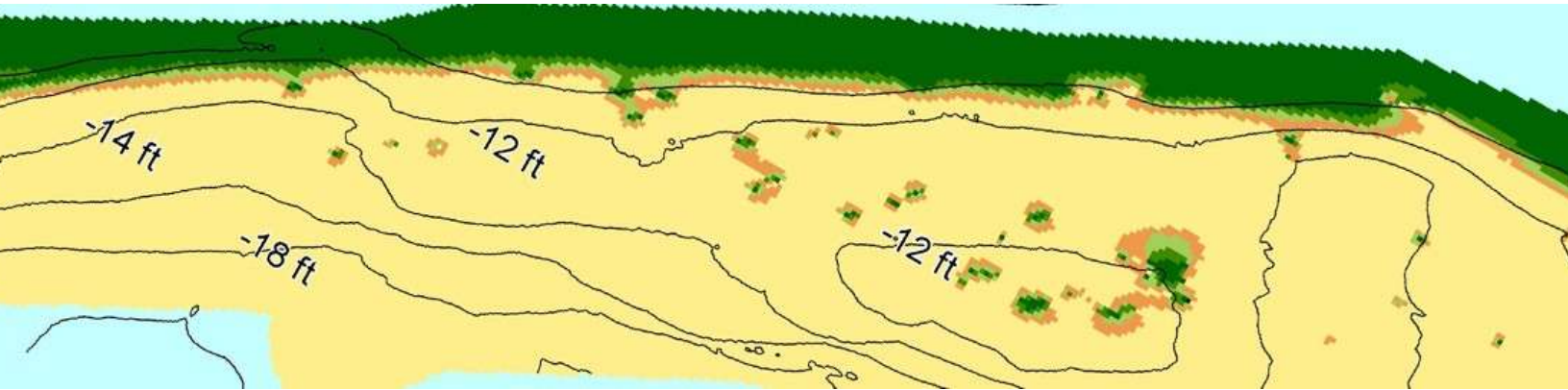


AQUATIC VEGETATION SURVEYS

Aquatic and marine vegetation provide essential habitat for fishes, invertebrates and waterfowl. Waterfront construction projects, dredging, and point and non-point source discharges can potentially affect submerged vegetation. In support of regulatory requirements, Tenera has completed numerous aquatic and marine vegetation surveys involving mapping, biomass estimation, and impact analysis using a variety of remote sensing and direct observational techniques. Species of concern include eelgrass, surfgrass, giant kelp, and bull kelp. Tenera also conducts surveys for *Caulerpa taxifolia* and *Undaria pinnatifida*, two invasive algal species recently found in marine waters of California.

Survey techniques may be direct observations by divers along transects or remote sensing using hydroacoustic or video methods for project areas that are too large to be effectively surveyed using divers. Hydroacoustic surveys utilize a differentially corrected GPS rover, base unit, and navigation software to geographically reference and analyze the data using a GIS. Aerial surveys can also provide wide area reconnaissance of vegetation distribution using digital imaging and multi-spectral scanners with sub-meter accuracy.



SERVICES INCLUDE:

- Measurements of eelgrass distribution and abundance
- Kelp bed delineation and mapping
- Subtidal habitat characterization
- Aquatic vegetation distribution and biomass
- Surveys for aquatic nuisance species
- Seafloor bathymetry, dredging analyses
- Survey-grade GPS data collection and processing

