



Thank you for your participation! Please note that safety is the top priority. Beaches and coastlines can be dangerous places. Please take great care and inform someone of when you are surveying and your expected return time. Please wear appropriate clothing for the weather. Do not enter the mudflat area of your study site as the substrate can be extremely soft and there is a danger of getting stuck. Bird Studies Canada and Simon Fraser University cannot accept responsibility or liability for any accidents or injuries during these Shorebird Surveys.

HIGHLIGHTS AND CHANGES TO METHODOLOGY FOR 2015

Even if you participated in the surveys in 2013 or 2014, please read the methodology carefully as there have been some changes.

- Tide locations only drawn on map at start and end of survey
- 2.5 hrs of surveys with sandpiper counts every 15 minutes
- Note falcon observations as they occur
- Some of the map sheets have been redone.
- Ratio of Western Sandpiper to Least Sandpipers included in methodology.
- Group surveys - a request for independent counts.
- Excel spreadsheet now available for data entry.
- Training video - uploaded to 'For Volunteers' section of website

Read this first...

If you are a new volunteer I will **note on the maps where you should stand** and what area you should attempt to survey. This is to ensure the same area is surveyed each year. If you are a returning volunteer, please survey from the same location as last year. The methodology for the map notation is also modified, to reduce clutter. This data is important to the project however, so please complete the maps when possible.

For those of you surveying in groups, we have an additional request for you. If you are willing and it does not make the experience unpleasant, **please have each member do the counts of abundance independently**. This will allow us to get a measure of overall variation in counts between observers. Details are below, but if you choose to do this, please note this on the first data page, and bring enough Sandpiper Count Forms for each of your group members.

Data submission can be done in a couple different ways, but we would like to receive the original data sheets either scanned or mailed in to us. The details on this are below.

To enter the data, you can either fill in the Excel spreadsheet and email back to me or use the online data submission form. Datasheets, the excel spreadsheet, and training material are available at www.sfu.ca/~dhope/4volunteers.html. You will require a password to access this area of the site. The password is '**biofilm**'. Click here to check out a video of a Western Sandpiper slurping up biofilm.

How is this program different from other citizen-science projects?

The focus of this project is to compare counts of Western Sandpipers between locations with different attributes. **Unlike the goals of most monitoring programs, we are not trying to count all the birds passing through the area.** Instead we are focusing on a single species and attempting to get very accurate counts from both their heavily used feeding sites and sites that are used only rarely. The purpose of this is to understand what characteristics are important to the birds in choosing a site, and how do changing conditions (such as increased predator presence or human disturbance) affect these decisions. Primarily, we hope to discover if changes in abundance at a particular site can be attributed to changes in the overall population size, thereby creating a leading indicator of change that conservation managers can respond to more rapidly.

This project is designed to generate a quick turnaround of results, within the framework of the Pacific Flyway-wide Migratory Shorebird Project enabling your work to yield conservation conclusions in a three year timeframe, much quicker than more traditional long-term monitoring programs.

What am I counting?

Just Western Sandpipers, Merlin, and Peregrine Falcons. That's it.

The Western Sandpiper is one of the most abundant shorebirds along the Pacific Flyway and has been very well studied. This allows us to generate predictions that your monitoring data will help test.

During the summer months, the mudflats will be primarily dominated by Western Sandpipers. See BSC's shorebird ID guide for the other shorebirds that might trip you up (www.birdscanada.org/volunteer/bccws/Resources/ShorebirdIDGuide.pdf).

At some sites it can be impossible to distinguish between all Least and Western Sandpipers. If this is the case, see the methodology below.

What if there are no birds?

That's ok. Because we are comparing sites, it is important to know if there are no birds using a site. **We still need volunteers to remain at the site for the entire 2-hr time period in case birds show up during this time and to record any observations of falcons.**

What if I cannot make it?

Ideally, we would like you to commit to both time periods in July and August. This is important at sites where there are large numbers of birds and different observers could have

slightly different estimates.

However, if you cannot make one of the summer dates, let us know and we will try to find another volunteer to take your place, or if you can find an alternate for the date you're unable to make, please do so and let us know.

When will the surveys occur?

Please examine your site's surveyor package for survey times for the various sites. If you are surveying at a freshwater site, please survey during the time period for your region. **The survey should take about two hours on the rising tide.**

The summer surveys will take place on the 17th, 18th, 19th, and 20th of July and the 14th, 15th, 16th, and 17th of August. We need surveys from each site on the 18 and 19 in July and 15 and 16 in August. An additional survey is requested if possible for either the Monday or Friday around each weekend in July and August.

Why do we care about the tides so much?

At the larger sites, when the tide is low, the birds will be too far from shore to count. We want to arrive at mid tide and stay until the entire site is inundated with water. At smaller sites, birds may leave before the site is completely covered.

Additionally, the position of the tide on the mudflat affects the behaviour of the birds and their vulnerability to predators. It is important to have a range of tidal values to examine this.

Where do I stand?

If you are a returning volunteer, please stand where you did last year. If the site is new to you, the survey location should be marked on a map with an X. If you are unsure about where you should stand, be sure to arrive at the site early enough to find your spot and be there in time for your initial observations. Make sure you stand at the same location in both July and August.

The maps will have the outline of the area or areas you are surveying drawn on them. Please restrict your survey to this area.

In the comments section, please add notes about your site such as any access difficulties and parking availability/location.

Above all, make sure your survey location is safe and that you can get away when the tide is high.

Data sheets

Please bring a copy of the surveyor package for each member of the survey group. One copy of each of the map sheet, sandpiper count form and falcon observation form is required for each independent observer for each survey date. The map page does not need to be printed in colour.

If you do not have access to a printer or have more observations than there are sheets, please make the notes yourself in a similar format to the data sheets.

What to Bring

- Datasheets
- Binoculars/spotting scope
- Weather appropriate clothing/sunscreen
- Water/snacks
- Watch or timer
- Pencils
- Copy of protocol
- Field notebook
- Camera
- Cell phone

Methods

Upon arrival, take a few minutes to get comfortable and acquainted with the site. We have a section on the data sheet to make notes about the site so if you think it might be of interest to us, please write it down. Data collection is comprised of two parts: Regular counts of shorebirds and observations of falcons. *Please be sure to note the site, date and time on each sheet.*

Before the first shorebird count, draw the tidal location on the map as best you can.

The most important data for you to collect is one accurate count of the number of Western Sandpipers within your survey area. The second most important data is observations of falcons and falcon attacks. Additional data is important, but the Sandpiper and Falcon counts are the most important.

Shorebird counts

Every fifteen minutes record take an estimate of Western Sandpiper abundance, even if it is 0. When possible, count every individual Western Sandpiper at your site. For larger sites follow the suggested protocols as described in the Bird Studies Canada Guide to estimating flock size (www.sfu.ca/~dhope/4volunteers/EstimatingShorebirdFlockSize.pdf). At larger sites be sure to be comfortable with flock estimation techniques before you

arrive at the site. You can practice using the guide both at home on a computer screen and in the field.

After the estimate is complete, mark flock locations on the map.

On the map, draw the relative size of the flock and mark in the datasheet the correct density as described in the BSC guide to estimating flock size. If there are areas with different densities of sandpipers, count them separately (use the notes area on data sheet) and then combine subtotals to get the total count.

Repeat this every 15 minutes until the end of your study period as noted in the table. Fill in the WESA count form every 15 minutes, even if there are no birds around. If large flocks of birds leave or arrive at the site between counts, make a note of the time and direction they arrived from or depart to. We are not interested in flocks that are transiting the site, only those that are using the site to feed at.

If the tide is too far out for you to make counts of the birds, please let me know as soon as possible so I can correct the timing of your site's survey

For those of you that have a digital camera and are comfortable, doing so, please take a photo of the area of observation, if surveying a large area you can take several photos to cover the entire area. Note file numbers of images on the data sheet.

WESA:LESA Ratio At some sites it can be difficult to differentiate between Western and Least Sandpipers. For this reason, you can now record "Peeps" on your WESA Count Form if you are unable to differentiate between them. If you use the group "Peeps" on your form, please take a record of the ratio of LESAs to WESAs at this site. To do this, you must wait until the tide has pushed the birds sufficiently close to shore to be able to differentiate between them. Use caution with this, however as Least sandpipers generally forage closer to shore than Westerns and so you must count outwards from shore when estimating the ratio.

Ratios can be conducted in between survey counts or at the end of the survey. To collect the ratio, count 50 birds in a strip going perpendicular from shore towards the water. Note the number of WESA and number of LESAs within the number counted. If there are not enough birds identifiable to reach 50, count as many as you can and record the number counted. This data can be entered on the first data page

Group observations If you are surveying a location with two or more people please consider doing the shorebird counts independently. It is important for us to have an idea of how the number of birds counted varies between observers. Having multiple people survey the same site gives us an opportunity to explore this.

To conduct independent counts, each group member needs to have their own sandpiper and count forms. The group can fill in the first data page together, but all of the counts must be conducted separately. Keep your counts secret until all of the surveys are over and then you can compare counts see which group member was the superior shorebird spotter.

We understand this may not appeal to everyone, so if you wish to conduct your counts collaboratively, just note it on the first data page.

Falcon observations

As the threat of being killed by predators can influence birds' decisions regarding which site to use, we would like you to make note of any Peregrine Falcons (PEFA) or Merlin (MERL) using the area. Before you make your first count of sandpipers, count the number of falcon you observe and mark their location on the map. Throughout the observation period record any attacks on the sandpipers, whether it is successful, where the attack came from and the duration of the attack (Try to note the time at the start and end of the attack). Mark the initial location of the falcon and its movement through the study area on the map from the previous count. All observations of falcons should be noted even if it is between count periods.

TIP: If you see the shorebird or waterfowl flock suddenly lift and start flying, look carefully around and behind you in case there is a falcon starting to come in.

Maps

The map sheet is divided into four sections: Tides, WESA, Falcons and Other.

- **Tides.** In this area, please draw the location of the tide or waterline throughout your survey. We would like you to draw the tide location at the start and end of your surveys and note the time that the site is flooded. Please draw the tide line where you can observe it.
- **WESA.** Please note on this map, the locations of any flocks of Western Sandpipers. This can be done by drawing the outline of the flock and marking it with W1, W2, etc. As new flocks arrive, note them on the map, and if a flock moves to a completely different part of the map, note this with W1a, W2a, W1b, etc. You do not have to note every movement of the birds, only if the move to a new area to forage or roost.
- **Falcons.** As with the sandpipers, note the locations and movements of falcons with F1, F2, F3, etc. For attacks, please draw a solid arrow in the direction of the initial attack. Again, you do not need to record every movement, just attacks and perching locations.

Data Submission

We have several options for data submission. The first choice is to enter your data into the online data form (click here in pdf to open link). If you cannot reach the page from the previous link, copy and paste the following link into your internet browser - <http://goo.gl/forms/1Fxs35GgnD>. If you have any problems with the form or there are not enough fields for either the falcon or WESA observations, let us know.

Alternatively, you can submit your data using the excel spreadsheet, designed for this process, it can be found at www.sfu.ca/~dhope/4volunteers/2015_Datasheet.xlsx. Unfortunately, the spreadsheet may not work well with earlier versions of excel or in other

spreadsheet programs. If you cannot access the file or have problems with this method, please email me.

Finally, please email or mail me your datasheets and maps after the end of the surveys. If you have a digital camera or scanner, you can photograph or scan the data sheets and email them to dhope@sfu.ca so we can analyze the map data.

Please mail hard copies of the data sheets at the end of each year to the following address:

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Simon Fraser University
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Burnaby, British Columbia
V5A 1S6

THANK YOU FOR YOUR HELP AND PARTICIPATION!

