Eco Assessment Tutorial - Worksheet

Habitat Doctor: Examine the Health of Your Ecosystem

A Brief Guide to this Tutorial:

Welcome to the IMPRINT+ ecological site assessment tool. This simple fieldwork exercise will guide you in assessing an area for ecological health. A site is considered ecologically healthy when there is a high level of biodiversity and a variety of habitats for plants and animals to live in. A healthy site will also have low levels of pollution, few to no invasive species and little human disturbance.

The tutorial is made up of three parts. While we recommend using all three parts of the tutorial, it is not essential to complete Part 1 & 3 to partake in the IMPRINT+ project. You can use part two on its own to gain a greater

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Part 1 – Pre-fieldwork Research.

Poses topics for an individual or a group to research before arrival at the site. With the knowledge acquired through this research you will be better able to assess the site accurately.

Part 2 – Onsite visual assessment.

The assessments are made through simple visual and auditory observations. These observations are the first stage in ecological science. From these observations you can draw some simple conclusions about the site being studied. The more experience you gain with this kind of observational research, the greater the accuracy of your research will be.

Part 3 – Back in Class or at Home. This section provides some suggestions for school and youth groups of final activities that can be used after the site/habitat visit. This will help to consolidate learning and take the information and research to a deeper level of understanding.

Onsite Visual Assessment

Is your site Ecologically Healthy?

The aim of this assessment is to determine the health of a chosen site or habitat. This information should not be considered a guide for research or environmental assessment in a professional capacity in anyway. Ecosystems are complex environments with many varying factors that cannot be easily summed up in a single assessment.

Data Set 1 - Plants

HOW MANY DIFFERENT SPECIES OF PLANTS?

Final Number:

LIST THE NAMES OF THE ONES YOU KNOW IN THE BOX BELOW...
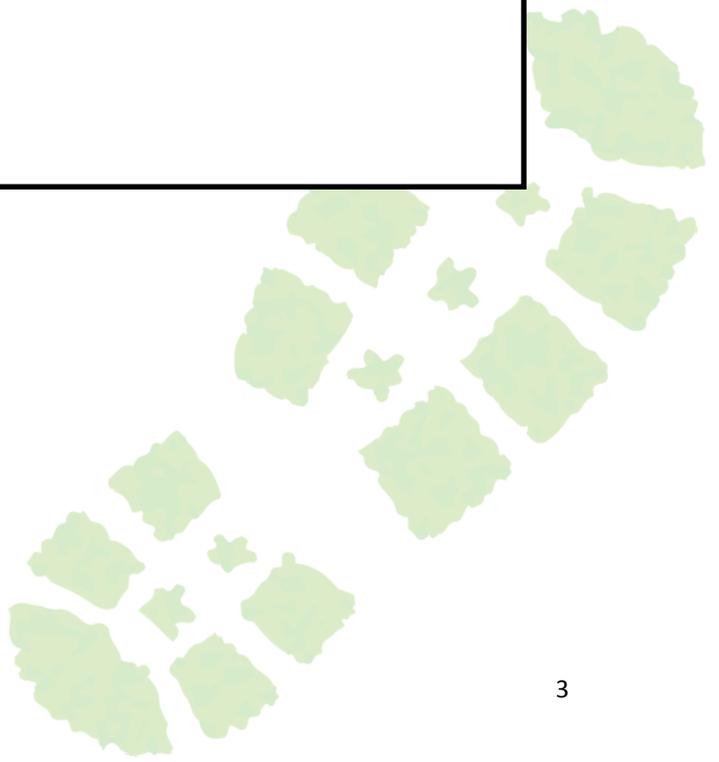
Data Set 2 – Invertebrates

HOW MANY DIFFERENT SPECIES OF INVERTEBRATES?

LIST THE NAMES OF THE ONES YOU KNOW IN THE BOX BELOW...

Final Number:

Data Set 3 - Vertebrates

HOW MANY DIFFERENT SPECIES OF VERTEBRATES?

LIST THE NAMES OF THE ONES YOU KNOW IN THE BOX BELOW...
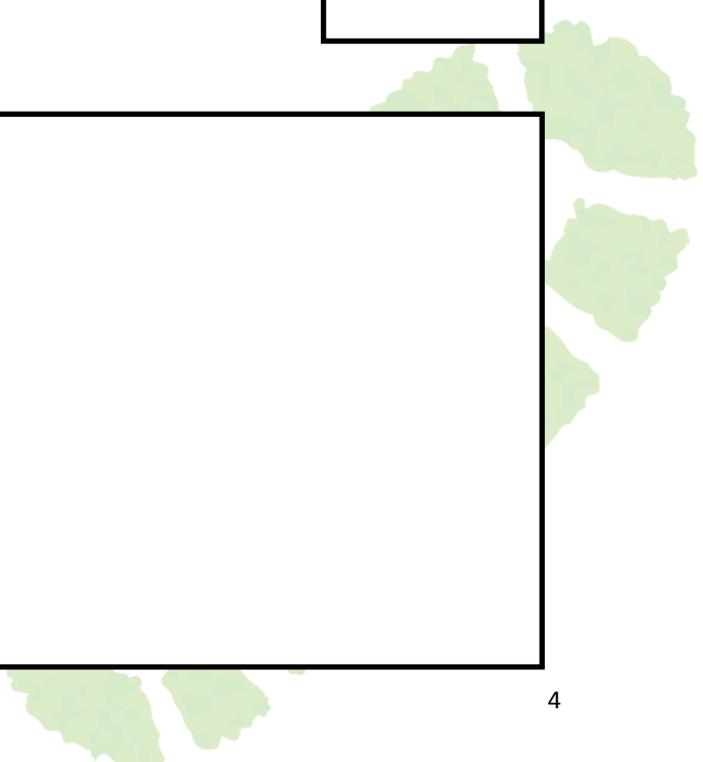
Final Number:

Data Set 4 - Vegetation Layers

HOW MANY LAYERS OF VEGETATION ARE THERE?

DESCRIBE THE LAYERS AS BEST YOU CAN IN THE BOX BELOW…

Final Number:

Data Set 6 – Habitat Count

HOW MANY DIFFERENT KINDS OF HABITATS ARE THERE?

List them in the box below…

Human Impact Assessment

For this section, refer to the guide images in the appendix that give examples of a severe, moderate and no impact for each data set. As a group estimate where the site falls between these guides, and circle the relevant number on the scale for the chosen site. In the box for observation notes, describe the impact verbally, noting any usual or significant aspects to it.

Allocate points to your site based on the severity of the human impacts on a scale from 10 (the impact being very severe) to 100 (having no impact at all)

When you have completed all the sections add up the points to see what the total is for your site and then go to the results section.

The images in Appendix I are a guide to assist you in identifying where on the scale your site is. For example; if the habitat looks like it has more litter& Waste than the image for 'moderate' then you would mark 40 points, as the amount of pollution increases, the points decrease.

LITTER & WASTE

0--------10 --------20 -------- 30 -------- 40 -------- **50** ------- 60 ------- 70------- 80 ------ 90 ---- **100**
Severe   **Moderate**   **None**

Observation Notes:

TRAMPLING

0-------10 --------20 -------- 30 -------- 40 -------- **50** ------- 60 ------- 70------ 80 ------ 90 ---- **100**
Severe   **Moderate**   **None**

Observation Notes:

WATER POLLUTION

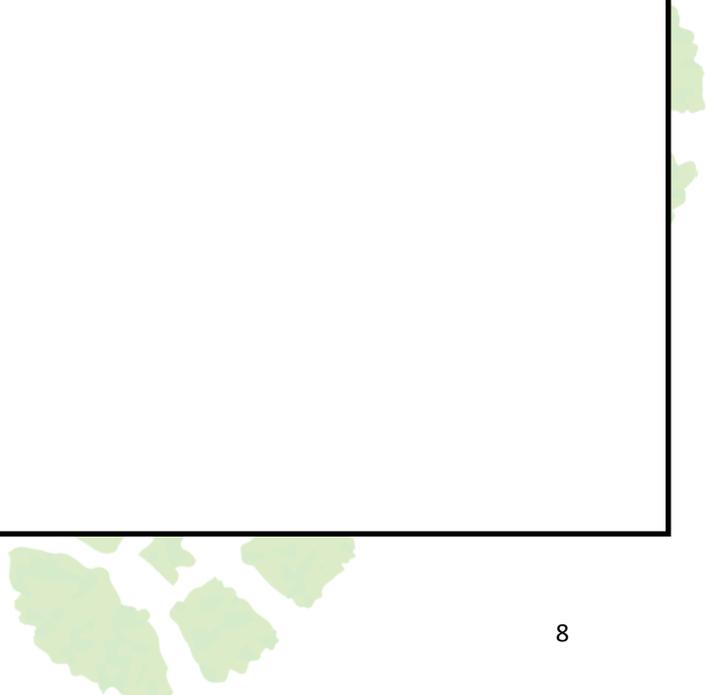**10** --------20 -------- 30 -------- 40 -------- **50** ------- 60 ------- 70------- 80 ------ 90 ---- 100
Severe   **Moderate**   **None**
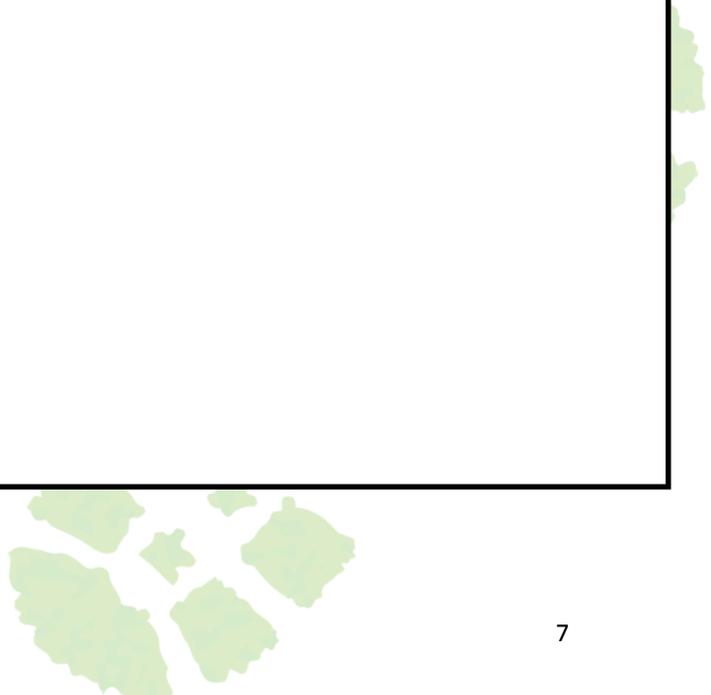
Observation Notes:

AIR POLLUTION

10 -------20 -------- 30 -------- 40 -------- **50** ------- 60 ------- 70------- 80 ------ 90 ---- **100**

Severe   **Moderate**   **None**

Observation Notes:

NOISE POLLUTION

10 -------20 -------- 30 -------- 40 -------- **50** ------- 60 ------- 70------- 80 ------ 90 ---- **100**

Severe   **Moderate**   **None**

Observation Notes:

INVASIVE SPECIES

10 --------20 -------- 30 -------- 40 -------- **50** ------- 60 ------- 70------- 80 ------ 90 ---- **100**

Severe   **Moderate**   **None**

Observation Notes:

Results Summary

Now that you have all of your recordings and observations, out of the human impact assessment you can add up all of the points you have allocated to your site. The total will fall under one of the following categories which will give you an indication of where your site falls in terms of ecological health.

Out of a possible 600 points - what did your habitat score?

High score [400-600) – Healthy

Your ecosystem appears to be healthy, scoring such a high mark indicates low levels of pollution and a potentially high degree of biodiversity. A healthy ecosystem is considered to be one that is self-sustaining. It can cope with a certain degree of stress in the form of weather damage, animal grazing or mild human impacts such as walking. It does not require replanting each year or the provision of food for the organisms that live there. All resources for the survival of its organisms are found within the ecosystem.

Moderate score [200-399] – Moderately healthy

A moderately healthy ecosystem is one that is experiencing some stresses that are too much for the ecosystem to bounce back from. As a result, visible impacts can be seen, such as bare soil from trampling or litter that is not biodegradable or water pollution that is too much for the water cycle to clean. It generally will not take a lot of work to restore a site such as this to full health. For suggestions on how to help habitats and biodiversity use the IMPRINT+ App and see what you can do to help.

Low Score [0-199] - Unhealthy

If your site scored below 200, it will not be a very healthy area, ecologically speaking. Some species may live there but there will be a lower diversity as not many species are able to cope with the environmental stresses an unhealthy area. Stresses include human activity such as trampling and waste or they could be environment caused such as a lack of water due to drought or no food source due to low biodiversity. In sites like this, we can be incredibly beneficial as we can make a huge difference to the plants and animals that live in an area like this, through very simple and easy actions. For suggestions on what actions you could take to improve the health of this site, check out the IMPRINT+ App.

Human impact scale - Visual Guide

Severe	Moderate	None

Litter & Waste

(c) Multiplier Event 1

(c) Lisa Lopes

Trampling

Water Pollution

Air Pollution

Air pollution can be hard to see when it is moderate. Indicators such as roads, factories and industry nearby

It can be hard to know if a site has good quality air or if it is polluted. We use indicators such as the presence of shrubby, hairy and leafy lichens to give a sense of how clean the air is.

Noise Pollution – This category is not visual, but auditory. Take a minute of silence at your site and see which of the following descriptions fit your experience best.

During your minute silence, you can only hear human made sounds. No natural sounds exist or if they do they cannot be heard over the human sound.	During your minute silence, you can hear natural sounds as well as some human made sounds such as traffic, machinery, music or industry.	During your minute silence, you only hear natural sounds such as leaves rustling, birds singing, or natural water moving.

Invasive Species – Invasive species are different for different areas, however some species are more vigorous than others. For this category you will need to research what is invasive and problematic for your locality. For the scale we have used the example of Japanese Knotweed.

Japanese Knotweed covering an entire area	Just a few individual plants of Japanese Knotweed.	An area with no Japanese Knotweed