

fish he captures, probably the highest possible efficiency of the streams under present food conditions will be reached. If this is done shell-drakes and kingfishers can be neglected except to see that they do not increase to an abnormal extent.

As the smolt go to sea they pass the gauntlet of the cormorants, but these, I think, we see, have little or no effect upon their number and can be neglected.

What happens at sea to the smolt, grilse, and salmon at present none can tell. In the teeming abundance of marine life their food can be assumed to be plentiful. The rapidity with which a fingerling smolt grows to a five pound grilse is sufficient evidence of this. The most serious limitation to numbers at sea must come from the salmon's many enemies. In the final stage of the salmon's existence before maturity lies probably the factor that determines how many will re-ascend the streams to procreate their species and incidentally become available for human use. As said before, a food species is consumed by its enemies until it becomes too scarce to be profitably hunted. A notable increase of food supply attracts new consumers and the resultant population is apt to be little, if any, greater than before. With the enemy factor controlling the situation the number of resultant food fish seems to become a matter of population per unit area of ground occupied.

For example, assume that ten salmon per acre is scarce, i.e. that population is too scattered to be profitably hunted, and the expended energy in finding and capturing a meal of salmon is considerably greater than would be expended in pursuit of other species or in other quarters; the salmon under these conditions and assumptions will cease to be systematically hunted by its enemies and, except for occasional and accidental encounters, will enjoy comparative immunity. Should the population be suddenly increased to fifty or a hundred per acre, it will be salmon season for their enemies who will abandon other usual prey for the new abundance. Should the resident enemies find more than they can consume neighbouring competitors will be attracted, and it will not be long before the population is reduced again to the old ten per acre and comparative peace will be resumed.