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Economic Aspect of Sustainable Development in National Park Djerdap

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Keywords

fish stocking, protection, development

Territory characteristics

The territory of the NATIONAL PARK DJERDAP extending from Golubac to Sip includes as unique natural entirety gorges, canyons, valleys and basins along the Danube with mountain ranges and massifs raising above it.

Fishery area in National Park Djerdap is extended from Golubac city until first Djerdap barrage (Djerdap hydro plant). This area covers 6.000 ha.

Decrease of some autochthonous fish species like: carp, perch, sheatfish, etc and enlarge number of Asian species, have severe influence in negative flora transformation Danube river. Consequences of these changes are also Djerdap hydro plant operation. Huge water level variation in accumulation (1m and more per one.day) is one of numerous facts that are damaging natural reproduction of autochthonous species.

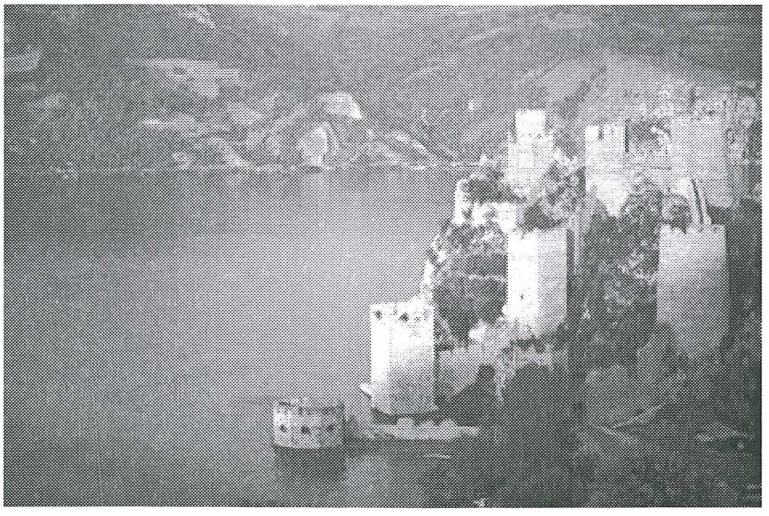

Fig. 1

Area of study

Fish, as a natural resource, contribute to the food supply, economy, and health of many nations worldwide. This project establishes the importance of integrating into planning the essential relations between the environment and tourism, indicating that a fundamental condition for tourism development is the need to avoid damaging the natural, cultural and human environment; and that the rational management of tourism can significantly contribute to the protection and development of the physical environment and the cultural heritage, as well as improving the life quality of coastal communities.

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Aim of this project

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1. Endangered and autochthonous fish species protection; introduction and protection of fish species with large scale of nutrition (these species can reduce process of organic pollution)
2. Autochthonous species fish stocking will make balance between fish species in Danube river
3. Direct fishing to rapacity species with large economic value, species that feed with algae
4. Provide reducing of process of organic pollution though fish stocking with autochthonous species

Importance of this project

As Danube is large International River that flows through several countries, it is not useful to implement this project into one small area and not covers all other area of Danube. If this project shows significant result then this method can be use in other parts of Danube River. Also, methods and results from this project can be used in different water ecosystem, not only rivers, because this can be good example how to protect autochthonous fish species in water ecosystems and how to promote one aspect of eco tourism. Besides, this project can give guide for other water areas not just Danube River, how to reduce organic pollution in water ecosystems and to avoid over production of invasive fish species.

Results until now

Considering that project duration is 3 years, results from first and second year is following: natural reintroduction of fish species was increase for 15% per year and organic pollution was reducing for 15% in first year and 20% in second year.

Indicators

Review of project result in previous two years was made thought size of fish catch. National Park Djerdap monitoring unit made fish catch. Quantity and size of catch fish individual's shows that this project was (in 2 years) very useful. These fish specimens were autochthonous species. This is also parameter for organic pollution reduction as this catch species is feeding with water vegetation.

How this project influence in future planning in protected areas?

Results obtain thought project implementation was very useful for protected managers in future planning in field of water management and sustainable fishery. As National Park Djerdap do not have any financial supports from Government of Republic of Serbia this shows good way how to get self-financing system, and, in the same time to make good and sustainable protection of water resources.

Social and economic aspect of this project

This National Park is located at the territory of municipalities: Majdanpek, Kladovo I Donji Milanovac in south part of Serbia. This area of Republic of Serbia is one of undeveloped part with lot of social and economic problems. Both commercial and recreational fishing constitutes a major source of employment and contributes significantly to the economy of the global economy. With over fishing occurring at an alarming and disastrous rate, economies and livelihoods are being irrevocably damaged. Large number of inhabitants in this area lives near by the Danube River and main working activity is commercial fishing. The impressive aquatic biodiversity of the Danube River is a key component of the food security of the people. Increasing fishing pressure and alteration of key aquatic habitat are having serious impacts on the fishery.

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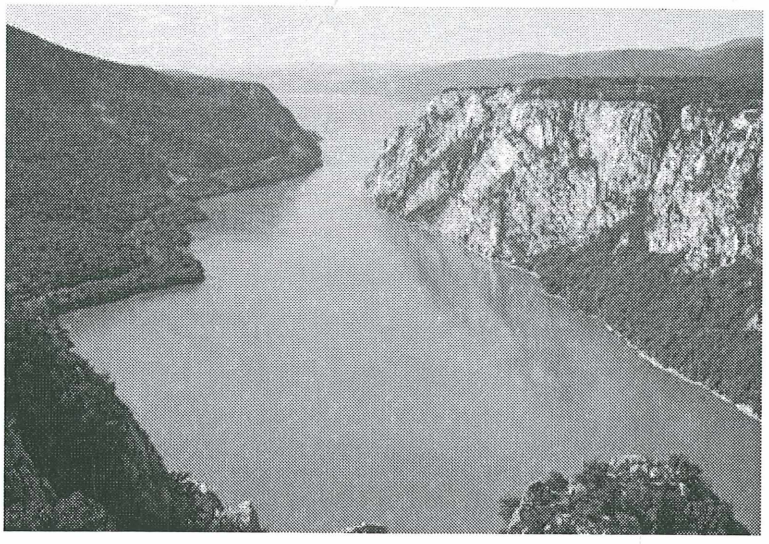

Fig. 2

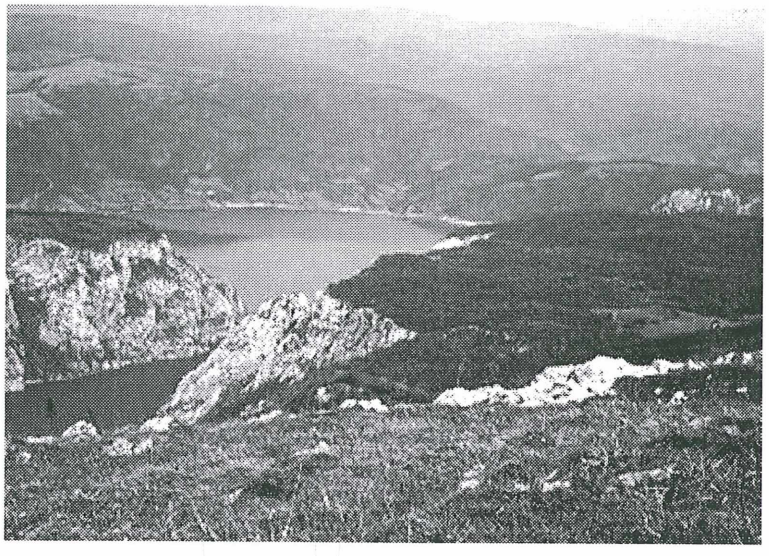

Fig. 3

Fig. 4

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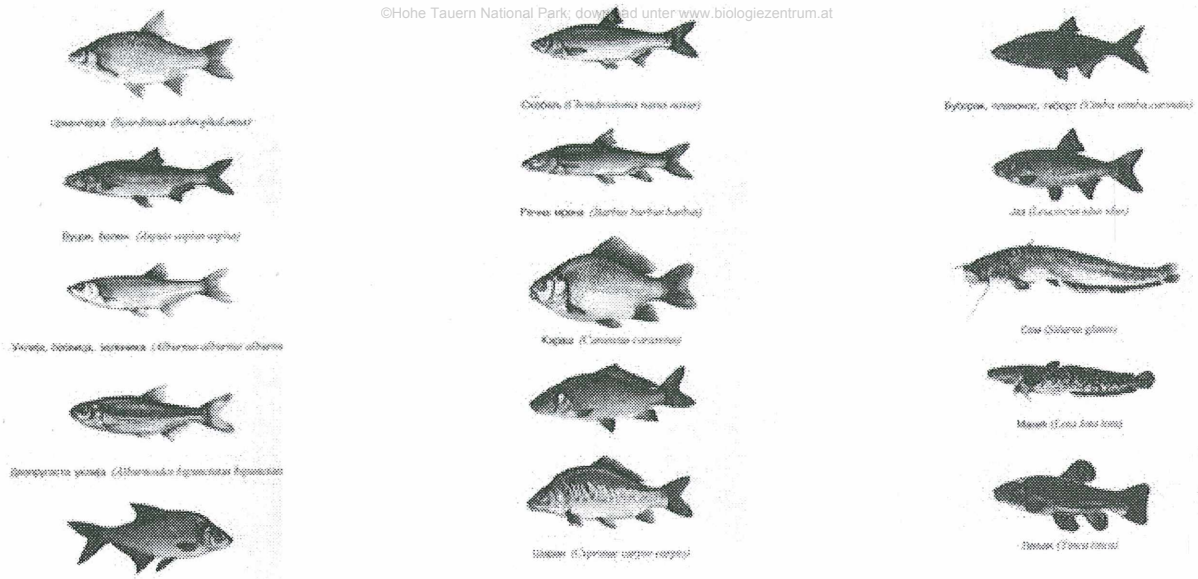

Fig. 5

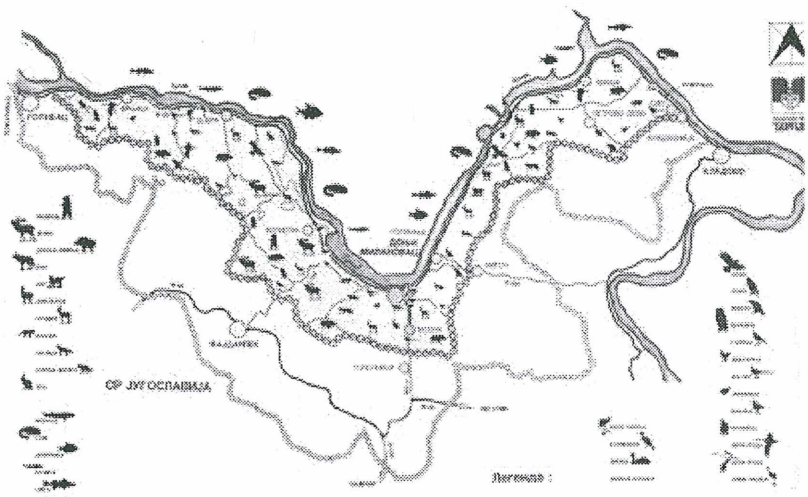

Fig. 6

Also, inhabitants have their own boats and barge that can be used in tourist purpose. If the recreational fishing made some development in territory of National park Djerdap then local inhabitants will have opportunity to development their own business related to the tourism. River, like Danube, clean and pure, with large fish diversity and quantity can give opportunity for local communities to make good quality of live hood. An increase in tourism productivity and competitiveness will necessarily take eco-tourism to protected areas and other places with extensive biological and cultural diversity, it being necessary therefore to take regional measures to manage to maintain these natural corridors.

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