

## Trapping for invasive crayfish: comparisons of efficacy and selectivity of baited traps



Non-native crayfish can dominate the invertebrate biomass of invaded freshwaters, with their high ecological impacts resulting in their populations being controlled by numerous methods, especially trapping. Although baited funnel traps (BTs) are commonly used, they tend to be selective in mainly catching large-bodied males. Here, the efficacy and selectivity of BTs were tested against an alternative trapping method based on artificial refuges (ARTs) that comprised of a metal base with several tubes (refuges) attached. The target species was signal crayfish *Pacifastacus leniusculus* in an upland river in southwest England. Trapping was completed in April to October over two consecutive years. In total, 5897 crayfish were captured, with 87% captured in ARTs. Comparison of the catch per unit effort (CPUE) between the trapping methods in the same 24 hour periods revealed significantly higher CPUE in ARTs than of BTs. ARTs fished for 6 consecutive days had higher catches than both methods over 24 hours. Whilst catches in BTs were significantly dominated by males (1.49M:1F), the sex ratio of catches in ARTs was 0.99M:1F. The mean carapace length of crayfish was also significantly larger in BTs ( $43.2 \pm 0.6$  mm) than in ARTs ( $33.6 \pm 0.2$  mm). Thus, ARTs had higher CPUE over 24 hour and 6 day periods versus BTs and also captured a greater proportion of smaller and female individuals. These results indicate that when trapping methods are deployed for managing invasions, the use of ARTs removes substantial numbers of crayfish of both sexes and of varying body sizes.

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