Detection of the pinewood nematode and its insect vector in the tsunami-damaged trees of *Pinus thunbergii* and *P. densiflora*

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Pinus thunbergii and *P. densiflora* are the main component of seacoast forests in northeastern Japan, and were severely damaged by the tsunami after the Great East Japan Earthquake in 2011. Huge amount of weakened or dead trees, as well as flooded ones, were left in the field, and suspected to be colonized by the pinewood nematode, *Bursaphelenchus xylophilus*, as a result of attracting the insect vector, *Monochamus alternatus*. Thus we investigated the presence/absence of those organisms in pine trees with discolored foliage found at 6 locations among the tsunami-damaged seacoast forests in Miyagi Prefecture. The trees were searched for the oviposition scar of *M. alternatus* or frass of its immatures on the stem surface up to 5.5 m above ground. If the tree was fallen, we investigated throughout the main stem. To detect *B. xylophilus* wood samples taken from the stem of the investigated trees were tested with a commercial detection kit (Nippon Gene Co. Ltd.). Oviposition/inhabitation of *M. alternatus* in the investigated trees was common (70-90%) in 2 locations, less common (ca. 20%) in 2 locations and not found in 2 locations, presumably corresponding to the occurrence of nearby pine wilt-damaged trees as source of emerged adults of *M. alternatus* in summer 2011. When there was no insect vector, no *B. xylophilus* was detected. Out of 3 in 4 locations where oviposition or inhabitation of *M. alternatus* was confirmed, detection of *B. xylophilus* in the investigated trees were less than 10%. The low detection of the nematode suggests the low efficiency of nematode transmission to the tsunami-damaged trees via feeding wounds and/or oviposition scars, compared to the normal transmission pathway in the epidemiology of pine wilt disease; form the insect adults to healthy trees via feeding wounds. A high detection rate of 63% was recorded in a *P. thunbergii* stand. There might be pine wilt-damaged trees of delayed symptom development mixed in the investigated trees, which can explain the high detection of *B. xylophilus* in this stand. Consequently, we can consider that the tsunami-damaged trees pose little risk of being source of infection of pine wilt disease unless there were a significant number of pine wilt-damaged trees that have not been affected by the tsunami in their vicinity.

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