



NATIONAL
BIODIVERSITY
FUTURE CENTER



Università
degli Studi
di Palermo

Technologies for marine biodiversity monitoring and conservation



UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II

Gennaro Ucciero
Biodiversity PhD. Student



LIPPIELLO - FRASCHETTI LABS



Vincenzo Lippiello
Full Professor of
Control and
Robotics, UNINA



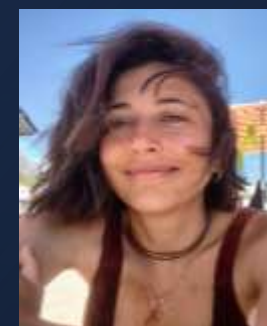
Simonetta Fraschetti,
Full Professor of Marine
Ecology, UNINA



Erika Fabbrizzi,
Ph.D., UNINA



Simone Maria
Santo Musumeci,
Ph.D. Student,
UNINA



Chiara Silvestrini,
Ph.D. Student,
UNINA



Andrea Capuozzo,
Ph.D. Student,
UNINA



Marzia
Cianflone, Ph.D.
Student, UNINA



Gennaro Ucciero,
Ph.D. Student,
UNINA/UNIPA



Sara De
Benedictis, Ph.D.
Student, UNINA



Luca Licciardi,
Ph.D. Student,
UNINA



Alberto Colletti,
Ph.D. Student,
UNINA



PhD. Project: Innovative approaches for marine biodiversity monitoring and mapping





PhD. Project: Innovative approaches for biodiversity monitoring and mapping

Essential ocean variables for global sustained observations of biodiversity and ecosystem changes

Patricia Miloslavich^{1,2,3,4} | Nicholas J. Bax^{1,5} | Samantha E. Simmons⁶ |
Eduardo Klein² | Ward Appeltans⁷ | Octavio Aburto-Oropeza⁸ | Melissa Andersen
García⁹ | Sonia D. Batten¹⁰ | Lisandro Benedetti-Cecchi¹¹ | David M. Checkley Jr.¹² |
Sanae Chiba^{13,14} | J. Emmett Duffy¹⁵ | Daniel C. Dunn¹⁶ | Albert Fischer¹⁷ |
John Gunn³ | Raphael Kudela¹⁸ | Francis Marsac^{19,20} | Frank E. Muller-Karger²¹ |
David Obura²² | Yunne-Jai Shin^{19,23}

Biology and Ecosystems

- Phytoplankton biomass and diversity
- Zooplankton biomass and diversity
- Fish abundance and distribution
- Marine turtles, birds, mammals abundance and distribution
- Hard coral cover and composition
- Seagrass cover and composition
- Macroalgal canopy cover and composition
- Mangrove cover and composition
- Microbe biomass and diversity (*emerging)
- Invertebrate abundance and distribution (*emerging)

DIRECTIVE 2008/56/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 17 June 2008
establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)
(Text with EEA relevance)

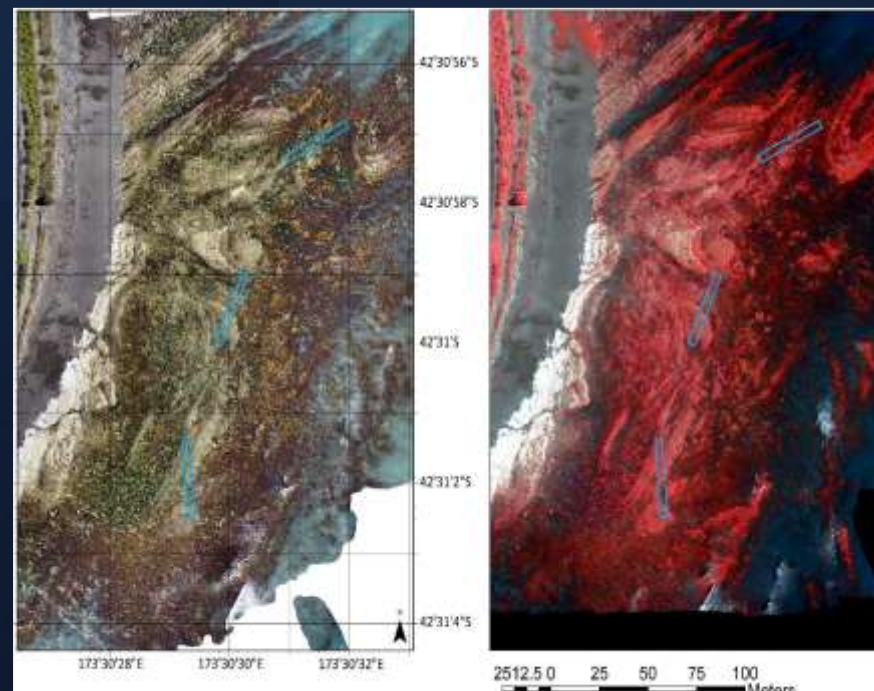
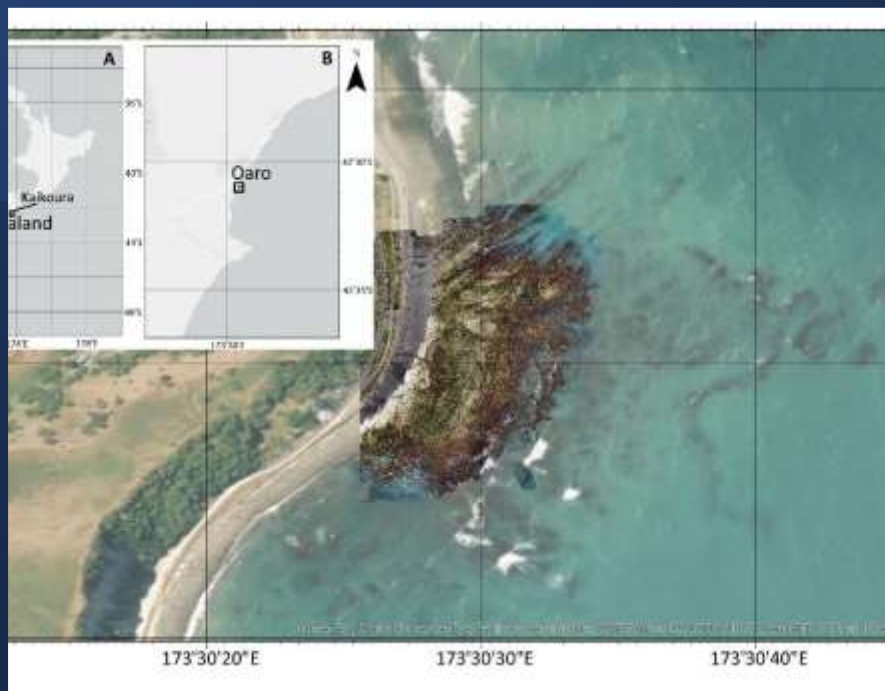
COUNCIL DIRECTIVE 92/43/EEC
of 21 May 1992
on the conservation of natural habitats and of wild fauna and flora
(OJ L 206, 22.7.1992, p. 7)

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on nature restoration
(Text with EEA relevance)
{SEC(2022) 256 final} - {SWD(2022) 167 final} - {SWD(2022) 168 final}





PhD. Project: Innovative approaches for biodiversity monitoring and mapping



Unmanned Aerial Vehicles (UAVs) for Monitoring Macroalgal Biodiversity: Comparison of RGB and Multispectral Imaging Sensors for Biodiversity Assessments

by Leigh Tait ¹, Jochen Bind ¹, Hannah Charan-Dixon ^{2,1}, Ian Hawes ³, John Pirker ² and David Schiel ²





Technologies for marine biodiversity monitoring and conservation: a systematic review

Biology and Ecosystems

Phytoplankton biomass and diversity

Zooplankton biomass and diversity

Fish abundance and distribution

Marine turtles, birds, mammals abundance and distribution

Hard coral cover and composition

Seagrass cover and composition


Macroalgal canopy cover and composition

Mangrove cover and composition

Microbe biomass and diversity (*emerging)

Invertebrate abundance and distribution (*emerging)

The PRISMA 2020 statement: An updated guideline for reporting systematic reviews

Matthew J. Page , Joanne E. McKenzie, Patrick M. Bossuyt, Isabelle Boutron, Tammy C. Hoffmann, Cynthia D. Mulrow, Larissa Shamseer, Jennifer M. Tetzlaff, Elie A. Akl, Sue E. Brennan, Roger Chou, Julie Glanville, Jeremy M. Grimshaw, [...], David Moher [view all]

Published: March 29, 2021 • <https://doi.org/10.1371/journal.pmed.1003583>





Database 1	Web of Science
Date of search:	07/02/2024
Query	<p>TS - "Marine Biodiv*" OR "Marine Environment*" OR "Marine Habitat*" AND</p> <p>TS - "Marine Biodiversity Monitor*" OR "Ecological monitor*" OR "EOVs" OR "Essential Ocean variable*" OR "Habitat Map*" OR "Habitat monitor*" OR "Map*" OR "Marine Monitor*" OR "Marine strategy" OR "Monitor*" OR "Temporal variation" OR "Biocenotic map*" AND</p> <p>TS - "AI" OR "A.I." OR "Aquatic robot*" OR "Artificial Intelligence" OR "ASC" OR "Autonomous surface craft*" OR "ASV" OR "autonomous surface vehicle" OR "Autonomous tech*" OR "Camera" OR "Deep learning" OR "Device*" OR "Drone*" OR "GIS" OR "Image segmentation" OR "internet of underwater things" OR "IoT" OR "LIDAR" OR "Machine learning" OR "Marine Technol*" OR "Multispectral" OR "Marine robot*" OR "Multibeam" OR "Multi-beam" OR "Neural network*" OR "Photogrammetry" OR "Photomosaic*" OR "Remotely operated vehicle*" OR "Robot*" OR "ROV" OR "Side-scan sonar" OR "sidescan sonar" OR "SSS" OR "Surface*" OR "Technol*" OR "Technol* status" OR "Technol* state of art" OR "UAV" OR "Underwater drone*" OR "Underwater device*" OR "Underwater engineering" OR "Underwater robot*" OR "Underwater technol*" OR "Unmanned" OR "Unmanned technol*" OR "Unmanned vehicle*" OR "Videogrammetry"</p>
Results	342 documents

Implementing and Innovating Marine Monitoring Approaches for Assessing Marine Environmental Status

By Danovaro, R (Danovaro, Roberto) [1], [2]; Carugati, L (Carugati, Laura) [1]; Berzano, M (Berzano, Marco) [1]; Cahil, AE (Cahil, Abigail E) [3], [4]; Carvalho, S (Carvalho, Susana) [5]; Chenail, A (Chenail, Anne) [3]; Corinaldesi, C (Corinaldesi, Cinzia) [1]; Cristina, S (Cristina, Sonia) [6], [7]; David, R (David, Romain) [3]; Dell'Anno, A (Dell'Anno, Antonio) [1]; ...More

Artificial intelligence and automated monitoring for assisting conservation of marine ecosystems: A perspective

Ellen M. Ditria¹ | Christina A. Buelow² | Manuel Gonzalez-Rivero² | Rod M. Connolly¹

Essential ocean variables for global sustained observations of biodiversity and ecosystem changes

Patricia Miloslavich^{1,2,3,4} | Nicholas J. Bax^{1,5} | Samantha E. Simmons⁶ | Eduardo Klein² | Ward Appeltans⁷ | Octavio Aburto-Oropeza⁸ | Melissa Andersen Garcia⁹ | Sonia D. Batten¹⁰ | Lisandro Benedetti-Cecchi¹¹ | David M. Checkley Jr.¹²

A Systematic Review of Remotely Operated Vehicle Surveys for Visually Assessing Fish Assemblages

Darryn Sward¹ | Giacomo Monk² | Neville Barrett

Automatic Habitat Mapping using Convolutional Neural Networks

Publisher: IEEE | Cite This | PDF

André Diegues | José Pinto | Pedro Ribeiro | Roberto Frias | do Campo Alegre | All Authors

Mapping and Classification of Ecologically Sensitive Marine Habitats Using Unmanned Aerial Vehicle (UAV) Imagery and Object-Based Image Analysis (OBIA)

by Daniele Ventura^{1,*} | Andrea Bonifazi² | Maria Flavia Gravina² | Andrea Belluscio¹ and Giandomenico Ardizzone¹





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GRAZIE PER L'ATTENZIONE



UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II

Gennaro Ucciero

Email: gennaro.ucciero@unipa.it

Cell: +393343856947