Vertebrate Survey Protocol

Updated 21 May 2011

Vertebrate Survey Member Duties:

- ✓ Attend all Vertebrate Survey trainings and introductory meetings
- ✓ Meet all Vertebrate Survey deadlines
- ✓ Be aware of and fulfill the hour requirements for the Vertebrate Survey study within the Arcade Creek Project
- ✓ Know the directions to and locations of all Vertebrate Survey sites along the Arcade Creek (sites A-G). Directions are on the arcade creek website www.arcadecreekproject.org
- ✓ Participate in outings with your site team (sites A, B, C, D, E, F, and G) as well as outings with the entire study group (sites A-G)
- ✓ Maintain contact with your Vertebrate Survey leader (sites A-G) and Vertebrate Survey Manager.
- ✓ Take responsibility for the collection of data and ***accurate*** observation of vertebrates while attending outings
- ✓ Attend the outings of other Group 4 Studies (Bio Assay, Bio Assessment, Botany, Chemistry, Habitat, Long Mapping, Outreach, Restoration, Sediments, Technology), if necessary and/or allowed

Before Data Collection:

- ✓ Manager announces the dates and times of upcoming outings at least 48 hours before the outing.
- ✓ The minimum number of people allowed to participate in an outing is ***four***. The more people who attend the outing, the safer the outing will be. However, the maximum number of people at an outing should be fifteen. Please notify your manager ***24 hours*** before the outing to ensure that enough people participate and to avoid last minute cancellations.
- ✓ Contact local birding associations or individuals who can help with the proper identification of birds, if possible. Contact such individuals at least one week in advance of the scheduled outing.

Checking Out Materials from the Creek Room:

- ✓ To check out materials from the Creek Room, the leader of the next outing (either the study manager or a site leader) must request access to the creek room from either his/her science instructor, the Creek Room manager (typically a student), Mr. Carson, or Ms. Suchanek. The Creek Room operation times and information should be located outside of the Creek Room and/or will be communicated to managers and leaders at the beginning of the year.
- ✓ The Senior Leader will check out the appropriate materials and record the check-out in the Creek Room Equipment Log or via the new barcode system.
- ✓ The Senior Leader ***must*** check-in with the Creek Room Manager before removing equipment from the Creek Room. ***Nothing*** will be allowed to leave the Creek Room without the written approval of the Creek Room Manager (usually given in the form of his/her initials). *Note: the new barcode system may allow study members to check equipments out without the Manager's written approval. More information coming soon. Consult the equipment manager.
- ✓ All equipment that is checked out must be checked back into the Creek Room by the Monday following the outings. Check out should occur on the Friday afternoon before the creek outings and all gear should be returned by Monday afternoon. ***NO EXCEPTIONS!*** The fastest way to lose track of the equipment is to leave it in "someone's car" or a classroom. Please make sure that it is checked back into the Creek Room according to the guidelines above.

Necessary Equipment for Creek Outings:

- ✓ Binoculars (the number needed depends on the number of people attending the outing)
- ✓ Hour Accountability Forms (to be signed at the site, before study members leave)
- ✓ Clipboard
- ✓ Pens
- ✓ Data Sheets (should be located in the Manager's binder or in the Vertebrate Survey binder)
- ✓ Bird books and other vertebrate identification guides (buy your own)
- ✓ Thermometer (for the tracking of the temperature at the creek); a cell phone thermometer can be used. You may not use an online weather source unless it gives the temperature reading for the specific site at which you will be taking data

- ✓ Trash Bags (for the restoration of the sites) and a glove or Ziploc bag

During Data Collection:

- ✓ Appropriate attire must be worn to creek outings. Appropriate attire consists of long pants, tennis shoes, and socks. Clothes that can get dirty are recommended as the condition of the creek banks depends on the time of year. During the colder months (typically November-March), layers are recommended as morning outings can be especially cold. Remember that clothing will get dirty and should be comfortable. Wear tennis shoes that you can walk/hike in and that can get dirty.

- ✓ Choose an appropriate time of day for the outings. Mornings (between the hours of 8:00 and 10:00). Vertebrate Survey must account for all vertebrates that are seen within the set data collection times; this includes animals that can only be seen during particular parts of the year. Record the time of arrival and departure.

- ✓ Being ***quiet*** and ***attentive*** during creek outings is essential to the success of the outing. Quietness should be maintained during prescribed data collection times as birds and other small animals can be scared away by the noises made by high school students.

- ✓ Any vertebrate seen while the group is collecting data should be recorded. Data that is recorded outside of the prescribed data collection times for individual transects should be recorded in the "Incidental Data" section on the data collection forms.

Taking Data:

1. Before data collection begins for the year, the manager should go out to the creek and determine which transects at each site should be used for data collection. Each site should have 3 transects that will be used for data collection. These transects should be widely spaced along the site and at points suitable for viewing aerial fixtures (birds and other vertebrates). Notify the Vertebrates members of the locations of the chosen transects.

2. When you have arrived at the selected site, pick a transect suitable for data collection. A suitable transect allows for proper viewing of the surrounding grounds and aerial fixtures (trees, birds, etc.).

3. Once you have found the proper transect that has been marked with the site's name and number (for instance, A1), arrange study members along the creek bank to allow for proper viewing. Make sure to keep ***QUIET!!***

4. Fill out the "Vertebrate Survey Data Collection Form" that you have brought with you. You will need to record the following:

- ✓ Time of arrival
- ✓ Date (Month/Day/Year)
- ✓ Site
- ✓ Recorder
- ✓ Weather Notes (cloud cover, temperature)
- ✓ Creek condition (stream flow, general observation of creek bank, bed, and water)
- ✓ Arrival Notes (include the general condition of the creek and the surrounding areas, including the amount of trash, homeless people, and other observations that are made)
- ✓ Time of the start of data collection

5. Once the proper recordings have been made on the "Vertebrate Survey Data Collection Form", begin your start time and begin data collection.

6. During the collection of data, you will spend fifteen minutes at three separate transects (totaling 45 minutes of collection time; 15 minutes at each transect)

7. Once a vertebrate (bird or other animal) has been seen, record the following information on the sheet:

   - ✓ Bird name (use both Latin and common names)
   - ✓ Number of that particular species seen at once
   - ✓ If two different groups of vertebrates of the same species are seen at two different times they must be recorded separately. For example, if 3 scrub jays are seen at once and 2 more scrub jays are seen a few moments later, label the first group as 3 scrub jays and the second group as 2 scrub jays separately on the data sheet. This will prevent birds from being counted twice.
   - ✓ If a vertebrate cannot be identified state what taxonomic class it belongs to (mammal, reptile, bird, etc.) and mark it as "unidentified" and then state reason why (it was a flythrough, it was too far away etc.).

8. Once fifteen minutes at an individual transect have been completed record the end time and move on to the next selected transect.

9. Record bird calls if they are recognizable and can be confirmed using the help of a bird sound identification device (tape, CD, etc.).

10. After the data collection times have been completed, record any other vertebrates or

miscellaneous items (such as invasive plants, trash, homeless people, etc.) in the "Departure Notes" section of the "Vertebrate Survey Data Collection Form."

11. Pick up any trash seen along the way.

Trash Collection:

- ✓ The health of the creek is an essential element to the successful lifestyles of the vertebrates that are seen along the creek. It is the responsibility of each study to participate in the restoration of the creek. To do so, trash bags must be brought to ***every*** outing.
- ✓ When collecting trash, use an inside-out Ziploc bag or gloves to pick it up. ***Do not*** use your bare hands. Deposit the trash into the large trash bag. The larger trash bag can be disposed of in the garbage can that should be located near the entrance to the creek site (excluding sites A and D) or in one of the dumpsters at Mira Loma High School. However, make sure that the disposal of the trash bag is safe.

After Data Collection:

- ✓ Return the equipment to the Creek Room on the Monday following the outings. Make sure that the name of the manager/leader has been checked off. The Creek Room Manager will be able to ensure that the equipment has been returned and the manager/leader is no longer accountable for it.
- ✓ Photocopy all data sheets. One copy should be given to the study manager to be placed in the Vertebrate Survey Data Binder. The second copy should be placed in a public binder that can be used by all Vertebrate Survey members for data analysis purposes.
- ✓ Ensure that hour accountability forms are placed in Mr. Carson's binder to be handled by the Data Team. All accountability forms should be placed in Mr. Carson's binder on the Monday following the outings. However, if the binder is being used or cannot be located, give the data accountability forms to the manager (if she/he does not already have them) for proper safe keeping.

Analysis of Data

1. After data has been collected, the data recorder must ensure that the data is given to the site leader.
2. The data will be organized as shown in the sample:

Table 1: Number of Individuals of Vertebrate Species Observed at Certain Sites Along Arcade Creek from October 2008-December 2008 on Given days from 8 am-10 am						
	Site A					
Species	9/12/2010			11/18/2010		
	# in Groups	Total	Average Group Size	# in Groups	Total	Average Group Size
Acorn Woodpecker						
American Crow	3; 4	7	3.5	7; 1	8	4
Scrub Jay	2; 1	3	1.5	8	8	8
Snow Geese						
Snowy Egret	1	1	1			
Starling						
Titmouse						
Towhee	2	2	2			
Western Grey Squirrel	2	2	2	1	1	1
Yellow-billed Magpie				3;1	4	2
Unidentified/flythrough	10	10	10	8	8	8
Note: this sample only shows some species, species actually seen will be different						

Table 2: Number of Individuals of Vertebrate Species Observed at Certain Sites Along Arcade Creek from October 2008-December 2008 on Given days from 8 am-10 am						
	Site B					
Species	10/21/2010			3/2/2011		
	# in Groups	Total	Average Group Size	# in Groups	Total	Average Group Size
Acorn Woodpecker				1	1	1
American Crow	1; 1	2	1			
Scrub Jay	1; 1; 1	3	1			
Snow Geese						
Snowy Egret						
Starling	4; 2	6	2	1	1	1
Titmouse						
Towhee	2	2	2			
Western Grey Squirrel				1	1	1
Yellow-billed Magpie						
Unidentified/flythrough	2; 2; 1	5	1.66	1; 3	4	2
Note: this sample only shows some species, species actually seen will be different						

Data is entered with semicolons separating the number of vertebrates seen in each group of the same species. So a group of 2 vertebrates of a species followed by a group of 3 vertebrates of the same species is recorded as "2; 3". The average group size is recorded on the right. Each site is separated by its own data table.

1. Each site leader is responsible for keeping a single spreadsheet of all the data collected for his/her site. Hence, the data recorder may either submit the raw data collected to the site leader or enter the data in a spreadsheet as demonstrated above and email the spreadsheet to the site leader.
2. After data has been charted, it can be put into pie charts and other graphs, which can be used to analyze population changes and other trends. Write a summary of the data and any trends, inconsistencies, or effectiveness of identification. Also, describe what the trend of the indicator species imply regarding the creek. (See sample)
3. After data has been analyzed, print it and place it in the Vertebrates binder in the creek room.

Safety contact information:

For a threatening situation: (916)-874-5111

For a medical emergency: (916)-228-3000

To contact Mr. Carson, call (916)-849-9832

25 Most Common Species at the Arcade Creek

Western & Eastern Gray Squirrel

Acorn Woodpecker

Nuttall's woodpecker

European Starling

Mourning Dove

Western Scrub jay

Turkey Vulture

Oak Titmouse

Bushtit

Black Phoebe

Northern Flicker

House Sparrow

Spotted Towhee

Anna's hummingbird

Yellow billed Magpie

Yellow-rumped Warbler

Ash-throated Flycatcher

Tree Swallow

Mallard Duck

House finch

American Goldfinch