

## Community dynamics at the 9°N East Pacific Rise after a volcanic eruption

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In 2006, a major volcanic eruption killed fauna over a large area of the 9°50'N East Pacific Rise vent field. We monitored community dynamics at active vents, at inactive vents and in the vent periphery by deploying and recovering settlement substrates (plastic kitchen sponges) one, two and four years after the eruption. In addition, we collected samples from the overlying water column with a plankton pump to determine the abundance of potential colonizers, and analyzed mtCOI of selected species to infer potential connectivity. At newly established active vents, initial recovery was relatively quick, and about 40% of the meio- and macrofaunal species had returned four years after the eruption, which may be due to the good dispersal capabilities of vent endemic macrofauna and vent endemic dirivultid copepods. Genetic results of dirivultids are in accordance with these findings as they indicate expansive population growth and high genetic connectivity. In the vent periphery however, where macrofaunal diversity is typically lower and meiofaunal diversity is typically higher, recovery of meiofauna was slow with only ~28% of pre-eruption species having returned to the site. The more limited dispersal capabilities of meiofaunal basalt specialists, such as nematodes or harpacticoid copepods, may have caused this pattern. The discovery of a juvenile subset of common vent species in the vent periphery points to the interconnection of vent periphery and active vent communities. The young inactive vent sites supported diverse and abundant meio- and macrofaunal communities and shared species with the active vent sites, suggesting that they may provide potential source populations for each other after disturbance events.