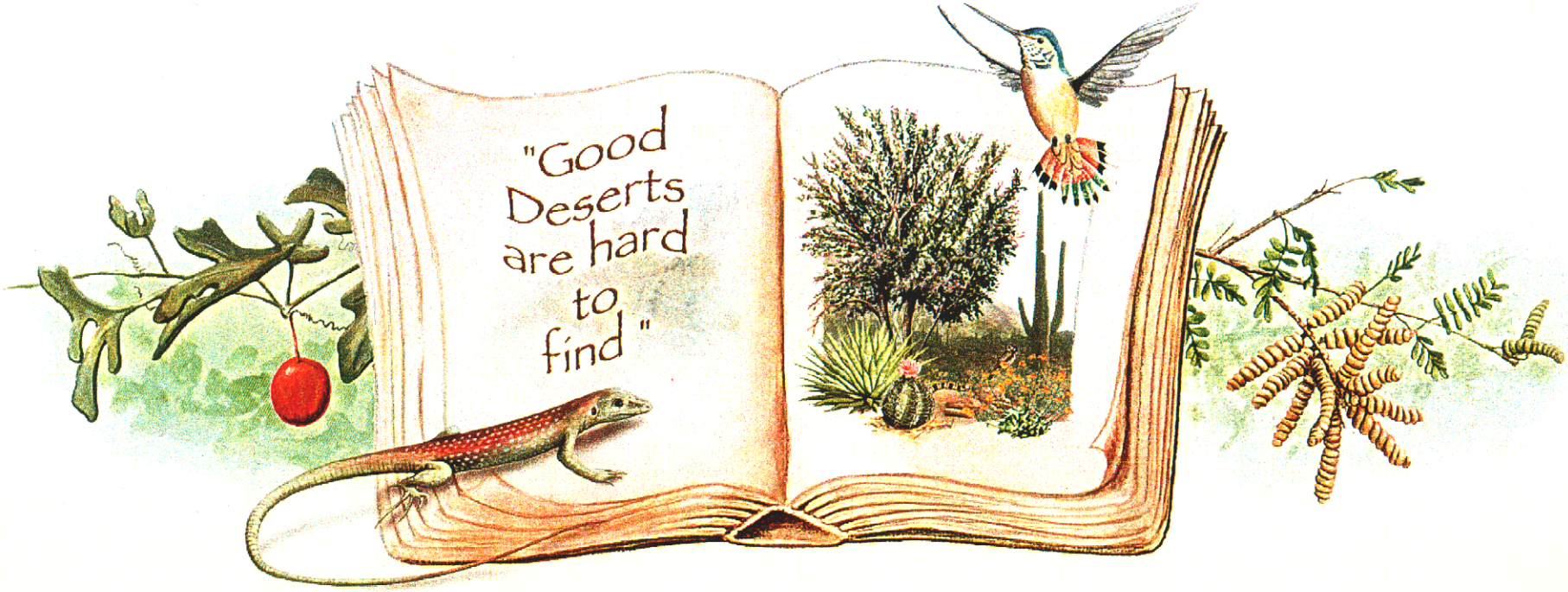
Sonoran Desert Conservation Plan

A long term vision for protecting the heritage and natural resources of the west.

Legend

- Important Riparian Areas
- Biological Core
- Scientific Research
- Multiple Use or Recovery Management Areas
- Agricultural within Recovery Management Areas
- Existing Development within Conservation Land System
- Indian Nation
- Existing Reserves
- Unincorporated Areas
- Incorporated Areas

Sonoran Desert Conservation Plan



....and protect