



San Elijo Lagoon CONSERVANCY

Preserving, Protecting and Enhancing San Elijo Lagoon Ecological Reserve and its Watershed

Rhythms of Wetlands

Teacher's Guide • Grades 3–5 • Supplemental Curriculum & Field Experience



Objectives

From the information and activities in this packet, students will gain:

- An understanding of San Elijo Lagoon as a type of wetland.
- An awareness that San Elijo Lagoon changes daily with the tides and during the year with the seasons, and so no two visits to the lagoon are the same due to these rhythms.
- Familiarity with some of the plants and animals that rely on the lagoon full-time and seasonally.

California State Standards

This packet will assist you in meeting these Science Content Standards for California Public Schools, which focus on how the physical environment influences the diversity of plants and animals in an ecosystem.

3.3b. Students know examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.

3.3d. Students know when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.

4.3a. Students know ecosystems can be characterized by their living and nonliving components.

4.3b. Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.

4.5c. Students know moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).

5.3a. Students know most of Earth's water is present as salt water in the oceans, which cover most of Earth's surface.

Vocabulary

algae	tiny, sometimes microscopic, plant-like organisms that serve as food for many animals, including those in the lagoon (plural, algae; singular, alga)
brackish	a mixture of fresh water and salt water
ecosystem	all the living and nonliving things that interact in an area
environment	everything living and nonliving that surrounds and affects an organism
estuary	a place where fresh water from rivers meets salt water from the ocean
gravitational	pertaining to gravity, that is, the force of attraction between masses, such as the gravitational pull of Earth on the moon or the moon on the Earth
habitat	a specific type of environment inhabited by a particular organism
lagoon	a body of water cut off from another larger body of water by sand, coral or reef
invertebrate	an animal without a backbone or vertebral column
marsh, fresh	a type of wetland with grassy or grasslike vegetation dominating
marsh, salt	a type of wetland with low lying salt-tolerant pickleweed dominating
migrant	an animal that lives in different places, moving (often with the seasons) from one region to another; one that migrates
migratory	migrating from place to place, such as a migratory bird
mudflat	an area of mud and other fine sediment (see definition below) that's part of a coastal wetland, which is often exposed during low tides and covered during high tides
resident	an animal that lives in the same place throughout the year
riparian	a type of wetland near or along the banks of a river, stream or lake
sediment	sand, particles of rock, bits of soil and remains of once-living things that can move with a fluid and are eventually deposited
species	a group of the same type of living things that can mate and produce with other living things of the same kind
tidal	of or relating to tides
tides	the periodic rise and fall of sea level or ocean's surface under the gravitational pull of the moon (predominantly) and the sun
upland	area of land that's higher than the surroundings, such as hills
wetland	an area that is covered by water during all or some part of the year

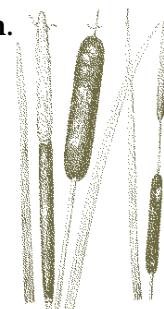
Introduction

What is a Wetland?

Each time you visit the San Elijo Lagoon it could look very different depending on the time of day and the time of year. That's because this fragile, beautiful **environment** is a dynamic meeting place of land and water, fresh water and salt water, desert winds and ocean fog.

San Elijo Lagoon is a **wetland**. A **wetland** is an **ecosystem** that is covered by water during all or part of the year. The **lagoon** is also called an **estuary** because of the meeting of fresh water and salt water. Here, fresh water from the Escondido Creek flows into salty water from the Pacific Ocean. Where there is a mingling of fresh and salt water, the water is called **brackish**.

At the western part (ocean side) of San Elijo Lagoon, **mudflats** and **salt marshes** dominate the landscape. **Mudflats** are muddy areas that are submerged and exposed every day as the tide rises and falls. In the eastern portion of the **lagoon**, freshwater inflow from **upland** areas around the **lagoon** is greatest. Here, freshwater **marshes** with cattail (*Typha* sp.) and bulrush (*Scirpus* sp.) replace saltwater **habitats**. Along freshwater rivers and creeks, you'll find trees and shrubs growing on the banks and this is called a **riparian habitat**.



Rhythm of the Day: Tides

The look of the **lagoon** changes throughout each day with the rhythm of the **tides**. **Tides** are the natural rise and fall of the ocean's surface, caused by the **gravitational** pull of the moon, and to a small extent of the sun. This **gravitational** pull creates a bulge of the ocean that sloshes back and forth (like water sloshing in a bathtub or sink) as the Earth rotates. You notice this "sloshing" as the rising and falling of the sea level along the shore — what we call **tides**.

Tides flood into and ebb out of the San Elijo Lagoon. Each day there are usually two high **tides** and two low **tides**, which are typically not the same height. Depending on the time of day when you visit, the **tide** in the **lagoon** may be high or low or in between (that is, rising or falling).

Rising (flooding) **tides** bring in plants, **algae** and animals, which serve as food for **lagoon** inhabitants. Falling (ebbing) **tides** can flush out these and other organisms. The overall health of the **lagoon** and welfare of its inhabitants depend on this rhythmic flow of water. When the **lagoon** opening to the ocean is blocked by sand, the **lagoon environment** suffers. If it is blocked for an extended period of time, we open the mouth of the **lagoon** with bulldozers to keep the ocean water flowing in and out.

If you visit San Elijo Lagoon at high **tide**, the salt **marsh** will appear to consist of more water than land. A rising **tide** first covers the **mudflats** and eventually may cover the pickleweed (*Salicornia virginica*) and part of the cordgrass (*Spartina foliosa*). These plants can survive being submerged by salt water to some degree every day. During high **tide**, you'll see **tidal** creeks, filled to the brim, meandering like watery ribbons among the **mudflats** and salt **marsh**.



High tide is feeding time for certain birds and fishes. With the incoming tide, mullet swim up **tidal** creeks. Terns dive bomb head-first into the water, snapping up topsmelt and other small fishes. Beneath the water's surface, larger fishes feed on smaller ones, and rays dredge the soft bottom for buried clams or worms.

If you visit during low **tide**, receding water reveals the salt **marsh** and **mudflats**. As the **tide** ebbs, you'll see large areas of pickleweed emerge. As the water level continues to drop, **mudflats** become exposed. **Mudflats** are rich with burrowing **invertebrates** (an important food source for many birds and other animals), many of which float into the **lagoon** with the high **tides**.

The **lagoon** teems with activity at low **tide**. Sometimes hundreds of shorebirds use their long, pointed bills to probe exposed mud, looking for meals. Among the feet of feeding birds are horned snails grazing on **algae** on the muddy surface. The numerous snails look like small pebbles evenly scattered across the mud. You may also notice holes in the mud, both on the **mudflats** and along the sides of the **tidal** creeks. These are the openings of burrows: home to crabs, shrimps and worms.



How do you know what will be happening when you visit? **Tide** tables can provide you with information on the time and height of each of the high and low **tides** every day. They note the **tide** level (in feet) above or below a zero-foot mark. We suggest (in an activity that follows) that you and your students look up and graph **tide** levels that'll occur during your San Elijo Lagoon visit.

Rhythm of the Year: Seasons

Although San Diego's climate is mild, the San Elijo Lagoon changes with the seasons. Winter and spring are cooler and rainy. Summers are dry with coastal fog in the western portion of the reserve and hot **uplands** to the east and further from shore. Fall can be very hot and dry, but slowly cools as winter approaches. One difference you'll notice during any season is the bird life.

Not all birds are here all of the time. This is one of the things that makes visiting the **lagoon** so interesting — you'll see different birds during different seasons.

Resident birds are birds that live in and around the **lagoon** throughout the year.

Migrant birds are birds that either spend only the winter months here, or spend some time in the spring and summer to breed and nest, or may pass through, spending anywhere from a few days to a few weeks in the spring or fall.

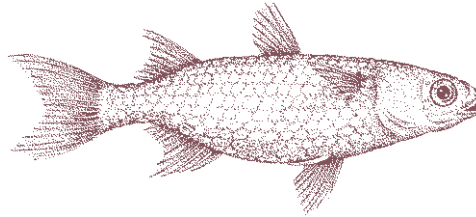
Winter is a busy time for bird activity because there's plenty of food and the weather is relatively warm. You might see winter **migrants** such as godwits, American wigeons, pintail ducks and buffleheads.

Spring and fall are transitional times of the year. **Migratory** songbirds pass through on their way to feeding or breeding grounds. They rely on the **lagoon** as a vital stop-over where they can rest and fuel up for the next leg of their journey. If you visit in spring, you might see **migrants** headed north to nesting grounds, if you're lucky. Come back during fall, and they'll be headed south for the winter. Sometimes we see red-necked phalaropes or Vaux's swifts. Because these birds spend only a short time at the **lagoon**, seeing them is rare, but always a special treat.



Summer is the quietest time of year with respect to birds at the **lagoon**. Late spring and summer mean little or no rain, and hot days. If you visit on your own during summer, which is nesting season, look for bird nests and young.

Any time of year is a good time to visit the **lagoon**. Some of the **resident** birds you're likely to see include pied-billed grebes, mallards, snowy egrets, osprey and the endangered Belding's savannah sparrow. There are about 65 **resident** bird **species** at the San Elijo Lagoon. About 40% of all the North American bird **species** have been spotted in San Elijo Lagoon at one time or another, so during any season it is a very important **habitat** for birds. It's also excellent habitat for resident invertebrates and fish, such as horned snails, shore crabs and mullet. Seeing a mullet leap into the air from a tidal creek is a real treat.



References and Suggested Readings

For more information, look for these references at a local library or online.

Baders, W. & Carnine, D. 2007. *Houghton Mifflin California Science*. Orlando, FL: Houghton Mifflin.

Bakker, E. & Slack, G. 1985. *An Island Called California*. 2nd rev. edition. Berkeley, CA: University of California Press.

Garelick, M. 1985. *What Makes a Bird a Bird?* New York, NY: Mondo Publishing.

Lawrence Hall of Science MARE Wetlands Curriculum website: <http://lawrencehallofscience.org/mare/oiresources/curriculum/wetlands/overview.html>

Ricketts, E. F., Calvin, J. & Hedgpeth, J. W., revised by Phillips, D.W. 1992. *Between Pacific Tides*. 5th edition. Stanford, CA: Stanford University Press.

San Elijo Lagoon Conservancy website: www.sanelijo.org

Sibley, D. A. 2000. *National Audubon Society The Sibley Guide to Birds*. New York, NY: Alfred A. Knopf.

Stienstra, T. 2000. *California Wildlife: A practical guide*. Emeryville, CA: Avalon Travel Publishing, Inc.

We developed the activities in this packet to support your field trip.

Pre-Visit

Activities 1 and 2 are designed as pre-visit activities. We recommend you spend some time getting your students familiar with the rhythms of the lagoon and the Animal Cards before they visit the San Elijo Lagoon. Depending on the tide and the season, your onsite leader (docent) will show you some of the animals described on the cards.



Post-Visit

Activity 3 is designed as a post-visit activity that will help your students review what they learned while at the San Elijo Lagoon.



Teacher's Aid

Activity Introduction

On the day of your visit, you will have a unique experience, based partly on the tides at the time you visit. During this activity, your students will chart the tides for the day of your visit. This way you'll know what to expect when you visit the San Elijo Lagoon.

Time & Materials

- This activity should take about 30 minutes to complete.
- Students can work in teams or individually.
- You'll need a current local tide table or access to local tide tables via the Internet.
- You'll also need one copy of the Student Worksheet (provided) for each student or team.

Instructions to Teacher

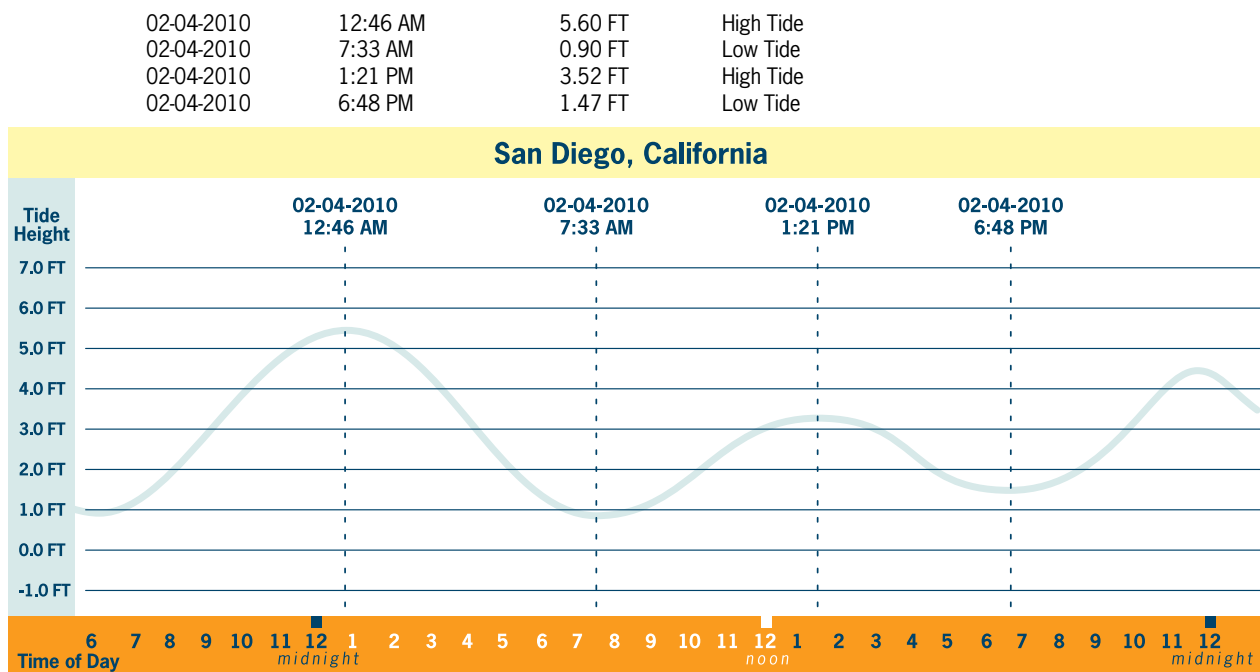
Ahead of time, make copies of the San Diego tide table for the month of your visit to San Elijo Lagoon, or go online to

<http://tidesandcurrents.noaa.gov/noaatidepredictions/viewDailyPredictions.jsp?Stationid=9410230> to obtain the correct tide data and chart. Give each student or group of students a copy of the tide data.

Have your students graph the tides for the day of your field trip.

Note: *If students are not familiar with graphing data points, you can demonstrate the process on the board and have them graph along with you on their worksheets.*

Here's an example of a final graph based on these tide data.



The X-axis is labeled as time, ranging from midnight to midnight in 1-hour intervals. The Y-axis is labeled in feet, ranging from -1.0 to +7.0 feet, in 1-foot intervals. Along the top you'll find the date and the time of each high and low tide.

Instructions to Students *(to be given verbally)*

Note: *Begin by writing the date and time of your visit to San Elijo Lagoon on the board*

I am going to give each of you a tide table for this month, which includes the day of our field trip to San Elijo Lagoon. This tide table shows the times each high tide and low tide will occur every day for a month.

When everyone receives their tide table, I want you to locate the high tide and low tide data points for the day of our field trip and circle them. Then, graph each high tide and each low tide on the graph paper provided by placing a dot on the appropriate X,Y coordinate. When you're done placing all 4 dots on the graph, connect the dots with an S-shaped line. Your graph should look something like this (show an example on the board). When you finish your graph, you can answer the questions below the graph.

Extension

If you wanted to visit San Elijo Lagoon when the marsh is the most exposed this month (during the lowest tide), what day would be best? What time of day (or night) would be best?



Teacher’s Aid

Activity Introduction

Each time you visit the San Elijo Lagoon it could look very different depending on the time of day (due to the tide level) or the time of year (due to the season). This activity will help you and your students get into the seasonal rhythms of these wetlands. The Animal Cards in this packet show some of the animals that can be found throughout the San Elijo Lagoon Ecological Reserve along with information about how each responds to the seasons or tides. Before your visit, we hope you and your students become familiar with some of the animals you may see during the field trip.

Time & Materials

- This is a class activity and it should take you and your students about 20 to 30 minutes to complete.
- You will need copies of the Animal Cards (printed back-to-back) starting on page 14: one card for each student or each group of students.
- You will need to draw the following chart on the board and provide each student or groups of students with this chart (see page 13).

Instructions to Teacher

Draw this chart on the board leaving off the animal names.

Next, ask students to look at their Animal Cards and to write the name of their animal [or paste the card of their animal] where it fits seasonally on this chart.

Seasonal Rhythms	Year-round Resident	M i g r a n t s		
		Winter Visitor*	Spring & Summer Nester	Spring & Fall Passing-through Migrant
Animal	mullet fiddler crab striped shore crab California horned snail snowy egret common yellowthroat Belding’s savannah sparrow mallard osprey black phoebe clapper rail pied-billed grebe Cooper’s hawk Forster’s tern	marbled godwit bufflehead American wigeon northern pintail whimbrel	black-headed grosbeak yellow-breasted chat cliff swallow	Vaux’s swift red-necked phalarope

* Note: Some winter species arrive to the lagoon as early as August, and most leave by April to breed in the north

Instructions to Students *(to be given verbally)***Introduction**

We're going to get into the seasonal rhythms of the San Elijo Lagoon. I am going to give you an Animal Card. Each card has information about an animal that you might see on our field trip to the lagoon. Look at the side of the card with the animal picture and read about where your animal fits with the lagoon's seasonal rhythms.

Let's start with an example:

Who has a spring and summer nester? That is a bird that's only at the lagoon in the spring and summer making nests and raising babies. *(Possible answers: black-headed grosbeak, yellow-breasted chat or cliff swallow)*

Okay, so come up and write [or paste] your animal on the chart under Spring & Summer Nester.

Note: *Proceed with the other columns: Year-round Resident, Winter Visitor and Spring & Fall Passing-through Migrant.*

Wrap Up

Take your What's My Rhythm? Chart and list the animals in the correct columns by copying what's on the board. Now that we have the chart complete, let's use it to answer some questions.

During our visit, which animals are we most likely to see? Tell me why you think we'll see that animal.

During our visit, which animals are we unlikely to see? Tell me why you think we won't see that animal.

You now know a little about some of the animals at San Elijo Lagoon. During our field trip we will get to learn more about them.

Extension

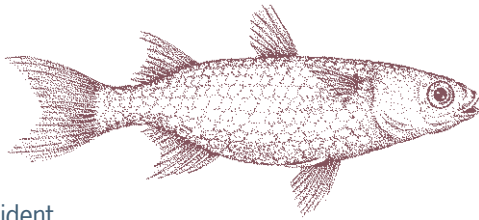
To help students identify the animals during your field trip, you might give each student an Animal Card. On a sheet of paper, ask them to draw the animal and identify on their drawing the unique characteristics of that animal, such as the shape of its bill or the length of its legs, unique color patterns on its body, or differences between the male and female. (You might consider using the Internet or a basic bird book to supplement the pictures on the Animal Cards.) This will help them identify animals during the field trip.

Alternate Extension

Have students pick an animal they would want to be on field trip (help them choose one based on what they have learned and one they are likely to see). Turn that Animal Card into a name tag and have students come as that animal to the field trip. **(Note:** *Because classes are split into groups of 12 on the field trip, it is fine for more than one student to be the same animal during the field trip as they will probably be in different tour groups.*)

Mullet

Mugil species



Year-round resident

Look for silvery fish leaping from the water

At high tide swimming in the lagoon

Fiddler crab (male)

Uca crenulata

Year-round resident

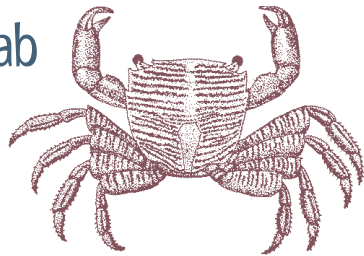
Look for mud holes surrounded by small pellets

At low tide along mudflats



Striped shore crab

Pachygrapsus crassipes



Year-round resident

Look for a small reddish-purple crab

At low tide hiding along mud banks

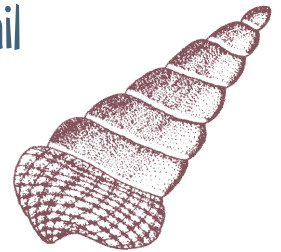
California horned snail

Cerithidea californica

Year-round resident

Look for a group of snails each with a pointy spiral shell

At low tide on mudflats



Snowy egret

Egretta thula

Year-round resident

Look for a tall white bird with long neck, black bill and bright yellow feet

Male and female are similar in size and color



Common yellowthroat

Geothlypis trichas

Year-round resident

Look for a little brown bird with yellow throat and chest in bushes or reeds near water

Males have a dark face mask



Belding's savannah sparrow

Passerculus sandwichensis

Year-round resident

Look for a flock of small dark birds with vertical breast streaks and listen for zaaaaaa zooooooo zeeee

At any tide hanging out in the pickleweed



Mallard

Anas platyrhynchos

Year-round resident

Look for a pair of ducks, a male with a shiny green head and curlicue tail paddling in the water or walking next to a brown female with an orange bill



Fiddler crab (male)

During cold months I stay deep in my burrow. You can tell I'm there by the pellets I leave when cleaning out my home. In spring, look for me and other males on the mud. Each of us has a large claw, which we wave to attract females.

Mullet

You may see me in the lagoon any time of the year but less often in winter. That's when I swim to the ocean to spawn. However, my youngsters stay back in the lagoon where they find food and shelter as they grow up.

California horned snail

I have a special 'lid' called an operculum that I use to shut myself in my shell to keep from drying out. My tongue is rough like a file. When I eat, my tongue scrapes the mud in search of rotting plants and animals (detritus).

Striped shore crab

I can survive out of water as long as my gills stay moist. If they get too dry, I take a dip and get them wet again. You might see me along the shore eating algae or bits of rotting plant and animal material (detritus).

Common yellowthroat

Living in the bushes keeps me safe. Predators have a hard time reaching me and my nest, and I can find insects in the bushes to eat. If I'm a male, I have a dark face mask. I'm more often heard than seen, so listen for my gentle witchety-witch song.

Snowy egret

When I'm hunting, I wade in shallow water, stalking my prey. Sometimes I use my feet to stir up aquatic insects, shrimp and small fish.

Mallard

I live at the lagoon all year long. From October to May, I have a mate. She's all brown while I'm the male with a shiny green head. From June to September we're both all brown. In spring, look for ducklings following their mother.

Belding's savannah sparrow

I live only in Southern California's wetlands. I cannot survive without them. Sadly, humans have destroyed many places where I once lived. There aren't many of me left and I'm on the state's endangered species list.

Osprey

Pandion haliaetus

Year-round resident

Look for a hawk-like bird with a white breast and belly, dark wings and back, and sharp claws

Often seen flying over the lagoon or perched on a post in the lagoon



Black phoebe

Sayornis nigricans

Year-round resident

Look for a small bird with a dark head and white belly sitting low on a branch or post near water flicking its tail up and down

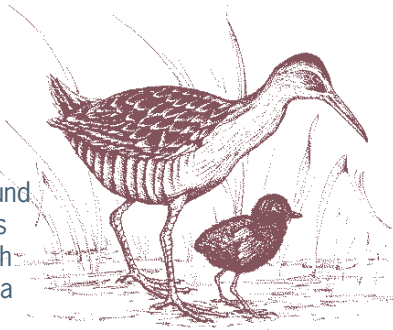


Clapper rail

Rallus longirostris

Year-round resident

Listen for a clapping sound coming from tall grasses near the water and watch for a bird that looks like a chicken with a long bill



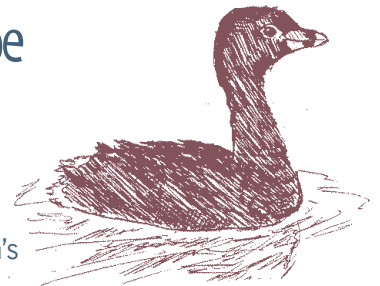
Pied-billed grebe

Podilymbus podiceps

Year-round resident

Look for a duck-like bird with a beak like a chicken's

Although not very pretty, it's fun to watch when it dives under water looking for food



Cooper's hawk

Accipiter cooperii

Year-round resident

Look for a hawk with a reddish chest and "armpits," a long tail and short wings



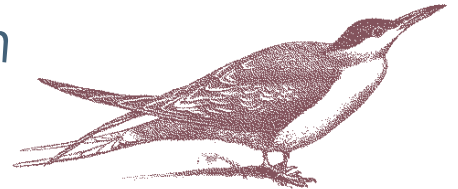
Forster's tern

Sterna forsteri

Year-round resident

Look for a white bird with a long forked tail and dark eye patch

At high tide flying over the water and diving for fish



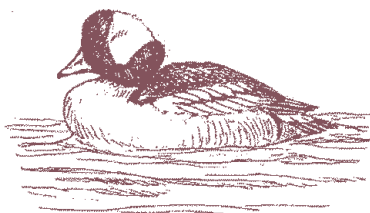
Bufflehead

Bucephala albeola

Winter visitor

Look for a flock of small, black and white ducks with heads that look like Oreo cookies

At high tide paddling on the water or diving for food



Marbled godwit

Limosa fedoa

Winter visitor

Look for a tall brown bird with a speckled back and a long bill that curves slightly upward

At low tide probing the mudflats for food, often with many other godwits



Black phoebe

You might see me flying near the ground catching insects. I have tiny 'whiskers' around my bill that help me catch food. In spring, I build a cup-shaped nest in a shady place near the water.

Osprey

I always live close to water because I eat fish. When fishing, I hover over the water or watch from a nearby perch. When I see a fish, I dive toward it and grab it with my sharp claws and sandpaper-like feet. As an adult, I can carry away fish equal to my own weight.

Pied-billed grebe

In winter, you may see me on the open water. During summer, look for me near plants on quiet waters where I build a floating nest. When I'm hungry, I dive for small shrimp, fish and aquatic insects.

Clapper rail

I'm very shy so you may not see me. But you might hear me. Listen for rustling among tall marsh plants or for my call: kek kek kek kek kek kek kek kek. People have destroyed my wetlands habitat, which is why I'm on the endangered species list.

Forster's tern

During the winter, I live in areas with sheltered waters, like this coastal lagoon. I spend summers in large breeding colonies in freshwater marshes of the northwestern United States and Canada.

Cooper's hawk

Look along the creek (riparian habitat), especially around willow trees for me flying in and out of the brush. This is a clue that I'm hunting small birds, such as doves and bushtits. Sometimes the alarm calls of the songbirds let you know I am nearby.

Marbled godwit

I'm one of the tallest shorebirds you can see along the mudflats in winter. During low tide, I probe the mud with my slightly upward curved bill. When I feel a worm, shrimp or sand crab, I pull it out of the mud and eat it. At high tide you can see me and other godwits together waiting for the next low tide.

Bufflehead

I'm a type of sea duck. Look for the white patch on each of my "ears." When hungry, I dive for insect larvae, clams, shrimp and other organisms. After winter, I fly north to nest in Canada or Alaska.

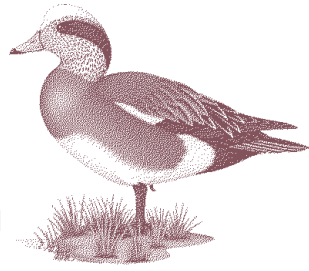
American wigeon

Anas americana

Winter visitor

Look for a gray-and-rust-colored duck with a short gray bill

Males have a white buffy head in winter and spring



Northern pintail

Anas acuta

Winter visitor

Look for a duck with long, narrow wings and long neck and tail

Males have a brown head, gray body and white neck during breeding season



Whimbrel

Numenius phaeopus

Winter visitor

Look for a tall brown bird with a bill curving slightly downward

At low tide looking for food on the mudflats

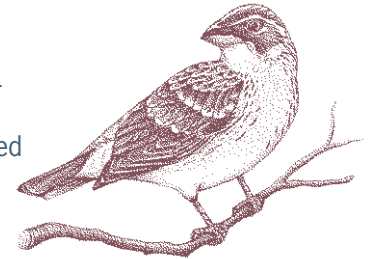


Black-headed grosbeak

Pheucticus melanocephalus

Spring and summer nester

Look for a cinnamon-colored bird with a black head and yellow "armpits" singing from the treetops



Yellow-breasted chat

Icteria virens

Spring and summer nester

Look for a songbird with a yellow belly and white "spectacles" dashing from bush to bush to stay under cover



Cliff swallow

Petrochelidon pyrrhonota

Spring and summer nester

Look for a small fast-flying acrobatic bird

At low tide collecting mud for nests



Vaux's swift

Chaetura vauxi

Spring and fall passing-through migrant

Look for small, slender birds flying like fighter jets over land and water

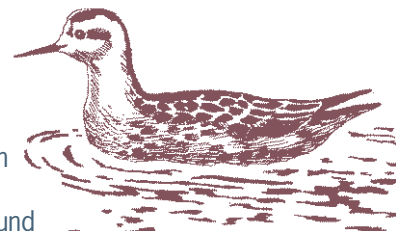


Red-necked phalarope

Phalaropus lobatus

Spring and fall passing-through migrant

Look for a small bird with a pointed upturned tail paddling or spinning around on the water's surface



Northern pintail

If you see me in early fall, I'm a male. Females arrive from our nesting grounds a little later. Once we're all together, we start choosing mates for the next year. Then we fatten up before migrating north in the spring to our nesting sites.

American wigeon

I'm a type of dabbling duck. This means I feed from the water's surface. Watch me tipping my head downward, while my tail points up. I eat mostly water plants. In the summer, I nest in Canada or Alaska.

Black-headed grosbeak

I nest along the creeks (riparian habitat) in the spring and summer. You may see me high in the bushes eating leaf buds or searching on the ground for seeds. If I am a cinnamon color, I'm a male. The female is brown, white and yellow.

Whimbrel

I'm a large shorebird and I feed by picking at food on the mudflats at low tide. I eat worms, clams and other burrowing animals. After winter, I migrate to the northern parts of Alaska to nest.

Cliff swallow

During nesting season I gather mud one mouthful at a time from the lagoon at low tide to build my nest. When I can't find a cliff for my nest, I use the side of a building, bridge or other vertical surface. I eat insects and feed them to my youngsters.

Yellow-breasted chat

I build my nest in the brush along sunny sections of creeks (riparian habitat). That's where I find plenty of insects to eat and to feed my young. After summer I leave the lagoon and migrate to Mexico and Central America for the winter.

Red-necked phalarope

If you see me spinning on the water, I'm creating a whirlpool to draw up small prey to eat. In summer, I nest in the Arctic Circle. Then I fly south for the winter where I live on the open ocean off Peru.

Vaux's swift

I'm an amazing flyer. I eat, drink and bathe from the air. If you see me while visiting the lagoon in spring, I'm headed to my nesting grounds in the Pacific Northwest. During fall, I'm flying south to Central America for the winter.

Teacher's Aid

Activity Introduction

It's important that your students reflect on and process what they learned during their field trip.

This activity will help them synthesize how the lagoon appeared during their visit and use the species names and vocabulary words that they learned.

Time & Materials

- This is an individual student activity that could take your students up to 30 minutes to complete.
- Your students will need paper and writing or artwork tools (pencils, colored pens, crayons, etc.).
- You may also want make available the vocabulary list, the Animal Cards and library books showing the colors and patterns of the species seen at the lagoon.

Instructions to Teacher

Have your students talk for a few minutes about their experiences at the lagoon. What was the time of year? What was the tide level? Which animal and/or plant species did they see? What was new to them? What new words did they learn?

Then ask students to draw a picture of their lagoon experience. In the drawing they should show the tide level and include at least three animal species. When they've completed the drawing, ask them to label it. Labels should include three of the vocabulary words plus the names of the animals and when each occurs at San Elijo Lagoon (resident, winter migrant, etc.).



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Bring your class on a field trip to the lagoon.
To learn about the different programs offered
or to schedule a walk...

- visit sanelijo.org/education
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