



**Birds,
People and
the Santa
Cruz River**



A Seventh Grade Teacher's Guide

P.A.R.K.S.

Parks as Resources for Knowledge in Science

Birds, People and the Santa Cruz River

A Seventh Grade Teacher's Guide

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**Friends of the
Santa Cruz River**



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Note about this Guide

This teachers' guide is available to schools, and for extended loan to all teachers in the following districts: District 35, Nogales Unified Schools, Little Red School, Patagonia, Sonoita, Sahuarita, and Continental Schools. Educators outside of this area may borrow the book at any time and photocopy all or part. Copies will also be distributed by Tumacácori National Historical Park for the cost of copying. For more information, please contact:

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BIRDS AND CULTURE

Students will analyze how historic cultures recognized and were influenced by birds through examining ancient art forms and creating their own motifs.

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TWELVE BIRDS OF TUMACÁCORI

Students will analyze bird species of the Santa Cruz River Valley classifying attributes of their habitats and physical characteristics of each species in activities that enable them to identify native bird species.

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FIELD TRIP TO THE MISSION AND RIVER

Students will analyze three historic cultures in Tumacácori National Park. They will discover how past and present cultures affect and impact bird habitat and local ecosystems, and how protection of the Santa Cruz river will ensure a healthy environment.

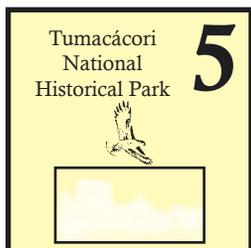
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RIVER ISSUES

Students will learn about specific issues relating to the Santa Cruz River, assert their opinion about each, and participate in a debate using knowledge gained.

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STUDENT JOURNAL

Students will complete this journal as part of the field trip to Tumacácori National Historical Park and the adjacent Santa Cruz River.

Appendix

Foreword

Tumacácori National Historical Park and the adjacent Santa Cruz River are historically, culturally and environmentally rich. While the area's history dates back to the prehistoric Hohokam people, present archeological evidence reveals O'odham and Spanish mission communities spanning over three hundred years. Apart from human habitation, the park and its environment provide an oasis for wildlife, particularly birds, in an otherwise inhospitable desert. The river and its associated Southwest Cottonwood-Willow Riparian Area is one of the most endangered ecosystems in the United States at this time. It hosts over 200 species of birds, and serves as an important corridor for neotropical migrants including the Lazuli Bunting, Yellow-billed Cuckoo and the Southwest-Willow Flycatcher.

When first defining goals and objectives for the 7th grade curriculum, we discussed ways in which students could learn about and appreciate the historical/cultural site and environment. Essentially, how could we marry culture and environment with the ultimate goal of stimulating the students' appreciation of and eventual stewardship of the area. After numerous meetings and field tests, we developed the current program and teachers' guide.

Although many lessons from this guide and field trip can be used as stand alone activities, completion of pre- and post-classroom activities is essential to integrating science, history and social science standards, goals and objectives.

In lesson 1 classroom activities, students learn about how different cultures have interacted with their environment. How did they view and utilize the land, wildlife and, specifically, birds? How has the environment influenced their culture to become what it is today? How is the environment integrated into art and ceremony?

Lesson 2 classroom activities instruct students in birding basics, including identification techniques, beginning ornithology, and common species identification.

Once prepared in the classroom, students visit the park and adjacent river area as described in lesson 3. During the field trip they learn to use binoculars and identify first-hand many of the birds they learned about in the classroom. In an Indian house or "Ki" they explore O'odham and Apache cultures and complete a journal activity from the point of view of a Native American. They then tour the mission and repeat a similar exercise from the viewpoint of a missionary while sitting in the Franciscan church. After lunch, students walk to the river, observing and learning about how American culture interacted with the environment. The field trip ends at the river with students individually sitting along the shady banks and completing an exploratory journaling exercise entitled "Journey to the heart of the Santa Cruz River."

The last unit of the study, lesson 4, looks at student viewpoints and current issues affecting the river. Students explore contemporary attitudes about the area from their own perspectives as well as those of diverse user groups such as environmentalists, developers, all terrain vehicle riders, picnickers and hikers. Each user group's position is then role played as students attempt to come up with a win-win management plan for the river and its surroundings.

The ultimate goal of this guide and program is to get our local students to take notice of and experience their rich heritage and environment. Instead of going to Tucson or further destinations north, they discover the National Park, the river and the local beauty in their backyard. Hopefully, by learning about and visiting these rich sites, they will learn to appreciate and even love the area. Once they love it, they are sure to protect it!

HOW TO USE THIS GUIDE

LESSON OVERVIEW

A brief outline of the general theme and concepts as well as a description to help accomplish the lesson. It is useful for scanning different lessons.

Subjects

Lessons are primarily science or social studies related, though other disciplines may be covered (art, etc.).

Standards

National Standards will be listed here, while Arizona State Standards will be listed on Page iii

Objectives

Measurable student outcomes.

Preparation

Includes a list of materials and steps needed to prepare for the lesson.

Time

The estimated amount of time it will take to complete the lesson.

Vocabulary

A list of key or foreign words.

LESSON TITLE

TEACHER BACKGROUND INFORMATION

Useful background information to be read by the teacher prior to the lesson. It is not intended to be read by students.



Enrichment

1. Step by step instructions.
 2. Numbered and clearly written.
 3. Augmented by graphics and other useful information.
- Suggestions or other activities appropriate to further study lesson concepts or themes.
 - Located at the end of the activity instructions.

LESSON # - LESSON TITLE - MASTER PAGE #

MASTER PAGES

Master Pages contain activities that are essential to complete the lesson. In most cases, they are student worksheets and will need to be photocopied. Sometimes a teacher copy is sufficient.

STATE OF ARIZONA - SCIENCE STANDARDS

ACTIVITY	AZ State # 1 N.S.T.A. A SCIENCE AS INQUIRY	AZ State # 2 N.S.T.A. G HISTORY AND NATURE OF SCIENCE	AZ State # 3 N.S.T.A. F SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES	AZ State # 4 N.S.T.A. C LIFE SCIENCE	AZ State #6 N.S.T.A. C. EARTH SCIENCE
1. Birds and Cultures	1SC - E3, PO2			4SC - E1, PO3	
2. Twelve Birds of Tumacácori				4SC - E1, PO1/2/3 4SC - E7, PO1	
3. Field Trip to the Mission and River			3SC - E2, PO1 3SC - E4, PO1		
4. Santa Cruz River Issues			3SC - E1, PO1 3SC - E2, PO1 3SC - E3, PO1 3SC - E4, PO1	4SC - E1, PO1	6SC - E6, PO1/2

RESOURCES AND REFERENCES

BIRDS AND CULTURE

The Encounters Box, Teachers' Resource Box, Tumacácori National Historical Park.

Indian Rock Art of the Southwest, Polly Schaafsma, School of American Research, Univ. of New Mexico Press, Albuquerque, 1980.

Resource Utilization and Food Taboos of Sonoran Desert Peoples, Amadeo M. Rea, *Journal of Ethnobiology*, Vol. 1, No. 1, University of Washington, Seattle, 1981.

Rock Art of the American Indian, Grant Campbell, Promontory Press, NY, 1967.

O'ODHAM

A Pima Remembers, George Webb, University of Arizona Press, Tucson, 1959.

Hohokam Arts and Crafts, Barbara Gronemann, Southwest Learning Sources, 6440 Presidio Road., Scottsdale AZ 85254, 1994.

Of Earth & Little Rain, Bernard Fontana, University of Arizona Press, Tucson, 1989.

Papago and Pima Indians of Arizona, Ruth Underhill, The Filter Press, P.O. Box 5, Palmer Lake, CO 80133, reprinted 1979.

Pima Indian Legends, Anna Moore Shaw, University of Arizona Press, Tucson, 1968.

Pima and Papago Indian Agriculture, Edward F. Castetter & Willis H. Bell, *Inter-American Studies*, Vol. 1, University of New Mexico Press, Albuquerque, 1942.

The Pima Indians, Frank Russell, University of Arizona Press, Tucson, reprinted 1975.

The Upper Pima of San Cayetano del Tumacacori, Charles C. Dipeso, The Amerind Foundation, Dragoon AZ, 1956.

APACHE

Indeh: An Apache Odyssey, Eve Ball, University of Oklahoma Press, 1980.

The Apaches: Eagles of the Southwest, Donald E. Worcester, University of Oklahoma Press, 1979.

The Apache Indians, Nicole Claro, Chelsea House Publishers, NY, 1992.

The People Called Apache, Thomas E. Mails, BDD Books, NY, 1974.

Western Apache Material Cultural, Alan Ferg, University of Arizona Press, Tucson, 1987.

When The Earth Was New, Chesley Goseyun Wilson, World Music Press, PO Box 2565, Danbury, CT 06813, 1994.

TWELVE BIRDS OF TUMACÁCORI

Field Guide to the Birds of North America, National Geographic Society, 1987.

Birds of North America, Golden Field Guides, St. Martins Press, New York, 2001.

A New Focus on the Field Birds of North America, Kaufman Focus Guides, Ken Kaufman, Houghton Mifflin Company, New York, 2000.

Birds of the American Southwest, Lynn Hassler Kaufman, Rio Nuevo Publishers, Tucson, AZ, 2000.

Field guide to Western Birds, Roger Tory Peterson, Houghton Mifflin Co., Boston, 1990.

A Natural History of the Sonoran Desert, Arizona-Sonora Desert Museum, University of California Press, Berkeley, Los Angeles, London, 2000.

Watchable Birds of the Southwest, Mary Taylor Gray, Mountain Press Publishing Co., Missoula, MT, 1995.

Easy Field Guide to Common Desert Birds, Richard and Sharon Nelson, Primer Pubs., Phoenix, AZ, 1996.

A Field Guide to Little-Known & Seldom-Seen Birds of North America, Ben, Cathryn and John Sill, Peachtree Publishers, Inc., Atlanta, GA, 1988.

FIELD TRIP TO THE MISSION AND RIVER

A History of the Southwest and Arizona: A History, Thomas E. Sheridan, University of Arizona Press, 1995.

Arizona's Changing River; How People Have Affected the

Rivers, Barbara Tellman, Richard Yarde & Mary G. Wallace, Water Resources Research Center, College of Agriculture, University of Arizona, 1977.

"*Human Ecology of the Sonoran Desert*," pages 105-117, *A Natural History of the Sonoran Desert*, Arizona-Sonora Desert Museum, University of California Press, Berkeley, Los Angeles and London, 2000.

Journey to the Heart of Nature, Joseph Cornell, Dawn Pubs, Nevada City, CA, 1994.

Seeds of Change, The Story of Cultural Exchange after 1492, Sharryl Davis Hawke and James E. Davis, Addison Wesley Pubs., 1992.

SPANISH

Kino A Legacy, Charles Polzer, Jesuit Fathers of Southern Arizona, Tucson, AZ 1998.

A Kino Keepsake, Friends of the University of Arizona Library, Tucson, 1991.

"CHANT," Gregorian Chant tape by the monks of Santa Domingo, Angel Records, 1993.

Entrada; The Legacy of Spain & Mexico in the United States, Bernard L. Fontana, Southwest Parks & Monuments Association, Tucson, 1994.

Sonora, Ignaz Pfeffercorn (translated by Theodore Treutline), University of Arizona Press, Tucson, 1989.

Friar Bringas Reports to the King, Daniel Matson and Bernard Fontana, University of Arizona Press, 1977.

Rules and Precepts of the Jesuit Missions of Northwestern New Spain, Charles Polzer, University of Arizona Press, 1976.

AMERICAN

Arizona: A History, Thomas E. Sheridan, University of Arizona Press, 1995.

Hispanic Arizona: 1536 - 1856, James E. Officer, University of Arizona Press, 1987.

They Lived in Tubac, Elizabeth R. Brownell, Westernlore Press, Tucson, 1986.

Tubac, Richard Wormser, The Tubac Historical Society, 1981.

RIVER ISSUES

A Sanitary Code, Rules and Regulations, Solid Waste, Chapter VII, pg. 140-143, Santa Cruz County Health Department, Nogales, AZ 85621, (520) 761-7800.

Divided Waters, Helen Ingram, Nancy K. Laney and David M. Gillilan, University of Arizona Press, Tucson, 1995.

Sonora; Its Geographical Personality, Robert C. West, University of Texas Press, Austin, 1993.

Water in the Hispanic Southwest, Michael C. Meyer, University of Arizona Press, Tucson, 1996.

Field Manual for Water Quality Monitoring, Mark K. Mitchell & William B. Stapp, Kendall/Hunt Publishing Co., Dubuque, Iowa, 1997.

OTHER USEFUL RESOURCES

Arizona Association of Environmental Educators (AAEE), (602) 786-9969.

Arizona Department of Agriculture, (520) 287-7887.

Arizona Department of Environmental Quality, (800) 234-5677.

Arizona Department of Health Services, (800) 221-9968.

Arizona State Government Water Resources, (520) 761-1814.

Arizona State Parks, Tubac Presidio State Historic Park, (520) 398-2252.

Friends of the Santa Cruz River, P.O. Box 4275, Tubac, AZ 85646, (520) 398-8269.

Household Hazardous Waste Program, Office of Public Works, Santa Cruz County, Nogales, AZ 85621, (520) 761-7800.

National Park Service, Tumacácori National Historical Park, P.O. Box 67, Tumacácori, AZ, 85640, (520) 398-2341.

Nogales Chamber of Commerce, Nogales, AZ 85621 (520) 287-6570.

Nogales Wastewater Treatment Project, 777 N. Grand Ave., Nogales, AZ 85621, (520) 287-6571.