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NOTES FOR PANEL

- Synthesis = balanced reflection, not the same as prioritization?
- SCOR154 WG on technologies for GO-SHIP and OCEANSites
- Where there are active controversies? (e.g., working with communities; N-fixation; genetics)
- Need excellent brokers – trusted communicators who consult across different sides of controversies
- Co-design with indigenous communities

SCOR WG 154

SCOR 154, P-OBS

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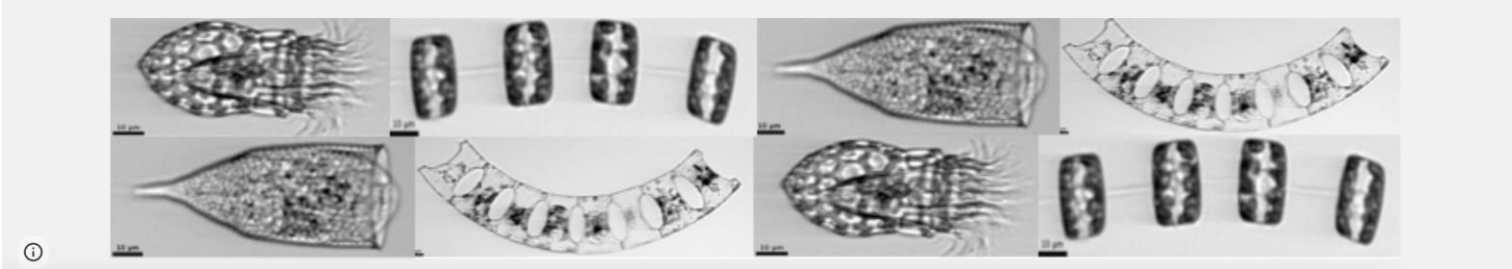
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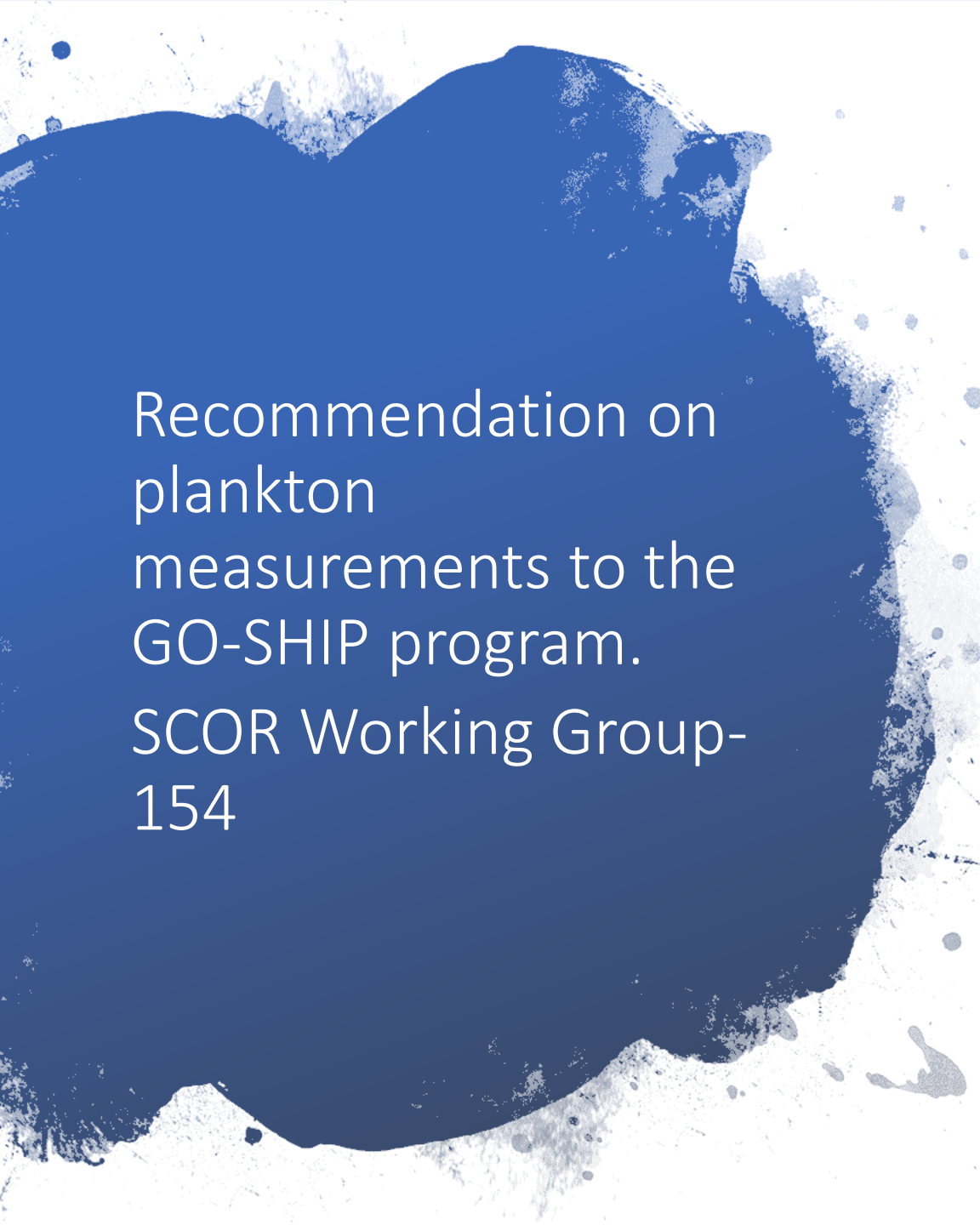
Integration of plankton-observing sensor systems to existing global sampling programs

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Objective

To identify best practices (technologies and sampling protocols) and technical feasibility to incorporate plankton measurements into global ocean observing platforms (initially GO-SHIP and for expansion into the mooring array of OceanSITES).





Recommendation on
plankton
measurements to the
GO-SHIP program.
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- Objective: identify best practices (technologies and sampling protocols) and technical feasibility to incorporate plankton measurements into global ocean observing platforms (GO-SHIP and OceanSITES in particular).
- Why GO-SHIP:
 - Global in scope and global in membership, gold standard for quality, systematic observations.
 - We espouse a holistic approach whereby all components of the plankton need to be measured. Hence, no ranking.
 - Whatever GO-SHIP adopts is likely to influence national priorities.

| Sample | Information content (1-5, low-high) | Approximate Price per sample | Water source | Spatial scale |
|--------------------------|-------------------------------------|---------------------------------|-----------------------|-------------------|
| POC | 1 | \$20 | Rosette bottle/inline | Bottles / 100 nmi |
| HPLC | 3 | \$80 | Rosette bottle/inline | Bottles / 100 nmi |
| FCM | 4 | \$20 | Rosette bottle/inline | Bottles / 100 nmi |
| Genetics | 5 | \$100 | Rosette bottle/inline | Bottles / 100 nmi |
| Sensor | | Sensor Price | Deployed on | |
| Single channel optics | 1 | ~4K per channel | Rosette/inline | 2m/ 300m |
| ADCP | 1 | Already on GO-SHIP | Hull/Rosette | 10m/ 10m |
| Hyper-spectral optics | 2 | ~40K | Inline | 300m |
| Quantitative eco sounder | 2 | ~400K – already on some GO-SHIP | Hull | 0.3m |
| LISST | 2 | ~35K | inline | 300m |
| Imaging (UVP) | 3 | ~130K | Rosette | 0.1m |
| Imaging (IFCB) | 4 | ~130K | Inline | 7 nmi |

| Sample/sensor | 1-lowest, 5-highest | |
|--------------------------------|--------------------------------------|-----------------------------------|
| Sample | Sampling effort (1 – 5, low to high) | Analysis effort |
| POC | 1 – 1hr for a full rosette | 1-A few hours for a whole cruise. |
| HPLC | 1– 1hr for a full rosette | 1 |
| FCM | 1– 1hr for a full rosette | 1 |
| Genetics | 1– 1hr for a full rosette | 3-Days for a whole cruise |
| Sensor | Sampling effort | Analysis effort |
| Single channel optics | 1-5min per day. | 2-a day for a whole cruise |
| ADCP | 1 | 3-several days for a whole cruise |
| Hyper-spectral optics | 2-30min per day | 3 |
| Quantitative eco sonder | 1 | 3 |
| LISST inline | 2 | 3 |
| Imaging (UVP) | 2 | 5-weeks for a whole cruise |
| Imaging (IFCB) | 1 | 5 |