

# Site Establishment and Monitoring Report

Establishing and monitoring the demonstration sites for the  
Ecological Services Initiative Phase 2 Regional Pilot  
March 2014

Completed by:  
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**Proud owner:** John Palmer is a rancher and owner of one of the demonstration sites along the Columbia River wetlands captured in the background of this photo.

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## Introduction

This portion of the Ecological Services Initiative (ESI) pilot required that the contractor complete the following steps to establish and monitor the demonstration sites involved in the pilot:

1. Establish sites
  - a. Develop site selection criteria
  - b. Screen potential sites
  - c. Complete site selection form
  - d. Establish site agreement
2. Conduct Assessments
  - a. Office based portion
  - b. Field based portion
3. Write report

The site establishment component was completed to determine if there are significant barriers to establishing larger numbers of Paid Ecosystem Services (PES) sites within a regional context. Specifically would farmers be reluctant to sign on or are there other unanticipated barriers.

The monitoring component consisted of conducting assessments of each targeted riparian areas. This would allow the project to evaluate the application of the previously developed monitoring tool on a larger number of sites within a regional context.

For a full overview of the Ecological Services Initiative Phase 2 Regional Pilot see the Greening Regional Agriculture report and associated additional reports.

The following sections describe the particular methods employed, and the results and recommendations for a wider application of the PES concept.

## Methods

The following steps were carried out in order to complete this portion of the contract:

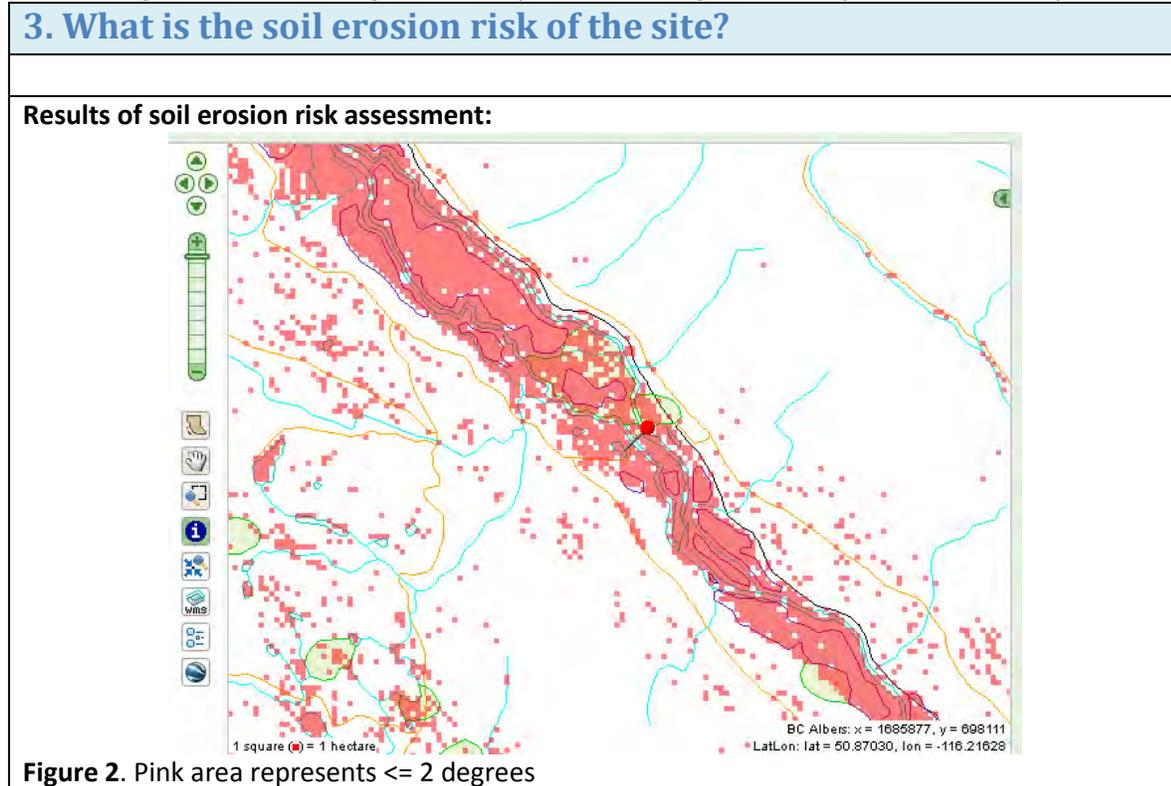
1. Establish sites
  - a. Establish site selection criteria
    - i. In order to establish the demonstration sites the contractors developed the site selection criteria. In order for a site to be selected the it was determined that is should be:

1. located within the Upper Columbia Valley
2. on a working farm or ranch
3. situated on a riparian area on a water body associated with the Columbia River
4. on a farm or ranch that has completed and Environmental Farm Plan
5. on a property that is owned by a land owner who is interested in the concept and willing to share the details of the demonstration publicly
6. able to meet the additional criteria required by the site selection form  
**(appendix 1)**

- b. Conduct initial interviews with the owners of the potential sites
    - i. While establishing the demonstration sites, potential sites were identified by the contractor who is familiar with the farmers and ranchers in the region. The potential sites that were thought to conform to the site selection criteria described above were interviewed to determine their suitability. 7 sites were interviewed and 5 sites were established.
  - c. Complete site selection form
    - i. Once the preliminary interviews were completed the contractor filled in a site selection form for each of the 5 sites. This step collected the relevant administrative information as well as allowed the project to further determine whether the site further conforms to the site selection criteria.
  - d. Complete the site agreements **(appendix 2)**
    - i. Each of the five demonstration sites had an agreement struck with the land owner which consisted of a map of the site and an accompanying agreement.
    - ii. Create the map
      1. A map was created for each site showing the location of the site and outlines the polygon showing the area that is to be included in the agreement
    - iii. Complete the agreement
      1. An agreement was completed for each site which outlines what practice the landowner will maintain as well as other relevant details.
2. Conduct Assessments
    - a. In the previous phase of the ESI a monitoring tool was created **(appendix 3)**

- b. This tool applied the ecosystem service assessment tool (**appendix 4**) and includes four steps:
- 1. Collecting administrative Information:** administrative data is required to identify the site of interest and note important characteristics;
  - 2. Assessing the ecosystem service site potential:** this is a desktop exercise that evaluates the landscape context for each site considered for the ESI program in order to identify the potential of the site to function as a service providing area;
  - 3. ESI site selection:** based on results of the ecosystem service site potential, selection criteria are applied to identify sites with the highest potential to support the delivery of ecosystem services based on ESI goals and priorities for participation in the program
  - 4. Field assessment of ecological condition:** for all sites selected for participation in the ESI program, the Riparian Health Assessment protocol is used to evaluate the ecological condition of each site. Depending on which type of riparian area the site consists of one of three workbooks (**appendix 5**) would be used; a wetland, river, or small stream assessment workbook.
- c. The ecological site assessments were completed for each site. These assessments focused primarily on steps 1, 2, and 4. Step 3 portion of the tool was not utilized since the site selection process was completed by the process required by the contract.

3. Figure 1 the following is an example of content generated by the assessment process:



Slope gradient	Risk Category	Results:
0 to 10	<b>Low</b>	Average slope of 2 degrees, therefore rated as flat
11 to 20	Moderate	
21 to 50	High	
>50	Very High	

4. Write report

- a. The writing of this report and the associated appendices is intended to meet this requirement of the contract.

## Results and Recommendations

The steps described in the Methods section consisted mainly of the site establishment and monitoring. This work served to answer some important questions that relate to the potential future expansion of the concept. In general the process went well with few challenges, producers were very supportive and willing to participate, and the monitoring tools were successfully completed.

Since this project was initiated there has been significant progress in advancing the ESI. The potential expansion to a multiregional concept has been supported by a large number of key stakeholders and funders. One of those positive developments is the formalization of the relationship between the ESI and the Environmental Farm Plan (EFP) (**appendix 7**). In an effort to keep this report to a reasonable length the specifics will be spared. The reader will see the EFP program referenced below. For more detail on that program the reader could follow the link provided.

The following describes the results and recommendations that relate to each of the completed steps:

1. Establish sites
  - a. Develop site selection criteria-
    - i. The contractor was able to develop selection criteria based on previous experience and input from regional experts.
    - ii. Recommendation-These criteria should be established according to regional priorities and funding opportunities. The process to establish priorities should be collaboration between funders, stakeholders, and regional experts. The output of the process should be a series of specific ecosystem goals, and a defined sub region that the program should focus on.
  - b. Screen potential sites-
    - i. The contractor was able to establish the required 5 sites. 7 site owners were approached but two were screened out. One land owner expressed interested but was away at the time that sites were being established, and the second felt their project didn't conform to the criteria. There was strong interest and support from all land owners who where approached.
    - ii. Recommendation-The screening process should be integrated with the EFP process, and there is particular opportunity to connect to the EFP's "Group Planning" component.
    - iii. Recommendation-The screening process should be connected to the site selection criteria which should be developed for a regional program.
  - c. Complete site selection form-
    - i. Administration information was collected successfully
    - ii. Recommendation- Future programs should integrate with EFP to create efficiency. By creating integrated forms and databases less time would be required to collect the same administrative information.

- iii. Recommendation-Selection Criteria should be established by regional experts based on priority targeted ecosystem services.
  - d. Establish site agreement
    - i. 5 site agreements were established. Farmers were receptive to the idea of maintaining the BMPs and were willing to sign the agreements
    - ii. Recommendation-The agreement template should be reviewed by a legal expert to ensure both the legality and efficacy.
2. Conduct Assessments
- a. The Assessments were completed on the 5 sites with the following results and recommendations:
    - 1. Collecting administrative information:** administrative data is required to identify the site of interest and note important characteristics;
      - 1. The administrative information was collected and recorded for this form. Some of the information was redundant because it had been collected by the site selection process.
      - 2. It took longer to complete the office based portion initially though significant efficiencies were gained as more were completed.
      - 3. A precise step by step guide to completing the office based portion of the assessment (**appendix 6**).
      - 4. It was determined that Environmental Farm Plan Advisors could complete this portion of the assessment.
      - 5. Recommendation-Future assessors should use the step by step guide that was created.
      - 6. Recommendation-This portion of the assessment should be integrated into the EFP as mentioned previously.
    - 2. Assessing the ecosystem service site potential:** this is a desktop exercise that evaluates the landscape context for each site considered for the ESI program in order to identify the potential of the site to function as a service providing area;
      - 1. This information was collected which went relatively smoothly though there have been some changes in the GIS websites since the tool was created. The guide mentioned above captures those changes.

2. Some of the data sets referred to are either incomplete or at a scale that is too coarse for some sites.
3. Recommendation-Future programs should attempt to develop the necessary data sets where they are insufficient for the process.

**3. ESI site selection:** based on results of the ecosystem service site potential, selection criteria are applied to identify sites with the highest potential to support the delivery of ecosystem services based on ESI goals and priorities for participation in the program

1. The site selection process outlined in the assessment tool was not used in this exercise though the relevant details were captured. The site selection was done using an alternative method.
2. Recommendation-In future programs this portion of the tool should replace the alternative method used in this project to ensure a fully integrated approach.

**4. Field assessment of ecological condition:** for all sites selected for participation in the ESI program, the Riparian Health Assessment protocol is used to evaluate the ecological condition of each site. Depending on which type of riparian area the site consists of one of three workbooks (**appendix 5**) would be used; a wetland, river, or small stream assessment workbook.

1. This portion of the assessments was completed by making the field visits to the sites. Since the assessments require an analysis of vegetation they were delayed to the spring due to the snow cover in the fall.
2. The assessor completed one of the three types of assessment depending on the site: wetlands, small streams or large river assessments.
3. One step in this process requires the assessor to choose an assessment site and choose whether that site is a representative or critical site.

From the Riparian Management Workbook:

- a “critical” site, one that may be sensitive, or already has some specific problems, for assessment; or

- a “representative” reach of stream and that will provide an overall impression of health.

To determine a site that is representative, become familiar with the entire length of stream and riparian area. What you are picking is a short reach that will represent the average condition of a long stretch of river or stream. Vegetation, use/utilization, channel characteristics and stream gradient in the representative reach should all reflect what is found in and is common to a longer reach. If there is too much variation, or a tributary joins, divide the stream into similar units and then select a representative piece from each unit.

The reasons for picking either or both critical and representative reaches may include:

<b>Critical</b>	<b>Representative</b>
• problem spots indicating management concern	• overall impression or average of riparian condition for a long stretch of stream
• sensitive areas, including key habitats for plants, fish or wildlife	• broader measurement of management actions or choices
• places that may respond to management change quickly	• broader measurement of vegetation characteristics, especially key indicators like woody vegetation, weeds or disturbance species
• shorter reaches, easy to monitor	• longer reaches for more comprehensive monitoring

4. Recommendation-Depending on the design of the regional program it will be important for future assessors to be given specific directions as to what type of site to capture with their assessment.
5. The contractor spoke with Noreen Ambrose a Riparian Assessment Expert who manages the Cows and Fish program to determine if the RHA scores could be wrapped up to create an amalgamated regional score. She said it is possible and that they are using these amalgamated scores in Alberta now.

6. Recommendation-Future programs should replace the whole farm assessment portion with a regional set of criteria to guide where the assessment should be targeted on the individual farm.
7. Recommendation-Future programs should determine if the assessors should be choosing a representative or critical site.
8. Recommendation-Future programs should investigate how the resulting RHA data should be wrapped up to create an amalgamated regional score.



**Fence line:** The fence shown in this picture is protecting the riparian area and the associated wetlands allowing both food and ecosystem service production.

# Appendix

The following appendix items are attached to this report:

1. Site selection forms
2. Site agreements
3. Monitoring tool
4. Monitoring reports
5. Riparian assessments wetland, river and small stream workbooks
6. Office based steps summary doc
7. Link to the Environmental Farm Plan Program-  
<https://www.bcac.bc.ca/ardcorp/program/environmental-farm-plan-program>