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سازمان بنادر و دریانوردی



The effects of sefidrod dam on the environment

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Abstract:

Sefidrod is one of the important rivers in the south of Caspian Sea, which has a favorite amount thirty percent of charge to the southern part the Caspian Sea.

Not very long ago, the river was the main center for the migration and the breeding of the caviar fish (Acipen seridae). And since 1962 after building of the reservoir dam and other dams (Tarick and Sangar), the migration and habitat of fish came under stress.

Also accumulation of sediment has added to the already stressed environment.

Since 1980 the chasse operation by opening the dam's gates every year and about 40 millions ton of accumulated sediments in dam's lake is conduct to the river and increases the total solid sediment (TSS) of the river.

This would kill about 1 million fish, and change the phenomena of the ecological river.

To assess the effects of sediment load and it's indirect effects on environmental factors and biota, 6 station were selected and sampling was conducted at 9 times in four season.

The parameters for study were total solid sediment (TSS), turbidity, dissolved oxygen (DO), PH and water temperature.

Also the effects of sediment load on biota were assess insitu and invirto. The results had shown that after opening the gates, TSS would raised up to 200,000 mg/lit and turbidity up to 15,000 FTU.

The amount of Dissolved oxygen (DO) was reduced to the level of 1 mg/lit. The insitu activity has shown that because of high (TSS) load the fish can not see and was easy to catch.

Another investigation of fish has shown that bronchia, pharynx, stomach and gut were full of sediment. And fish meat was necrosed.

Invirto experiment has shown that up to 200,000 mg/lit TSS in the environment can be tolerated by fish as amount of TSS increases and the fish tolerance decreases.

LD₅₀ experiment has shown that the tolerance time only about one hour.

Taken all this consideration it is recommended that forest should be protect, and by this, erosion of soil reduced and the TSS effect would not be so dramatic, the other recommendation is, to have sediment pool which is located before the dam and should be emptied continuously.