

NEWTS, NEWTS, NEWTS (AND HOW NOT TO GET RID OF THEM)

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From May 1980 I have been giving away newts to reduce their numbers. As a consequence of this I now have more newts than before. If this sounds curious, read on! In the garden at the rear of my house I have 3 medium sized ponds in which the 3 native species of newt i.e. smooth, palmate, and great crested (*Triturus vulgaris*, *Triturus helveticus* and *Triturus cristatus cristatus*, respectively) breed.

Also breeding in the ponds are common frog, common toad, and European tree frog. The numbers of newts (especially palmate and common) became very high. The point was reached when their numbers seemed no longer to increase. It appeared that a dynamic balance had been reached between the numbers of newts in the pond, and the amount of pond available. As a result of this high density of newts very few frog or toad tadpoles survived to full metamorphosis owing to the degree of predation. Normally adult newts could be found in the water from spring (late February in common newt) up till autumn. I decided it would be a sensible measure and good for conservation to advertise the newts "free to pond owners" in the local paper. As a result of the advert the journalists became curious and wrote a small article entitled "Homes for Newts Plea!" Following this many pond owners came and collected newts from me. It was then late May 1980, the female newts having not completed egg laying. It seemed a good idea to give them away, still in egg, as they would immediately resume egg laying in their new environment which would not have been overspanned as far as the number of newts was concerned, as was the pond they left. I restricted each person to a half dozen of one species, e.g. one person would be given half a dozen palmate newts consisting of 3 males, 3 females. The next person would be given a similar quota of smooth newts. Far fewer great crested newts in relation to the smooth and palmate existed in the pond, so far fewer were distributed. In 1980 a total of 230 newts plus, were given away. When I had reached my target of a dozen visible members of each species in the ponds, further applicants for newts were given eggs attached to weeds. I noted the applicants names and addresses and there are now, presumably, scattered colonies of newts within a 15 mile radius of my home. In the autumn of 1980 exploration of the ponds at night revealed very large numbers of young newts of the season all three species relative to previous years. In previous years a long night-time search in the weed was necessary in order to find one newt tadpole. In late summer-autumn 1980 very many were easy to find in the warmer surface waters with a torch. These were swimming freely in gaps in the weed making no attempt to remain continuously hidden in weed as in previous years. Thus there appeared to be a change in behaviour as well as numbers.

The ponds themselves average about 7ft x 5½ft in size, and are easy to investigate with a powerful torch by walking around the banks. The large numbers of large newts seemed to reflect the approximate ratio of the original adults. That is to say, about 1:1 for smooth/palmate populations and a population of crested newts 1:20 of total numbers.

This experiment in giving away newts was repeated in May 1981. This time 160 adults were given away and hundreds of eggs. In the autumn once again the large number of young newts was conspicuous. Looking under debris, e.g. stones, rocks, near the ponds in the late autumn, revealed a greater number of individuals than pre-1980! (The average age was however, now much younger). So, if you ever want NOT to get rid of newts ...!

This spring (1982) the newts are as numerous as ever in the pond and I will restrict myself to giving away common and palmate newts as a conservation measure (by wider distribution) so as not to contravene the new Wildlife & Countryside Act, 1981. However, as can be seen from the foregoing this may eventually lead to fewer newts and of course they will not get the chance of being spread more widely afield, which seems to me at least a valuable conservation tactic, i.e. to get them to newtless ponds, where they can expand in numbers.

I think the mechanism leading to greater numbers of young may work as follows:—

- (i) reducing the numbers of adults makes available more food for the young.
- (ii) more importantly, without the efficient predation by adults, the young can survive in far greater numbers. The frogs and toads also showed an increase in numbers judging by the numbers of fully developed young leaving the pond following the newt reductions.

The previously described phenomenon would have great implications in the field of conservation if the phenomena is repeatable in other ponds. The procedure could be carried out in conservation ponds; possibly removing adults temporarily to another site and leaving the eggs to hatch and larvae to grow, unhindered. This should boost numbers so that the newly emerging young in larger numbers could be reintroduced to other areas. This could of course only be applied to newts as native British frogs do not feed beneath the water surface, and so do not feed on amphibian larvae. It may also not work where newts are not the main predators of the young (e.g. where fish are present). However, the observed phenomenon also occurred in the largest of my garden ponds which also contains common carp up to 14" long. It must be added that these fish do not in fact attempt to eat the adult newts (possibly they have learnt from past experience that they are distasteful/toxic and this may protect the young newts from fish predation). If the young newts are not taken to other areas when they leave the pond it would seem to follow that subsequent recruitment to the adult stock could become far higher (if the environment will allow). This will mean a greater number of breeding newts in later years. As I said earlier, a dynamic balance seemed to exist in the pond between the numbers of adults that the pond could hold and the numbers of young that were able to mature. This mechanism must, it would seem to follow, apply in nature when the adults take to water to breed and fall prey to other creatures (e.g. herons etc.). This removal could, if my observations are applicable to the wild, eventually lead to greater numbers of young. Heavy predation on the resulting greater numbers of returning adults in subsequent years could then be sustainable in the wild. This kind of ecological balance contrasts to the situation pertaining to my garden which originally had negligible predation on adults and large predation on the young, presumably by the adult newts. Taking adults out presumably mimics predation in the wild. Aquarium experiments could easily be set up to follow this mechanism through and give more precise numerical data. Further implications from these results, if repeatable, would be that taking adult newts from the wild by the pet trade abroad could be controlled by a closed season during early spring: collection after this time would possibly have less effect on future numbers. This may be a fruitful field for research, and the many other factors that operate in the wild (such as varied forms of predation) would give added interest.

It must be added that, from common observation, no two ponds, even if adjacent, are alike. Even so, I feel sure the foregoing paradoxical way to increase newt numbers (in garden ponds at least) raises some interesting or controversial points.