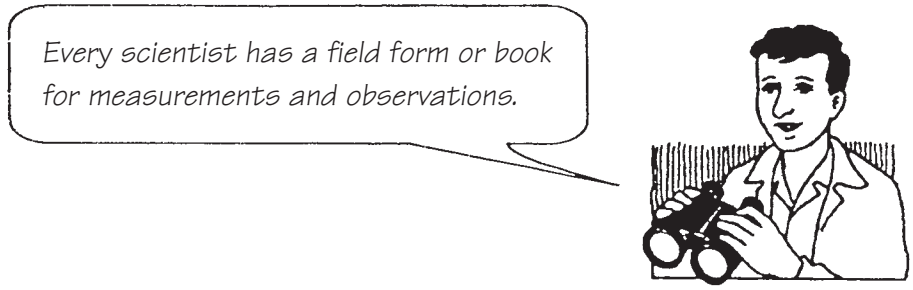
DISCOVER YOUR ESTUARY INVESTIGATION SHEETS: JUST PHOTOCOPY AND GO!

In this section, we have provided a number of ready-to-use Activity Sheets that allow you to just photocopy the quantities you need—one per person or one per group—and go! We recommend that you take a copy of the ***"Discover Your Estuary"*** Book with you for reference. Usually there is helpful background information in the Book to supplement the Activity Sheets.

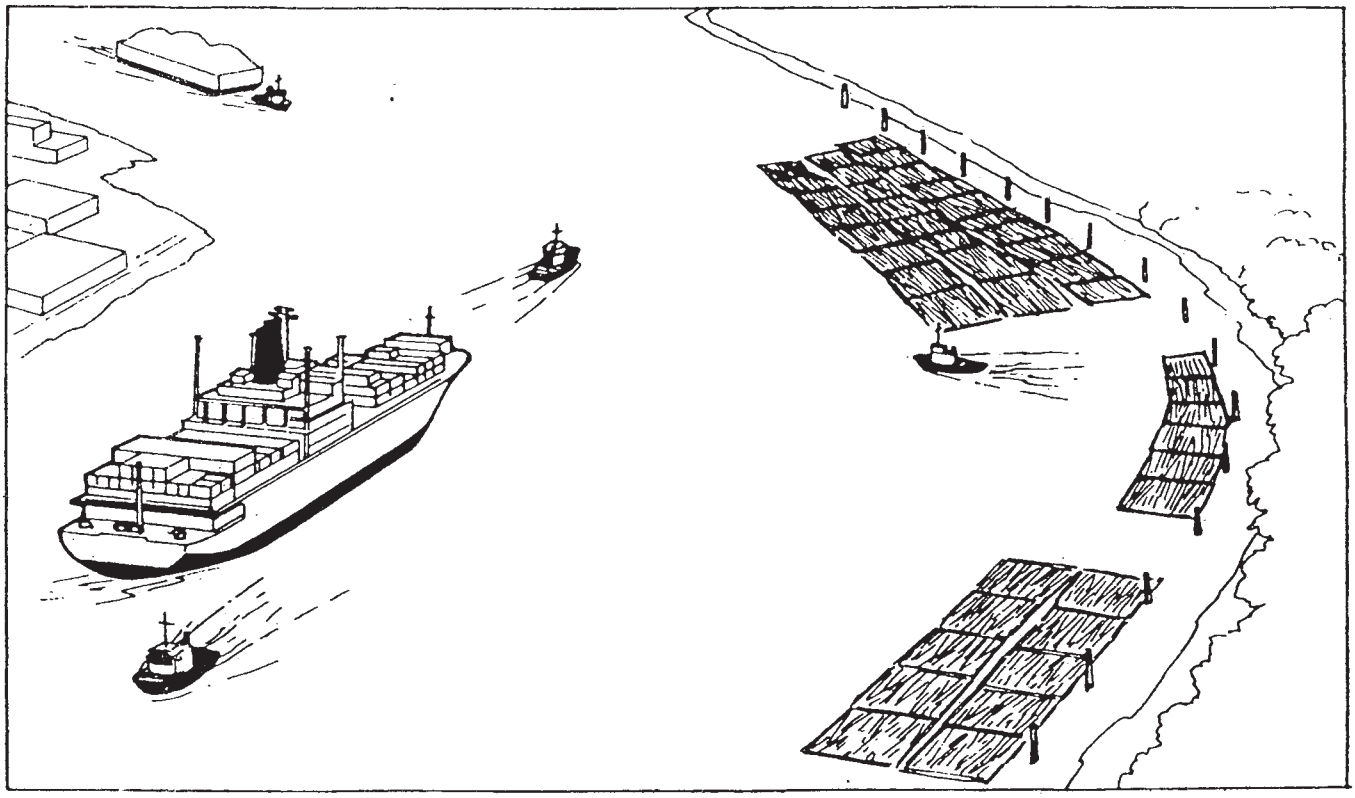


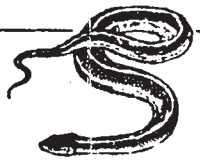
The "Safari" sheets (#'s 2, 4, 5, 6, 7, and 10) are like "treasure hunts": kids of all ages can use them to practise their observation skills and record their observations.

The "Micro-habitat Observation" sheets (#'s 1, 3, and 8) suggest in depth studies that will require patience and perhaps some demonstration and practice. The most elaborate study is found on Investigation Sheet #3, "Tideflat micro-habitat study". You can read more detailed instructions in the Book and in the Salt marsh and Tideflat chapter. There are two "general" observation sheets that can be used for many purposes, and in any area of the estuary, #9 AND #11.

Investigation Sheet #9 encourages free-form exploration; and it is designed to fold into a small square that fits into a kid's pocket easily. On this rainy day each of the students can use a small square of corrugated cardboard as a "clipboard", and keep the sheet dry inside a ziplock baggie.

Investigation Sheet #11 encourages kids to think about how humans are changing the estuary. There are three chapters in the Book that give background information on human effects on the estuary; you may want to use some of this material in preparation for the field trip, and there is a wealth of information in these chapters for students to do their own research, before or after the field trip.





LIFE IN A BACK-YARD

Micro-habitat Observation Sheet

Locate a micro-habitat in a back-yard, school-yard or park. This could be a log, a flower-bed, a bush, under a rock, a stump, even a concrete surface.

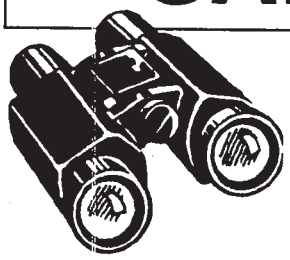
Book pp. 62-63

Where is your micro-habitat? Record the location.

Describe or draw the animals and plants you see here:

Why do they want to live here?

SALTMARSH SAFARI



Book
pp. 42-53

Keep track of what you find while you're investigating (circle each picture when you find it) ...

Bald Eagle

Saltwort

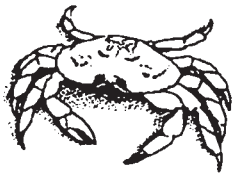
Black Brant

Marsh Wren

Arrowgrass

Rough-legged Hawk

Saltgrass



Dungeness Crab

Saltbush

Dead Eelgrass

Short-eared Owl

Townsend's Vole

...AND draw pictures of, or describe, other organisms you find:

NOTES FOR PARENT AND TEACHER
on Investigation Sheet #3

Quadrats are used to sample a known surface area. Digging out the top 2" of the quadrat reveals a living "mud carpet", since Invertebrates are found under the surface of the mud. Illustrations and further instructions can be found on pages 45 and 46 of the Book; and see Suggested Readings, pp. 118-120.

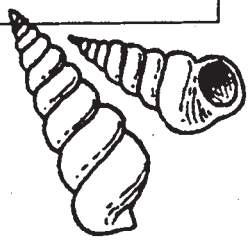
Unless it is a piece of human waste (eg., styrofoam) or nonliving matter (eg., pebbles) everything the treasure hunters find can be categorized as follows:

	ANIMAL	PLANT
LIVING THINGS	Molluscs are either • bivalves (pair of hinged shells; looks like a clam) or • gastropods (single shell, usually spiral) Crustaceans (insect-like animals with exterior shell and legs) Marine Worms (small, usually have bristles)	algae mats (described on page 46 of the Book)
ARTIFACTS	dead creatures pieces of shell fecal casts animal body parts footprints droppings other evidence of the presence of animals	plant detritus (e.g., leaves, sticks, stems, decayed matter)

Classification is an important science skill!

LIFE BENEATH THE TIDEFLAT
Observation Sheet for a Tideflat Quadrat

Book
pp. 45-46



As described on pages 45 and 46 of the Book, dig up a "square core" of mud and record your observations here:

Location of quadrat : _____

Dimensions of mud dug up : _____ x _____ x _____
(length) (width) (depth)

Record what you find in this quadrat :

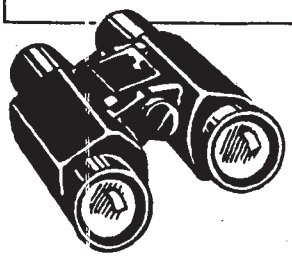
	ANIMAL	PLANT
LIVING THINGS		
ARTIFACTS		

ANIMAL DENSITY CALCULATION :

Name of invertebrate :	Number of individuals :	Density per square ___	Estimated density :

Did you see any plants or animals or artifacts you could not identify? If so, make drawings on the back of this sheet, including measurements, and plan to do further research.

TIDEFLAT SAFARI

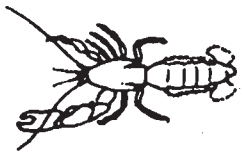


Book
pp. 42-53

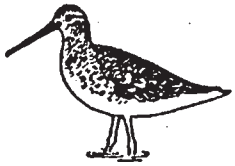
Keep track of what you find while you're investigating (circle each picture when you find it) ...

Lugworm

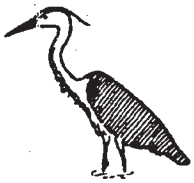
Fecal Casts



Ghost Shrimp



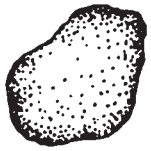
Long-billed Dowitcher



Great Blue Heron

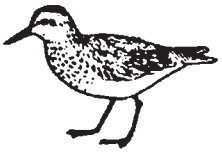
Dunlin

Screw Shell Snail



Algae Mats

Edible Blue Mussel



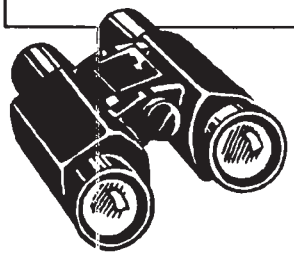
Western Sandpiper

Heron Tracks

Northern Pintail

...AND draw pictures of, or describe, other organisms you find:

BRACKISH & FRESHWATER MARSH SAFARI



Book
pp. 35-41

Keep track of what you find while you're investigating (circle each picture when you find it) ...

Seacoast Bulrush

Red-winged Blackbird

Lyngbel's Sedge

Northern Harrier

Long-billed Marsh Wren

Cat-tails

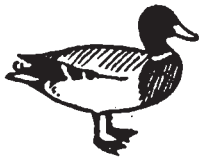
Pacific Silverweed

Yarrow

Snow Geese

American Widgeon

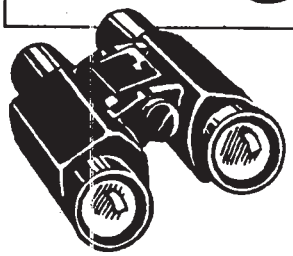
American Bulrush



Mallard

...AND draw pictures of, or describe, other organisms you find:

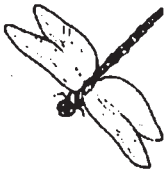
SLOUGH SAFARI



Book
pp. 65-73

Keep track of what you find while you're investigating (circle each picture when you find it) ...

Water Boatman



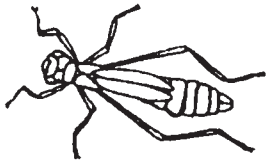
Dragonfly

Detritus

Amphipod

Bald Eagle

Small Shrimp

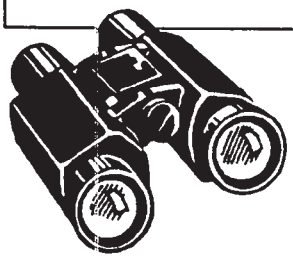


Dragonfly Nymph

Leech

...AND draw pictures of, or describe, other organisms you find.

FLOODPLAIN FOREST SAFARI

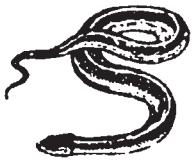


Book
pp. 54-61

Keep track of what you find while you're investigating (circle each picture when you find it) ...

Eastern Cottontail

Downy Woodpecker



Puget Garter Snake

Wood Duck

Red-tailed Hawk

Check each tree or shrub you see...

☐

Elderberry

☐

Oregon Alder

☐

Thimbleberry

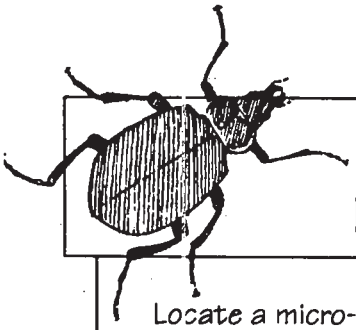
☐

Pacific Willow

☐

Black Cottonwood

...AND draw pictures of, or describe, other organisms you find.



FOREST FLOOR

Micro-habitat Observation Sheet

Locate a micro-habitat in the floodplain forest—
a log, or a shrub, or perhaps do a quadrat
(investigate a square area of known dimensions

Book, pp. 61-63

Where is your micro-habitat? Record the location.

Describe the animals and plants you see here:

Why do they want to live here?

(NAME) (BUDDY'S NAME)

FIELD NOTES FOR

(MONTH) (DAY) (YEAR)

FIELD TRIP TO:

(PLACE)

WEATHER:

SPECIAL INVESTIGATIONS:
(QUESTIONS TO EXPLORE)

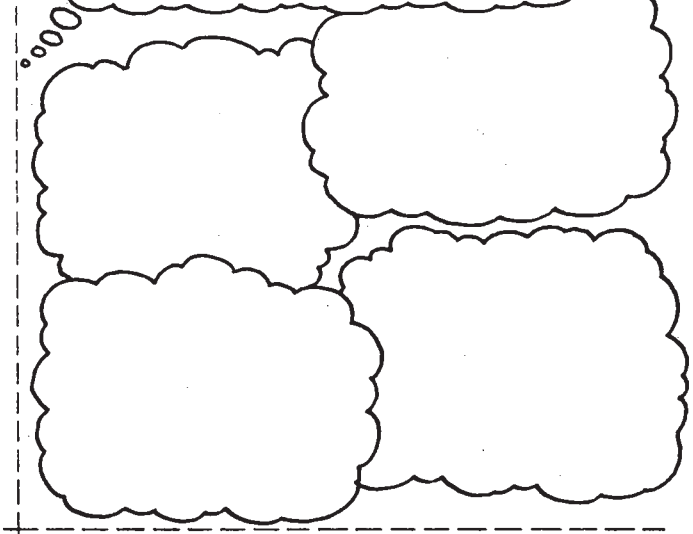
1.

2.

3.

OBSERVATIONS AND MEASURES
(SIGHTS, SOUNDS, SMELLS, TOUCH)

INTERESTING THOUGHTS...



SKETCH: A FAR-AWAY LOOK

SKETCH: A CLOSE-UP LOOK

MINIBEAST SAFARI

Locate a minibeast—a creature small enough for you to capture, examine and release without hurting it. You might want to capture it in a glass jar.

Fill in an observation sheet for each minibeast you examine.

Name of minibeast:

_____

Minibeast #: _____

Location:

_____

_____

_____

Date: _____

Describe how it moves : _____

_____

_____

How does it eat ? _____

_____

_____

Who eats this minibeast ? _____

_____

_____

How does it protect itself ? _____

_____

_____

HUMAN ACTIVITY IN THE ESTUARY
Observation Sheet

Book, pp. 80-89: Settlement by Europeans, Present-Day Use

What are some of the indications of humans in the area you are visiting today? (Write or draw your observations.)

How do you think this affects the estuary?