DIFFERENT TECHNIQUES OF UNDERWATER VISUAL CENSUSES WERE USED TO EVALUATED THE PRESENCE OF ALIEN MARINE FISHES IN THE CANARY ISLANDS (CENTRAL-EASTERN ATLANTIC) INTRODUCED THROUGH OIL RIGS

R. Triay-Portella, J. G. Pajuelo, J. A. González, J. A. Martín, R. Ruiz-Díaz, J. M. Lorenzo and A. Luque*

Instituto Universitario de Estudios Ambientales y Recursos Naturales i-UNAT, Universidad de Las Palmas de Gran Canaria, Campus de Tafira, Las Palmas de Gran Canaria, 35017 Las Palmas, Spain. [emap.raul@gmail.com], [jose.pajuelo@ulpgc.es], [pepe.solea@ulpgc.es], [jose.martingarcia@ulpgc.es], [raquel.ruiz103@alu.ulpgc.es], [josemaria.lorenzo@ulpgc.es] and [angel.luque@ulpgc.es] *

Recent investigations reveal the introduction of non-native fish species in the Canary Islands (central-eastern Atlantic) through oil rigs (ORs) [1]. These structures provide artificial substrates in places where do not exist naturally. The ORs are an important transmission vector of species [2,3]. In a previous study in Las Palmas Port area [4] eleven tropical or subtropical non-native fish species were registered, Five of them are first recorded for the Canaries: Paranthias furcifer, Abudefduf hoefleri, Acanthurus bahianus, Acanthurus chirurgus, and Acanthurus coeruleus. Other three non-indigenous fish species found were recently recorded from the Canaries: Cephalopholis taeniops, Abudefduf saxatilis, and Acanthurus monroviae. The native areas of these non-indigenous species coincide with the ORs operating areas in West Africa and South America with destination to the Port of Las Palmas. The ORs transit has increasing recently and consolidated the Port of Las Palmas. This heavy traffic is probably responsible for many of the previous fish data records that were attributed to other sources in the past ten years, and this also could be applied to other parts of the world [5]. Estimations of biomass, densities, reproduction possibilities and effects on indigenous species are needed to understand the ecological impact of these non-indigenous fishes on the local ecosystems in order to take environmental management measures. The Port of Las Palmas Foundation and researchers of University of Las Palmas de Gran Canaria, with the support of the Biodiversity Foundation of the Spanish Ministry for Agriculture, Food and the Environment, are joining efforts to measure the impact of these alien species in the marine protected areas belonging the European web Natura 2000. Application of different underwater visual census techniques and comparison between mobile transect and stationary-point-count techniques [6] are the methodologies used in this part of the study.

References

[1] Pajuelo, J. G., González, J. A., Triay-Portella R., Martín, J. A., Ruiz-Díaz, R., Lorenzo, J. M. and Luque A. (2015) Estuarine Coastal and Self Association, Submitted
[2] Yeo, D. C., Ahyong, S. T., Lodge, D. M., Ng, P. K., Naruse, T., & Lane, D. J. (2009)

Biofouling, 26(2), 179-186.
[3] Friedlander, A.M., Ballesteros, E., Fay M. and Sala, E. (2014) PLoS One, 9: e103709.
[4] Triay-Portella, R., Pajuelo J. G., Manent, P., Espino, F., Ruiz-Díaz, R., Lorezo, J. M., and González, J. A. (2015) Cybium, 39(3), 163-174.

[5] Freitas, R., Luiz, O.J., Silva, P.N., Floeter, S.R., Bernardi, G. and Ferreira, C.E.L. (2014) Marine Biodiversity, **44:** 173–179.

[6] Ward-Paige, C., Flemming, J. M. and Lotze, H. K. (2010) PLoS One, 5(7), e11722.