

عنوان مقاله:

Application of microsatellite markers to determine populations of the Persian sturgeon (*Acipenser persicus*) in the South Caspian Sea

محل انتشار:

مجله بیوسیستماتیک حیوانات, دوره 6, شماره 2 (سال: 1389)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

The population genetic structure of the Persian sturgeon (*Acipenser persicus*) in the Sefidrud and Gorganrud River watersheds was analyzed based on the characterization of microsatellite markers. One hundred fin clip samples of Persian sturgeon from the two regions were collected. Four microsatellite loci (Ls68, Spl168, Spl173, and Afu68) were analyzed for molecular characterization, resulting in polymorphic patterns. DNA bands were analyzed using Biocapt and GenAlex software packages. In total, 109 alleles were observed. The maximum number of alleles (17) was found in locus Spl168 in sturgeon from the Sefidrud watershed and the minimum number of alleles (10) in locus Ls68 in sturgeon from the Gorganrud watershed. No significant differences between samples of the two regions, either in average number of alleles per locus or in heterozygosities, were observed ($P > 0.05$). However, based on AMOVA, the calculated F_{st} (0.07) and R_{st} (0.17) between the two regions were significantly different ($P < 0.01$), showing that the two populations differ genetically. Spl173, Afu68, and Spl168 loci in samples from the Sefidrud watershed and Afu68 and Spl168 loci in samples from the Gorganrud watershed demonstrated Hardy-Weinberg equilibrium. The genetic distance between samples of the two areas was 0.4, which represents a significant difference. We conclude that the Persian sturgeon of two regions of the southern Caspian Sea are genetically differentiated and therefore fisheries management of this unique stock for restocking and conservation of gene pools is strongly recommended.

کلمات کلیدی:

Persian sturgeon, *Acipenser persicus*, Caspian Sea, Microsatellite, Genetic structure, Population genetics

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