

BioSentinel Passive eDNA Sampling system

Existing sampling of eDNA in the field incurs prohibitive costs and elevated cross-contamination risks, and requires vessels and teams, limiting its utility in **large-scale biodiversity, biological resources, and harmful biota monitoring**. This **portable, power-free passive** eDNA sampling system enables **simultaneous remote** collection of **multiple samples** from **multiple layers** by **one deployment**, with **enhanced protection to the survey sites**. Its **power-free structure** and **vessel-free operation** eliminate the **disturbance** to the survey site. Integrating our comprehensive eDNA reference database, this system advances and **streamlines aquatic biota monitoring and risk management**, empowering timely responses to climate change and conservation challenges.

Project Team
Dr Cheng Jinping
Mr Liu Jingyu



FEATURES AND ADVANTAGES

Simple, power-free structure for **cost-effective simultaneous multi-layer/multi-sample and non-invasive** sampling (vertical & horizontal) in a **single operation**

01

Remote deployment capability:
Deployable from shore within a **30-meter range**

02

Save 90% of time and 75% of costs:

Operations without expensive equipment and manpower (e.g. ships/one-off active sampler/filtration)

03

Cross-Contamination & DNA Degradation Prevention:

No pipelines/filter processes and quick disassembly, ensuring **accuracy and reliability of results**

04

Low processing time:

1 min/sample vs **50 min/sample** filtration

05

Comprehensive **eDNA database** (incl. **469** harmful algae species & **>210** aquaculture bacterial pathogenic species) for biota monitoring and risk management

06

FUTURE DEVELOPMENTS

- **Become a leading player** via **licensing** to distributors and **consultation** for global bio-monitoring and risk management
- **Sell** the system to **private sectors** (e.g. fish farmers) and **government agencies** to ensure **higher commercial value**
- **Further enhance** eDNA **distribution** to increase its user coverage