

| <u>Task Order</u>      | <u>MMS Issue Addressed</u>  | <u>Monitoring Hypotheses</u>  | <u>Methods</u>   | <u>Key Monitoring Result or Parameter for Decision Making</u>   |
|------------------------|---|---|--|---|
| 006<br>(Boulder Patch) | Will offshore oil development activities result in increased levels of TSS in the waters of Stefansson Sound to a degree that the unique flora and fauna of the Boulder Patch may be impacted | <p>H1: Geographic and temporal patterns in historical kelp growth can be detected from historical data sets.</p> <p>H2: Patterns in kelp productivity are linked to IOPs of water column unique to the physical site (e.g. depth, distance from shore, fetch).</p> <p>H3: Site-specific annual blade lengths of kelp reflect TSS levels at a variety of Boulder Patch locations.</p> <p>H4: Various locations in Boulder Patch are likely to have elevated TSS levels which are have measurable effects on kelp productivity.</p> <p>H5: Benthic diversity indices do not vary across Boulder Patch and locations are not more susceptible to TSS levels based on community composition</p> | M1: Synoptic and long-term measurements of PAR, light scattering coefficients, and total suspended solids (TSS; mg L-1), and indices of benthic diversity and kelp biomass will be used to determine the impacts of sediment re suspension on kelp productivity and ecosystem status in the Stefansson Sound Boulder Patch | Annual measurements of PAR, light scattering coefficients, total suspended solids, and indices of benthic diversity and kelp biomass will be used to model and determine the impacts of sediment re-suspension on kelp productivity and ecosystem status in the Stefansson Sound Boulder Patch. |

