Understanding genetic diversity and population structure for effective seagrass restoration

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Ecologists and conservation biologists have long recognised the importance of understanding genetic diversity and population structure for the long-term viability and resilience of natural populations. However, to date surprisingly little attention has been devoted to genetic considerations in seagrass habitat recovery and restoration. Here we present the results of genetic surveys of the ecologically important seagrass Zostera nigricaulis from a large embayment in south-eastern Australia. This data is used to understand the relative importance of sexual and asexual reproduction in maintaining local meadows, and determine patterns of connectivity to identify source and sink populations. These data are crucial for making informed decisions of the current viability of seagrass meadows, identify those with limited capacity to respond to future environmental stressors, and identify potential source and donor populations for future restoration and recovery efforts.