In this talk, we will be mainly concerned with the following question: Suppose we consider a nonlinear dispersive or wave equation on a large compact domain of characteristic size $L$. What is the effective dynamics when $L$ is very large? This question is relevant for equations that are naturally posed on large domains (like the water waves equation on the ocean), and in turbulence theories for dispersive equations. It’s not hard to see that the answer is intimately related to the particular time scales at which we study the equation, as one often obtains different effective dynamics on different timescales. After discussing some relatively “trivial” time scales (and their corresponding effective dynamics), we shall attempt to access longer times scales and try to describe the effective equations that govern the dynamics there. The ultimate goal is to reach the so-called the “kinetic time scale” over which it is conjectured that the effective dynamics are described by a kinetic equation called the “wave kinetic equation”. This is the main claim of wave turbulence theory. We will discuss several results that are aimed at addressing the above problematic for the nonlinear Schrodinger equation. Recent results are joint works with Tristan Buckmaster, Pierre Germain, and Jalal Shatah.