

Year-to-year variability in beach nematode community structure and biodiversity in the northern part of the Persian Gulf

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In December 2008, we performed the first study on beach nematode communities in the northern part of the Persian Gulf. We sampled four beach locations near Bandar Abbas, with three stations at 50-m intervals per beach along a distance gradient from local pollution sources (mostly sewage outlets). A total of 39 genera belonging to 17 families were identified. There were significant differences in abundance and genus diversity between locations as well as between stations. Sediment granulometry correlated positively with genus diversity and the location exposed to the strongest pollution input had the lowest nematode diversity. Generally, diversity increased with increasing distance from a pollution point source, while abundance showed inconsistent station effects. In the whole study area, five genera *Daptonema*, *Ptycholaimellus*, *Terschellingia*, *Promonhystera* and *Paramonhystera* together comprised 75% of the total nematode abundance. One year later, we repeated this sampling to be able to assess year-to-year variability in community structure and diversity. Climatologically, November 2009 differed from November 2008 mostly in terms of precipitation, which was 2.6 times higher in 2009 than in 2008. A total of 42 genera belonging to 21 families were identified. *Terschellingia*, *Ptycholaimellus*, *Daptonema* and *Promonhystera* together comprised 80% of the total nematode abundance. In spite of the fact that the dominant genera were largely the same in both years, more than half of the genera recorded in 2009 were new compared to the 2008 campaign, resulting in a total of 62 genera belonging to 24 families recorded over the two years. In 2009, there were again significant differences in abundance as well as genus diversity between locations, but no longer between stations. A potential reason for the lack of a station effect in 2009 is that with the much higher precipitation, sewage input into the beaches was higher and extended further than in the previous year, thereby wiping out differences between stations.