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Full Length Research Paper

Assessing the effectiveness of protected area management in the Turkish Caucasus

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Despite expected benefits such as conservation, recreation or sustainable development, most protected areas (PAs) have serious problems in implementing basic management functions such as planning, organizing, coordination or control. In order to maximize management effectiveness, the World Wide Fund for Nature (WWF) has developed the rapid assessment and prioritization of protected area management (RAPPAM) methodology for assessment of protected area management at system level based on planning, pressure and threats, inputs, processes and outputs. The RAPPAM assessment was implemented in the Turkish part of the West Lesser Caucasus for 11 PAs with 3 different categories. Two meetings were conducted with the participation of 70 people in possession of the best local knowledge about the PAs in the region. The results show that management assessment scores in all areas were rather low and this finding was similar throughout Turkey. In general, policy environment scores were remarkably below the average, showing that the importance and priority of conservation among public policies is rather low. Threats in the region were high in areas with high biological diversity. Further, semi natural processes, pollution, conversion and tourism appeared to be the greatest threat and pressure elements for the PAs in the region.

Key words: Rapid assessment and prioritization of protected area management (RAPPAM), management effectiveness, protected areas, Northeast Black Sea region, Turkish Caucasus, Turkey.

INTRODUCTION

For longer than a century, countries throughout the world have assigned areas for special protection owing to their natural beauty and their repository status for important biodiversity (Dudley et al., 2005). These regions in many parts of the world are the only places not completely dominated by human aspirations and influence, and the only hope for the survival of many of the world's plant and animal species. Protected areas (PAs) are the cornerstone of most conservation strategies (Stolton, 2010) and have long been recognized as a key tool to counter the loss of the world's biodiversity, safeguard ecosystem health, and provide an array of ecosystem services (Hockings, 2003; Emerton et al., 2006). The constituency for PAs is therefore broad and diverse. However, PAs can only deliver their environmental, social and economic benefits if they are effectively managed (Hockings and Phillips, 1999). To maximize the potential of PAs, managers and policy makers need information on the strengths and weaknesses in their management and on the threats and stresses they face (Hockings, 2003). Consequently, managing protected areas is becoming more complex (Hanna et al., 2008).

Society is continuing to invest resources into acquiring and managing PAs, believing that they are the backbone of biodiversity conservation and deliver a range of other social, economic and environmental benefits. In 2002, world leaders committed, through the convention on biological diversity, to achieve a significant reduction in the rate of biodiversity loss by 2010 (Butchart et al., 2010) and to effectively manage the PA system by saying

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Abbreviations: **PAs**, Protected areas; **WWF,** World Wide Fund; for Nature **RAPPAM**, rapid assessment and prioritization of protected area management.

"nationally, a monitoring and evaluation system should be incorporated into the national PA system plan" called for under Article 8 of the CBD (Hockings and Phillips, 1999). Over the past four decades, there has been a ten-fold increase in the number of PAs listed by United Nations (UN). The area under protection has likewise expanded from 2.4 million km^2 in 1962 to over 20 million km^2 in 2004 (Emerton et al., 2006). According to United Nations Environment Programme (UNEP), World Conservation Monitoring Centre on World Database on Protected Areas (WDPA) terrestrial PAs now cover over 13% of the world's land surface (Stolton, 2010) which should be further increased according to the resolutions of the CBD Conference of Parties (COP) 10^{th} meeting. However, while the number and size of PAs have been increasing globally, the existing global system of PAs is inadequate in several ways (Dudley et al., 2005) and biodiversity still continues to decline at an alarming rate (Leverington et al., 2010; Bleher et al., 2006).

Assessment of PA management effectiveness

One of the greatest land and sea use transformations occurred at the end of the 20^{th} century and continues into the 21^{st} century. Under use of people, most PAs face multiple serious threats and therefore become one of the Earth's most significant designations for use (Hockings et al., 2006a; Carey et al., 2000). They are ineffectively managed (Ervin, 2003a) and their values have been significantly degraded (Hockings et al., 2006a). Management of over 4,000 protected areas that were analyzed varied from weak to effective, with about 40% showing major deficiencies (Leverington et al., 2010). The most frequently cited weaknesses in protected area management include visitor impacts, inadequate management planning, unsustainable resource use, inadequate community benefits, inadequate research and monitoring, and low law enforcement (Ervin and Dudley, 2008; Leverington et al., 2010). Despite the spectacular growth in PAs over the past half-century and the importance ascribed to them as mechanisms for *in-situ* conservation in international strategies and conventions, the problem faced by the world's PAs remain a major concern. These problems can be grouped into three broad categories: (1) threats acting on the natural and cultural resources of the PA; (2) inadequate financing for management; and (3) institutional and capacity problems, including inappropriate policies and inadequately trained staff (Hockings, 2003; Stanciu et al., 2010).

Besides these challenges in the PA system, an evaluation of the extent to which these reserves really do protect their values and deliver benefits to the community (Hockings and Phillips, 1999; Ervin, 2003a), and demonstrate proper accountability, good management practices and transparency in public reporting is needed (Hockings et al., 2006b, 2009; Leverington et al., 2010).

Management effectiveness evaluation has been included in the Programme of Work on Protected Areas (PoWPA) adopted by CBD in 2004 at COP7. PoWPA sets ambitious targets towards which many countries have been working (Ervin et al., 2008) and includes commitments that ''by 2010, frameworks for monitoring, evaluating and reporting PAs management effectiveness at sites, national and regional systems, and trans-boundary PA levels [will be] adopted and implemented by Parties'' and that the results of such studies will be used to improve management (Dudley et al., 2005; Leverington et al., 2010). Its genesis stretches back to 2000 and a conference organized in Thailand by WWF and IUCN-WCPA, looking at PA management effectiveness (Stolton, 2010).

In 1995, the International Union for Conservation of Nature (IUCN) World Commission on Protected Areas (WCPA) established a task force to explore issues related to the management effectiveness of PAs. Based on the results of the task force's findings, WCPA has developed an overall assessment framework (Hockings et al., 2000; Ervin, 2003a) in order to provide a consistent approach to assessing PA management effectiveness. WWF developed rapid assessment and prioritization of protected area management (RAPPAM) methodology among several tools which, according to Hockings (2003), evaluates the management effectiveness of PA as a whole system. The primary aim of this assessment is to elucidate threat and management weakness (Ervin, 2003b). RAPPAM provides a broad and comparative perspective, identifies relative management strengths and weaknesses, indicates the urgency of the conservation priorities within the region, and provides a transparent and effective means of resource allocation and policy development. It offers policy makers a tool for achieving that goal by enabling a rapid assessment of the overall management effectiveness of PAs within a particular country or region (Ervin, 2003a). The RAPPAM methodology can help to answer some of the basic questions policymakers might ask about PA effectiveness, such as "which PAs are the most threatened?" and "which threats are causing the most damage systemwide?". WWF's RAPPAM Methodology draws on an evaluation framework developed by the WCPA (Ervin, 2003c). It can (Leverington et al., 2008):

1. Identify management strengths, constraints and weaknesses.
2. Analyze the scope, severity, prevalence and distribution of threats and pressures.
3. Identify areas of high ecological and social importance and vulnerability.
4. Indicate the urgency and conservation priority for individual PAs.
5. Help to develop and prioritize appropriate policy interventions and follow-up steps to improve PA management effectiveness.

Current conservation regime and PAs effectiveness in Turkey

The exceptional diversity encountered in Turkey stems from various biogeographic reasons, such as being a "crossroads" and having diverse geographic features and climatic conditions (Eken et al., 2006). Turkey houses a great variety of natural habitats, ranging from Mediterranean, Aegean and Black Sea coasts to towering coastal and interior mountains, from deeply incised valleys to expansive steppes, from fertile alluvial plains to arid, rocky hill slopes. A myriad of community types and habitat mosaics occurs, containing a rich mixture of plant and animal species, many of which are endemic. Complex interactions among species and with their abiotic environment exist and the dynamics of habitat change over an exceedingly long period of human cultural history in the region have added an ever-changing dimension to ecosystem and landscape character (Kaya and Raynal, 2001). Two prioritization studies clearly demonstrate the importance of Turkey on the global scale with the hot spots (Mittermeier et al., 2004) and plant biodiversity centers (Davis et al., 1994) it hosts. Its global importance for plant biodiversity stems not only from the number of species groups observed but actually from its plant biodiversity (Belen et al., 2008).

Although, most of the biological riches of the earth reside in developing countries, they are far behind the developed countries in technical and financial resources needed to develop and implement appropriate conservation strategies (Kence, 2005). While there are many laws, regulations and programs in place seeking to promote (Kaya and Raynal, 2001) and manage (Kurdoğlu et al., 2006) biodiversity in Turkey, the lack of efficient management of PAs is obvious. Thus, additional laws and regulations for a sound conservation program (Guclu and Karahan, 2004) are still needed. Problems in efficient management, not unique to Turkey, constitute the most important issue for which solutions are being sought (Kurdoğlu et al., 2006).

Turkey's national PA system is composed of PAs established according to two main laws which correspond to IUCN categories. There are also areas declared under Barcelona Convention of Mediterranean Countries. The 41 national parks, 31 strict nature reserves, 41 nature parks, 106 natural monuments, 79 wildlife reserves, 1 biosphere reserve, 56 protected forests, 231 gene preserved forests, 347 seed stand area, 15 special PAs, 13 RAMSAR sites, 9 World Heritage Site cover a total area of over 4 million ha (Kurdoğlu, 2002; Anonymous, 2006c; Belen et al., 2008; Avcioglu et al., 2011). This nearly equals 5% of the national territory. However, these PAs in general cannot be protected efficiently due to various reasons, including lack of management plans, poor infra-structure, insufficient technical and financial resources, etc. Avcioglu et al. (2011) mentioned that there is a significant negative change in the nature conservation policy in the PA system of Turkey. Due to inefficient management, besides meeting the demands of biodiversity conservation, like in many PAs as Dudley et al. (2005) mentioned, the level of meeting visitors' recreational and educational demands are far from satisfactory in Turkey as well.

Implementing justification of RAPPAM in the Turkish part of Caucasus Ecoregion

The Caucasus Ecoregion covers a total area of 580,000 km^2 and consists of six countries: Azerbaijan, Georgia, Armenia, the North Caucasus part of the Russian Federation, Northeastern Turkey, and part of Northwestern Iran (Anonymous, 2006a). The study area is also one of the 34 World Biodiversity Hotspots identified by the Conservation International, but also within the Caucasus-Anatolian-Hyrcanian Temperate Forests classified as one of the 200 Global Ecoregions of WWF, identified as globally outstanding for biodiversity (WWF and IUCN, 1994; Zazanashvili et al., 1999; Anonymous, 2006b; Eken et al., 2006). The Caucasus has been named as a large herbivore hotspot by WWF's Large Herbivore Initiative (Anonymous, 2006b), and it is among one of the 217 bird endemism areas for the Caucasus black grouse (Olson and Dinerstein, 1997; Zazanashvili et al., 1999).

The Turkish part of the West Lesser Caucasus known as the Eastern Black Sea Mountain range (Figure 1) is one of the priority corridors of the Caucasus Ecoregion owing to its rich biodiversity. It lies within the North-eastern Anatolian centre of plant diversity (SWA No.19) and includes Karçal Mountains and Fırtına Basin designated among the 122 Important Plant Areas (IPA) of Turkey (Özhatay et al., 2003, 2005; Byfield et al., 2010). Karçal Mountains and Fırtına Basin are regarded by WWF as Europe's 100 forest 'hot spots' in term of their diversity of monumental trees, old growth forests, deep valleys, intact rivers, large mammals and raptors. However, it has a rich biodiversity and is highly threatened by human intervention and land use change. The main threats include infrastructure development (powerlines, motorways, pipelines, dams, hyrdoelectric power plants, etc.) (Kurdoğlu et al., 2004; Kurdoğlu and Özalp, 2010), land use changes (conversion of forests to cultivation, mining, etc.), unsustainable tourism, over-grazing, poaching, collection of plants (for medicinal, aromatic, ornamental use), soil erosion and floods. These threats lead to habitat degradation and fragmentation, decline in species populations and disruption of ecological processes. The root causes of these threats include poor law enforcement, inappropriate development and natural resource use that ignores biodiversity, low public awareness, low capacity governmental organizations (forestry, environmental) and an underdeveloped biodiversity-related NGO sector in the (Kaya and Raynal, 2001; Guclu and Karahan, 2004; Kurdoğlu et al.,

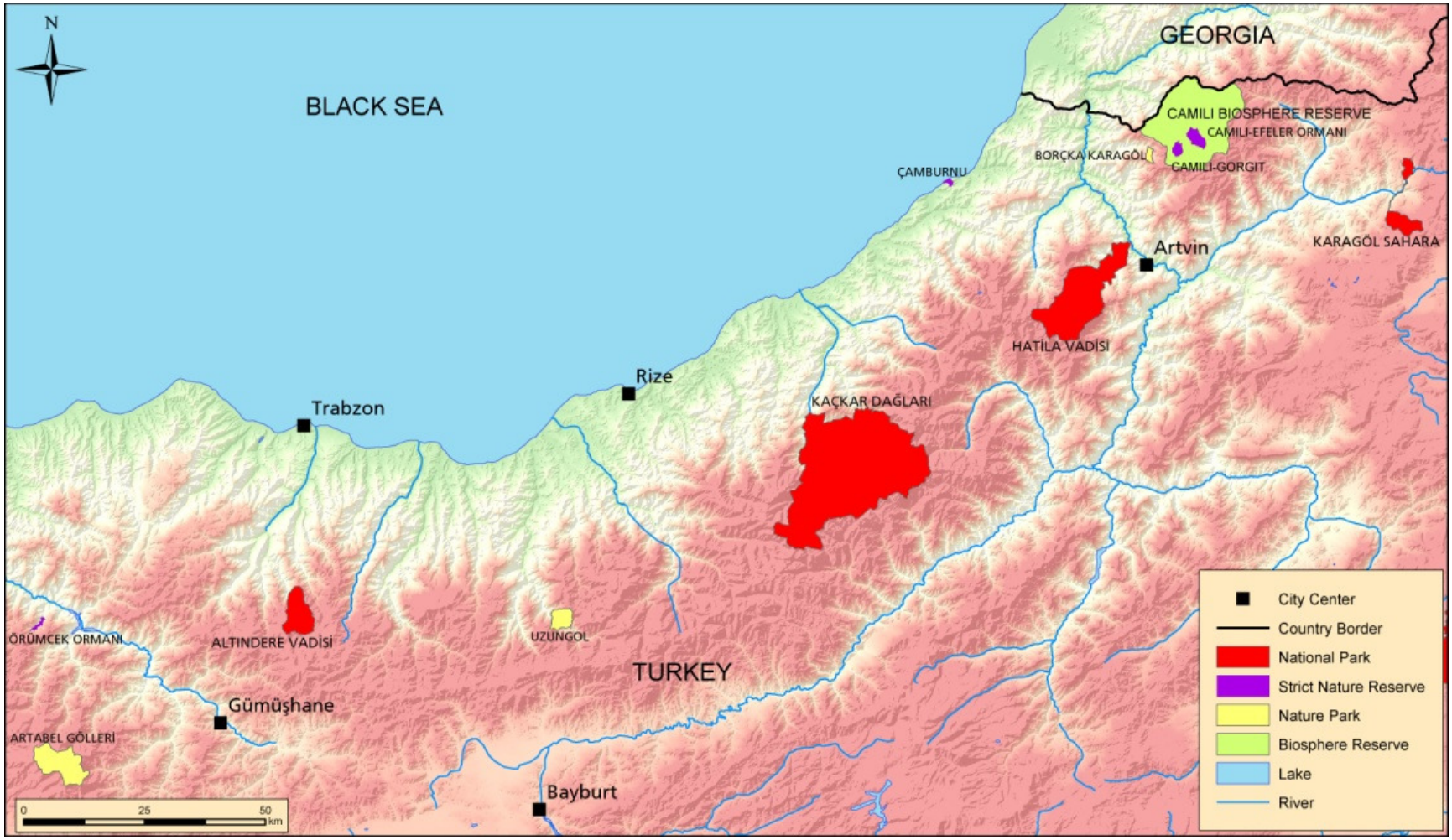

Figure 1. Eastern Black Sea Region and assessed PAs.

2004, 2006).

The problems which Turkish Caucasus is facing can be observed in whole parts including PAs. Although, governmental authorities have improvements and investments in PAs, still threats exist and new pressures arise. Having such realities on the ground, it was decided by the authors to implement RAPPAM and tracking tool in PAs to assess existing management and its effectiveness for conservation of biodiversity. RAPPAM was firstly implemented in Turkey in 2005 under Natural Resources Management and Biodiversity Conservation Project at national park level by WWF-Turkey in partnership with Ministry of Environment and

Table 1. List of pressures and threats considered for PAs.

S/N	Pressures and threats
1	Logging
2	Land use conversion
3	Mining
4	Grazing
5	Dams and hydroelectrical
6	Hunting
7	Non forest timber
8	Tourism
9	Pollution
10	Semi natural processes
11	Cross-boundary activities
12	Alien species
13	Afforestation
14	Excavation and mining
15	Fresh water conversion

Forest. It was later applied at regional level in a project of Green Artvin Society by the authors in a smaller scale under Caucasus Grant Programme of Critical Ecosystems Partnership Fund (CEPF) and WWF in order to assess all PA categories in Eastern Black Sea Region in West Lesser Caucasus part of Turkey in 2007.

MATERIALS AND METHODS

This study was held in the Eastern Black Sea Region of Turkey which is Turkish part of the Caucasus Ecoregion called Turkish Caucasus or West Lesser Caucasus including 11 PAs with 3 different categories. The RAPPAM was implemented for all PA categories in the area including 4 national parks, 4 strict nature reserves and 3 nature parks with a total area of 90740 hectares. These PAs are Kaçkar Mountains National Park (NP) in Rize; Karagöl-Sahara NP, Hatila Valley NP, Borçka-Karagöl Nature Park (NaP) and Çamburnu, Gorgit and Efeler Strict Nature Reserves (SNR) in Artvin, Altındere Valley NP and Uzungöl NaP in Trabzon, and Artabel NaP and Örümcek SNR in Gümüşhane.

Since the mid-1990s, numerous methodologies have been developed to assess the management effectiveness of PAs, many tailored to particular regions or habitats (Hockings, 2003). Approximately, 50 management effectiveness evaluation (MEE) methodologies have been developed so far and the list is still growing. The most commonly used methodologies across the globe to date are RAPPAM (over 1,400 PAs assessed) and the tracking tool (over 1,000 PAs) (Leverington et al., 2008). RAPPAM methodology provides the best result for management effectiveness in a short period of time, with limited resources and knowledge (Hockings, 2009; Leverington et al., 2010; Kurdoğlu et al., 2006). For this reason, in this study RAPPAM methodology was implemented in 2008. Two meetings were conducted with the participation of 70 people whom are local PA managers of governmental organizations, experts from universities, NGOs and local people living in and around the PAs in possession of the best local knowledge about the PAs in the region. As the project area is considerably large, two workshops were organized by dividing the area according to the same governmental managerial unit. Before the workshops, training seminars were given to participants on RAPPAM methodology in order to ensure that they had the same level of knowledge on this methodology and its questions on context, planning and design, input, management processes, management output and outcomes. Participants were questioned into groups which were divided according to the PA managerial units in each city. Before group work, an overall assessment of each PA was made to prepare participants for the RAPPAM's sections. Each group was facilitated by an expert to guide participants as they interpreted the questions and to ensure that the discussions led to a shared answer. Participants assessed and answered the questions below according to RAPPAM defined by Ervin (2003b):

1. Background Information.
2. Context: Pressures and threats, biological importance, socio-economic importance, vulnerability.
3. Planning: Objectives, legal security, site design and planning.
4. Inputs: Staffing, communication and information, infrastructure, finances.
5. Processes: Management planning, management decision making, research, monitoring, and evaluation.
6. Outputs: Results of managerial action, products and services.

RESULTS AND DISCUSSION

Pressures and threats

In assessing the pressures and threats for the PAs in Eastern Black Sea, those given in Table 1 were used in all areas for all PA categories (Table 1).

Pressures

The assessment showed that the pressure with the highest score in all areas of the study region was pollution (Figure 2). It was worst in Altindere *Valley NP (Sumela Monastery). Being the oldest protected area in the region, this nation*al park faces great visitor demand as it hosts a highly important monastery and is in close proximity to the largest city in the region. Another overly polluted area is the Kaçkar Mountains National Park that attracts a big number of visitors. In these areas, pollution constitutes a pressure due to visitors, waste produced by hotels and settlements, and heavy traffic.

The second most serious source of pressure in the study region is tourism. Tourism as a pressure can be seen in all PA categories. It is most intense in Uzungöl NP, followed by Kaçkar NP and Camili-Gorgit and Camili Efeler SNR (also Biosphere Reserve). Even though Camili-Gorgit and Efeler are IUCN Ib categories of strict nature reserves, they are still under pressure of tourism. This stems from the tourism value of the basin containing the SNRs and the interest caused by increasing promotions and advertisements. The basin is the country's first and only biosphere reserve, thus attracting great interest by the national media and the public.

Semi-natural processes and conversion of land use are two other pressures, quite close to one another, in the protected areas. The semi-natural processes that con-

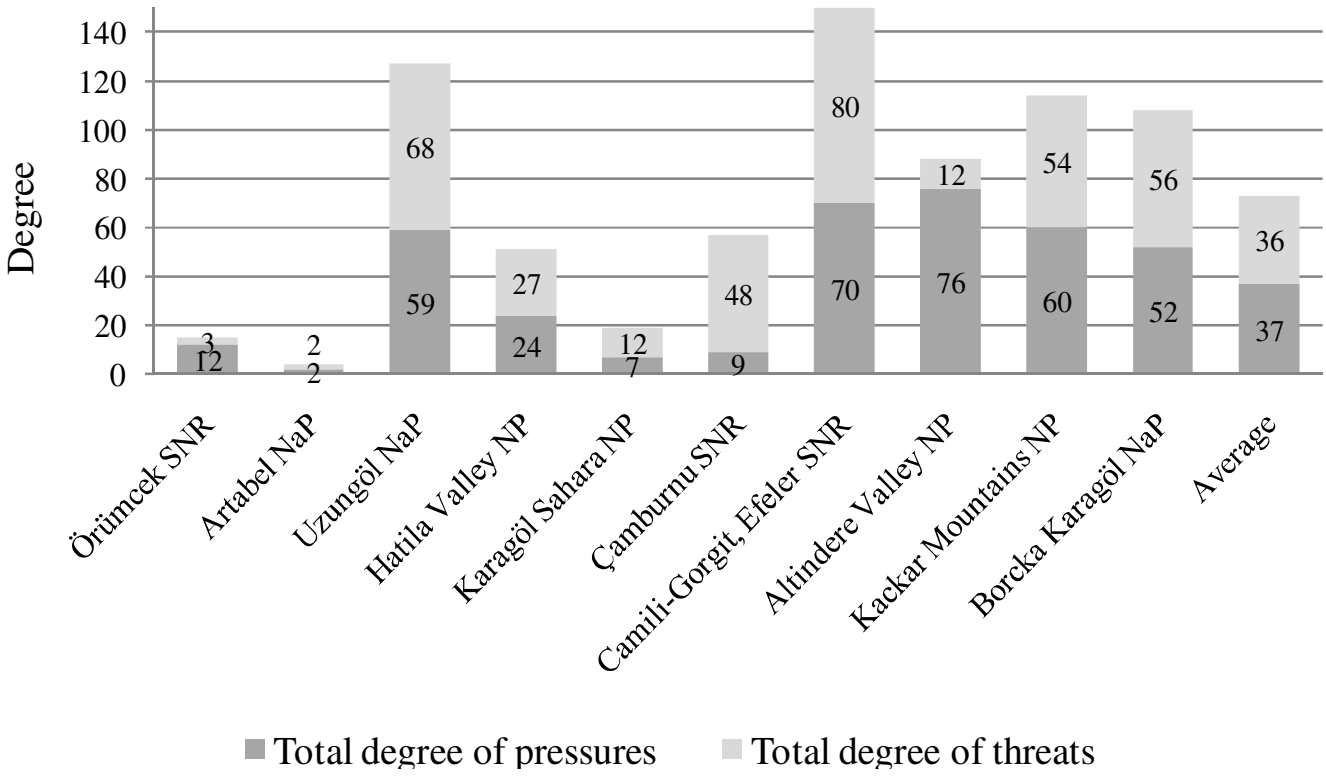

Figure 2. The distribution of total pressure and total threat in the PAs.

stitute an element of pressure in the region are due to insect disease in the forests caused by some epizootic species. Pressure caused by conversion of land use in the region mostly occurs due to housing at high pastures (in other words grasslands), tourism settlements and roads. Illegal activities in the PAs are poaching and deforestation. The assessment showed that these two illegal activities are most often seen in Uzungöl NaP and Altindere Valley NP.

Overall, Altındere Valley NP seems to be the most pressurized area. It is followed by Camili Gorgit and Camili Efeler SNR and Kaçkar Mountains NP, respectively (Figure 2).

Threats

The most common future threat throughout the Eastern Black Sea Region, and accordingly in the protected areas, is semi-natural processes caused by bark beetles (Figure 3). This beetle attack is in fact a stage in the natural succession process; however, as most people are not aware of this fact, it is considered to be a threat by most to the forest ecosystem. Although it is a natural process, the decrease in ecosystem health caused by land use changes stops forests from regenerating. The second highest threat is pollution due to tourism activities and the third is conversion due to existing pressures as a result of housing at high pastures, tourism settlements and roads. Even though semi natural processes threaten Camili the most, land use change in Çamburnu and Kackar Mountains will constitute a problem in the future. Another result of these pressures is possibitity of pollution in the area (Figure 3).

Biological and socio-economic importance

The results of this study regarding the biological importance of the PAs are similar to those of earlier studies in the region (Anonymous, 1994; Küçük, 1998; Kurdoğlu, 2002; Eminağaoğlu et al., 2008). It may be said that the results reflect the reality about the biological importance of PAs such as Camili-Gorgit and Camili-Efeler (Figure 4). However, some studies made low assessment of certain areas with biological importance such as the Örümcek Forest. This may be attributed to the lack of adequate scientific data about the area and lack of adequate public recognition. Karagöl-Sahara NP and Çamburnu SNR have the lowest biodiversity and the results of the present study corroborate it (Figure 4).

Areas with the highest biological importance also had the highest socio-economic importance (Figure 5). Among these, Uzungöl may not have particularly high biological importance but has great tourism potential. Different ecosystems in biologically important areas are

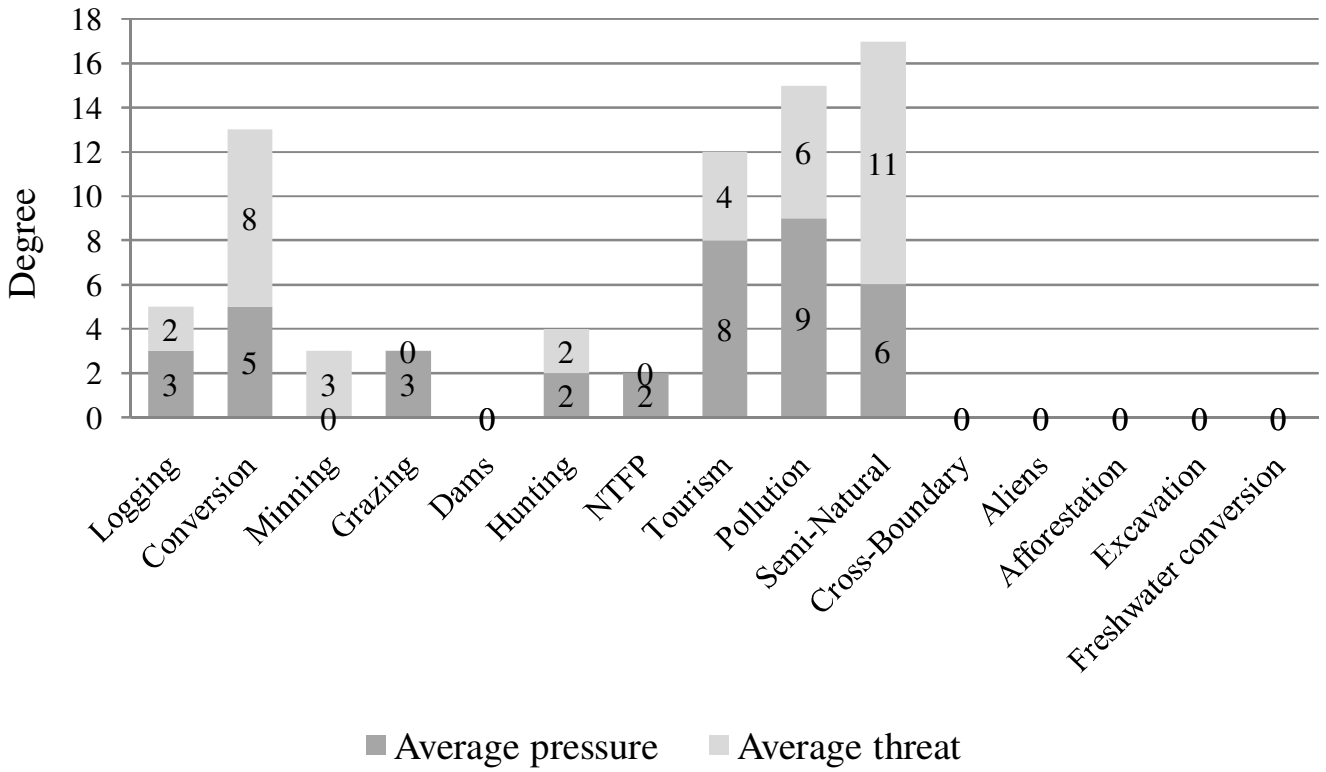

Figure 3. Average pressure and threats.

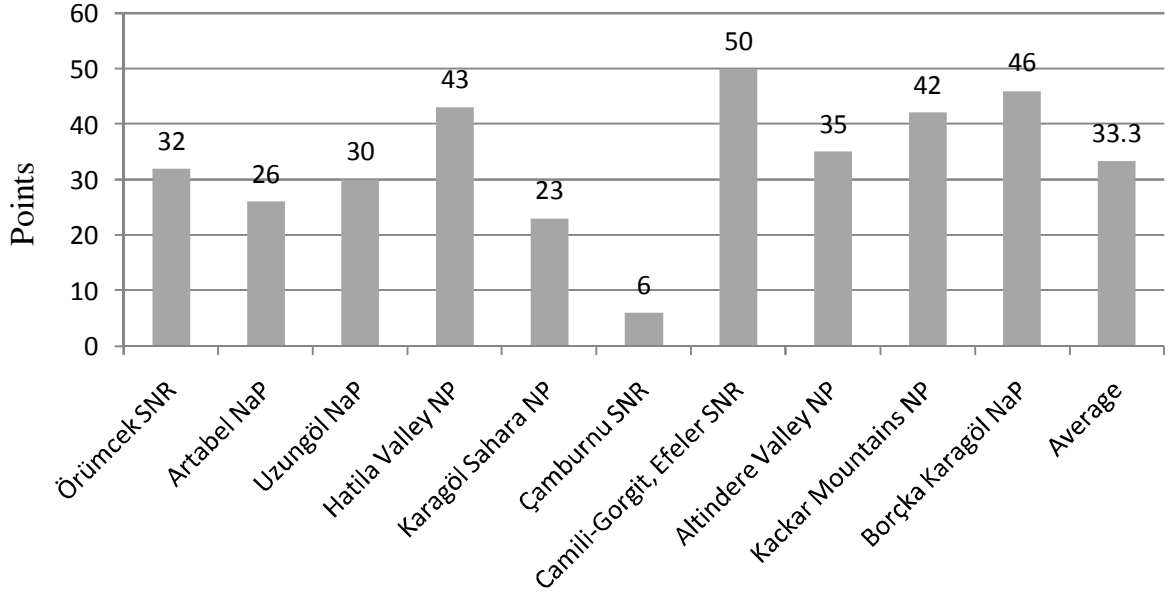

Figure 4. Biological importance of Pas.

known to increase economic activities. Indeed, the socio-economic importance of these areas emerges owing to forestry products, illegal species trafficking, illegal hunting, and legal tourism and recreational activities (Figure 5).

Conservation and socio-economic priority

Camili-Gorgit and Camili-Efeler have first conservation priority (Figure 6). The basin also has priority as a special PA owing to its intact natural old forest ecosystems, the

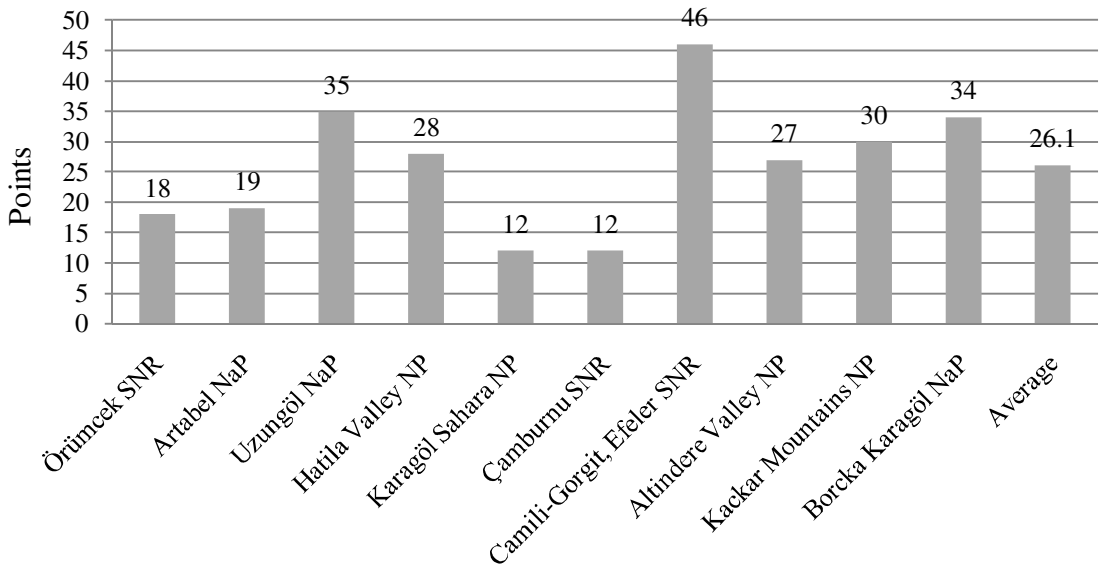

Figure 5. Assessment of socio-economic importance of protected areas.

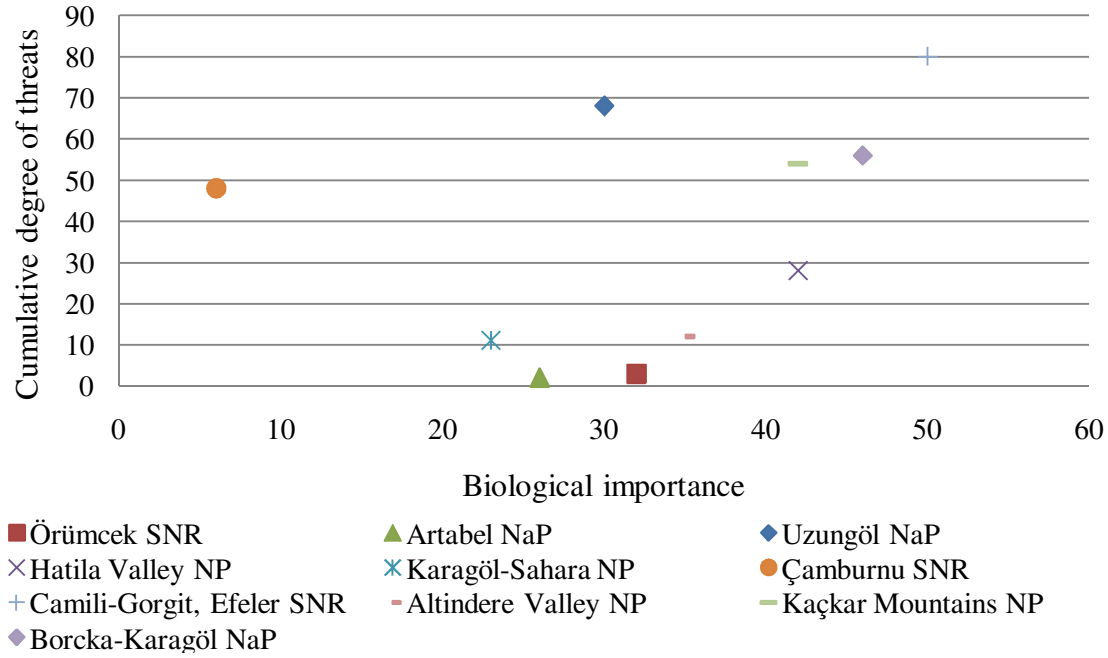

Figure 6. Assessment of the conservation priority of areas.

number of its endemic and relict species, glacial lakes and fresh water systems. At the same time, the combination of these special ecosystems with landscape quality and tourism elements such as traditional life increases the demand from tourists and thus the threats. Improvement in highway quality and roads open year-round will also increase the demand and threats in the near future. The number of tourists in some parts of these areas has already significantly increased in recent years (Albayrak, 2010; Aydın and Türker, 2010). Areas with high conservation priority scores, such as Uzungöl NaP, Kaçkar Mountains NP and Borçka-Karagöl NaP, also have similar characteristics. As shown in Figure 6, Çamburnu SNR, which has the lowest conservation priority, has been declared a SNR as it is the only place where the Scotch pine goes down to sea level. Being declared as SNR does not show that the area has rich biological diversity. Therefore, it is not surprising that its

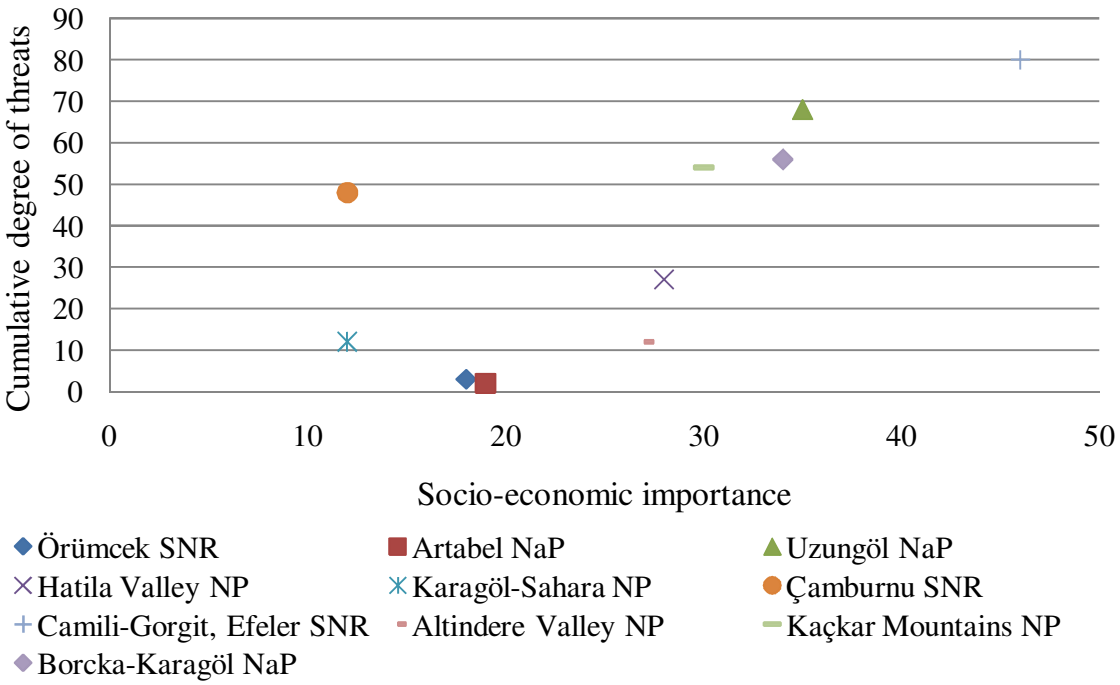

Figure 7. Assessment of areas with respect to socio-economic priority.

conservation priority is low. What is surprising is the area has actually been declared as SNR. In addition, the close proximity of the area to two cities exposes is it to various threats such as rubbish tips. Even though areas such as Karagöl-Sahara NP, Artabel NaP and Altindere Valley NP have moderate biodiversity, transportation difficulties and low demand mean that they do not face serious threats (Figure 6).

Seen from a socio-economic perspective too, areas of priority are Camili-Gorgit and Camili-Efeler SNR, Uzungöl NaP, Borçka-Karagöl NaP and Kaçkar Mountains NP. This can be attributed to the facts that these areas are the most important tourism destinations in Eastern Black Sea and their people have high socio-economic expectations (Figure 7). However, the increase in expectations and the commercialization of traditional life constitute further problems.

Vulnerability

Intensive legal logging and insect-related forest death has turned the Hatila Valley NP into the most vulnerable area. Kaçkar Mountains NP is also vulnerable because of easy accessibility with its borders to 3 cities, 6 districts and 4 entrances without control; demand for hydroelectrical energy, tourism, poaching, illegal logging and fishing; and change in traditional life style and housing; and Uzungöl NaP due to tourism and hotel pressures. Kaçkar Mountains NP has high biological diversity and varying land use style owing to tourism (Figure 8).

The most important element affecting vulnerability of areas is easy accessibility because of roads (Figure 9). In addition, difficulties with recruitment and the market value of areas also affect vulnerability.

Management effectiveness

Planning, input, processes and output in PA management altogether show the effectiveness of the PAs in the region. Overall management effectiveness scores are not related to protected area categories; however, lack of management planning has led to the assessment of only the existing conditions of management activities in the area.

The highest score area was Camili-Gorgit and Camili-Efeler. This may be attributed to the 5-year-old GEF funded II Natural Resource Management and Biological Diversity Conservation Project and the support of public institutions as well as NGOs (Figure 10). This area also has high management effectiveness planning as there are management and implementation plans. In other areas, input was low due to reasons such as shortage of personnel, the distances between management units and the area, and problems with personnel working conditions and training.

With respect to management effectiveness, Altındere Valley NP scored second best because this national park is the oldest protected area in the region and has a management plan.

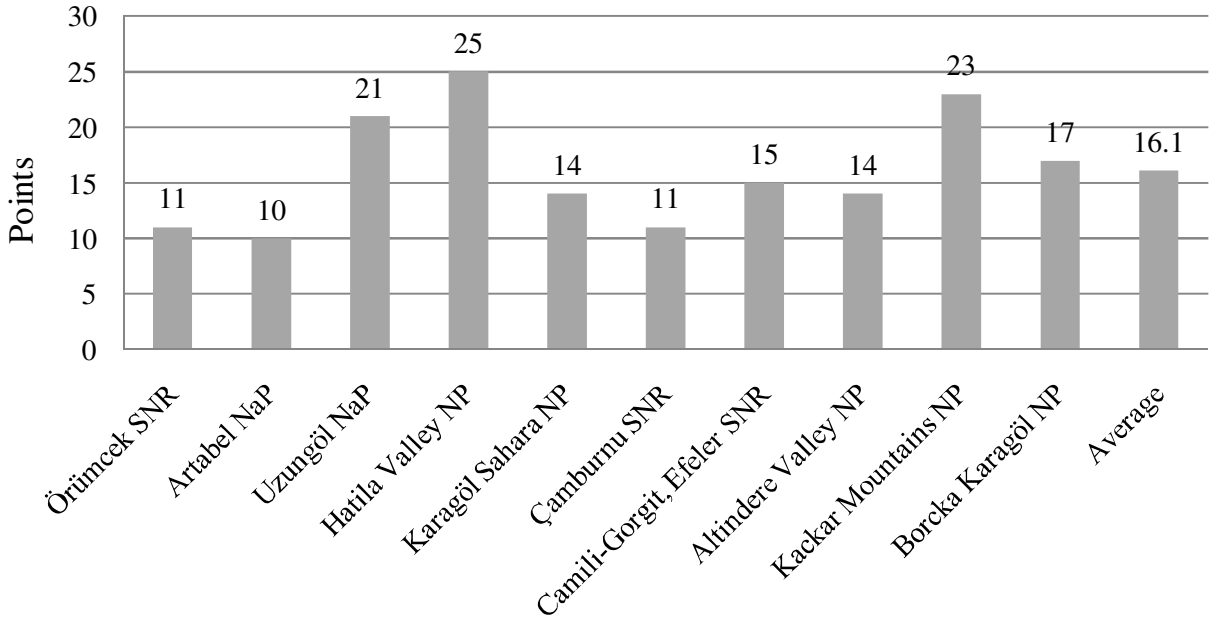

Figure 8. Assessment of areas with respect to vulnerability.

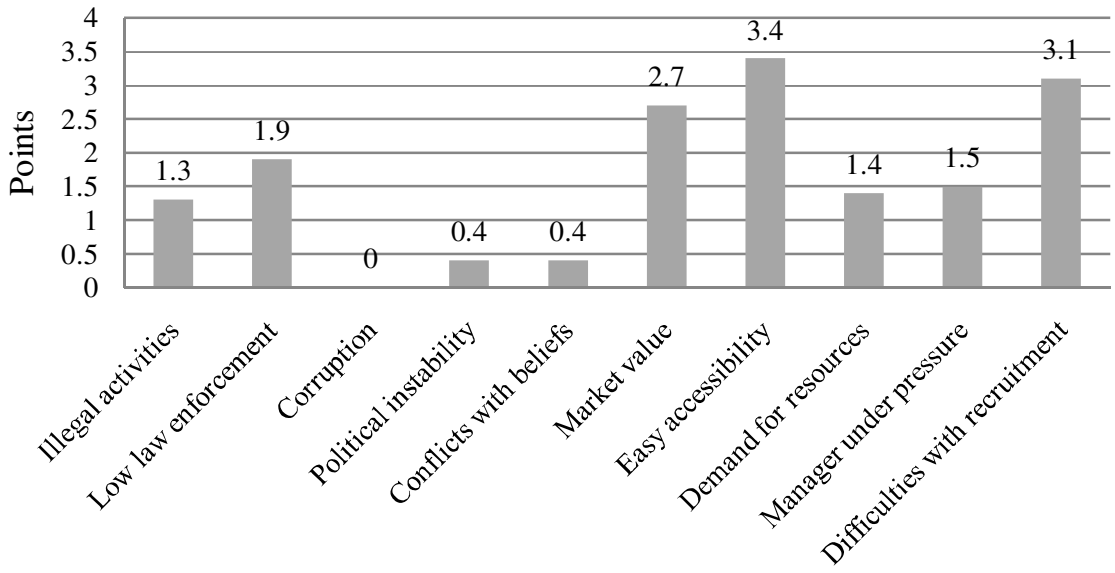

Figure 9. Assessment of PAs average vulnerability.

Overall assessment of the protected area system

The overall assessment of the protected area system was conducted with three common questions directed to all participants. The results have shown that region's intact ecosystems, high endemism, natural processes and representation have scored higher than others in the system level design of the protected areas (Figure 11).

Current protected areas represent the Colchic ecosystems well with their species and ecosystems. Issues such as having protected areas express the goals and objectives of the national protected area system clearly and accurately, maintaining the natural processes on landscape level, and continuing studies on important aspects of protected areas have scored higher than others (Figure 12). These results are not surprising considering the natural areas protected and the many scientific studies that focus on protected areas.

However, others scored low owing to reasons such as the lack of a comprehensive biodiversity inventory for the entire area, absence of restoration goals for damaged ecosystems, and failure to regularly review the PA

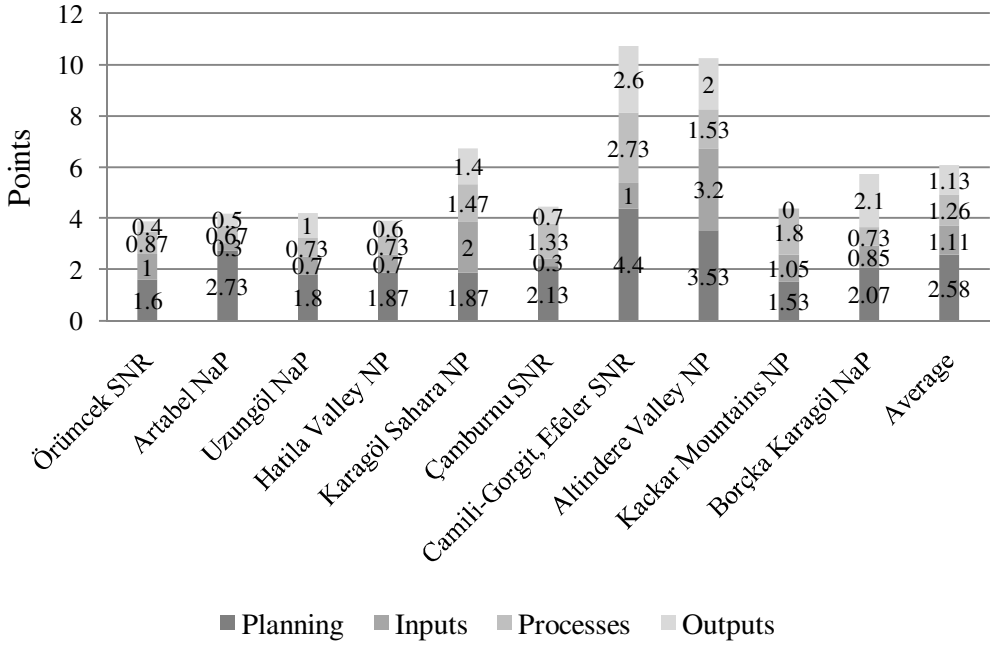

Figure 10. Identification of overall management effectiveness of areas.

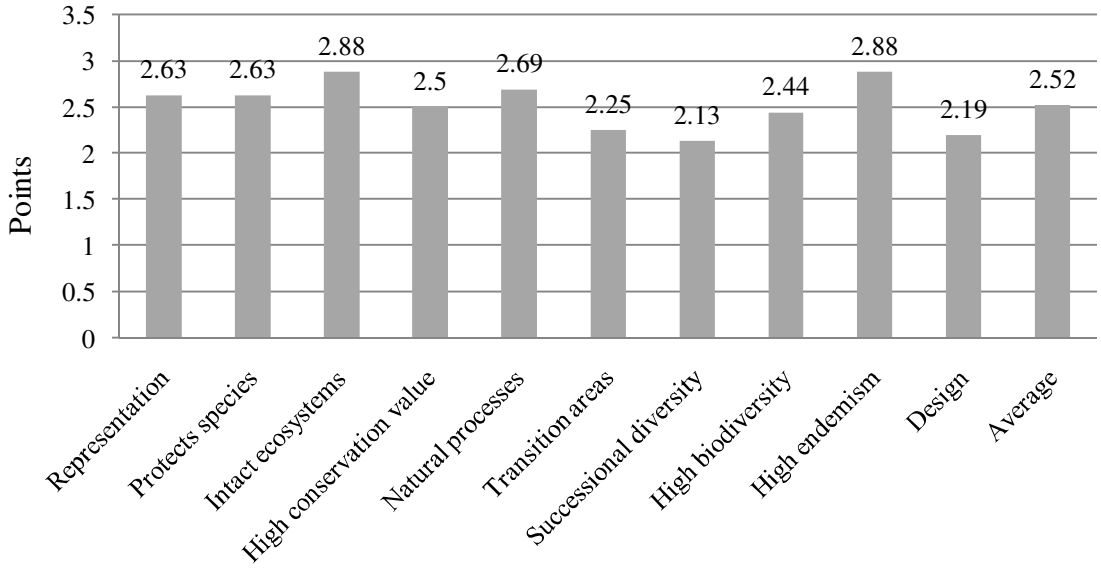

Figure 11. System level design of protected areas.

system with techniques such as gap analysis in order to spot deficiencies and weaknesses. The most interesting result has been that “management assessment”, which actually is the reason why this method has emerged, has scored low in all areas as shown in Figure 10, and that this result also represents Turkey in general. Indeed, it is a known fact that PA managements in Turkey do not assess themselves or commission others to do this, which was confirmed once again with the scoring of participants. The results of a joint workshop with the General Directorate of Nature Conservation National Parks aiming at the implementation of the RAPPAM methodology in all areas was not reflected at all in practice but remained as an assessment.

Current regulations on PAs encourage protection goals and effective management – though not adequately – as well as entering into a dialogue with NGOs and participation. Owing to this, “laws” and “civil dialogue” scored higher than others when the policy environment of the PAs in the region was assessed (Figure 13).

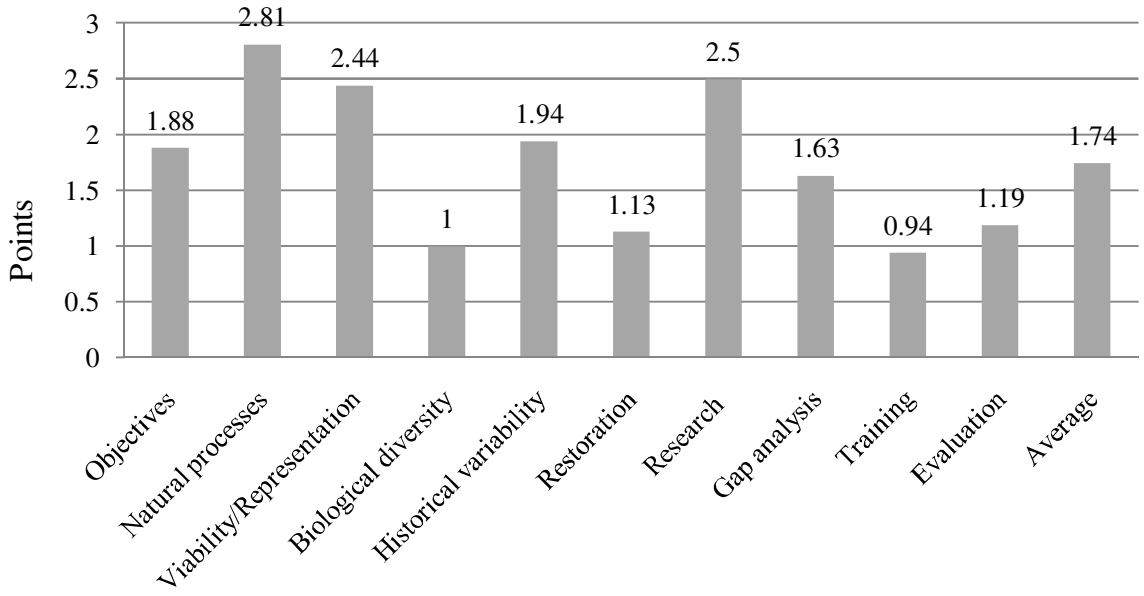

Figure 12. Assessment of protected area policies.

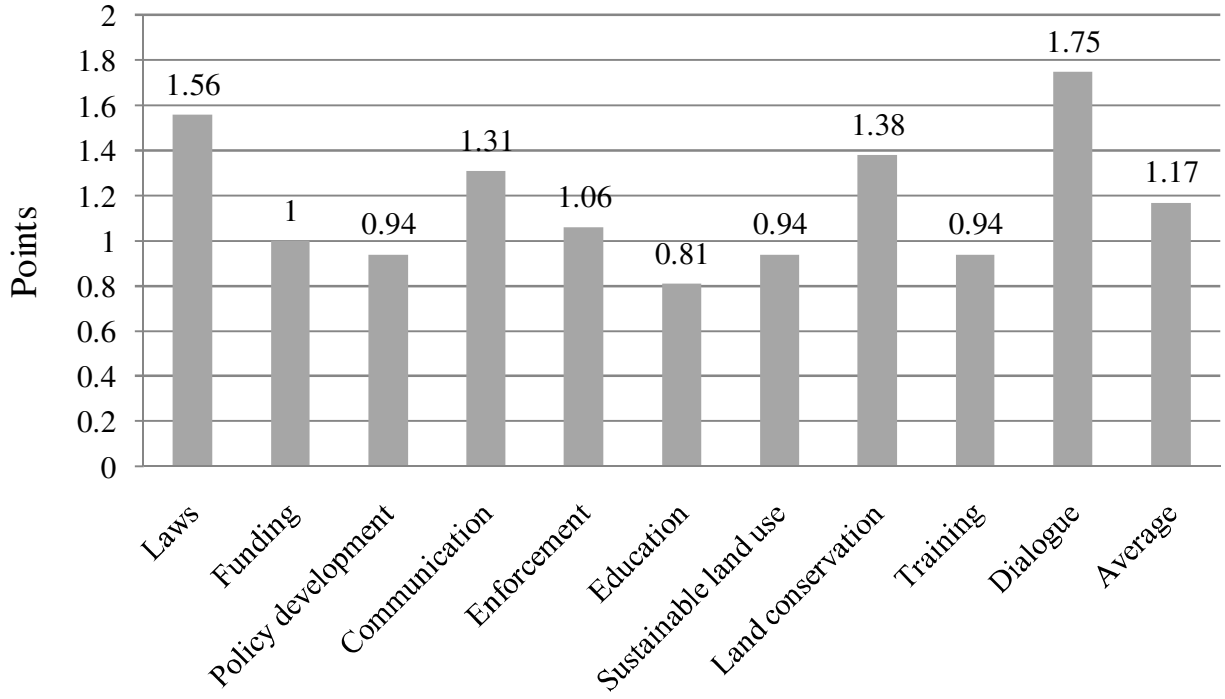

Figure 13. Assessment of the national protected area policy environment.

However, the points of policy environment are generally significantly below the average, showing that the protection of nature has very low importance or priority among public policies. Typical negative indicators of this include poor communication between units involved in natural resources, poor support for environmental education by national policies, and poor enforcement of PA rules and regulations.

Conclusion

The study has shown that the PAs in Eastern Black Sea face several local and global pressures and threats

mentioned in the foregoing. The most serious pressures and threats for the PAs in Eastern Black Sea include semi natural processes, pollution, conversion and tourism. According to Kurdoğlu (2002), tourism is an important development tool for this region. However, the serious mistakes made in tourism implementation regarding hotels, B and Bs and road construction affect not only the PAs but all natural ecosystems adversely. Where biological diversity is rich in the region, there are also many serious threats. Of these, Camili Gorgit and Camili Efeler SNR, Altındere Valley NP, Uzungöl NaP and Borçka Karagöl NaP and Kaçkar Mountains face the highest pressures and threats. Even though biodiversity may be high in Artabel NaP and Örümcek SNR, threats in these areas are not as serious as they are not easily accessible or nearby.

Camili Gorgit SNR and Camili Efeler SNR scored highest in biodiversity, and both of these areas and Uzungöl NaP scored highest in socio-economic importance. Among the areas decleared as PAs, Çamburnu SNR did not have high biodiversity value. Such areas may have been declared PAs owing to certain values they possess, and for Çamburnu SNR this value is the sea level extension of Scotch pine. Thus, the RAPPAM method may not give accurate results for areas such as this. However, it yielded accurate results when used in areas such as Camili, Borçka-Karagöl, Hatila Valley and Kaçkar Mountains which were declared PAs owing to their high biological diversity.

The results show that areas in Eastern Black Sea which have the highest biological diversity also have socio-economic importance because of their tourism potential. This reveals the link between biological diversity and tourism, and the high expectations of locals in these areas. On the other hand, tourism also emerged as a factor that increases the vulnerability of PAs.

Illegal activities in PAs, political instability, high market value of resources in the area, easy accessibility for illegal activities, high demand for resources and pressures on managers show the vulnerability of areas.

There is no systematic management planning process in Turkey that is in line with the goals of PAs. Lack of transparency and participation in the planning process usually ends in conflicts with the locals. Locating PA management offices in city centers as opposed to in the PAs themselves is a serious obstacle in front of effective PA management. In general, Turkish PAs have huge quantitative and qualitative funding and human resources deficiencies (Steindlegger and Kalem, 2005).

The RAPPAM assessment has shown that management

effectiveness is rising in areas such as Camili-Gorgit and Camili Efeler SNRs where international projects are run, and the direct participation of different interest groups and NGOs is ensured. Thus, PAs have a more effective management structure when participation and participatory management planning is adopted.

Clearly and accurately expressing the aims and objectives of the national PA system, being conducive to maintaining natural processes on the landscape level, and continuing studies on important aspects of PAs have caused positive results. On the other hand, low scores for PAs throughout the region have been caused mainly by the lack of a comprehensive inventory on the biodiversity elements of the entire region, lack of restoration in certain ecosystems such as the Hatila Valley NP, and lack of gap analysis or similar work to identify deficiencies. “Assessment of PA management” particularly received a low score in system assessment as it is not implemented in Turkish PAs.

With regard to the assessment of national PA policy environment, PA regulations seem to support protection goals and effective management - though not adequately. Current regulations seem to encourage dialogue with NGOs and participation. However, this study has shown once again that the communication between units involved in natural resources is poor, national policies do not support extensive environmental education at all levels, and rules and regulations on PAs are not implemented effectively at all levels.

It is necessary to assign technical and financial resources which will make national and local PA system management even more effective; establish serious and legal cooperation between institutions that operate on natural resources; clarify PA regulations and gear them towards conservation goals; effectively enforce conservation regulations at all levels; include extensive environmental education in national education policies; incorporate dialogue with the civil society in national policies at all levels, and give participation a legal basis.

RAPPAM as a management effectiveness tool in Turkey

Even though the RAPPAM method may have been used locally on a smaller scale in this study, it has provided an opportunity to assess the usability of the method in the Turkish context. The greatest advantage of the method is that it allows assessment based on group discussion and the reaching of a common decision. Bringing together not only PA managers and researchers but also people from different interest groups has resulted in rich and diverse data. At the same time, respectful contribution to the discussion by all involved has shown the importance of participation in PA management.

The most serious problem in the implementation of the method was the lack of information and data about the areas. In order to rectify the information gaps, Goodman (2003) reconvened earlier workshops to evaluate subsequently identified pressures and threats. He reported assessment participants to state that lack of comparative biodiversity data may lead to a biased assessment of biological importance.

Lack of data leads to inadequate assessment in some areas. Thus the RAPPAM method yields accurate results in areas where information and data are adequate, and also helps the identification of deficiencies in the areas. Implementing the method with adequate information about the areas and by using one-to-one observation would increase the reliability of the assessment results. As a result, the following may be stated about the method and its implementation in Turkey: Protected areas in Turkey are not explored equally and there is not enough research. Most research is seen in national parks than in other protected area categories.

1. Information gaps in PAs resulted in bias in assessments.
2. In PAs which have more research, information and planning (Camili and Altindere), the results in terms of pressure and threats are higher compared to the ones with less information and intervention. On the other hand, well known areas were assessed as high biodiversity areas than the ones with less data.
3. It is crucial to make the assessment with qualified and knowledgeable PA staff. Otherwise, it becomes hard to answer the questions and most PAs become positively assessed.
4. When areas declared as PAs for different statutes and uses were considered, it was seen that not all “questions” were appropriate for all statutes. For instance, as strict nature reserve management planning is nonexistent in Turkey, it is natural that the assessment of these areas is lacking.
5. In systems containing areas with different statutes, methods based on single areas such as Management Effectiveness Tracking Tool (METT) may be better for the assessment of management effectiveness.
6. Conducting the assessment in the given area itself may yield more accurate results.
7. Assessment results should be taken into account in local and central PA authorities and thus contribute to the improvement of implementation units.
8. The results will contribute to the development of new research not only by decision-makers and site managers, but also by universities and NGOs so that deficiencies may be rectified.

Using internationally acclaimed methods such as RAPPAM and METT in the assessment of management effectiveness is important for the assessment of transboundary PAs and the success of larger scale biological diversity conservation. The RAPPAM method was used in Turkey and Georgia, two countries in the same ecological region. In 2003, it was implemented by the WWF Caucasus Programme Office in Georgia, which is Turkey’s Eastern Black Sea neighbor. For this purpose, 18 protected areas were selected for the assessment from a formal list of PAs (Zazanashvili et al., 2003). In this study, areas with conservation priority owing to biological diversity also had high socio-economic priority points. The pressures and threats found in the present study were also similar to those obtained in Georgia. The results obtained in both countries by using the same method reveal how management effectiveness in trans-boundary PAs can be equalized.

In Turkey, studies aiming to identify management effectiveness in national PAs were initiated in 2005 with the cooperation of the Turkish Ministry of Environment and Forestry and WWF-Turkey. The method was first used on a regional scale in the present study which was supported by CEPF. With more implementations at the regional level, Turkey’s PA system and management structure may be identified in detail. Revealing manage-ment effectiveness and its lacks through participatory studies will undoubtedly make it possible to resolve problems by using common sense. This study showed that the diverse methodologies used for evaluating the effectiveness of protected area manage-ment paint a remarkably similar picture of management strengths and weaknesses across the world. As Leverington et al. (2010) mentioned, effective protected area management is an essential tool in tackling current and future threats to biodiversity. Only if evaluation results in improved management is it a worthwhile investment.

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