

## GUIDELINES FOR SAMPLING TERRESTRIAL ARTHROPODS IN PEATLANDS

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A study of the arthropods of peatlands is currently among the projects being pursued by the Biological Survey of Canada. The project aims to coordinate the cooperative collection of material from various habitats and eventually to publish a taxonomic and ecological conspectus of peatland arthropods.

These suggested guidelines were prepared for distribution to cooperators in the Survey's peatland project and to other persons interested in sampling terrestrial arthropods of peatlands.

It is now evident, based on a complete seasonal sample obtained in Alberta during summer 1985, that the arthropod fauna of peatlands is very large and diverse. It is also evident that samples of arthropods collected by different methods are not comparable. For instance, samples collected by pan trapping produce a very different fauna compared with those collected by sweeping or other techniques. If the fauna of one peatland is to be compared with that of another, the sampling method must be the same. There are 4 basic types of trapping device for terrestrial arthropods (sweeping, light traps, Malaise or interception-type traps and pan or pitfall traps) all of which will provide broad spectrum collections and valuable data. It is, however, the pan trapping techniques that provide samples most heavily weighted with those species most likely to be permanent residents of a peatland study site. The other sampling techniques tend to collect larger numbers of transient species that may or may not be peatland residents.

The following is a description and illustration of a pan trap developed by Dr. Lubomir Masner of the Biosystematics Research Centre in Ottawa. The trap does not have to be dug into the ground but simply rests on the surface. It is lightweight, highly portable, quick to install, easily serviced and with very little effort can be used in conjunction with more group-specific techniques.

### Materials:

1. Yellow vinyl rectangles
2. Clothespins (4 per trap)
3. Wooden or metal skewers (6 per trap, each longer than width of trap)

Each corner of the vinyl rectangles is pinched at a 45 degree angle and folded along width at end, where a clothespin is used to hold the flap in place (Figs. 1 & 2). This will produce a pan about 2 inches deep. Two wooden or metal skewers are placed, one at each end, horizontally along width and are held by the clothespins. The pan is then placed in position on the ground and 4 skewers are used perpendicular to the horizontal skewers to secure the trap to the ground and provide rigidity to the sides. Vertical skewers rest tightly against horizontal skewers giving maximum tension to the walls of the trap (Fig. 3). The pan is then filled with water supersaturated with salt to act as a preservative (ethylene glycol may be substituted for salt). Several drops of liquid soap are added to break the surface tension of the water, allowing specimens to sink to the bottom of the trap. Small amounts of debris may be placed along the outer walls of the trap to assist specimens in climbing the walls. Average installation time is less than 2 minutes. Specimens are removed from the trap using an aquarium dip-net of the finest mesh size available, then transferred to suitable field containers (Whirl Paks) after which they are preserved in 70% alcohol.

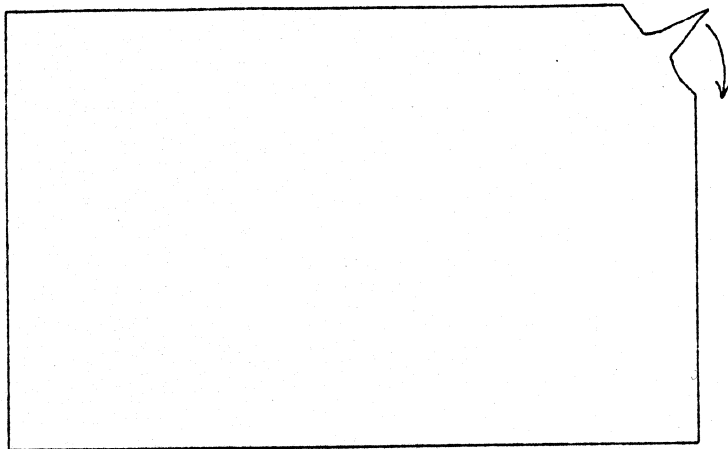


Fig. 1

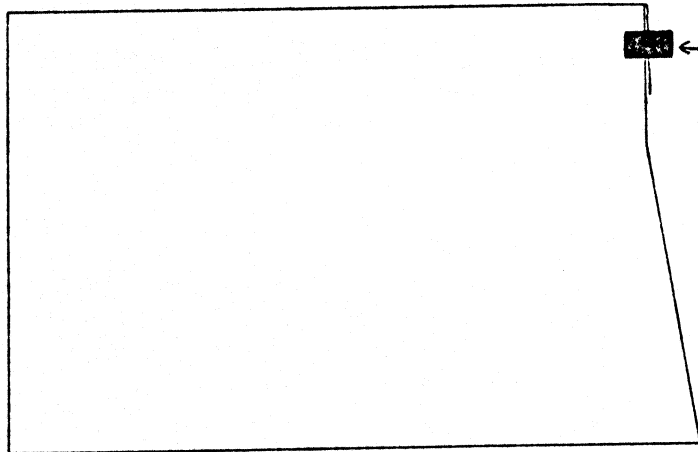


Fig. 2

← clothespin

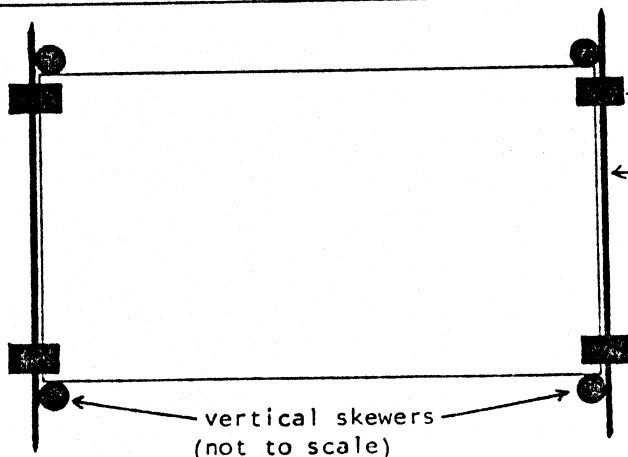


Fig. 3

← clothespin

← horizontal skewer

← vertical skewers  
(not to scale)

Pan traps placed anywhere in a peatland will yield results but several habitats such as water edge in sphagnum bogs and mud flats in marl fens seem to be particularly-productive and well worth sampling.

Further information on the peatlands project may be obtained from the following persons:

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