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Trophic ecology of pike perch (*Sander lucioperca* Linnaeus, 1758) as revealed stable carbon and stable isotope ($\delta^{13}C$ and $\delta^{15}N$) in Lake Eğirdir (TURKEY)

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Aim of the study: The impact of introduced piscivores on local fish population is continuously taken attraction from all over the world. In this study we performed a stable isotope study in Lake Eğirdir, Turkey, in order to understand the role of pike perch (*Sander lucioperca*) in food web structure of the lake. The perch was introduced in the lake almost fifty years ago, which has caused serious ecological changes in the food webs.

Material and Methods: We collected the perch and other fish species at four sites during spring and fall of 2010. The contribution of prey items to the tissue of pike perch was analyzed with SIAR mixing model.

Results: The carbon (-17.69 ± 0.54) and nitrogen (13.61 ± 0.66) signatures of the perch (34.91 ± 8.69 cm, 459.03± 325.91 g) did not change much over the entire lake and season. The pike perch, as expected, occupied the top of the food webs with trophic level of 4.03 (mean of 3.89 ± 0.13). The contribution of freshwater lobster and crabs was substantially higher (0.11-0.60 min-max, 0.60 mean) than that of fishes (0.00-0.33 min-max, 0.33 mean) during spring, whereas the contribution of fishes was higher (0.08-0.61 min-max, mean 0.35) during fall. Among the fishes, contribution of *Carassius gibelio, Pseuodophoxinus egridiri, Capoeta pestai* and *Gambusia holbrooki* contribution was relatively higher than those of other fishes. Aggregating stable isotope data over seasons and sampling sites indicated, however, that contribution of fishes was relatively higher (mean 0.67). Among the fishes *Gambusia holbrooki* and *Cyprinus carpio* contribution was higher. The results of this stable isotope study had contrary results of those obtained for gut contents analysis in the lake, which indicated that perch preyed on mostly *Atherina boyeri* and *Knipowitschia caucasica*. This stable isotope study showed that the perch had a great impact of all the fish species of the lake.

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