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Centro de Ecología, Pesquerías y Oceanografía del Golfo de México (EPOMEX) Universidad Autónoma de Campeche, Mexico

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INTRODUCTION

The Ecology, Fisheries, and Oceanography Program in the Gulf of Mexico (EPOMEX) was conceived as a strategy to strengthen higher education in the Gulf of Mexico region through support of scientific research, the development of human resources, and the improvement of existing scientific infrastructure. From the program's creation in 1990 to its change into a permanent center in 1997, the purpose has been to develop a professional response to regional programs. The initiation of this program in the southern Gulf of Mexico was based on the great industrial and scientific importance of the area, as well as its importance to the socioeconomic development of Mexico.

Since 1990, the Universidad Autónoma de Campeche (UAC) has promoted the development of highly qualified researchers and workers as well as research on priority issues regarding the evaluation and protection of coastal ecosystems and their renewable resources. With support from the Board of Education through the Undersecretary of Scientific Research and Higher Education, on 26 July 1990, the UAC announced the creation of the Program of Ecology, Fisheries, and Oceanography of the Gulf of Mexico (EPOMEX is the acronym in Spanish (Fig. 1).

The EPOMEX Program during its first 5 years of existence proved to be a creative academic instrument, contributing to the solution of different needs and requirements of the region, from a scientific and technological point of view. Owing to the transcendent work undertaken by the EPOMEX Program, the Honorable University Council approved a new organic structure recognizing the academic potential of its staff, elevating the program to the category of center on 14 June 1996, thus making its academic activities within the university permanent. As of 2008 EPOMEX has been recognized as a Consolidated Academic Group by the Board of Education within its program PROMEP (Spanish acronym for "Program for Improving Professorship").

GOALS

1. Our goals are to obtain scientific answers for priority problems in the following areas:
 - **Coastal ecosystem management:** We will study and address issues in ecology, conservation, and restoration of coastal wetlands; integrated management of the coastal zone; marine and coastal policy; management and conservation of natural protected coastal areas; water quality monitoring; and determination of the environmental quality of sediments.
 - **Tropical fish resources:** We will research and address issues in population dynamics and coastal resource evaluation, community ecology, ichthyology, environmental processes that regulate the distribution and abundance of biotic resources on coastal zones, base line studies to manage biotic resources of commercial importance in coastal zones (Fig. 2).
 - **Pollution and environmental impact:** We will carry out programs and address issues in ecotoxicology, environmental monitoring, non-point sources of pollution, environmental problems caused by changes in land use, geographic information system (GIS) and remote sensing applied to environmental diagnosis.
 - **Aquaculture:** We will study and address issues in pathobiology of aquatic organisms, aquatic health, identification and use of probiotics in aquaculture, alternative sources of protein, and estimation of potential aquacultural sites through GIS (Fig. 3).
 - **Coastal processes:** We will research and address issues in coastal landscape ecology, natural risk zoning, coastal zone environmental vulnerability, numeric models applied to the coastal zone, littoral dynamic studies.
2. We will create highly qualified professionals on integrated coastal management of seas and coasts through the Integrated Management of Coastal and Marine Zones master's program; an integrative, multidisciplinary and flexible program that trains students in how to address coastal and marine problems with efficiency and within a sustainable framework (Fig. 4).
3. We will publish and make available the results of scientific research and the academic

TABLE 1. List of acronyms.

Acronym	Spanish	English
CETYS	Centro de Enseñanza Técnica y Superior	Center of Higher and Technical Education
CFE	Comision Federal de Electricidad	Federal Electric Commission
CICESE	Centro de Investigación Científica y de Educación Superior de Ensenada	Center for Scientific Research and Higher Education of Ensenada, B.C.
CICIMAR	Centro Interdisciplinario de Ciencias del Mar	Interdisciplinary Center in Marine Sciences
CINVESTAV	Centro de Investigación y de Estudios Avanzados del IPN	Center for Research and Advanced Studies of the National Polytechnic Institute
COI-UNESCO	Comisión Oceanográfica Intergubernamental—UNESCO	Intergovernmental Oceanographic Commission—United Nations Educational, Scientific, and Cultural Organization
CONABIO	Consejo Nacional de Biodiversidad	National Biodiversity Council
CONAGUA	Comision Nacional del Agua	National Water Commission
CONANP	Comision Nacional de Areas Naturales Protegidas	National Natural Protected Areas Commission
COP15		United Nations Climate Change Conference – 15 th Conference of the Parties, Copenhagen, Denmark
COP16		United Nations Framework Convention on Climate Change – 16 th Conference of the Parties, Cancun, Mexico
FURG	Universidade Federal do Rio Grande, Brazil	Federal University of Rio Grande, Brazil
IPN	Instituto Politecnico Nacional	National Polytechnic Institute
PEMEX	Petroleos Mexicanos	Mexican Petroleum
PNUMA	Programa de Naciones Unidas para el Medio Ambiente	United Nations Environment Program
PROFEPA	Procuraduria Federal de Proteccion al Ambiente	Federal Environmental Protection Agency
PRONATURA	PRONATURA	PRONATURE
RSMAS	Escuela Rosenstiel de Ciencias Marinas y Atmosféricas	Rosenstiel School of Marine and Atmospheric Science
SAGARPA	Secretaria de Agricultura, Ganaderia y Recursos Pesqueros	Ministry of Agriculture, Cattle, and Fishery Resources
SCT	Secretaria de Comunicaciones y Transporte	Ministry of Transportation and Communications
SEMARNAT	Secretaria de Medio Ambiente y Recursos Naturales	Ministry of Environment and Natural Resources
SEPESCA	Secretaria de Pesca del Estado de Campeche	Campeche State Ministry of Fisheries
TNC	The Nature Conservancy	The Nature Conservancy
UABC	Universidad Autonoma de Baja California	Autonomous University of Baja California
UADY	Universidad Autonoma de Yucatan	Autonomous University of Yucatan
UAM	Universidad Autónoma Metropolitana	
UAT	Universidad Autonoma de Tamaulipas	Autonomous University of Tamaulipas
UBC	Universidad de Baja California	University of Baja California
UJAT	Universidad Juarez Autonoma de Tabasco	Autonomous University Juarez of Tabasco
UNACAR	Universidad Autónoma del Carmen	
UNAM	Universidad Nacional Autonoma de Mexico	Autonomous National University of Mexico
UNICARIBE	Universidad del Caribe	
UQROO	Universidad de Quintana Roo	University of Quintana Roo
UV	Universidad Veracruzana	University of Veracruz

Fig. 1. In 2010 EPOMEX celebrated its twentieth anniversary.

activities of EPOMEX through newsletters, magazines, books, and electronic means, reaching out to the scientific community, decision makers, the public, and stakeholders interested in coastal and marine affairs.

4. EPOMEX maintains active contact with different sectors and stakeholders involved with coastal and marine fields. Some of them are listed here (see Table 1 for list of acronyms):

- **Federal:** EPOMEX maintains contact with SEMARNAT, SAGARPA, SCT, CONABIO, CONANP, PEMEX, CFE, PROFEPA, CONAGUA, and SEPESCA.
- **State:** EPOMEX maintains contact with the government of the State of Campeche, Campeche County, Carmen County, Champoton County, and Palizada County.
- **Academic National:** EPOMEX maintains contact with UNAM, CINVESTAV-Unidad

Fig. 2. Researchers and graduate students working with fishermen in Campeche Bay.

Fig. 3. Marine aquaculture, a topic of research at EPOMEX.

Mérida, UAM, Colegio de la Frontera Sur, UADY, UQROO, UNACAR, UNICARIBE, UV, UJAT, CICESE, CICIMAR, UABC, CETYS-Universidad, UAT, IPN, and Universidad Marista de Yucatán.

- **Academic international:** EPOMEX maintains contact with the University of Delaware, RSMAS—University of Miami, University of Calgary, Laval University—Quebec, BCU, Universidad de Cadiz, Uni-

Fig. 4. Undergraduate students working with field trip samples in one of the labs at EPOMEX.

versidad de Sevilla, Universidad de Montpellier-Francia, FURG-Brasil, and Universidad de Aveiro-Portugal.

- **Others:** EPOMEX maintains contact with Pronatura-PY, PNUMA, TNC, Inter American Development Bank, World Bank, COI-UNESCO, Global Forum on Oceans, Coasts, Islands, Coastal Integrated Management National Web.
5. EPOMEX is the academic leader of the Mexican Network of Coastal Management, Coastal Protected Areas, Coastal Fisheries, and the Regional Network in Shrimp Resource Knowledge. It is also a member of the

organizing committee of the World Forum on Oceans and Coasts, a group that unites world leaders on different topics related to coasts and seas and attended the Sustainable Development World Summit in Rio (1992), Johannesburg (2002), and COP15 and COP16.

CENTRO EPOMEX, UNIVERSIDAD AUTÓNOMA DE CAMPECHE, AV. AUGUSTIN MELGAR Y JUAN DE LA BARRERA S/N, APARTADO POSTAL 520, C.P. 24030, CAMPECHE, CAMPECHE, MÉXICO; ¹ACTING EPOMEX DIRECTOR; ²EPOMEX PUBLISHER; ³UAC ADMINISTRATOR (COORDINADOR DE VINCULACION INTRA E INTERINSTITUCIONAL).