

LESSON 2

TWELVE BIRDS OF TUMACÁCORI



Students will analyze bird species of the Santa Cruz River Valley by classifying their physical features, identifying each species, and recording attributes of their habitats.



LESSON OVERVIEW

Students will analyze bird species of the Santa Cruz River Valley by classifying their physical features, identifying each species, and recording attributes of their habitats.

Subjects

Science

Standards

Science as Inquiry

Life Science

Objectives

Students will:

1. Identify and describe habitat for 12 bird species.
2. Construct a physical attributes chart of local bird species.
3. Identify local birds by their calls and songs.

Preparation

Copy **Master Page 2.4**, (one per student), 12 sets of **Master Pages 2.8 and 2.10**, and one copy (teacher's) of **Master Pages 2.11 - 2.14**; Have available pictures of birds (provided in guidebook), bird reference guide-books, bird song CD (provided) and CD player.

Time

Two 50 minute sessions.

Vocabulary

Archaeology, habitat, indigenous, mesquite bosque, migration, neotropical, prey, riparian.

TWELVE BIRDS OF TUMACÁCORI

TEACHER BACKGROUND INFORMATION

The Santa Cruz River starts in the San Rafael Valley south of Patagonia, flows into Mexico for twenty- five miles, then northward through Santa Cruz and Pima Counties. The River terminates into the Gila River (normally underground).

Natural areas of the river corridor referred to as riparian areas have become fragmented by public and private holdings such as cattle ranches, agricultural fields, housing developments, roads, national and state parklands. These habitats once served a large population of bird species migrating from tropical climates of Latin America to the temperate climates of Arizona and northward to Alaska. The migratory movements of hundreds of neotropical bird species continue to occur twice yearly in spite of the dwindling food supplies and safe resting and nesting places within the riparian corridor.

The Southwest Cottonwood-Willow riparian corridor of the Santa Cruz Valley is a rare and critical habitat for the survival of migratory birds traveling long, arduous journeys. It is world renown for birdwatching and considered a national treasure. It is one of the most endangered ecosystems in the United States at this time.

Birds have been migrating through the Santa Cruz Valley for thousands of years. One form of evidence for this is observed in the artifacts found at archeological sites which record the existence of bird species through indigenous art forms.



LESSON 2 - TWELVE BIRDS OF TUMACÁCORI

Today, birds continue to travel the corridor just as they have always done and are appreciated by thousands of visitors who come to the valley to observe the migration of over two-hundred fifty species of birds.

The presence of certain types of birds coming and going year after year is predictable, so it is relatively easy to discern with a little training the difference among birds species. Appearance is perhaps the most reliable way to identify birds, but identification alone is but a fraction of the knowledge needed. To begin to understand the world of birds and why they come to the Santa Cruz Valley one must look at which riparian habitat is used by each species, how, when, and why they call or sing to each other, and where they build nests, find food, and raise offspring. Observing birds with the aid of binoculars can be a rewarding educational experience. The number and kinds of birds found can indirectly indicate the health of the habitat they seek. Because records show which species have been here in the past, comparison of present day species will help us identify immediate management issues and conservation needs.

Activity 1

Part 1 - Habitat Attributes

1. On the board, reconstruct the chart below, leaving answer spaces blank.

2. Present to your class the color photos provided of Mesquite-Bosque and Southwest Cottonwood-Willow Riparian habitats.

3. Complete the chart with the entire class, encouraging student input, response and discussion. Note that in many cases, attributes are overlapping for both habitats. (See answers in the chart below.)

Part 2 - Species Attributes

1. Make twelve copies of *Bird Species Attributes Chart*, **Master Page 2.4** and *Bird Species Cards*, **Master Pages 2.7 - 2.10**. Copy the chart onto the board or make an overhead.

2. Present to the class bird pictures from **Master Pages 2.7 - 2.10**, or alternatively use the provided color photos. Discuss each species and its attributes.

3. Divide the class into twelve work groups, hand out Master Pages and assign each group a species. Ask each group to complete the *Species Attribute Chart* for their given species using the information provided on **Master Pages 2.7 - 2.10** in addition to various bird reference books.

4. Upon completion of the individual species attribute charts, have students write their information onto the larger chart on the board. Have students complete the *Chart* with the exception of the habitat column.

HABITAT ATTRIBUTES CHART

Habitat	Tree Species	Bird Foods	Nesting Sites	Cover Available	Places to Forge	Bird Species
Mesquite Bosque	Mesquite, Mexican Elder, Hackberry	Mesquite Pods, Elderberries, Hackberries, Nectar, Seeds,	Trees, Shrubs, Ground, River Banks	Tree Canopy, Leaves, Shrubs, Grass	Under leaves, In the air, On the ground, Tree Bark	All species listed are found
Riparian	Cottonwood, Willow, Ash	Insects, Small Mammals				

LESSON 2 - TWELVE BIRDS OF TUMACÁCORI

Part 3 - Identifying suitable bird habitat

1. Based on the two attributes charts generated in Activities 1 and 2, ask students, working in new groups, to identify the habitat, (either Mesquite-Bosque or Southwest Riparian), that corresponds to each species. Ask them to write their answer in the Habitat column on the **Species Attributes Chart - Master, Page 2.4.**

2. Review and discuss answers with the class.



Activity 2 - Identifying Bird song

1. Play the provided CD of all bird songs, one at a time, to the students and try to have them guess the species, writing the name down.

2. Write all possible answers on the board and play the songs again, one at a time, this time with the teacher circling the correct answers and correlating each song with the species pictures provided.

3. Repeat step 2 and ask students to try to mimic the sounds.

4. As an assessment, erase all bird species names from the board and replay the songbird CD asking students to correctly identify the bird species.

Activity 3 - Clue Cards

1. As a review, divide the class into twelve workgroups and give each one a photograph of a bird species. Ask them to summarize the information provided on the back of the photo, presenting their information to the rest of the class.

2. Refer to the clues for individual birds on **Clue Cards - Master Pages 2.11 - 2.12.** Consider photocopying and laminating cards to make a working teacher copy.

3. If you have not previously played the game, explain to your students that you will be reading clues about a certain type of bird and they are to try to guess its name. They must ask at least six questions before guessing.

4. Read the clues to the students.

5. When all the clues are read, have students say or write down their guess.

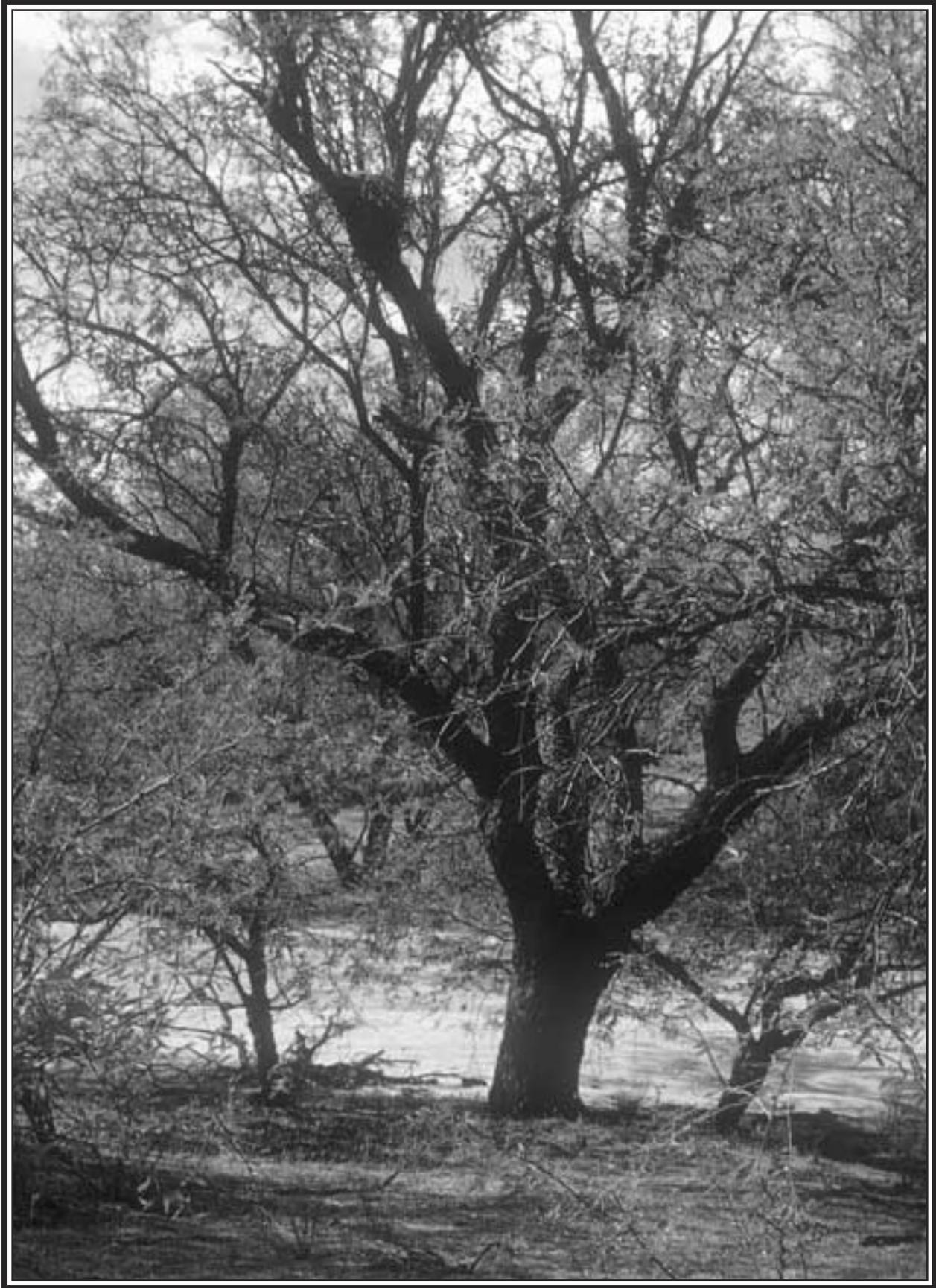


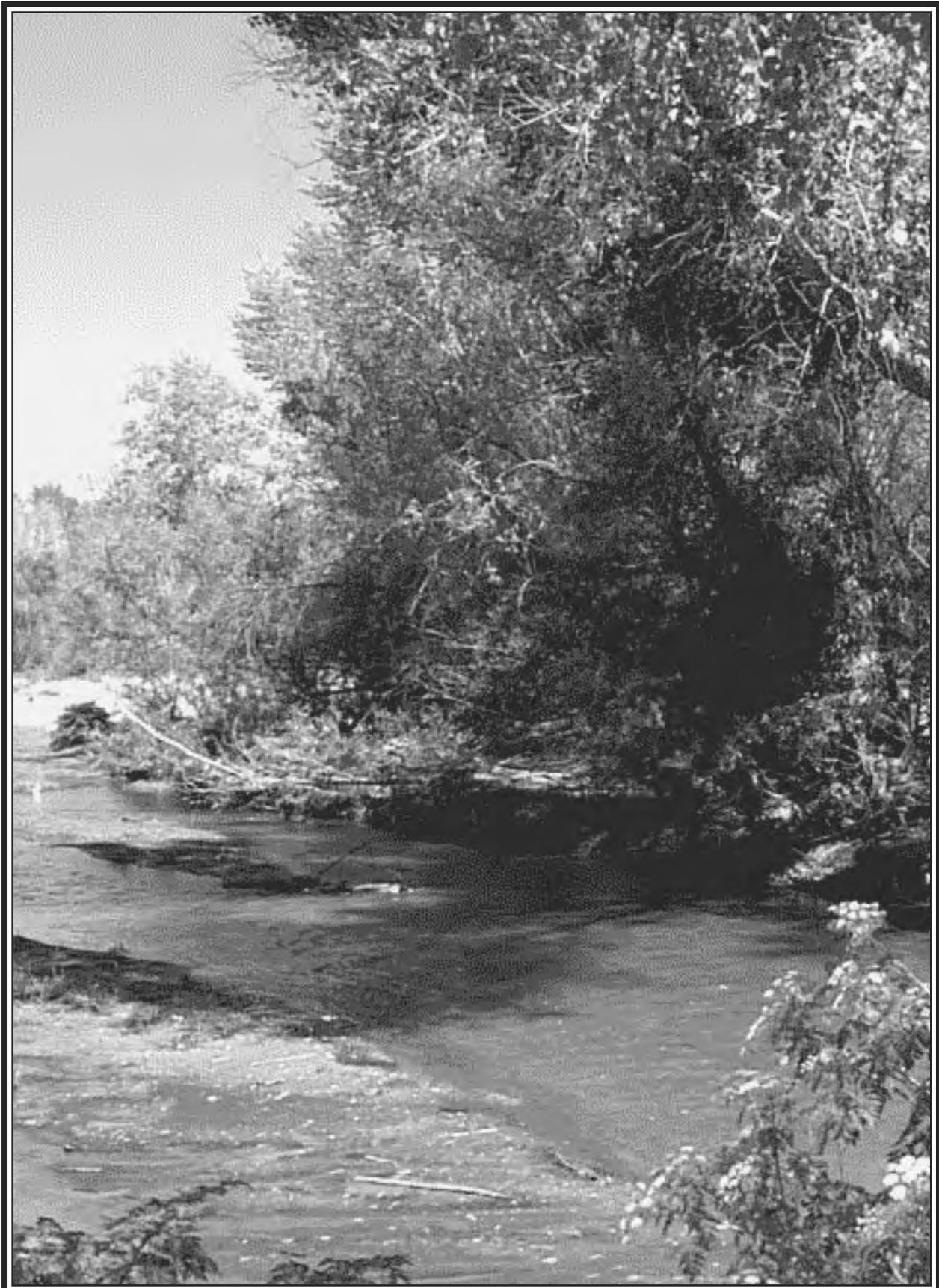
Enrichment

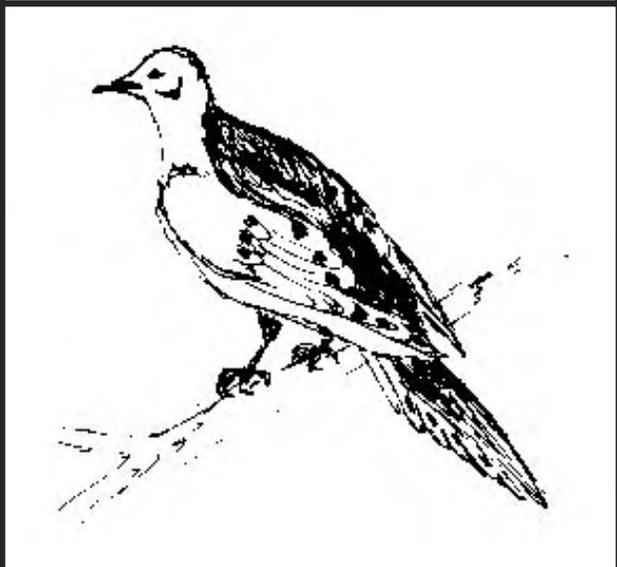
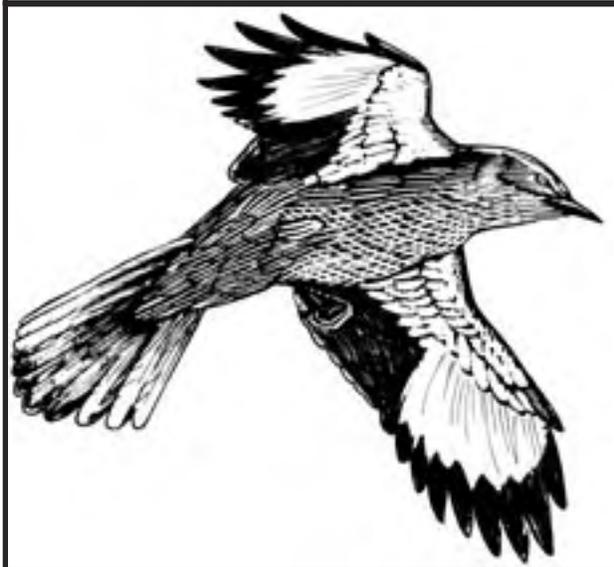
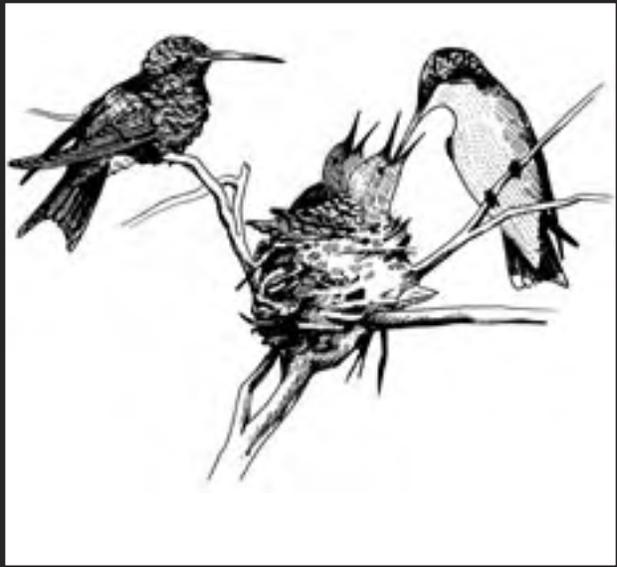
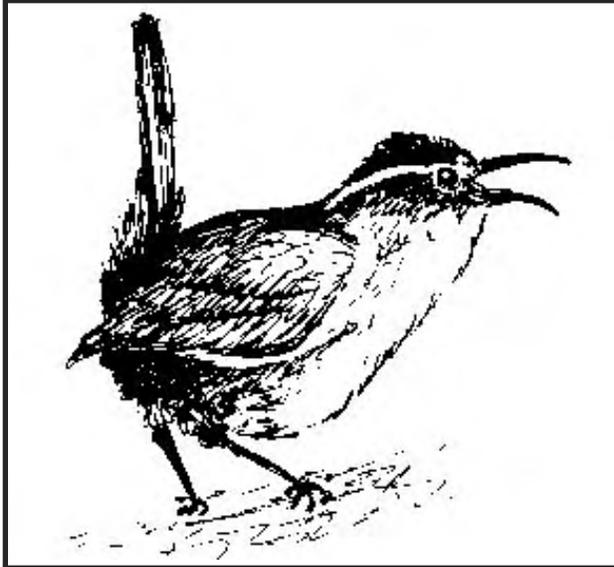
- Copy the twelve bird species on **Master Page 2.7 and 2.10.** for each student and have them use bird guides or provided photographs to realistically color each species.
- As the twelve birds are common to Santa Cruz County, ask students to attempt to sight birds as a homework assignment.
- Take your class birding!

BIRD SPECIES ATTRIBUTES CHART

Bird Species	Size	Color	Beak Shape	Foot Type	Perching Habits	Nest Type	Habitat
Bewick's Wren							
Black-Chinned Hummingbird							
Northern Cardinal							
Gila Woodpecker							
Mockingbird							
Mourning Dove							
Phainopepla							
Red-Tailed Hawk							
Greater Roadrunner							
Say's Phoebe							
Turkey Vulture							
Vermilion Flycatcher							







BLACK CHINNED HUMMINGBIRD

Archilochus alexandri

FAMILY: Trochilidae (Hummingbird)
NEST: tiny cup shape in fork of branch
HABITAT: open woodland, riparian, parks, gardens
FOOD: insects, nectar, spiders
BEHAVIOR: flies backward, rapid wing-beat makes a humming sound
SIZE: body length 3 ½ inches
COLOR: black throat & white collar, male metallic green, violet band at base of throat
SOUND: high-pitched “tsst, tsst, teew”
MIGRATION: resident, range is western U.S. and Mexico

BEWICK’S WREN

Thryomanus bewickii

FAMILY: Troglodytidae (Wrens)
NEST: natural cavity or center of a brush pile
HABITAT: open woodland, brushland, hedgerows, stream edges
FOOD: insects, spiders on the ground
BEHAVIOR: Hops, picks through foliage
SIZE: body length 5 ¼ inches
COLOR: long tail with white corners, bold white eyebrow, striped mousy brown upper parts, stiff and short tail
SOUND: flat hollow chirp, song a high thin buzz
MIGRATION: winters along Sea of Cortez

GILA WOODPECKER

Melanerpes uropygialis

FAMILY: Picidae (Woodpeckers)
NEST: cavity
HABITAT: riparian woodland
FOOD: fruit, insects, lizard, bird eggs, mistletoe berries, acorns
BEHAVIOR: aggressive interaction, head bobbing, wood-boaring, flight is undulating
SIZE: body length 9 inches
COLOR: black & white zebra striped back, light brown body, white wing patches seen in flight, male has red cap, chisel-billed, two toes forward, two back, stiff spiny tails
SOUND: loud “churrrrr”
MIGRATION: year-round resident

NORTHERN CARDINAL

Cardinali cardinalis

FAMILY: Fringillidae (Grosbeaks)
NEST: cup shaped in low trees
HABITAT: dense shrubs, undergrowth, riparian thickets
FOOD: seeds, fruit, insects
BEHAVIOR: flocks up to 70 birds in winter
SIZE: body length 9 inches
COLOR: males are brilliant red with black mask and chin, red beak. Females are light brown with a red beak
SOUND: “tik, tik, tik”
MIGRATION: winter resident

MOURNING DOVE

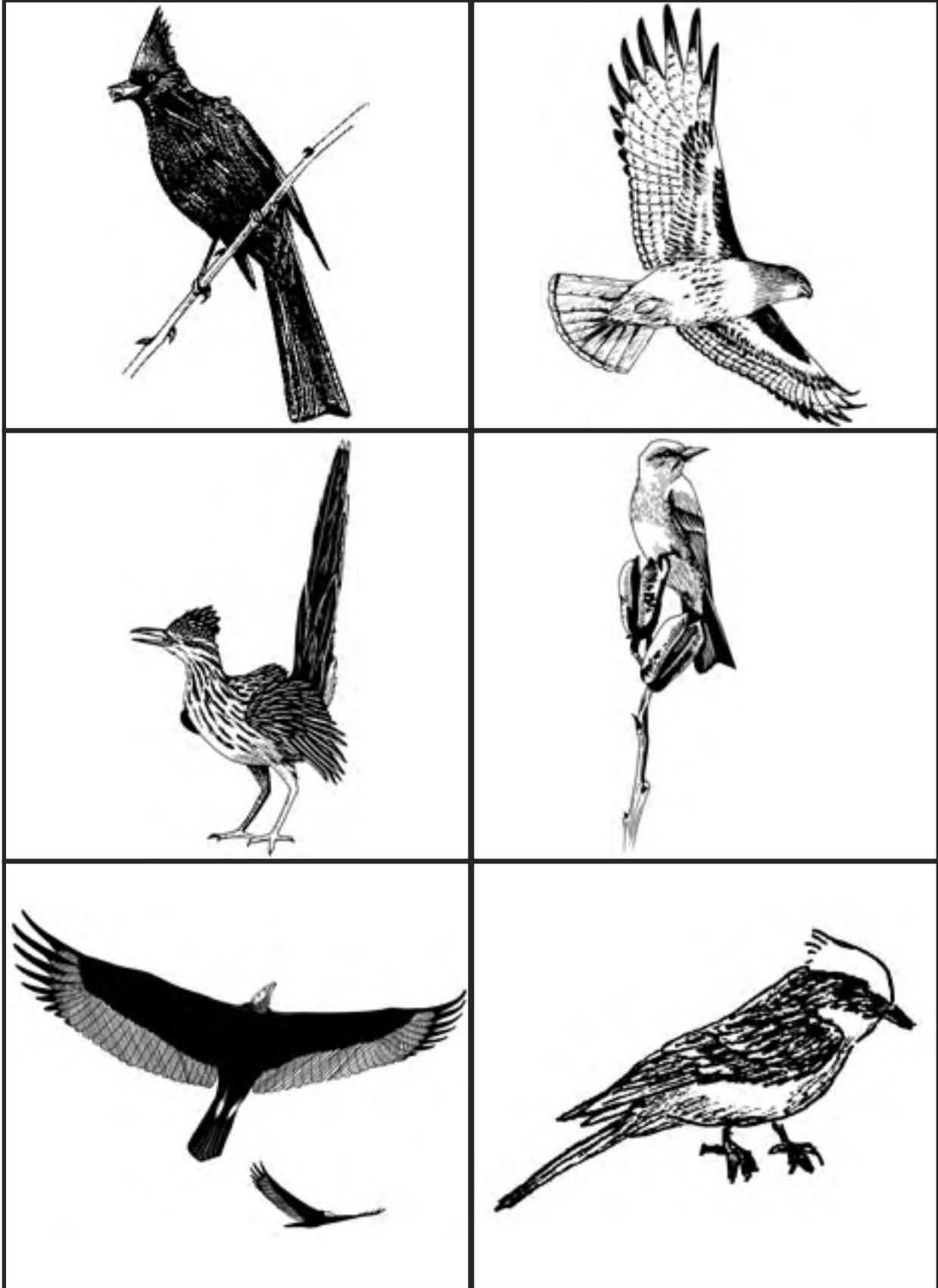
Zenaida macroura

FAMILY: Columbidae (Dove)
NEST: plate-shaped, flimsy, on solid platform
HABITAT: open woodland, fields and trees
FOOD: seeds, waste grain from the ground
BEHAVIOR: picks through ground vegetation, stones, and foliage, bobs head while walking
SIZE: body length 12 inches with small heads
COLOR: light brown
SOUND: hollow, mournful “coah, coo, coo, co.” (At a distance only “coo's” are audible.)
MIGRATION: residents, nearly worldwide in tropical and temperate regions
OTHER: population fluctuates according to the availability of prickly poppy seeds

NORTHERN MOCKINGBIRD

Centzontle alibanco, Mimus polyglottus

FAMILY: Mimidae (Mimic Thrushes)
NEST: cup shaped in shrubs
HABITAT: most all habitats
FOOD: fruit and insects, sow bugs, crayfish, snails, berries, small birds
BEHAVIOR: picks through foliage
SIZE: body length 10 inches
COLOR: gray, slim, long tail, shows white wing patches and tail in flight
SOUND: has a powerful voice, mimics many sounds like sirens and other bird calls
MIGRATION: resident
OTHER: un-mated males sing at night in spring, predators include snakes



<p style="text-align: center;">RED-TAILED HAWK</p> <hr/> <p style="text-align: center;"><i>Buteo jamaicensis</i></p> <p>FAMILY: Falconiformes (Hawk) NEST: Bulky, large, made of branches in tops of trees or cliff edges HABITAT: Woods with nearby open land, plains, prairies, groves, deserts FOOD: rabbits, reptiles, insects, fish, other birds SIZE: body length 22 inches COLOR variable from dark brown to light tan, reddish tail, yellow beak HABITAT: woods, plains, prairies, desert SOUND: harsh descending “keeeer” MIGRATION: winters as far south as Panama and breeds all the way to Alaska</p>	<p style="text-align: center;">PHAINOPEPLA</p> <hr/> <p style="text-align: center;"><i>Phainopepla nitens</i></p> <p>FAMILY Ptilogonatidae (Silky Flycatchers) NEST: cup-shape in shrubs HABITAT: semi arid and riparian woodland FOOD: insects, berries (especially mistletoe) BEHAVIOR: fluttering in flight, hawking, hovers, picks foliage, aerial acrobatics SIZE: body length 8 inches COLOR: male glossy black, slender crest, red eye, white wing patches seen in flight, female is tan SOUND: brief, high-pitched “phewt” and “pre-tee-bird” MIGRATION: Central to South America</p>
<p style="text-align: center;">SAY’S PHOEBE</p> <hr/> <p style="text-align: center;"><i>Sayornis saya</i></p> <p>FAMILY: Tyrannidae (Tyrant Flycatchers) NEST: cup-shaped HABITAT: open woodland near water FOOD: insects, berries BEHAVIOR: hovering flight, feeds just above water, regurgitates pellets. Perches quietly, sits upright on exposed branches and snaps up insects in flight SIZE: body length 7-8 inches COLOR: gray brown with black tail and peach belly, bill flattened with bristles at base SOUND: plaintive, downward slurred “pweee” “pee-ee” MIGRATION: tropics in winter</p>	<p style="text-align: center;">GREATER ROADRUNNER</p> <hr/> <p style="text-align: center;"><i>Geococcyx californianus</i></p> <p>FAMILY: Cuculidae (Cuckoo) NEST: cup shape in low trees, cactus, shrubs HABITAT: cultivated land, woods, open areas FOOD: insects, lizards, snakes, rodents, birds, cactus fruit, and seeds. BEHAVIOR: runs up to 15 mph SIZE: body length 24 inches COLOR: black shaggy crest, large feet, black and white striped underparts SOUND: clicking and a low “brrrrrr” MIGRATION: resident OTHER: two toes forward & two back, New Mexico state bird</p>
<p style="text-align: center;">VERMILION FLYCATCHER</p> <hr/> <p style="text-align: center;"><i>Pyrocephalus rubinus</i></p> <p>FAMILY: Tyrannidae (Tyrant Flycatchers) NEST: cup-shaped HABITAT: riparian woodland FOOD: insects, especially bees BEHAVIOR: hovers and pounces on prey, pumps tail up and down while perched SIZE: body length 6 inches COLOR: male has flaming red underparts, bushy crest, with upper parts dark brown to black. Female is soft brown with a peach colored breast SOUND: “pitazeeee,” downward, high-pitched call MIGRATION: northern-most range is southern AZ, migrates to east Mexican gulf</p>	<p style="text-align: center;">TURKEY VULTURE</p> <hr/> <p style="text-align: center;"><i>Cathartes aura</i></p> <p>FAMILY: Cathartidae (Vultures) NEST: none built, lays eggs in hollow stump/cave HABITAT: dry country woodland, farmland FOOD: carrion (any dead animal down to a tadpole size) BEHAVIOR: soars high in wide circles, rocks and tilts unsteadily in flight, spreads wings while perched with back to sun SIZE: 6 foot wingspan, body length 27 inches COLOR: body black; wings two tone, black with gray outer flight feathers SOUND: none MIGRATION: south to Cozumel, Mexico OTHER: makes a communal roost</p>

BLACK CHINNED HUMMINGBIRD

Archilochus alexandri

1. If you are quick you can see me in open woodlands, parks or gardens.
2. I build a very tiny cup-shaped nest lined with spider webs.
3. I can fly backwards.
4. I am usually seen visiting flowers for their nectar.
5. I am only 3 1/2 inches long with a metallic green band below my black throat and white collar.
6. My wings beat so rapidly they make a humming sound.

BEWICK'S WREN

Thryomanus bewickii

1. I live in the open woodland.
2. I make my nest in the center of a brush pile.
3. I scratch on the ground turning over leaves to find spiders and other insects.
4. I am 5 1/4 inch from head to tail.
5. My tail is long and tilts upward.
6. I have a bold, white eyebrow and a light brown back.
7. The first part of my name sounds the same as a certain automobile maker.

NORTHERN CARDINAL

Cardinalis cardinalis

1. I am a year-round resident of riparian thickets and dense shrubs.
2. My call sounds like "tik, tik, tik"
3. My nest is cup-shaped in shrubs.
4. In the wintertime I flock with others of my kind in groups of up to 70 birds.
5. I eat seeds, fruit and insects.
6. My beak is red & conical shaped.
7. I am 9 inches from head to tail.
8. I have brilliant red feathers and black eyes, mask, and chin.
9. I have a red crest on top of my head.

GILA WOODPECKER

Melanerpes uropygialis

1. I can be seen all year long in woodland areas
2. I have a very loud call that sounds like "churrrr"
3. My nest is a cavity or hollow in trees.
4. In flight I show two large, white wing patches.
5. I am a 9 inch bird with a zebra-colored back and light brown head.
6. The male of my species has a red cap.
7. I hang on to the side of a tree trunk and look for insects.

NORTHERN MOCKINGBIRD

Mimus polyglottus

1. I live year round in most any habitat.
2. My nest is cup-shaped in low shrubs.
3. I eat foods such as insects, crayfish, snails, berries, & small fish.
4. In flight I show my white wing patches.
5. I am a slim, gray, 10 inch bird from head to long tail.
6. Snakes like to eat me.
7. The un-mated males of my species sing all night long in the spring.
8. I have a powerful voice and I can imitate just about any sound from sirens to other birds' songs.

MOURNING DOVE

Zenaida macroura

1. My habitat is open woodlands and agricultural fields with trees.
2. I am very common in many backyards.
3. I make a plate-shaped, flimsy nest in trees or on the ground.
4. I walk along the ground picking up seeds and grain that is not harvested.
5. I am 12 inches from head to tail.
6. My wings whistle when I fly.
7. I have a small head and large brown body.
8. I make a "coo, coo" sound.
9. People think of me when they think of love.

PHAINOPEPLA

Phainopepla nitens

1. I sit at the top of a tree in semi- arid and riparian woodlands.
2. My nest is cup-shaped and built in shrubs.
3. I like insects and berries, but especially mistletoe berries.
4. One of my calls sounds like “pre-tee-bird.”
5. I make acrobatic maneuvers by fluttering, dodging & swooping in flight.
6. You can see my white wing patches when I fly.
7. I look like a small cardinal, but am black with a red eye.

RED-TAILED HAWK

Buteo jamaicensis

1. I am a very common sight along and above highways.
2. I build nests that provide me with a view on cliffs or in tall trees.
3. I eat birds, reptiles, insects, and rodents.
4. You can usually hear my squeal or high pitched “keeeeerrrr” in open country or woodlands.
5. I soar in wide circles on 22 inch long wings.
6. My tail is wide with reddish upper tail feathers.

GREATER ROADRUNNER

Geococcyx californianus

1. I make clicking sounds as I walk along in open areas, fields or woodlands.
2. My nest is cup shaped in low trees, cactus or shrubs.
3. I am a great hunter of insects, lizards, snakes, rodents, and birds.
4. I also eat fallen seeds and cactus fruit.
5. My large feet have two toes forward and two toes backward.
6. My head is adorned with a shaggy crest.
7. I can run up to 15 miles per hour.

SAY’S PHOEBE

Sayornis saya

1. I can be seen in open woodland near water.
2. I build my cup-shaped nest under roofs, on outdoor light fixtures, and in trees.
3. My call is like a downward “pweerrr”.
4. I hover in flight and catch insects on the wing, but I also eat berries.
5. You might see me flying just above the surface of water.
6. I am gray-brown on the back and have a peach colored belly.

TURKEY VULTURE

Cathartes aura

1. I live in a communal roost with hundreds of my own kind.
2. You won’t find me building nests to lay my eggs. I use a hollow stump or cave floor to lay them.
3. I soar high on 6 foot wings in wide circles with a rocking, unsteady, tilting flight.
4. I eat dead food that I find along road sides or anywhere an animal has died.
5. I have no feathers on my red head.
6. I do not make a call or song.
7. I am 27 inches long with black & gray wings.

VERMILION FLYCATCHER

Pyrocephalus rubinus

1. You can usually see me in riparian woodlands.
2. I like to hover above water or land, catching insects in the air.
3. My nest is cup-shaped built between the fork of a tree branch.
4. When I am sitting I pump my tail up and down.
5. I make a “pita zeee” sound.
6. I have a bushy crest on my head.
7. The male of my species has beautiful flaming red underparts and a black back.