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**ON WHAT FOREST INSECT POPULATION STUDIES NEED FROM THE
CHEMICAL ECOLOGIST.**

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KEYWORDS: Studies on the population ecology of insects require precise estimation of their abundance. Identifying the processes that drive population dynamics is a key question of ecological research, which is becoming increasingly significant due to the observed changes in climate and landscape configuration. When insects become pests, as economic damage is typically a function of population numbers, an accurate estimation protocol is critical to loss prevention. To estimate population size through time, sampling protocols that are deployed should not only provide reliable data, but should also be affordable and readily available. The problem then arises when populations are in low numbers, as is often the case with many forestry pests or when alien species recently arrive or spread into new areas, because the effort needed for detecting individuals can exceed available resources. In this sense, the identification of compounds to which individuals reliably respond can provide a specific sensitive tool. I illustrate this by presenting the case of the woodwasp *Sirex noctilio* in southern Argentina. The species displays pulse-like outbreak dynamics, remaining for long periods in low population numbers. I will describe the rationale behind the need for more sensitive methods for this species, and very briefly our progress in the arena. I will highlight the importance of increasing our knowledge on the chemical ecology of this species and other forest pests, to track their population dynamics and consequently contribute to a better understanding of their population ecology and to prevent economically significant damage.