

Santa Clara County Stream Inventory

Amphibian and Reptile Survey Protocol

MATERIALS

10 meter line marked off in 1 meter sections
Data sheet with clipboard and pens (ball-point and waterproof marker)
Survey tape
Hip waders (or dress for wading)
Binoculars (should be able to focus as close or closer than 2 meters)
Stebbin's *Western Reptiles and Amphibians*
Watch
Thermometer
Tally counter

METHODS

The survey crew will meet at an agreed upon time and place. The Field Leader will assign stations to teams comprised of two surveyors. The number of 500 meter stations to be surveyed by each team is to be agreed upon; each team will then be assigned a starting station separated by this number of stations. Teams will travel to their starting stations.

A team will enter the creek at the station marker and each member will take either end of the ten meter line. One member should be designated as the lead; this person will use binoculars to study the section of stream immediately upstream. The second member will use this time to record weather and temperature.

The lead will then proceed upstream while the second member remains stationary. The lead will search for animals by studying the banks and stream bottom, by peering into overhangs and into root tangles, and by casual turning of cover objects such as rocks and boards. Each time the lead moves an object, it should be counted on a hand counter. If animals are noted, the lead will call the data back to the second member to record. Record any reptiles or amphibians you see whether or not they are associated with the water. The second member will watch as the lead searches to record any animals that are not seen by the lead.

When the ten meter line is fully extended, the lead will pause while the second member proceeds up stream at the same pace used by the lead, searching in the same manner as did the lead. The second member will also keep track of the number of meters taken up by pool habitat. While the second member is searching, the lead will study the next section of creek with binoculars.

When the second member has arrived at the lead's position, the two members will confer and complete the data recording for that ten meter section, including animals and number of pools. This

process will be repeated until 10 sections are completed. At this time a new sheet will be started; weather data should be taken, and the entire process repeated.

When the next 500 meter station marker is reached, the surveyors should begin at this marker regardless of whether 50 sections have been searched.

Unusual sightings (California red-legged frog or other sensitive species; observed threat to habitat/wildlife) should also be noted on a map of that creek section drawn in the spaces on the back of the data sheet.

Note: DO NOT attempt to catch aquatic animals. State law prohibits harassing some species and others are extremely sensitive. Identifications should be on sight alone. DO NOT wade anywhere you suspect might have breeding animals. DO NOT pick up or approach pond turtles, especially if they are away from water, unless it is necessary to save their lives (i.e. they are on a heavily traveled road). Harassing a female pond turtle when she is attempting to nest may prevent her from laying eggs that year.

SPECIAL NOTES ON *RANID* FROGS

It is especially important to distinguish bullfrogs from native red-legged and yellow-legged frogs in your survey. Bullfrogs are exotic and may be one of the causes for declines in native species of frogs. Often as you survey the creek frogs will leap into the water before you have had a chance to visually identify them. Ranid frogs (members of the genus *Rana*) will be the only large aquatic frogs you will see. Tree frogs and toads will usually be visible in the water after they jump and will be easy to identify. Bullfrogs frequently give an alarm call when startled. If the frogs leap without a sound, record them as OTH on the data sheet and record "unknown frog" or, if it is large enough to be distinguished from a treefrog, "unknown ranid" in the Notes column. If a frog should give a short "yip" or barking noise as it leaps, record "BUL" in the Species column and write "by call" in the Notes column on your data sheet. DO NOT assume a frog is a red-legged frog until you have noted the black mask, white jaw stripe and dorsolateral fold that characterizes it.

SAFETY

Sampling for reptiles and amphibians is relatively safe; however, some basic precautions should be taken.

Poison oak/stinging nettle

Learn to recognize poison oak and stinging nettle before going out into the field. Wearing long sleeved shirts and gloves will help you from getting infected or stung.

Rattlesnakes

The ONLY poisonous reptile you might encounter in your survey will be the Western Rattlesnake. In order to avoid being bitten you MUST watch where you put your hands and feet. Rattlesnakes are often well camouflaged; make sure you can see through to the ground wherever you step. When you turn over objects, PULL on the far side of the object so that the object is between you and whatever might be underneath. If you should hear the rattle of a rattlesnake (it sounds a little bit like hissing steam), freeze until you can tell exactly where the snake is. Record it on your data sheet, then avoid that area as for the rest of your survey.

Scorpions and spiders

When working under cover objects or stirring the duff you risk being stung or bitten by a scorpion or spider. Only the black widow spider is poisonous enough to seriously injure you; all other spiders and scorpions do no more than inflict a painful bite. Wearing gloves tucked into a long sleeved shirt should prevent most incidents of this kind.

Ticks

Ticks might be lurking where you will be surveying. Ticks normally climb onto people around their ankles and hike their way upwards. Tuck your pants into your socks or high boots, or wear gaiters to keep them from biting you. Always search yourself carefully after surveys. If a tick should bite you, remove the tick by pulling it straight out (don't twist it or use matches -- this might cause the tick to inject bacteria into you) then enclose it in a Ziplock bag or other container labeled with your name and the date you were bitten. Hand this in to the Volunteer Coordinator and she/he will have it tested for Lyme's disease free of charge.

Yellow jacket wasps

When turning over cover items and digging into brush you run the risk of disturbing a yellow jacket nest. By being aware of your surroundings and noting the presence of yellow jackets nearby you should be able to locate the nest before the yellow jackets locate you. If you should come upon a nest, RUN FAR AWAY. The wasps may already have been alerted to your presence and might be on their way to attack you; the best defense is to put some distance between you and them. If there is enough water in the creek and wasps are crawling all over you, immerse yourself and wait for them to fly away. Note any aquatic animals you see, then continue your survey.

DATA SHEET: EXPLANATION OF FIELDS

Print all data. If possible, use waterproof red pen. One sheet is used for every 10 sections surveyed.

Background data

Date: Record the survey date as month - day - year separated by dashes.

Example: June 5, 1994 should be written 6 - 5 - 94.

Observers: Write first initial and last name of the two members of the survey team.

Example: M. Westphal, R. Seymour

Creek: Record the full name of the creek being surveyed, INCLUDING the word "creek" or "river".

Example: San Francisquito Creek.

Cloud cover: Record your estimate of the percent cloud cover. Estimate to the closest ten percent. Do not write the percent sign.

Wind speed: Estimate the wind speed using the Beaufort Scale at the end of the protocol.

Wind direction: Circle the letter that represents the direction from which the wind is blowing. If a two direction designation (i.e. "northwest") is needed, put one oval around the two letters representing that designation.

Air and water temperature: Circle the scale used (C for centigrade, F for Fahrenheit) and write the number.

Precipitation: Circle the appropriate kind of precipitation. Write the number zero if none, otherwise write "light", "med" (for medium) or "heavy."

Begin time: Write in 24 hour notation the exact time to the minute that surveyors commence looking for animals. Do not write a colon or AM/PM.

Example: 10:15 in the morning should be written 1015. 2:30 in the afternoon should be written 1430.

End time: Write in 24 hour notation the exact time to the minute that searching on the final ten meter section of the data sheet is completed.

Example: See 9 above.

Station #: Enter the number of the 500 meter marker.

Example: See example sheet.

Begin section number: Copy the first line in the "Section #:" column here.

Example: See example sheet.

End section number: When the sheet is completed, copy the last line from the "Section #" column here.

Example: See example sheet.

Column data

Section #: Record the two digit number of the section to be searched starting with "00."

Example: See example sheet.

Species: Record the three letter code from the box at the bottom of the sheet. If you use the OTH code, BRIEFLY describe the animal in the Notes section and why you could not identify it.

Example: A large tadpole cannot be distinguished as to species. Write OTH and "Large, possible ranid" in the Notes column.

Age: Use the box at the bottom of the sheet to find the appropriate code. Salamander larvae will usually be "3" because they normally have four legs early in their development. Assignment of Adult or Juvenile status will vary by species. **Note:** If two age classes of animal are found in each section, dedicate a line to each size class.

Example: See example sheet.

Number: Record the number of the species given of the age class given.

Pools: Record the number of meters to the nearest meter of pools in the ten meter section. Round UP to the nearest meter. Pools are defined for this survey as any area present which has slow or no water movement and may provide habitat for breeding/larval amphibians. Team members will receive instruction on identifying pools during the training process.

Dry: Record the closest distance in meters between any two noncontinuous portions of the creek.

Objects: Record the number of cover objects turned.

Notes: Priority in this space should be given to clarification(s) of data in the preceding columns. A brief narrative note on observed threats, chance occurrences, other species noted etc. should be written in the space remaining in the notes column after the data sheet for has been otherwise completed. A vertical line should separate notes that do not apply to data to the left of the Notes column.

Diagrams: Draw map of section containing unusual sighting. Indicate access routes.

BEAUFORT SCALE

<u>NAME</u>	<u>MPH</u>	<u>DESCRIPTION</u>
Calm	less than 1	Calm; smoke rises vertically.
Light Air	4 to 7	Wind felt on face; leaves rustle, vane moved by wind.
Gentle Breeze	8 to 12	Leaves and small twigs in constant motion; wind extends flag.
Moderate Breeze	13 to 18	Raises dust and loose paper; small branches are moved.
Fresh Breeze	19 to 24	Small trees in leaf begin to sway; crested wavelets form on inland water.
Strong Breeze	25 to 31	Large branches move, telegraph wires whistle, umbrellas used w/difficulty.
Moderate Gale	32 to 38	Whole trees in motion; inconvenience in walking against wind.
Fresh Gale	39 to 46	Twigs break off trees; generally impedes progress
Strong Gale	47 to 54	Slight structural damage occurs
Whole Gale	55 to 63	Trees uprooted; considerable structural damage
Storm	64 to 72	Very rarely experienced; accompanied by widespread damage.
Hurricane	73 to 136	Devastation occurs (do not attempt census).

SPECIES LIST

Species without codes should be entered as OTH and described in the notes.

Amphibians

Pacific giant salamander (PGS)
California tiger salamander (CTS)
Coast range newt (California newt) (CAN)
Rough-skinned newt (RSN)
California slender salamander (CSS)
Western toad (WET)
Pacific treefrog (PTF)
Bullfrog (BUF)
California red-legged frog (RLF)
Foothill yellow-legged frog (YLF)
Yellow eyed salamander
Black salamander
Arboreal salamander
Western spadefoot toad

Reptiles

Southwestern pond turtle (WPT)
Northwestern fence lizard (Western fence lizard)
Coast horned lizard
Skilton skink (Western skink)
California whiptail (Western whiptail)
California alligator lizard (Southern alligator lizard)
San Francisco alligator lizard (Northern alligator lizard)
Silvery legless lizard (California legless lizard)
Pacific rubber boa
Pacific ringneck snake
Sharp-tailed snake
Chaparral whipsnake
Alameda whipsnake
Western yellow-bellied racer
Pacific gopher snake
Coast mountain kingsnake
California kingsnake
California red-sided garter snake
Coast garter snake
Santa Cruz garter snake
California black headed snake
Night snake
Western rattlesnake

