

## **Physical Habitat Simulation and Comparison within a Lerma River Reach, with Respect to the Same but Modified Reach, to Create a Linear Park**

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**Abstract :** In this work, the *Ictalurus punctatus* species estimated available physical habitat is compared with the estimated physical habitat for the same but modified river reach, with the aim of creating a linear park, along a length of 5 500 m. To determine the effect of ecological park construction, on physical habitat of the Lerma river stretch of study, first, the available habitat for the *Ictalurus punctatus* species was estimated through the simulation of the physical habitat, by using surveying, hydraulics, and habitat information gotten at the river reach in its actual situation. Second, it was estimated the available habitat for the above species, upon the simulation of the physical habitat through the proposed modification for the ecological park creation. Third, it is presented a comparison between both scenarios in terms of available habitat estimated for *Ictalurus punctatus* species, concluding that in cases of adult and spawning life stages, changes in the channel to create an ecological park would produce a considerable loss of potentially usable habitat (PUH), while in the case of the juvenile life stage PUH remains virtually unchanged, and in the case of life stage fry the PUH would increase due to the presence of velocities and depths of lesser magnitude, due to the presence of minor flow rates and lower volume of the wet channel. It is expected that habitat modification for linear park construction may produce the lack of *Ictalurus punctatus* species conservation at the river reach of the study.

**Keywords :** Habitat modification, *Ictalurus punctatus*, Lerma, river, linear park

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