

PRINCIPLES OF WIREWALKER MOORING DESIGN

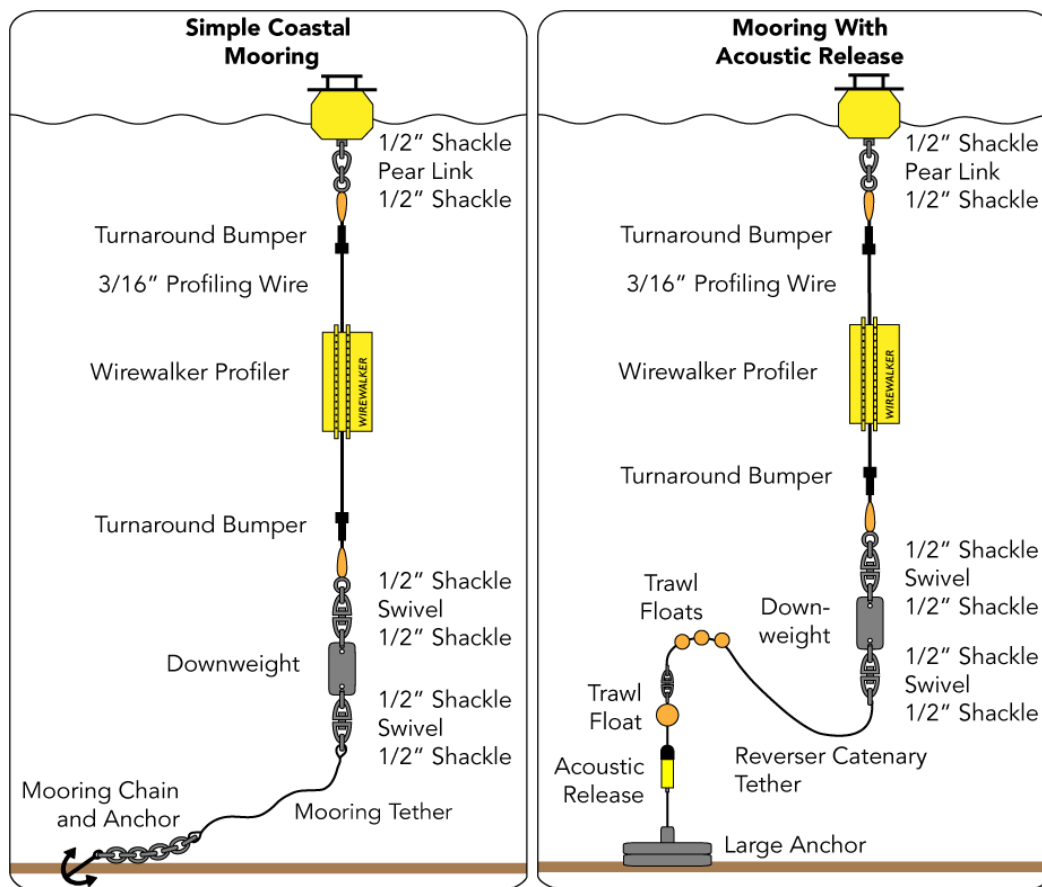
Technical Note

The Wirewalker Profiling System is, at its core, a simple mooring suspended from the surface. Each component is outlined in Section 3 of the [Wirewalker User Guide](#). That basic mooring can be used as-is in free-drifting deployments, or it can be tethered to the bottom to keep it anchored in place. WWs have been moored in just a few meters of water to full ocean depths. Here, we introduce some basic concepts to consider when designing a WW mooring.

In both free-drift and moored designs, the following apply,

- 1) The surface buoy must freely follow the vertical excursions of surface waves.
- 2) The downweights cannot become grounded. Both tides and waves should be considered for working near the bottom, and in choosing a profiling wire length.
- 3) The core WW mooring (buoy to downweight) should remain vertical. The simplest way to straighten out the wire in strong currents/shear is to add additional downweight.

In effort to provide some guidance when mooring a WW, we present two visualizations which have proven useful. However, there are many factors to consider with any mooring. You should rely on expertise in your particular application, environment, location, and depth. In many cases, it may be advantageous to utilize mooring design software (such as [ProteusDS Oceanographic](#)) in order to plan, organize, and gain confidence that your Wirewalker mooring design will withstand the effects of currents and waves.



Additionally, deepwater moorings, including full anchor-to-surface inductive designs, are possible and have been successful. However, they are generally deployed for much longer periods of time and often utilize specialized buoys. Therefore, these designs are outside the realm of this technical note as they require unique engineering and considerations. The use of mooring design software is strongly encouraged in this case.