

THE HEAT-SINK EFFECT IN THE FISHROOM

by Joe Schill

Water, as we all know, has a high specific heat, or heat capacity, so it takes a lot of energy from the heater to raise its temperature by a few degrees. By the same token, it needs to lose a lot of heat for its temperature to fall appreciably. In fact a 100-litre tank at, say, 25°C, will need about 16 hours to fall to room temperature, after its heater has been turned off (or has failed!). Smaller tanks would, of course, do so more quickly.

This has important consequences for the fishroom for the more tanks that are present, the more slowly will the ambient temperature respond to outside fluctuations, with a given level of insulation. In climates such as ours in Canberra, where temperatures range widely between day and night and over the seasons, this regulating effect can be quite important and to maximise it, one should have as many tanks as can reasonably be accommodated or, if expense is a major consideration, then any other spare containers, such as lemonade bottles can be pressed into service. However, it takes a lot of such bottles to replace even a relatively small tank. Any spare tanks that may not be in use, should at least be full of water.

The heat-sink effect can also have a favourable impact on electricity consumption in the fishroom, for any excess heat absorbed from outside during the hottest part of the day is used to offset that lost at night. However, such an impact is probably rather small, in comparison with that resulting from use of more efficient insulation.

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