



**World Underwater Federation America Colombian Federation  
of Underwater Activities  
International Scientific Diving Course  
CMAS Zona America ( FEDECAS ) .**

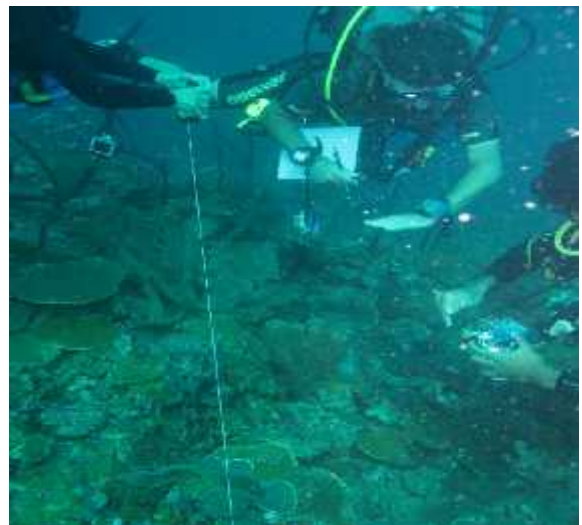
With the participation of professionals and researchers from Mexico , Peru , Portugal , Venezuela and Colombia , the Latin - CMAS FEDECAS Zone , International Scientific Diving Course was developed in the cultural and tourist district of Cartagena de Indias , renowned for its reef development and the black history in all ships wrecked in times of pirates.

The course was held from 22 to 27 November 2015 with an intensity of 50 hours, in Baru area near Cartagena de Indias. Area with beautiful white sand beaches , clear water, surrounded by mangrove pipes and multicolored coral . Where the underwater beauty of the Colombian Caribbean is explored .

It was under the supervision of the CISD Ma Clotilde Zeckua Ramos director of FMAS scientific committee and CMAS zone Latin and address of the ISD Luis Fernando Barrios director of the scientific committee of the Colombian Federation of Underwater Activities - . FEDECAS , who coordinated the opening of the course giving participants an overview of the course and practical work to develop in the week of the event using different methodologies for scientific research

During the development of the course were presented by special guests and aspiring to the different degrees of qualification in scientific diving , lectures in the area of Biology, security, emergency and development technology applied to scientific diving

Workout began with a presentation on the CMAS and scientific diving grades by the Biol. Zeckua Clotilde Maria Ramos, Director





of the Scientific Committee CMAS America. Subsequently the topics were: "Benthic Species Population Studies Economic and Ecological Importance on the use of different algae and their ecological and economic use, sampling" by Ms C. Cesar Omar Pacherras, Marine Biologist and professor Marine Biology career Scientific University of the South in Lima; "Technology applied to scientific Scuba diving (equipment use rebreathers) and the technological development of diving equipment is used to cause less impact on research in scientific diving" by Julio Cesar Salvatori PCD equipment instructor Hollis rebreathers. "Risk Analysis Working Environments Scientific Diving on how to develop and design the security parameters according to the analysis in scientific activities" by ISD Paulo Jorge Cruz da Costa Silva tec. NASAL Geology - Universidade dos Açores; "Underwater sampling techniques, such as different sampling techniques are used in scientific research of the seas" to Thistle Ms C. Aldo Gonzalo Mejia Indacochea Marine Biologist and professor of Marine Biology career Scientific University of the South; "The importance of logistics training in scientific diving exits, planning, analysis and logistics needs for marine research organization" by Luis Guillermo Vasquez Ruestas ICM3 three stars Instructor career of Marine Biology Scientific University South. "Emergency Management and Assistance in case of accident in scientific expeditions as scientists should be prepared in basic care in case of accident in a scientific expedition" by Luis Fernando Barrios ISD Biologist,three stars Instructor specialist in aquatic emergencies.

The course was provided additional topics adding more experience and training to the participants : as " use of hyperbaric chambers in scientific diving work " and handling of diving equipment Reabrethers Explorer Hollis

The field work was directed by aspiring Instructor Confirmed Scientific Diving Luis Fernando Barrios and Paulo Jorge Cruz da Costa Silva , developed based on the topics of the lectures , performing operational planning with the allocation of working groups, areas diving, preparation of equipment and safety procedures for carrying out the corresponding practices





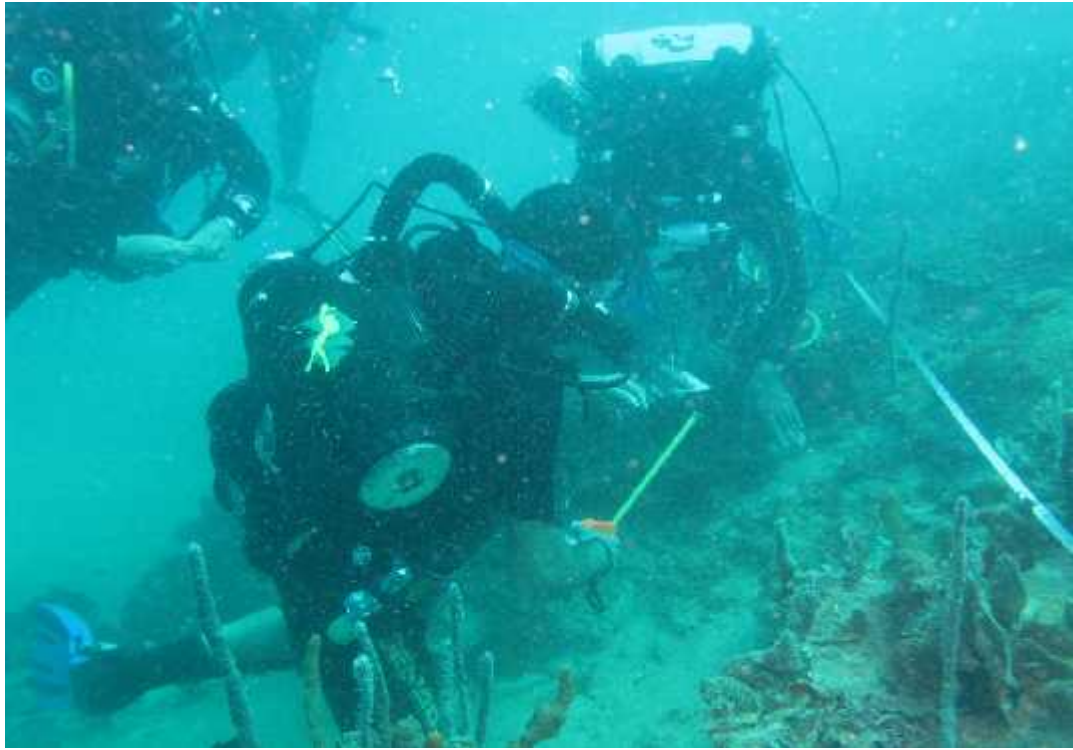
on land and subsequently in the underwater environment to conclude the processing of the data.

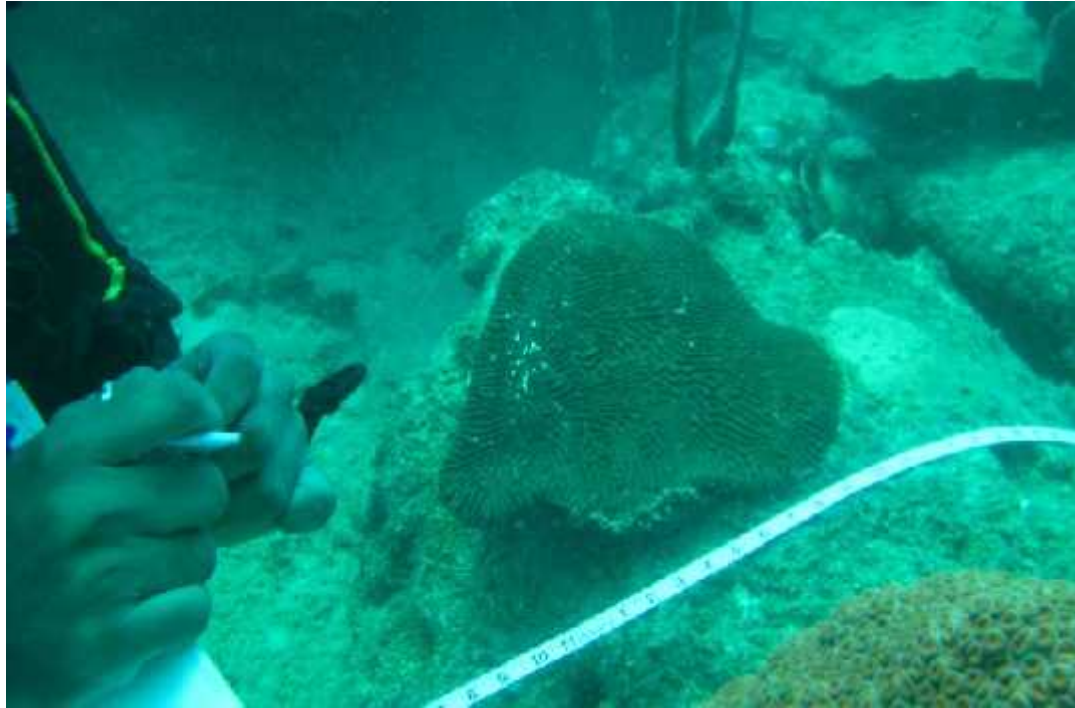






















Applicants participating countries obtained the following grades:

	<b>NOMBRE- NAME</b>	<b>PAÍS- COUNTRY</b>	<b>GRADO OBTENIDO- DEGREE OBTAINED</b>
1	CESAR OMAR PACHERRES	PERÚ	BUCEADOR CIENTIFICO- SCIENTIFIC DIVER
2	ALDO GONZALO INDACOCHEA MEJIA	PERÚ	BUCEADOR CIENTIFICO- SCIENTIFIC DIVER
3	LUIS GUILLERMO VASQUEZ RUESTAS	PERÚ	INSTRUTOR DE BUCEO CIENTIFICO- INSTRUCTOR SCIENTIFIC DIVER
4	PAULO JORGE CRUZ DA COSTA SILVA	PORTUGAL	INSTRUTOR DE BUCEO CIENTIFICO CONFIRMADO – CONFIRMED INSTRUCTOR SCIENTIFIC DIVER
5	LUIS FERNANDO BARRIOS HERNANDEZ	COLOMBIA	INSTRUTOR DE BUCEO CIENTIFICO CONFIRMADO – CONFIRMED INSTRUCTOR SCIENTIFIC DIVER
6	JULIO CESAR SALVATORI FOIS	VENEZUELA	ASISTENTE PONENTE- ASSISTANT SPEAKER



The work that scientists conduct more professional in the underwater world , to better develop its scientific management has led many governments and citizens aware of the value and importance of knowledge of the underwater world , so working together with the World Confederation Underwater and its affiliated federations, ensure sure to be a topic of global knowledge , biological and cultural resources that keep our oceans and all divers supported by scientists .

Report prepared by:

**SDI Luis Fernando Barrios H.**  
**Director Comité**

**SDI Paulo Jorge Da Costa Silva**