

## Saving up: Resource storage in stalked kelp (*Pterygophora californica*)

*Pterygophora californica*, or stalked kelp, is a vital kelp forest species along the west coast of North America from Baja to British Columbia. It grows in rocky, sub-tidal habitats down to about 10 m depth and creates a 3-dimensional habitat above the seafloor, providing shelter and food for many invertebrates, fishes, and other seaweeds.



Species in the understory canopy guild are more adapted to tolerate wave stress than those making up the taller canopy guilds. However, they still experience significant disturbance from wave action and grazers. Researchers have observed resource storage, which may aid in recovery from disturbance, in other understory kelp species, but *Pterygophora* has not been closely investigated for this characteristic. *Pterygophora* is a prime subject for studying storage mechanisms and physiological response due to its long-lived, slow growing perennial thallus and seasonal vegetative tissue. This study will explore the

mechanisms behind the seasonal variations in resource storage, and the ability of *Pterygophora* to use this strategy to recover from biotic or abiotic disturbances in the subtidal environment.

Approximately 200+ *Pterygophora* have been tagged at 8.5 m depth in Stillwater Cove, Pebble Beach, CA. These individuals have been manipulated in the field in an experiment that will be running for the next year. Growth measurements are taken underwater every month, and subsamples are harvested every 3 months. *Pterygophora* from the 3-month samplings will be processed in the laboratory and analyzed for carbon, hydrogen, nitrogen (CHN), sugar, and amino acid content.



**As an undergraduate student assistant for this project, you will get to assist with:**

- Preparing harvested *Pterygophora* samples for analyses
  - Cutting and weighing fresh samples
  - Drying and grinding samples
  - Weighing and packaging ground samples
- Data collection and entry

**Things you will learn/be exposed to:**

- Field sampling techniques/experimental design
- Basic kelp physiology and ecology
- Laboratory procedures
- Data organization
- Statistical analyses

**You will need to be willing and able to do:**

- Work in the laboratory for up to 8 hours at a time (**not** required on a daily basis)
- Have a flexible schedule
- Work alone and stay on focused while performing certain tasks (e.g., grinding samples, weighing samples, etc.)
- Have a positive attitude and willingness to learn