Collaborative Field Census of Waterbirds in Mazandaran Province, Iran 2026

Official Report

آوای بوم
انجمن حفاظت پرندگان
AvayeBoom Bird Conservation Society

سازمان حفاظت محیط زیست
دادگل حفاظت محیط زیست استان مازندران

Report Authors:
Fateme Kazemi[1], Iman Ebrahimi

Project Manager:
Iman Ebrahimi

Field Experts and Volunteer Contributors:
Dr. Ruhollah Esmaeili, Alireza Ebrahimi, Iman Ebrahimi, Fateme Kazemi, Amin Seifi, Farnoush Farhadi, Yaser Azadi, Ali Golmohammadi, Mohammad Jannat Fereydouni, Saeed Hassan Sasani, Mr. Shabestani, Mr. Fadaei, Hor Mansouri, Zahra Sadeghi Amiri, Zohreh Nasiri, Marjan Mollahosseini, Masoumeh Pakravan, Saeed Mohammadi, Mehdi Taheri, Omid Shajari, Abbas Azizi, Abdolali Ramazani, Mahmoud Taghipour, Mehdi Goli, and a number of staff from the Mazandaran Provincial Department of Environment.

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[1] Email: Kazemi.F@AvayeBoom.com

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1. Introduction

Following the signing of a cooperation agreement between the Mazandaran Provincial Department of Environment and the AvayeBoom Bird Conservation Society, the winter census of waterbirds in Mazandaran Province was conducted collaboratively in January 2026. This census was carried out as part of the International Waterbird Census (IWC), a global monitoring program coordinated annually to assess the status of waterbird populations and their habitats.

The primary objective of this project was to monitor waterbird habitats across the province and to assess the population status and species diversity within these habitats. In addition to contributing to the annual IWC framework, the project also aimed to facilitate knowledge exchange and initiate joint activities in wildlife research and conservation.

Practical field-based training for local volunteers, environmental activists, and staff of the Department of Environment in Mazandaran Province was another key objective of this initiative.

To achieve these goals, a public call was announced prior to the project, inviting qualified and interested individuals to participate. A training course on bird census methodologies based on the International Waterbird Census (IWC) was conducted by instructors from AvayeBoom for selected participants. Following the theoretical training, participants also received hands-on field training and actively contributed to the census process.

2. Overall Census Results

During the winter census of waterbirds in Mazandaran Province in January 2026, a total of 54,889 individual birds belonging to 112 species were recorded across 36 sites. Of these, 54,269 individuals from 84 species were waterbirds, representing the dominant component of the observed community. In addition, 137 raptors from 12 species and 493 individuals from 16 species of other birds associated with aquatic habitats were recorded.

A substantial proportion of the total population was concentrated in a limited number of sites. In particular, Miankaleh International Wetland and the network of Damgah (traditional waterfowl trapping sites) accounted for a significant share of the total recorded population. This pattern highlights the importance of high-density sites in analyzing population trends. In contrast, lower abundance and species diversity were recorded in some man-made ponds (locally known as Ab-bandans) and other sites affected by land-use change, habitat degradation, human disturbance, or limited survey coverage.

The results further indicate that conservation status, habitat security, vegetation structure, and the level of human access play a determining role in shaping the distribution and density patterns of birds. The concentration of populations in more secure sites with restricted access underscores the importance of clearly redefining Site and Sub-site boundaries, establishing fixed polygons, and standardizing count points to improve repeatability and interannual comparability. This issue should be given particular attention in future analyses and in assessing population trends within the province.

Key Considerations and Recommendations from the Census:

1) Redesign of spatial units (Site / Sub-site) and count points along the coastal strip

• Given the linear nature of the coastline and the heterogeneous distribution of birds, particularly their concentration at river mouths, in areas with higher security, and at sites with greater food availability, it is essential to define fixed, clearly delineated, and repeatable count points for coastal surveys. The absence of fixed points and well-defined spatial units can reduce interannual repeatability and comparability of the data.

• It is recommended that in future years, count points and the boundaries of census units along the coastline be reviewed and revised based on actual bird aggregation patterns. River mouths should be prioritized as anchor points for defining count units.

• Coastal sites should be redefined in a way that large and continuous units are subdivided into monitoring sub-units (Sub-sites) wherever meaningful spatial variation in density and species composition exists. This will improve the accuracy of abundance estimates, reduce the risk of double counting or undercounting, and enable more robust spatial analyses.

• Given the identified inconsistencies in the current definition of some coastal sites, a comprehensive redefinition and standardization of coastal spatial units is recommended as a fundamental step toward improving data quality.

• For each Site, permanent polygons should be delineated and made accessible to survey teams in subsequent years. This will allow better control of survey coverage and reduce spatial errors in data recording.

• To ensure data consistency at the provincial scale, harmonization in site definitions between eastern and western Mazandaran is necessary, so that differences in the structure of census units do not introduce bias in comparisons.

• Considering that some sites have undergone land-use change and have been converted into fish farming ponds, it is essential that their current ecological function be systematically incorporated into the definition of census units. Accordingly, sites that have significantly lost their habitat function should either be redefined or, if necessary, removed from the list of priority census sites and replaced with appropriate standardized alternatives.

2) Role of access restrictions and military zones in shaping bird aggregation patterns

• During the census, it was observed that concentrations of waterfowl (Anatidae) in certain areas were primarily located adjacent to military zones. This pattern should be considered a determining factor in interpreting census results and analyzing distribution patterns.

• It is recommended that, prior to the census, coordination be established with local military authorities to enable controlled access to fenced areas or, where possible, the deployment of monitoring equipment at suitable locations. This would improve spatial coverage and reduce the risk of bias resulting from the inaccessibility of key aggregation sites.

3) Impact of disturbance from free-ranging dogs on waterbirds along the coast and at river mouths

• Along the coastal strip, due to the widespread presence of free-ranging dogs, the abundance of waterbirds was observed to be lower than expected for the season. This can be considered a chronic disturbance factor in evaluating coastal habitat quality.

• Observations at small river mouths showed a clear pattern: waterbirds were present in areas without dogs, whereas in locations where dog barking was detected, waterbirds were absent despite otherwise suitable habitat conditions. This highlights the importance of disturbance management at key aggregation sites.

• A considerable proportion of the observed dogs were tagged, indicating that targeted management interventions may be feasible through engagement with groups involved in dog tagging programs. It is recommended that formal collaboration with such groups be pursued to manage dog populations along the coastal strip.

• It is further recommended that the presence of dogs at small river mouths be formally restricted and managed, and that this approach be implemented through a combination of field-based measures and public awareness efforts.

4) Marine monitoring, data gaps in deeper waters, and limitations of shore-based census

• Due to the limitations in detecting and identifying seabirds at long distances, it is recommended that at least one day of the census program be dedicated to marine monitoring. Conducting this component without a boat significantly reduces the ability to adequately cover deeper waters and to accurately record certain groups, including pelagic gulls and pelicans. This limitation should be explicitly acknowledged as a methodological constraint in the interpretation of results.

• For effective marine monitoring, the use of a boat and the design of survey transects tailored to depth and marine extent are essential, in order to generate reliable data from areas that cannot be covered from the shore using binoculars and telescopes.

• It is recommended that future reports include a clearly defined section on “Monitoring Limitations” for both coastal and marine areas, specifying which parts of the marine environment were beyond the reach of shore-based observation. This will allow for more transparent and cautious interpretation of the results.

• In the present census, species diversity in the marine zone was assessed to be lower than expected, with the observed community largely dominated by gulls. Given that gulls are opportunistic species with high tolerance to suboptimal conditions, this pattern may potentially indicate unfavorable environmental conditions, including pollution. However, further targeted monitoring and complementary data are required for a conclusive interpretation.

5) Species distribution patterns and differences between eastern and western Mazandaran

• The population ratio of Black-headed Gull to Slender-billed Gull was higher in western Mazandaran compared to the eastern part of the province. This difference can be recorded as a spatial pattern to be tracked in future monitoring efforts.

• Along the coast of Aliabad Asgarkhan village, a group of Mallards was observed at sea. Their behavior suggests that they likely forage elsewhere and return to the sea for resting and roosting. This observation may indicate the presence of a natural or artificial wetland habitat in the vicinity serving as a feeding site, which warrants further field investigation.

6) Management recommendations for Fereydoonkenar Wildlife Refuge

• The reclamation of lands within Fereydoonkenar Wildlife Refuge and the reduction of water levels are proposed as management options. These measures may be considered within the framework of enhancing habitat efficiency and improving conditions for bird settlement.

• The establishment and implementation of an online monitoring system in Fereydoonkenar Wildlife Refuge is recommended to improve surveillance efficiency and reduce violations.

Given the sensitivity of the area, such a system could serve as a valuable support tool for conservation management.

Table 1. Overall census results by site

No.	Site name	Area (hectares)	Coverage percentage	Total number of birds	Total number of species
1	Lapou Zaghmar	175	50	**11**	**4**
2	Miankaleh International Wetland	60000	75	**29363**	**75**
3	Zineh Vand Ab-bandan	120	90	**517**	**21**
4	Swan Wetland (Sorkhroud)	25	100	**360**	**9**
5	Fereydoonkenar Damgah	400	85	**7758**	**30**
6	Fereydoonkenar Lapou (Ab-bandan)	45	90	**199**	**10**
7	Eastern Sorkhroud Damgahs	40	90	**665**	**9**
8	Central Sorkhroud Damgahs	40	90	**3435**	**15**
9	Ezbaran Damgah	60	95	**565**	**11**
10	Heydarkola Ab-bandan (Fereydoonkenar)	30	100	**3**	**2**
11	Karikola Ab-bandan	60	80	**21**	**3**
12	ZarinKola Ab-bandan (Lapou and ZarinKola Ab-bandan)	430	80	**1165**	**31**
13	Larim Ab-bandan	300	100	**21**	**6**
14	Kordkola Ab-bandan	120	85	**155**	**15**
15	Anarmarz Ab-bandan	70	85	**1522**	**24**
16	Seyed Mahalleh Ab-bandan	250	100	**58**	**10**
17	Cheshmeh Kileh River Mouth	10	80	**509**	**13**
18	Mistan Ab-bandan	170	85	**52**	**9**
19	Roshandan Ab-bandan	210	90	**777**	**9**
20	Lajmeh Ab-bandan (Azizak)	50	90	**287**	**9**
21	Langour Ab-bandan	220	100	**6**	**3**
22	Aghozben Ab-bandan	55	90	**5**	**5**
23	Rement Ab-bandan	160	70	**203**	**19**
24	Water Lily Wetland (Heydarkola)	32	100	**1705**	**17**
25	Bosra Ab-bandan	150	100	**455**	**20**
26	Marzounabad Ab-bandan	400	90	**202**	**18**
27	Caspian Sea Coastline - Miankaleh to Babolsar	11000	20	**682**	**14**
28	Caspian Sea Coastline - Noor to Babolsar	6500	15	**1065**	**10**

No.	Site name	Area (hectares)	Coverage percentage	Total number of birds	Total number of species
29	Caspian Sea Coastline - Chalous to Noor	6000	20	**1095**	**23**
30	Caspian Sea Coastline - Ramsar to Tonekabon	4000	40	**1357**	**14**
31	Caspian Sea Coastline - Tonekabon to Chalous (Abbasabad)	7000	20	**671**	**9**
32	Ojaksar Ab-bandan	70	0	**0**	**0**
Total				**54889**	**112**

3. Census Methodology

The winter census of waterbirds in Mazandaran Province was conducted over a 10-day period in January 2026, covering 36 sites across the province.

Survey site selection was carried out in coordination with the Mazandaran Provincial Department of Environment, taking into account weather conditions and the following criteria: priority ranking provided by the Department, conservation status of the area, accessibility of wetlands or sites, and the feasibility of achieving minimum survey coverage.

Selected sites were surveyed either on foot or by vehicle, depending on accessibility and site conditions. In non-wetland coastal areas, surveys were conducted using a four-wheel-drive vehicle moving at a speed of 35 to 45 km/h (average 40 km/h), at a distance of approximately 40 to 60 meters from the waterline. Birds were identified and counted during movement using binoculars.

Bird identification and counting were conducted using binoculars and spotting scopes. Observation points within each site were selected based on both field of view and light conditions, with particular attention to minimizing backlighting. All observation points were recorded and documented to enable consistent long-term monitoring from fixed locations.

Census methods were implemented in accordance with the International Waterbird Census (IWC) guidelines available up to 2025.

In addition to waterbirds, other bird groups associated with aquatic habitats, including species such as kingfishers, as well as raptors, were also recorded. Raptors were only counted when there was confidence that their flight occurred within the boundaries of the surveyed wetland or site.

In situations where large flocks made accurate counting difficult, a mean count approach was applied: two observers independently counted individuals, and the average of their estimates was recorded as the final count.

In cases of disagreement in species identification, photographs were taken using superzoom cameras, and identification was confirmed later based on image review. A species identification was considered confirmed only when at least three experts reached consensus.

Bird concentration hotspots and survey routes were recorded using GPS for future analyses. Site names and locations were verified using aerial maps and with the support of experts from the Mazandaran Provincial Department of Environment. All site names in this report follow this reference.

For reporting purposes, some spatial units were aggregated based on continuous survey coverage. The Caspian Sea coastline from Khazarabad to Babolsar, and from Miankaleh to Khazarabad, was surveyed continuously and recorded as a single site under the title “Caspian Sea Coast from Miankaleh to Babolsar.”

Similarly, the man-made ponds (Ab-bandans) and Lepou of ZarinKola were surveyed as a continuous unit and recorded as “ZarinKola Ab-bandan.” Census results for Miankaleh

Wetland, Miankaleh Coast, the Bay, and Chalasht were aggregated and reported under the single site name “Miankaleh Wetland.”

Babolsar Ab-bandan (Oujak Sar) was not accessible during the census period due to road damage, and no birds were reported from this site during the survey window. However, due to the absence of field verification by the survey team, this site was not assigned a zero value in order to minimize potential error.

Table 2. List of surveyed sites

No.	City	Site name
1	Behshahr	Lapou Zaghmarz
2	Behshahr	Miankaleh International Wetland
3	Behshahr	Zineh Vand Ab-bandan
4	Fereydoonkenar	Swan Wetland (Sorkhroud)
5	Fereydoonkenar	Fereydoonkenar Damgah
6	Fereydoonkenar	Fereydoonkenar Lapou (Ab-bandan)
7	Fereydoonkenar	Eastern Sorkhroud Damgahs
8	Fereydoonkenar	Central Sorkhroud Damgahs
9	Fereydoonkenar	Ezbaran Damgah
10	Fereydoonkenar	Heydarkola Ab-bandan (Fereydoonkenar)
11	Fereydoonkenar	Karikola Ab-bandan
12	Juybar	ZarinKola Ab-bandan (Lapou and ZarinKola Ab-bandan)
13	Juybar	Larim Ab-bandan
14	Juybar	Kordkola Ab-bandan
15	Juybar	Anarmarz Ab-bandan
16	Sari	Seyed Mahalleh Ab-bandan
17	Tonekabon	Cheshmeh Kileh River Mouth
18	Babol	Mistan Ab-bandan
19	Babol	Roshandan Ab-bandan
20	Babol	Lajmeh Ab-bandan (Azizak)
21	Babol	Langour Ab-bandan
22	Babol	Aghozben Ab-bandan
23	Babol	Rement Ab-bandan
24	Babol	Water Lily Wetland (Heydarkola)
25	Babol	Bosra Ab-bandan
26	Babol	Marzounabad Ab-bandan
27	Juybar	Caspian Sea Coastline - Miankaleh to Babolsar
28	Babolsar	Caspian Sea Coastline - Noor to Babolsar
29	Noor	Caspian Sea Coastline - Chalous to Noor
30	Chalous	Caspian Sea Coastline - Tonekabon to Chalous (Abbasabad)
31	Tonekabon	Caspian Sea Coastline - Ramsar to Tonekabon
32	Sari	Ojaksar Ab-bandan

4. Equipment

A combination of optical, navigation, and data recording tools was used during the waterbird census to maximize the accuracy of species identification, data collection, and spatial coverage of survey sites.

For bird observation and identification, two Swarovski 8×42 binoculars were used. In addition, three Swarovski spotting scopes with 65 mm objective lenses, mounted on dedicated Swarovski tripods, were deployed. These were primarily used for stationary counts and for identifying birds at long distances.

To document observations and assist in species identification, two Canon PowerShot SX60 HS cameras were used.

For field navigation and spatial data recording, a Garmin MAP 64s handheld GPS unit was used. This device was employed to record survey tracks, log stationary count points (particularly telescope locations), and document survey routes.

In addition, the Gaia GPS mobile application, installed on the personal smartphones of field experts, was used to record observation points, verify site boundaries, reduce spatial errors, and assess survey coverage.

Field data were recorded in accordance with International Waterbird Census (IWC) guidelines using standardized printed data sheets, pencils, and clipboards to ensure accuracy under varying field conditions.

From a logistical perspective, one Foton Tunland vehicle and one Nissan pickup were used as primary vehicles for transporting teams and equipment. In some sites, additional support vehicles were deployed to facilitate access and improve the safety of field teams.

5. Sites

6.1. Lapou Zaghmarz

Site Description:
Lapou Zaghmarz Wetland is located on the western side of the Miankaleh Peninsula, within the Zaghmarz area in the Central District of Behshahr County, Mazandaran Province. This wetland forms part of a larger complex of wetlands including Lapou, Shir Khan Lapou, and Palangan. It is situated approximately 1 km north of Behshahr city.

The unique geographical setting of the Miankaleh Peninsula, bounded by the Caspian Sea to the north and Gorgan Bay to the south, has created favorable conditions for the formation of extensive wetland habitats in this region.

Habitat Management Status: Ramsar Site

Figure 1. Surveyed area in Lapou Zaghmarz

Weather Conditions during Survey: Partly cloudy

Survey Date and Time: 25 January 2026, 09:15–09:24

Notes and Observations:
• Due to the proximity of this site to an air defense installation, fieldwork and census activities were conducted under specific operational constraints.

Table 3. Census results for Lapou Zaghmarz

Species Code	Scientific Name	English Name	Count
CASAL	Casmerodius albus	Great White Egret	4
EGRGA	Egretta garzetta	Little Egret	1
ANATI	.Anatinae spp	Unidentified Ducks	3
CIRAE	Circus aeruginosus	Marsh Harrier	3
TOTAL		**11**	
Total Species		**4**	
Total Waterbirds		**8**	
Total Waterbirds Species		**3**	
Total Raptors		**3**	
Total Raptors Species		**1**	
Total other birds		**0**	
Total other birds Species		**0**	

6.2. Miankaleh International Wetland

Site Description:
Miankaleh International Wetland is part of the Miankaleh Peninsula, located in eastern Mazandaran Province, west of Ashuradeh Island and adjacent to the city of Behshahr. This wetland was the first site in Iran to be listed under the Ramsar Convention and is considered one of the most important natural ecosystems in the country at both national and regional scales.

The Miankaleh Peninsula is a narrow and elongated landform bordered by the Caspian Sea to the north, Gorgan Bay to the south, Ashuradeh Island to the east, and Zaghmarz Wetland to the west. This unique geographical setting has led to the formation of a diverse mosaic of coastal, marine, and wetland habitats.

Miankaleh Wetland was designated as a protected area in 1969 and later recognized as a Biosphere Reserve under UNESCO's Man and the Biosphere (MAB) Programme in 1976. The total area of this natural complex, including wetland zones, surrounding terrestrial areas, and associated habitats, is estimated at approximately 100,000 hectares, making it one of the largest wetland systems in northern Iran.

The wetland serves as a key wintering and stopover site for migratory waterbirds along the Eurasian flyway. Notable groups recorded in this area include herons, egrets, gulls, terns, and pratincoles, alongside occasional records of rare and threatened species.

In addition to its importance for birds, Miankaleh Wetland plays a significant ecological role for aquatic species in the Caspian Sea. Parts of its water bodies function as spawning and nursery grounds for fish species, including cyprinids and certain sturgeon species.

The habitat structure of Miankaleh is highly diverse, comprising sandy coastal zones, marshlands, shallow water bodies, forested wetlands dominated by tamarisk shrubs, natural pomegranate groves, blackberry thickets, and low-lying plains.

Overall, Miankaleh Wetland is one of the most important refuges for waterbirds in Iran and plays a central role in the results of waterbird censuses in Mazandaran Province, both in terms of species diversity and population abundance.

Habitat Management Status: Ramsar Site, No-Hunting Area, Wildlife Refuge

Figure 2. Surveyed area in Miankaleh Wetland

The central part of Miankaleh shows visible cracking, as indicated in the figure above. The northern section (coastal strip) was surveyed continuously along a transect, while the southern section was surveyed using stationary count points located at:
36.79702 , 53.53676
36.79019 , 53.54676
36.80420 , 53.72615

Weather Conditions during Survey: Cloudy, wind (~15 km/h)

Survey Date and Time: 25 January 2026, 09:06–16:50

Figure 3. Participation of volunteers, AvayeBoom Association, and the Mazandaran Department of Environment

Notes and Observations:

• During the census, several sighthounds were observed within the refuge, reportedly belonging to a local livestock herder. The presence of hunting dogs in such areas may potentially lead to disturbance, chasing, or direct predation of wildlife.

• Gunshots were heard during the survey, which may have influenced bird distribution and aggregation patterns in certain areas.

• Due to cloudy conditions, reduced visibility and backlighting issues were encountered in some locations, potentially affecting the accuracy of species identification.

• In terms of species distribution patterns, in the section from the ranger station to the first dyke, nearly all observed birds were species adapted to freshwater conditions. Beyond the first dyke, species associated with saline environments were recorded, indicating a salinity gradient and corresponding habitat differentiation across the two sections.

• In the area before the dyke, larger duck species were more abundant. No saltwater-associated species, including flamingos and plovers, were observed prior to the dyke. All recorded flamingos beyond the dyke were adults, with no juveniles observed.

• In the bay area, due to water recession, access to the water edge required the use of a tractor, which affected the ease of survey and spatial coverage.

Recommendations:

• It is recommended that systematic monitoring of the number, breed, and function of dogs within the refuge be included as part of management actions. Given the hunting nature of certain breeds, particularly sighthounds, the presence of hunting dogs within the refuge should be formally prohibited and communicated clearly to local herders. Clear regulations regarding the type, number, and management of dogs in surrounding areas should also be developed.

• To improve survey accuracy, it is recommended that future censuses begin from the eastern part of Miankaleh and proceed westward, allowing for more favorable light conditions during observation. In the bay area, it is further recommended that surveys start from Bandar Gaz and continue eastward to optimize spatial and temporal coverage.

• Given the clear habitat differences before and after the dyke, separate and comparative monitoring of these two sections is recommended in future surveys to systematically assess changes in salinity, species composition, and habitat structure.

• Considering the limited access to the water edge in the bay area due to water retreat, appropriate logistical planning, including suitable equipment, is essential to improve census accuracy.

Table 4. Census results for Miankaleh Wetland

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	11
TACRU	Tachybaptus ruficollis	Little Grebe	1
PELON	Pelecanus onocrotalus	Great White Pelican	3
PELCR	Pelecanus crispus	Dalmatian Pelican	39
PHACA	Phalacrocorax carbo	Great Cormorant	6679
ARDCI	Ardea cinerea	Grey Heron	110
CASAL	Casmerodius albus	Great White Egret	28
EGRGA	Egretta garzetta	Little Egret	3
PHORO	Phoenicopterus roseus	Greater Flamingo	5961

Species Code	Scientific Name	English Name	Count
ANSAL	Anser albifrons	White-fronted Goose	9
ANSAN	Anser anser	Greylag Goose	74
TADFE	Tadorna ferruginea	Ruddy Shelduck	12
TADTA	Tadorna tadorna	Shelduck	610
ANAPE	Anas penelope	Wigeon	250
ANAST	Anas strepera	Gadwall	285
ANACR	Anas crecca	Green-winged Teal	575
ANAPL	Anas platyrhynchos	Mallard	2301
ANAAC	Anas acuta	Northern Pintail	68
ANACL	Anas clypeata	Northern Shoveler	738
AYTFE	Aythya ferina	Pochard	228
AYTFU	Aythya fuligula	Tufted Duck	20
ANATI	Anatinae spp.	Unidentified Ducks	8372
HAEOS	Haematopus ostralegus	Eurasian Oystercatcher	4
HIMHI	Himantopus himantopus	Black-winged Stilt	7
RECAV	Recurvirostra avosetta	Avocet	285
VANVA	Vanellus vanellus	Northern Lapwing	242
PLUAP	Pluvialis apricaria	Eurasian Golden Plover	394
PLUSQ	Pluvialis squatarola	Grey Plover	7
CHAHI	Charadrius hiaticula	Ringed Plover	115
CHADU	Charadrius dubius	Little Ringed Plover	69
CHAAL	Charadrius alexandrinus	Kentish Plover	38
CHAMO	Charadrius mongolus	Lesser Sandplover	17
CHALE	Charadrius leschenaultii	Greater Sandplover	3
CHARA	Charadrius spp.	unidentified Charadrius plovers	105
LIMLI	Limosa limosa	Black-tailed Godwit	11
LIMLA	Limosa lapponica	Bar-tailed Godwit	1

Species Code	Scientific Name	English Name	Count
NUMPH	Numenius phaeopus	Whimbrel	2
NUMAR	Numenius arquata	Eurasian Curlew	28
TRIER	Tringa erythropus	Spotted Redshank	3
TRITO	Tringa totanus	Redshank	66
TRINE	Tringa nebularia	Greenshank	28
TRIOC	Tringa ochropus	Green Sandpiper	6
TRIGL	Tringa glareola	Wood Sandpiper	19
TRICI	Tringa cinereus	Terek Sandpiper	2
TRING	Tringa spp.	unidentified Tringa sandpipers	3
ACTHY	Actitis hypoleucos	Common Sandpiper	8
CALAB	Calidris alba	Sanderling	38
CALMI	Calidris minuta	Little Stint	14
CALAP	Calidris alpina	Dunlin	156
CALFE	Calidris ferruginea	Curlew Sandpiper	2
PHIPU	Philomachus pugnax	Ruff	4
WADER	Unidentified Waders	Unidentified Waders	809
LARAM	Larus armenicus	Armenian Gull	30
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	21
LARIC	Larus ichthyaetus	Great Black-headed Gull	3
LARRI	Larus ridibundus	Black-headed Gull	11
LARGE	Larus genei	Slender-billed Gull	87
LARUS	Larus spp.	Unidentified Gulls	150
CHLHY	Chlidonias hybridus	Whiskered Tern	1
CHLLE	Chlidonias leucoptera	White-winged Black Tern	2
STENI	Sterna nilotica	Gull-billed Tern	1
STERN	Sternidae spp.	unidentified Sterna terns	111
HALAL	Haliaeetus albicilla	White-tailed Sea Eagle	13

Species Code	Scientific Name	English Name	Count
CIRAE	Circus aeruginosus	Marsh Harrier	8
MOTAL	Motacilla alba	Pied Wagtail	3
ANTSP	Anthus spinoletta	Water Pipit	43
-	Buteo rufinus	Long-legged Buzzard	1
-	Motacilla cinerea	Grey Wagtail	1
-	Peregrine Falcon	Falco peregrinus	1
-	Anthus richardi	Richard’s Pipit	1
-	Aquila heliaca	Eastern Imperial Eagle	1
-	Circus pygargus	Montagu`s Harrier	2
-	Circus macrourus	Pallid Harrier	3
-	Falco tinnunculus	Common Kestrel	3
-	Circus cyaneus	Hen Harrier	3
TOTAL		**29363**	
Total Species		**75**	
Total Waterbirds		**29280**	
Total Waterbirds Species		**62**	
Total Raptors		**35**	
Total Raptors Species		**9**	
Total other birds		**48**	
Total other birds Species		**4**	

6.3. Zineh Vand Ab-bandan

Site Description:

Zineh Vand Ab-bandan is located in eastern Mazandaran Province, within the coastal zone of Behshahr County, adjacent to Zaghmarz and Amirabad Port. This water body lies along the western margin of the habitat complex associated with the Miankaleh Peninsula and, from a spatial perspective, forms part of the network of coastal wetlands and man-made ponds (Ab-bandans) in eastern Mazandaran, which are connected to both the Caspian Sea and surrounding wetlands.

The proximity of Zineh Vand Wetland to larger wetlands such as Miankaleh and Zaghmarz has resulted in this site functioning as a complementary habitat for migratory waterbirds during the autumn and winter seasons.

Habitat Management Status: Unprotected

Figure 4. Surveyed area in Zineh Vand Ab-bandan

Weather Conditions during Survey: Partly cloudy

Survey Date and Time: 25 January 2026, 09:30–10:06

Table 5. Census results for Zineh Vand Ab-bandan

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	1
PELCR	Pelecanus crispus	Dalmatian Pelican	34
PHACA	Phalacrocorax carbo	Great Cormorant	27
ARDCI	Ardea cinerea	Grey Heron	3

Species Code	Scientific Name	English Name	Count
CASAL	Casmerodius albus	Great White Egret	3
EGRGA	Egretta garzetta	Little Egret	18
CYGCY	Cygnus cygnus	Whooper Swan	16
ANAST	Anas strepera	Gadwall	2
ANACL	Anas clypeata	Northern Shoveler	3
AYTFE	Aythya ferina	Pochard	16
HIMHI	Himantopus himantopus	Black-winged Stilt	34
RECAV	Recurvirostra avosetta	Avocet	4
VANVA	Vanellus vanellus	Northern Lapwing	270
TRIOC	Tringa ochropus	Green Sandpiper	4
WADER	Unidentified Waders	Unidentified Waders	35
LARRI	Larus ridibundus	Black-headed Gull	31
HALAL	Haliaeetus albicilla	White-tailed Sea Eagle	1
AQUCL	Aquila clanga	Greater Spotted Eagle	2
ALCAT	Alcedo atthis	Kingfisher	1
ANTSP	Anthus spinoletta	Water Pipit	4
EMBSC	Emberiza schoeniclus	Reed Bunting	8
	TOTAL	**517**	
	Total Species	**21**	
	Total Waterbirds	**501**	
	Total Waterbirds Species	**16**	
	Total Raptors	**3**	
	Total Raptors Species	**2**	
	Total other birds	**13**	
	Total other birds Species	**3**	

6.4. Swan Wetland (Sorkhroud)

Site Description:
Sorkhroud Wetland is located approximately 21 km east of Mahmoudabad city center, within an extensive matrix of rice fields and agricultural lands. The wetland, with its diverse aquatic and marginal habitats, annually supports a significant population of migratory waterbirds from various regions.

Migration of different bird species begins in early December, with some of the most characteristic species including wild ducks, geese, and Whooper Swans. Despite observed declines in some species due to reduced food availability in surrounding areas, Sorkhroud remains one of the most important wetlands in northern Iran for birdwatching and waterbird census activities.

Habitat Management Status: Unprotected

Figure 5. Surveyed area in Swan Wetland

Weather Conditions during Survey: Sunny

Survey Date and Time: 26 January 2026, 12:24–12:40

Notes and Observations:
• In its current condition, Swan Wetland has become one of the most suitable sites in the region for birdwatching and field-based research activities. Good accessibility, consistent presence of key species, and observation opportunities at reasonable distances make this site a valuable educational and research space.

• The census was conducted on foot along a defined survey route.

Recommendations:
• To develop this site into a standard birdwatching location, it is recommended that

structured management measures be implemented. These may include the design of controlled observation points, management of access routes, establishment of visitor capacity limits, installation of educational signage, and development of visitor guidelines to minimize disturbance while maintaining the site's attractiveness.

• From a habitat perspective, the wetland has the potential to support greater species diversity. It is recommended that regular habitat assessments be conducted annually by qualified experts, and that targeted management interventions, such as water level regulation, vegetation structure enhancement, or margin management, be implemented where necessary to improve conditions for a wider range of species.

• If such measures are implemented, Swan Wetland could serve as a provincial and even national model for integrated management of birdwatching, education, and conservation. The site has the potential to demonstrate how a local habitat, through scientific management and stakeholder engagement, can evolve into a successful example of balancing conservation and responsible use.

Table 6. Census results for Swan Wetland

Species Code	Scientific Name	English Name	Count
ARDCI	Ardea cinerea	Grey Heron	1
CASAL	Casmerodius albus	Great White Egret	2
PHORO	Phoenicopterus roseus	Greater Flamingo	2
ANACR	Anas crecca	Green-winged Teal	35
ANAPL	Anas platyrhynchos	Mallard	9
AYTFE	Aythya ferina	Pochard	78
ANATI	.Anatinae spp	Unidentified Ducks	15
FULAT	Fulica atra	Common Coot	179
GALGA	Gallinago gallinago	Common Snipe	39
TOTAL		**360**	
Total Species		**9**	
Total Waterbirds		**360**	
Total Waterbirds Species		**9**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds Species		**0**	

6.5. Fereydoonkenar Damgah

Site Description:
Fereydoonkenar Damgah is located on the outskirts of Fereydoonkenar city in Mazandaran Province and forms part of the internationally recognized wetland complex of the region. This area is one of the most important wintering grounds for migratory waterbirds in northern Iran and annually supports substantial populations of diverse species.

Damgahs are traditionally rice paddy fields that are intentionally flooded during the second half of the year, following the rice cultivation season, thereby acquiring a semi-wetland function. In Fereydoonkenar, these areas are traditionally used for trapping migratory birds, and in recent years, multiple cases of mass capture and mortality of migratory birds have been reported in this region.

Habitat Management Status: Ramsar Site, No-Hunting Area

Figure 6. Surveyed area in Fereydoonkenar Damgah

Weather Conditions during Survey: Sunny, calm

Survey Date and Time: 26 January 2026, 09:05–13:00

Notes and Observations:
• Despite the long-established structure of damgahs, unrestricted access and direct monitoring by rangers and official experts are still not possible in many parts of the area. This limitation constrains independent assessment and data-driven management.

• Conflicts of interest and ongoing disagreements among local stakeholders remain a major management challenge and contribute to the complexity of the situation.

• Despite these challenges, the area continues to support the highest abundance and diversity of waterbirds in Fereydoonkenar and surrounding counties, playing a critical role in

maintaining migratory pathways and supporting bird populations. This highlights its strategic ecological importance.

• Based on information provided by local damgah operators and confirmed by a local ranger, the presence of 2 individuals of Red-breasted Goose, 1 Greater White-fronted Goose, and 1 Lesser White-fronted Goose was reported in the days prior to the official census. These observations were not recorded by the survey team and are therefore included as supplementary local information.

• All geese observed during the census were carefully examined under suitable light conditions, and no individual of Greater/Lesser White-fronted Goose was recorded among them.

• A review of reports from previous years for this site indicated that although population figures were reported, there was no clear information regarding the type of data (exact counts vs. estimates) or the percentage of survey coverage. As a result, direct quantitative comparison between current data and previous records is limited. Any interannual comparison should therefore be interpreted with caution, taking these methodological limitations into account.

Figure 7. Census of waterbirds and shorebirds at Fereydoonkenar Damgah

Recommendations:

• It is recommended that a renewed operational plan be developed for the facilitation and management of damgahs, with defined short-term, mid-term, and long-term objectives. This plan should be implemented in a phased manner, taking into account the social and economic realities of the region.

• Effective enforcement of existing regulations should be prioritized. Where legal gaps or inefficiencies are identified, revision or strengthening of the relevant regulations should be considered.

• Fereydoonkenar Damgah should not be regarded as an unmanaged or unmanageable area; rather, it should be recognized as a key component of migratory bird conservation. Moving toward sustainable management requires a constructive dialogue with stakeholders, reduction of conflicts, and strengthening of the regulatory and conservation roles of responsible authorities.

• At 09:05, approximately 2,800 Great Cormorants were observed taking off simultaneously from the damgah and flying directly toward the sea. The timing and flight pattern of this event appeared relatively consistent and structured. It is therefore recommended that future census teams be present at this site during a similar time window to enable interannual comparison of cormorant populations and to assess potential changes in their movement patterns.

Table 7. Census results for Fereydoonkenar Damgah

Species Code	Scientific Name	English Name	Count
PHACA	Phalacrocorax carbo	Great Cormorant	2823
ARDCI	Ardea cinerea	Grey Heron	145
ARDPU	Ardea purpurea	Purple Heron	2
CASAL	Casmerodius albus	Great White Egret	8
EGRGA	Egretta garzetta	Little Egret	6
PLEFA	Plegadis falcinellus	Glossy Ibis	2
PLALE	Platalea leucorodia	White Spoonbill	4
ANSAN	Anser anser	Greylag Goose	479
CYGOL	Cygnus olor	Mute Swan	5
TADFE	Tadorna ferruginea	Ruddy Shelduck	300
TADTA	Tadorna tadorna	Shelduck	31

Species Code	Scientific Name	English Name	Count
ANAST	Anas strepera	Gadwall	80
ANACR	Anas crecca	Green-winged Teal	1024
ANAPL	Anas platyrhynchos	Mallard	620
ANAAC	Anas acuta	Northern Pintail	491
ANACL	Anas clypeata	Northern Shoveler	105
NETRU	Netta rufina	Red-crested Pochard	3
ANATI	.Anatinae spp	Unidentified Ducks	850
RALAQ	Rallus aquaticus	Water Rail	2
RECAV	Recurvirostra avosetta	Avocet	1
VANVA	Vanellus vanellus	Northern Lapwing	638
VANLE	Vanellus leucurus	White-tailed Plover	9
TRIER	Tringa erythropus	Spotted Redshank	2
TRITO	Tringa totanus	Redshank	13
TRIOC	Tringa ochropus	Green Sandpiper	19
TRIGL	Tringa glareola	Wood Sandpiper	6
GALMD	Gallinago media	Great Snipe	58
AQUCL	Aquila clanga	Greater Spotted Eagle	1
MOTAL	Motacilla alba	Pied Wagtail	30
-	Milvus migrans	Black Kite	1
TOTAL		**7758**	
Total Species		**30**	
Total Waterbirds		**7726**	
Total Waterbirds Species		**27**	
Total Raptors		**2**	
Total Raptors Species		**2**	
Total other birds		**30**	
Total other birds Species		**1**	

6.6. Fereydoonkenar Lapou (Ab-bandan)

Site Description:
Fereydoonkenar Lapou Ab-bandan is one of the man-made ponds located within the Ramsar site and Wildlife Refuge of Fereydoonkenar, under the ownership and management of the Department of Environment of Iran. During the winter season, this site serves as an important habitat for migratory waterbirds and, as part of the regional network of Ab-bandans, plays a significant role in providing safe habitat and feeding opportunities.

Habitat Management Status: Wildlife Refuge, Ramsar Site, No-Hunting Area

Figure 8. Surveyed area in Fereydoonkenar Lapou

Weather Conditions during Survey: Sunny, calm

Survey Date and Time: 26 January 2026, 13:40–13:55

Notes and Observations:
• During the survey, a large number of aerial nets were observed across the site. In addition, numerous duck decoys and duck-shaped bags used to attract birds for trapping were present on the water surface. Despite the extensive presence of trapping infrastructure, the number of observed birds was extremely low and largely limited to a small number of coots.

• Given these conditions, and considering that the land is under the ownership of the Department of Environment, it is strongly recommended that the process of full reclamation and control of the area be prioritized. Following reclamation, all aerial nets and trapping equipment should be removed, and any activities incompatible with conservation objectives should be halted.

• It is recommended that, after reclamation, this site be considered as a potential alternative to damgahs in the region and managed as a secure habitat for migratory birds. Targeted fencing and continuous online monitoring could play an effective role in preventing violations.

• To enhance the effectiveness of these measures, water depth and hydrological management of the site should be reassessed based on expert input to ensure suitable conditions for bird settlement and feeding.

• Overall, implementation of these measures could transform this area from a low-functioning and currently ineffective site into a valuable conservation solution for managing migratory birds in the Fereydoonkenar region.

Table 8. Census results for Fereydoonkenar Lapou

Species Code	Scientific Name	English Name	Count
TACRU	Tachybaptus ruficollis	Little Grebe	9
FULAT	Fulica atra	Common Coot	161
GALGA	Gallinago gallinago	Common Snipe	1
CHLLE	Chlidonias leucoptera	White-winged Black Tern	11
CIRAE	Circus aeruginosus	Marsh Harrier	2
ALCAT	Alcedo atthis	Kingfisher	1
MOTAL	Motacilla alba	Pied Wagtail	10
-	Acrocephalus scirpaceus	Common Reed Warbler	1
-	Motacilla cinerea	Grey Wagtail	1
-	Cettia cetti	Cetti's Warbler	2
TOTAL		**199**	
Total Species		**10**	
Total Waterbirds		**182**	
Total Waterbirds Species		**4**	
Total Raptors		**2**	
Total Raptors Species		**1**	
Total other birds		**15**	
Total other birds Species		**5**	

6.7. Central and Eastern Sorkhroud Damgahs

Site Description:
Sorkhroud Wetland, also known as “Shira Wetland,” is located in Sorkhroud County, within the Vezra Mahalleh area, near the cities of Mahmoudabad and Fereydoonkenar. The wetland is hydrologically connected to the Sorkhroud River and is considered one of the most important wintering habitats for waterbirds in western Mazandaran Province.

Due to its location adjacent to rice fields, damgah areas, and the Caspian Sea coastline, the wetland provides suitable conditions for supporting large populations of migratory birds. Within the framework of the waterbird census, the site is monitored in two sections: Central Sorkhroud Damgah and Eastern Sorkhroud Damgah.

From early December, the wetland hosts a wide range of migratory species, including Whooper Swans, flamingos, geese, and various species of wild ducks. Despite a relative decline in some species in recent years, likely due to reduced food availability and increasing human pressures, Sorkhroud remains a key census site in northern Iran. Its data play an important role in understanding spatial patterns and population distribution across damgah systems in western Mazandaran.

Habitat Management Status: Ramsar Site, No-Hunting Area

Figure 9. Surveyed area in Eastern Sorkhroud Damgah

Figure 10. Surveyed area in Central Sorkhroud Damgah

Weather Conditions during Survey: Sunny

Survey Date and Time: 26 January 2026, 10:30–13:20

Notes and Observations:

• During field monitoring, both species diversity and bird abundance in Eastern Sorkhroud Damgah were assessed as low relative to the potential capacity of the habitat.

• A considerable portion of the damgah appeared abandoned or lacking active management, which may negatively affect habitat quality and functionality for birds.

• A high-rise urban development pilot project is currently being implemented in the Sorkhroud area, which may potentially affect the presence, distribution, and movement patterns of migratory birds. Given that this region lies along a migratory pathway and holds ecological and international importance, any physical development within its boundaries requires careful environmental assessment.

Recommendations:

• The decline in income for damgah operators and the partially abandoned state of the area may provide an opportunity for renewed engagement and redefinition of land use within a conservation and birdwatching framework. It is recommended that the feasibility of converting parts of the damgah into managed birdwatching sites, in collaboration with local stakeholders, be explored.

• Regarding urban development and high-rise construction, it is recommended that a detailed Environmental Impact Assessment (EIA) be conducted with a specific focus on migratory birds. The ecological importance of the area as part of a migratory route should be considered in defining the final boundaries of the project. In addition, a clearly defined ecological buffer zone should be established to reduce conflicts between urban expansion and bird habitats.

Table 9. Census results for Eastern Sorkhroud Damgah

Species Code	Scientific Name	English Name	Count
ARDCI	Ardea cinerea	Grey Heron	1
ANSAN	Anser anser	Greylag Goose	177
ANACR	Anas crecca	Green-winged Teal	185
ANAPL	Anas platyrhynchos	Mallard	210
ANAAC	Anas acuta	Northern Pintail	15
ANACL	Anas clypeata	Northern Shoveler	35
AYTFE	Aythya ferina	Pochard	20
VANVA	Vanellus vanellus	Northern Lapwing	20
-	Milvus migrans	Black Kite	2
TOTAL		**665**	
Total Species		**9**	
Total Waterbirds		**663**	
Total Waterbirds Species		**8**	
Total Raptors		**2**	
Total Raptors Species		**1**	
Total other birds		**0**	
Total other birds Species		**0**	

Table 10. Census results for Central Sorkhroud Damgah

Species Code	Scientific Name	English Name	Count
ARDCI	Ardea cinerea	Grey Heron	2
CASAL	Casmerodius albus	Great White Egret	2
ANSAN	Anser anser	Greylag Goose	67
CYGCY	Cygnus cygnus	Whooper Swan	3
TADTA	Tadorna tadorna	Shelduck	92
ANAPE	Anas penelope	Wigeon	66
ANAST	Anas strepera	Gadwall	5
ANACR	Anas crecca	Green-winged Teal	925
ANAPL	Anas platyrhynchos	Mallard	408
ANAAC	Anas acuta	Northern Pintail	80
ANAQU	Anas querquedula	Garganey	3
ANACL	Anas clypeata	Northern Shoveler	6
ANATI	.Anatinae spp	Unidentified Ducks	1712
VANVA	Vanellus vanellus	Northern Lapwing	63
GALGA	Gallinago gallinago	Common Snipe	1
TOTAL		**3435**	
Total Species		**15**	
Total Waterbirds		**3435**	
Total Waterbirds Species		**15**	
Total Raptors		**0**	
Total Raptors Species		**0**	

6.8. Ezbaran Damgah

Site Description:
Ezbaran is located in Mazandaran Province within the Fereydoonkenar Plain and, together with Sorkhroud and Fereydoonkenar, forms part of a network of traditional semi-natural ecosystems in northern Iran. The area still includes man-made ponds (Ab-bandans) and seasonally flooded agricultural lands that play an important role in supporting waterbirds.

Due to its mild Caspian climate and the persistence of aquatic habitats, Ezbaran annually hosts significant numbers of migratory waterbirds during the autumn and winter seasons and is considered one of the key census sites in this part of the province.

Habitat Management Status: Ramsar Site, No-Hunting Area

Figure 11. Surveyed area in Ezbaran Damgah

Weather Conditions during Survey: Sunny

Survey Date and Time: 26 January 2026, 14:23–14:53

Notes and Observations:
• During the census, no shorebirds were observed and no geese were recorded in this site. Overall bird abundance was extremely low, showing a significant decline both relative to the habitat's potential capacity and compared to previous years' reports. Nearly all recorded individuals were adults, with no juveniles observed.

• This was the only site where Tufted Duck was recorded.

• According to local damgah operators, nighttime shooting has reduced habitat security for birds in this area, while damgahs in Fereydoonkenar are considered relatively more secure. They also identified increased water depth (up to approximately 1.5 m) and flooding from adjacent rivers as contributing factors to the decline in bird numbers.

• Given the sharp decline in bird numbers, reported environmental changes, and reduced habitat functionality, there is concern that Ezbaran Damgah may face severe degradation or

even complete loss as an effective habitat for migratory birds if current conditions persist. This highlights the urgent need for a reassessment of management approaches in this area.

• The census was conducted within the damgah with the participation of volunteers, using five vehicles and involving nine Department of Environment personnel. Practical training was also provided to staff during the process.

Recommendations:

• If feasible, it is recommended that full land acquisition by the Department of Environment be considered as a potential management option. This could enable the transformation of the area into a secure and managed refuge for migratory birds, while still incorporating the local knowledge of damgah operators. Given that this area has previously been designated both as a Wildlife Refuge and a Ramsar Site, such an action could significantly strengthen the regional conservation network.

• It is strongly recommended that Ezbaran Damgah be considered as a pilot site for participatory conservation. This proposal is well justified given the site's characteristics, including its spatial integrity, circular configuration, potential for complete and consistent monitoring, and its history of supporting rare and sensitive species.

Figure 12. Census at Ezbaran Damgah

Table 11. Census results for Ezbaran Damgah

Species Code	Scientific Name	English Name	Count
ARDCI	Ardea cinerea	Grey Heron	35
CASAL	Casmerodius albus	Great White Egret	3
ANAPE	Anas penelope	Wigeon	35
ANAST	Anas strepera	Gadwall	45
ANACR	Anas crecca	Green-winged Teal	80
ANAPL	Anas platyrhynchos	Mallard	265
ANAAC	Anas acuta	Northern Pintail	29
ANACL	Anas clypeata	Northern Shoveler	52
NETRU	Netta rufina	Red-crested Pochard	2
LARRI	Larus ridibundus	Black-headed Gull	18
CIRAE	Circus aeruginosus	Marsh Harrier	1
TOTAL		**565**	
Total Species		**11**	
Total Waterbirds		**564**	
Total Waterbirds Species		**10**	
Total Raptors		**1**	
Total Raptors Species		**1**	
Total other birds		**0**	
Total other birds Species		**0**	

6.9. Heydarkola Ab-bandan (Fereydoonkenar)

Site Description:

Heydarkola Ab-bandan is located in Heydarkola village within Fereydoonkenar County, Mazandaran Province. During the field visit, the entire perimeter of the Ab-bandan was enclosed by embankments, and no natural wetland vegetation, including reed beds, was observed.

At present, the site is primarily used for fish farming, and during the census, no significant presence of waterbirds was recorded. The current condition of the Ab-bandan has substantially reduced its habitat function for migratory birds.

Habitat Management Status: Wildlife Refuge, Ramsar Site

Figure 13. Surveyed area in Heydarkola Ab-bandan (Fereydoonkenar)

Weather Conditions during Survey: Sunny

Survey Date and Time: 27 January 2026, 12:32–12:38

Notes and Observations:

• The entire perimeter of the Ab-bandan was surrounded by embankments, and no reed bed vegetation was observed. The site is currently used for fish farming, and under these conditions, it does not provide an effective habitat for waterbirds. However, if land use is modified, embankments are reduced or removed, and appropriate vegetation is restored, the conservation value of the site could be reassessed in the future.

• The census was conducted using a vehicle-based transect survey.

Table 12. Census results for Heydarkola Ab-bandan (Fereydoonkenar)

Species Code	Scientific Name	English Name	Count
CASAL	Casmerodius albus	Great White Egret	1
GALCH	Gallinula chloropus	Moorhen	2
TOTAL		**3**	
Total Species		**2**	
Total Waterbirds		**3**	
Total Waterbirds Species		**2**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds		**0**	
Total other birds Species		**0**	

6.10. Karikola Ab-bandan

Site Description:
Karikola Ab-bandan is located in Fereydoonkenar County, Mazandaran Province, and is functionally connected to the surrounding rice paddy landscape. It is considered one of the small agricultural water storage ponds within the Fereydoonkenar Plain.

Within the framework of the waterbird census, this site is assessed as part of the network of local Ab-bandans, which may serve as seasonal habitat for migratory waterbirds during the colder months.

Habitat Management Status: Unprotected

Figure 14. Surveyed area in Karikola Ab-bandan

Weather Conditions during Survey: Sunny, calm

Survey Date and Time: 27 January 2026, 12:08–12:18

Notes and Observations:
• Despite the very open field of view and the possibility of complete visual coverage of the site, no significant diversity or abundance of waterbirds was observed.

• A high level of human presence and movement was observed around the site, which may be a key factor limiting bird use and persistence.
• The census was conducted using a vehicle-based transect survey.
• Reed bed coverage was estimated to be less than 5%.

Table 13. Census results for Karikola Ab-bandan

Species Code	Scientific Name	English Name	Count
PODNI	Podiceps nigricollis	Black-necked Grebe	3
ANAST	Anas strepera	Gadwall	1
LARRI	Larus ridibundus	Black-headed Gull	17
TOTAL		**21**	
Total Species		**3**	
Total Waterbirds		**21**	
Total Waterbirds Species		**3**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds		**0**	
Total other birds Species		**0**	

6.11. ZarinKola Ab-bandan (Lapou and ZarinKola Ab-bandan)

Site Description:
ZarinKola Ab-bandan is located in Larim-e Shomali Rural District of Juybar County, Mazandaran Province. It lies adjacent to the villages of Bala ZarinKola and Paeen ZarinKola and functions as part of the local network of Ab-bandans supplying irrigation water to surrounding rice fields.

These seasonal and semi-permanent water bodies, in combination with adjacent agricultural lands, provide important habitats for migratory waterbirds during different stages of migration and wintering.

Habitat Management Status: Unprotected

Figure 15. Surveyed area in ZarinKola Ab-bandan

Weather Conditions during Survey: Wind (~8 km/h)

Survey Date and Time: 28 January 2026, 10:35–11:25

Notes, Observations, and Recommendations:
• During the survey, a large number of Ruddy Shelducks were recorded in Basin 1, representing a very high density relative to the size of the pond. Given the conservation status of this species, its notable presence can serve as a strong basis for strengthening conservation approaches at this site.

• The diversity of observed birds suggests a water depth of at least approximately 3 meters in the central part of the Ab-bandan, indicating the site's potential to function as an artificial refuge for waterbirds. In contrast, Basin 2 was assessed to be shallower. All swans observed at this site were juveniles, suggesting that the site may function primarily as a temporary or transitional habitat.

• From an infrastructure perspective, access routes were found to be well-maintained and orderly, and planted trees appeared to be in good condition. These features, together with the

presence of key species, indicate strong potential for the controlled development of ecotourism and birdwatching activities.

• Due to light conditions, accurate bird counts require careful timing. It is recommended that surveys of Basin 1 be conducted after midday to improve observation quality and data accuracy.

• During the field visit, strong local interest and engagement with the site and its birdlife were clearly observed. Therefore, organizing targeted educational workshops for local communities could play an important role in raising awareness, reducing potential conflicts, and strengthening participation in conservation.

• Considering the overall habitat conditions, presence of valuable and rare species, suitable infrastructure, and high social acceptance, it is strongly recommended that this site be designated as a pilot for participatory conservation of Ab-bandans in Mazandaran Province. Implementation of such a pilot could include targeted water management, optimized census timing, community education, and controlled development of birdwatching activities. The experience gained could serve as a practical and scalable model for other Ab-bandans in the region.

• Reed bed coverage was estimated to be less than 10%.
• The census was conducted using a combination of vehicle-based and on-foot transect surveys.

Table 14. Census results for ZarinKola Ab-bandan

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	5
PODNI	Podiceps nigricollis	Black-necked Grebe	13
TACRU	Tachybaptus ruficollis	Little Grebe	26
PHAPY	Phalacrocorax pygmaeus	Pygmy Cormorant	151
PHACA	Phalacrocorax carbo	Great Cormorant	60
CYGOL	Cygnus olor	Mute Swan	6
ANAPE	Anas penelope	Wigeon	8
ANAST	Anas strepera	Gadwall	172
ANACR	Anas crecca	Green-winged Teal	33
ANAPL	Anas platyrhynchos	Mallard	59
ANACL	Anas clypeata	Northern Shoveler	60
MARAN	Marmaronetta angustirostris	Marbled Teal	10

Species Code	Scientific Name	English Name	Count
AYTFE	Aythya ferina	Pochard	175
AYTFU	Aythya fuligula	Tufted Duck	3
RALAQ	Rallus aquaticus	Water Rail	4
FULAT	Fulica atra	Common Coot	138
LARAM	Larus armenicus	Armenian Gull	3
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	1
LARIC	Larus ichthyaetus	Great Black-headed Gull	1
LARRI	Larus ridibundus	Black-headed Gull	65
LARGE	Larus genei	Slender-billed Gull	135
CHLLE	Chlidonias leucoptera	White-winged Black Tern	1
STENI	Sterna nilotica	Gull-billed Tern	4
ALCAT	Alcedo atthis	Kingfisher	1
MOTAL	Motacilla alba	Pied Wagtail	1
-	Acrocephalus scirpaceus	Common Reed Warbler	1
-	Acrocephalus melanopogon	Moustached Warbler	1
-	Emberiza schoeniclus	Common Reed Bunting	2
-	Phylloscopus trochilus	Willow Warbler	21
-	Cettia cetti	Cetti’s Warbler	4
-	Accipiter nisus	Eurasian Sparrowhawk	1
TOTAL		**1165**	
Total Species		**31**	
Total Waterbirds		**1133**	
Total Waterbirds Species		**23**	
Total Raptors		**1**	
Total Raptors Species		**1**	
Total other birds		**31**	
Total other birds Species		**7**	

6.12. Larim Ab-bandan

Site Description:
Larim Wetland is located in Juybar County, Mazandaran Province, within the Larim village area, and together with Larim Ab-bandan forms a complex of interconnected water bodies. Due to its position at a lower elevation relative to surrounding water levels, the wetland exhibits specific hydrological characteristics that make it a suitable habitat for waterbirds, particularly during the winter season. The wetland is estimated to be approximately 1.5 km in length and 1 km in width.

The wetland is surrounded by extensive agricultural lands, rice fields, and numerous Ab-bandans. The presence of river systems and associated water structures enhances soil fertility and, alongside agricultural functions, plays an important role in maintaining seasonal water bodies and supporting migratory birds. This combination of wetland, Ab-bandans, and rice paddies makes Larim one of the key waterbird census sites in eastern Mazandaran.

Habitat Management Status: Unprotected

Figure 16. Surveyed area in Larim Ab-bandan

Weather Conditions during Survey: Cloudy

Survey Date and Time: 28 January 2026, 11:54–12:04

Notes and Observations:
• Reed bed coverage was estimated at approximately 30% during the survey.

• The census was conducted using a vehicle-based transect survey.

Table 15. Census results for Larim Ab-bandan

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	6
TACRU	Tachybaptus ruficollis	Little Grebe	8
LARUS	.Larus spp	Unidentified Gulls	3
CIRAE	Circus aeruginosus	Marsh Harrier	2
-	Buteo rufinus	Long-legged Buzzard	1
-	Acrocephalus scirpaceus	Common Reed Warbler	1
TOTAL		**21**	
Total Species		**6**	
Total Waterbirds		**17**	
Total Waterbirds Species		**3**	
Total Raptors		**3**	
Total Raptors Species		**2**	
Total other birds		**1**	
Total other birds Species		**1**	

6.13. Kordkola Ab-bandan

Site Description:
Kordkola Ab-bandan is a relatively small water body forming part of the extensive network of Ab-bandans in Juybar County, Mazandaran Province, located near Kordkola village. It has traditionally been constructed for irrigation water storage and management of rice paddies. As a seasonal aquatic habitat, it contributes to supporting waterbirds during different times of the year.

Ab-bandans in Juybar are typically located adjacent to rice fields and agricultural lands, and with increased water levels during colder months and migration periods, they play an important role in providing habitat for migratory birds. Kordkola Ab-bandan functions within this broader ecological context and is included as part of the waterbird census network.

Habitat Management Status: Unprotected

Figure 17. Surveyed area in Kordkola Ab-bandan

Weather Conditions during Survey: Partly cloudy

Survey Date and Time: 28 January 2026, 12:12–12:36

Notes and Observations:
• Given the size of the site, the density of Western Marsh Harrier was assessed as relatively high.

• Access to the site required the use of a four-wheel-drive (4WD) vehicle.

• Reed bed coverage was estimated at approximately 70%.

• The census was conducted using a vehicle-based transect survey.

Table 16. Census results for Kordkola Ab-bandan

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	23
PODNI	Podiceps nigricollis	Black-necked Grebe	7
TACRU	Tachybaptus ruficollis	Little Grebe	6
CASAL	Casmerodius albus	Great White Egret	1
GALCH	Gallinula chloropus	Moorhen	3
PORPP	Porphyrio porphyrio	Purple Swamphen	3
FULAT	Fulica atra	Common Coot	4
VANVA	Vanellus vanellus	Northern Lapwing	30
LARRI	Larus ridibundus	Black-headed Gull	55
LARGE	Larus genei	Slender-billed Gull	10
CIRAE	Circus aeruginosus	Marsh Harrier	6
MOTAL	Motacilla alba	Pied Wagtail	3
-	Anthus richardi	Richard’s Pipit	1
-	Milvus migrans	Black Kite	2
-	Cettia cetti	Cetti’s Warbler	1
TOTAL		**155**	
Total Species		**15**	
Total Waterbirds		**142**	
Total Waterbirds Species		**10**	
Total Raptors		**8**	
Total Raptors Species		**2**	
Total other birds		**5**	
Total other birds Species		**3**	

6.14. Anarmarz Ab-bandan

Site Description:
Anarmarz Ab-bandan is located in the southwestern part of Anarmarz village, within Gilkhoran District of Juybar County, Mazandaran Province, covering an area of approximately 300 hectares. Together with more than 300 hectares of surrounding rice fields, it functions as a traditional agricultural water storage system and is used for warm-water fish farming during the summer.

During the colder months, the site is utilized by groups of migratory waterbirds. Given its wetland characteristics and surrounding agricultural landscape, it has the capacity to support species such as various ducks and other wintering birds. For this reason, Anarmarz Ab-bandan is included as one of the surveyed sites in the Mazandaran waterbird census.

Habitat Management Status: Unprotected

Figure 18. Surveyed area in Anarmarz Ab-bandan

Weather Conditions during Survey: Partly cloudy

Survey Date and Time: 28 January 2026, 10:26–12:00

Notes and Observations:
• The site is currently used as a fish farming pond, with aquaculture representing its dominant function.

• Active agricultural lands surrounding the site have limited the natural wetland margins.

• During the survey, signs of illegal access and disturbance were observed, consistent with patterns seen in other Ab-bandans in the region. In addition, a considerable number of spent cartridges were found, indicating hunting activity in the area.

• These combined factors suggest significant multi-layered human pressure on the site and a substantial reduction in its habitat function for waterbirds.

Recommendations:

• Where management conditions allow, it is recommended that the potential for partial land-use revision and the establishment of a participatory conservation zone be considered in the future.

Table 17. Census results for Anarmarz Ab-bandan

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	11
TACRU	Tachybaptus ruficollis	Little Grebe	33
PHACA	Phalacrocorax carbo	Great Cormorant	4
ARDCI	Ardea cinerea	Grey Heron	1
CASAL	Casmerodius albus	Great White Egret	44
EGRGA	Egretta garzetta	Little Egret	60
TADTA	Tadorna tadorna	Shelduck	47
ANAST	Anas strepera	Gadwall	8
ANACR	Anas crecca	Green-winged Teal	4
ANAPL	Anas platyrhynchos	Mallard	36
ANACL	Anas clypeata	Northern Shoveler	2
ANATI	.Anatinae spp	Unidentified Ducks	8
GALCH	Gallinula chloropus	Moorhen	5
PORPP	Porphyrio porphyrio	Purple Swamphen	1
FULAT	Fulica atra	Common Coot	851
ACTHY	Actitis hypoleucos	Common Sandpiper	96
GALGA	Gallinago gallinago	Common Snipe	9
LARRI	Larus ridibundus	Black-headed Gull	268
CHLLE	Chlidonias leucoptera	White-winged Black Tern	1
STEAL	Sterna albifrons	Little Tern	1
CIRAE	Circus aeruginosus	Marsh Harrier	13
ALCAT	Alcedo atthis	Kingfisher	5
ANTSP	Anthus spinoletta	Water Pipit	2

Species Code	Scientific Name	English Name	Count
-	Milvus migrans	Black Kite	12
TOTAL		**1522**	
Total Species		**24**	
Total Waterbirds		**1490**	
Total Waterbirds Species		**20**	
Total Raptors		**25**	
Total Raptors Species		**2**	
Total other birds		**7**	
Total other birds Species		**2**	

6.15. Seyed Mahalleh Ab-bandan

Site Description:
Seyed Mahalleh Ab-bandan, with an area of approximately 150 hectares, is located in northern Sari County at the entrance of Seyed Mahalleh village, adjacent to the Sari–Babolsar main road and the Juybar–Bahnemir route. This wetland provides an important habitat for migratory waterbirds and also supports a variety of other fauna and wetland-dependent vegetation.

The site plays a significant role in the livelihoods of local communities, with many economic activities relying on wetland resources and ecosystem functions. Traditional hunting and trapping of migratory waterbirds remain part of local subsistence practices.

Habitat Management Status: Unprotected

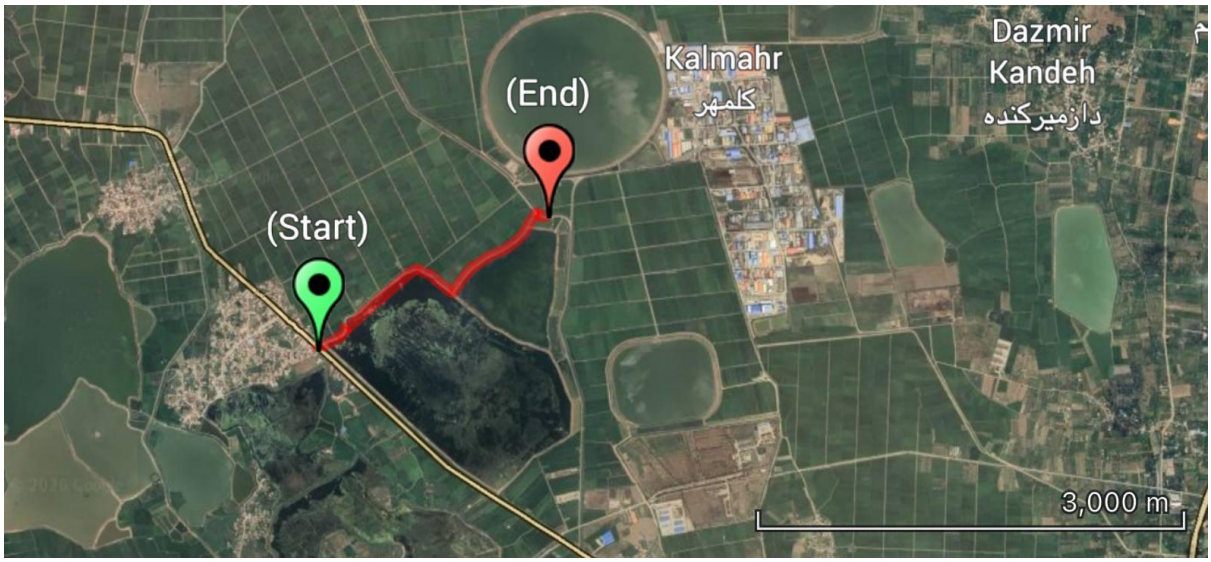

Figure 19. Surveyed area in Seyed Mahalleh Ab-bandan

Weather Conditions during Survey: Partly cloudy

Survey Date and Time: 28 January 2026, 13:09–13:15

Notes and Observations:
• Reed bed coverage was estimated at approximately 50%.

• The census was conducted using a vehicle-based transect survey.

Table 18. Census results for Seyed Mahalleh Ab-bandan

Species Code	Scientific Name	English Name	Count
PODNI	Podiceps nigricollis	Black-necked Grebe	1
TACRU	Tachybaptus ruficollis	Little Grebe	13
FULAT	Fulica atra	Common Coot	18
CIRAE	Circus aeruginosus	Marsh Harrier	2
ALCAT	Alcedo atthis	Kingfisher	2
MOTAL	Motacilla alba	Pied Wagtail	18
ANTSP	Anthus spinoletta	Water Pipit	1
-	Acrocephalus scirpaceus	Common Reed Warbler	1
-	Emberiza schoeniclus	Common Reed Bunting	1
-	Cettia cetti	Cetti's Warbler	1
TOTAL		**58**	
Total Species		**10**	
Total Waterbirds		**32**	
Total Waterbirds Species		**3**	
Total Raptors		**2**	
Total Raptors Species		**1**	
Total other birds		**24**	
Total other birds Species		**6**	

6.16. Cheshmeh Kileh River Mouth

Site Description:
Cheshmeh Kileh River originates from the mountainous regions of Dohezar, Takht-e Soleyman, and the Alamut range, with two main tributaries. The Dohezar branch originates from the Dohezar mountains, while the Sehezar branch originates from the Sehezar highlands. These branches converge in the Chaldareh area, approximately 24 km south of Tonekabon.

After emerging from mountainous areas, the river is known as Cheshmeh Kileh, and in the lowland section it is referred to as “Mezar.” The river maintains a relatively high discharge throughout most of the year, with an average depth of approximately 1.5 meters and a width ranging from 30 to 350 meters, reaching up to 400 meters in some sections.

Habitat Management Status: Unprotected

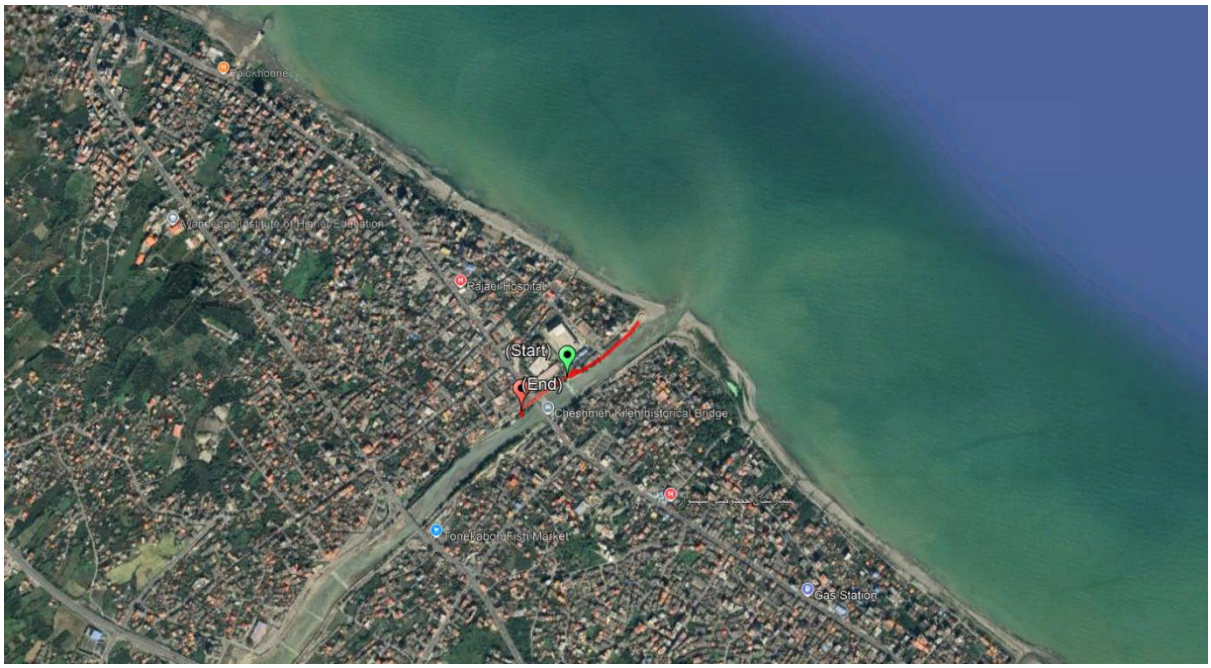

Figure 20. Surveyed area at the Cheshmeh Kileh River Mouth

Weather Conditions during Survey: Sunny, wind (~8 km/h)

Survey Date and Time: 1 February 2026, 14:54–15:20

Notes and Observations:
• Most observed Caspian Gulls were sub-adults.

• The census was conducted on foot along a defined transect.

Table 19. Census results for Cheshmeh Kileh River Mouth

Species Code	Scientific Name	English Name	Count
PHAPY	Phalacrocorax pygmaeus	Pygmy Cormorant	20
PHACA	Phalacrocorax carbo	Great Cormorant	111
CASAL	Casmerodius albus	Great White Egret	1
EGRGA	Egretta garzetta	Little Egret	4
LARAM	Larus armenicus	Armenian Gull	2
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	28
LARIC	Larus ichthyaetus	Great Black-headed Gull	1
LARRI	Larus ridibundus	Black-headed Gull	230
LARGE	Larus genei	Slender-billed Gull	50
LARUS	.Larus spp	Unidentified Gulls	50
CHLHY	Chlidonias hybridus	Whiskered Tern	1
CHLLE	Chlidonias leucoptera	White-winged Black Tern	1
MOTAL	Motacilla alba	Pied Wagtail	10
TOTAL		**509**	
Total Species		**13**	
Total Waterbirds		**499**	
Total Waterbirds Species		**12**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds		**10**	
Total other birds Species		**1**	

6.17. Mistan Ab-bandan

Site Description:
Mistan Ab-bandan is located south of Mistan village in Juybar County, approximately 5–7 km from the Caspian Sea coastline. The wetland lies at an elevation of approximately 18 meters below sea level.

Each year during autumn and winter, Mistan Wetland provides habitat for wintering waterbirds.

Habitat Management Status: Unprotected

Figure 21. Surveyed area in Mistan Ab-bandan

Weather Conditions during Survey: Partly cloudy

Survey Date and Time: 28 January 2026, 13:30–13:45

Table 20. Census results for Mistan Ab-bandan

Species Code	Scientific Name	English Name	Count
TACRU	Tachybaptus ruficollis	Little Grebe	13
CASAL	Casmerodius albus	Great White Egret	1
FULAT	Fulica atra	Common Coot	2
TRIOC	Tringa ochropus	Green Sandpiper	1
GALGA	Gallinago gallinago	Common Snipe	23
WADER	Unidentified Waders	Unidentified Waders	3
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	4
LARRI	Larus ridibundus	Black-headed Gull	4
ALCAT	Alcedo atthis	Kingfisher	1
TOTAL		**52**	
Total Species		**9**	
Total Waterbirds		**51**	
Total Waterbirds Species		**8**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds		**1**	
Total other birds Species		**1**	

6.18. Roshandan Ab-bandan

Site Description:
Roshandan Ab-bandan is a local water body in Mazandaran Province that is directly connected to surrounding rice paddies and is used for agricultural water storage and management.

During the colder months, the site may be used to a limited extent by migratory waterbirds and is therefore included among the surveyed sites in the waterbird census.

Habitat Management Status: Unprotected

Figure 22. Surveyed area in Roshandan Ab-bandan

Weather Conditions during Survey: Partly cloudy

Survey Date and Time: 28 January 2026, 13:50–14:40

Notes and Observations:
• Dredging operations were ongoing at the site during the survey.

• A high density of snipes was observed. Given that snipes feed on invertebrates within the soil, this likely indicates recent disturbance and turnover of the substrate.

Table 21. Census results for Roshandan Ab-bandan

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	16
TACRU	Tachybaptus ruficollis	Little Grebe	15
ARDCI	Ardea cinerea	Grey Heron	6
CASAL	Casmerodius albus	Great White Egret	37
GALGA	Gallinago gallinago	Common Snipe	342
LYMMI	Lymnocryptes minimus	Jack Snipe	106
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	1
LARRI	Larus ridibundus	Black-headed Gull	251
CIRAE	Circus aeruginosus	Marsh Harrier	3
TOTAL		**777**	
Total Species		**9**	
Total Waterbirds		**774**	
Total Waterbirds Species		**8**	
Total Raptors		**3**	
Total Raptors Species		**1**	
Total other birds		**0**	
Total other birds Species		**0**	

6.19. Lajmeh Ab-bandan (Azizak)

Site Description:
Azizak Wetland, also known as Azizak Ab-bandan, covers an area of approximately 550 hectares in Azizak Rural District, Bahnemir District, Babolsar County, Mazandaran Province. The site consists of four small and large Ab-bandans and, in addition to its natural landscape value, plays an important role in supplying agricultural water and supporting aquaculture.

During migration seasons, the site hosts significant numbers of waterbirds. The combination of aquatic habitats and surrounding lands provides suitable conditions for feeding, resting, and settlement of migratory birds, making Azizak Ab-bandan one of the key census sites in Mazandaran Province.

Habitat Management Status: Unprotected

Figure 23. Surveyed area in Lajmeh Ab-bandan (Azizak)

Weather Conditions during Survey: Sunny

Survey Date and Time: 27 January 2026, 12:45–13:00

Notes and Observations:
• A considerable number of spent cartridges were observed within the site.

• Due to high water levels, access to the far end of the site was not possible.

• The census was conducted using a vehicle-based transect survey.

Table 22. Census results for Lajmeh Ab-bandan (Azizak)

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	2
ARDCI	Ardea cinerea	Grey Heron	5
CASAL	Casmerodius albus	Great White Egret	44
EGRGA	Egretta garzetta	Little Egret	6
ANAPL	Anas platyrhynchos	Mallard	9
FULAT	Fulica atra	Common Coot	162
LARRI	Larus ridibundus	Black-headed Gull	48
CIRAE	Circus aeruginosus	Marsh Harrier	10
AQUCL	Aquila clanga	Greater Spotted Eagle	1
TOTAL		**287**	
Total Species		**9**	
Total Waterbirds		**276**	
Total Waterbirds Species		**7**	
Total Raptors		**11**	
Total Raptors Species		**2**	
Total other birds		**0**	
Total other birds Species		**0**	

6.20. Langour Ab-bandan

Site Description:
Langour Wetland is located in Langour village, Babol County, Mazandaran Province, and with an area of approximately 700 hectares, is considered one of the larger water bodies in the province. In addition to its agricultural importance as a water storage source for surrounding farmlands, the site offers valuable natural landscapes and relatively undisturbed scenery.

During the winter season, Langour Wetland hosts a considerable population of migratory waterbirds.

Habitat Management Status: Unprotected

Figure 24. Surveyed area in Langour Ab-bandan

Weather Conditions during Survey: Sunny

Survey Date and Time: 27 January 2026, 12:10–12:40

Table 23. Census results for Langour Ab-bandan

Species Code	Scientific Name	English Name	Count
TACRU	Tachybaptus ruficollis	Little Grebe	2
CIRAE	Circus aeruginosus	Marsh Harrier	3
-	Buteo rufinus	Long-legged Buzzard	1
TOTAL		**6**	
Total Species		**3**	
Total Waterbirds		**2**	
Total Waterbirds Species		**1**	
Total Raptors		**4**	
Total Raptors Species		**2**	
Total other birds		**0**	
Total other birds Species		**0**	

6.21. Aghozben Ab-bandan

Site Description:
Aghozben Ab-bandan is located in Aghozben village, within Feyziyeh Rural District of the Central District of Babol County, Mazandaran Province. This water body is part of the extensive network of rice-field Ab-bandans in the region, which function as semi-wetland habitats during the colder months through seasonal water storage.

Although detailed published information about this site is limited, field observations indicate that it supports a diversity of waterbird species.

Habitat Management Status: Unprotected

Figure 25. Surveyed area in Aghozben Ab-bandan

Weather Conditions during Survey: Sunny

Survey Date and Time: 27 January 2026, 11:30–11:43

Notes and Observations:
• The presence of Water Hyacinth as an invasive species was observed at the site.

• Dredging operations were ongoing during the survey.

Table 24. Census results for Aghozben Ab-bandan

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	1
CASAL	Casmerodius albus	Great White Egret	1
TRIOC	Tringa ochropus	Green Sandpiper	1
LARUS	Larus spp.	Unidentified Gulls	1
CIRAE	Circus aeruginosus	Marsh Harrier	1
TOTAL		**5**	
Total Species		**5**	
Total Waterbirds		**4**	
Total Waterbirds Species		**4**	
Total Raptors		**1**	
Total Raptors Species		**1**	
Total other birds		**0**	
Total other birds Species		**0**	

6.22. Rement Ab-bandan

Site Description:
Rement Ab-bandan is located in Rement village, within the Central District of Babol County, approximately 7 km from Babol city. The area includes four Ab-bandans used for agricultural water storage and management. Similar to other Ab-bandans, in addition to their agricultural function, these water bodies provide suitable habitats for migratory waterbirds.

Habitat Management Status: Unprotected

Figure 26. Surveyed area in Rement Ab-bandan

Weather Conditions during Survey: Sunny

Survey Date and Time: 27 January 2026, 10:10–11:11

Notes and Observations:
• During the visit, the sound of gas cannons used in fish farms to deter cormorants was heard.

• Degradation of reed bed vegetation was observed within the site.

Table 25. Census results for Rement Ab-bandan

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	4
PHAPY	Phalacrocorax pygmaeus	Pygmy Cormorant	28
PHACA	Phalacrocorax carbo	Great Cormorant	19

Species Code	Scientific Name	English Name	Count
ARDCI	Ardea cinerea	Grey Heron	2
CASAL	Casmerodius albus	Great White Egret	41
EGRGA	Egretta garzetta	Little Egret	39
ANAST	Anas strepera	Gadwall	1
ANACR	Anas crecca	Green-winged Teal	2
ANATI	Anatinae spp.	Unidentified Ducks	1
GALCH	Gallinula chloropus	Moorhen	4
CHAHI	Charadrius hiaticula	Ringed Plover	23
TRIOC	Tringa ochropus	Green Sandpiper	1
GALGA	Gallinago gallinago	Common Snipe	14
CALAP	Calidris alpina	Dunlin	2
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	1
LARRI	Larus ridibundus	Black-headed Gull	3
CIRAE	Circus aeruginosus	Marsh Harrier	3
ALCAT	Alcedo atthis	Kingfisher	10
-	Milvus migrans	Black Kite	5
TOTAL		**203**	
Total Species		**19**	
Total Waterbirds		**185**	
Total Waterbirds Species		**16**	
Total Raptors		**8**	
Total Raptors Species		**2**	
Total other birds		**10**	
Total other birds Species		**1**	

6.23. Water Lily Wetland (Heydarkola)

Site Description:
Heydarkola Wetland, also known as the “Water Lily Park,” is located along the eastern beltway of Babol County in Mazandaran Province. Covering an area of approximately 34 hectares, it is one of the notable urban wetlands in the region. Its water is primarily supplied by the Agharoud River and associated channels.

The presence of extensive water lily cover, combined with open water areas, provides suitable conditions for waterbirds, particularly during migration periods.

In addition to its ecological value, the wetland plays an important role in supplying water for surrounding agricultural lands. Its location within an urban setting and the multiple uses of its water resources highlight the need for regular monitoring and integrated management within conservation frameworks.

Habitat Management Status: Unprotected

Figure 27. Surveyed area in Water Lily Wetland (Heydarkola)

Weather Conditions during Survey: Sunny, wind (~10 km/h)

Survey Date and Time: 27 January 2026, 13:25–13:55

Notes and Observations:
• The flight initiation distance of Common Teal was estimated at approximately 10 meters, indicating a high level of site security and effective physical protection. Such a short distance reflects bird habituation to safe conditions and low levels of disturbance.

• The presence of Common Moorhen was recorded as an indicator of habitat stability and low disturbance, as this species typically occupies well-structured and relatively undisturbed wetlands.

• Bird density at this site was relatively high and appeared to be directly associated with favorable protection conditions. Among observed species, Common Teal was particularly dominant, warranting further investigation into habitat conditions, vegetation structure, and food availability.

• Reed and emergent vegetation cover was extensive in parts of the wetland, and managing the balance between vegetation and open water is likely to play a key role in maintaining species diversity.

• Reed bed coverage was estimated at approximately 70%.

Recommendations:

• It is recommended that the extent of reed cover be actively managed in proportion to the wetland area to maintain an appropriate balance between open water and vegetation.

• Given the high bird density and habitat security, this site has strong potential to be developed as a dedicated birdwatching site. Establishing appropriate infrastructure, controlled access routes, designated observation points, and visitor management plans could significantly enhance its value.

• It is further recommended that this wetland be considered as a successful pilot model for physical protection and management of Ab-bandans, and that similar approaches be tested in at least two additional sites within the province. If successful, this model could be scaled up as a provincial standard for effective Ab-bandan management.

• Given the high abundance of Common Teal relative to other species, it is recommended that further detailed studies be conducted to assess habitat conditions, water quality, and vegetation structure in order to better understand species composition dynamics.

Table 26. Census results for Water Lily Wetland (Heydarkola)

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	2
PODNI	Podiceps nigricollis	Black-necked Grebe	4
TACRU	Tachybaptus ruficollis	Little Grebe	2
PHAPY	Phalacrocorax pygmaeus	Pygmy Cormorant	6
ANAST	Anas strepera	Gadwall	6
ANACR	Anas crecca	Green-winged Teal	1491
ANAPL	Anas platyrhynchos	Mallard	42
RALAQ	Rallus aquaticus	Water Rail	2
GALCH	Gallinula chloropus	Moorhen	29
PORPP	Porphyrio porphyrio	Purple Swamphen	1
FULAT	Fulica atra	Common Coot	95
GALGA	Gallinago gallinago	Common Snipe	20
CIRAE	Circus aeruginosus	Marsh Harrier	1
-	Acrocephalus scirpaceus	Common Reed Warbler	1
-	Acrocephalus palustris	Marsh Warbler	1
-	Acrocephalus dumetorum	Blyth's Reed Warbler	1
-	Acrocephalus melanopogon	Moustached Warbler	1
TOTAL		**1705**	
Total Species		**17**	
Total Waterbirds		**1700**	
Total Waterbirds Species		**12**	
Total Raptors		**1**	
Total Raptors Species		**1**	
Total other birds		**4**	
Total other birds Species		**4**	

6.24. Bosra Ab-bandan

Site Description:
Bosra Ab-bandan is located along the Amol–Babol road, within the southern bypass corridor of this route. It is one of the traditional water storage systems in the Mazandaran Plain, playing an important role in agricultural water supply and in the formation of seasonal aquatic habitats.

Dredging operations at Bosra Ab-bandan have been carried out since 2018. Over approximately the past 15 years, farmers in downstream areas of Bosra (in Lalehabad District) have relied on upstream lands in Toghān as a water storage source. During periods of reduced water levels, stored water from Toghān has been transferred to Bosra Ab-bandan.

The area of Bosra Ab-bandan is approximately 200 hectares, with an estimated service area of around 1,200 hectares of agricultural land. In addition to its primary role in water management, the site functions seasonally, particularly during migration periods, as a suitable habitat for waterbirds.

Habitat Management Status: Unprotected

Figure 28. Surveyed area in Bosra Ab-bandan

Weather Conditions during Survey: Sunny

Survey Date and Time: 27 January 2026, 11:00–11:46

Notes and Observations:
• A relatively high density of harriers was recorded in relation to the size of the site.

• The density of Reed Bunting was also notable relative to the site’s extent.

• Access to the site is challenging. In particular, in the northern sections, there is a high risk of vehicles becoming stuck in soft or waterlogged soils, which may affect survey efficiency.

• Reed bed coverage was estimated at approximately 65% during the survey.

Recommendations:

• It is recommended that access limitations and soil conditions be carefully considered in planning future surveys. Where conditions are unsuitable for vehicle access, surveys should be conducted on foot or only after ensuring safe vehicle passage.

Table 27. Census results for Bosra Ab-bandan

Species Code	Scientific Name	English Name	Count
PODNI	Podiceps nigricollis	Black-necked Grebe	1
PHACA	Phalacrocorax carbo	Great Cormorant	8
CASAL	Casmerodius albus	Great White Egret	3
EGRGA	Egretta garzetta	Little Egret	4
ANACR	Anas crecca	Green-winged Teal	3
ANACL	Anas clypeata	Northern Shoveler	2
ANATI	Anatinae spp.	Unidentified Ducks	1
RALAQ	Rallus aquaticus	Water Rail	1
GALCH	Gallinula chloropus	Moorhen	1
FULAT	Fulica atra	Common Coot	101
LARRI	Larus ridibundus	Black-headed Gull	126
CHLHY	Chlidonias hybridus	Whiskered Tern	2
CIRAE	Circus aeruginosus	Marsh Harrier	8
MOTAL	Motacilla alba	Pied Wagtail	5
ANTSP	Anthus spinoletta	Water Pipit	1
EMBSC	Emberiza schoeniclus	Reed Bunting	184
-	Acrocephalus scirpaceus	Common Reed Warbler	1
-	Acrocephalus schoenobaenus	Sedge Warbler	1
-	Luscinia svecica	Bluethroat	1

Species Code	Scientific Name	English Name	Count
-	Acrocephalus palustris	Marsh Warbler	1
TOTAL		**455**	
Total Species		**20**	
Total Waterbirds		**253**	
Total Waterbirds Species		**12**	
Total Raptors		**8**	
Total Raptors Species		**1**	
Total other birds		**194**	
Total other birds Species		**7**	

6.25. Marzounabad Ab-bandan

Site Description:
Marzounabad Ab-bandan is a natural wetland located in the southwestern part of Babol County, covering an area of approximately 183 hectares. The average depth is around 2.5 meters, and the site supports a rich assemblage of aquatic vegetation, making it a suitable habitat for waterbirds, particularly during migration periods.

However, the inflow of agricultural runoff and other pollutants has increased nutrient loading, particularly nitrogen and phosphorus compounds, exposing the wetland to eutrophication processes. This may have long-term impacts on habitat quality and bird distribution patterns.

Habitat Management Status: Unprotected

Figure 29. Surveyed area in Marzounabad Ab-bandan

Weather Conditions during Survey: Partly cloudy, calm

Survey Date and Time: 27 January 2026, 09:57–10:37

Notes and Observations:
• Flight initiation distance of birds was assessed as low, indicating a relatively high level of habitat security and low direct human disturbance.

• A high density of European Robin was observed in marginal areas of the wetland.

• Among duck species, the population ratio of Gadwall was higher than that of Mallard, which may reflect habitat conditions, water depth, or food resource availability.

• Approximately 70% of the wetland surface was covered by reed beds, which in some areas limited visibility and reduced the ability to directly observe birds. In areas with lower reed coverage, waterbirds were not observed, suggesting a possible dependence of species on denser vegetation structure.

• The entire wetland area was surveyed, and no aerial nets were observed.

• Reed bed coverage was estimated at approximately 70%.

Recommendations:

• Given the low flight initiation distance of birds, maintaining the current level of disturbance control is essential. This condition should be monitored as a positive conservation indicator in future surveys.

• The higher ratio of Gadwall relative to Mallard, along with the high density of European Robin, warrants annual population trend analysis to determine whether these patterns are stable or influenced by changing habitat conditions.

Table 28. Census results for Marzounabad Ab-bandan

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	4
PODNI	Podiceps nigricollis	Black-necked Grebe	2
ANAST	Anas strepera	Gadwall	17
ANACR	Anas crecca	Green-winged Teal	46
ANAPL	Anas platyrhynchos	Mallard	21
ANACL	Anas clypeata	Northern Shoveler	23
ANATI	Anatinae spp.	Unidentified Ducks	6
GALCH	Gallinula chloropus	Moorhen	1
FULAT	Fulica atra	Common Coot	65
CIRAE	Circus aeruginosus	Marsh Harrier	3
ALCAT	Alcedo atthis	Kingfisher	1
MOTAL	Motacilla alba	Pied Wagtail	4
EMBSC	Emberiza schoeniclus	Reed Bunting	3
-	Buteo rufinus	Long-legged Buzzard	1
-	Acrocephalus scirpaceus	Common Reed Warbler	2
-	Acrocephalus schoenobaenus	Sedge Warbler	1

Species Code	Scientific Name	English Name	Count
-	Luscinia svecica	Bluethroat	1
-	Motacilla cinerea	Grey Wagtail	1
TOTAL		**202**	
Total Species		**18**	
Total Waterbirds		**185**	
Total Waterbirds Species		**9**	
Total Raptors		**4**	
Total Raptors Species		**2**	
Total other birds		**13**	
Total other birds Species		**7**	

6.26. Caspian Sea Coastline

Site Description:

The Caspian Sea coastline in Mazandaran Province represents one of the most important linear habitats for waterbirds in northern Iran. Extending from Miankaleh in the east to Ramsar in the west, this coastal strip comprises a mosaic of sandy shores, river mouths, estuaries, shallow coastal waters, and adjacent marine areas.

River mouths along this coastline play a particularly important role in concentrating waterbirds, especially during migration and wintering periods. In addition, nearshore marine areas provide feeding and resting habitats for species such as gulls, grebes, and other coastal-dependent birds.

Due to its linear structure, wide geographical extent, and high exposure to human activities, the Mazandaran coastline requires careful design of survey points, clear spatial unit definition, and particular attention to visibility and access constraints within the framework of waterbird census efforts.

Figure 30. Surveyed area along the Caspian coast from Miankaleh to Babolsar

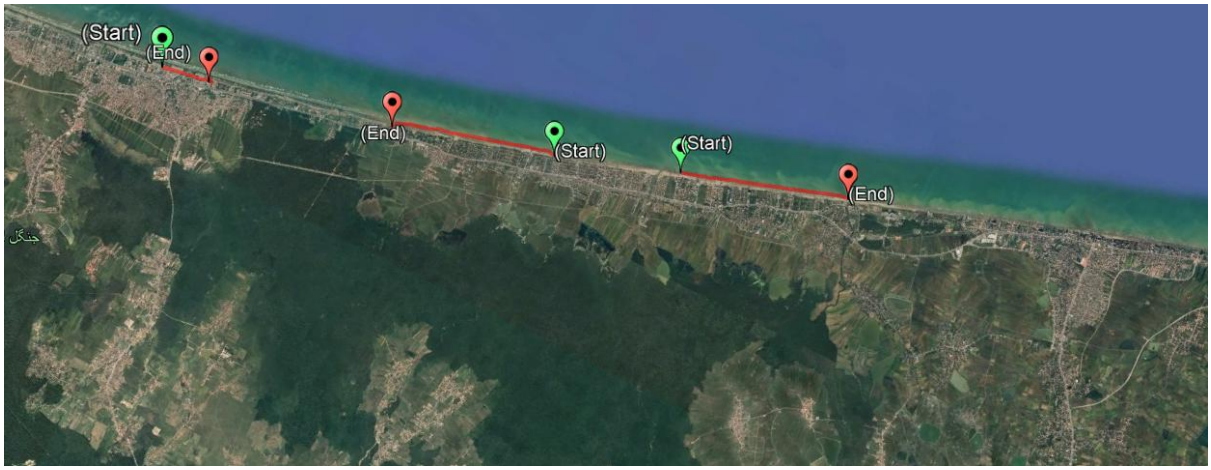

Figure 31. Surveyed area along the Caspian coast from Noor to Babolsar

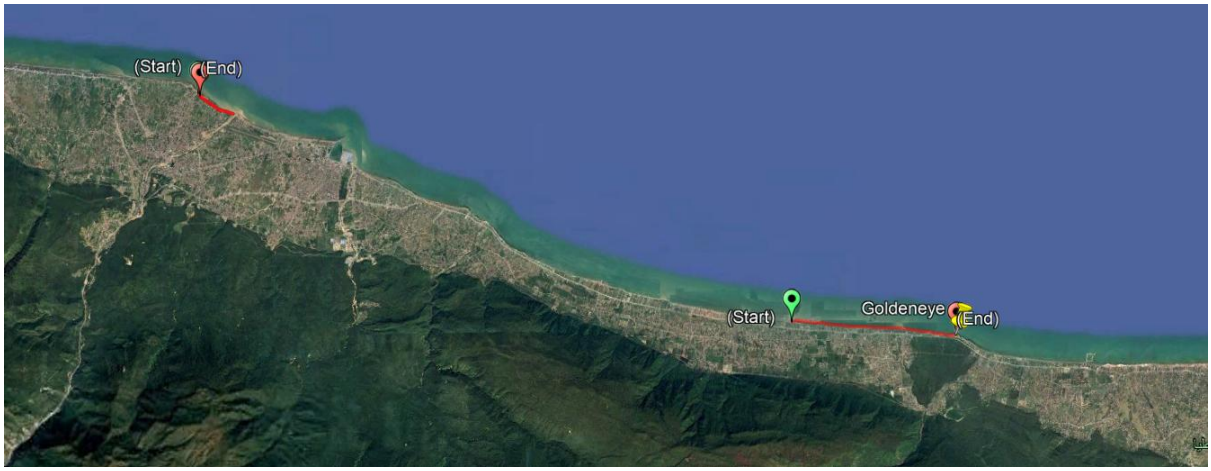

Figure 32. Surveyed area along the Caspian coast from Chalous to Noor

Figure 33. Surveyed area along the Caspian coast from Tonekabon to Chalous

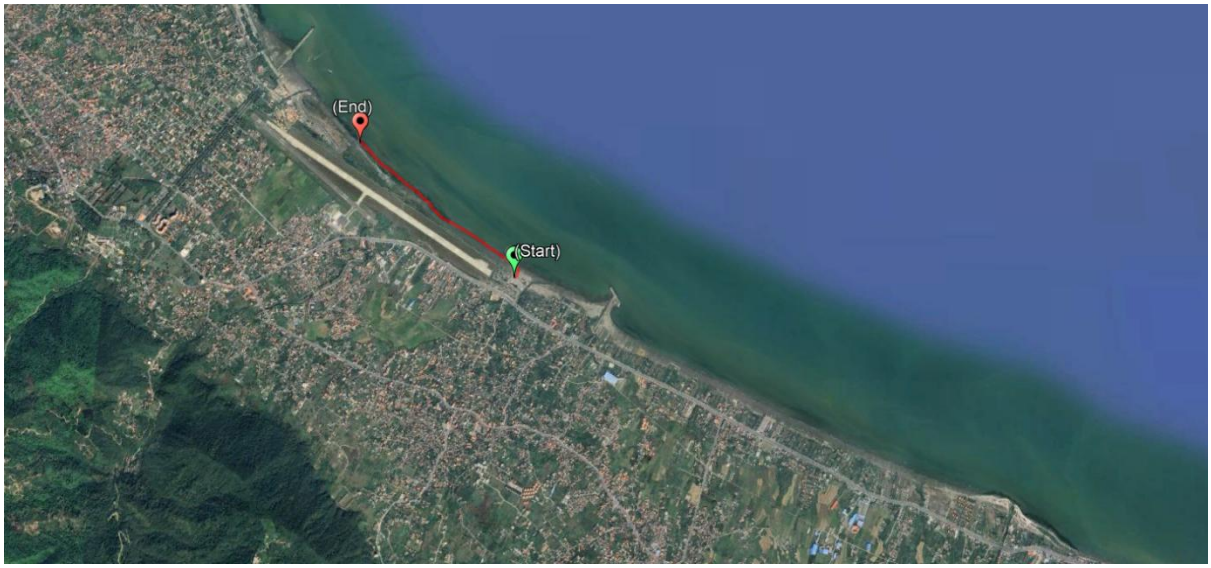

Figure 34. Surveyed area along the Caspian coast from Ramsar to Tonekabon

Survey conditions along the Caspian coastline:

Miankaleh to Babolsar:
Habitat Management Status: Unprotected
Weather Conditions: Sunny, wind (~5 km/h)
Survey Date and Time: 28 January 2026, 13:28–14:05

Noor to Babolsar:
Habitat Management Status: Unprotected
Weather Conditions: Sunny, wind (~14 km/h)
Survey Date and Time: 2 February 2026, 15:20–16:41

Chalous to Noor:
Habitat Management Status: Unprotected
Weather Conditions: Sunny, wind (~5 km/h)
Survey Date and Time: 2 February 2026, 12:24–14:20

Tonekabon to Chalous (Abbasabad):
Habitat Management Status: Unprotected
Weather Conditions: Sunny, wind (~10 km/h)
Survey Date and Time: 1 February 2026, 15:30–16:35

Ramsar to Tonekabon:
Habitat Management Status: Unprotected
Weather Conditions: Sunny, wind (~5 km/h)
Survey Date and Time: 1 February 2026, 13:23–14:20

Notes and Observations:

Miankaleh to Babolsar:
• Along the route from Noor toward Babolsar, the population ratio of Slender-billed Gull to Black-headed Gull showed an increasing trend.

Chalous to Noor:
• A very high concentration of Black-headed Gulls was observed along the surveyed coastal stretch. Given that this species is considered opportunistic, such aggregation may potentially indicate extensive modification of the coastline in Chalous County and/or the presence of artificial food sources, including direct or indirect feeding by humans. This situation may alter natural distribution and feeding behavior patterns of birds in the area.

• A considerable portion of birds was present in deeper offshore waters; however, due to distance and visibility limitations, accurate identification using binoculars and spotting scopes was not possible. In such cases, precise census requires boat-based surveys, which were not available during this study. This limitation should be considered a methodological constraint in interpreting the results.

• During the survey, three gull carcasses were observed along the coastline, appearing relatively fresh. However, due to insufficient evidence, the cause of death could not be determined and requires further investigation.

• Based on observations, it is recommended that targeted monitoring be conducted along the Chalous–Noor coastline, focusing on artificial food sources, human feeding behavior, and their ecological consequences on opportunistic species aggregation. Additionally, the use of boats is recommended in future surveys to improve the accuracy of seabird counts in this area. Systematic monitoring of carcasses and investigation of potential mortality causes could also help identify underlying threats.

• One individual of Common Goldeneye (a rare species in the area) was observed and documented photographically.

Tonekabon to Chalous (Abbasabad):

• In Slender-billed Gulls, plumage changes were observed, including color transition in the breast area and the development of facial coloration. Given the timing within the season, this pattern warrants further investigation.

• This plumage transition pattern was not observed in eastern Mazandaran but was recorded in the western part of the province, which may indicate differences or partial heterogeneity between migratory populations across the region.

• In Black-headed Gulls, the development of darker head coloration was observed.

• The primary focus of the survey in this section was the Kazemroud River mouth.

• Feeding of birds by people was observed within the survey area.

• It is recommended that designated feeding areas be established and that informative and regulatory signage be installed to prevent feeding in sensitive locations.

• During the survey, construction activities involving two structures were ongoing within the river corridor.

• Due to these construction activities, bird abundance at the river mouth was lower than expected at the time of the census.

• Due to the presence of limited military facilities in the Abbasabad area and prevailing security conditions during the survey, monitoring was conducted on foot along the transect.

Figure 35. Construction activities

Figure 36. Feeding of birds

Ramsar to Tonekabon:

• In the coastal area north of Ramsar Airport, due to airport protection measures and security restrictions, a notable concentration of waterbirds was observed. Species such as Tufted Duck, grebes, and other coastal-associated birds were recorded in significant numbers. Reduced human disturbance, absence of disruptive activities, and a high level of physical protection appear to be key factors contributing to this aggregation.

• Based on field observations, this section of the coastline currently represents a major hotspot for waterbird presence in western Mazandaran. The continuation of existing security and protection conditions has effectively created a stable and safe habitat for migratory birds.

• Given the high level of site security, this area has strong potential for the implementation of an online monitoring system to track bird presence and movement. Compared to other coastal sites, the risk to infrastructure and equipment is lower, making it suitable for installing fixed monitoring systems such as cameras.

• It is recommended that a formal agreement be developed and signed between the Department of Environment, Ramsar Airport authorities, and relevant military institutions to establish a clear framework for maintaining current conditions, preventing human disturbance, and implementing continuous bird monitoring in this area. Such an initiative could position this site as a successful example of integrating security, spatial management, and biodiversity conservation along the northern coastline.

• Overall, field evidence indicates that the coastal area north of Ramsar Airport currently represents one of the most important and stable habitats for waterbirds in western Mazandaran and should receive priority attention in monitoring and conservation programs.

Table 29. Census results for the Caspian coast from Miankaleh to Babolsar

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	33
PODNI	Podiceps nigricollis	Black-necked Grebe	1
PHACA	Phalacrocorax carbo	Great Cormorant	57
EGRGA	Egretta garzetta	Little Egret	1
ANATI	.Anatinae spp	Unidentified Ducks	2
LARAM	Larus armenicus	Armenian Gull	1
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	33
LARIC	Larus ichthyaetus	Great Black-headed Gull	3
LARRI	Larus ridibundus	Black-headed Gull	353
LARGE	Larus genei	Slender-billed Gull	124
LARUS	.Larus spp	Unidentified Gulls	70
STECA	Sterna caspia	Caspian Tern	1
STERN	.Sternidae spp	unidentified Sterna terns	1
MOTAL	Motacilla alba	Pied Wagtail	2
TOTAL		**682**	
Total Species		**14**	
Total Waterbirds		**680**	
Total Waterbirds Species		**13**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds		**2**	
Total other birds Species		**1**	

Table 30. Census results for the Caspian coast from Noor to Babolsar

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	100
PODNI	Podiceps nigricollis	Black-necked Grebe	10
CASAL	Casmerodius albus	Great White Egret	1
EGRGA	Egretta garzetta	Little Egret	2
LARAM	Larus armenicus	Armenian Gull	4
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	4
LARRI	Larus ridibundus	Black-headed Gull	705
LARGE	Larus genei	Slender-billed Gull	154
LARUS	.Larus spp	Unidentified Gulls	55
MOTAL	Motacilla alba	Pied Wagtail	30
TOTAL		**1065**	
Total Species		**10**	
Total Waterbirds		**1035**	
Total Waterbirds Species		**9**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds		**30**	
Total other birds Species		**1**	

Table 31. Census results for the Caspian coast from Chalous to Noor

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	17
PODNI	Podiceps nigricollis	Black-necked Grebe	24
PHACA	Phalacrocorax carbo	Great Cormorant	14
EGRGA	Egretta garzetta	Little Egret	6
ANAST	Anas strepera	Gadwall	5

Species Code	Scientific Name	English Name	Count
ANAPL	Anas platyrhynchos	Mallard	145
AYTFU	Aythya fuligula	Tufted Duck	2
BUCCL	Bucephala clangula	Goldeneye	1
ANATI	.Anatinae spp	Unidentified Ducks	20
CHAAL	Charadrius alexandrinus	Kentish Plover	18
TRIOC	Tringa ochropus	Green Sandpiper	1
ACTHY	Actitis hypoleucos	Common Sandpiper	1
LARCN	Larus canus	Common Gull	2
LARAM	Larus armenicus	Armenian Gull	1
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	2
LARRI	Larus ridibundus	Black-headed Gull	650
LARGE	Larus genei	Slender-billed Gull	17
LARUS	.Larus spp	Unidentified Gulls	140
STENI	Sterna nilotica	Gull-billed Tern	1
ALCAT	Alcedo atthis	Kingfisher	1
MOTAL	Motacilla alba	Pied Wagtail	25
MOTCT	Motacilla citreola	Citrine Wagtail	1
ANTSP	Anthus spinoletta	Water Pipit	1
TOTAL		**1095**	
Total Species		**23**	
Total Waterbirds		**1067**	
Total Waterbirds Species		**19**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds		**28**	
Total other birds Species		**4**	

Table 32. Census results for the Caspian coast from Tonekabon to Chalous (Abbasabad)

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	30
PHACA	Phalacrocorax carbo	Great Cormorant	30
EGRGA	Egretta garzetta	Little Egret	3
CHAAL	Charadrius alexandrinus	Kentish Plover	7
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	5
LARRI	Larus ridibundus	Black-headed Gull	520
LARGE	Larus genei	Slender-billed Gull	30
LARUS	.Larus spp	Unidentified Gulls	20
MOTAL	Motacilla alba	Pied Wagtail	26
TOTAL		**671**	
Total Species		**9**	
Total Waterbirds		**645**	
Total Waterbirds Species		**8**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds		**26**	
Total other birds Species		**1**	

Table 33. Census results for the Caspian coast from Ramsar to Tonekabon

Species Code	Scientific Name	English Name	Count
PODCR	Podiceps cristatus	Great Crested Grebe	437
PODNI	Podiceps nigricollis	Black-necked Grebe	8
PHAPY	Phalacrocorax pygmaeus	Pygmy Cormorant	40
PHACA	Phalacrocorax carbo	Great Cormorant	9
CASAL	Casmerodius albus	Great White Egret	4
ANAST	Anas strepera	Gadwall	42
ANAPL	Anas platyrhynchos	Mallard	185
AYTFU	Aythya fuligula	Tufted Duck	95
TRIOC	Tringa ochropus	Green Sandpiper	3
LARCC	Larus cachinnans	Caspian Yellow-legged Gull	9
LARRI	Larus ridibundus	Black-headed Gull	440
LARGE	Larus genei	Slender-billed Gull	14
LARUS	.Larus spp	Unidentified Gulls	70
MOTAL	Motacilla alba	Pied Wagtail	1
TOTAL		**1357**	
Total Species		**14**	
Total Waterbirds		**1356**	
Total Waterbirds Species		**13**	
Total Raptors		**0**	
Total Raptors Species		**0**	
Total other birds		**1**	
Total other birds Species		**1**	

6. Overall Results

Table 34. Census results by species

Scientific Name	English Name	Count
Podicipedidae		
Podiceps cristatus	Great Crested Grebe	**703**
Podiceps nigricollis	Black-necked Grebe	**74**
Tachybaptus ruficollis	Little Grebe	**128**
Pelecanidae		
Pelecanus onocrotalus	Great White Pelican	**3**
Pelecanus crispus	Dalmatian Pelican	**73**
Phalacrocoracidae		
Phalacrocorax pygmaeus	Pygmy Cormorant	**245**
Phalacrocorax carbo	Great Cormorant	**9841**
Ardeidae		
Ardea cinerea	Grey Heron	**311**
Ardea purpurea	Purple Heron	**2**
Casmerodius albus	Great White Egret	**229**
Egretta garzetta	Little Egret	**153**
Threskiornithidae		
Plegadis falcinellus	Glossy Ibis	**2**
Platalea leucorodia	White Spoonbill	**4**
Phoenicopteridae		
Phoenicopterus roseus	Greater Flamingo	**5963**
Anatidae		
Anser albifrons	White-fronted Goose	**9**
Anser anser	Greylag Goose	**797**
Cygnus cygnus	Whooper Swan	**19**
Cygnus olor	Mute Swan	**11**
Tadorna ferruginea	Ruddy Shelduck	**312**
Tadorna tadorna	Shelduck	**780**
Anas penelope	Wigeon	**359**
Anas strepera	Gadwall	**669**

Scientific Name	English Name	Count
Anas crecca	Green-winged Teal	**4403**
Anas platyrhynchos	Mallard	**4310**
Anas acuta	Northern Pintail	**683**
Anas querquedula	Garganey	**3**
Anas clypeata	Northern Shoveler	**1026**
Marmaronetta angustirostris	Marbled Teal	**10**
Netta rufina	Red-crested Pochard	**5**
Aythya ferina	Pochard	**517**
Aythya fuligula	Tufted Duck	**120**
Bucephala clangula	Goldeneye	**1**
Anatinae spp.	Unidentified Ducks	**10990**
Rallidae		
Rallus aquaticus	Water Rail	**9**
Gallinula chloropus	Moorhen	**45**
Porphyrio porphyrio	Purple Swamphen	**5**
Fulica atra	Common Coot	**1776**
Haematopodidae		
Haematopus ostralegus	Eurasian Oystercatcher	**4**
Recurvirostridae		
Himantopus himantopus	Black-winged Stilt	**41**
Recurvirostra avosetta	Avocet	**290**
Charadriidae		
Vanellus vanellus	Northern Lapwing	**1263**
Vanellus leucurus	White-tailed Plover	**9**
Pluvialis apricaria	Eurasian Golden Plover	**394**
Pluvialis squatarola	Grey Plover	**7**
Charadrius hiaticula	Ringed Plover	**138**
Charadrius dubius	Little Ringed Plover	**69**
Charadrius alexandrinus	Kentish Plover	**63**
Charadrius mongolus	Lesser Sandplover	**17**
Charadrius leschenaultii	Greater Sandplover	**3**
Charadrius spp.	unidentified Charadrius plovers	**105**
Scolopacidae		

Scientific Name	English Name	Count
Limosa limosa	Black-tailed Godwit	**11**
Limosa lapponica	Bar-tailed Godwit	**1**
Numenius phaeopus	Whimbrel	**2**
Numenius arquata	Eurasian Curlew	**28**
Tringa erythropus	Spotted Redshank	**5**
Tringa totanus	Redshank	**79**
Tringa nebularia	Greenshank	**28**
Tringa ochropus	Green Sandpiper	**36**
Tringa glareola	Wood Sandpiper	**25**
Tringa cinereus	Terek Sandpiper	**2**
Tringa spp.	unidentified Tringa sandpipers	**3**
Actitis hypoleucos	Common Sandpiper	**105**
Gallinago media	Great Snipe	**58**
Gallinago gallinago	Common Snipe	**449**
Lymnocryptes minimus	Jack Snipe	**106**
Calidris alba	Sanderling	**38**
Calidris minuta	Little Stint	**14**
Calidris alpina	Dunlin	**158**
Calidris ferruginea	Curlew Sandpiper	**2**
Philomachus pugnax	Ruff	**4**
Unidentified Waders	Unidentified Waders	**847**
Laridae		
Larus canus	Common Gull	**2**
Larus armenicus	Armenian Gull	**41**
Larus cachinnans	Caspian Yellow-legged Gull	**109**
Larus ichthyaetus	Great Black-headed Gull	**8**
Larus ridibundus	Black-headed Gull	**3795**
Larus genei	Slender-billed Gull	**621**
Larus spp.	Unidentified Gulls	**559**
Sternidae		
Chlidonias hybridus	Whiskered Tern	**4**
Chlidonias leucoptera	White-winged Black Tern	**16**
Sterna nilotica	Gull-billed Tern	**6**

Scientific Name	English Name	Count
Sterna caspia	Caspian Tern	**1**
Sterna albifrons	Little Tern	**1**
Sternidae spp.	unidentified Sterna terns	**112**
Accipitridae		
Haliaeetus albicilla	White-tailed Sea Eagle	**14**
Circus aeruginosus	Marsh Harrier	**69**
Aquila clanga	Greater Spotted Eagle	**4**
Alcedinidae		
Alcedo atthis	Kingfisher	**23**
Motacilidae		
Motacilla alba	Pied Wagtail	**168**
Motacilla citreola	Citrine Wagtail	**1**
Anthus spinoletta	Water Pipit	**52**
Emberizidae		
Emberiza schoeniclus	Reed Bunting	**195**
Additional		
Buteo rufinus	Long-legged Buzzard	**4**
Peregrine Falcon	Falco peregrinus	**1**
Aquila heliaca	Eastern Imperial Eagle	**1**
Circus pygargus	Montagu`s Harrier	**2**
Circus macrourus	Pallid Harrier	**3**
Circus cyaneus	Hen Harrier	**3**
Milvus migrans	Black Kite	**22**
Accipiter nisus	Eurasian Sparrowhawk	**1**
Falco tinnunculus	Common Kestrel	**3**
Acrocephalus scirpaceus	Common Reed Warbler	**8**
Acrocephalus schoenobaenus	Sedge Warbler	**2**
Acrocephalus palustris	Marsh Warbler	**2**
Acrocephalus dumetorum	Blyth’s Reed Warbler	**1**
Acrocephalus melanopogon	Moustached Warbler	**2**
Phylloscopus trochilus	Willow Warbler	**21**
Cettia cetti	Cetti’s Warbler	**8**
Anthus richardi	Richard’s Pipit	**2**

Scientific Name	English Name	Count
Luscinia svecica	Bluethroat	**2**
Motacilla cinerea	Grey Wagtail	**3**
Emberiza schoeniclus	Common Reed Bunting	**3**
TOTAL	**54889**	
Total Species	**112**	
Total Waterbirds	**54269**	
Total Waterbirds Species	**84**	
Total Raptors	**127**	
Total Raptors Species	**12**	
Total other birds	**493**	
Total other birds Species	**16**	

*****_The species Pallas's Gull was recorded in the species list under the name Great Black-headed Gull._

7. Acknowledgements

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