

ACTIVITY IMPLEMENTATION REPORT

**OPEN WATER DIVING TRAINING IN ORDER TO MONITOR THE
AQUATIC ECOSYSTEM OF CONSERVATION AREAS FOR KOMODO
NATIONAL PARK MANAGERS**



Komodo National Park Center

Directorate General of Conservation and Natural Resources and
Ecosystems of the Ministry of Environment and Forestry
Year 2024

ENDORSEMENT SHEET

**OPEN WATER DIVING TRAINING IN THE CONTEXT OF
MONITORING THE AQUATIC ECOSYSTEM OF CONSERVATION
AREAS FOR KOMODO NATIONAL PARK MANAGERS**

ON SEPTEMBER 20-22, 2024

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FOREWORD

Praise and gratitude to God Almighty for His abundance of grace and gifts so that the Report on the Implementation of Open Water Diving Training Activities in the context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers can be completed properly. This report is a form of documentation and accountability of activities that have been carried out successfully, thanks to the support and financing of the Investing in the Komodo Dragon and Other Globally Threatened Species in Flores (IN - FLORES) West Landscape - Seascape Management Unit Project. We hope that this training can improve the competence and skills of Komodo National Park managers in monitoring aquatic ecosystems more effectively and professionally.

This training activity aims to strengthen technical skills in the field of open water diving, which is important in supporting maritime ecosystem monitoring and conservation activities. It is hoped that the trainees will be able to carry out accurate observations and record environmental data, and apply the new knowledge gained for ecosystem sustainability and biodiversity conservation. Our sincere gratitude goes to all parties who have contributed to the organization of this activity. In particular, we would like to thank Project IN - FLORES and all parties involved, from the instructors to the participants, for their outstanding participation and cooperation.

We realize that this report still needs improvement, therefore we would appreciate any valuable input and suggestions from readers for future improvements. We hope that this report can provide benefits to all parties involved and support sustainable conservation efforts in Komodo National Park.

Thus we convey this preface. Hopefully this report can be a reference and inspiration for similar activities in the future.

Labuan Bajo, September 2024

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CHAPTER I. INTRODUCTION

A. Background.

The Komodo National Park area is an integral part of the IN-FLORES project implementation which is an important focus for project implementation as it is a habitat for various endangered species. Komodo National Park is one of the most important conservation areas in Indonesia, known worldwide for its Komodo dragons (*Varanus Komodoensis*). In addition to the Komodo dragons, the area is also home to a variety of other protected and endangered species of flora and fauna in the *Landscape and Seascape* of the Komodo National Park area.

To overcome this challenge, Komodo National Park managers need to improve their skills and knowledge in maritime ecosystem monitoring. One of the essential skills is the ability to dive with proper and safe techniques. Therefore, open water diving training is an urgent need to strengthen the capacity of managers to conduct more effective aquatic surveys and monitoring.

This training activity was supported by the Investing in the Komodo Dragon and Other Globally Threatened Species in Flores (IN - FLORES) Project, which focuses on species and ecosystem conservation through capacity building and active participation of conservation area managers. With this support, the training was designed to provide technical knowledge and skills, including international standard diving techniques, along with training on proper diving equipment and underwater observation techniques.

As diving is not just about using tools and jumping into the water, the training also emphasizes the importance of following safety rules to minimize risks. In the context of aquatic ecosystem monitoring, these skills enable managers to collect more accurate underwater environmental data, provide a better understanding of current ecosystem conditions and assist in data-driven management decision-making.

With comprehensive and tiered open water diving training, it is expected that monitoring capabilities and conservation activities in Komodo National Park can be implemented in a more sustainable manner. This training will facilitate better monitoring and support the sustainability of rich and diverse marine ecosystems, in line with Project IN - FLORES' conservation vision.

B. IN - FLORES Project Digest

The Directorate General of Natural Resources and Ecosystem Conservation of the Ministry of Environment and Forestry is implementing the "Investing in

The Komodo Dragon and Other Globally Threatened Species in Flores (IN - FLORES)" in collaboration with the Global Environment Facility (GEF), the United Nations Development Programme (UNDP) Indonesia, and Ministries/Institutions of the Republic of Indonesia to support the optimization of conservation area management and biodiversity of komodo lizards (*Varanus komodoensis*), yellow-crested cockatoo (*Cacatua sulphurea*), florescent eagle (*Nisaetus floris*), and various other important species living in Komodo National Park, Longos Island, and Flores Island, East Nusa Tenggara Province. The project with a total budget allocation of US\$46,695,827 has several project areas consisting of the administrative areas of West Manggarai Regency, Manggarai Regency, East Manggarai Regency, and Ngada Regency - East Nusa Tenggara Province. The success of the project is realized through the implementation of 3 (three) main components, namely:

Component 1: Strengthening the enabling environment and introducing a new governance model for integrated land and marine landscape management.

Component 2 : Increased private sector, community engagement and diversified financing for biodiversity conservation and livelihood improvement across the land and marine landscape for Komodo dragons and other endangered species.

Component 3: Knowledge management, safeguard management, and monitoring & evaluation.

IN-FLORES project implementation is divided into 3 entities namely: Project Management Unit (PMU) based in Jakarta and 2 (Two) Landscape-Seascape Management Units (LSMU) based in Labuan Bajo (West LSMU) and Ruteng (North LSMU). The IN-FLORES project in the West LSMU plays a role in supporting the management of Komodo National Park and its buffer zone. The various challenges of managing Komodo National Park include optimizing the management of nature tourism visits, protecting forests and waters, preserving species and genetic biodiversity, empowering communities and transforming the education curriculum, and sustainable financing into long-term goals or legacies that need to be realized through the IN-FLORES project in West LSMU.

C. Purpose and Objectives

This training is intended to increase the capacity and competence of Komodo National Park managers in conducting maritime ecosystem monitoring effectively and safely. With adequate skills, conservation actors are expected to better carry out maintenance and preservation tasks, supporting sustainable conservation efforts in the region. The objectives of the Open Water Diving Training in the context of Monitoring the Marine Ecosystem of Conservation Areas for Komodo National Park Managers are as follows:

1. Provide training for Komodo National Park managers to master basic diving techniques in accordance with international standards, as well as the correct and safe use of diving equipment.

2. Provide Komodo National Park managers with an understanding of the importance of safety in diving activities, including emergency procedures, to minimize risks and maintain personal safety during dives.
3. Equip Komodo National Park managers with the ability to conduct direct monitoring of aquatic ecosystems, enabling the collection of relevant and accurate environmental data.

D. Outputs

The expected outputs in the Open Water Diving Training Activity in the context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers are:

1. Trainees were successfully certified in open water diving, demonstrating that they have mastered the technical skills required to perform dives safely and effectively.
2. Consistent application of safe diving procedures and international safety standards by all participants during diving activities.

E. IN - FLORES Project Targets

The activities of the Open Water Diving Training Activity in the context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers meet the following indicators and milestones of the IN - FLORES project:

1. Output 1.4
Under output 1.4, monitoring and law enforcement capacity, systems, coverage and partnerships are strengthened to improve the knowledge base on population dynamics and variation of Komodo dragons and other species, enabling more informed decision-making in the land-sea landscape of West and North Flores. There is an indicative activity under output 1.4 which is 'Provide training for protected area managers and staff on emerging monitoring approaches and technologies, emphasizing monitoring of marine ecosystems and threats.
2. West LSMU Milestones
Of course, this is also in line with the West Landscape - Seascape Management Unit milestone related to Strengthening Biodiversity Conservation. In the West LSMU milestone of the IN-FLORES project, the activity has actualized the activity input, namely the Komodo National Park Office Ranger Dive Training and Komodo National Park Management.

CHAPTER II. LITERATURE REVIEW

A. History of Komodo National Park

Komodo National Park is a Technical Implementation Unit (UPT) under the Directorate General of Natural Resources and Ecosystem Conservation, Ministry of Environment and Forestry. Prior to its designation as a national park, the area was a wildlife reserve. Komodo Island, Rinca Island, and Padar Island Wildlife Sanctuary was established based on the Decree of the Minister of Forestry Number: 66/Dep.Keh/1965 dated October 21, 1965 with a total area of 40,728 Ha. The Komodo Island, Rinca Island, and Padar Island Wildlife Sanctuary was designated because it is a habitat for a typical wildlife, the komodo monitor lizard (*Varanus komodoensis*) and has a high potential for natural resources that must be maintained so that it can be utilized for research, science, education, tourism and recreation purposes. In order to improve the status of the area, Komodo National Park was inaugurated as one of Indonesia's first five national parks by the Minister of Agriculture, Prof. Ir. Soedarsono Hadisapoetro, with a total area of 75,000 Ha on March 6, 1980. The existence of Komodo National Park was then reinforced by the issuance of the Minister of Forestry Decree Number: 306/Kpts-II/92 dated February 29, 1992 where the total area increased to 173,300 Ha.

In addition to getting institutional strengthening from within the country, Komodo National Park also received recognition from abroad. The area was designated a 'Man and Biosphere Reserve - Komodo' by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 1977. In 1991, UNESCO again added international recognition for Komodo National Park as a World Heritage Site by fulfilling two criteria, namely criterion 7 (has a beautiful landscape ranging from coral reefs, beaches, savannas, and other spiny green vegetation) and criterion 10 (the area includes most of the remaining natural habitat of Komodo dragons in the world). The last international recognition the area received was from the New 7 Wonders Foundation in 2012 as 'The New 7 Wonders of Nature'. The award was based on a global public vote of 25 of the world's most remarkable locations.

B. Open Water Diving

Open water diving is an activity carried out using scuba equipment (Self-Contained Underwater Breathing Apparatus) to explore and study the underwater environment. Basic techniques in open water diving include skills such as equalizing or balancing ear pressure to prevent injury, the use of regulators to breathe, as well as buoyancy control through a buoyancy control device (BCD) (Bennett & Elliott, 2003). Intensive training usually starts in the pool to mature basic skills before moving on to open water training, which is more complex and challenging.

Safety is a crucial aspect of any diving activity. In accordance with the standard procedures provided by diving organizations such as PADI

(Professional Association of Diving Instructors), safe diving emphasizes the importance of the buddy system-divers working in pairs to supervise each other (PADI, 2014). In addition, pre-dive equipment checks and preparing contingency plans are part of training aimed at minimizing risks such as loss of air or disorientation underwater (Edmonds et al., 2016). The introduction of dive computers to monitor underwater time and understanding the principles of decompression are key elements in keeping divers safe from dangerous conditions such as decompression sickness.

In an ecological context, open water diving also makes a significant contribution to underwater research and conservation. Scientists and environmentalists often use diving skills to collect data on habitat conditions, monitor populations of marine species, and assess the state of coral reef ecosystems (Talge, 1993). Salvage activities such as removing discarded fishing nets or planting coral reefs are often undertaken to aid the recovery of damaged marine ecosystems.

Quality dive training and certification is essential to ensure divers have adequate knowledge and skills. Organizations such as PADI and NAUI provide a rigorous curriculum in dive training, which includes understanding the theory of underwater physics, human physiology under diving conditions, as well as safety practices that must absolutely be adhered to (Gilliam & Phillips, 2008). This certification not only guarantees that divers can safely conduct underwater explorations, but also ensures their valuable contribution to global marine conservation efforts.

Through tiered and high-standard training, the management and conservation of aquatic ecosystems can be improved, and is expected to have a positive impact on maintaining biodiversity in the oceans. Such efforts not only protect valuable marine ecosystems, but also help in creating global awareness on the importance of preserving the marine environment for future generations.

C. Monitoring Aquatic Ecosystems

Monitoring aquatic ecosystems is an essential element in the management of Komodo National Park (Komodo NP), a conservation area that faces unique challenges related to biodiversity, marine ecosystem dynamics and human activities. Effective monitoring in Komodo National Park allows managers to gain an in-depth understanding of the conditions and changes occurring in this rich and complex aquatic environment.

In the context of Komodo National Park, aquatic ecosystem monitoring aims to protect coral reefs that are home to a wide range of marine species, including those that are rare and endangered.

rare and endangered. The use of direct observation techniques by divers, such as line transects and stationary plots, helps in collecting data on the biodiversity and health condition of coral reefs (English, Wilkinson, & Baker, 1997). These observations also include monitoring populations of marine species that serve as indicators of ecosystem health, as well as assessing the impacts of human activities such as fishing and tourism on ecosystems.

Technology also plays an important role in supporting monitoring activities in Komodo National Park. The use of modern tools, such as underwater cameras and automated sensors, helps obtain accurate and continuous data on the state of the ecosystem (Schofield et al., 2012). These data not only document trends in ecosystem change but also facilitate the formulation of management strategies that are more adaptive and responsive to threats such as bleached coral due to climate change and ocean acidification.

Through a comprehensive monitoring approach, Komodo National Park managers can assess the effectiveness of their conservation actions and adjust natural resource management efforts according to real needs on the ground. In addition, the monitoring data generated can also be used to support community education and awareness and policy makers on the importance of conserving marine ecosystems in Komodo National Park.

In addition, continuous ecosystem monitoring helps ensure that conservation measures are not only reactive, but also proactive in preventing further damage and restoring ecosystems that have been affected. As such, aquatic ecosystem monitoring is fundamental to the sustainable management of Komodo National Park, safeguarding important biodiversity and supporting local welfare and the long-term economic value that healthy ecosystems bring.

CHAPTER III. METHODOLOGY

A. Legal Basis

1. Law Number 5 of 1990 concerning Conservation of Natural Resources and Ecosystems;
2. Law Number 41 of 1999 concerning Forestry; Law Number 32 of 2009 concerning Environmental Protection and Management;
3. Government Regulation No. 108/2015 on the Amendment of Government Regulation No. 28/2011 on the Management of Nature Reserve Areas and Nature Conservation Areas;
4. Government Regulation No. 12 of 2014 Concerning Types and Rates of Non-Tax State Revenue Applicable in the Ministry of Forestry;
5. Minister of Environment and Forestry Regulation Number 17 of 2022 Dated July 29, 2022 Concerning the Organization and Work Procedures of the Technical Implementation Unit for Natural Resources and Ecosystem Conservation;
6. Minister of Environment and Forestry Regulation Number P.22/MENLHK/SETJEN/KUM.1/7/2018 concerning Guidelines for the Preparation of Strategic Environmental Assessments;
7. Decree of the Minister of Environment and Forestry Number SK.2456/MENLHK-PKTL/REN/PLA.0/7/2018 on the Determination of the Function of the Komodo National Park Conservation Area;
8. Regulation of the Director General of Forest Protection and Nature Conservation No. 7/2011 on Entry to Nature Reserve Areas, Nature Conservation Areas, and Hunting Parks;
9. Regulation of the Director General of Forest Protection and Nature Conservation Number: SK.133/IV-SET/2014 Dated June 17, 2014 Regarding Nature Tourism and Hunting Parks for the Imposition of Non-Tax State Revenue;
10. Decree of the Director General of Forest Protection and Nature Conservation Number: SK.41/IV-Set/H0/2006 Dated March 24, 2006 Regarding Guidelines for the Establishment of Conservation Cadres.
11. Letter of Plh. KKHSG Director Letter Number: S.144/KKHSG/PSG2/KSA.2/03/2024 Dated March 26, 2024 Inviting *Project Management Unit* (PMU) and *Landscape-Seascape Management Unit* (LSMU) of Project IN-FLORES.

B. Equipment, Supplies, and Other Needs

Tools and materials used in the implementation of Open Water Diving Training Activities in the Context of Monitoring Aquatic Ecosystems of Conservation Areas for Komodo National Park Managers, among others:

1. Meeting Room
2. Activity Consumption
3. Scuba Equipment (*Self-Contained Underwater Breathing Apparatus*)
4. Transportation
5. Training Materials
6. Diving Certification

C. Activity Location and Schedule

Open Water Diving Training in the Context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers was held on:

Date : September 20 - 22, 2024

Location : Labuan Bajo, West Manggarai.

The schedule of activities is presented in the table below:

September 20, 2024			
No	Time	Activity	Ket
1	09.00 - 09.30	Opening	
2	09.30 - 10.00	Filling in Registration and Application Forms	
3	10.00 - 11.45	Knowledge Review I	
4	11.45 - 13.30	Break	
5	13.30 - 17.00	Knowledge Review II, III, IV, V.	
6	17.00	Finish	
September 21, 2024			
1	08:00 - 08.30	Participants gather at Waecicu Beach	
2	08.30 - 09.00	<i>Equipment Gear</i> Introduction	
3	09.00 - 11.30	Basic Diving Skills Practice	
7	11.30 - 13.00	ISHOMA	
8	13.00 - 15.00	Emergency Capability Practice	
9	15.00 - 16.00	DIVE I	
10	16.00 - 17.00	Review Material and Practice	
11	17.00	Finish	
September 22, 2024			
1	08.00 - 08.30	Participants Gather at KP 3 Harbor	
2	08.30 - 09.15	Travel to Sabolan Besar	
3	09.15 - 10.30	DIVE II	
4	10.30 - 11.00	Break	
5	11.00 - 12.15	DIVE III	
6	12.15 - 13.30	Rest and Journey to the Angel	
7	13.30 - 14.00	Navigation Materials	
8	14.00 - 15.30	DIVE V	
9	15.30 - 16.15	Back to Labuan Bajo	
10	16.15	Finish	

D. Target Activity Participants

The target participants of the Open Water Diving Training in the context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers are selected based on their activeness and dedication in managing the Komodo National Park area.

E. Implementation Team and Resource

Persons Activity Implementation Team

The implementation team for the Open Water Diving Training in the context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers will be appointed based on the Komodo National Park Head's Task Letter who has the technical competence.

Resource Persons

The resource persons for the Open Water Diving Training activities in the framework of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers are from Diving Instructors with the following fields of expertise:

1. Basic Technical Diving
2. Basic Technical Rescue
3. Basic Technical Underwater Identification

F. Activity Method

The implementation of the service activities was carried out by conducting socialization/theory in the room and practical scuba diving training at sea. The instructor presented material about scuba diving as a recreational and achievement sport, the requirements to become a diver, knowledge of bouyancy, basic diving equipment, scuba equipment, and diving practices while in the water. The training was conducted by means of material presentation by resource persons and diving instructors from PADI. Given that the participants of the service activities are staff of the Komodo National Park, most of whom (open water level) have never tried scuba diving, for optimal results the training is carried out in several stages. These stages are as follows:

1. Initial Observation

Initial observations were made by determining the schedule and place of training, determined together between all parties related to the planned program. The presentation of the material took place indoors and the practice of diving directly at sea.

2. Training Implementation

Training on the sport of scuba diving was carried out at a predetermined time and was carried out by a team that had received a letter of assignment from the Head of Komodo National Park as many as 10 people.

G. Funding

The Open Water Diving Training Activity in the Context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers is funded by the IN - FLORES West Landscape - Seascape Management Unit Project Overseas Grant for Fiscal Year 2024. The cost details are as follows:

522191 Other Services Expenditure			
Work Package for Open Water Diving Training in the Context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers	1 Package	Rp 71,950,000	Rp 71,950,000
Total Budget			Rp 71,950,000

H. Activity Personnel

The implementers of the Open Water Diving Training activities in the context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers are personnel of the Komodo National Park Office and IN-FLORES West LSMU project staff determined based on the Komodo National Park Office Head Task Letter Number: ST.1143/T.17/TU/KSA.3.7/B/09/2024 Dated September 19, 2024. The document of the letter of assignment of the Head of the Komodo National Park Office is presented in the appendix.

CHAPTER IV. RESULTS AND DISCUSSION

Komodo National Park organizes open water diving training as a strategic step to increase the capacity of human resources involved in the management of this conservation area. One of the main reasons for the training was to equip staff and managers with the technical diving skills necessary to conduct direct and accurate monitoring of marine ecosystems. With these skills, they can more effectively collect critical data on the biodiversity and health of aquatic ecosystems, which is essential to inform decision-making in the management and protection of the area. The training also supports better implementation of conservation programs, helping to tackle threats such as coral reef degradation and declining fish populations caused by human activities and environmental change. In addition, the training emphasizes diving safety and security, ensuring all monitoring and research activities are conducted with minimal risk to staff.

In its implementation, this activity is also supervised by the Directorate General of Natural Resources and Ecosystem Conservation (KSDAE), specifically the Directorate of Forest and Wildlife Conservation Areas (KKHSG), through the Investing in The Komodo Dragon and Other Globally Threatened Species in Flores (IN-FLORES) Project. The presence of this project provides important support and supervision to ensure that the implementation of the training complies with established conservation standards.

In a regulatory context, this training activity is in line with several policies and regulations from the Ministry of Environment and Forestry (MoEF), such as Law No. 5 of 1990 on the Conservation of Living Natural Resources and Ecosystems, which emphasizes the importance of protecting and preserving biodiversity. It is also in line with Government Regulation No. 28/2011 on the Management of Nature Reserve Areas and Nature Conservation Areas, which underlines the importance of increasing the capacity of managers as well as the integration of scientific and technological methods in conservation activities. Thus, this dive training not only supports the operational effectiveness of Komodo National Park management but also ensures consistency with national regulations governing the preservation of natural resources and biodiversity.

A. Participant Demographics

The Head of the Komodo National Park Office through the Komodo National Park Office Head Task Letter Number: ST.1143/T.17/TU/KSA.3.7/B/09/2024 dated September 19, 2024 to participate in the activity is:

No.	Name	Position
Open Water (A1)		
1	Agustinus Djami Koreh, S.ST., M.Si.	Associate Forestry Instructor
2	Rawuh Pradana S.H.	First Expert Forestry Police
3	Rijkard Gideon Sambite	Novice Forestry Police
4	Firman Nuralam Suryadi	Novice Forestry Police
5	Didimus Patri Jengka	Forest Security Officer
6	Gunardi	Forest Guard
7	Suaidi	Forest Guard
8	Muhammad Anshory	Crewman on <i>King Fisher</i> Patrol Boat
9	Farja Farhan Ekadj, S.Sos., M.Si.	WLSC INFLORES
10	Yudha Pamungkas, S.Tr.Par.	WLSA INFLORES

From the above assignment letters, the participation/attendance rate reached 100% or met the target participants specified in the RPK document. Of the total participants who attended there were 10 (100%) male participants. The achievement of this percentage figure is an added value for the performance of the Komodo National Park Office in organizing the 2024 fiscal year.

B. In-Class Coaching Presentation

The recently completed open water diving in-class training has had a significant impact on improving the competence of participants. Referring to the standards set by PADI (Professional Association of Diving Instructors), the training successfully delivered the key elements required before practicing open water diving.

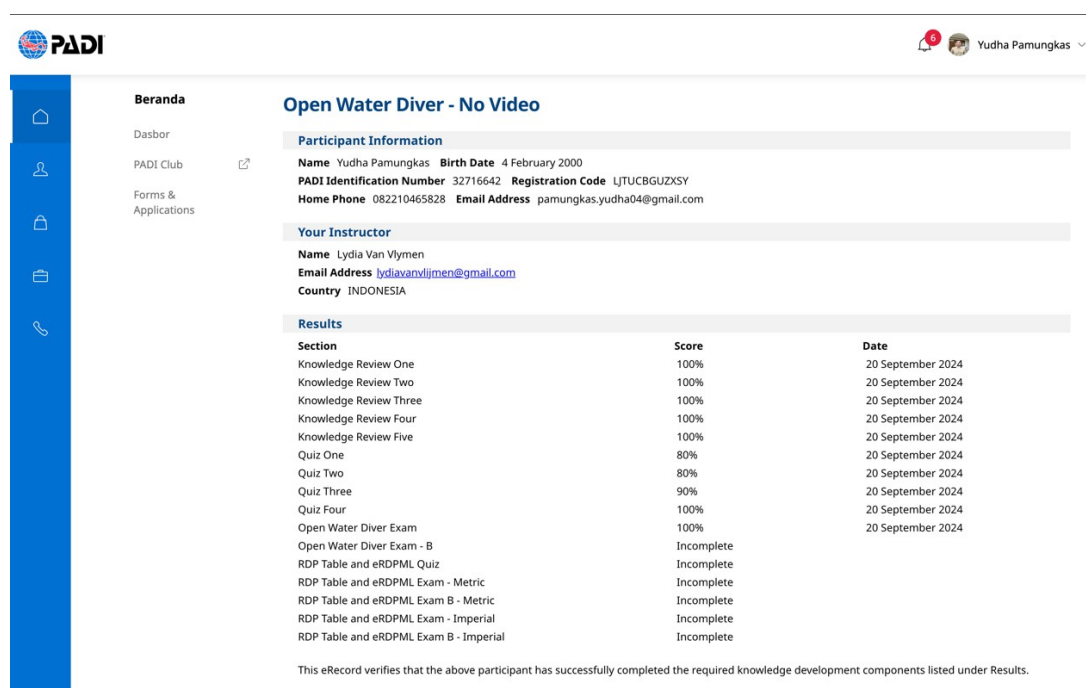


Figure 1 Results of the Open Water Diving Training Material Review

An introduction to diving theory, which includes discussions on human physiology underwater and the principles of pressure, provides a solid foundation for participants to understand the dynamics of diving. Detailed explanations of the function and use of diving equipment ensure that each participant is well versed in the operation and maintenance of equipment such as scuba tanks and regulators. Dive safety techniques are an important focus, teaching participants how to cope with emergency situations and maintain discipline through the application of the buddy system.

In terms of navigation, participants acquire useful strategies for orientation underwater, using aids such as compasses and recognizing natural navigation signs. Effective dive planning is also emphasized, including calculation of bottom time limits and attention to environmental conditions such as currents. Knowledge of marine ecosystems is provided with the aim of increasing environmental awareness and ensuring that dives do not damage fragile habitats.

To ensure participants fully understand the material, periodic quizzes and evaluations are conducted, guaranteeing their understanding before moving on to practical exercises. Delivery of the material through various teaching methods, including multimedia presentations and group discussions, supported comprehensive understanding. With this training, participants are now better prepared and confident to conduct safe and informed dives, supporting conservation efforts and marine ecosystem monitoring in Komodo National Park.

C. Out - Class Coaching Presentation

The PADI-standard open water dive training was successfully completed with all practical sessions in the open ocean. Participants went through four dive stages, from DIVE I to DIVE IV, designed to apply the skills learned during the in-class sessions to real-life practical situations, while increasing their confidence and ability as novice divers.

1. DIVE I, participants were introduced to the open water environment and familiarized with dive equipment, applying the basic skills learned in class. The focus on underwater comfort and initial application of safety procedures was successful, with participants demonstrating an understanding of correct breathing techniques, basic buoyancy control and mask recovery. On this Dive I, along with a successful dive with a *Max. Depth* of 5 Meters with a *Bottom Time* of 43 Minutes at Waecicu Beach in Labuan Bajo.
2. DIVE II, participants showed significant progress in improving their buoyancy control and basic navigation. They deepened their skills from previous dives and grew more confident with the techniques taught, including regulator manipulation and sharing air with their buddy, improving their comfort and technique underwater. On this Dive II, along with successful dives with a *Max. Depth* 12.2 Meters with *Bottom Time* 57 Minutes in the waters of Sebolan Besar Island.
3. DIVE III focused on introducing underwater navigation techniques and developing independence while diving. Participants successfully practiced the use of underwater compasses and natural navigation techniques, and also practiced more complex emergency situation management, honing their navigation and decision-making skills during the dive. On this Dive III, along with successfully diving to a *Max. Depth* 12.8 Meters with *Bottom Time* 42 Minutes in the waters of Sebolan Besar Island.
4. DIVE IV involves applying all skills learned in more independent full dives. Participants successfully complete all requirements for certification by conducting dives that resemble real situations they could face in the future. The focus on direction-finding skills, buoyancy control and dive management in moderate currents helps in assessing their overall proficiency and readiness to dive independently and responsibly. On this Dive IV, along with successfully diving to a *Max. Depth* 17.4 Meters with *Bottom Time* 46 Minutes in Bidadari Island Waters.

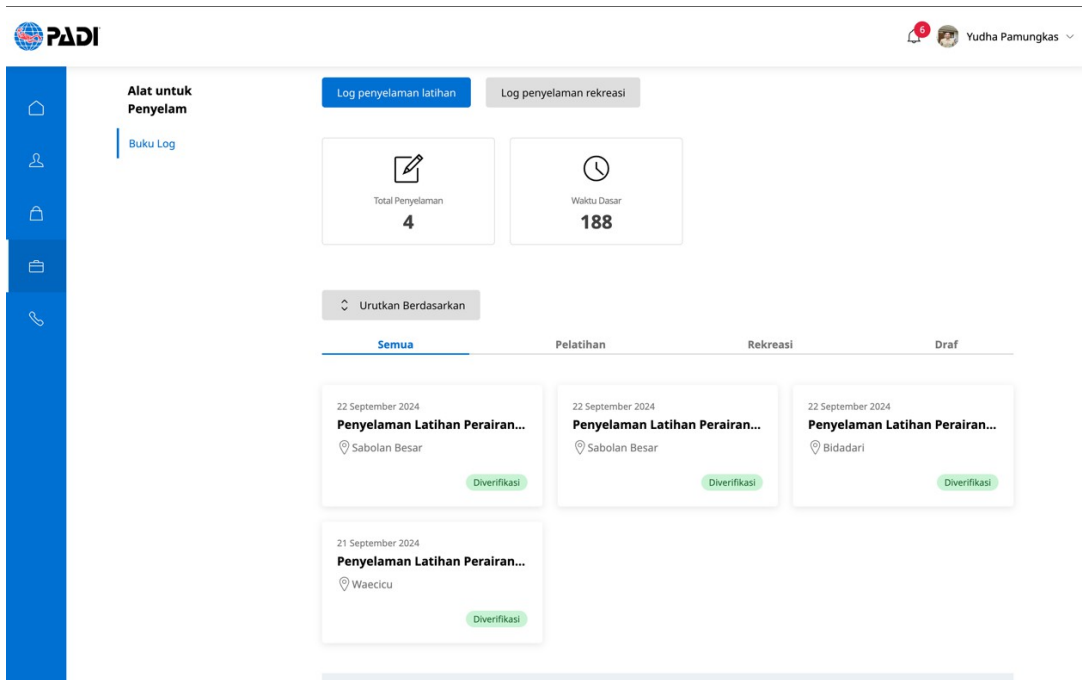


Figure 2 Log Book of Trainees

With each stage of the dive closely supervised by a PADI certified instructor, this training ensures the safety of participants and validates that all knowledge and skills applied meet the standards required to receive Open Water Diver certification. Completing these four dive sessions has left participants better prepared and confident to conduct dives independently, with strong basic skills and a good understanding of diving safety and techniques.

CHAPTER V. CONCLUSION

A. Conclusion

The Open Water Diving Training Activity in the context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers has been carried out with the following objectives achieved:

1. The number of participants in the Open Water Diving Training in the context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers is 10 Komodo National Park officers appointed by the Komodo National Park Head's Task Letter.
2. The in-class sessions provided a strong theoretical foundation, covering basic diving and proper use of dive equipment. This knowledge, combined with an in-depth understanding of the marine ecosystem and safety techniques, enables participants to be prepared to effectively face the challenges of the underwater terrain and cope well with emergency situations.
3. Having conducted four stages of out-class diving (DIVE I-IV), participants successfully apply theoretical skills in a real water environment. From initial adaptation to equipment use in DIVE I to navigation and self-reliance in DIVE IV, participants showed significant progress in diving techniques, underwater navigation and dive management. Close supervision by PADI certified instructors ensures safety and adherence to professional standards, leading to participants' success in achieving Open Water Diver certification.
4. Based on anecdotal observations by the activity implementation team, participants have been able to dive with a maximum depth of up to 18 meters. This is a human capital asset that can assist in the implementation of various underwater monitoring and research programs. This allows Komodo National Park to effectively expand and deepen its operational activities, utilizing the new in-depth understanding of the ecosystem.

B. Recommendations

The recommendations for Open Water Diving Training in the context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers are as follows:

1. Komodo National Park needs to conduct follow-up training and certification updates on a regular basis, ensuring the team's readiness to deal with the latest developments in the field of aquatic ecosystems.
2. Komodo National Park should consider incorporating advanced training such as advanced open water diving courses and marine conservation handling specializations, to broaden staff expertise in various aspects of conservation.
3. Komodo National Park should strengthen its monitoring plan for the park's aquatic ecosystem.
4. The park should utilize the latest technology in aquatic ecosystem monitoring, such as underwater drones and automated monitoring systems, to improve the efficiency and accuracy of environmental data collection.
5. Komodo National Park needs to conduct regular evaluations of the effectiveness of training programs and implementation of conservation, using the data collected during dives to submit reports and

collected during dives to submit reports and make evidence-based decisions in the future.

6. Komodo National Park needs to strengthen data on genetic biodiversity and underwater species so as to enrich knowledge and inventory of Biodiversity in the Komodo National Park area.

APPENDIX

Assignment Letter of the Head of Komodo National Park for Open Water Diving Training in the Context of Monitoring the Aquatic Ecosystem of Conservation Areas for Komodo National Park Managers:



KEMENTERIAN LINGKUNGAN HIDUP DAN KEHUTANAN
DIREKTORAT JENDERAL KONSERVASI SUMBER DAYA ALAM DAN EKOSISTEM
BALAI TAMAN NASIONAL KOMODO

SURAT TUGAS

Nomor: ST. 1143 /T.17/TU/KSA.3.7/B/09/2024

KEPALA BALAI,

- Menimbang : 1. Bahwa dalam rangka mendukung pengelola dan staf Balai Taman Nasional Komodo tentang pendekatan dan teknologi monitoring yang baru muncul dengan menekankan pada ekosistem laut dan ancamannya dikawasan Taman Nasional Komodo. Balai TN Komodo dan Proyek IN – FLORES West LSMU menyelenggarakan Pelatihan Selam Open Water dan Selam Advanced Dalam Rangka Monitoring Ekosistem Perairan Kawasan Konservasi Bagi Pengelola TN Komodo;
2. Bahwa pengelola dan staf Balai TN Komodo yang ditunjuk mengikuti pelatihan tersebut diatas berasal dari perwakilan SPTN dan Sub Bagian Tata Usaha Balai TN Komodo;
3. Bahwa untuk melaksanakan kegiatan dimaksud, perlu ditugaskan personil yang memiliki kecakapan dalam melaksanakan kegiatan dimaksud melalui Surat Tugas Kepala Balai.
- Dasar : 1. Keputusan Direktur Jenderal Perlindungan Hutan dan Konservasi Alam Nomor: SK.41/IV-Set/HO/2006 Tanggal 24 Maret 2006 Tentang Pedoman Pembentukan Kader Konservasi;
2. Peraturan Menteri Lingkungan Hidup dan Kehutanan RI Nomor 17 Tahun 2022 Tanggal 29 Juli 2022 Tentang Organisasi dan Tata Kerja Unit Pelaksana Teknis Konservasi Sumber Daya Alam dan Ekosistem;
3. Surat Plh. Direktur KKHSG Nomor: S.144/KKHSG/PSG2/KSA.2/02/2024 Tanggal 26 Maret 2024 Hal Pemanggilan *Projet Management Unit (PMU) dan Landscape – Seascape Management Unit (LSMU) Project IN – FLORES*;

MEMBERI TUGAS

- Kepada : (Daftar Nama Terlampir)
- Untuk : 1. Mengikuti kegiatan Pelatihan Selam Open Water dan Advanced Dalam Rangka Monitoring Ekosistem Perairan Kawasan Konservasi Bagi Pengelola TN Komodo di Labuan Bajo, Kabupaten Manggarai Barat;
2. Pelaksana tugas melaksanakan tugas tanggal 20– 22 September 2024;
3. Biaya dibebankan pada anggaran Proyek IN – FLORES West LSMU Tahun Anggaran 2024;
4. Melaporkan hasil segera setelah melaksanakan tugas.

Demikian untuk dilaksanakan dengan penuh tanggung jawab dan segera melaporkan hasilnya setelah melaksanakan tugas.



Labuan Bajo, 19 September 2024
Kepala Balai,

[Signature]
Heriokus Rani Siga, S.Hut., M.Sc.
NIP. 19680708 199803 1 002

Attachment 1. Letter of assignment

Number : ST. 1143 /T.17/TU/ KSA.3. 7/ B/09/ 2024
Date : September 19, 2024

LIST OF EXECUTORS OF OPEN WATER DIVING TRAINING ACTIVITIES IN THE CONTEXT OF
MONITORING THE AQUATIC ECOSYSTEM OF THE CONSERVATION AREA FOR THE
MANAGEMENT OF KOMODO DRAGON PARK

Open Water Diving Training (AI)				
No.	Name/NIP	Rank/Gen.	Position	Ket.
1.	Agustinus Djami Koreh, S.ST., M.Si. 19700810 199803 1 002	Pembma / IVa	Associate Expert Forestry Extension Worker	
2.	Rawuh Pradana, S.H / 19910809 201902 1 002	Junior Structurer Tk. I/ 111b	First Expert Forestry Police	
3.	Rijkard Gideon Sambite/ 19970815 202203 1 015	Junior Registrar/11a	Beginner Forestry Police	
4.	Firman Nuralam Suryadi / 19970209 202012 1 010	Junior Registrar/ Ha	Beginner Forestry Police	
5.	Didimus Patri Jengka / -	PPNPN Personnel	Forest Security Worker	
6.	Gunardi /-	PPNPN worker	Forest Maintenance Worker	
7.	Suaidi /-	PPNPN Worker	Forest Security Worker	
8.	Muhammad Anshory / -	PPNPN Worker	Patrol Boat Crew <i>King Prefer</i>	
9.	Fajra Farhan Ekadj, S.Sos., M.Si /-		<i>West landscape - Seascape Coordinator</i>	
10.	Yudha Pamungkas, S.Tr.Par. /- West landscape - Seascape AssistartCoordinator 10.		<i>West landscape - Seascape AssistartC</i>	

Labuan-Bajo, 19 September 2024

Kepala Balai,



Henrikus Rani Siga, S. Hut., M.Sc
NIP. 19680708 199803 1 002

Attachment 2. Letter of Assignment

Number : ST. 1143 /T. 17/TU/ KSA. 3. 7/B/09/ 2024

Date : September 19, 2024

LIST OF EXECUTORS OF ADVANCED DIVING TRAINING ACTIVITIES IN THE CONTEXT OF MONITORING THE AQUATIC ECOSYSTEM OF CONSERVATION AREAS FOR KOMODO DRAGON PARK MANAGERS

Advanced Diving Training (A2)				
No	Name/NIP	Rank/Gen.	Position	Ket.
1.	Hendrtlcus Rani Siga, S.Hit' M.Sc. 19680708 199803 1 002	Pembina Tk. 1/IVb	Head of Komodo National Park Office	
2.	Judy Aries Mulik, STP., M.AP. / 19730601 199903 1 005	Supervisor / IVa	Head of SPTN Region III Komodo National Park Center	
3.	Julizar Riduan, S.Sos. / 19830116 200501 1 001	Penata / IIIc	Head of SPTN Region 1 Komodo National Park Office	
4.	Naoma Y. Banamtuan, A. Md. 19870608 201012 2 008	Junior Structurer Tk.1 / IIIb	Advanced Forestry Police	
5.	Dalilussakha Susan Fratama/ 19841122 200604 1 00 1	Junior Organizer / IIIa	Advanced Forestry Police	
6.	Agitha Putri BR Bangun / 19950602 202012 2 01 1	Junior Pengatiir / Ha	Pemiila Forestry Police	
7.	Rias / 19990222 202203 1 004	Junior Observer/ Ha	Beginner Forest Ecosystem Controller	
8.	Suwendi Iskandar Bubang /	PPNPN Worker	Forest Security Officer	
9.	Nasmawi/ -	PPNPN worker	Captain on <i>xin9</i> fisher patrol boat	
10.	Mardi Triyanto / -	PPNPN Employee	crew member on patrol boat <i>King Fisher</i>	

Labuan Bajo, September 19, 2024



[Handwritten Signature]

s Rani Siga, S. Hut., M.Sc
80R08 1d9803 1 002

OPEN WATER DIVING INSTRUCTOR LICENSE ATTACHMENT

Logged in as: lydia_1976@hotmail.com



Account Information for Lydia Van Vlymen

My Account

Member Name: Lydia Van Vlymen **Instructor #:** 309516



Upload Your Photo

Birth Date: 9/21/1976
Area Office: PADI Asia Pacific
Renew Year: 2024

[Mailing](#) [Teaching](#) [Verify My Status](#) [Awards](#)

Lydia Van Vlymen

Member Number: 309516

- Instructors are generally authorized to teach PADI core courses, guide divers and assist on PADI courses per their listed credential.
- Divemasters and Assistant Instructors are generally authorized to guide divers and assist on PADI courses.
- **The information listed below is not all-inclusive. Not reflected are any additional credentials necessary to teach some specialized PADI courses and insurance requirements necessary to teach, guide or assist in some areas.**

PADI Rating: IDC Staff Instructor Authorized to Teach:

Renewed:

Expires: 31 Dec 2024

PADI Rating: Master Scuba Diver Trainer Authorized to Teach:

Renewed:

Expires: 31 Dec 2024

ACTIVITY DOCUMENTATION



Figure 3 Open Water Diving Training Participants Get a Briefing from Lydia Van Vlymen as a Diving Instructor

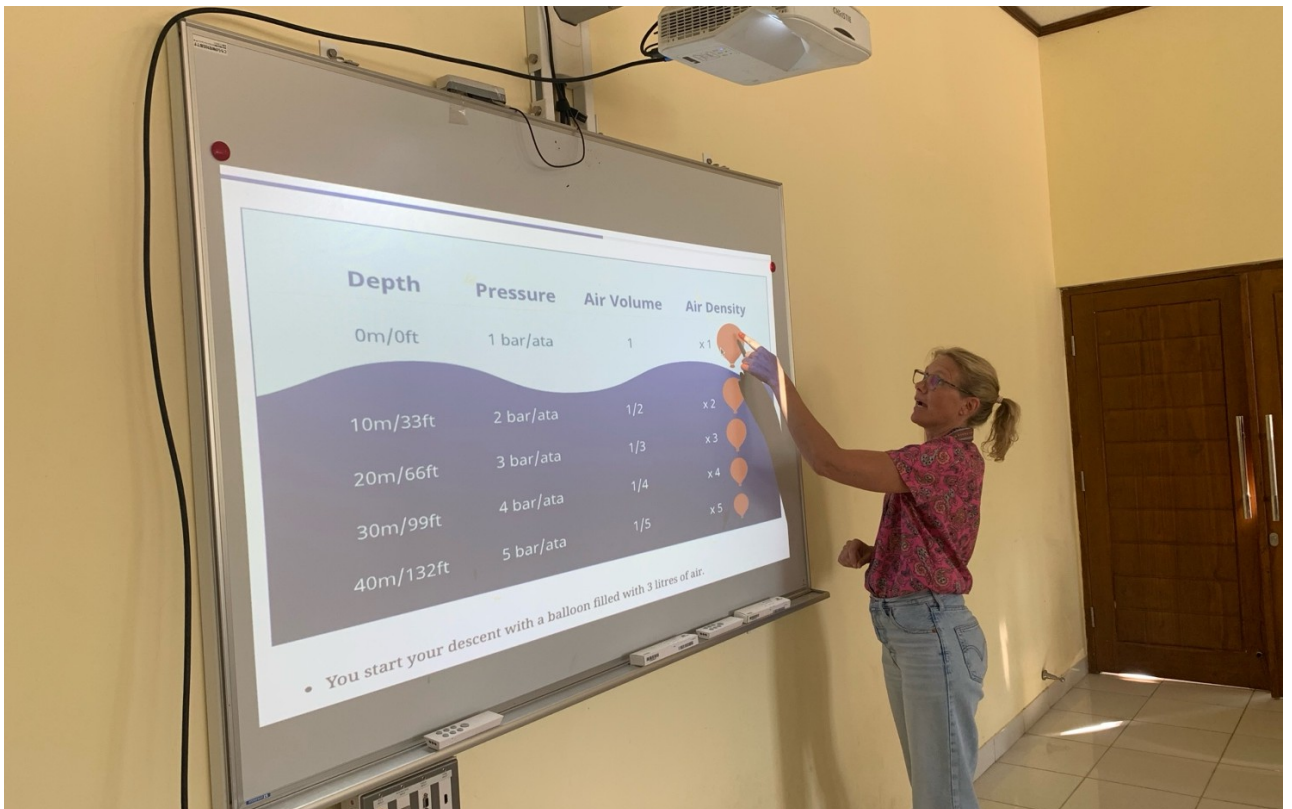


Figure 4 Lydia Van Vlymen explains material related to depth, density and pressure during dives



Picture 5 The diving instructor is putting on the SCUBA (Self Contained Underwater Breathing Apparatus) Gear



Figure 6 Open Water Diving Trainees being introduced to SCUBA Gear



Figure 7 Trainees setting up SCUBA Gear for the first time.



Figure 8 Trainees diving around Waecicu Beach



Figure 9 Training Participants setting SCUBA Gear before diving in open water



Figure 10 Participants perform emergency stop technique at a depth of 5 meters



Figure 11 Participants at a depth of 12.5 meters



Figure 12 Participants reach a depth of 17.8 meters