Wildlife Acclimatization Center

Agamon HaHula - KKL-JNF

2022 Annual Report

המכללה האקדמית
תל-חי

קרן קיימת לישראל
KKL·JNF

Little Grebe, photo: Itav Meyers

A Summary of the Year's Events
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❖ January 2022, a partnership began with Dr. Moshe Farhi, head of the Department of Social Work at Tel Hai College and an expert in trauma care. In this partnership, Dr. Farhi gave us tools to strengthen the team's mental resilience in dealing with various events and promote joint research covering a wide scope of topics.

❖ March 2022, we participated in two conferences in Jerusalem. One meeting at the Biblical Zoo and the other in the Gazelle Valley urban park.

❖ April 2022, Dr. Michal Gorali Shiloh, an eye specialist, began volunteering at the center, helping us diagnose and treat cases of vision impairment. In addition, another therapist began working at the center - Itai Mizrahi, a bachelor's degree student in the Department of Animal Sciences at Tel Hai Academic College with experience working with wild animals.

❖ May 2022, collaboration with Yigal Miller - in charge of raptor breeding at the Israel Nature and Parks Authority (IPNA). He came to the Wildlife Acclimatization Center to fit a GPS transponder to an eagle that finished the acclimatization process in preparation for its release.
In addition, KKL-Germany raised funds for the Wildlife Acclimatization Center to purchase advanced medical equipment.

❖ June 2022, the hatchery was opened for the second time. Chicks started arriving from April to August, totaling at 56. The season started later than expected, after April. The hatchery was operated by a group of 30 volunteers. In addition, a 4x4 vehicle was donated to the Wildlife Acclimatization Center by Daniela and Adi Nadler.

❖ July 2022, we were visited by the author Meir Shilo. In addition, Omer Katz, a therapist and student at Tel Hai Academic College, joined as backup for the team.

❖ August 2022, May Avrahami, the main caregiver at the Wildlife Acclimatization Center, left for a month and a half of training in Italy at the Centro Tutela e Ricercar Fauna Esotica e

Salvatica - Monte Adone (Center for the Protection and Research of Exotic and Wild Fauna Monte Adone ODV).

❖ September 2022, Dr. Rona Nadler Valenci renewed her international acclimatization certificate.

❖ October 2022, Dr. Rona Nadler Valenci, Director of the Wildlife Acclimatization Center, participated in a conference of the International Wildlife Coexistence Network on coexistence with wild animals, at Yellowstone National Park in the US.

❖ December 2022, the center participated in the 59th Israel Zoological Society conference where **we presented 2 posters**. One on the acclimatization center and the other, Eitan Doldner's research on the "Survival and distribution of wild birds after acclimation". In addition, an international workshop on human-wildlife conflicts, organized by the External Academic Relations Unit of Tel Hai Academic College was held and led by Dr. Rona Nadler Valenci under the direction of Prof. Alistair Bath from Memorial University of Newfoundland, Canada. Professor Bath is a consultant to the Predators Group of the IUCN organization and a global expert in the field of Human-Wildlife conflicts.

❖ This year, the Wildlife Acclimatization Center appeared in the media 10 times, on television, news, on-line content, media websites and radio interviews.

❖ Within the current framework of the Wildlife Acclimatization Center, it is not yet possible for groups to visit for informational and educational purposes. However, we see this as one of the Wildlife Acclimatization Center 's main goals, which is why in the last year we agreed to 13 visits by small groups in a controlled manner. These groups included: the Environmental Quality Department and spokespeople of the Upper Galilee Regional Council, the KKL-JNF Fundraising Dept., the Confederation of Eastern Galilee Municipalities' veterinary department, municipal veterinarians, specialist doctors from Tel Hashomer Hospital and National Institute of Health, as well as various course participants from Department of Animal Sciences at Tel Hai Academic College and Department of Zoology at Tel Aviv University.

❖ This year we presented the work of the Wildlife Acclimatization Center at various conferences and forums of KKL-JNF and Tel Hai Academic College.

# Data from the Wildlife Acclimatization Center

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During 2022, 286 wild animals arrived at the clinic for treatment, of which 40% (117) were returned to the wild. Nine raptors arrived for acclimatization from the Safari Wildlife Hospital and were released at the end of acclimatization process with a soft release. A total of 83 species arrived this year (2 more species than last year). Most of the patients (70%) were birds. During March, June, July and August, a new record was set for the number of patients. However, the year was marked by an overall decrease in total number of patients due to the quarantine following the bird flu epidemic at the beginning of the year that lasted until February. The breeding season was also characterized by lower numbers of chicks arriving for treatment, a phenomenon also observed in other centers in Israel that treat wild animals. A brief summary is in the graphs below:
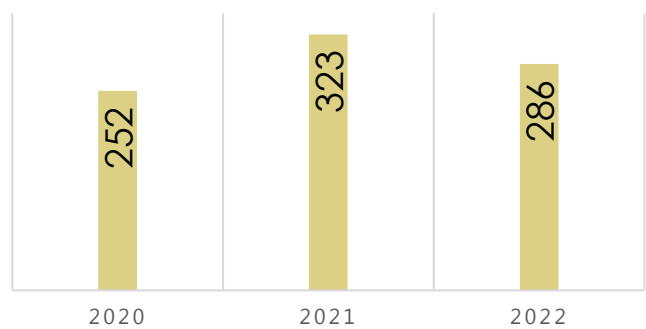
Number of patients per month 2020-2022

Legend: ■ 2020 ■ 2021 ■ 2022
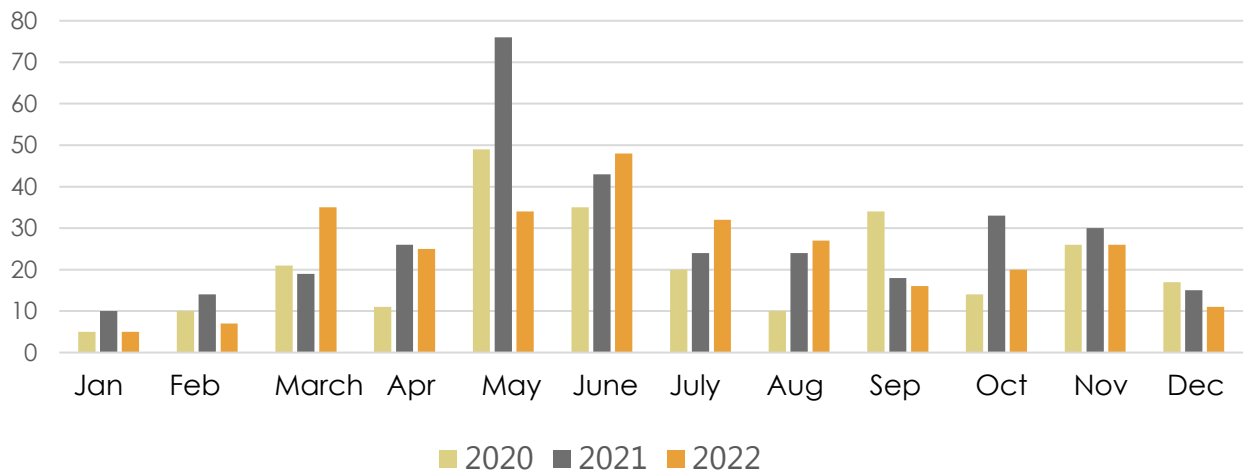
Patients per Department 2022

10.8%
19.6%
69.6%

■ Reptiles ■ Mammals ■ Birds
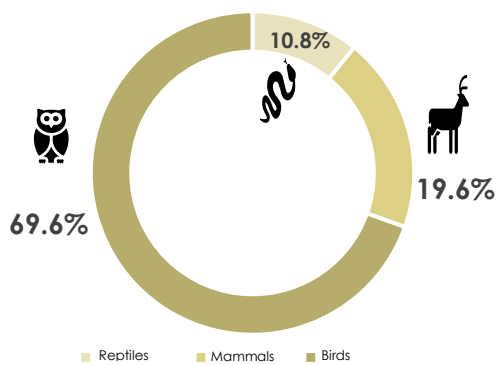
NUMBER OF PATIENTS PER YEAR
2020-2022

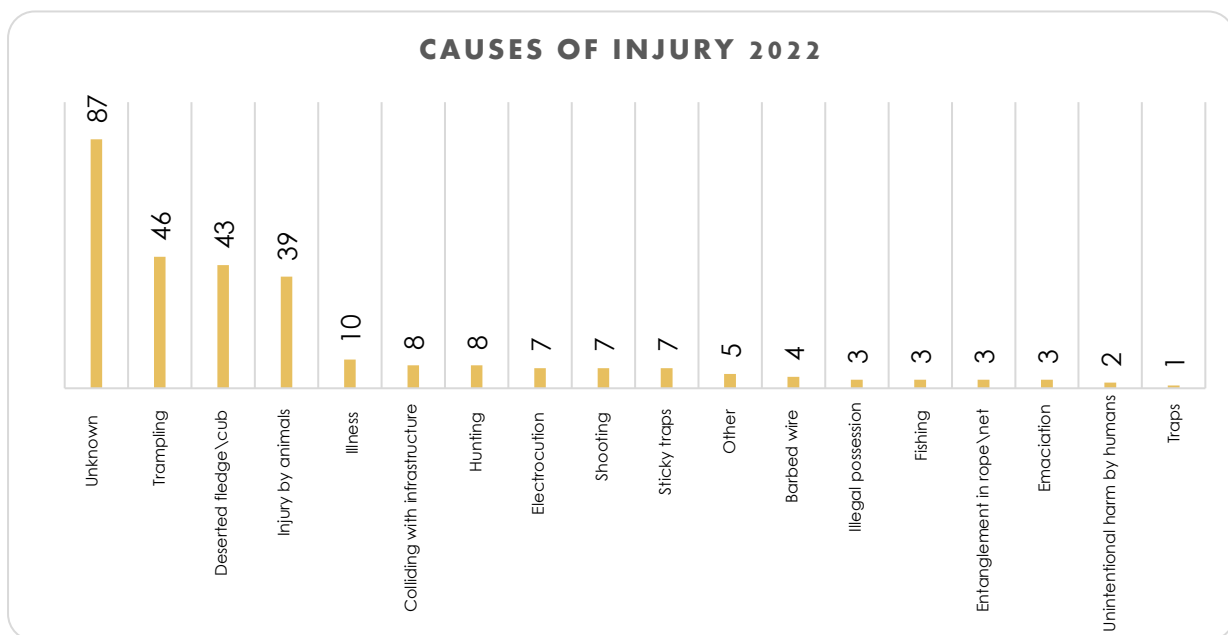| 2020	2021	2022
252	323	286

Causes of Injury

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The main causes of injury are running over by vehicles (16%), rescued chicks/pups (15%), and animal attacks (mainly pets) (14%). In a third of the cases (30%), the cause of the injury is unknown. 2-4% of the cases arrived because of disease, collision with infrastructure, hunting, electrocution, shooting, traps, or other.

23% of the patients arrived at the Wildlife Acclimatization Center with the help of inspectors from the Israel Nature and Parks Authority, 16% by veterinary ambulance volunteers, and the

rest by citizens and employees of the Wildlife Acclimatization Center and the Agamon HaHula Center.

Most of the patients come from the Hula Valley and its surrounding areas: 52% from the Hula Valley, 26% from the Golan Heights, 13% from the Naftali Mountains and Western Galilee.

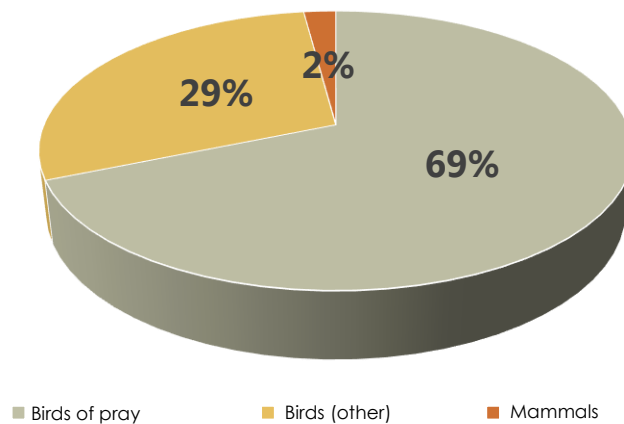### CAUSES OF INJURY 2022

Cause	Count
Unknown	87
Trampling	46
Deserted fledge\cub	43
Injury by animals	39
Illness	10
Colliding with infrastructure	8
Hunting	8
Electrocution	7
Shooting	7
Sticky traps	7
Other	5
Barbed wire	4
Illegal possession	3
Fishing	3
Entanglement in rope\net	3
Emaciation	3
Unintentional harm by humans	2
Traps	1

Species List

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Birds (63)		Mammals (14)
Eurasian Coot	Barn Swallow	Cape Hare
Eurasian Eagle-owl	Common Crane	European Badger
European Honey Buzzard	Eurasian Jay	Indian Crested Porcupine
Purple Heron	Booted Eagle	Beech Marten
Night Heron	Lesser Spotted Eagle	Wolf
White-spectacled Bulbul	Steppe Eagle	Spalax
Lesser Kestrel	Common Chiffchaff	Jungle Cat
Common Kestrel	Common Buzzard	Forest Dormouse
Black-winged Kite	Steppe Buzzard	Common Pipistrelle
Black Kite	Long-legged Buzzard	Kuhl's Pipistrelle
House Sparrow	Graceful Prinia	Palestine Mountain Gazelle
Western Marsh Harrier	Palestine Sunbird	Southern White-breasted Hedgehog
Common Starling	Laughing Dove	Red Fox
European Goldfinch	Western Jackdaw	Golden Jackal

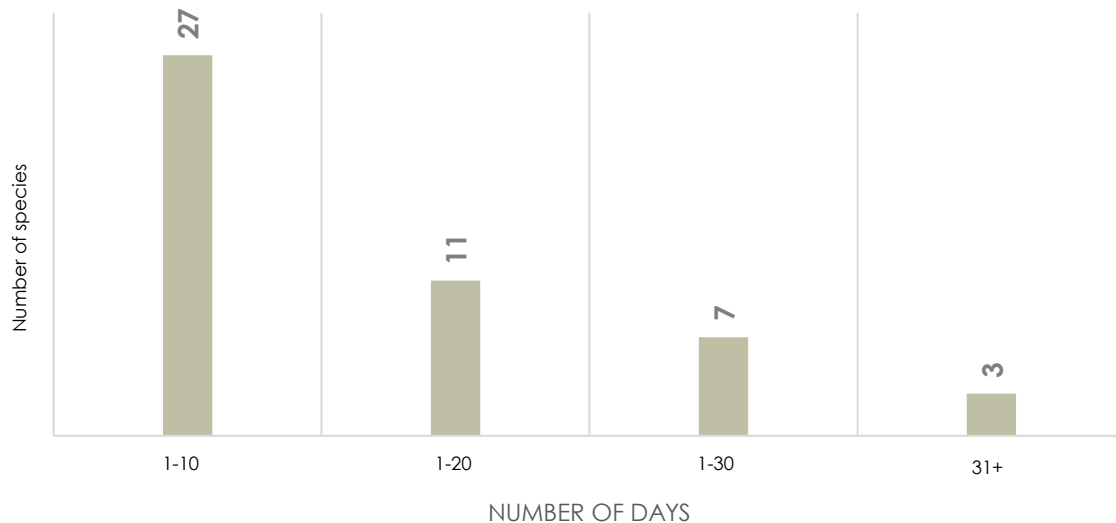|		
Spotted Flycatcher	Great Spotted Cuckoo	
Short-toed Snake Eagle	Song Thrush	Reptiles (6)
Woodchat Shrike	Eurasian Reed Warbler	Common Chameleon
White Stork	Common Tern	Coin-marked Snake
Black Stork	Common Blackbird	Laudakia stellio
Little Grebe	White-throated Kingfisher	Balkan Pond Turtle
Long-eared Owl	Eurasian Scops Owl	Greek Tortoise
Great Tit	Great White Pelican	Narrow-striped Dwarf Snake
European Goldfinch	European Bee-eater	
Great Egret	Eurasian Collared Dove	
Lesser Egret	Barn Owl	
Tawny Owl		
Corn Crake		
White Wagtail		
Eurasian Sparrowhawk		
Syrian Woodpecker		
Lesser Whitethroat		
Eurasian Blackcap		
Sardinian Warbler		
Common Moorhen		
Alpine Swift		
Common Swift		
Spur-winged Lapwing		
Red-rumped Swallow		

Acclimatized Animals

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Forty-eight animals were held in acclimatization enclosures, 47 birds and 1 hare. The individuals stayed in the enclosures between 1 - 46 days.
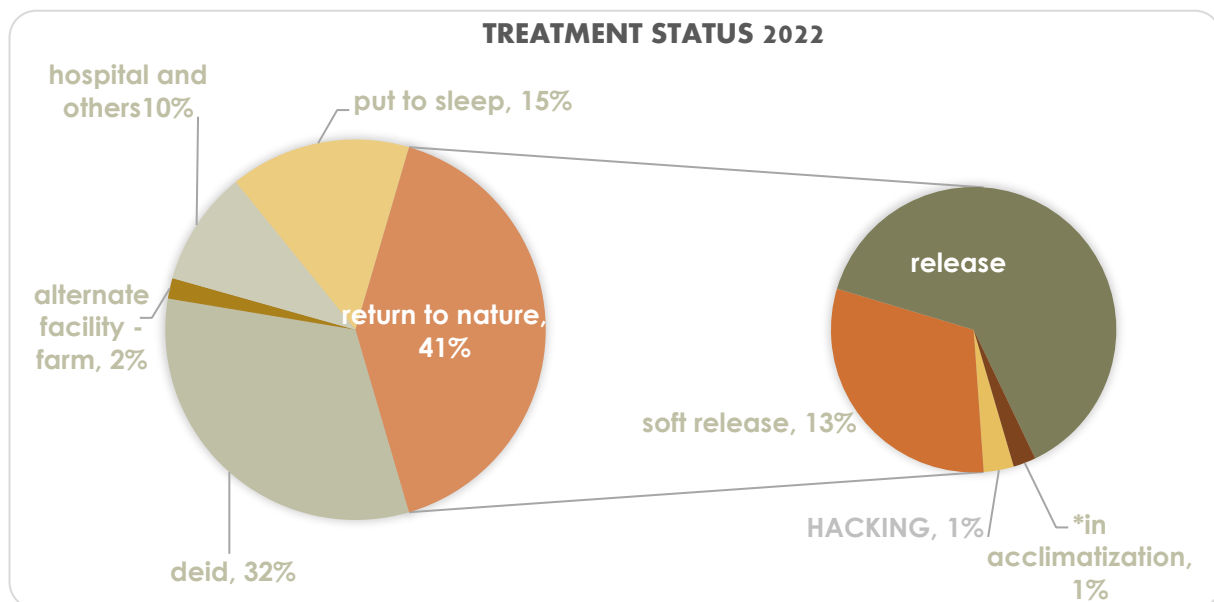
Species that were in the Acclimatization Enclosures

2%

29%

69%

■ Birds of pray   ■ Birds (other)   ■ Mammals

DURATION OF STAY

Number of species

27

11

7

3

1-10   1-20   1-30   31+

NUMBER OF DAYS

End of Treatment Status

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41% of the patients, (117 animals) were returned to the wild using standard release methods, soft release from the acclimatization enclosures and hacking (return to a replacement nest). 10% of the total patients were transferred to a wildlife hospital for further treatment. 32% died during hospitalization. 15% were put to sleep to incurable injuries that did not allow rehabilitation and return to nature. A total of 17% of the patients (49 animals) underwent the acclimatization process in enclosures. *In the graph 1% in acclimatization at the time of writing the report.

TREATMENT STATUS 2022

hospital and others 10%
put to sleep, 15%
alternate facility - farm, 2%
return to nature, 41%
deid, 32%
release
soft release, 13%
HACKING, 1%
*in acclimatization, 1%

Research Summary - 2022 Nesting Season

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"Effect of the Acclimation Process on Survival and Movement in Common Kestrels"

Mentors: Wortman, Y. Nadler-Valenci, R., Sapir, N.
Student: Doldner, A.
Participants: Abrahami, M., Vandermeer, J.

This study began in the 2021 nesting season. During this season, an experimental research period was carried out to check the study's feasibility, assess work methods and identify possible difficulties, all this to get the best possible results (report describing the results of the preliminary research season is attached in the 2021 summary report).

Preparatory work for the 2022 research season began in January (a few months before the nesting season) and included the construction and placement of nesting boxes dedicated to common kestrels in the Agamon Hula "Peatlands Treaty" area. A total of 20 boxes were built, of which 15 were installed; of the 15 installed boxes, 7 were inhabited (~47%). In these 7 boxes, a total of 31 eggs were laid and 28 of them hatched (~90%). During the nesting season, a nesting survey was conducted in which biological indices (mass, wing length, tail length and foot bone length) of the hatched kestrels were collected every few days. In this survey, 136 samples of kestrels of different ages were collected between the range of day 0 (day of hatching) and day 27; it is not possible to sample after the age of 27 days for fear of early leaving of the nest. When the kestrels reached the age of 24 days, an Atlas tag weighing about 4 grams (BW <3%) was attached to them.

Metal identification rings were placed on all the kestrels that hatched and grew in the nesting boxes. Kestrels to which a transmitter was attached received, in addition to the metal identification rings, red-colored rings for easy identification in the field. A total of 21 Atlas tags were attached to birds during the 2022 research season, 16 tags on kestrels from the wild and 5 on kestrels after being acclimated. Tag transmission resolution is a scan every 4 seconds.

The 2022 research season provided enough wild kestrels to which a transmitter could be attached, but the number of kestrels in the acclimatized kestrel group this season was unusually small (13 compared to 31 in the previous season). Fortunately, in the previous research season, sufficient movement data of kestrels after acclimatization was collected (17 kestrels with transponders after the acclimatization process in this season). There are several theories to explain why the number of patients brought to acclimatization this year was so small. This downward trend also applies to other places (in Israel and elsewhere) that treat injured wild animals.

Statistical analyses of collected data examined behavioral differences between kestrels raised in the wild and those after acclimatization (n=5 and n=12, respectively). As of time of writing the report, two different analyses were performed:

1. Overlap of the home range during consecutive days - home range is a concept that describes the areas used by wildlife for their existence. Examining different levels of use of the home range will identify several types of sites with different importance for the wildlife. A low level of use (50%) will describe the wildlife's territory whereas a high level of use (95%) will also include sites of importance such as hunting and foraging sites, roaming sites, etc. The calculations made looked at the difference between the home range of a specific day compared to the day before it, in order to describe exploratory movement across the space. The analysis found that kestrels raised in the wild tend to maintain a relatively high degree of overlap of the home range between successive days, which may indicate an affinity to a known area, whereas kestrels that have undergone an acclimatization process tend to show a lower percentage of overlap (t=2.302, p-value=0.0392, n=17) (Figures 1,2).

2. Cumulative daily distance - count of the cumulative daily distance after removing points defined as stopover/resting points. Defining stopover/resting points according to traffic data is a complex challenge,

accomplished by defining a variety of subsequent conditions such as a typical movement radius, typical movement speed, distance between a point and the next one, etc. If the conditions are met, the point will be considered a stopover/resting point if it does not start from a segment of previous movement. For the sake of the analysis, only movement segments were included (it must be noted that in a proxy analysis, points are also obtained but there is no way to know for sure whether they belong to a movement segment or a stopover/resting point). Statistical analyzes examining the differences have yet to be undertaken (as of the writing of this report) though data filtering and organizing (which is the complex part of the data analysis process) has already been completed.

In preparation for the upcoming research season (nesting season 2023), 3 more nesting boxes were installed (see map, Figure 3), in order to increase the number of individuals on to which a transponder will fitted, as well as to increase the number of individuals from which biological parameters will be collected during the nesting survey. During the 2023 research season we plan to fit transponders to kestrels from the two research groups (those from nature and those after acclimatization). In addition, we will try to fit transponders on adult females as well. It is possible that in the coming year we will change the method of fitting the transponder from gluing with tissue glue to using dedicated harnesses. We also plan to examine additional behavioral analyzes such as max displacement, revisits, etc.
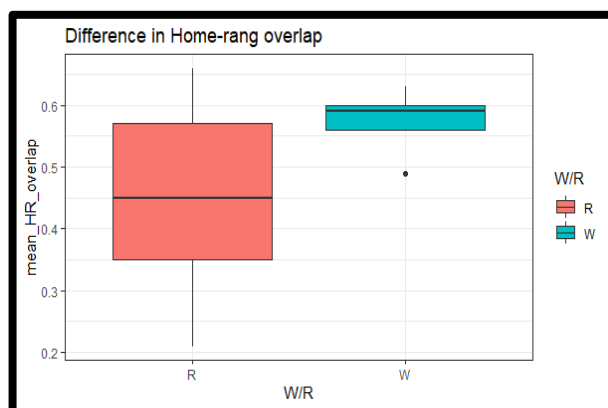

FIGURE 1 - T-TEST DESCRIBING DIFFERENCES IN THE OVERLAP PERCENTAGE (AVERAGE) OF RANGE FOR CONSECUTIVE DAYS BETWEEN THE ACCLIMATIZED KESTREL GROUPS AND THE KESTRELS RAISED IN THE WILD (RED AND BLUE COLORS RESPECTIVELY).

FIGURE 2 - VISUAL ILLUSTRATION OF THE CALCULATION OF OVERLAP OF HOME RANGE BETWEEN CONSECUTIVE DAYS. HIGH OVERLAP PERCENTAGES (A) ARE OBTAINED WHEN LARGE PARTS FROM THE PREVIOUS DAY (RED CIRCLE) CONTAIN LARGE PARTS FROM THE NEXT DAY (BLACK CIRCLE).

Birds' Nests 1:40,000

FIGURE 3 - MAP OF NESTING BOXES THAT WERE INSTALLED IN THE AREA OF AGAMON HULA.

Images of 2022 Patients

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Summary

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2022 began with an ongoing outbreak of avian flu among the Agamon Hula birds, during which a minority of individuals (less than 10 per month) were seen in January and February. Only in March it seemed that the flu ended.

Increasing the Wildlife Acclimatization Center's staff by two caregivers enables work on a wider scale and increases our availability to provide a response.

We managed to increase the daily volume of volunteers by assigning specific tasks to each one while investing in creating a cohesive volunteer community.

The Wildlife Acclimatization Center provided a variety of additional services this year such as testing, writing legal opinions in hunting cases and taking screening samples for avian diseases such as bird flu from dead animals in the Agamon Hula area.

Our Instagram community has over 700 followers and continues to grow.

In 2023, concerted efforts will be directed towards building an intermediate structure for the Wildlife Acclimatization Center. This structure will allow receiving audiences/groups at the center while enlarging the clinic's area and the number of patients it can serve. We have great anticipation for what is coming.

Finally, we would like to thank KKL-JNF and the Tel-Hai Academic College for supporting the Wildlife Acclimatization Center and helping to fulfill our goal of helping and preserving Israel wildlife and wildlife of the Galilee-Golan region in particular. We would also like to thank all of our volunteers and donors for their generosity and valuable time contributed to the center.