OPEN ACCESS
EURASIA Journal of Mathematics Science and Technology Education
ISSN 1305-8223 (online) 1305-8215 (print)
2017 13(6):2215-2233
DOI 10.12973/eurasia.2017.01222a

Evaluation of opinions related to the endangered Neopolis wetland in North Cyprus

Asuman Korukoğlu
Near East University, N.Cyprus
Şerife Gündüz
Near East University, N.Cyprus
Ahmet Güneyli
Near East University, N.Cyprus

Received 29 February 2017 ▪ Revised 02 April 2017 ▪ Accepted 07 May 2017

ABSTRACT
In this paper, the complaints and expectations of people living around the Neopolis wetland, which is an endangered area with international importance in Famagusta, Cyprus, in terms of the present situation of the wetland. For this purpose, 88 people (self-employed, university students over 18 years of age, etc.) who live in the three streets and one main street parallel to the wetland were included in the working group. Open-ended questions were asked to the participants as required by qualitative research approaches. According to the research findings, it is seen that people have complaints about the present situation of the wetland and have expectations from the authorities and residents living there about its protection. It is observed that participants do not have sufficient awareness about the importance, protection and usage of the wetlands. In summary, it is found out that they required education about the environment and the wetland.

Keywords: Environment education, Neopolis, North Cyprus, Wetland,

INTRODUCTION

It is argued that environmental problems have deteriorated due to technological influences on inhuman emotions, such as greediness, restlessness, jealousy, irresponsibility and laziness and their perception of the earth. Nevertheless, environmental education works have gained global momentum with the purpose of finding solutions to existing problems (D'Amato & Krasny, 2011; Kopnina, 2014). Environmental education can be defined as the development of environmental awareness in all segments of society, creating behavioral changes which are environmentally sensitive, permanent and positive, and urging individuals to actively participate in the protection of natural, historical, cultural and socio-aesthetic values and of the solution to environmental problems. One aspect of environmental education is

Correspondence: *Asuman Korukoğlu, Faculty of Education, Near East University, Nicosia, Cyprus.*
Email address: asumankorukoglu@gmail.com

State of the literature

- Wetlands are ecological habitats, they provide shelter and areas of nutrition to organisms therefore, they are worthy of protection
- Water resources are essential resources and has to be used in a systematic and economic way
- Wetlands are one of the most important ecosystems in the world; they constitute an indispensable habitat for various mammals, particularly migratory birds, reptilians, some amphibians and fish species, which are part of the indigenous wildlife

Contribution of this paper to the literature

- It is observed that participants do not have sufficient awareness about the importance, protection and usage of the wetlands
- People have complaints about the present situation of the wetland and have expectations from the authorities and residents living there about its protection
- Environmental Education is key to protect wetlands

programming and adding to the educational system training activities on the comprehension of the functions of ecosystems of wetlands (Ibrahim et al, 2012; Korfiatis et al, 2009). For instance "Anthropocene park" in Kopnina's (2014) study, named Future Scenarios and Environmental Education, which focuses on deep ecology education and the recognition of intrinsic value of other species, can be a good sample for creating awareness for people who live around wetlands. Studies on wetland ecosystems and their biological richness, particularly on wetland water birds, have gained importance in North Cyprus in recent years.

In this paper, the purpose is to determine the opinions of adults on the basis of lifelong learning. In this regard, the research is different from other studies in that the literature in that the sample is not chosen from students and the opinions of adults are sought. The importance of the research can be explained in terms of the conservation of wetlands in North Cyprus. Namely, conservation and management plans must be developed for each one of the wetlands, taking into consideration the fact that Cyprus is an island, it has a semi-arid climate and all resources on the island are limited. In this context, it is important that adults should receive appropriate education.

According to the definition provided by the Turkish Republic General Directorate of Nature Conservation and National Parks, a wetland is an ecosystem which combines land, coastal and naval habitats (2017). When they are grouped according to their biological and physical characteristics, wetlands are divided into 42 categories; 33 natural and 9 artificial. Therefore, several definitions have been made for wetlands. Wetlands are the most important genetic reservoirs of the earth, with rich flora and fauna and intensive organism collection, which have emerged as a result of natural processes that have developed over hundreds of thousands of years. They regulate the water regime of their area and balance its climate; they are also of economic value due to the opportunities they provide for fisheries, agriculture, and husbandry, nut-grass cutting, pet-extracting and recreational activities.

Consequently, they have been a centre of attraction for all civilizations throughout history. As wetlands are ecological habitats, they provide shelter and areas of nutrition to organisms, each of which have a distinct duty in nature, in terms of their geographical structure, visual beauty, and biological contents; therefore, as they are worthy of protection, environmental education on wetlands has gained significant importance. Wetlands are one of the most important ecosystems in the world; they constitute an indispensable habitat for various mammals, particularly migratory birds, reptilians, some amphibians and fish species, which are part of the indigenous wildlife. They are one of the most critical producers of oxygen in the atmosphere. The solution of organic materials in wetlands is particularly critical for the sulphur and nitrogen cycles, and has some critical functions, such as fish production, water for agriculture, potable water resources, flood control, and supplementing underground water levels. It can also clear a limited amount of organic waste through natural means. Some wetlands have important features which cannot be quantified financially in scientific, educative, aesthetic, archaeological and historical terms (Arı, 2006).

The most comprehensive international convention on the protection of wetlands is the Ramsar Convention. According to the 1971 Ramsar Convention, wetlands are defined as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six metres" (Yavuz, 1995). The Ramsar Convention categorizes wetlands into three groups, namely naval/coastal wetlands, inland wetlands and man-made (artificial) wetlands. A total of 42 wetland types are determined in these three categories (Arı, 2006). When the historical process is examined, it is seen that the earliest human settlements were concentrated in wetland areas, such as deltas, flood plains, lakes and river banks. Babylonians, Egyptians, Aztecs and several other developed civilizations used water effectively and conducted agriculture without drying the wetlands. The Mesopotamians, Chinese, Indians and several other societies have integrated their societies with wetlands for thousands of years, performed agriculture and husbandry in fertile flood plains which renewed every year, and founded great civilizations based on the opportunities provided by the wetlands such as reeds, fish and birds (Turkish Republic of General Directorate of Nature Conservation and National Parks, 2017).

The Ramsar Convention examines the importance of wetlands in two dimensions, namely their functions in nature and the value for humans. Taken from that perspective, although the benefits of wetlands were significantly important, people could not comprehend them for many years. As their role in the continuity of ecological balance was not examined and evaluated sufficiently, wetlands were perceived around the world for many years as marshlands and infertile areas, which are host to several diseases and have consequently been dried for a number of reasons (Zaimoğlu & Bozkurt, 2010).

In people's daily lives, wetlands defined as marshlands or reed beds have critical importance due to their ecological features and the biomes they host. Wetlands provide a habitat for various types of biome with high ecological and commercial value, as a result of

which, these ecosystems represent the highest biological production in the world, along with tropical forests (Williams, 1990; Görmez, 1997). Species in wetlands can be conserved only if the wetlands are conserved.

Wetlands are home to a very rich flora, particularly water birds, and they also have highly important functions for nature and economic value for humans (de Groot et al, 2006; Arı, 2006). Subsequently, the basic problem about water resources is this essential resource has to be used in a more systematic and economic way; thus, the problems which threaten water resources can be determined, prevented, and water and its dependant ecosystems can be conserved (Sarıkaya & Çiçek, 2010). Wetlands regulate water regimes by supplying or discharging underground waters, balancing ground water, controlling floods and preventing the penetration of sea water into coastal areas (lagoons). Additionally, wetlands have a positive impact on climate by increasing the humidity in their region. Reeds in wetlands block poisonous materials and also distil the water; for this reason, waste water purification is possible by storing waste waters in small settlements in artificial wetlands. Additionally, wetlands are often stopover locations for migratory birds and home to several animal and plant species (Gürer & Yıldız, 2008).

MATERIALS AND METHOD

The model of the study, knowledge about the wetland area, participants, data collection tool and analysis of the data sections are presented below.

Model of the study

This study is conducted according to a qualitative research approach. The research is based on a case study, which is a qualitative research model. In this research, the Neopolis wetland in the Famagusta district of North Cyprus was studied. In the research, complaints and expectations of people living around the Neopolis neighbourhood wetland area were determined. The data of the research was obtained through interview techniques.

Case study: Endangered Neopolis wetland

According to Republic of Cyprus Water Development Department 2009 year resource on the Dams of Cyprus, the dams in Cyprus are grouped into two categories, namely large and small dams, with 55 large and 51 small dams listed based on their water capacity. According to the resource titled Dams of Cyprus, the construction of 108 large ponds was completed in Cyprus between 1900 and 2010. These ponds are defined as earth filling, rock filling and weight dams, depending on their construction origins (International Commission on Large Dams, 1994). The wetlands in North Cyprus are classified according to the "By-Law on Conservation of Water and Aquatic Environments" as underground water resources and aquifers, springs, dams and ponds, natural lakes and natural wetlands (North Cyprus Environmental Law, 2012). According to a study conducted by the Joint Nature Conservation Committee, as of October 2015, 248 Ramsar sites are listed (designated and proposed) in the UK and Overseas Territories & Crown Dependencies, which include the

Cyprus Akrotiri Wetland in the British Sovereign Base Area. According to the circular published for the 2005 World Wetlands Day by Salathe, European counsellor for Ramsar Wetlands (2015), the Famagusta wetlands are among the most important wetlands which require attention as bird habitats.

The research on ecologically important wetlands in North Cyprus generated a list of 66 different locations. Among these wetlands, there are 20 ponds, 16 rivers, 7 streams, 10 stream barrages, 13 natural wetlands (Cambaz et al., 2005). One of the abovementioned wetlands, the Neopolis wetland, is geographically located at 35°8'30.99''N and 33°55'8.20 coordinates, in Glapsides Bay on the Famagusta gulf coast of northern Cyprus. Neopolis wetland is one of the country's natural wetlands that is conserved under the by-laws on "conservation of water environments and wetlands" (North Cyprus Environmental Law, 2012). In the 2005 research conducted by Canbaz et al. to determine the wetlands that bear importance for the ecology in the region, the Neopolis wetland was defined as one of the important wetlands under conservation. The Neopolis wetland is a rare natural wetland in the island, with its unique flora and avifauna in particular (Çiçek, 2007).

In the 2007-2011 resources series conducted by Charalambidou et al. on the "water birds observation program" for the entire island of Cyprus, 44 wetland avifauna species were identified in total. A replication of the same study in 2012 identified 49 bird species in the region. In the resource titled "Important Bird Areas of Cyprus" published by BirdLife Cyprus, the Neopolis wetland was defined as an important bird area among the Famagusta wetlands.

The Neopolis wetland was declared a "Special Protection Protection Area" by North Cyprus authorities in 2008; however, the foundation of Eastern Mediterranean University on the border of this wetland, along with the construction of various offices and multi-story constructions in the dry bed of this wetland exposed the area to the threat of intense construction (Seffer et al., 2011). A research study conducted by the Environmental Protection Department of the North Cyprus Ministry of Environment, Culture and Tourism determined that the Famagusta municipality poured debris at the border of the wetland in January 2009 and consequently constructed a road that was opened for traffic (North Cyprus Environmental Law, 2012). In their study titled "Environmental Factors that Threaten Wetlands in Northern Cyprus", Kaşot et al. (2014) listed the factors that threaten the Neopolis wetland as follows: lack of implementation of conservation measures, filling part of the wetland with transported soil, cutting off the natural link with the sea, vehicles parking by the wetland and increased wastes polluting water banks, and stray dogs entering shallow water, endangering the lives of water birds.

As a result, the Neopolis wetland is perceived as a wetland worthy of study, taking into consideration its importance mentioned in the literature and its endangered status that has been emphasised in various studies. Thus, the purpose was to make a valuable contribution to the literature concerned with wetland ecology and to increase the environmental sensitivity towards the example of the Neopolis wetland in Cyprus.

Participants

The working group for this study consisted of the residents of the Karakol neighbourhood in the Famagusta district of Northern Cyprus, which is the closest area to the Neopolis wetland. In the period when the research was conducted, participants suitable for easily accessible case sampling were chosen. Purposeful and easily accessible case sampling was preferred in order to ensure the speed, practicality and economy of the research. Resultantly, the research sample consisted of 88 people who live in the closest three streets and a main street parallel to the Neopolis wetland. The table demonstrating the demographic information of the people who participated in the Neopolis wetland research is given below.

Table 1: *Table of demographic information on the participants of the research*

Gender	*Female*	*Male*							
	48	40							
Age	*18-25*	*26-45*	*46-65*	*Above 65*					
	17	32	34	5					
Education	*Elementary*	*Secondary*	*High s.*	*University*	*MA/MS*	*PhD*			
	24	6	21	34	3	1			
Profession	*Self-e.*	*House w.*	*Retired*	*Teacher*	*Tourism*	*Student*	*Public s.*	*Manager*	*Unemployed*
	39	11	8	7	6	6	5	5	1
Revenue	*None*		*1200 TLs and below*		*1200-3500 TLs*		*3500 TLs and above*		
	18		9		49		12		

It can be seen that the 88 participants whose demographic data are given in Table 1 were chosen according to maximum variability sampling. The birth places of the research participants are as follows: 69 were born in Cyprus and 19 participants were born outside Cyprus. Of the 69 participants who were born in Cyprus, 39 were born in Famagusta and 30 were born outside Famagusta. Finally, of the 39 participants who were born in Famagusta, 11 were born in the neighbourhood close to the Neopolis wetland.

Data collection tool

A semi-structured interview form was used in order to identify the complaints and expectations of the local residents living near the Neopolis wetland. As one of the most widely used research data collection techniques, an interview is a purposeful conversation where previously prepared questions are asked and answered (Kuş, 2003). Researchers focused on ensuring that the semi-structured interview form used in the study was reliable and valid; furthermore, professional opinions were sought for this purpose. An instruction was added to the prelude of the interview form explaining the purpose, expected time and directions for how to answer the research questions. Attention was paid to ensure that the two open-ended questions in the interview form were topic-focused and easily understandable; efforts were also made to avoid unnecessary question load. During the interviews, additional questions such as how, why, what and who were used in order to detail the participants' opinions. Due to the low number of questions (only two open-ended questions), the number of participants (88 participants) was higher than a standard qualitative study.

Collection of data

In order to obtain the necessary permissions for the interview and to verify the questions, the *Muhtar* (headman of the neighbourhood) was informed about the study and the first face-to-face interview was made with him in order to obtain his opinions. With the aim of ensuring that the questions could be understood by all participants, the oldest coffee shop that the local residents attended was chosen as the location for the interviews with the five local people who were among the oldest residents in the neighbourhood. As a result of the feedback received, further interviews continued with other local people. Interviews were conducted in June 2013, generally in the afternoons or during evening hours. Questions were asked to the people in their natural environments and in the same order and style. A sufficient time interval was provided for the delivery of answers, which were recorded by taking notes and without alteration. The response rate was high as the interviewer took accurate notes in the interview personally. Participants were informed that ethical rules would be followed during the research (i.e., they would remain anonymous, data confidentially would be maintained and it would only be used for scientific study, and interviews would be terminated if they wished) and researchers refrained from directing the participants.

Analysis of the data

The collected data were resolved using the content analysis method. Two open-ended questions were determined as basic categories: complaints and expectations. After the interviews, the coded (keywords) in the opinions voiced by the participants were identified under each heading, Similar codes were assembled into categories and sub-categories were

formed. With the purpose of ensuring internal reliability, two researchers analysed the answers given by 10 randomly chosen participants to a selected question during the formation of sub-categories and 80% consistency was found. Then, the two researchers worked together at each time, with the result that joint decisions were reached and findings were recorded. Finally, in order to verify whether the emerging sub-categories coincided with the data set, another researcher was added to the data analysis process. The third researcher stated that the created sub-categories reflected the data set.

Tables are utilized while presenting the data. Under each of the tables, explanations are added on the sub-categories. The findings are digitalized and frequencies (number of participants) are indicated. Frequencies are given in the table by ranking from the most preferred to the least.

FINDINGS

The findings of the research are presented based on two sub-problems:

Sub-Problem 1: What are the complaints about the wetlands made by the people living around the Neopolis wetland?

With the purpose of responding to the sub-problem, the participants' views were evaluated through content analysis and 74 different views emerged. These views are presented in table 2.

Table 2: *Complaints of participants about the Neopolis wetland*

Complaints	N
Environmental pollution	27
Pests	24
Mismanagement of the wetland by the municipality	9
Failure to conserve the wetland	9
High humidity	1
Noise	1
Total discomfort with the existence of the wetland	1
Insufficient disinfection of the wetland	1
Not complaining	1
Total	74

Six participants did not respond to the question on complaints about the Neopolis wetland, and the views of some participants were not found to be relevant to the research topic. As a result, it was seen that 74 different views emerged. It is observed that the complaints of a majority of the people living close to the Neopolis wetland are not actually related to the wetland, but refer to environmental pollution in general. In regard to environmental pollution, complaints were raised about waste water, malodours, waste left by people close to the wetland and accumulation of rain water.

After environmental pollution, the second most widely voiced complaint by the participants was pests. They particularly complained about flies, mosquitos, and their associated health hazards. Additionally, the humidity of the wetland was another source of complaint. These views imply that the local people who participated in the research are not knowledgeable about the ecosystems of wetlands, as it is commonly known that the nature of wetlands is to have flies and humidity.

It was found out that some of the complaints made by the local people were related to the tasks of the municipality. It was stated that the municipality did not pay sufficient attention to the wetland and that it filled the area with debris. On the other hand, the view that wetlands should be conserved is also particularly considering the findings of the research, as it differs from the other opinions by supporting the importance of ecosystems. Complaints about the failure to conserve the Neopolis wetland indicate that it is in an idle position, does not attract attention, degeneration of the ecological balance is not managed and material support is not given.

The facts that six participants did not answer, while some gave irrelevant answers such as the noise in wetland, or that disinfection was not conducted and some even expressed total discomfort with the existence of the wetland, complaining about the failure to fill the wetland with earth. This shows that there are people who have no sensitivity or even opinions at all about the wetlands.

Sub-problem 2: What are the expectations about the wetland of the people living near Neopolis wetland?

Expectations in this sub-problem are classified depending on whether they include an environmentalist approach and are grouped under four different headings:

i. Expectations not relevant to environmental awareness

ii. Expectations with superficial environmental awareness

iii. Expectations with indefinite indications

iv. Expectations with environmental awareness

Table 3: *Expectations of participants not relevant to environmental awareness*

Expectations	N
Regulation of the wetland according to their own needs	14
Avoiding flies	7
Disinfection	5
Correction	2
Drying	2
Filling	1
Removal	1
Total	32

The findings in Table 3 show the expectations of people living in the Neopolis area which are not related to environmental awareness. When these expectations are examined, it can be seen that people tend to concentrate on their own needs. For example, they stated that they wanted Neopolis and its surroundings to be developed into a picnic area, green area or a park. It is seen that participants evaluated the entire wetland and its surroundings purely based on the fact that they were disturbed by mosquitos. It is observed that they did not understand what a wetland actually is, its value, how it should be used, why it should be conserved and the importance of mosquitoes in the cycle of life. Additionally, it is believed that they are not aware how beneficial it can be to live near a wetland. It is believed that participants without environmental awareness had not observed the wetlands personally, had not read any publications about wetlands, and that they desired to have neighbourhood parks that they see in large cities in other countries instead.

Table 4: *Expectations of participants with superficial environmental awareness about Neopolis wetland*

Expectations	N
Organization of the surrounding of wetland	12
Wetland should be beautiful and well-kept	9
Wetland should not threaten human health	1
Total	22

When the opinions in Table 4 are examined, the expectation that the area surrounding the wetland should be organized and the environment should be well-kept is a reasonable expectation, but it is not entirely related to environmental awareness and sensitiveness. People living around Neopolis settled close to the wetland as a result of their own choices and established homes in the location. Additionally, they did not mention the protection of the living species in the wetland. Resultantly, it can be said that they are not knowledgeable about the place and importance of a wetland in the natural cycle of life and the role of water in nature. It is evident that people living close to the wetland who participated in this study were not curious about the wetland and had not researched how a wetland should be managed; furthermore, they had not read any publications or watched relevant documentaries. As can be seen in Table 4, the research participants demanded environmental planning; however the organisation that they wanted to implement this approach and what it would entail was not entirely clear. This result implies that they are not knowledgeable about the concept of environmental planning.

Table 5: *Expectations of the participants about the Neopolis wetland with superficial environmental awareness*

Expectations	N
Not responding	9
Government and municipality should interest themselves in the wetland	6
People without any expectations	4
Wetland should be open to the public but kept under control	3
Total	22

In Table 5, the expectations of people living near the Neopolis wetlands who do not clearly indicate what is required, are given. Participants stated that they expected meticulousness, interest, seriousness and effective strategies from the authorities, but the opinions about what this would entail and the purpose was not clear. The fact that nine of the participants did not provide any answer and four of them had no expectations implies that they are disinterested in the wetlands. In this research, when the people who live in the Neopolis neighbourhood are examined, it is seen that, let alone any feeling of discovery, the local people suffer from a lack of interest, which prevents them from answering research questions about the wetland in their own neighbourhood. It can be said that the people who did not respond and who did not have any expectation about the wetland in their locality do not generally have a sufficient level of environmental awareness and sensitiveness.

Table 6: *Expectations with sufficient environmental awareness of participants in regard to the Neopolis wetland*

Expectations	N
Cleaning of the surrounding of the wetland	13
Conservation	11
It should be a nature and bird observation area	2
It should be joined with the sea as the case in its original form	1
Sewage wastes should not be dumped into the wetland	1
It should be isolated from the town and car park around the wetland should not be allowed	1
Number of wetlands should be increased	1
Total	30

In Table 6, the expectations of people living near the Neopolis wetland with sufficient environmental awareness are given. It can be said that those participants who stated that the surrounding area of the wetland should be cleaned, transformed into a suitable location for nature and waterfowl observation, and recommended that car parking near the wetland should not be allowed, undeniably have a high level of environmental awareness and sensitiveness. However, when the expectations in Table 3 above are considered, it is seen that the number of expectations with sufficient environmental awareness is low. The opinions with insufficient environmental awareness are 32, superficial environmental awareness are 22 and indefinite opinions are 22. In this case, only 30 (in other words, 28.3% or less than one-third) out of all opinions reflected sufficient environmental awareness, which is a very low ratio.

DISCUSSION AND CONCLUSION

When the expectations of the people are examined, it is seen that the majority are related to themselves (their own needs) and not to the wetland or its surroundings. People who participated in the research stated that they had some expectations related to a local park, picnic area or a beauty spot instead of protection of the wetland. Thus, it is seen that they are more interested in meeting their own needs and that they are not knowledgeable about the wetland ecosystems or their importance on a national and global scale. An examination whom they expected to realise these plans revealed that 62 interviewees had expectations of the government authorities, 13 of both government authorities and the

people and 3 from their local municipality. In this case, it is clear that only 13 expectations implied responsibility on the part of the public. It can be said that people who participated in this study expected the government authorities and municipality to take appropriate steps and placed their own responsibility in second place. In summary, this understanding must also be criticized in terms of environmental awareness and sensitiveness.

When the expectations of the majority of participants in this research about the Neopolis wetland in northern Cyprus are examined, it is observed that they expected an area "with environmental planning", "green", "which could be used as a park", "with no flies", "disinfected" and "under protection". In particular, the expectation for a disinfected area without flies implies that the interviewees do not understand the concepts related to wetland ecosystems and biological diversity and that they are not aware of the importance of Neopolis wetland as a waterfowl area. Additionally, it shows that they are completely ignorant of the food chain concept and that every living thing in nature has a role to play; furthermore, they do not have sufficient knowledge and sensitiveness about the importance of wetlands in terms of nature and biological diversity. For example, in Arı's (2006) research, it was stated that the most important method of wetland management in Turkey before the 1960s was to dry those areas. Since those years, it was accepted that "the best wetland is a dried wetland" and it was thought that these places were the source of various diseases and agricultural areas should be established to feed the growing population. Additionally, wetlands were seen as useless places which prevented human development. The studies conducted by Tokatlı and Gürbüz (2014) in Turkey showed that local people were not sufficiently sensitive to wetland ecosystems, as they neglected the negative impacts of agricultural activities on the wetland and predominantly perceived them as an economic source. In the research conducted by Surat, Surat and Özdemir (2014), negative opinions were voiced, such as that wetlands should be organized as places where picnics or boat rides could be offered or, alternatively, they could be converted into restaurants, cafeterias or pastoral cafes. In the study by Scholte et al. (2016), the emphasis was on the opinion that wetlands were a food source for mosquitos and they posed a flood danger. As displayed in the findings of the study above, the reason behind the incorrect information and negative attitudes, as stated in Sülük, Nural and Tosun's study (2013), is the insufficient knowledge of the people and the deficiencies in environmental education.

When the complaints and expectations of the interviewees are examined, the fact that they displayed views that were irrelevant to environmental awareness brought attention to the quality of environmental education on the island. In Kuyucu's 2016 study conducted on wetlands with 10 elementary school teachers who worked at different schools in North Cyprus, it was determined that almost all teachers defined wetlands as areas with water. It was found out that half of the participants were completely unaware of the number of wetlands in North Cyprus, and almost all of the other teachers could not accurately estimate the number of wetlands in the country. It is essential that examples should be taken from countries with wetland education practices and similar practices should be implemented in

this country. In their study conducted in Turkey, Başar and Miran (2010) found out that the primary factor which attracted visitors to Dilek Peninsula Büyük Menderes Delta National Park in September and October was the sense of exploration. From that perspective, activities and knowledge about wetlands should not be limited to biology lessons and biology textbooks, and permanent learning should be ensured through travel, observations and applications. Myers (2012) and Sukhontapatipak and Srikosamatara (2011) demonstrated that wetland education based on application and travel-observation increased the knowledge and attitudes of students. Wilcox (2008) argued that wetland education significantly developed and has become more effective since the 1970s.

In this study, when the expectations of the interviewees related to the wetlands are examined, it is found out that they had expectations from the authorities (government, municipality) rather than themselves. It is undeniable that, when wetland conservation and management plans are being prepared, the local government, environmental office, agricultural office, forest and water office authorities, as well as makers and implementers of law, all have an important impact on wetlands. However, it is believed that the crux of the issue is raising the awareness of each individual through education. Similar to the findings of this research, Tankuş and Soran's study (2012) determined that students believed that social elements are larger obstacles than individual elements in terms of the conservation of wetlands. In this context, the social elements refer to society, politicians and authorities; while the personal elements are the person and his/her family. In that study, the problems related to social elements were displayed as a lack of trust in authorities and the ignorance of the society. However, contrary to the findings of the research mentioned above, Keddy argued in his work titled "wetland ecology: principles and conservation" (2010) that the greatest problem was the individual.

In this research, various opinions on wetland ecosystems, biodiversity and environmental awareness were also voiced. In the interviewee opinions related to environmental awareness, concerns about the future of Neopolis wetland were mentioned and the necessity of taking various measures was emphasised. In their study which was conducted in Turkey, Gürer and Yıldız (2008) showed that the high ratio of irrigation water usage in the total annual water consumption had a negative effect on wetlands. Resources which supply the wetlands are used to obtain potable water or for irrigation. Dams are constructed on the rivers which feed wetlands and the increase in droughts due to global warming causes serious water shortages in wetlands. Additionally, the storage of solid wastes around wetlands, pollution of the wetlands with pesticides and drainage waters, unplanned nut-grass cutting, burning of nut-grass, extraction of turf, sand and pebbles from wetland were listed as problems which threaten the future of these areas. Based on these findings, it is seen that the conservation of wetlands has come to the forefront. In the research by Dimitrakopoulos et al. (2010), it was found out that, although the environmental knowledge level of local people around the wetlands was high, their participation in the the sustainable management of wetlands was minimal. Therefore, it was seen that people having

adequate knowledge about wetlands was not sufficient and greater awareness had to be created on conservation and sustainable management.

According to the 1971 "Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat", signatories are also obliged to rationally use the wetlands which are not included in the Ramsar wetlands list (Gürer & Yıldız, 2008). In this context, in order to conserve the wetlands in North Cyprus, authorities must put the regulations into practice so that they can perform their obligations under the Ramsar convention. Consequently, the Neopolis wetland urgently requires an updated conservation and management plan. Turkey became a signatory to the Ramsar convention in 1994 and accepted the rational use of all wetlands in the country. Within this framework, the country prepared a National Wetland Strategy and began to publish various publications, including basic information about wetlands (Republic of Turkey Ministry of Forest and Water Affairs, 2017).

RECOMMENDATIONS

Recommendations in regard to the findings of the research are presented below:

i. The research findings displayed that people living in Cyprus do not have the desired level of knowledge and awareness about wetlands. For this reason, education activities related to wetlands have to be conducted to achieve a comprehensive understanding in North Cyprus. The process should start with the education of the environmental educators themselves. Environmental education and wetland education should be performed both in and outside schools. In elementary and secondary schools near wetlands, practical education activities on wetlands must be put into practice. On days such as "Earth water day", "Earth wetlands day" and "Biodiversity day", public education seminars and education materials should be prepared on wetlands.

ii. Significant wetland management must be realised in North Cyprus. Research findings show that government and municipality authorities are not capable of realising wetland education in an effective manner. The "Bylaw on Conservation of Wetlands and Water Environments" under North Cyprus environmental law must be examined and necessary updates must be implemented. The area 500 meters around wetlands must be declared an absolute protection area so that natural living things and biodiversity unique to wetlands can be sustained. For this purpose, rural watchmen equipped with necessary knowledge and forest officials must be assigned in sufficient numbers to control the forests nearby wetlands. In summary, when conservation and management plans are being prepared and put into practice, it should considered that Cyprus is an island with limited natural resources and specific threats.

iii. The quantity and quality of scientific studies on wetlands in North Cyprus should also be increased. With studies similar to this one, the awareness of scientists on wetlands in North Cyprus can be increased. For example, cooperation can be made with universities in

order to prepare an inventory, map and biogeography of wetlands across the whole country. Wetland workshops can be prepared where all stakeholders (academicians interested in environment, government-municipality authorities, civil society organizations, educators etc.) can attend.

iv. The role of a society with environmental ethics in the protection of wetlands should be taken into consideration. Effort must be made to create a society with environmental ethics. Measures must be taken to increase the readability and accessibility of the works on wetlands, which is the topic of this study. Thus, it is believed that environmental ethics can be developed through education. Lack of awareness brings environmental insensitivity. It can be said that societies can become more sensitive and achieve environmental ethics as they learn and continue to learn about the environment.

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