



BioBlitz: Monitoring for invasive species through citizen science

Abstract

Biological invasions by non-indigenous species (NIS) are a major force of change in coastal marine ecosystems around the world. Relatively few NIS are known from Alaska's waters to date, compared to other regions, but many marine NIS occur below Alaska and have been spreading northward. While invasions are a significant and growing concern for Alaska, detection of newly arriving NIS is especially challenging for the region, due to the extensive shoreline and limited resources available.

Several methods show great promise to enhance detection capability for particular "target" taxa with modest cost. First, citizen or public participation in NIS detection can be highly effective, when the target species is relatively large, conspicuous, and easily recognized (from other species, such as the European green crab). Second, genetic tools offer the opportunity to screen for multiple known target species simultaneously, without detailed morphological analyses.

The purpose of the BioBlitz was to help advance citizen science and genetic methods to detect target NIS in Prince William Sound (PWS), building on a significant body of previous work by Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) and the Smithsonian Environmental Research Center, along with various partners. Specifically, we conducted a BioBlitz and training event for detection of target NIS by citizen scientists in Valdez and training for PWSRCAC staff to collect zooplankton samples for detection of target NIS using genetic tools. We detected one NIS (previously known for the PWS) during this event and initiated zooplankton sampling for genetic analyses. We recommend both citizen science and genetic tools as key components, and part of a broader strategy, for long-term NIS monitoring and detection in PWS.

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