

Trial Science



In this section you will find a teacher's introduction to the science used in the Scottish Beaver Trial and activity sheets to help your students.

This work is based on the Habitat Assessment work which was carried out before the Scottish Beaver Trial could go ahead and will hopefully help your students to understand some of the work which was necessary.

Trial Science Teacher Introduction

Habitat Description—Site 1

Habitat Description—Site 2

Habitat Description—Site 3

Habitat Assessment Form

Habitat Assessment Results—Site 1

Habitat Assessment Results—Site 2

Habitat Assessment Results—Site 3

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As part of the Trial there are many scientific experiments taking place. Some of these had to take place before the trial began.

The habitat assessments were a vital part of getting the licence application granted. In this activity the students can try their hand at assessing three lochs to find out which is the most suitable for a new release site in the Knapdale forest area. The assessment can involve water pH testing as well if you feel this is suitable for the group. This will need some extra set up time as you will need to make up three samples of water which can be tested for pH, these can all be the same or you can make each different to give a clearer result.

Please ensure that site 2 is the most suitable as the water quality is a very important factor.

The habitat assessments work by giving different areas a score, the higher the score the more suitable the habitat. It covers many different aspects of the habitat and the assessment sheets for this activity are shortened, simplified versions of the actual assessments used.

Suggested session:

- Students can work alone or in small groups.
- Give each student a recording sheet and each student/group the habitat description sheets for each of the three sites.
- They must work out the score for each site by picking out the information from the description and scoring it against the assessment criteria. When they have a result for each they must then report on which is the most suitable site and why.
- The report can be written in the form of a proposal for site suitability or can be given as an oral presentation to the Trial manager (teacher or selected student).

Additional activities:

- The students can be given the grid references of the actual release sites and they can find them on the Trial map.

Resources:

- Habitat Assessment sheet
- Habitat descriptions
- Answer sheets
- Release site co-ordinates: Release 1 - NR 784 903
Release 2 - NR 794 906
Release 3 - NR 805 911
Release 4 - NR 788 884

The Trial Science Habitat Description Site 1



Vegetation:

- The dominant woody species within 100m of the bank are willows providing continuous bankside cover, with the average diameter being 15cm.
- There is 25% cover of aquatic plant species in the water channel and 43% field layer cover within 20m of the bank.

Running water:

- Depth reaches 7m.
- General flow speed of 0.8 metres per second.
- The width of the channel is 12m.
- The channel gradient is 24% over a distance of 100m.

Still water:

- There are no associated features within the water body.
- Depth is 3m.
- Length is 310m.
- Width is 46m.

Other notes:

There have been quite a few power boats sited along with a lot of dog walkers.

The Trial Science Habitat Description Site 2



Vegetation:

- The dominant woody species within 100m of the bank is aspen providing scattered bankside cover, with the average diameter being 19cm.
- There is 80% cover of aquatic plant species in the water channel and 41% field layer cover within 20m of the bank.

Running water:

- Depth reaches 5m.
- General flow speed of 1.6 metres per second.
- The width of the channel is 315m.
- The channel gradient is 4% over a distance of 100m.

Still water:

- There are lots of associated features within the water body.
- Depth is 5m.
- Length is 508m.
- Width is 77m.

Other notes:

There is angling at certain times of the year.

The Trial Science Habitat Description Site 3



Vegetation:

- The dominant woody species within 100m of the bank are conifers providing continuous bankside cover, with the average diameter being 9cm.
- There is 36% cover of aquatic plant species in the water channel and 12% field layer cover within 20m of the bank.

Running water:

- Depth reaches 1m.
- General flow speed of 4 metres per second.
- The width of the channel is 1m.
- The channel gradient is 10% over a distance of 100m.

Still water:

- There are a few associated features within the water body.
- Depth is 0.9m.
- Length is 86m.
- Width is 100m.

Other notes:

A lot of bankside shooting and there is a fairly busy road very close by.



The Trial Science Habitat Assessment

PARAMETER	SCORING		
	POOR (1)	FAIR (2)	GOOD (3)
RUNNING WATER			
Depth (m)	<1 OR >6	1-2 OR 4-6	2-4
Width (m)	<2 OR >300	2-10 OR 100-300	10-100
Flow speed (m/s)	>1	0.3-1.0	<0.3
Gradient %	>20	5-20	<5
STILL WATER			
Depth (m)	<1 OR >6	1-2 OR 4-6	2-4
Length (m)	<100	100-500	>500
Width (m)	<10 OR >1000	10-50 OR 150-1000	50-150
Features	None	Few	Many
VEGETATION			
Woody species	Conifers	Hardwoods	Aspen/willows
Diameter (cm)	>20	10-20	<10
Bankside cover	None	Scattered	Continuous
Aquatic plant %	<40	40-60	>60
Field layer %	<40	40-60	>60
ANTHROPOGENIC FACTORS (HUMAN)			
Water use	Shooting/ power boat	Angling/row boat	Reserve/none
Disturbance	Industry/road	Angling/dog walking	Reserve/none
pH LEVEL	<5.5 OR >8.5	5.5-6.5 OR 7.5-8.5	6.5-7.5

The Trial Science Results Site 1 = 29



PARAMETER	SCORING		
	POOR (1)	FAIR (2)	GOOD (3)
RUNNING WATER			
Depth (m)	<1 OR >6	1-2 OR 4-6	2-4
Width (m)	<2 OR >300	2-10 OR 100-300	10-100
Flow speed (m/s)	>1	0.3-1.0	<0.3
Gradient %	>20	5-20	<5
STILL WATER			
Depth (m)	<1 OR >6	1-2 OR 4-6	2-4
Length (m)	<100	100-500	>500
Width (m)	<10 OR >1000	10-50 OR 150-1000	50-150
Features	None	Few	Many
VEGETATION			
Woody species	Conifers	Hardwoods	Aspen/willows
Diameter (cm)	>20	10-20	<10
Bankside cover	None	Scattered	Continuous
Aquatic plant %	<40	40-60	>60
Field layer %	<40	40-60	>60
ANTHROPOGENIC FACTORS (HUMAN)			
Water use	Shooting/ power boat	Angling/row boat	Reserve/none
Disturbance	Industry/road	Angling/dog walking	Reserve/none
pH LEVEL	<5.5 OR >8.5	5.5-6.5 OR 7.5-8.5	6.5-7.5

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Results Site 2 = 34



PARAMETER	SCORING		
	POOR (1)	FAIR (2)	GOOD (3)
RUNNING WATER			
Depth (m)	<1 OR >6	1-2 OR 4-6	2-4
Width (m)	<2 OR >300	2-10 OR 100-300	10-100
Flow speed (m/s)	>1	0.3-1.0	<0.3
Gradient %	>20	5-20	<5
STILL WATER			
Depth (m)	<1 OR >6	1-2 OR 4-6	2-4
Length (m)	<100	100-500	>500
Width (m)	<10 OR >1000	10-50 OR 150-1000	50-150
Features	None	Few	Many
VEGETATION			
Woody species	Conifers	Hardwoods	Aspen/willows
Diameter (cm)	>20	10-20	<10
Bankside cover	None	Scattered	Continuous
Aquatic plant %	<40	40-60	>60
Field layer %	<40	40-60	>60
ANTHROPOGENIC FACTORS (HUMAN)			
Water use	Shooting/ power boat	Angling/row boat	Reserve/none
Disturbance	Industry/road	Angling/dog walking	Reserve/none
pH LEVEL	<5.5 OR >8.5	5.5-6.5 OR 7.5-8.5	6.5-7.5

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Results Site 3 = 23



PARAMETER	SCORING		
	POOR (1)	FAIR (2)	GOOD (3)
RUNNING WATER			
Depth (m)	<1 OR >6	1-2 OR 4-6	2-4
Width (m)	<2 OR >300	2-10 OR 100-300	10-100
Flow speed (m/s)	>1	0.3-1.0	<0.3
Gradient %	>20	5-20	<5
STILL WATER			
Depth (m)	<1 OR >6	1-2 OR 4-6	2-4
Length (m)	<100	100-500	>500
Width (m)	<10 OR >1000	10-50 OR 150-1000	50-150
Features	None	Few	Many
VEGETATION			
Woody species	Conifers	Hardwoods	Aspen/willows
Diameter (cm)	>20	10-20	<10
Bankside cover	None	Scattered	Continuous
Aquatic plant %	<40	40-60	>60
Field layer %	<40	40-60	>60
ANTHROPOGENIC FACTORS (HUMAN)			
Water use	Shooting/ power boat	Angling/row boat	Reserve/none
Disturbance	Industry/road	Angling/dog walking	Reserve/none
pH LEVEL	<5.5 OR >8.5	5.5-6.5 OR 7.5-8.5	6.5-7.5