

Water Temperature Methodology

(Last rev. 19/11/2024)

STRI's Physical Monitoring Program maintains sea surface temperature (SST) sensors in three general areas: Bay of Panama, Galeta and Boca del Toro (Figures 1-5).

Data are collected using three different sensors:

1. Hobo temperature data loggers (Figure 6)
2. YSI Professional Plus multiparameter logger (Figure 6)
3. YSI EXO 2/3 multiparameter data loggers (Figure 7)

Hobos are deployed for 6 to 12 months at a time. These sensors are programmed to sample temperature once every 15 minutes. These sensors are deployed at the largest number of locations

YSI Professional Plus multiparameter loggers are used to manually measure temperature (as well as salinity and pH). These devices are used at Naos Island and the Bocas del Toro stations. Recordings are made 3-5 times a week in the morning.

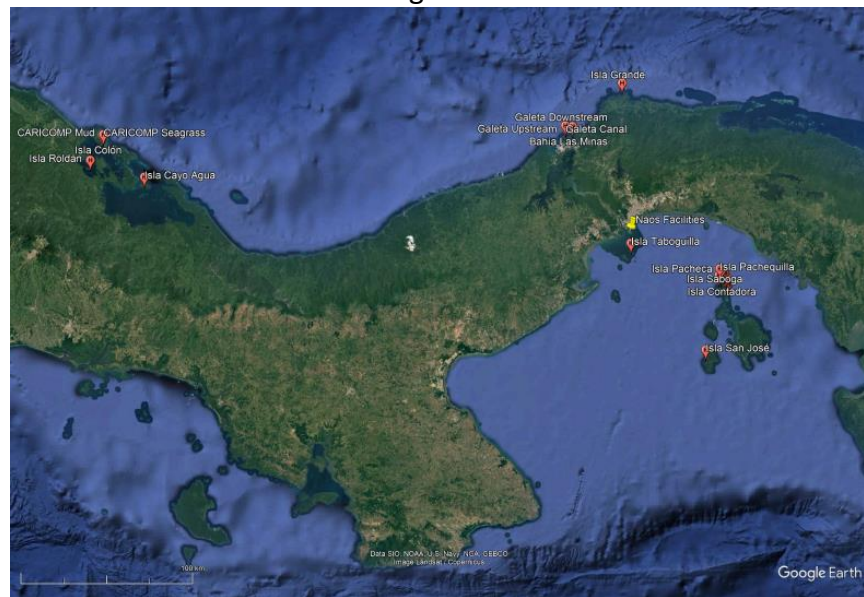
YSI EXO 2/3 multiparameter data loggers are used in the Bay of Panama and Bocas del Toro. These loggers can be installed with up to six sensors. These devices are used to measure a range of parameters throughout the water column once a week.

SST data can be found at several locations on the Physical Monitoring website.

- <https://striresearch.si.edu/physical-monitoring/sst-monitoring/>
- <https://striresearch.si.edu/physical-monitoring/punta-galeta/>
- <https://striresearch.si.edu/physical-monitoring/bocas-del-toro/>
- <https://striresearch.si.edu/physical-monitoring/water-quality-monitoring/>

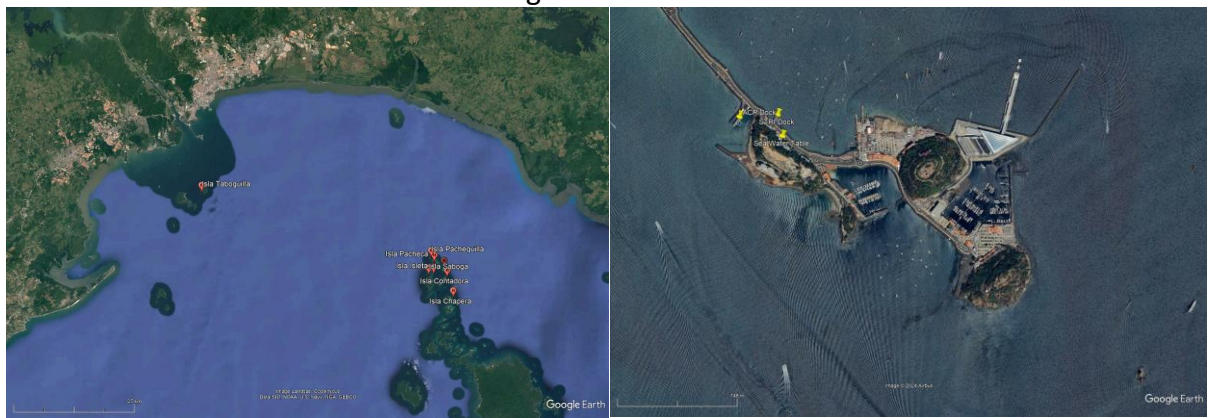
Records are provided with two Quality Control flags. Flag one indicates the fitness for use of each record. Possible values are: good, bad, doubtful, missing. Records are marked as bad if they fail one or more QC tests. Likewise, records are marked as doubtful if they are potentially bad, but without sufficiently strong evidence to be marked as bad. The second QC variable provides that reason for marking a variable as bad or doubtful. Potential values are: range, step, persistence, drift. At this time only range tests have been applied.

Figure 1



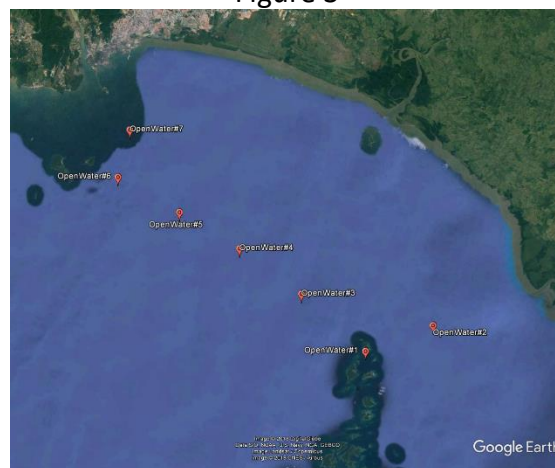
SST monitoring sites

Figure 2



Bay of Panama (left) and Naos Island (right) monitoring sites.

Figure 3



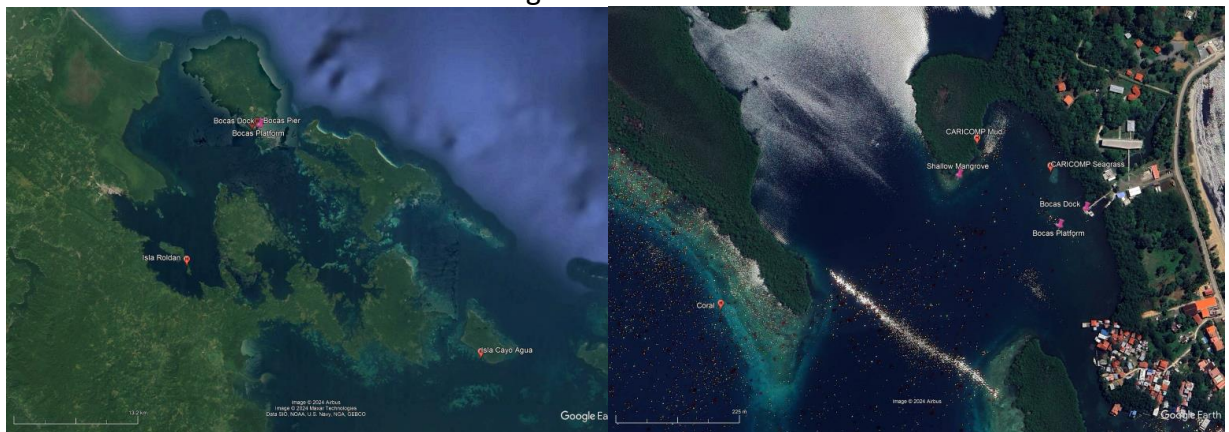
Bay of Panama multi-parameter sampling locations

Figure 4



Central Panama Caribbean Coast monitoring sites.

Figure 5



Bocas del Toro monitoring sites.

Figure 6



Hobo Temp. Pro V2 data logger (left) and a YSI Professional Plus multiparameter logger (right)

Figure 7



YSI EXO 2 (left) and EXO 3 (right)