

Evaluation of Management Performance in Protected Areas: Example of Adana Seyhan Dam Lake Wildlife Reserve Area

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Abstract

Aim of study: With the Performance Measurement Evaluation Method, it is aimed to disclose the success of the implementation of the Adana Seyhan Dam Lake Wildlife Reserve Area Management and Development Plan.

Area of study: The study area is located within the boundaries of Çukurova, Karaisalı, Yüreğir, and Sarıçam districts of Adana.

Material and methods: The Plan identified 50 activities under 8 different programs in 2011. The success of the plan's implementation was measured with observations, question-answer, and mapping methods.

Main results: According to the first, second, and third priorities of the fifty activities listed, the results of the observations and mapping show that their success rates are 37%, 27%, and 33% respectively. Regardless of the priorities of these activities, the findings of the study indicate an 82% success rate in question-answers, while the observations detect a 20% success rate.

Highlights: Considering the priorities of the activities, the study displays an overall 30% success rate in the performance of the plan; i.e., relatively low level. The research concludes that out of eight Wildlife improvement projects, two are *inadequate*, three are *unsuccessful*, and three are *successful*.

Keywords: Seyhan Dam Lake Wildlife Reserve Area, Performance Criteria, Adana

Korunan Alanlarda Yönetim Performansının

Değerlendirilmesi: Adana Seyhan Baraj Gölü Yaban Hayatı Geliştirme Sahası Örneği

Öz

Çalışmanın amacı: Çalışmada Adana Seyhan Baraj Gölü Yaban Hayatı Geliştirme Sahası Yönetim ve Gelişme Planının uygulamadaki başarısının Performans Ölçüm Değerlendirme Yöntemi ile ortaya konulması amaçlanmıştır.

Çalışma alanı: Çalışma alanı Adana İli'nin Çukurova, Karaisalı, Yüreğir ve Sarıçam ilçe sınırları içerisinde konumlanmıştır.

Materyal ve yöntem: 2011 yılında Yönetim ve Gelişme Planı hazırlanmış ve 8 farklı programa ait 50 faaliyet belirlenmiştir. Faaliyetlere yönelik hedeflerin uygulamadaki başarısını değerlendirmede gözlem, soru-cevap ve haritalama yöntemleri kullanılmıştır.

Sonuçlar: 50 faaliyetin birinci, ikinci ve üçüncü önceliklerine göre Gözlem ve Haritalama Yöntemlerinden elde edilen bulgular sonucunda başarı performansları sırasıyla %37, %27 ve %33'dür. Bulgulara göre, faaliyetlerin önceliklerine bakılmaksızın başarı oranı Soru-Cevap'da %82, Gözlem metodunda ise %20 olarak gerçekleşmiştir.

Önemli vurgular: Planın başarı performansındaki oran, faaliyetlerin öncelikleri açısından değerlendirildiğinde %30 gibi düşük bir başarı oranına sahiptir. Plandaki 8 programdan 2'si *yetersiz*, 3'ü *başarısız*, 3'ü *başarılı* olarak değerlendirilmiştir.

Anahtar Kelimeler: Seyhan Baraj Gölü Yaban Hayatı Geliştirme Sahası, Performans Ölçütleri, Adana

Introduction

Throughout history, a society's social values and its sensitivity to the environment have progressed in parallel. In this context, the political, economic, philosophical, ethical,

social and cultural development levels of the societies have affected the environmental sensitivities and responsibilities of the countries. (Mahmutoğlu, 2009; Aslım et al., 2012; Öztürk & Özdemir, 2013). When



people realized that there was no return to the destruction they did in nature, they began to adopt the concept of conservation. However, factors such as intense work in daily life, an increase in living standards, and city life brought about the restriction of physical activities, and people wanted to head to areas away from city life where they could do recreational activities, rest, and have fun in their lives under stress. Protected areas are the primary areas that will serve this purpose, but will ensure that both nature and people continue their existence in the renewal cycle as long as they are managed with the right planning and application.

The management plan in protected areas is the document in which the physical characteristics of a protected or planned area, ecological characteristics, socio-cultural structure, economic structure are defined and the factors that threaten the area are specified, the targets determined to improve the area are included, and the activities that need to be carried out to achieve these goals are included in the stakeholders.

"Wildlife Reserve Area" in Article 2 of the Land Hunting Law No. 4.915; It is defined as the areas where game animals are sheltered, where studies are carried out to improve the current living conditions, where wildlife is preserved, where its development is ensured, and where hunting is allowed within the scope of a special hunting plan if necessary. According to the fifth article of the Regulation on Wildlife Protection and Wildlife Reserve Areas, published in the Legal Gazette No. 25.637 published on 8 November 2004, the selection criteria for "Wildlife Reserve Areas" are listed in 5 items, while the target species or species are found or brought later, It has been stated that the area where the migratory species live in natural environments with opportunities such as food and accommodation they need to survive will be selected from the preserved renewable areas to ensure that the migration routes are safe.

Wildlife Reserve Areas are under the responsibility of the Ministry of Agriculture and Forestry, General Directorate of Nature Conservation, and National Parks. According to the current legislation in Türkiye, Wildlife Reserve Areas have been registered by the Cabinet Decision by the 8th paragraph of

Article 4 of Law No. 4.915 on "Land Hunting". The Regulation on Wildlife Protection and Wildlife Reserve Areas was published in the Legal Gazette dated 8 November 2004, numbered 25.637, and entered into force. Management of Wildlife Reserve Areas and Wildlife Protection Areas in Türkiye is implemented according to Law No. 4915 on Land Hunting, Regulation No. 25.637 on Wildlife Protection and Wildlife Reserve Areas, Central Hunting Commission No. 25.466, Duties of Provincial and District Hunting Commissions, Working Principles and the Procedures.

According to the official list of the Ministry of Agriculture and Forestry, dated 2020, in Türkiye, there are 84 Wildlife Reserve Areas with a total surface area of 1.162.788.47 hectares. 1.5% of Türkiye's surface area is managed as a Wildlife Reserve Area (Şen & Buğday, 2015). The Ministry of Agriculture and Forestry, General Directorate of Nature Conservation and National Parks, to which the Wildlife Reserve Areas in Türkiye is affiliated, has been classified by dividing into 15 regions. No intervention is allowed that will adversely affect these sites and the living creatures in the field.

Within the framework of the regulation explained above, Wildlife Reserve Areas are selected from areas with natural landscapes in which the target species or species are naturally sheltered or subsequently settled. In this context, the Wildlife Reserve Area in the fifteen regions in our country has been listed according to its target species and conservation priorities. Target species in our country; deer (*Cervus* sp.), roe deer (*Capreolus* sp.), waterfowl species (*Anas acuta*), wild goat (*Capra* sp.), mountain rooster (*Tetrao* sp.), bald ibis (*Geronticus* sp.), bustard (*Otis* sp.), pheasant (*Phasianus* sp.), wild sheep (*Ovis* sp.), black vulture (*Coragyps* sp.), fallow deer (*Dama* sp.), hyena (*Crocuta* sp.), bear (*Bear* sp.), gazelle (*Gazella* sp.), partridge (*Aves* sp.), partridge (*Perdix* sp.), *Lynx* sp., and rabbit (*Oryctolagus* sp.). The majority of the Wildlife Reserve Area is concentrated in the Mediterranean Region, and Wild Goat is the species that provide the majority in terms of target species in these areas. Other target species, which make up the majority of all Wildlife Reserve Areas, are

deer (*Cervus* sp.), roe deer (*Capreolus* sp.), and various waterfowl species. The lowest number of Wildlife Reserve Areas is in the Eastern Black Sea and Southeastern Anatolia Regions. When the higher education thesis presidency and other written literature on Wildlife Reserve Areas in Türkiye between 1994 and 2021 are examined according to their contents, the studies are grouped on the Wildlife Reserve Site management plan (B) and species in the Wildlife Reserve Area (A) (Figure 1).

In this study, Adana Seyhan Dam Lake Wildlife Reserve Area, which was declared a Wildlife Reserve Area in 2006, was chosen as the research area because it is located on the Asian and European migration routes and hosts native/migratory birds. Seyhan Dam Lake and its surroundings were declared as Wildlife Reserve Area with the decision of the Council of Ministers dated 13.09.2006 and numbered 2006/10.966, pursuant to article 4 of the Land Hunting Law No. 4.915 and published in the Legal Gazette dated 05.10.2006 and numbered 26.310. The Target Type of the Area is Water Birds. There are sixteen Wildlife Reserve Areas in our country, which are similar to our study area in terms of being the same as the target type, two of them are Akyatan Lake Wildlife Reserve Area and Tuzla Lake Wildlife Reserve Area in Adana. Adana Seyhan Dam Lake Wildlife Reserve Area, which is within the borders of

Çukurova-Sarıçam, Karaisalı- Yüreğir districts, has an area of 11.436.44 hectares. The surface area of 65% of the area is 6.869 hectares forming the lake area.

In this study, the success of the implementation of the plans, projects and strategies put forward by the Wildlife Reserve Area Management and Development plan has been evaluated by the Performance Measurement Evaluation Method and suggestions have been developed for the elimination of the problems.

Material and Method

The main material of the research is the registration of 25.156 birds including thirteen waterbird species in the mid-winter waterbird censuses of 2011, and their compliance with the Ramsar criteria and obtained the status of Wildlife Reserve Area (Anonymous, 2012), located within the borders of Çukurova, Karaisalı, Yüreğir and Sarıçam districts of Adana Province. Seyhan Dam Lake the Wildlife Reserve Area (Figure 2) and Seyhan Dam Lake the Wildlife Reserve Area Management and Development Plan prepared in 2012.

In the research, 2017 Adana Seyhan Dam Lake the Wildlife Reserve Area 1st Stage 1/5.000 Scale Master Development Plan and Google Earth Satellite Images and ASTER satellite images from 2006-2018 were used as cartographic material.

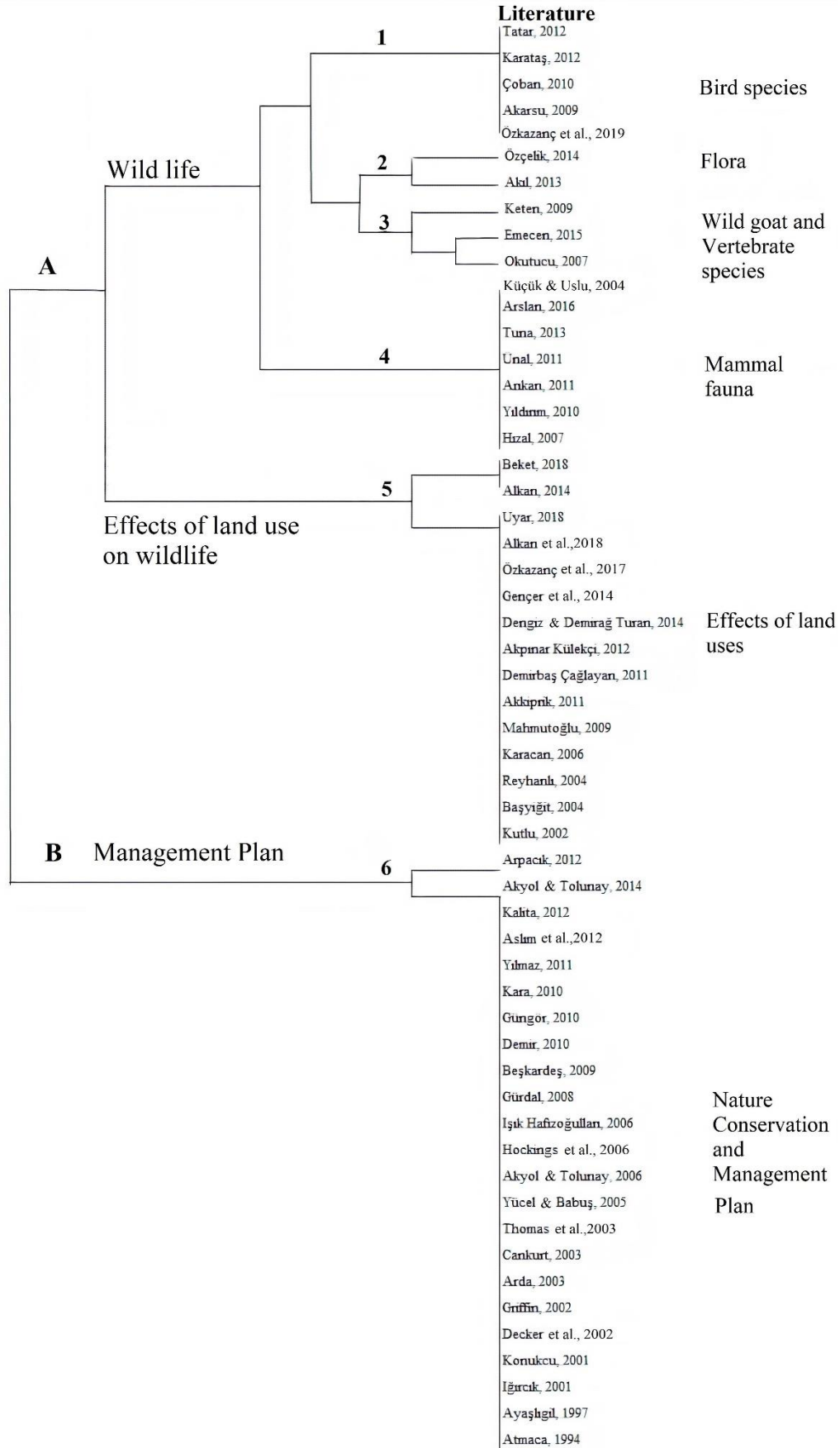


Figure 1. Studies related to Wildlife Reserve Area in Türkiye (1994-2021).

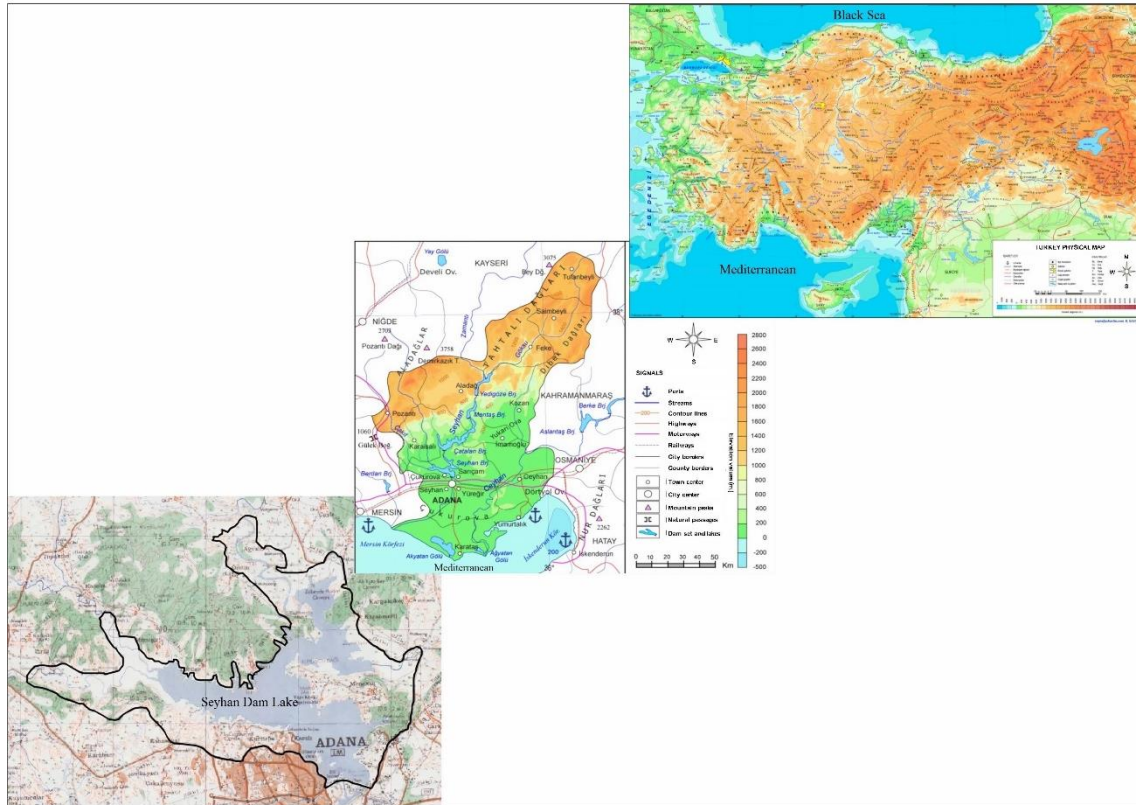


Figure 2. Location of the Wildlife Reserve Area in the Borders of Adana Province (Anonymous, 2012).

The method followed in the research was carried out in three main stages to obtain data, evaluate performance criteria and develop recommendations (Figure 3). In the first stage of the study, the performance measurement evaluation of the Management and Development Plan, that is, the success of the management plan in reaching the specified goals, in the 8 programs in the Management and Development Plan; “Program for the protection of the population and habitats of waterfowl, francolins, and mammals”, “Program for the preservation of the function of the Seyhan Dam Lake”, “Program for the protection of the natural landscape of the Seyhan Dam Lake Wildlife Reserve Area”, “Program for the prevention of pollution in the area”, “Sports activities By examining the strategies, activities and success indicators for 50 activities in the "Agriculture, livestock/grazing and beekeeping areas management program" and "Monitoring and evaluation program", the strategies, activities and success indicators of the activities were examined. Methods according to content; observations made in the field (O), questions

and answers directed to the relevant public institutions in line with the targets (Q-A) and mapping (M).

Within the mapping method in the second stage of the study; Since the research area was declared as the Wildlife Reserve Area in 2006 and the targets in Wildlife Reserve Management and Development Plans were concluded in 2016, the changes in the land cover of the area were determined by considering the satellite images of 2018, CORINE Land Cover/Land use Second Level. Control of construction in habitats “outside the zoned areas” within the Wildlife Reserve Area; The 1st Stage of 2017 was made according to the 1/5.000 Scale Master Zoning Plan and the plan decision decisions; They are grouped as “Open and Green Areas”, “Service Areas”, “Development and Built Housing Area” and “Other”. By overlapping the 2017 Master Zoning Plan and the 2018 Land Cover Area Use Map, the “compatibility” of the Zoning Plan Provisions in terms of “coastal areas”, “open green areas” and “proposed residential areas” was compared.

The programs and activities in the Management and Development Plan, taking into account all the data obtained at the last stage of the study; Considering the “priorities” (1-2-3) and the overall success of the plan, according to the “Observation (O), Question-Answer (Q-A) and Mapping (M) methods” successful (1), unsuccessful (0) and

insufficient (-) evaluated as. The results obtained were transferred to the matrix and the performance of success of the management plan was evaluated. The applicability "Success Levels" of the short and long-term goals in the management plan are revealed.

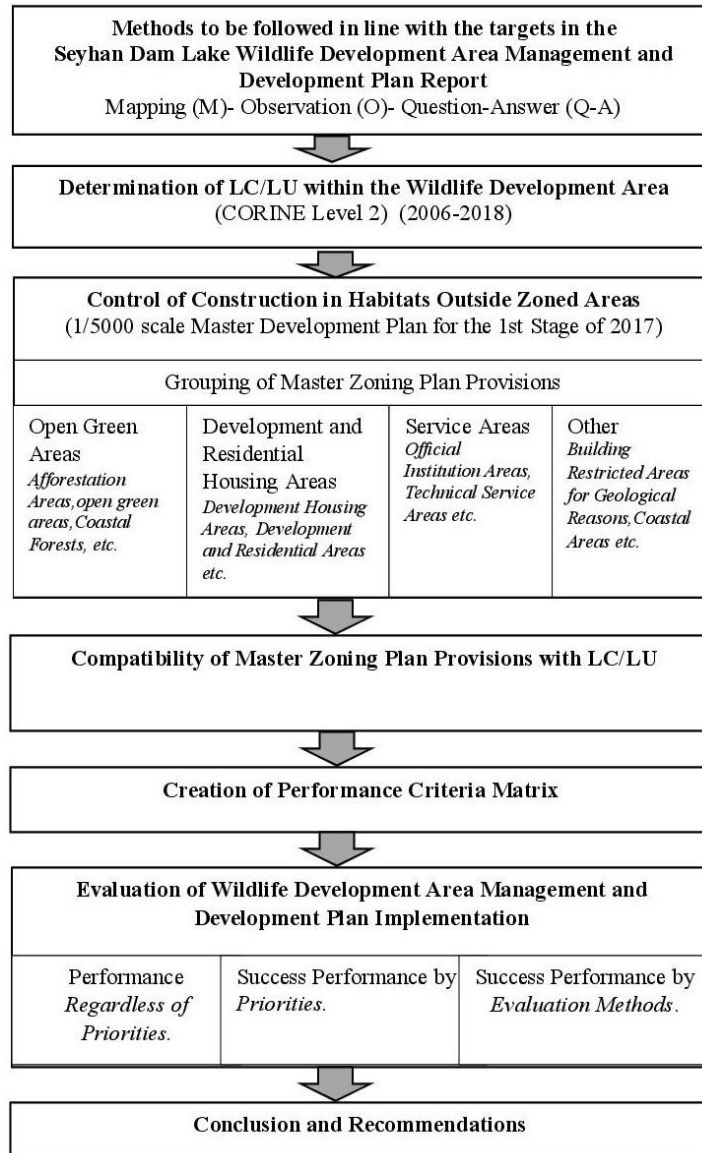


Figure 3. Method flow chart of the research

Results and Discussion

Two data sets from the Landsat TM scanner of the research area dated August 2006 and March 2018 were classified at the second level using the Corine (CLC) classification system. In the 12-year interval between 2006-and 2018, there was a 3%

increase in urban texture and agriculture, while forest and semi-natural areas and coastal areas consisting of seasonally sourced changes in the water level of the lake were classified as wet areas decreased by 3% (Table 1).

Two data sets, dated August 2006 and March 2018, obtained from the Landsat TM scanner belonging to the research area covering the Seyhan Dam Lake Wildlife Reserve Area, were classified at the 2nd level using the Corine (CLC) classification system. In the 12 years between 2006-2018, there is a 3% increase in urban texture and agricultural areas, while a 3% decrease is observed in forest and semi-natural areas and coastal areas, which are classified as wet areas, due to seasonal changes in the water level of the lake (Table 1). However, with the increase in “Open Areas with Little or No Vegetation”, decreases are observed in areas dominated by maquis vegetation classified as “Combination

of Heather and/or Herbaceous Plants”. The same is true in agricultural areas. While the number of vineyards and orchards with a continuous crop is increasing (410%), agricultural areas with the characteristics of non-irrigated agricultural land are also decreasing. The increase in the lake mirror changes in direct proportion to the decrease in wet areas. While agricultural activities take place in the non-irrigated agricultural lands in the northern and southern parts of the Seyhan Dam Lake, the continuous urban texture in the area is densely distributed in the Kurttepe neighborhood located in the south of the Seyhan Dam Lake.

Table 1. Land cover-land use change rates of Seyhan Dam Lake Wildlife Reserve Area between 2006 and 2018.

Level 1	CORINE		Area (ha)		Rate of Change (%)
	Level 1	Level 2	2006	2018	
1. Artificial surfaces	1.1	Urban fabric	671	911	36
	1.2	Industrial, commercial and transport	51	57	12
	1.3	Mine, dump and construction sites	17	25	41
	1.4	Artificial, non-agricultural vegetated areas	19	27	40
2. Agriculture Areas	2.1	Arable land	4.920	4.610	6
	2.2	Permanent crops	79	402	410
3. Forests and semi natural areas	3.1	Forests	2.772	2.213	20
	3.2	Shrub and/or herbaceous vegetation associations	948	622	34
	3.3	Open spaces with little or no vegetation	80	163	103
4. Wetlands	4.2	Coastal wetlands	587	343	42
5. Water bodies	5.1	Inland waters	4.474	5.258	18

The area covered by the Seyhan Dam Lake, which was classified as Inland waters in Land Cover/Land Uses in study, is not included in the ratio of Land Cover/Land Uses to the total area.

Control of Occurrence in Habitats Outside Zoned Areas within the Wildlife Reserve Area

The provisions of the 2017 Adana Seyhan Dam Lake Wildlife Reserve Area 1st Stage 1/5.000 Scale Master Development Plan coincided with the 2018 CORINE Land cover-land use 2nd Level classification of the research area, and the provisions of the plan were defined as coastal areas (Other), building areas (Compatibility with the Land Cover and Land Uses in the northern and southern regions of the area was evaluated in terms of service areas), open green areas (Open Green Areas) and proposed residential areas (Development and Settled Housing Areas).

Compatibility in Coastal Areas

In the research area, the shallow areas around the Seyhan Dam Lake and the seasonally sourced shallow areas caused by the decrease in the water level in the mirror of the lake are classified as coastal areas in the Land cover-land use classification as coastal areas. Coastal Areas plan provisions in the north of the research area extend along with the Near Coastal Wetlands (CORINE LCLU code, 4.2.). However, seasonal agricultural activities are carried out in shallow areas due to the shrinking of the lake mirror in the summer period in the areas that are limited as coastal areas in the provisions of the plan (Figure 4a). For this reason, the coastal area boundary in the zoning plan provisions can be

accepted as the maximum level of the lake mirror.

Considering the zoning plan provisions, it is located on the southern shores of the research area, in wet areas close to the coast

(CORINE LCLU code, 4.2.), open areas with little or no vegetation (CORINE LCLU code,3.3.), and areas suitable for agriculture (CORINE LCLU code,2.1.) (Figure 4b).

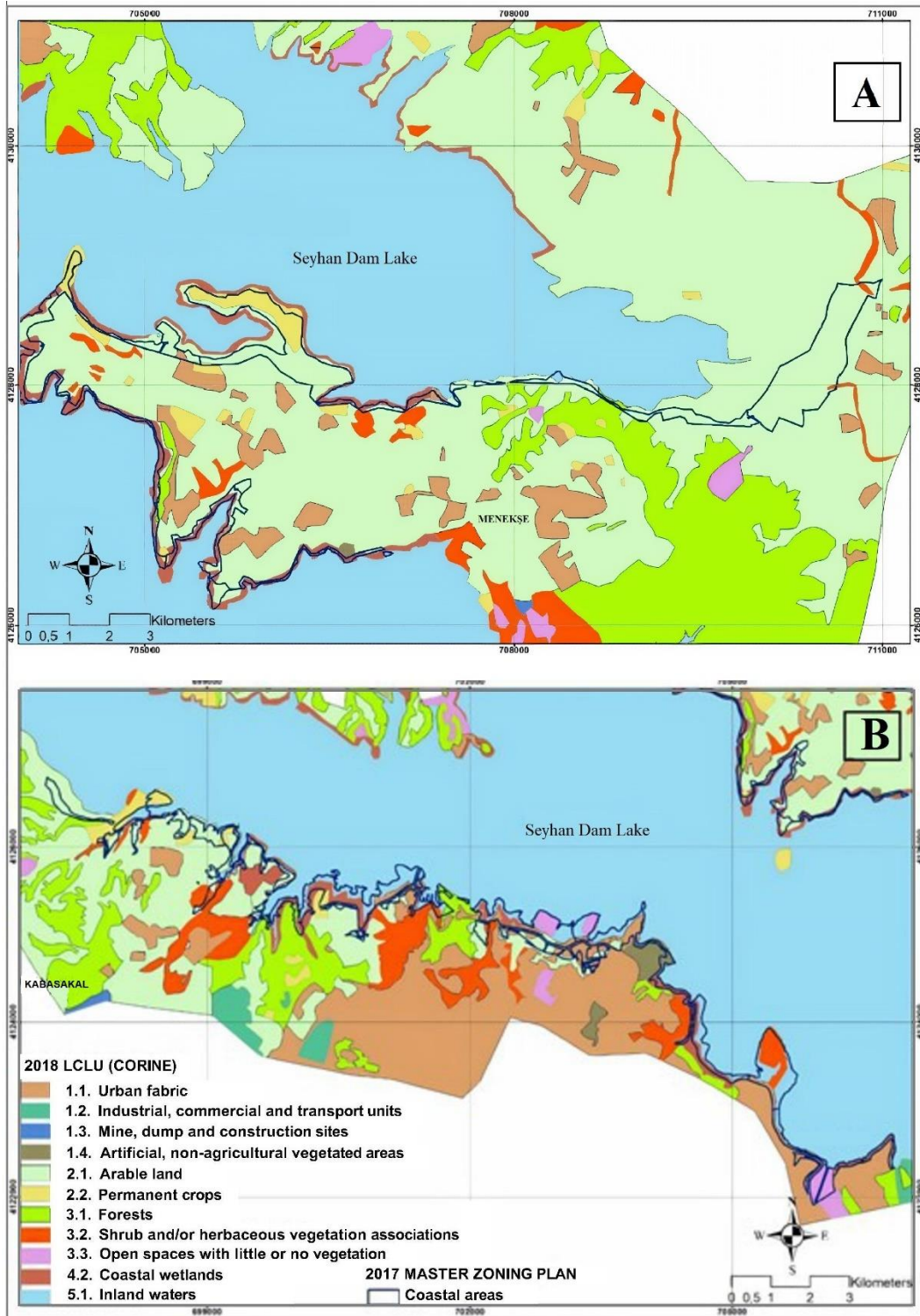


Figure 4. The compatibility of the Coastal Areas in the 2017 Master Zoning Plan Provisions with the land cover-area use in 2018 (A: north, B: south).

Compatibility in Light Green Spaces

In the southern parts of the research area, at the border of arable areas (CORINE LCLU code, 2.1.), open areas with little or no vegetation (CORINE LCLU code, 3.3.) are defined as Forest Areas in the 2017 Master Plan provisions (Figure 5a, b). The Areas to be Afforestation in the provisions of the Plan are located in the areas where the land cover is a combination of heather and or herbaceous plants (CORINE LCLU code, 3.2.) and in the areas classified as the areas near the building areas. For this reason, it is possible to say that the afforestation works are not done enough or the afforestation has been unsuccessful. It is seen that the Arboretum areas and the Botanical Park are located within the forest boundaries of the Çukurova University campus (Figure 5.c). In the northern parts of the research area, forest and afforestation areas as small parcels within the "agricultural areas" defined as "continuous products" and "areas suitable for agriculture", where

agricultural activities are carried out as of 2018, are included in the provisions of the 2017 zoning plan, coincides with the provisions of the plan.

In the southern part of the research area, Sports Areas and Water Sports Areas are located around the Dam lake in the 2017 Zoning Plan Provisions, while the Wildlife Surveillance Recreation Area operates in the forest areas (CORINE LCLU code, 3.1.) and near the Agricultural areas (CORINE LCLU code, 2.2.) that are a permanent product.

While most of the park-like areas in the provisions of the Plan are located in piecemeal parcels within the City structure (CORINE LCLU code, 1.1.), agricultural activities are carried out in some of them. Although the Park Areas in the northern part of the research area continue along the coast in the provisions of the plan, these areas are used as agricultural areas today and are classified as "Agricultural areas" (CORINE LCLU code, 2.1.) in the study.

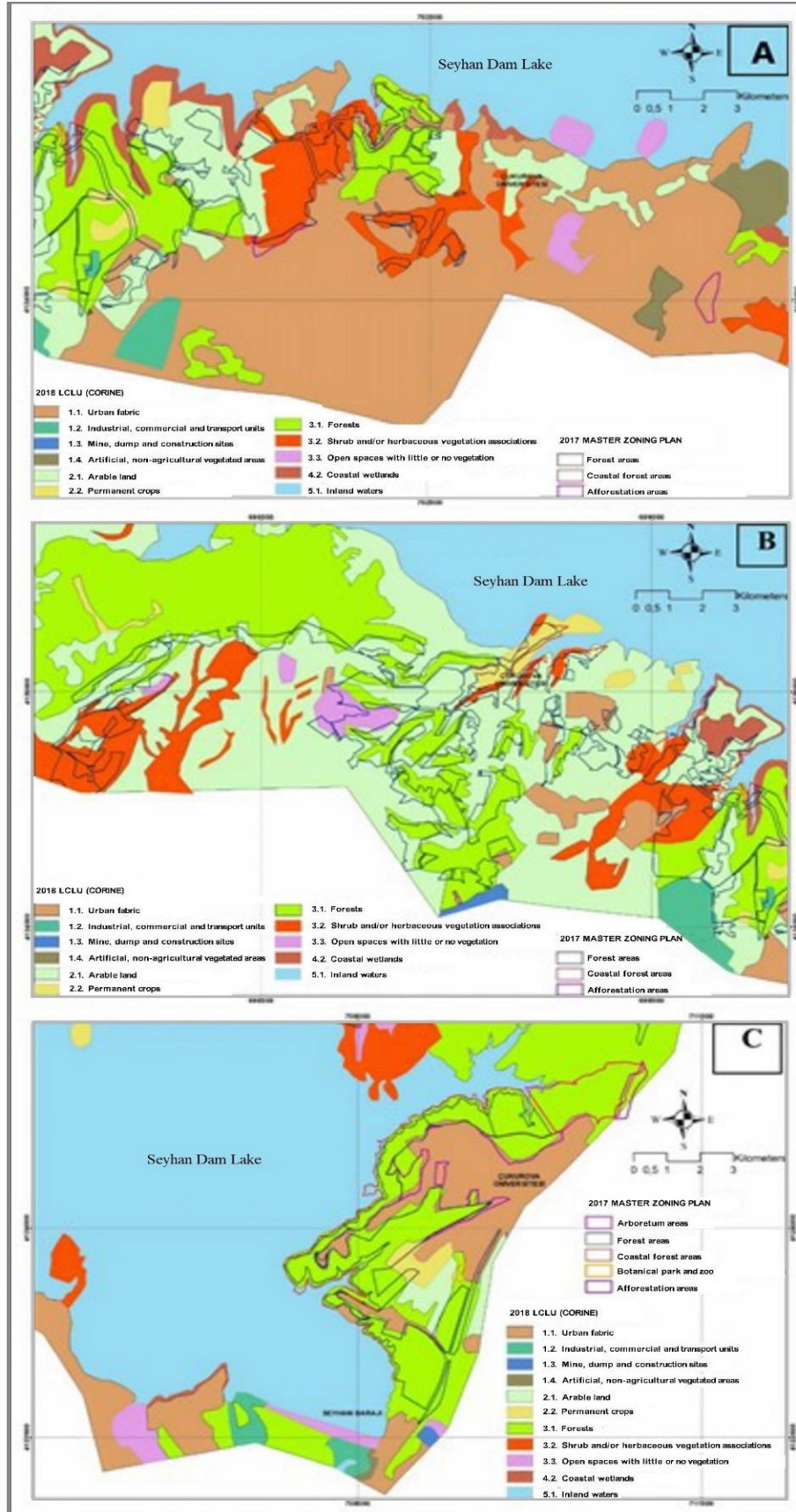


Figure 5. Compliance with 2018 land cover and land use of Forest, Coastal Forest, and Afforestation Areas in 2017 plan provisions.

Compatibility in Development and Residential Areas

In the provisions of the plan, although the construction facilities continue on the existing city structure (CORINE LCLU code, 1.1.), it is seen that construction is allowed in the arable areas (CORINE LCLU code, 2.1.) in the north

of Kabasakal district and Menekşe district. In the provisions of the plan, the housing areas were arranged as “Settled residential areas” and “Development housing areas” and the densities of the areas were included in the plan provisions (Figure 6).

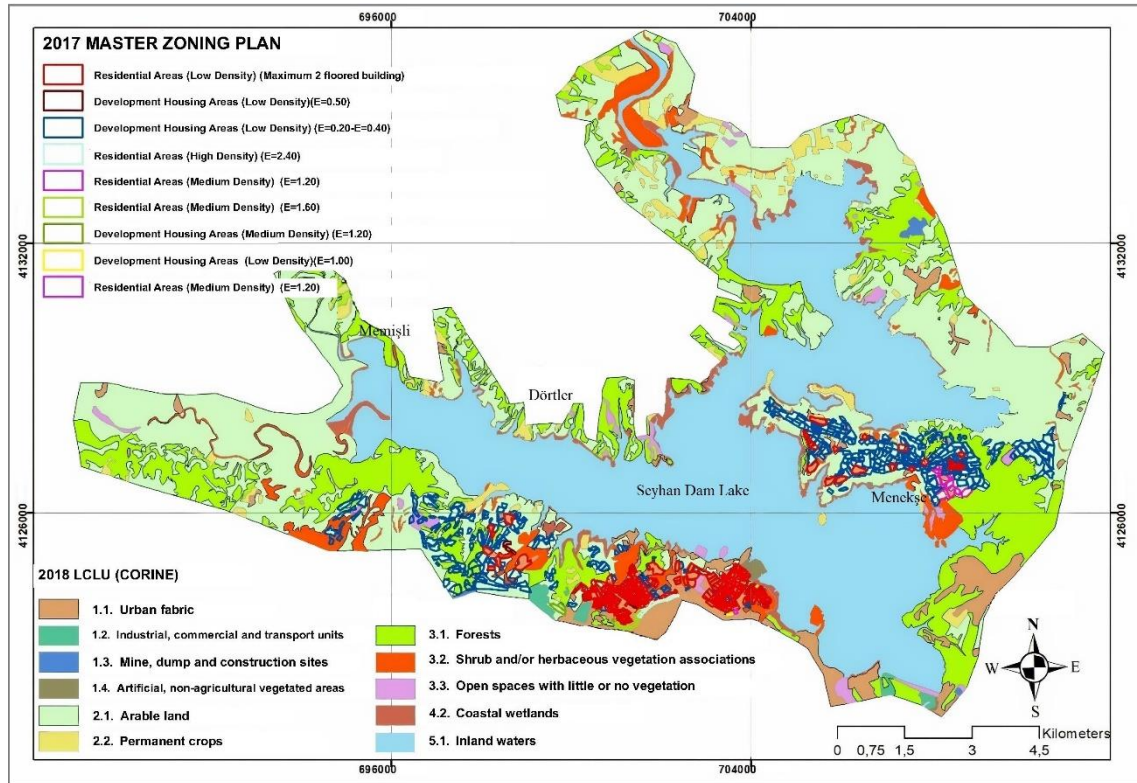


Figure 6. Distribution of Development and Settlement Housing Areas on land cover-land use

"Low-density Development Housing Areas" in the southern part of the research area, "Low-density Residential Housing Area" on the areas suitable for agriculture (CORINE LCLU code, 2.1.) and in the areas with existing settlements, the "Low-density Development Housing Areas" settlement,

forest (CORINE LCLU code, 3.1.) was limited to the land cover and included in the plan provisions. In areas where there is an existing settlement, there is a medium-density development residential area provision (Table 2).

Table 2. Distribution of Development and Residential Housing Areas on land cover-land use

Master Zoning Plan (2017)	Land Cover/Land Use									
	(2018)									
	Urban fabric (ha) (1.1)	Industrial, commercial and transport (ha) (1.2)	Mine, dump and construction sites (ha) (1.3)	Artificial, non-agricultural vegetated areas (ha) (1.4)	Arable land (ha) (2.1)	Permanent crops (ha) (2.2)	Forests (ha) (3.1)	Shrub and/or herbaceous vegetation associations (ha) (3.2)	Open spaces with little or no vegetation (ha) (3.3)	Coastal wetlands (ha) (4.2)
Development Housing Areas (Low Density)(E=1.00)	0.8									
Development Housing Areas (Low Density)(E=0.50)	1.4				2.5		0.1	0.1		
Development Housing Areas (Low Density) (E=0.20-E=0.40)	33.2	0.3	1.3	0.5	349.1	7.1	24.2	14.3	4.9	0.1
Development Housing Areas (Medium Density) (E=0.15-E=1.20)	8.1				13.4		0.2	0.4		
Residential Areas (Low Density) (Building with Maximum 2 Floors)	175.9			3.3	15.3	0.8	1.9	4	0.2	
Residential Areas (Medium Density) (E=1.20)	0.5									
Residential Areas (Medium Density) (E=1.60)	4.4									
Residential Areas (High Density) (E=2.40)	4.3									

Conclusion and Recommendations

When the success of the targets set for the 8 programs in the Management and Development Plan is evaluated "regardless of the priorities" stated in the report; According to the answers received from the Question-

Answer (Q-A) method, the performance of success of the Management and Development Plan is 82%, while when evaluated by the Observation (O) method, this success rate drops to 20% (Table 3).

Table 3. Achievement Performance by Evaluation Method of Activities.

Assessment Method	Number of Activities	Program								Success Performance
		1	2	3	4	5	6	7	8	
Observation (O)	20	8	1	3	2	4	0	2	0	10%
Question-Answer (Q-A)	38	8	1	3	0	6	8	3	9	82%
Mapping (M)	4	3	1	0	0	0	0	0	0	25%

When the Land Cover/Land Uses maps and Zoning Plans are overlapped (M) and the related activities are evaluated in terms of

their compatibility with the targets specified in the management plan, it has been determined that the performance of success is

25% successful. When the performance of success of the activities was evaluated "according to their priorities" without considering the evaluation methods, it was determined that 20 of the 27 activities with 1st priority and 14 of the activities with 2nd priority were successful (Figure 7).

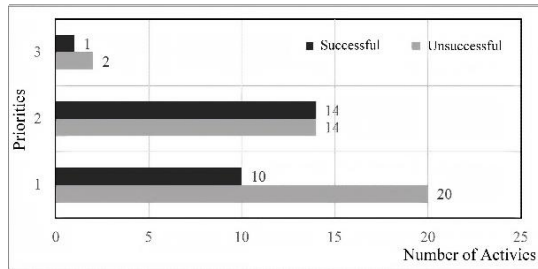


Figure 7. Performance of Success According to the "Priorities" of the Activities.

12 activities are included in more than one evaluation method

When the performance of success of the Management and Development Plan is evaluated by considering the "evaluation

methods"; While the performance of success was high according to the Question-Answer (Q-A) method, the success rates in the Observation and Mapping method were found to be quite low. 1. The overall performance of success of the 27 priority activities was found to be 74% successful. However, 95% of this success was achieved in line with the answers obtained through Question-Answer (Q-A) from institutions to 19 of the 20 activities in the "1st Priority" (Table 4). "2nd. While 65% of the 70% overall performance of success of the 20 activities in the Priority was obtained from Question Answers, the performance of success obtained from Observation and Mapping is 27%. "3. The 3 activities in the Priority are; While it was 100% successful when evaluated by the Question-Answer (Q-A) method, it was found to be 33% successful when evaluated by the Observation (O) and Mapping (M) method.

Table 4. Evaluation of the Performance of Success of the Activities According to the "Priority and Evaluation Methods"

Priority	Number of Activities (50)	Program								Question & Answer Success Performance	Observation Success Performance
		1	2	3	4	5	6	7	8		
1	27	8	2	1	0	2	8	0	6	95%	37%
2	20	8	0	2	1	3	0	3	3	65%	27%
3	3	0	0	0	1	2	0	0	0	100%	33%

When the performance of success of the Management and Development Plan is evaluated both in terms of the priorities of the activities and in general; it is seen that 82% success is achieved in the findings obtained in the Question and Answer method for the success indicators for the goals in the plan, the performance of success is 20-25% when evaluated in terms of the current applicability of the activities targeted to be carried out in the plan. When the rate of this performance of success is evaluated in terms of the priorities of the activities, the plan has a low success rate of 30% on average.

As a result, the Performance Measurement and Evaluation of the Seyhan Dam Lake Wildlife Reserve Area Management and Development Plan has been evaluated within the framework of the following questions.

i) *How well are the activities carried out?* "Due to the actions are taken towards the targets specified in the Wildlife Reserve Area Management and Development Plan, it was found to be successful in terms of the performance of the management plan. However, when it is evaluated in terms of the continuity of the management plan, the implementation and follow-up of the actions for the plans and programs are unsuccessful. Observations also supported this prediction.

ii) *To what extent have the expected results been achieved?* When the activities of the 8 programs included in the Seyhan Dam Lake Wildlife Reserve Area Management and Development Plan are evaluated; While the 1st Program in the Management and Development Plan was evaluated as unsuccessful, the 3rd Program was evaluated

as unsuccessful. 8. Although the success rate of the program was high (100%) in the findings obtained from the Question-Answer (Q-A) method, it was considered unsuccessful (100%) since the success rate was 0% according to the findings obtained from the field observation (O) and mapping (M). Despite these failures in the implementation of the plan, 2, 5, and 6 were considered successful (Figure 8).

iii) *Did the activities carried out to contribute to the objectives?* The activities carried out within the scope of the strategies and targets determined within the 8 programs included in the Wildlife Reserve Area Management and Development plan contributed to the achievement of the purpose. However, when looking at the change between 12-years land cover - land use and the change/development in the provisions of the Zoning Plan, it has been determined that the works are not for protection, but more use.

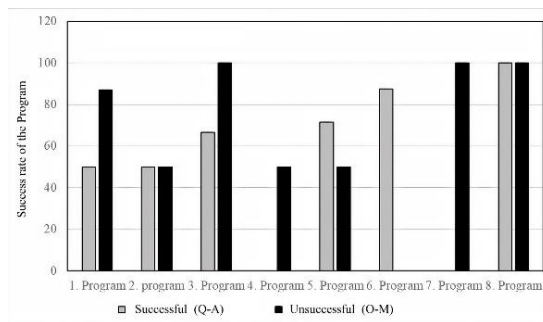


Figure 8. The Performance of Success of the Programs in the Management and Development plan.

iv) *What is the impact of these activities on performance?* With the work carried out, the success of reaching the goals determined by the Wildlife Reserve Area Management and Development Plan has been evaluated by revealing the past and present changes/developments.

v) *Are there any deviations from the basic principles?* When the Adana Seyhan Dam Lake Wildlife Reserve Area 1/5.000 Scale Master Development Plans dated 2017 are compared with the Land cover and Area uses in the Area, it is seen that there is a deviation in the strategies and targets of the Wildlife Reserve Area Management and Development Plan as a result of the findings.

vi) *Is there a good orientation in line with the targets?* With the implementation of the zoning plans, the resource value of the area will be adversely affected and the existence of waterfowl, which gives the area a protection status, and other wildlife will be in danger. Unless the necessary precautions and precautions are taken, it will not be possible to talk about the success of the management plan. For this reason, there is not enough promotion of the area to contribute to tourism activities. For this reason, more tourism activities should be carried out and the society should be informed about the existence of the area. The Ministry of National Education should organize nature trips to raise environmental awareness among students, define the Seyhan Dam Lake Wildlife Reserve Area, and explain the reasons for its protection and the factors that threaten the area. Field users (Hunters, visitors, villagers, etc.) should be trained. It will not be possible to achieve success in the applicability of the plan targets if the work done is not reduced to the level of users or reached. For this reason, it is extremely important to educate and inform users. Before 1/1.000 scale Implementation Development Plans are made, the opinions of NGOs such as Çukurova University, landscape architects, city planners and chambers should be made. The General Directorate of Forestry and the General Directorate of Nature Conservation and National Parks should work in more coordination to protect the wildlife and to get efficiency from the working area.

For effective nature protection and landscape management for the Seyhan Dam Lake Wildlife Reserve Area, as Yılmaz (2011) stated, the resource value of the landscapes in the area should be determined. priorities and usage options should be determined and the needs of the sectors should be met at the field level. However, today, these processes are not implemented based on legislation and understanding, as seen in the provisions of the Zoning Plan. To create qualified management in the area, users with awareness and willingness, decision-makers with knowledge and competence on landscape values, executive bodies with will and sanction power, although having sufficient knowledge about landscape should be worked

together. It should be constantly supervised that the institutions and organizations responsible for the implementation of the Wildlife Reserve Area Management and Development Plan have the necessary will and sanction power for effective protection. Necessary inspections should be carried out to ensure the continuity of Wildlife Reserve Areas, which is one of the protected areas and the subject of study, and to protect the fauna-flora and, most importantly, the target species in the area. For this purpose, a separate Management and Development Plan is prepared and put into effect for each Wildlife Reserve Area by the General Directorate to which that Wildlife Reserve Areas is affiliated.

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Conflict of Interest

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