Monitoring and evaluation methodology for coral restoration at Oceans Alive

**Methodology: Photographic Monitoring and Evaluation for Coral Restoration**

**Objective:** The objective of this methodology is to monitor and evaluate the growth rate and survivorship of corals on both coral tables and artificial reefs in specific locations. The use of photographic documentation will provide a cost-effective and time-efficient method to measure coral health and track progress over time.

**Equipment and Materials:**

* - Digital cameras with standardized zoom and settings
* - Plastic piping frames
* - GPS device to mark the exact locations of monitoring spots
* - Data sheets for recording relevant information during each visit
* - Temperature reading device

**Step 1: Site Selection:**

* Identify specific locations on coral tables and artificial reefs where the frame-based photographic monitoring will take place. Ensure these locations are easily accessible and representative of the overall restoration area.

**Step 2: Frame Installation:**

* Install plastic piping frames at each monitoring location. These frames will serve as fixed points of reference for consistent photograph composition during each visit.

**Step 3: Initial Photo Documentation (Day 1):**

* On Day 1 of the monitoring period, visit each location and take photographs of the coral colonies within the frames. Capture multiple angles to ensure complete coverage of the coral colonies.

**Step 4: Photo Documentation at Intervals:**

* Return to each monitoring location on Day 30, Day 60, and Day 180 for coral tables, and on Day 365 for artificial reefs, respectively. Reinstall the same plastic piping frames in their original positions if needed.
* Take photographs of the same coral colonies within the frames using the same camera settings and zoom as the initial documentation. Ensure consistent lighting conditions and angles for accurate comparisons.

**Step 5: Data Collection:**

* Record relevant information during each visit, including date, GPS coordinates, environmental conditions (e.g., water temperature, visibility), and any observations of coral health or disturbances.

**Step 6: Photo Analysis and Measurement:**

* Transfer the photos to a computer for analysis. Use photo-editing software to measure the growth of individual coral colonies by comparing their sizes across different time points.
* Calculate survivorship by comparing the number of surviving colonies from the initial visit to subsequent visits.

**Step 7: Ecological Volume Index (EVI) Calculation:**

* If available, use specialized software to analyze the photographs and calculate the Ecological Volume Index (EVI) (Need to speak to Dishon). EVI provides an estimation of the total living volume of coral and is a useful metric for assessing reef health and restoration success.

**Step 8: Data Interpretation and Reporting:**

* Analyze the data collected from the monitoring visits and EVI calculations. Interpret the findings to assess the growth rate and survivorship of corals on the tables and artificial reefs.
* Prepare comprehensive reports, graphs, and visualizations to communicate the results effectively to stakeholders and funders.

**Step 9: Adaptive Management:**

* Based on the M&E results, make informed decisions about the restoration strategy. Use the findings to adjust and optimize the coral restoration approach if necessary.

**Conclusion:**

By implementing this photographic monitoring and evaluation methodology, Oceans Alive can efficiently assess the growth and survivorship of corals on the tables up to 180 days and artificial reefs up to 365 days. The use of standardized frames and photographic documentation allows for accurate comparisons over time and provides valuable insights into the success of coral restoration efforts.