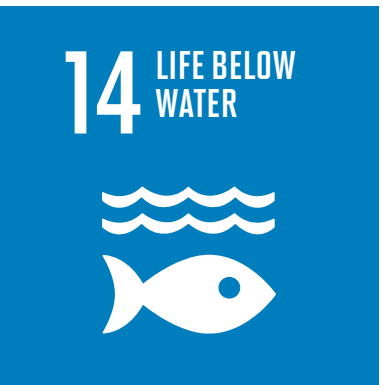
SUSTAINABLE DEVELOPMENT GOALS

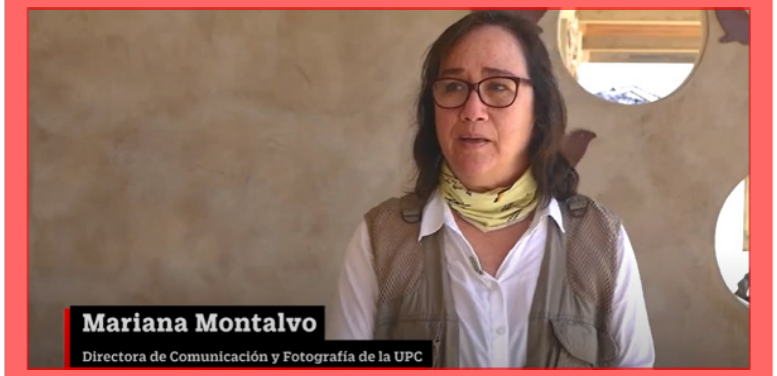


Agreement with SERNAMP and Paracas National Reserve – Photography and Environmental Conservation Project

The direction of the Communications and Photography program led an agreement with Sernamp, which aimed to highlight the role of photography in the conservation of natural resources.

In this context, photographic sessions were held between professors, photography students, and personnel responsible for the protected natural areas of the Paracas Reserve.

Additionally, training was provided on the use of photographic equipment. The goal was to combine knowledge and raise awareness among the population through images to care for our territory and ecosystem.

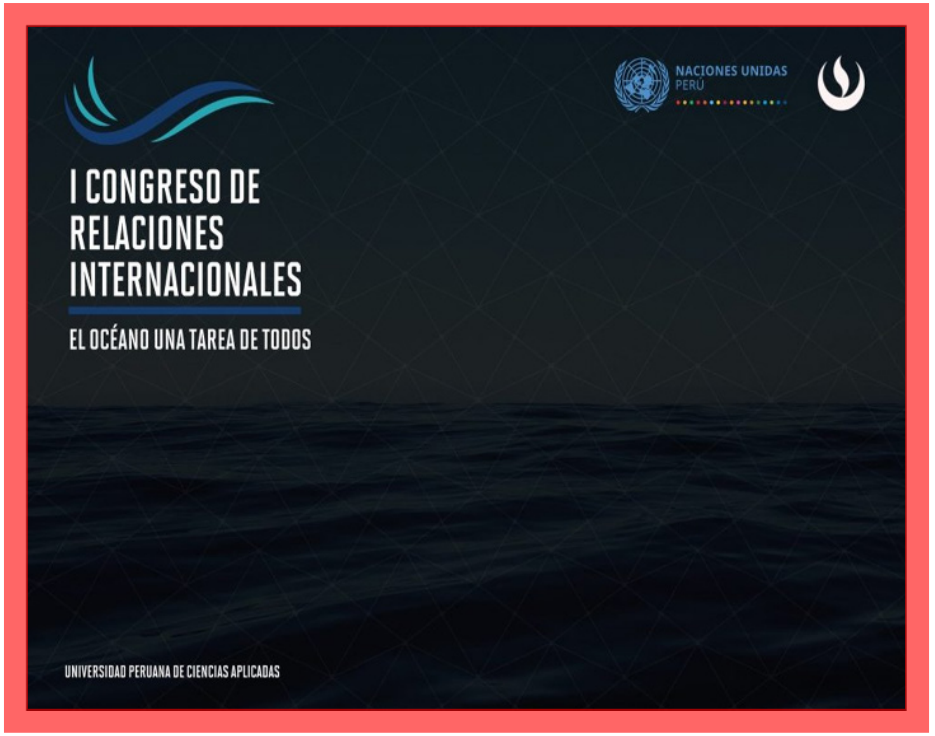


I International Relations Congress: “El océano una tarea de todos”

The International Relations program held its first congress on June 8 and 9, themed “El océano una tarea de todos” The objective was to contribute to and provoke reflection on the demands and challenges of our planet’s future through the protection of the ocean and its natural resources. This initiative aligns with the 2030 Agenda and the Sustainable Development Goals (SDGs).

The conference series featured prominent national and international speakers who provided a global perspective on the legal, political, environmental, and economic aspects surrounding the ocean and its natural resources.

Among the speakers were Doaa Abdel-Motaal, advisor at the Guarini Institute of Public Affairs in Rome; José Ramón Delgado, oceanographer, diplomat, and professor of oceanology and marine pollution; Eduardo Marone, coordinator of the National Manatee Conservation Program on the Brazilian coast; Sajal Matur from India, advisor of the Trade and Environment Division; and Nicolás Roncagliolo Higueras, Peruvian ambassador in the diplomatic service.



UPC participates in Beach Cleanup Organized by Conservation International Peru, Coca Cola Foundation, and LOOP

Students from the Environmental Engineering program at UPC took part in a beach cleanup organized by Conservation International Peru, Coca Cola Foundation, and LOOP.

This activity took place on October 15th, 2022, at San Pedro de Lurín beach and aimed at caring for and preserving the environment. A total of 72 volunteers participated, with 30 of them being UPC students.

They collected 305.8 kg of waste, of which 42.5 kg were recyclables and 263.8 kg were non-recyclables. The top 5 most found items were:

- Plastic bags: 671
- Disposable utensils and plates: 165
- Microplastics: 151 (small pieces)
- Plastic wrappings: 133
- Plastic caps: 124

UPC reaffirms its commitment to environmental conservation and will continue to seek spaces to engage its students in preserving the planet.

https://noticias.upc.edu.pe/2022/12/07/upc-limpieza-playa-organizado-por-conservacion-internacional-peru-fundacion-coca-cola-y-loop/

Beyond the Wound and Oblivion: The Voz Memoriosa and Its Narrative in Two Radio Ucamara Documentaries

Authors: Mauricio Rodriguez; Franco Pastor; Willy Ugarte

Abstract: La presente investigación analiza desde un enfoque interdisciplinario la narrativa de Radio Ucamara para visibilizar las consecuencias materiales y espirituales del derrame de crudo de petróleo más grande de la primera década de los 2000 en el Perú. Para ello, analizo dos documentales: Consuelen a mi pueblo. Cuninico, dos años después (14' 37") y Daños a la espiritualidad kukama (11' 40"). Estos muestran sus formas de resistir y denunciar a partir de lo que llamamos una voz memoriosa. Esta metáfora conceptual se caracteriza por intersecar prácticas sociales propias (cantos, icaros e historias) con narrativas oficiales (la cronología del derrame, la contabilización de los daños materiales, extractos de juicios). De ese modo, su forma de presentar las consecuencias del derrame y de representarse frente a ellas no solo es intercultural, sino que es altamente metafórica. Se optó por aplicar un enfoque cualitativo sostenido en diez entrevistas extensas, a profundidad y semiestructuradas vía telefónica y a través de mensajería instantánea con Leonardo Tello, director de Radio Ucamara, desde mayo del año 2020 hasta junio de 2021.

Los análisis y concepto teórico hechos permiten entender que los documentales forman parte de las prácticas sociales del territorio en tanto envuelven a los miembros de la comunidad y a las subjetividades no humanas con quienes se

Beyond the Wound and Oblivion: The Voz Memoriosa and Its Narrative in Two Radio Ucamara Documentaries

relacionan. Así las cosas, ellos, desde sus propios términos, logran entramar las perspectivas occidentales de recuerdo lineal (causa-consecuencia), con su recuerdo polifónico de estética orgánica. El concepto propuesto permite ampliar el uso y la forma de entender la estética orgánica de Ginsburg. Asimismo, el estudio propone un análisis de la forma en la que los afectados narran las consecuencias que la contaminación ambiental trae directamente a su espiritualidad.

Keywords: Amazonía, derrames de petróleo, kukama, memoria, Radio Ucamara, voz memoriosa

Antipoda, 2022; Volume 2022, pages 99-122

https://doi.org/10.7440/antipoda46.2022.05

A model and simulation of an electrodialysis cell for seawater desalination

Authors: Collado, C., Quispe, J., Vinces, L., Oliden, J.

Abstract: The shortage of drinking water in the northern coast of Peru is a major problem due to the occurrence of natural phenomena, since they contaminate the available fresh water sources and lead to the clogging of the distribution networks, exposing the surrounding people to a state of water shortage. In this work we propose the development of a seawater desalination system by electrodialysis, this technique is based on the transport of ions present in the diluted salts through selective membranes under the influence of an electric field. The simulation and mathematical modeling of the process will allow predicting the behavior of the system, calculating the time necessary for the required desalination and obtaining the electrical energy consumption of the system. The results obtained recorded the desalination of a solution with a value of 36,500.00 ppm of diluted salts, up to 145.37 ppm. Being the solute NaCl the main one extracted, obtaining a total concentration of 54.00 ppm of Na and 83.83 ppm of Cl, values which are within the legal limits of drinking water.

Keywords: Electrodialysis; freshwater recovery; ion exchange technology; model; seawater desalination
2022 Congreso Internacional de Innovación y Tendencias en Ingeniería, CONIITI 2022

https://doi.org/10.1109/CONIITI57704.2022.9953690

Concentration of fecal coliforms in marine waters using satellite images in the vicinity of Pucusana Bay, Peru

Authors: Palma-Gongora, Y.-A., Zuta-Medina, F.-V., Gomez-Cunya, L.-A.

Abstract: Water quality monitoring in coastal areas is challenging due to cost and time constraints. Identifying and selecting sampling sites accurately and effectively is crucial for efficient monitoring. The need for efficient monitoring of marine waters has led to exploring the use of remote sensing as one helpful alternative. Remote sensing is practical in several applications based on pattern recognition and information processing of large terrestrial and aquatic surface areas. Collected information is processed with various image processing techniques to identify objects such as microorganisms. Fecal coliforms are microorganisms that are indicators of sanitary quality and are present in human and animal wastes discharged into water bodies reaching coastal regions. The present study estimated the presence of fecal coliforms as an indicator of contamination in coastal marine waters. Satellite data from two sensors, Landsat 7 ETM+ and Landsat 8 OLI, were used to evaluate the reflectance of fecal coliforms in marine waters. Then, statistical analysis and four regression models were tested to establish a functional correlation between the spectral bands and historical in situ fecal coliform measurement. In this research, satellite imagery in the vicinity of Pucusana Bay helped estimate the concentration of fecal coliforms in marine waters. As a result, a significant relationship was found between the shortwave infrared band splitting (SWIR 2) with the blue band and fecal coliforms presence.

Concentration of fecal coliforms in marine waters using satellite images in the vicinity of Pucusana Bay, Peru

The relationship was used to estimate coliform concentration from the reflectance of the aquatic surface in Pucusana Bay. Finally, spatial distribution maps of fecal coliform concentrations were generated to compare the increase of these microorganisms over different years in the area. The methodology and results can be calibrated to other water body locations where fecal coliform is a concern.

Keywords:

IOP Conference Series: Earth and Environmental Science, Volume 1077, Issue 1, 2022

https://doi.org/10.1088/1755-1315/1077/1/012005