

Water & a Healthy Environment

5. HABITAT INTEGRITY TEST



A checklist of risk and habitat change



What do we need?

- Pen / pencil
- Clip board
- Habitat integrity checklist (in pack)

Questions we are asking, and how we plan to take our investigation further:

In order to understand why the river/stream/pond is in a particular condition, it is necessary to see what factors nearby have had an impact on it.

How do you make sense of the criteria for impact evaluation (using a scale of 0 - 25)? Does it give a realistic reflection of the realities and risks?

Consider the information that you have gathered so far regarding your river/pond. What risks are there with regard to your health and well-being? Do you think that your audit has provided sufficient information to give you a realistic idea of the implications?

We have considered the danger of jumping to conclusions without measuring and carefully considering all of the complexities of the matter. We need to be equally careful about our conclusions even after we have made measurements and gathered information.

If we want to find out if the health of the river/stream/pond is worse than before, we first need to know how it was in the past. There are many different historical perspectives, each of which has some validity.....

What do we think the habitat integrity is telling us? What have we learned from this, and where do we take our investigation from here?

How do we use the kit?

Here, we are probing our findings by making careful observations in the area, in order to get a better sense of what is happening to the water. By finding out how healthy the area around the water/river system is, we can get a clearer idea of what health risks we are dealing with:

Habitat integrity: auditing at the general health (integrity) of the area around the water.

- Using the 'Habitat Integrity' checklist, do a careful review of the different factors which affect the 'instream' habitat (the actual river/stream/pond itself) and the 'riparian zone' (the banks).
- You could use the criteria in this table to 'score' the level of impact.

Score/ Impact		Criteria for impact evaluation
0	None	No evidence of impact, or the stream is modified but without any impact
1-5	Small	Very small impact is evident, or modification is limited to certain areas of the stream
6-10	Moderate	Modification is evident at a few localities. The stream/pond quality and its bio-diversity and size have been impacted
11-15	Large	General modification is evident. The stream/pond quality and its bio-diversity and size have been obviously impacted
16-20	Serious	Frequent modification is evident. The stream/pond quality and its bio-diversity and size have been seriously impacted
21-25	Critical	Extreme modification is evident everywhere. The stream/pond quality and its bio-diversity and size have been critically affected

CHECKLIST: impacts on 'instream' habitat integrity

- Evidence of water removal - influences habitat type and flow of water.
- Modification of water flow. Influenced by addition or removal of water. Affects habitat.
- Modification of the stream bed - caused by increased input of sediment.
- Modification of the shape of the channel. Can influence the rate of flow and alter the habitat.
- Modification of the water quality (pollution) - is it 'diffuse' (everywhere) or 'point' (one place) pollution?
- Inundation (evidence of flooding). Influences the movement of sediment and aquatic fauna.

Secondary impacts

- Invasive macrophytes/trees - in or over the water. Can obstruct flow, alter the habitat and water quality.
- Invasive aquatic fauna (fish). Disturb the bed and increase turbidity. Also upset the ecosystem.
- Solid waste disposal (rubbish dumping) - indication of misuse and mismanagement of the stream.

CHECKLIST: impacts on the 'riparian zone' integrity

- Vegetation removal - physical removal by farming, firewood or over-grazing. Causes increased run-off and erosion.
- Invasive vegetation. Encroachment leads to unstable banks and decreases the buffering of the riparian zone. Diversity is decreased.
- Bank erosion. Decreases bank stability, increases sedimentation and causes modification. Caused by over-grazing, vegetation removal or invasive plant encroachment.
- Modification of the channel. Influences the rate of flow and the habitat.
- Water Removal. Influences water level and riparian habitat.
- Inundation/flooding. Obstructs movement of sediment and aquatic fauna.
- Modification of water flow. Rate of flow can influence riparian habitats and species which live or breed in this area.
- Modification of Water Quality. Diffuse or point pollution.