

## DOCENT GUIDE

### FIELD TRIPS: WATER TESTING STATION

(Note: This guide is for docents' optional use. The best learning come when the docent asks interesting questions for the students to answer, rather than telling the students something. Docents can develop their own questions to ask, and will have their own style of sharing their enthusiasm for the wetlands.)

#### GOALS:

- To introduce the Watsonville Wetlands water system
- To discuss the importance of protecting slough water from pollution.
- To help the students identify sources of water pollution
- To show the students 3 ways to monitor slough water

### INTRODUCTION

There are six sloughs in the Watsonville Wetlands: Struve, West Struve, Hanson, Harkins, Gallighan & Watsonville.

Our wetlands are important because this is one of the largest fresh-water slough systems along the West Coast. Birds migrating from Mexico to Alaska stop off

here to rest, eat and breed. Other birds live here year-around. Our birds and animals need unpolluted water.

What is a slough? (A shallow pond that sometimes dries up.)

Why do sloughs sometimes dry up? (The water slowly evaporates. The sloughs need rainfall to get more water. If we have a drought, some of these sloughs may dry up. Lakes don't dry up, although they may get smaller.)

What's a drought? (A time of less rainfall than normal.)

Where does the slough water come from? (The Watsonville sloughs aren't fed by streams, but by rainfall, springs, and run-off from streets and fields.)

Why doesn't the slough water sink into the ground? (The clay soil holds the water like a big clay bowl.)

Why is there a white pole with black markings in the middle of West Struve Slough? (It indicates the water level. It's easy to monitor the water level without getting wet by using binoculars to read the markings.)

What things might pollute the sloughs?

- Garbage and trash
- Oil and soap from storm drains (car washing, etc.)

- Chemicals from fertilizer and pesticides that run-off into the sloughs from agricultural fields and home gardens
- Algae and rooted aquatic plants

## WATER QUALITY TESTING: PHOSPHATES

### Where do phosphates come from?

- Garbage thrown into fields
- Soap & detergent from storm drains (washing cars in driveways)
- Manure & chemical fertilizers from fields and gardens

### What can you do to help prevent water pollution?

- Don't throw garbage or trash into the environment
- Wash your car in a car wash (the car wash must clean the water before putting it in storm drains) or in a field, using soap that is "phosphate-free"
- Use bio-friendly fertilizers and less pesticide in gardens

### TEST FOR PHOSPHATES:

1. Have a student read the directions from the plastic card in the phosphate test kit.
2. Leader puts water in a test tube from bucket of slough water.
3. Have a student drop in a phosphate test tablet.
4. Stopper the test tube and shake it until the tablet dissolves.
5. Have a student time the test for 5 minutes. MEANWHILE,

## TESTING FOR INVERTEBRATES

What are invertebrates? (Invertebrates are animals without backbones. Some have hard shells to protect and support their soft bodies. They are the most numerous animals on Earth, and

they are very important for the functioning of ecosystems (pollination, nutrient cycling, food webs)

1. Students hand out invertebrate sheets, Petri dishes and magnifying glasses.
2. The docent pours slough water into the Petri dishes, which the students must hold level to avoid spilling water!
3. Explain that the students should set the magnifying glass in the Petri dish with the black side up and the clear part in the water.
4. The students use magnifying glasses to look for invertebrates, which they try to match to the invertebrate drawings.
5. Did anyone find an invertebrate in the slough water? (often found: shrimp, beetles, cyclops)

6. Is it good or bad to have invertebrates like these in the sloughs?

(Good. The presence of invertebrates shows the water isn't badly polluted; also, invertebrates feed fish and birds)

(RETURN TO PHOSPHATE TEST)

Water in test tube will now be blue. Hold it up next to the card with several blue colors. We hope our water is a 0 (zero)  
Which blue color does our slough water match? (It will probably be between blue #1 and #2 - if so, call it a 1.5)

REVIEW QUESTIONS FOR END OF SESSION

- How many sloughs are in the Watsonville Wetlands? (6)
- What is a slough? (Shallow pond)

- How is it different from a lake? (A slough may dry up during a drought; lakes don't completely dry up.)
- Is the water in the Watsonville sloughs fresh or salt? (fresh)
- Why are the Watsonville sloughs important? (One of last big fresh-water slough systems along coast; migrating & resident birds need them to rest, eat and breed)
- What keeps the water from draining down into ground? (Clay)
- Where does the water in these sloughs come from? (Rain, springs, run-off from streets & agricultural fields)
- What can pollute these sloughs? (Garbage & trash; oil from streets & parking lots; soap from washing cars in driveways; chemicals from fertilizers & pesticides that run-off from agricultural fields and home gardens)