

# The Role of Genetic Variants in Local Eelgrass Adaptations

*Katie Erickson, University of California, Davis*

Over time species adapt to meet the needs of their environment and survive. These adaptations are genetic changes that increase an organism's chance of survival (also known as fitness) and can be passed down to offspring. Identifying and understanding these changes on a local scale can help land managers predict which populations may be more resistant to disturbances, and thus inform restoration efforts. Researcher Katie Erickson from the University of California, Davis is studying how differences in the ways genes are arranged into chromosomes (DNA structures carrying genetic information of an organism) can improve our understanding of environment-specific adaptation. These arrangements of genes into chromosomes are known as Structural Variants (SVs). Using Eelgrass (*Zostera marina*) populations in Tomales Bay – a species with identified SVs that differ among populations in different locations – Erickson is working to assess the role of SVs in fitness (survival and reproduction success) and local adaptation, and to build frameworks to incorporate SVs into management decisions.

*“I am excited to have the support of Point Reyes National Seashore Association to embark upon a project that will produce knowledge about Tomales Bay eelgrass populations, while also exploring how genomic studies can contribute to conservation and restoration efforts.”*

–Katie Erickson,  
University of  
California, Davis



Katie Erickson and team surveying eelgrass in Tomales Bay, CA.  
An eelgrass bed in Tomales Bay. © NPS

