

Human-Environment Interactions in Prespa National Park, Greece

Stephanie Janetos
Department of Geography, University of Waterloo

Abstract

Prespa National Park, located in the northwest corner of Greece, is a unique environment with significant natural and cultural elements that are being seriously threatened. The past symbiotic relationship between the local communities located within the park boundaries and the natural environment has changed with the advent of agricultural intensification and the switch from mixed farming methods to a bean monoculture. Irrigation works have drained valuable wetland area and favoured agricultural land use next to the wetland versus previous upslope plots. The local communities face many remote rural area problems, such as depopulation; inadequate services; sense of social isolation; impoverishment of biodiversity; a low level of professional skills; and difficulty marketing products. Park infrastructure is non-existent and there is a lack of cooperation among the many agencies and levels of government that have jurisdiction over the park. This case study attempts to examine stakeholder perspectives and human ecological interactions in order to better understand the interrelationships between environmental protection and cultural preservation.

Introduction

Resource and environmental management is characterized by problem solving and decision-making in regards to natural resources, which includes the management of human interactions with these resources. The process of understanding and managing the interrelationships between the biophysical and socio-economic environments leads to complex and probabilistic problems. Slocombe (1993) asserts that understanding the state and dynamics of the ecological and institutional aspects of an ecosystem is essential for determining the obstacles against more sustainable management practices. Nelson and Serafin (1997) state research is needed into the interrelationships among ecological approaches, land use, institutional arrangements and environmental education, especially as they relate to environmental conservation, sustainable development, and public and private stewardship. According to McNeely (1994) detailed knowledge of the people whose lives are af-

ected by the establishment and management of protected areas is as important to protected area management as the information on the plant and animal species to be conserved. This paper addresses key groups' perspectives concerning park management in Prespa National Park, located in northern Greece, in order to better understand the basis of environmental problems and conflicts in the area.

Case Study Background

The Greek government officially declared Lake Mikri Prespa and a peripheral zone as a National Park in 1974 (IUCN, 1987). Prespa National Park is located in the northwest corner of Greece bordering the former Yugoslavian Republic of Macedonia (FYROM) and Albania (Figure 1). Lake Mikri Prespa is one of 11 Greek wetland complexes designated as Wetlands of International Importance under the Ramsar Convention (IUCN, 1987). Prespa National Park is also recognized as an Area of Exceptional Natural Beauty (Greek Ministerial Decision A/931/23211/1747/1975), a Special Protection Area under the 79/409 European Economic Community (EEC) Bird Directive, and a constituent of the Natura 2000 network under the 92/43 European Union (EU) Directive for the conservation of natural habitats and wild fauna and natural flora. Byzantine churches, monasteries, 15th century wall paintings, hermitages and traditional stone buildings survive as evidence of Prespa's long cultural history.

Figure 1. Prespa National Park located in the northwest corner of Greece. The shaded area on the map represents the core of the park while the rest of the area is considered the peripheral zone (Trakolis, 2001: 229).



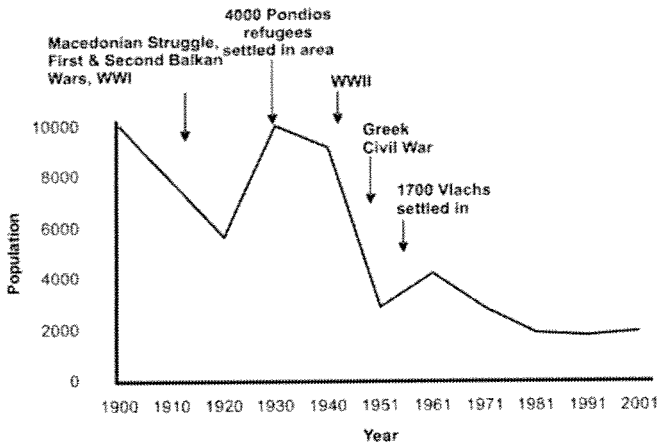
Prespa National Park covers 256 km² of which approximately 43.5 km² and 37.64 km² are the Greek portions of Lake Mikri Prespa (shared with Albania) and Lake Megali Prespa (shared with Albania and FYROM), respectively (Pyrovetsi and Gerakis, 1987). The park lies in a mountainous region where the altitude ranges from 853 m to 2177 m above sea level. The climate shows characteristics of a hot and dry Mediterranean type during the summer (July 23.6°C) and Mid-European type during the winter with long periods of high rainfall, snow, increased cloudiness and low temperatures (January 0.8°C) (Hollis and Stevenson, 1997).

The number and diversity of animal species in Prespa is commonly attributed to the high variety of habitats, the existence of relatively large areas with shallow water around the lake and the existence of mountainous habitats nearby (Catsadorakis, 1997a). Prespa contains over 1300 species of plants (Pavlidis, 1997) and more than 40 species of mammals, including brown bear (*Ursus arctos*), wolf (*Canis lupus*), chamois (*Rupicapra rupicapra*), and wild boar (*Sus scrofa*) (Chaini, 1999). Extensive areas of common reed (*Phragmites australis*) and many shallow lagoons in Prespa create important marshlands for large colonies of breeding birds. Among the 261 bird species that have been observed in the Prespa area since late 1960s, 164 breed in the park including the internationally important Dalmatian Pelican (*Pelecanus crispus*), Great White Pelican (*Pelecanus onocrotalus*) and Pygmy Cormorant (*Phalacrocorax pygmaeus*) (Catsadorakis, 1997b).

Human activities, over many centuries, have played a key role in shaping the natural environment of Prespa National Park. Currently there are 13 communities in the park with a resident population of approximately 1300 people (Catsadorakis and Malakou, 1997). Prespa National Park is located in a contentious border area and the twentieth century proved to be quite a difficult time for the people of the area with conflict and depopulation as a result of the Macedonian Struggle, the First and Second Balkan Wars, the two World Wars and then the Greek Civil War. Some abandoned villages were resettled at a later date while others were deserted for good. The Greek government attempted to repopulate the area by settling 4000 Pontios Black Sea refugees in the mid-1920s and then 1700 Vlach shepherds in the 1950s. The population has still decreased significantly from the approximately 10,000 inhabitants present at the beginning of the twentieth century and the other 5700 people who were resettled in the area (Figure 2).

The Prespa region had a traditional subsistence economy that combined crop farming with livestock breeding, fishing, and collecting from nature following the end of the 1940s (Valaoras, 1998). This drastically changed in the early 1960s when a surface irrigation network was established to convert rain fed crops to irrigated ones in order to increase production and farmer's incomes (Catsadorakis and Malakou, 1997; Valaoras, 1998). The increasing intensification of agriculture gradually displaced the subsistence economy. By 1986, the monoculture cultivation of dry white haricot beans had begun to replace mixed farming methods and then dominated the agriculture in the park throughout the 1990s.

Figure 2. Population changes in the Prespa area (after Daoutopoulos *et al.*, 1999: 65-68; NSSG, 2002: 48).



The designation of the area as a National Park did not affect land ownership status and most of this land is still privately owned (Pyrovetsi and Gerakis, 1987). However, since about 40% of this land belongs to absentee landowners, a significant percentage of farmers' income is being transferred to other regions in the form of rents (Catsadorakis and Malakou, 1997). Currently, the Prespiot farmers cultivate a total land area of approximately 5 ha spread out on about six plots (Pyrovetsi and Daoutopoulos, 1999).

Soil erosion is severe in the area. There has also been considerable human modification to the hydrology of the region. Loffler *et al.* (1998) state the water level of Lake Megali Prespa has dropped 6 m since the 1950s and attributes the drop to the steady expansion of irrigation networks. Lake Mikri Prespa is believed to have entered a critical stage of eutrophication due to agricultural runoff (IUCN, 1987; Loffler *et al.*, 1998; Michaloudi *et al.*, 1997; Tryfon and Moustaka-Gouni, 1997), however more research and better testing of the water quality of the lakes is required (Golterman, 2001).

Fisheries have existed on the two Prespa lakes since time immemorial, but only the inhabitants of the village of Psarades on Megali Prespa were, and still are, full-time fishermen (Crivelli *et al.*, 1997). The others are mainly farmers who fish in their spare time. Since 1945, the number of active fishermen has constantly decreased and it is difficult to know how many currently continue fishing on the Prespa lakes (Crivelli *et al.*, 1997). Some fish are sold by the fishermen themselves but most are sold to merchants who drive around locally and sell their fish (Catsadorakis and Malakou, 1997). Fishermen sometimes supplement their income by taking visitors on their

boats for trips on the lake and others keep fish taverns where they cook part of their catch.

In 1991, the Society for the Protection of Prespa (SPP), a federation of seven Greek environmental organizations and three from elsewhere in Europe, was founded (Chaini, 1999). The SPP mission is to conserve Prespa's natural environment and cultural heritage, as well as to promote sustainable development (Chaini, 1999). In 1992, an Information/Visitor Centre was established in Prespa by the SPP, the first of its kind in a Greek National Park (Valaoras, 1998). The centre, which is visited annually by more than 6000 people, is run by five young local people who were trained as eco-guides and work in an environmental education programme which attracts more than 5000 students annually (Catsadorakis and Malakou, 1997). Other SPP activities have included the support of organic farming and the marketing of local products, such as woollen socks, herbs, dried beans and preserves, through information centres (Valaoras, 1998).

Key Perspectives

Inhabitants' attitudes toward the Prespa National Park designation have varied from indifference to hostility due to the fact that the decision was made without any previous discussion or consultation with the communities (Pyrovetsi and Gerakis, 1987). Local people related conservation not only with prohibitions and restrictions, but also with a loss of control in any decisions made for their future (Chaini, 1999). Various efforts to sustain the rural economy have not been successful and there is a general tendency to blame the mere existence of the park for social and economic problems which are actually common in most other isolated rural areas of Greece (Pyrovetsi and Gerakis, 1987). Remote rural area problems in Greece include depopulation; sense of social isolation; low level of farmers' and cattle raisers' professional skills; difficulties in marketing local products; inadequate services; and impoverishment of biodiversity (Chaini, 1999). Generally, the 13 communities are concerned with their survival and economic well being; believe the natural resources are theirs to use; and are ignorant of environmental impacts.

Although some of the local people are still hostile toward the park, the majority seem more indifferent to its existence and see the park as a separate entity not involving them. Trakolis (2001) found that 15% of Prespiots interviewed did not know whether they lived in the National Park or beside, while the locals in the sample who answered their village was inside the park was less by 28% than those who actually lived in the park. The local inhabitants expressed similar feelings towards the environmental NGO. Even though there are locals who are still hostile towards the environmental group, for the most part the local people ignore them. The SPP has been working in the park for over 10 years, so the locals have become accustomed to their presence, but disregard them unless the NGO attempts to do

something that the locals feel will affect them negatively, especially in economic terms. Some locals do think the SPP does do some 'good things' for the birds, while I witnessed others blame the SPP for social and economic problems beyond their control, such as the lack of visitors to their community.

The Managing Director of the SPP, Myrsini Malakou, states their priority objectives are as follows: (1) water level in Lake Mikri Prespa; (2) appropriate legislation for the park; (3) establishing a park management authority; (4) organization of the trans-boundary Prespa park (with Albania and FYROM); and, (5) management of the wet meadows (personal interview, 16 August, 2001). Malakou asserts that these objectives should not be seen as separate from the local people and since primary sector activity is very important in the area, it is also a concern of the SPP (personal interview, 16 August 2001). The SPP is focused on protecting Prespa's natural environment and preserving its cultural heritage. However, there is little evidence of the SPP really trying to involve the local people in decision-making. The intense hostility the NGO encountered from the local inhabitants when the SPP began may be a contributing factor to the minimal local involvement. Nonetheless, after over a decade of working in the area I would have thought the relationship between the SPP and the local people would be somewhat stronger. The SPP does have some young locals who have been trained as eco-guides for Prespa's Information Centre, who are very helpful and knowledgeable concerning the Prespa environment; however some individuals exhibited limited awareness and understanding of broader environmental issues. The members of the SPP are a tight knit group and tend to mostly socialize with each other, with some having contact with only a small number of the local inhabitants.

Although Greece's acceptance as a full member of the European Union in January 1981 set the environment high on the government's agenda (Kazakos, 1994; Lekakis, 1995), Greece's ultimate national policy objective is rapid economic growth, as a means of converging with the northern EU member states (Fousekis and Lekakis, 1997). The Greek state is supportive of the economic development of Prespa and does not tend to enforce or push forth conservation measures (Chaini, 1999). Papageorgiou and Brotherton (1999) state scarce funding, insufficient staff, who are inadequately trained in park management, and the lack of a special independent park administration are bottlenecks in effective environmental protection in Greece. The Prespa region has had at least eight different government authorities of local, regional and national level prepare separate development plans for the National Park or for a larger area including the park since various aspects of the park fall under the jurisdiction of different authorities (Trakolis, 2001). For example, Ramsar wetlands fall under the jurisdiction of the Ministry of Environmental Planning and Public Works, while National Parks are the responsibility of the Forest Service under the Ministry of Agriculture.

Over the past couple of decades, the EU has given quite a bit of funding to Greece for Prespa's development, however often times the money has been used by the

State for inappropriate works, such as a disastrous Integrated Mediterranean Programme in the mid-1980s (Pyrovetsi, 1989). Although the EU has a number of directives and policies that are aimed at preserving the environment, others such as the Common Agricultural Policy (CAP) are a major driving force in the continuing technological revolution and intensification in Greek farming. The CAP has led to drastic changes in the natural environment of Greece and altered the socio-economic dynamics of Greek rural society (Kasimis and Louloudis, 1997).

Discussion and Conclusions

Conflicts in resource and environmental management are usually over values, either ecological or human, rather than clashes over numbers (Sexton, 1998). Frequently, there is a serious incompatibility of views among regulatory agencies, affected communities, businesses and environmental groups (Grimble and Wellard, 1997). Table 1 demonstrates the general viewpoints of four key stakeholder groups affecting Prespa National Park. The four groups have different priorities, interests and objectives from which conflict may arise. Understanding these differences can help in balancing conflicting purposes and aims, determining tradeoffs and developing a common vision, all of which are essential to Prespa's future environmental integrity.

Although the SPP has a great environmental education program for those visiting the area, very little seems to have been done to educate the local inhabitants, possibly due to past hostility and fear of confrontation. The locals' mistrust of authority and fear of losing their autonomy is a major obstacle to the promotion of environmental education in Prespa. Hence, a slide show telling villagers of the natural assets of the park is not likely to be very successful on its own. The local people desperately want their voices and opinions to be heard. The approach to environmental education will have to be dynamic and interactive, such as series of public meetings in each of the villages where at first the environment may not be the major focus. The meetings will need to have themes that are important and socially relevant to the people of the area, so they will wish to participate. It will also be imperative to demonstrate how these meetings would be beneficial to those involved by perhaps establishing short- and long-term goals for community projects. Environmental concerns, such as improper fertilizer and pesticide practices and disposal, could eventually be discussed in terms of their impact on water quality and human health.

While large-scale initiatives like the creation of the Balkan park are important for the entire region's future, smaller scale projects also need to be implemented. More of a grassroots approach towards environmental protection should be undertaken. For example, litter is a large problem in the park, so possibly litter pick-ups could be organized through the communities and schools.

Table 1. Current perspectives and roles of Prespa stakeholders (adapted from Sexton *et al.*, 1999: 8).

	Greek Government	European Union (EU)	Prespa Communities	SPP (Environmental NGOs)
Communities Imperative	Implementing regional/transnational policies; forming trade partnerships; strengthening global identity as a conglomerate	Boosting economic growth; implementing laws; concern for social welfare of citizens (not equitable)	Protecting community and individual well-being; meeting basic needs	Preserving and protecting the natural environment
Legitimization	Accession of member states	Legal authority and power	Group identity and social justice	Principles and passions
Basis for Decisions	Bureaucratic precedent; political wills and realities	Legalities, political realities and bureaucratic precedent	Short- to medium-term preservation of community and economic well-being	Long-term preservation of natural systems
View of Natural Resources	Use and protect within the confines of EU policy	Means to achieve an end; little protection offered by statutory mandates	Use to benefit community	Ends unto themselves; use only within prescribed limits
Approach to Environmental Protection	Agendas, policies and agreements; member state pressure tactics	Very weak mandates; protection in name only	Hostility to indifference; ignorance of environmental issues/impacts	Legislative prescriptions, political will, ethical values
Attitude Toward Economic Growth	Generally desirable within the context of EU policy	Very important priority	Desirable in the context of benefits to the community	Only desirable if it balances environmental, economic and social factors

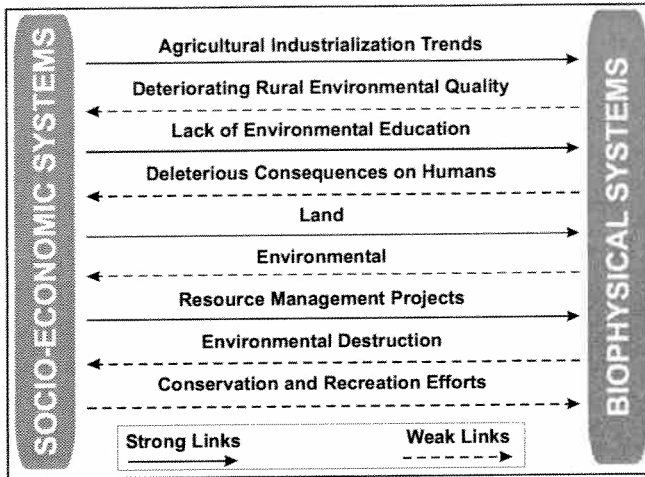
Coordination of local projects and plans by the municipal government, local communities, environmental NGOs, and the local forest service is essential, however much of this problem is at the national level with inter-ministerial competition and government structure. Comments by Slocombe (1993) that overlapping jurisdictions, competing agencies, varied goals of multiple actors and existing management frameworks tend to lead to conflict rather than cooperation definitely apply to the situation found in Prespa National Park. An integral step toward cooperation in Prespa, which will most likely involve conflict, is for the different groups of people to recognize one another, instead of ignoring each other's existence. A sense of community needs to be restored in the area following the belief that if the local people care about where they live, they are more apt to want to protect it. The bitterness and self-interest that has developed is as destructive to the environment's

health as it is the area's social sustainability. A recently formed cultural NGO called The Cultural Triangle of Prespa, could potentially play a major role in fostering community spirit through its local initiatives which have included the establishment of a library and an arts festival which involved art workshops in each of the Prespa villages.

Dynamic change in systems may be addressed by the patterns of interactions. Berkes and Folke (1998) assert that the analysis of interactions requires a focus on feedback mechanisms and social-ecological linkages. Patterns of interaction produce certain outcomes such as 'the biophysical environment may or may not be used sustainably; the functional performance of the ecosystem may or may not be damaged; and benefits may or may not be shared equitably or fairly (Berkes and Folke, 1998). Some key interactions between the socio-economic and biophysical systems in Prespa National Park are demonstrated in Figure 3. Feedbacks from the biophysical systems to the socio-economic systems are rather weak, whereas the forward links from the socio-economic system to the biophysical system are much stronger and disruptive of the existing natural cycles (Bowonder, 1987). For example, historical human practices in the park, such as cutting and burning the reeds surrounding Lake Mikri Prespa, altered Prespa's biophysical environment by inhibiting the terrestrialization of the small lake. This human practice in turn led to optimum spawning grounds for the fish in the lake, which fed the bird species. However, this balance was disrupted with the park designation when the cutting and burning of reeds was banned resulting in rapid reed growth and infill, which affected fish spawning grounds and accelerated eutrophication. Now measures are being taken by the environmental NGO to reverse these trends by different forms of reed management in order to return to the previously human induced balance.

Prespa National Park is a unique environment with significant natural and cultural elements that are being seriously threatened. Although the environmental NGO has been successful in many of its initiatives, it has failed to attain support and cooperation from the majority of the local people. The centralizing character of the Greek government has led to funds being spent on inappropriate development in the region, which has often been economically and environmentally costly. A cohesive social identity and cooperative spirit in the local communities is integral to improving Prespa's social health, which fundamentally impacts the park's biophysical environment.

Figure 3. Some key interactions between the socio-economic and biophysical systems in Prespa (after Bowonder, 1987).



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