
Litter Trap Simulation

Level

5-7

Key question

How would you design, construct and test a model litter trap?

Key outcome

Describe and design an instrument to trap litter within bays and estuaries.

This material formed part of the workshop on Port Phillip Bay at Jervis Bay presented by Gayle Seddon, Department of Education, Victoria.

What you need

Pencil, paper

Appropriate materials for design and model

(paper, cardboard, pieces of wire, wire netting or fly netting, glue, plasticine, etc)

What you do

The scenario

The local water board or council has had difficulty in controlling the amount of litter entering the Bay through the local river. The old trap designs set across creek mouths and stormwater drains have been difficult and expensive to clean and maintain. The tidal changes have meant that the litter has escaped and floods have also washed much of the litter out to sea. Your task is to design, construct and test a model litter trap.

Design criteria:

- it can be a floating litter trap for rivers and creeks
- it can be a litter boom for rivers and creeks
- it can be a trash rack for drains
- it can be a trash rack for side entry pits
- it can't block the drain/creek and cause flooding upstream
- a major flood must be able to cross it
- it must not be labour intensive to clean
- it must be buoyant if in a creek.

Procedure

1. Investigate the problem, think about the type of litter trap you will design using the design criteria. List the materials you will need.
2. Design a plan for your litter trap on paper. Design how you will test your litter trap model. How will you create a creek or drain?
3. Construct your litter trap using your materials.
4. Evaluate your litter trap in the simulation creek or drain. Make recommendations for improved design. Modify your design and test again.
5. Check your local neighbourhood: would your design work in reality there?

Reference

Seddon, Gayle, 1995 *Litter Trap Technology* (Draft).