

Community matters: Post-eruption settlement at vent sites with and without a surviving animal community

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Hydrothermal vents on fast spreading ridges experience frequent eruptive disturbances which may pave over existing communities and change vent fluid chemistry and temperature for the animals that will repopulate the area. Succession following these events has been studied at several sites in the eastern Pacific where the communities were destroyed. However, the effects of these events on nearby areas, where the existing community survived the disturbance, are less well understood. We examined recruitment onto settlement surfaces (“sandwiches”) at two sites near 9°50’N on the East Pacific Rise twenty-two months after a catastrophic eruption early in 2006: one where the animals were exterminated, and the other where the community survived the eruption. Species abundances varied between the sites, with swimming forms (amphipods and leptostracans) more abundant at the undisturbed site and less mobile animals, such as gastropods and polychaetes, found in greater numbers at the disturbed site. These differences could be due to a number of factors, such as changes in food availability, presence or absence of predators, habitat structure or environmental parameters. In general, species richness and composition were similar between the two sites, indicating that observed post-event changes in larval supply had a broad influence on the composition of colonists across sites. An exception was seen in a bed of mussels at the inhabited site, where both the number of individuals and species of colonists was reduced. This local effect may have been due to disruption of larval settlement by the suspension-feeding mussels.