



The National Unit for Environmental Research and Services (NUERS)

A window to facilitate and develop scientific
environmental researches

Director: Dr. Hussain Bahbahani, Kuwait University

NUERS

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- ▶ A service unit at Kuwait University.
- ▶ Under the umbrella of both the Research sector and Faculty of science.



Goals and objectives

- ▶ Original goal
 - Assess the environmental consequences of the Iraqi invasion to Kuwait in the period between 1990 – 1991.
- ▶ Current goals
 - Mediate scientific environmental researches in Kuwait University.
 - Assess and understand the urgent environmental issues in Kuwait.
 - Help external academic organizations to develop their environmental research field



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NUERS facility

**Organic
Extraction Lab**

**Inorganic
Analyses Lab**

**Organic
Analyses Lab**

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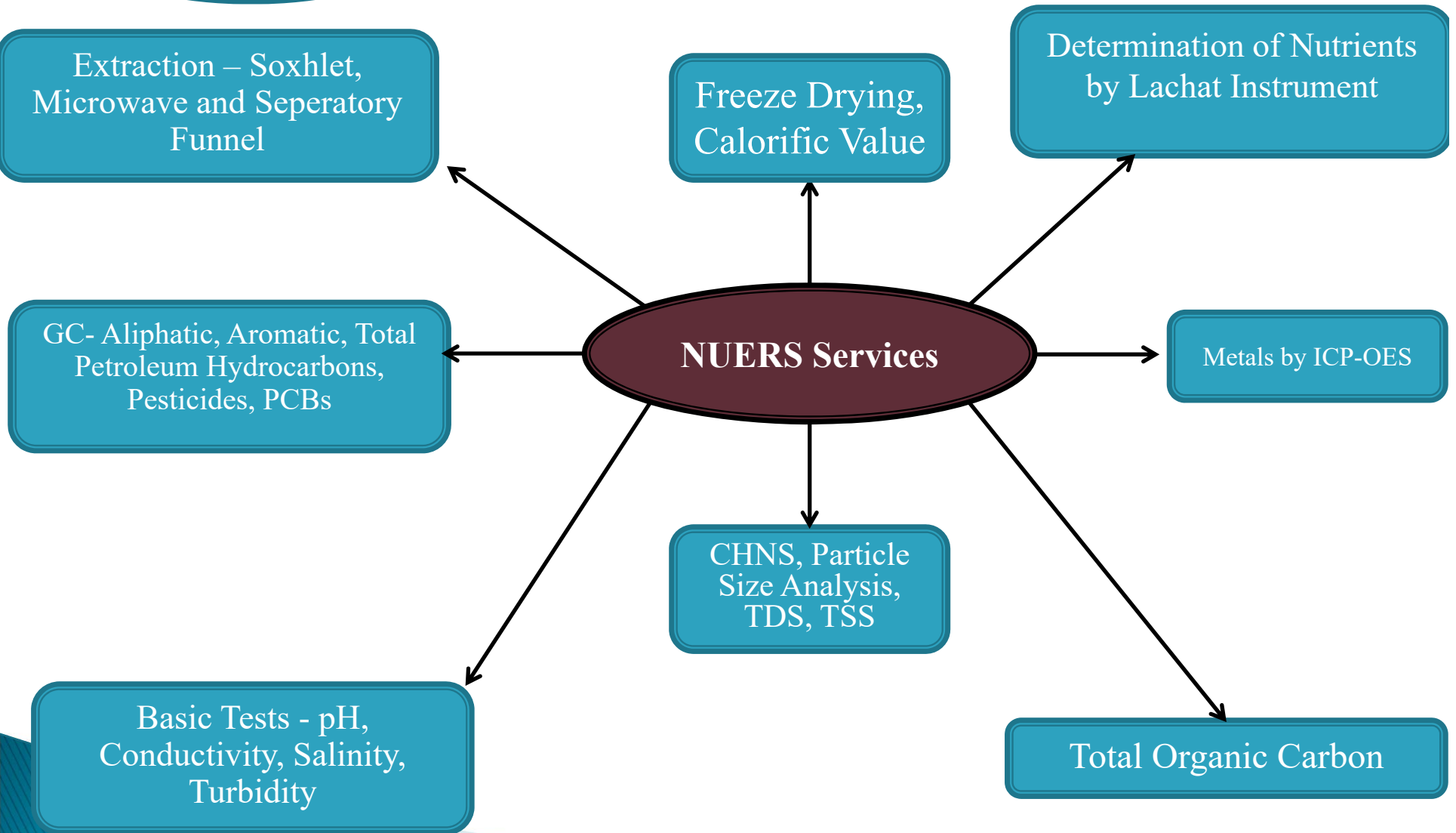
**Sample
Custody**

**Soil Analyses
Lab**



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NUERS services



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NUERS and the emerging environmental issues



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National project: Massive fish death off Kuwait Coast in 2017

Sea Water Characterization;
pH, Conductivity, Salinity,
Metals

Fish Dissected – Analyzed
Metal contents, TPH

Soil / Sediment
Metals, TPH





Oil uptake by plant-based sorbents and its biodegradation by their naturally associated microorganisms[☆]



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Scientific environmental researches at Kuwait University



ORIGINAL RESEARCH
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Signatures of Selection for Environmental Adaptation and Zebu × Taurine Hybrid Fitness in East African Shorthorn Zebu

Hussain Bahbahani^{1*}, Abdulfatai Tijani^{2,3}, Christopher Mukasa⁴, David Wragg⁵, Faisal Almathen⁶, Oyekanmi Nash³, Gerald N. Akpa⁷, Mary Mbole-Kariuki², Sunir Malla⁸, Mark Woolhouse⁹, Tad Sonstegard¹⁰, Curtis Van Tassell¹¹, Martin Blythe⁹, Heather Huson¹¹ and Olivier Hanotte^{2,12}



Oil uptake by plant based sorbents

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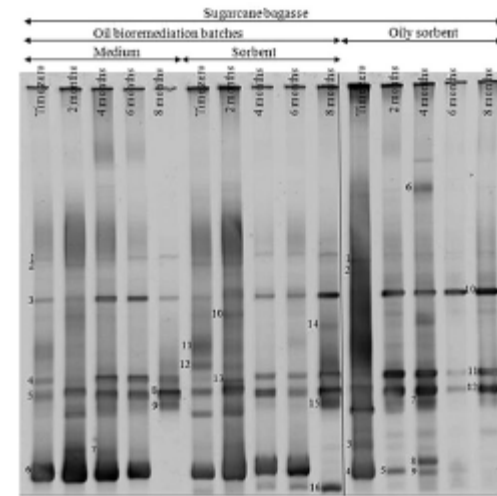


Oil uptake by plant-based sorbents and its biodegradation by their naturally associated microorganisms[☆]



Narjes Dashti, Nedaa Ali, Majida Khanafer, Samir S. Radwan*

Microbiology Program, Department of Biological Sciences, Faculty of Science, Kuwait University, P.O.Box 5969, Safat 13060, Kuwait



- Objectives:** Assess the ability of plant-waste products to remediate and biodegrade spilled oil using their microbial communities.

- Funding body:** Kuwait University, Research sector



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Bivalves of Kuwait

Project title: The Biology of Marine Bivalves and their Environment in Kuwait, Phase I: Population Structure and Reproduction.

•**Objectives:** Bivalve bioassay for environmental toxicity monitoring.

•**Principle Investigators:** Dr. Salim Y. Al-Mohanna and Dr. Amani S. Al-Zaidan , Dept. of Biological sciences, Kuwait University.

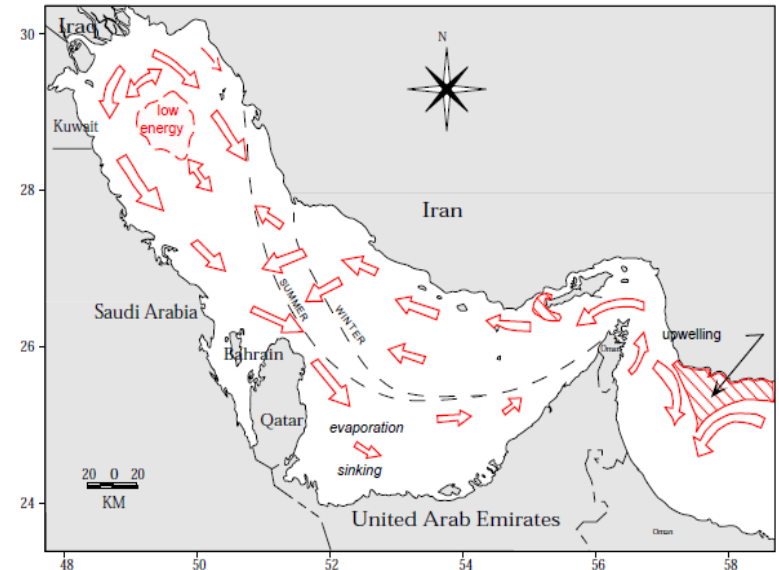
•**Funding body:** Kuwait Foundation for Advancement of Science (KFAS).



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Understanding internal waves off the Kuwait coast

- **Project title:** Internal waves climate and turbulence mixing on the continental shelf of the Northwestern Arabian Gulf, off the Kuwait coast.
- **Objectives:** Understanding the climate and dynamics of internal waves of the Northwestern Arabian Gulf.
 - quantify the IW-associated energy flux.
 - ...etc
- **Principle Investigator:** Dr. Fahad Al-Senafi, Dept. of marine sciences, Kuwait University.
- **Collaborator:** Texas A&M University, USA.
- **Funding body:** Kuwait Foundation for Advancement of Science (KFAS).





Genomic control of livestock adaptation to the African environment



Signatures of Selection for Environmental Adaptation and Zebu × Taurine Hybrid Fitness in East African Shorthorn Zebu

Hussain Bahbahani^{1*}, Abdulfatai Tijjani^{2,3}, Christopher Mukasa⁴, David Wragg⁵, Faisal Almuthen⁶, Oyekanmi Nash³, Gerald N. Akpa⁷, Mary Mbole-Kariuki², Sunir Malla⁸, Mark Woolhouse⁹, Tad Sonstegard¹⁰, Curtis Van Tassel¹¹, Martin Blythe⁸, Heather Huson¹¹ and Olivier Hanotte^{2,12}



- **Objectives:** Determine candidate genomic regions and variants associated with the adaptation of African cattle to the local African environment.
- **Principle Investigator:** Dr. Hussain Bahbahani, Dept. of biological sciences, Kuwait University.
- **Collaborator:** Uni. Of Nottingham (UK) and International Livestock Research Institute (ILRI), Kenya.
- **Funding body:** Kuwait University and the Wellcome Trust (UK).

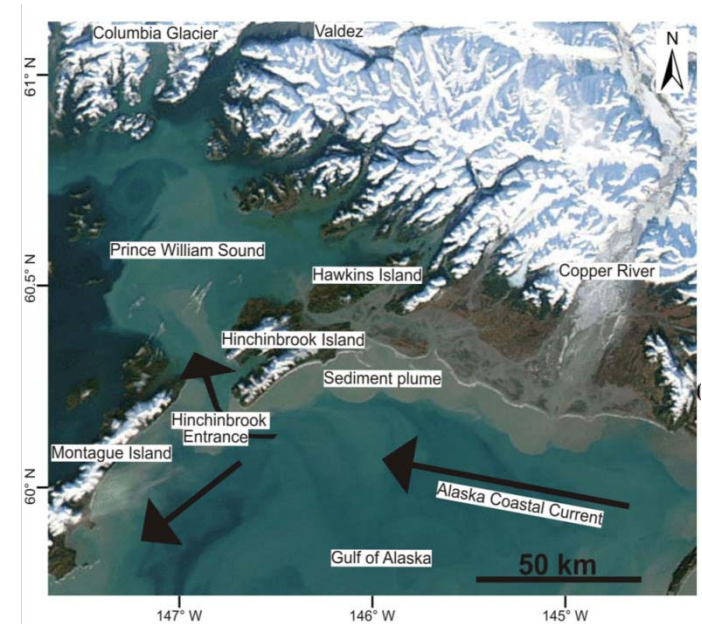


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Sediments Geochemistry in Alaska

Project title: Geochemical Characterization of Prince William Sound and Copper River Sediments: A Proxy Development to Assess Climate-Driven Variations in a High Resolution Sedimentary Record

- **Objectives:** Understanding the effect of climate variation and the associated contamination on the sedimentary record to help in developing future decisions and regulations.
- **Principle Investigator:** Dr. Joshua R. Williams, Virginia Institute of Marine Science.
- **Collaborator:** Dr. Mohammad Al Mukaimi, Dept. of marine science, Kuwait University
- **Funding body:** National Science Foundation, USA





KUWAIT UNIVERSITY - RESEARCH SECTOR

NATIONAL UNIT FOR ENVIRONMENTAL RESEARCH AND SERVICES

SRUL01/13

Specialized Research Unit Laboratory

NUERS

HOME

ORGANIZATION

DIRECTORS

TEAM MEMBERS

FACILITY

SERVICES

REQUEST FROM

QUALITY CONTROL

PUBLICATIONS

ANNUAL PERFORMANCE

GALLERY

HISTORY

CONTACT US



The National Unit for Environmental Research and Services (NUERS) is a research and services facility under the management of Kuwait University Research Sector. The unit is housed on the second floor of the A wing of Prof. Faiza Al-Khurafi building. Being a research and services unit, NUERS offers a wide-range of analytical services in the field of environmental research to both the university researchers and external clients.

Located within a hundred to three hundred metres of all departments of the Faculty of Science, NUERS is poised to serve the University's research community effectively. As part of NUERS' mandate, the unit actively encourages graduate students and their supervisors to avail themselves of the analytical facilities provided in NUERS for research.

The procedures adopted for analyses of samples in NUERS are according to the approved International Standard Methods (USEPA, MOOPAM, ASTM), consistent with the practices as previously carried out by the previous ISO-certified management (CEL). The unit operates with a core of experienced and competent staff. Presently, NUERS is vigorously pursuing the re-certification of the laboratory for the ISO-17025; a process that is at an advanced stage.

Website: <http://nuers.ku.edu.kw/>

Kuwait Foundation for the Advancement of Sciences (KFAS)



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Thanks for your attention

