

Evaluation of animal rescue activities in Tekirdağ city, Turkey

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ABSTRACT

This study was conducted to evaluate the response readiness for disasters based on the current animal rescue activities performed in Tekirdağ city. The material of this research contained the data of the animal rescue operations in Tekirdağ in 2019 and 2020. Results showed that a total of 2201 (82.7%) animals were saved in 2663 operations while 251 (9.4%) animals couldn't be saved in 2020. The average intervention time was around half an hour. The majority of the animals (2118; 79.5%) were released to nature while some of the others were handed over to the owner (24; 0,9%), delivered to the local veterinarian (31; 1.2%), to the shelter (35; 1.3%) or Forestry Waterworks (1; 0.04%). Nothing was done to the rest (454; 17.1%) because they were not found, inaccessible or found dead. This study emphasizes the need for a standardized monitoring system with appropriate data routinely collected from all rescue groups. International standards should be adopted by providing correct information to the rescue teams of each district. In this context, readiness, response and recovery stages should be first developed at the local level and applied to large events for better incident management.

Keywords: animal rescue, disaster, emergency, fire-department

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Introduction

Animals face risks in disasters, just as humans do. Because we live with them by sharing homes, gardens or workplaces, we have a responsibility to help animals in case of danger (Glasse 2020; Irvine 2006) and keep them safe from the negative impacts of natural disasters. Any potential danger threatening human life is also likely to put animals at risk, too. Emergency responders aim to keep all human beings safe from the negative impacts of natural disasters, accidents or all hazardous events (Thompson 2018). Organizational problems in human social systems become compounded during disaster events and this is true with animal response and rescue operations (Farmer et al. 2016).

Among all rescue units, fire services are mainly responsible for rescuing animals during emergencies.

The rescue process covers the period from the beginning of the emergency, through response, scene setup, extrication, transport and follow-on veterinary care involving all species of animals. Depending on the severity of the emergence provincial directorates, security forces, civil defense search and rescue directorates, regional directorates of forestry and waterworks also take part in animal rescue operations.

Successful recovery from natural disasters depends on strong animal rescue infrastructure. However, there is a limited source of information on routine rescue operations and there is no national system for monitoring the data of rescued animals in many countries. Since records of animal rescue operations are not taken properly and not kept in a digital medium, there is no information on the available

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capacity and experience as well as the kind of cases encountered. In addition to these gap areas in the existing rescue practices, there are other problems such as insufficient equipment, lack of knowledge and experience with animals, personnel who are not permanent in the same task and lack of species-specific rescue technical knowledge. Therefore, a good system based on scientific recording and comprehensive planning in the light of the experiences that covers the possibility of any hazard or disaster is the first step to make correct animal rescue operations.

Anticipating the potential consequences of disasters can help determine the actions that need to be started before the disaster strikes to minimize its effects. During planning, the risks in the region that causes endangering animal life such as the collapse of buildings, fires, flooding of barns, stables and domes along with wildfires and disorganized cityscape should be considered first (Aslım and Biricik 2018; Knight 2009).

When scientific studies on the subject are examined, it is not easy to come across articles that have reported numerical data, considering case types, regional distribution, intervention time, animal species or seasonal effects during animal rescue activities. Therefore, the level of awareness on the subject does not exceed a certain threshold. There is a gap in up-to-date information sharing on topics such as digital reporting, types of cases encountered in rescue operations, difficulties experienced and techniques used.

In short, there is a real need to keep animals safe before, during and after natural disasters. The existing national arrangements and framework for animal emergency management do not currently meet international best practices.

In this research, the records of animal rescue operations were examined and the existing infrastructure, case types, performance of the rescue team in responding to cases and post-rescue operations were investigated.

Materials and Method

Tekirdağ was chosen as the exemplary city due to the regular and disciplined work of the fire department and the sensitivity of the city people to animals as well as the opportunity to access the records. The data of the animal rescue operations regarding the years 2019 and 2020 obtained from the Tekirdağ Metropolitan Municipality Fire Department were used in this study. The data were predominantly in the form of written reports with a content of the notifications of cases

based on days, locations, information about the person making the notification, crime scene information, dispatch and arrival times of the teams, intervention times, operation results, animal species, case types and return times of the teams. The data were sorted and classified as numerical data for statistical analysis. The variables extracted from the different data sets were incidents by districts and month, case types, distribution of animal species, intervention time, results of the operations, and process after operations and incidents by species. Since the data of Süleymanpaşa, which is the central district, for the years 2019 and 2020 were more useful in terms of the diversity and amount, this district was focused on in the analyzes to compare the 2019 and 2020 cases. The data for 2020 was also evaluated within itself. There was no record based on the gender of the animals, therefore evaluations were made based on species. Time until the process is completed after reaching the scene was considered as the intervention time. The team involved in the operations gave information about the methods used during the rescue through face-to-face interviews. Regarding the team involved in the operations and methods used during operations, there was no personnel with special training in animal rescue and rescue was done with the tools they developed and the facilities available. The main equipment used was a dog catcher for dogs, catch net, carriers and cages for cats, rescue belts for cattle and some other tools like a bag, rope, cutting-separating scissors. There was no natural disaster during the rescue operations mentioned in this paper. Statistical analyzes regarding the descriptive statistics such as distribution of animal species by months, average intervention time and result of the operations by species were made using SPSS statistical package v25 (SPSS Inc., Chicago, IL, USA).

Results

Animal rescue operations across Tekirdağ city:

Animal rescue operations were mostly centered in Süleymanpaşa (32.48%, n=865), Çorlu (23.17%, n=617) and Çerkezköy (15,85%, n=422) districts with a total percentage of 71.5% in 2020 (Fig 1). When the district population size is taken into consideration with the incident frequencies, more or less a similar picture was seen in the rank since Çorlu, Süleymanpaşa, and Çerkezköy were the most populated districts with 279.251, 203.617, and 185.234 people respectively in 2020 (Anonymous, 2021).

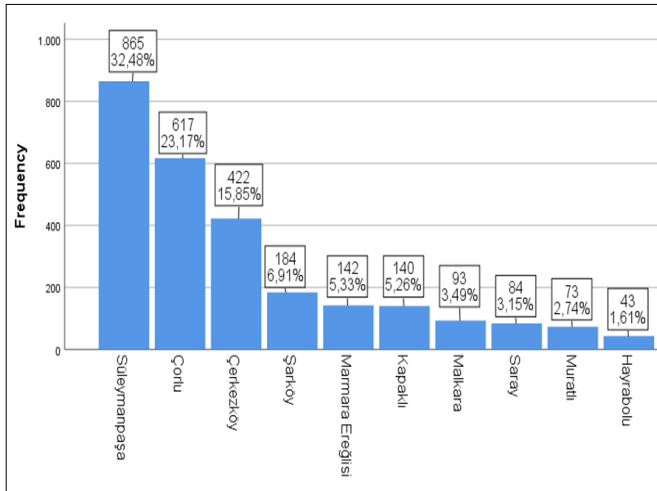


Figure 1. Distributions of the animal rescue incidents by districts

Looking at the distribution of operations within the year, it was seen that the frequency of the operations was significantly higher in the summer months (Figure 2).

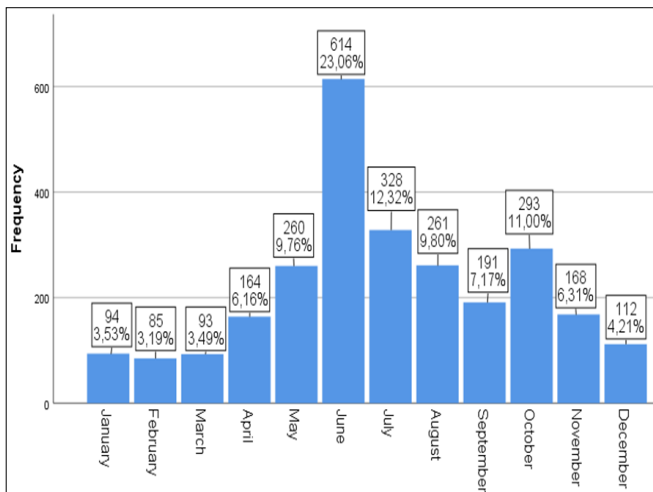


Figure 2. Distribution of the frequency of animal rescue cases by months in 2020.

Just over half (58%) of the calls were responding to cats, 23% birds including crow and seagulls, 7% snakes and 6% dogs. As can be seen from Table 1, cats were the most frequently reported animal species throughout the year in rescue operations.

Considering the response times, the rescue team immediately reached the scene in all cases in 2-10 min but the specific nature of the events led to the difference in the time of intervention. The average intervention time for species was approximately around half an hour during the rescue operations (Table 2). Data under 10 cases might not give correct information due to the variability of the situations.

Most of the rescue operations were ended successfully. A total of 2201 (82.7%) animals out of 2663 operations were saved while only 251 (9.4%)

animals couldn't be saved, 141 (5.3%) could not be found, 13 were inaccessible (0.5%) and 6 of the notifications were false (0.2%) ones. In 13 cases (0.5%), the team was called back due to no intervention was required and two animals were found dead when the team reached the scene (Figure 3).

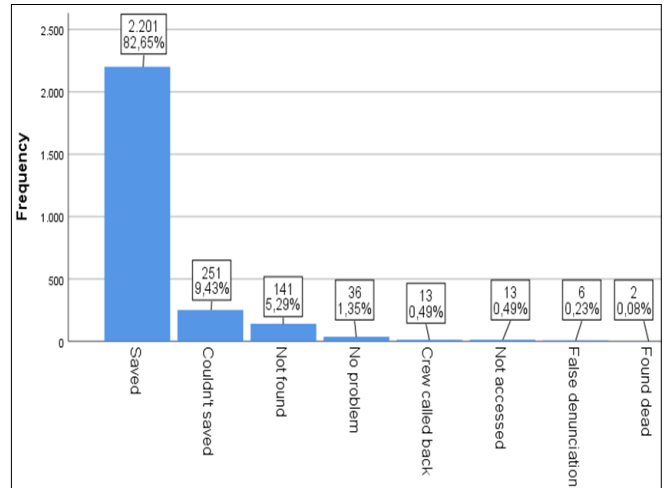


Figure 3. Distribution of the animal rescue results after rescue operations

After the rescue, animals were either released to nature or delivered to appropriate addresses. The majority of animals (2118; 79.5%) were released to nature while others were handed over to the owner (24; 0.9%), delivered to vet (31; 1.2%), shelter (35; 1.3%) or Forestry Waterworks (1; 0.04%). Nothing was done for the rest (454; 17.1%) due to not being found, being inaccessible or found dead (Figure 4).

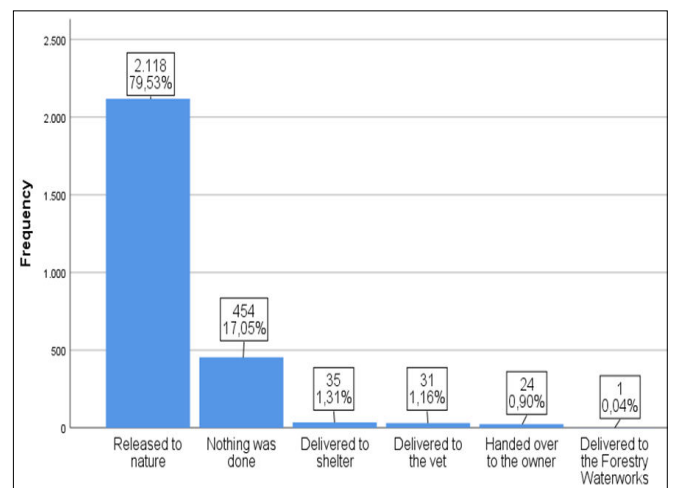


Figure 4. Distribution of the process applied after animal rescue operations

Animal rescue operations in the central district (Süleymanpaşa): Case types could be classified as falling into somewhere (an apartment, a ventilation space, sea, stream, pool), stuck in somewhere (tree, pole, vehicle, roof, chimney, wires, branches,

Table 1. Distribution of animal species by months in 2020

Species	Month												Total	%
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec		
Cat	68	64	52	77	137	266	165	166	121	228	132	77	1553	58.32
Bird	8	3	25	43	60	175	71	31	14	8	6	12	456	17.12
Snake	0	0	0	2	17	82	48	24	11	1	1	1	187	7.02
Dog	12	8	5	18	20	15	15	13	14	15	14	13	162	6.08
Crow	1	4	6	13	15	46	6	1	2	7	1	3	105	3.94
Seagull	2	2	3	4	5	14	7	3	7	7	2	3	59	2.22
Bat	0	0	1	2	0	7	5	11	11	3	3	0	43	1.61
Cattle	2	1	0	0	1	2	2	3	3	4	1	0	19	0.71
Sheep	0	0	0	2	0	0	5	2	1	0	1	0	11	0.41
Horse	0	1	0	2	0	1	3	2	0	3	0	0	12	0.45
Mouse	1	1	0	1	1	0	1	2	0	0	2	0	9	0.34
Hedgehog	0	0	0	0	2	3	0	1	1	0	0	0	7	0.26
Goat	0	0	0	0	1	1	0	0	0	0	0	0	2	0.08
Grasshopper	0	0	0	0	0	1	0	1	0	0	0	0	2	0.08
Weasel	0	0	1	0	1	0	0	0	0	0	0	0	2	0.08
Fox	0	1	0	0	0	0	0	0	0	1	0	0	2	0.08
Goose	0	0	0	0	0	0	0	1	0	1	0	0	2	0.08
Bee	0	0	0	0	0	1	0	0	0	0	0	0	1	0.04
Pigeon	0	0	0	0	0	0	0	0	4	11	6	1	22	0.83
Otter	0	0	0	0	0	0	0	0	1	0	0	0	1	0.04
Hawk	0	0	0	0	0	0	0	0	0	1	0	1	2	0.08
Duck	0	0	0	0	0	0	0	0	0	0	0	1	1	0.04
Dolphin	0	0	0	0	0	0	0	0	0	1	0	0	1	0.04
Parrot	0	0	0	0	0	0	0	0	1	1	0	0	2	0.08
Total	94	85	93	164	260	614	328	261	191	293	168	112	2663	100

transformer, pit, manhole, well, canal, swamp), being stranded in somewhere (a confined space, balcony, cliff), jamming in somewhere (a fence, wall, shutter, pipe), squeezed into something (stones, sea cliffs), free-range animal or wild animal in the residential area. This variety resulted in variable intervention

time, equipment and post-operation process. When species diversity was added to the situation, each case seemed to have a different character. Therefore, a general view was given to provide the range and extent of challenges faced by rescue services personnel in their interactions with animals (Figure 5).

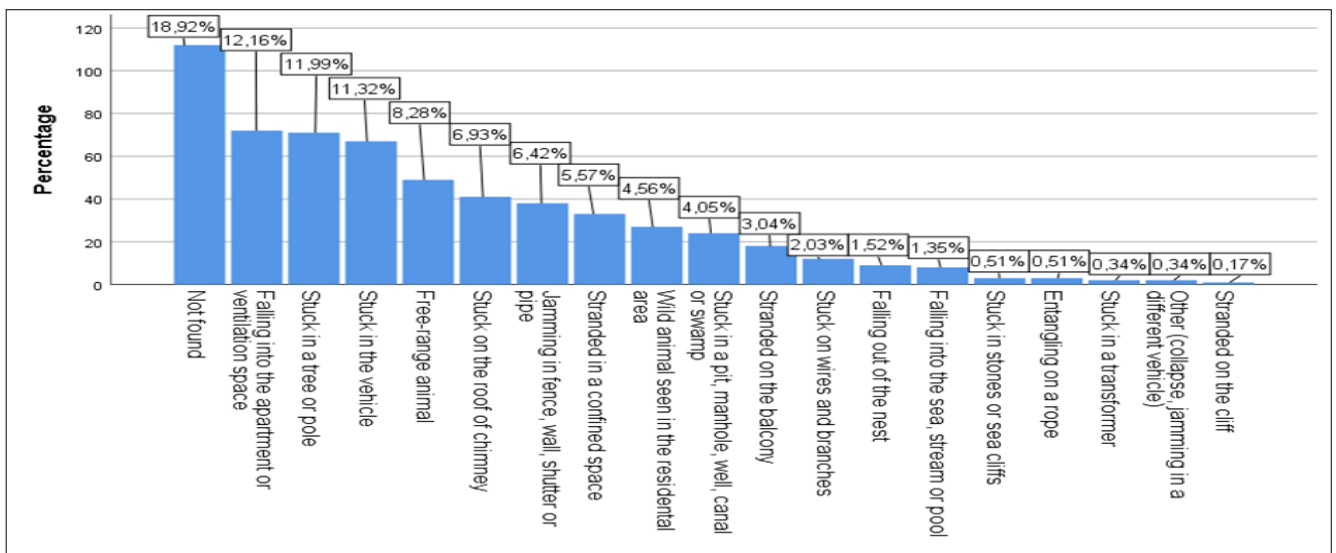


Figure 5. Occurrence of the animal rescue case types in the central district in 2019

Table 2. Average intervention time by species during animal rescue operations in 2020

Species	n	Intervention time (min) ±SD	Min	Max	Range
Cat	1553	25.54 ± 15.6	1	74	71
Bird	456	26.95 ± 14.2	2	72	70
Snake	187	29.19 ± 14.8	3	70	67
Dog	162	26.09 ± 15.6	3	70	67
Crow	105	28.37 ± 15.3	6	73	67
Seagull	59	22.95 ± 11.9	6	61	55
Bat	43	22.12 ± 11.3	4	51	47
Pigeon	22	32.45 ± 19.5	6	64	60
Cattle	19	37.95 ± 17.1	10	74	64
Sheep	11	29.36 ± 18.9	8	68	60
Horse	12	22.25 ± 17.8	4	60	56
Mouse	9	23.67 ± 8.5	9	37	28
Hedgehog	7	20.29 ± 23.0	6	71	65
Fox	2	22.50 ± 27.6	3	42	39
Goat	2	26.00 ± 1.4	25	27	2
Grasshopper	2	18.00 ± 2.8	16	20	4
Weasel	2	19.50 ± 0.7	19	20	1
Goat	2	26.00 ± 1.4	25	27	2
Goose	2	27.00 ± 29.7	6	48	42
Hawk	2	30.00 ± 16.9	18	42	24
Parrot	2	19.50 ± 6.4	15	24	11

The distribution of rescue operations by species for 2019 and 2020 is shown in Figure 6.

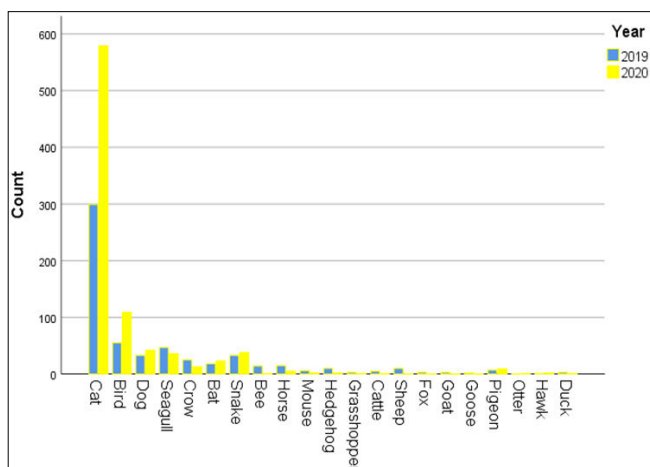


Figure 6. Comparing the incidents by species in the central district in 2019 and 2020.

In the face-to-face interviews, it was understood that many cases were based on the reports of citizens who could not fully define the incident whether urgent intervention was required due to lack of information. Among the indicators of this, animals saved by themselves, rescued by their owners, false denunciations, rescued by the citizens, free-range

animals can be counted (Table 3).

After the rescue operations, most of the animals without health problems were released to nature, some of them were handed over to their owners, the injured ones were taken to the veterinarian and those in need of care were delivered to the animal shelter (Figure 7).

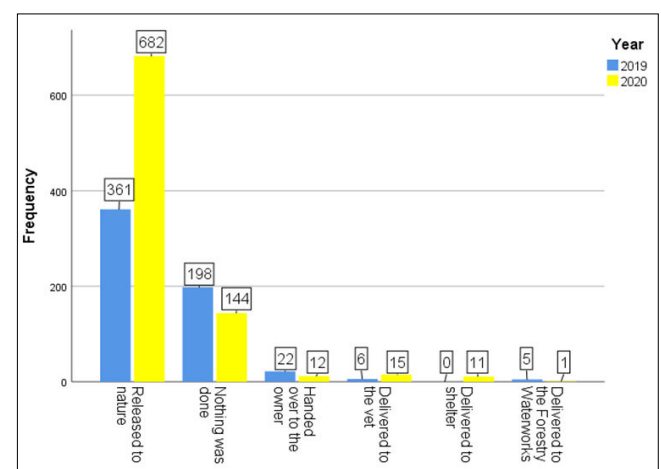


Figure 7. Comparing the process after rescue operations in the central district in 2019 and 2020

Table 3. Result of the operations by species during animal rescue operations

Species	Year	n	Saved	Survived itself	Owner saved	Died	Service called	Owner not permitted	Someone saved	No problem detected	Not found	Rescued wounded	False denunciation	Could not accessed
Cat	2019	374	248	8	0	2	6	5	3	45	5	2	50	0
	2020	579	474	59	35	4	2	0	5	0	0	0	0	0
Bird	2019	41	17	0	0	1	0	3	0	1	1	0	18	0
	2020	109	94	8	7	0	0	0	0	0	0	0	0	0
Snake	2019	17	15	0	0	0	0	0	0	0	0	0	2	0
	2020	38	29	4	5	0	0	0	0	0	0	0	0	0
Dog	2019	49	24	2	0	0	0	0	1	2	0	0	20	0
	2020	42	38	2	1	0	1	0	0	0	0	0	0	0
Crow	2019	26	23	0	0	0	0	0	0	0	0	0	3	0
	2020	13	12	1	0	0	0	0	0	0	0	0	0	0
Seagull	2019	41	40	0	0	0	0	0	0	0	0	1	0	0
	2020	36	31	4	0	0	0	0	1	0	0	0	0	0
Bat	2019	13	10	1	0	0	0	0	0	0	0	0	2	0
	2020	23	19	1	0	0	0	0	0	0	0	1	0	2
Cattle	2019	4	1	0	1	0	0	0	1	0	0	0	1	0
	2020	1	1	0	0	0	0	0	0	0	0	0	0	0
Sheep	2019	4	3	0	1	0	0	0	0	0	0	0	0	0
	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
Horse	2019	1	0	0	0	0	0	0	0	0	0	0	1	0
	2020	5	4	1	0	0	0	0	0	0	0	0	0	0
Mouse	2019	1	0	0	0	0	0	0	0	0	0	0	0	1
	2020	2	2	0	0	0	0	0	0	0	0	0	0	0
Hedgehog	2019	1	0	0	0	0	0	0	0	0	0	0	1	0
	2020	2	2	0	0	0	0	0	0	0	0	0	0	0
Goat	2019	2	1	0	0	0	0	0	0	0	0	0	1	0
	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
Grasshopper	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
	2020	1	1	0	0	0	0	0	0	0	0	0	0	0
Weasel	2019	2	1	0	0	0	0	0	0	0	0	0	1	0
	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
Fox	2019	2	1	0	0	0	0	0	0	0	0	0	1	0
	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
Goose	2019	1	0	0	0	0	0	0	0	0	0	0	1	0
	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
Bee	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
	2020	1	0	1	0	0	0	0	0	0	0	0	0	0
Pigeon	2019	5	2	0	0	0	0	0	0	0	0	1	1	1
	2020	9	9	0	0	0	0	0	0	0	0	0	0	0
Otter	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
	2020	1	1	0	0	0	0	0	0	0	0	0	0	0
Hawk	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
	2020	2	2	0	0	0	0	0	0	0	0	0	0	0
Duck	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
	2020	1	1	0	0	0	0	0	0	0	0	0	0	0
Parrot	2019	3	1	0	0	0	0	1	0	0	0	0	0	1
	2020	0	0	0	0	0	0	0	0	0	0	0	0	0
Stork	2019	5	3	0	0	0	0	0	0	0	0	0	2	0
	2020	0	0	0	0	0	0	0	0	0	0	0	0	0

Discussion

The fact that there were significantly more animal rescue operations in crowded settlements (Çorlu, Süleymanpaşa and Çerkezköy), the extent to which the people were intertwined with animals and the predominantly species of rescued animals, such as cats and dogs, indicates that there was a high level of awareness towards them (Figure 1).

Under the current circumstances, it is difficult to say that animal rescue operations have been carried out professionally, considering both the profile of the rescue personnel and the equipment used. It is an undeniable fact that serious dedication has been given, but this job requires expertise and a structure that meets international standards on the basis of good models. Animal rescue operations need to be carried out by trained personnel who have the necessary competencies to not only handle animals but also work in an emergency response environment (Glasse 2010). This will result in successful management by synchronized behavior of the person, shorter time and accurate method.

Although not recorded regularly, according to the information obtained from the officials, approximately similar cases were encountered each year. These cases are also common in major disasters. However, there may be variations in the distribution of animal species.

Regarding the results of the current study, increased operations during the summer months (from 6% to 23%) are understandable in terms of the environmental changes for hibernating, grazing, hunting or migrating animals (Figure 2). Additionally, since it is the holiday season and people go out of the city, the surveillance of houses and street animals is weakening. Cats, dogs, crows, and seagulls were reported at the expected rate since these species are found in large numbers in the region. On the other hand, bees, otter, duck and dolphin were less numerous among all species. The difference in the number of the rescued animals reflects the existence and diversity of animal species close to humans in the city.

The most frequently reported animal species throughout the year (58%) in rescue operations showed that the cat has a greater place in people's social life and that humans interact most closely with cats (Table 1). While running away from dogs or playing with other cats, they climb walls, trees, roofs and enter narrow and secluded places. They are noticed more quickly due to their proximity to humans and their high displacement. Due to these active and mobile characteristics, it is one of the most difficult animal species to access in disasters. Many

people are concerned about the pets and domestic animals that could not be evacuated simultaneously during disasters and therefore refuse to evacuate (Holcer et al. 2015). They are not considered unfair because animal rescue operations are not yet carried out professionally. On the other hand, since the city is by the sea, it is normal for birds such as crows and seagulls (23%) to be the subject of animal rescue operations due to their high amount. Snakes and bats were probably the most surprising animals ranking in the 3rd and 7th place and mostly reported in summer because it is not normal to see them in settlements.

Average intervention time by species during animal rescue operations gives information about what kind of situation will be faced while planning animal rescue operations, how long it will take to intervene in which cases, how many people will be needed for appropriate intervention. Therefore, intervention time should be properly recorded during routine practice. Data of similar cases belonging to the same species in this paper show that the incidents are not intervened by following certain protocols. It is thought that the gap between the minimum and maximum response time will decrease in cases where there are more professional interventions.

Considering the range of intervention times, there was a range of 1 minute to more than 1 hour (Table 2). The type of event, location of the incident and the environmental conditions were thought to be effective in that variability. Besides, it was not surprising that the time spent on rescued ones would be different from those who could not be rescued, not found, false reports and those found dead. The critical point here is to be able to make a fast and correct decision. Whether there is a serious problem in the reported case, which will be the most effective method in rescue situations and which equipment should be used will shorten the intervention time. Thus, the experience gained in routine applications can be used effectively in times of disaster.

One of the measures that can be considered to increase the success rate (82.7% in this case) is to find a solution for false notices (Figure 3). Both the false notifications and the reports made with the assumption that there is a problem cause time and labor loss. Since the fire department quickly arrived at the scene after each notification, it was not possible to verify the accuracy of the report. It is obvious that something is missing here or something needs to be fixed. Confirmation of the case through people other than those who made the report can provide a solution. Having a volunteer in each neighborhood and communicating with him quickly can be offered

offered as a suggestion or considering to get support from the headman might be helpful. However, since timing is very important in such events, a more effective suggestion is to use the technology effectively. Video communication, drone, security cameras can be used to verify the incident.

The release of the majority of rescued animals (2118; 79.5%) to nature who do not have visible health problems such as injury, bleeding, limitation of movement does not mean that all of them survived the incident without any problems (Figure 4). A correct assessment of the health status of these animals can only be made by a veterinarian. Considering the current situation, no veterinarians work actively in fire departments. Veterinarians take a role, if necessary, after the operations are completed. However, the nature of an incident may identify the level of competency of the rescue team. The person involved in the animal rescue must know how to approach the animal, be able to predict the reaction of the animal when feeling threatened or fearful. Sliding, lifting, carrying or manipulating an animal, either manually or with mechanical equipment requires technical information. On the other hand, the release or evacuation of an animal in an uncontrolled manner could worsen the existing incident or cause a secondary incident, resulting in harm to people or the animal. Moreover, it may be necessary to control or restrain the animal using physical or chemical methods. Monitoring food safety, prevention and management of infectious diseases are other issues in which vets take active roles. Before an incident is closed, the released or evacuated animal needs to be handed over to its owner, if appropriate. If the animal does not have an owner, it may need to be placed into the care of a veterinary surgeon, or other animal care specialist. Considering all these issues, as Lesch-Hollis (2008) reported, it is undoubtedly a fact that veterinarians play an important part in emergency management and should be integrated into emergency planning and response. Authorities responsible for rescue operations should employ veterinarians while developing their strategic risk management plans.

Taxonomic distributions of the rescued animals in the current study were composed of 69% mammals, 25% of birds and 7% of reptiles. Romero et al. (2019) reported that 86% of the rescued animals were birds, 12% were mammals and 2% were reptiles in Chile over 5 years. Swana et al. (2019) classified the rescued animal species as reptiles (43%), mammals (42%) and the remaining 15% representing amphibians and birds in Panama during the 2007-

2010 period. The fact that different animal groups were the subject of operation in these studies was thought to be related to their habitats and environmental conditions.

Considering the distribution of cases, it is noteworthy that there was an increase in the number of cases with cat, bird, snake and bat species compared to the previous year (Fig 6). The rescue operation of each animal species will provide the opportunity to develop the experience specific to that species and to intervene quickly in case of need. These experiences are of particular importance in dealing with situations of despair or not knowing what to do, especially in major disasters. It also indicates which equipment will be used effectively.

There is a need to create an online digital database for all animal rescue operations throughout the country with one standard entry form for effective preparations for disasters. This could facilitate the evaluation of the magnitude of the disaster problem and allow assessment of strategies aiming to reduce hazards that occur in the future. More participation in animal rescue activities may occur when people attribute similar meanings to events (Every et al. 2016). All kinds of information, which could be easily obtained before a disaster, could prove vital to those responding to a disaster (Darroch and Adamson 2016). If the rescue activities carried out by institutions such as the fire brigade are regularly recorded and shared with stakeholders, the possibility of being prepared for bigger disasters increases. In this context, detailed records regarding the animal rescue operations should be properly and digitally kept and shared at the national level. On the other hand, all personnel working in animal rescue operations should be trained in issues of conscious rescue practice.

Another noteworthy issue is the animals left behind during disasters because of a lack of suitable places for them. The ability to overcome such problems depends on taking precautions before disaster strikes. In current practice, rescued animals are often released into nature. If suddenly there are massive needs for care, feeding and housing, there is no means to respond. This indicates a weakness in the management of animals in disasters and emergencies after the rescue. In the same context, McCarthy and Taylor (2018) indicated that many people were not still motivated to do training before an event creating considerations of how to resource future responses.

Most of the data presented in this study was obtained and analyzed through written documents

(incident reports). The reason why this and similar information is not available in the digital environment is thought to be that it is not known or needed for what purpose it will be used in practice. In a world where the importance of data-based information is increasing day by day, the fact that such important information is only in written documents makes them useless. Since all disaster response begins at the local level, the transition to a more professional system will also be shaped in parallel with the developments at the local level. International standards also need to be established step by step by providing correct and detailed information to the rescue teams of each district. In this context, readiness, response and recovery stages should be developed by rehearsing at the local level and applied to large events for better

incident management comprehension. It is hoped that the results from this study will contribute to guiding the development of a regular reporting system and establishing appropriate infrastructures for disaster preparedness.

Conclusions

For more effective animal rescue, appropriate infrastructure should be established, records should be properly and digitally kept and shared at the national level and veterinarians should be included in the rescue team. Assessment of the health status of the rescued animals, verifying the accuracy of the notifications and taking precautions before disaster strikes should be considered in animal emergency management.

References

- Anonymous (2021). Population of Tekirdağ districts (Tekirdağ ilçeleri Nüfusu). <https://www.nufusu.com/ilceleri/tekirdag-ilceleri-nufusu> (accessed 29 April 2021).
- Aslım, G., & Biricik, H. S. (2018). Evaluation of "animal rescue" in Turkey. *Ankara Üniversitesi Veteriner Fakültesi Dergisi*, 65, 15-19.
- Darroch, J., & Adamson, C. (2016). Companion animals and disasters: The role of human services organisations. *Aotearoa New Zealand Social Work*, 28(4), 100-108.
- Every, D., Due, C., Thompson, K., & Ryan, J. (2016). Conflicting perspectives on nonhuman animal rescues in natural disasters. *Society and Animals*, 24(4), 358-382.
- Farmer, A. K., DeYoung, S. E., & Wachtendorf, T. (2016). Pets and evacuation: An ongoing challenge in disasters. *Journal of Homeland Security and Emergency Management*, 13(4), 13.
- Glassey, S. (2010). Recommendations to enhance companion animal emergency management in New Zealand, Wellington: Mercalli Disaster Management Consulting.
- Glassey, S. (2020). Lessons from USA summit can help protect animals and people. *Australian Journal of Emergency Management*, 35(1), 16-17.
- Holcer, N. J., Jeličić, P., Bujević, M.G., & Važanić, D. (2015). Health protection and risks for rescuers in cases of floods. *Arhiv za Higijenu Rada i Toksikologiju*, 66, 9-13.
- Irvine, L. (2006). Animals in Disasters: Issues for Animal Liberation Activism and Policy. *Animal Liberation Philosophy and Policy Journal*, 4(1).
- Knight, A. P. (2009). *Elements of a disaster plan for animals. Veterinary disaster response.* (edited by) Wingfield WE, Palmer SB, Wiley Blackwell, Iowa, USA, ISBN: 978-0-8138-1014-0
- Lesch-Hollis, A. (2008). Thoughts on protecting veterinary responders following natural disasters. *Journal of the American Veterinary Medical Association*, 232(8), 1131.
- McCarthy, M., & Taylor, M. (2018). Animal emergency management in South Australia: a case study of the Sampson Flat bushfire. *Australian Journal of Emergency Management*, 33(2), 60-65.
- Romero, F., Espinoza, A., Sallaberry-Pincheira, N., & Napolitano, C. (2019). A five-year retrospective study on patterns of casuistry and insights on the current status of wildlife rescue and rehabilitation centers in Chile. *Revista Chilena de Historia Natural*, 92, 6.
- Swana, J. L., Carvera, A., Correac, N., & Nielsen, C. K. (2019). Wildlife rescue and relocation efforts associated with the Panama Canal Third Locks Expansion Project. *Tropical Zoology*, 32(2), 58-79.
- Thompson, K. (2018). Facing disasters together: how keeping animals safe benefits humans before, during and after natural disasters. *Revue Scientifique et Technique (International Office of Epizootics)*, 37(1), 223-230.