GLOBAL GREENGRANTS FUND
2840 Wilderness Place, Suite A
Boulder, CO 80301 USA
Phone: +1(303)939-9866
Fax: +1(303)939-9867
www.greengrants.org

GLOBAL GREENGRANTS FUND UK/EUROPE
Development House, 56-64 Leonard Street
London, EC2A 4LT, UK
Phone: +44(0)20 70650927
www.greengrants.org.uk

Global Greengrants Fund Reporting Guidelines

This form must be completed within one year of the date of the Award Letter. Please send reports to your recommending advisor and grantreports@greengrants.org. The questions below are intended to help us understand how you used the funds and what kinds of change or outcomes you have seen so far. Please feel free to include any additional information.

Organization Name: Jordan BirdWatch Association

Advisor Name: Fares Khoury Date of Report: 7 June 2022

Grant Number: 2021-5885 Grant Amount: 5,000 US$

Towards the protection of threatened birds in Jordan: Assessing the current status of the near endemic *Syrian Serin* in Jordan

Breeding habitat of Syrian Serin, Al-Barrah open woodland, Dana Nature Reserve, SW Jordan

الجمعية الأردنية لمراقبة الطيور
JORDAN BIRDWATCH

1. *Please describe how you used the support from Global Greengrants Fund, providing examples whenever possible (2 pages maximum).*

Field work

A) Winter distribution survey in center and north: This included several field trips to the northwestern part of Jordan during winter, where Syrian Serins from the northern breeding populations (Lebanon and Syria including Mt. Hermon) are expected to spend the winter. We focused our search of overwintering serins on the highlands and rift margins in the north because we already have information about wintering birds around Amman, and in central and southern regions of Jordan. As a result we found scattered birds and small groups of wintering Syrian Serins at few sites in northern Jordan. The fund made it possible to cover transportation (fuel) costs and accommodation for these field visit.

B) Spring survey / breeding population and habitat. This included two field trips of three days each to the Dana Nature Reserve to carry out a survey of the breeding population, and get an update of the population size and the situation of the breeding habitat. Transportation (car rental and fuel), water, meals, and accommodation costs for three persons each visit, was covered by the GGF grant.

Dissemination / awareness material:

Posters

Two posters (one in Arabic and another in English) with information about the Syrian Serin was produced being (or still to be) distributed to stakeholders, and the schools in the two towns neighboring the Dana Nature Reserve, closest to the breeding habitats, i.e. Al-Qadessiyah and Busseira, and also to some schools in Amman. The GGF fund made it possible to print the posters (digital A2 format). The design was made by a volunteer.

The website (www.jordanbirdwatch.com) and social media (JBW facebook page: **https://web.facebook.com/Jordan.Birdwatch.Association)** are being used to disseminate the results in both English and Arabic languages.

Coordination and administration

An administrative assistant was reimbursed for the efforts in organizing the project activities, e.g. transportation (rental and costs), financial report and internal audit, and arranging meetings with stakeholders.

Meetings and stakeholder workshop

The meetings outside Amman (i.e. in Dana) were made possible by the GGF fund. Nevertheless, all meetings with stakeholders are listed below (section 4). During these meetings, the Syrian Serin situation was discussed and we expect the authorities and stakeholders are more encouraged to take action to protect the woodland habitats in Dana Nature Reserve especially in Al-Barra open woodland where the Syrian Serins breed. We also held meetings with the education sector.

2. *Who benefitted from these activities and how? Please be specific if beneficiaries include women, men, youth, indigenous peoples, etc. (1 page maximum):*

This project did not have direct financial benefits for those involved. Exceptions include a small reimbursement for the administrative assistant /coordinator, and a few locals benefitted from our visits to Dana by providing accommodation.

The indirect beneficiaries include:

- Volunteers who took part in the surveys and field work were JBW members (one woman and three men) and local people from Al-Qadessiyah, Busseirah and Dana village, i.e. men from the local community. This included the Dana Reserve ecologist and one ranger. All were able to enhance their knowledge in the identification and ecology of birds, particularly the Syrian Serin at Dana. Some of them volunteered

because they just enjoy this work, whereas others also benefit professionally from training because the are nature guides or working in conservation.

- The Dana Nature Reserve Management benefitted from the results of the bird survey and is now considering the report about Syrian Serin including its recommendations. The reserve manager is now planning to get financial support for improved management of the Al-Barra woodland.
- Education / spreading awareness among stakeholders, school teachers and school children about threatened species and the importance of caring for biodiversity and nature.
- Improved protection and awareness about local rare birds will benefit locals indirectly, e.g. through nature-based tourism and sustainable rangelands

3. *Changes or outcomes based on your work (2 pages maximum):*
    a. *What was the most significant change you saw as a result of this funding?*

(1) An increase in interest among educators and decision makers about the importance of acquiring knowledge about status and protection measures for threatened species. Awareness was raised among stakeholders, regarding the importance of considering the protection of threatened species. Increased awareness about obligations arising from signing international conventions like the CBD and CMS.

(2) New records of wintering Syrian serins in northern Jordan is strong evidence that this part of Jordan could be important for the breeding populations of Syria and Lebanon.

(3) The breeding survey showed a further decrease in the area of the only breeding habitat in Jordan and breeding population size, with around 440-490 pairs now left. Our assessments and presence of more data, show the species' conservation status should be upgraded to "Endangered" according to IUCN Red list criteria (mainly B sub-criteria). The project thus provided an important update of the situation of the breeding population of Syrian Serin and its habitats. The subject is finally being re-visited after many years when habitat degradation was continuing and affecting the

Syrian Serin and other bird species in parts of the Dana Nature Reserve. Unwillingness or difficulties in implementing the reserve management plan such as regulation of grazing and day visitors, and implementing forestry laws, i.e. protection of trees and shrubs was evident and needed to be assessed and made aware of.

b. *Did the funding help improve environmental conditions? If yes, please provide any examples and evidence of this change.*

The scope of this project was too limited to cause significant improvement in such a short period. Nevertheless, it was sufficient to carry out a situation analysis and initiate more awareness and attention to this pressing issue which involves a vulnerable species and its unique breeding habitat among stakeholders. As discussed during a workshop with local stakeholders, the Dana Nature Reserve Management is planning to improve woodland management, and to submit a proposal for the improved protection of the unique vegetation associations including the open woodlands dominated by Phoenician juniper and evergreen oak shrubs in Al-Barrah Woodland, by limiting access to the breeding area by day visitors, and raising awareness among them, and offering incentives to livestock owners so grazing pressure can be released. JBW will continue to monitor and offer technical assistance. The Dana Reserve also offered to distribute the posters produced during this project to local schools, which indicates their interest in cooperating and acknowledging the problems.

c. *Did the funding help strengthen your organization? If yes, please provide any examples and evidence of this change*.

Each project increases JBW's cumulative experience. The project also strengthened JBW's relations and cooperation with various stakeholders. The funding has helped JBW to carry out field work including monitoring and research, to disseminate results and raise awareness and to recommend action based on the information gained. This type of work is essential for fulfilling JBW's mission. JBW members who also took part in surveys strengthened their knowledge and capacity about many birds including Syrian Serin.

d. *Did the funding help increase community involvement or awareness? If yes, please provide any examples and evidence of this change.*

Raising awareness was one of the main activities and was carried out by involving locals, and meetings with stakeholders and distributing posters in Arabic and English language. Some of the volunteers during the breeding survey where from the local community. Moreover, the Dana Nature Reserve staff, all of which are from the local community, were cooperating and showed interest in our work; one of the rangers accompanied us during field work.

Posters about the Syrian Serin are being distributed among local schools in towns close to the Dana Nature Reserve, in Amman, and to stakeholders.

e. *Did the funding help increase the involvement of women or increased the number of women in leadership roles? If yes, please provide any examples and evidence of this change.*

One woman only, a JBW member, is regularly involved in JBW's activities in the field. Another woman volunteered to design the Syrian Serin posters. This project was of short duration and it included field work. Unfortunately, very few women in Jordan would spend several days in the field due to local cultural constraints. This is slowly changing, however. Through our educational and awareness programs we hope more women will be involved in JBW work in the future.

f. Did the funding help your organization impact policy? If yes, please provide any examples and evidence of this change.

Such impact is difficult to assess in such a short project which included mainly field surveys. But as JBW is reporting and disseminating results to all stakeholders, we expect an impact on policies regarding threatened species in general, and improvement in the local management of Al-Barrah woodland (breeding area of Syrian Serin), in the near future. Regarding policies and conflict regarding responsibilities of authorities, see section 4.

g. Did the funding help your organization influence the media? If yes, please provide any examples and evidence of this change.

JBW is increasing awareness about threatened species like Syrian Serin by using its website and social media. One journalist specialized in environmental issue confirmed her interest in making a story about the Syrian Serin and perhaps other threatened species in the near future.

4. *Did Global Greengrants Fund's support help your organization gain access to spaces for advocacy or decision-making (i.e. meetings, conferences, forums, networks, hearings)? If so, please note if this specifically increased access for women, indigenous peoples, or youth. (1 page maximum)*

Yes, meetings and a workshop were held as part of disseminating results and as attempt to influence decision making. These included:

a) Meeting with director of nature protection at the Royal Society for the Conservation of Nature at its HQ, in Amman, Mr. Abdul-Razzaq Al-Hmoud. The meeting aimed at discussing the importance of strengthening protection measures, especially illegal trapping of wild birds. According to RSCN and their record of confiscations, tens (possibly over 100) of Syrian Serins and Red-fronted Serins are being trapped illegally every year, and being sold in the market (e.g. in Friday bird markets) and through the internet. According to Mr. Hmoud, The trapping of all wild birds is illegal and RSCN rangers, along with the environmental police rangers are trying to limit trapping and trafficking, but much still remains undetected. Moreover, when trappers or trafficker are caught, judges assign a very low sentence in comparison to the sentence fixed by law (because trafficking with wildlife is not considered a priority) or they dismiss the case because of lack of evidence. Trafficking is organized through internet platforms which make it easier to traffic birds illegally. RSCN along with official authorities (Environmental police and electronic/internet crimes department) are aware of these issues, and are trying to tackle them.
b) Meeting with the Head of the Nature protection department at the Ministry of the Environment, Mr. Belal Qteishat, who is also national focal person of CBD and CMS.

The main question was what the ministry is doing regarding IUCN threatened species as part of its obligations to CBD and CMS. Mr Qteishat said that the ministry is planning to take measures which would improve protection of threatened species. He said a national red-list for birds would be helpful and that would be one of the future tasks of JBW. However, the main problem is still that most protection laws are officially under the responsibility of the Ministry of Agriculture (e.g. Forestry, rangelands, hunting laws, etc…), and cooperation between the two ministries is limited in this regard. This prevents effective implementation of measures for protecting threatened species and biodiversity, and in fulfilling obligations related to CBD and CMS.

c) Meeting with head of Biodiversity office at the Forestry department, Ministry of Agriculture, Mr. Mohammed Awamleh. The meeting was to discuss enhanced measures for protecting the woodlands in Dana Reserve where the Syrian Serin breeds. Mr Awamleh welcomes any measures which lead to the protection of the woodland habitats, although he admitted there are some conflict among stakeholders like livestock owners who request unlimited access to the woodland.
d) Dana Nature Reserve Manager, ecologist and joint field work with reserve rangers and volunteers at the Dana Nature Reserve. Several small meetings were held, at the end to organize jointly the workshop with local stakeholders. The reserve staff will also distribute the posters to local schools in towns surrounding the reserve.
e) JBW is carrying out a half-day workshop at the Dana Nature Reserve in mid-June to present and discuss the results of the breeding survey with local stakeholders at Dana, and means of protecting the breeding habitat by stopping further degradation of the woodland. Local stakeholders include manager and staff of Dana Nature Reserve (RSCN), Forestry department (e.g. Forestry directors of governorate and district), representative of Al-Qadessiah Municipality, Al-Qadessiyah livestock owners cooperative. The costs of transport and accommodation of some participants at Dana was covered by GGF grant. The workshop was postponed to 28th June and was attended by 25 participants representing the stakeholders and

local decision makers. The main problems that threaten Syrian Serin breeding habitats was discussed and all agreed that climate change (repetitive, prolonged drought conditions) and random picnicking in the Al-Barra area are having the main impacts while locals did not agree that overgrazing should be regarded an issue, although JBW in a presentation demonstrated the effects of overgrazing. In any case it was agreed that grazing is a possible but indirect factor leading to habitat degradation and therefor it was recommended to regularly reassess carrying capacities / stocking rates should be regularly reassessed especially as they can be affected by drought. Moreover, new ways to adapt to prolonged drought were recommended such as using alternative rangelands which could also be planted with fodder plants. Moreover, large barns were suggested at Qadessiyah to protect the livestock from cold weather in winter, instead of moving them to Al-Barra. There were also a number of recommendations to regulate visitor number and identify sites for picnicking to protect most of the breeding area of Syrian Serin.

f) Meeting with Al-Alahliyya and Mutran Schools in Amman (Dr. Laila Abdul-Majeed, Noor Othman). Posters of Syrian Serins are to be used at the schools, and it was agreed to work with nature clubs at the schools to design their own posters about threatened species in Jordan. The concept of threatened species and red-lists will be used as subject of various activities by students of the nature clubs. JBW agreed previously to work with these schools in establishing bird and/or nature clubs.
g) Meeting with the manager of the Humane Center for Animal Welfare near Amman (Mrs. Margaret Ledger). This center has the only veterinarian clinic that also treats wild animals, although their experience in wildlife is limited, and that is why they are cooperating with other entities like JBW and RSCN. The center also has an educational program and works with schools and as a result of the meeting, the center will include the theme of threatened species in their education program, especially as they keep injured birds that are rare and threatened in Jordan (e.g.

Eurasian Eagle Owls). Posters of Syrian Serin and other birds will also be used and in future distributed to schools via the center.

5. *Has Global Greengrants Fund's support helped you gain access to any additional funding or support?*

This is possible as we are planning to submit again to GGF in 2022, and are discussing with other potential donors as well the funding of projects related to threatened species.

6. *Were there any external changes in the political, social or environmental context that made your work* easier or harder? (1 page maximum)

- Unexpected adverse weather conditions e.g. strong winds, made our field work sometimes difficult.
- lack of interest in environmental issues among decision makers and many stakeholders; even at or around nature reserves; economic development often has priority, regardless of ecological impacts.

7. *What were the most important lessons you learned from this grant? Did these lessons change any of your organization's strategies? Please provide examples. (1 page maximum)*

This grant made it possible to enhance core activities needed to carry out our mission as advocacy NGO which focusses on collecting information, education/awareness and capacity building. It also helped us to strengthen outreach and communication and also identify opportunities in the educational sector.

8. *Please provide Global Greengrants Fund with copies of any print, digital, written, or visual media that were funded by this grant. We also appreciate any other forms of media, including but not limited to videos, press articles, publications, and photographs that document your work. Global Greengrants Fund assumes permission to share any of this media with our community. Please indicate if you prefer we not share this information or if you would like the media to be credited in a specific way.*

See attachments/Appendix

9. *Please provide a brief financial summary of how the grant funds were used. A simple statement by budget line item is all we request. Actual copies of receipts are not required.*

See attachments/Appendix

Appendix 1: Financial Statement

BUDGET

GGF Grant number: 2021-5885

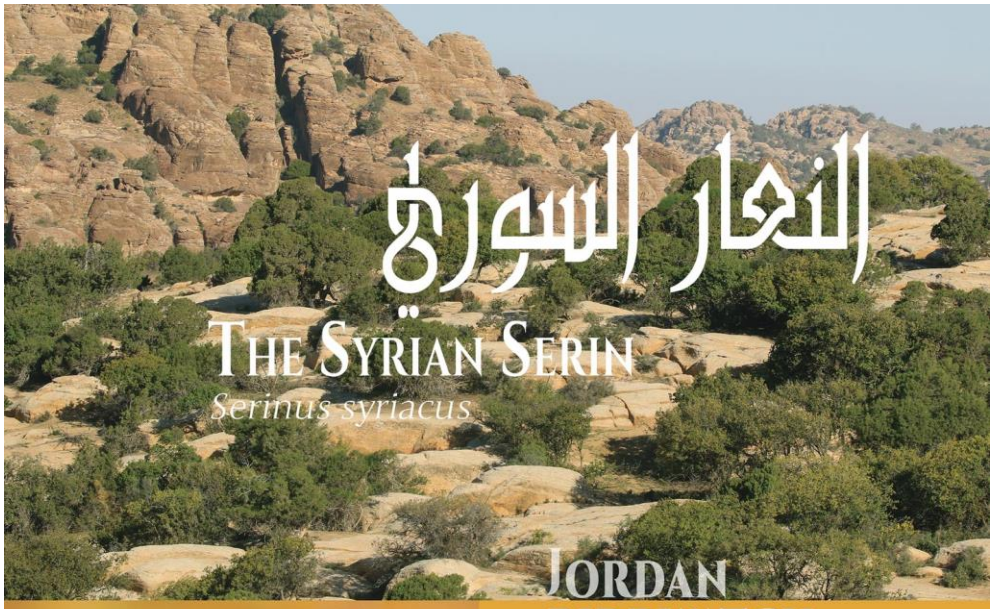
PROJECT TITLE: The current status of Syrian Serin in Jordan: breeding population, distribution and threats

Item	description	US $	JOD	Spent in JOD	Available in JOD
Travel – local	Car rentals and fuel costs for field visits / surveys	1650	1168	1805	- 637
Accommodation and subsistence	Researchers and volunteers will be covered while working in the field	1750	1239	865	374
Administration, reporting and printing	An administrative assistant (10% or c. 4 hours per week) will be reimbursed for organizing trips, car rental, meetings, outreach and documentation. Moreover, this item includes printing costs	1600	1133	870	263
Total		**5000**	**3540**	**3540**	**0**

Exchange rate USD to JOD: 0.708

Item	Spent in JOD	Spent in US$
fuel	780	1102
Car rentals	1025	1447
Accommodation and subsistence	555	784
printing	270	381
volunteers	310	438
administrative assistant	600	848
Total	**3540 JOD**	**5000 USD**

Appendix 2: Posters



JORDAN BIRDWATCH
الجمعية الأردنية لمراقبة الطيور

النعار السوري هو طائر مغرد صغير من مجموعة الحساسين مستوطن في جنوب غرب الأردن وسوريا ولبنان.

يفضل الجبال العالية والمنحدرات الصخرية التي تحتوي على اشجار العرعر والسنديان التي توفر مكان آمن لبناء الاعشاش بينما يتردد خلال فصل الشتاء على موائل السهوب المفتوحة.

يعتبر من الانواع النادرة وله توزيع جعرافي محدود جدا وينحصر وجوده في الاردن خلال موسم التكاثر في محمية ضانا الطبيعية حيث تم تقدير اعداده في المحمية بحوالي 500 زوج فقط في العام 2022.

IUCN/REDLIST GLOBAL STATUS:
THREATENED - VULNERABLE

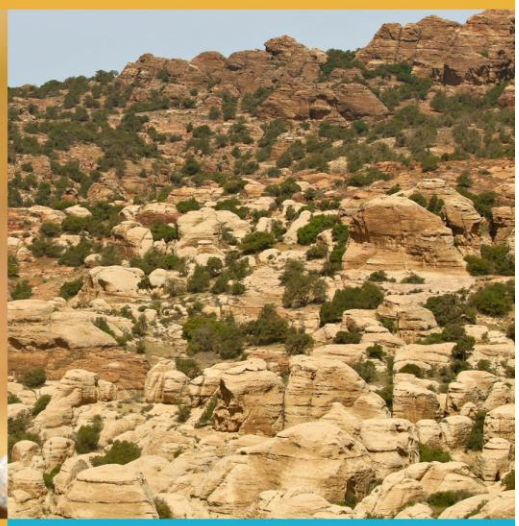
انخفضت اعداده بمقدار 30٪ آخر 20 عام بسبب تدمير الموائل وتدهورها الناجم عن الرعي الجائر والجفاف وقطع الأشجار والتنزه الغير المنظم. كما ظهرت تهديدات جديدة مؤخرا حول مناطق تكاثره مثل محطات الرياح لتوليد الكهرباء والتعدين. وبالتالي فهو بحاجة ماسة لاجراءات تحد من هذه التهديدات.

الجمعية الأردنية لمراقبة الطيور
JORDAN BIRDWATCH
Mobile - 00 962 (0)7 9550 2900
Web site - https://www.jordanbirdwatch.com
https://www.iucnredlist.org

RSCN
GLOBAL GREENGRANTS FUND

The Syrian Serin

Serinus syriacus



Jordan Birdwatch

Protection of Birds and their Habitat

Habitat: Semi-arid, rocky slopes at high altitudes with open woodland containing a mix of junipers and evergreen oak shrubs, important for nesting and roosting.

ID card: The Syrian Serin *Serinus syriacus*, a small passerine bird belonging to the finch family, is endemic to parts of the Levant, in southwestern Jordan, Syria and Lebanon.

Movements & migration: It frequents during autumn and winter more open steppe habitats.

الجمعية الأردنية لمراقبة الطيور
JORDAN BIRDWATCH
Mobile - 00 962 (0)7 9550 2900
Web site - https://www.jordanbirdwatch.com

IUCN/Redlist global status:
THREATENED - VULNERABLE

The Syrian Serin is a rare species with a restricted geographical range; In Jordan, it breeds solely in the Dana Nature Reserve. In 2022, only 500 pairs were estimated to occur in the Reserve.

It decreased by 30% during the last decades due to habitat destruction and degradation caused by overgrazing, prolonged drought, unregulated picnicking and wood cutting. Further, recent threats include wind farm developments and mining at or near its habitats.

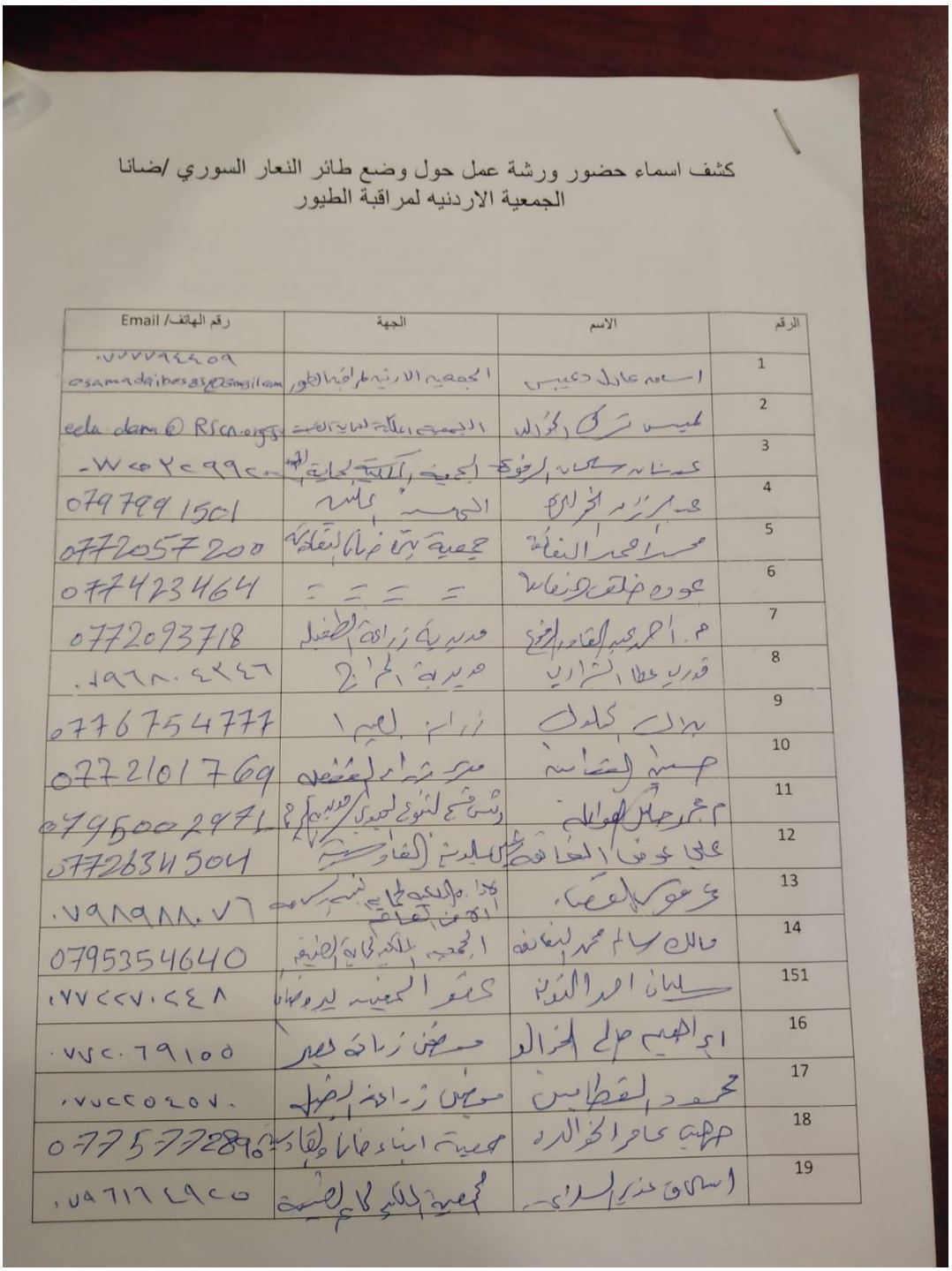
https://www.iucnredlist.org

الجمعية الملكية لحماية الطبيعة
RSCN

GLOBAL GREENGRANTS FUND

Appendix 3: Attendance sheets and photo of workshop of stakeholders at Dana Reserve on 28th June 2022

Attendance sheets and photo of workshop



كشف اسماء حضور ورشة عمل حول وضع طائر النعار السوري /ضانا
الجمعية الاردنيه لمراقبة الطيور

الرقم	الاسم	الجهة	رقم الهاتف/ Email
1	اسعد عادل دعيبس	الجمعية الاردنية لمراقبة الطيور	٠٧٧٧٩٤٤٥٩ osamadaibes@yahoo.com
2			
3			
4			0797991501
5			0772057200
6			0774234644
7			0772093718
8			٠٧٩٦٨٠٤٢٤٢
9			0776754777
10			0772101769
11			0795002971
12			0772634504
13			٠٧٩٨٩٨٨٠٧٦
14			0795354640
151			٠٧٧٤٤٧٠٤٤٨
16			٠٧٧٤٠٧٩١٥٥
17			٠٧٧٤٤٥٤٥٧٠
18			0775772896
19			٠٧٩٧١٧٤٩٤٥

كشف اسماء حضور ورشة عمل حول وضع طائر النعار السوري /ضانا
الجمعية الاردنيه لمراقبة الطيور

20	خالد أبو تايه	الجمعية الاردنية لمراقبة الطيور	0795541529
21	دلال سليم	الجمعية الاردنية لمراقبة الطيور	0795577005
22	فارس خورك	〃 〃	0795502900
23	عبدالرزاق الحمود	RSCN	0796669339.
24	شيرين الدباس	Jordan Bird watch	-
25	عامر الرفوع	RSCN	0799074947
26			
27			
28			
29			

See also short article about the workshop in Arabic on https://web.facebook.com/Jordan.Birdwatch.Association

Appendix 4: Survey report

الجمعية الأردنية لمراقبة الطيور
JORDAN BIRDWATCH

Results of Syrian Serin *Serinus syriacus* Surveys: Winter distribution, Breeding population size, and national conservation status in Jordan

Submitted by Dr. Fares Khoury on 20th May 2022
As part of the project supported by Glogbal Greengrants Fund
Towards the protection of threatened birds in Jordan: Assessing the current status of the near endemic Syrian Serin in Jordan

1. Introduction

1.1. General Introduction

The Syrian Serin breeds in montane Lebanon, Syria and south-west Jordan, on rocky slopes with scattered trees and shrubs, and in open, rocky woodland (Khoury 1998a). Due to its restricted range, and the fact that it is the only endemic breeding species within its range in the Near East, the species should receive the highest conservation priority in the region. The causes for this restricted breeding range have been analyzed in previous studies and include mainly the presence of a combination of suitable habitats for breeding, feeding, and roosting, used in different seasons, within fairly short distances (Khoury 1998b, 2003). Of utmost importance is the breeding habitats which are at relatively high altitude with a semi-arid climate, and rocky slopes with open woodlands dominated by conifers such junipers and/or cedars and various shrubs (see next section). During the 1990s, the only breeding population in SW Jordan was believed to be the largest within its range, but this was only due to the lack of breeding data in other parts of its range. Recent surveys in the Lebanon revealed that the Lebanese – Syrian population is larger, apparently occurring there as a small number of subpopulations concentrated at various sites. These northern (sub-) populations are separated from the breeding population of southwest Jordan by a distance of at least 250 km. The Syrian Serin is listed under the IUCN Red List of Threatened Species (http://www.iucnredlist.org/) as vulnerable with a decreasing population trend (Vulnerable, C1), and its status may be very critical in some of its range countries. It is also included on Appendix I of the Bonn Convention on Migratory Species. Due to its globally and locally threatened status, data on population trends and ecology is regularly needed for species and habitat management.

In Jordan, Syrian Serin is probably the most restricted and one of the rarest resident passerine birds. In south-west Jordan, the breeding range is restricted to the Dana Biosphere Reserve, where it breeds at high altitudes between 950 – 1300m, in Al-Barrah area (Andrews 1995, Khoury 1998b). Dana has been designated as Important Bird Area (RSCN 2000) for the high diversity of breeding and migrant birds it harbors, and the presence of species with restricted range, including the Syrian Serin.

During the first survey carried out in 1995 (RSCN / Evans & Al-Mashaqbah 1995) in the Dana Nature Reserve, the population size of Syrian Serin was estimated at around 800 pairs. In subsequent surveys carried out in 1996 -1997 a different method was used, and the breeding population was estimated at around 650 pairs (Khoury 1998b), while in 1999 the breeding population apparently dropped to 500 pairs, which was probably related to severe drought conditions during the late 1990s (Khoury 2000, 2001). In 2011, a team of RSCN and other researchers, including the author of this report, conducted a breeding survey as part of the monitoring program at Dana Reserve (RSCN 2011), and the breeding population size apparently remained stable since 1999 with a minimum of 500 pairs (maximum 700). However, marginal and disturbed areas were not being used anymore by the Syrian Serins for breeding, i.e. the actual breeding habitat at Dana (occupancy) decreased by around 12%, a negative trend which, as will be demonstrated in this report, has been continuing for the past two decades.

1.2. Breeding site location in Jordan and habitat description:

The breeding survey was carried out at Dana Biosphere Reserve which is located in south-west Jordan around 200 km south/south-west of Amman. For details about site location and habitats see Evans & Al-Mashaqbah / RSCN (1995) and Khoury (1998b). The Syrian Serin breeds in south-west Jordan mainly in rocky, open oak-juniper (plate 1) and less frequently in juniper – dominated (*Juniperus phoenicea*) woodland, but not in pure stands of evergreen oak (*Quercus calliprinos*) or pine plantations (Khoury 1998b). Nests are built in both of these tree species (evergreen oak and juniper), while large oaks are usually required for roosting in the non-breeding seasons. Local breeding density was previously found to be correlated with tree density (Plate 2), the presence of tall juniper trees, the presence of open glades covered with annuals and proximity to seasonal pools (Khoury 1998a, 1998b, 2003).

Plate 1: Breeding area of Syrian Serin in SW Jordan; Al-Barrah woodland, Dana Nature Reserve.

Plate 2: Dense patches of trees / shrubs usually have higher density, and may harbour small clusters of pairs / nests of Syrian Serin.

1.3. Wintering habitats:

In the non-breeding season, open areas (e.g. road sides and waste places) with ruderal vegetation, gardens, fields, orchards and *Artemisia*-dominated steppes are usually used by foraging Serins (Khoury 1998b). In winter, the Syrian Serins breeding at Dana tend to use more open steppe habitat with scattered trees and shrubs, and many move to neighboring areas in SW Jordan, often as small flocks, including mainly the southern Rift margins, with a few reaching Wadi Rum and Disi in some years. *Artemisia* steppe at various altitudes is generally favored by the serins during the winter season (Khoury 2000), as *Artemisia* seeds are the main food of the birds from November - February.

Migrating and wintering birds have also been recorded in the rift margins of central and northern Jordan. This indicates that these areas may be part of the wintering grounds of Syrian Serin populations that breed in the highlands of The Lebanon and Syria. The serins were often recorded in open semi-arid batha (garrigue) and steppe habitats with dwarf shrubs and scattered shrubs sometimes in the vicinity of orchards and water springs. The Syrian Serins in these parts were often feeding on the fruits and seeds of ruderal plants rather than *Artemisia* seeds.

1.4. Aims of the surveys

The surveys / field work make up the largest part of this project, and the aims are

A) Collect more information about the winter distribution of Syrian Serins in the norhtern part of Jordan
B) Estimate the population size of breeding Syrian Serin in southwestern Jordan; the last breeding surveys being in 2011.
C) Compare the current (2022) breeding population size and breeding area (area of occupancy) with estimates from 2011 and the 1990s.
D) Identify and discuss conservation status and main threats
E) Involve and encourage participation of volunteers in the birds surveys
F) Prepare a list of recommendations to be communicated with stakeholders

2. Materials and Methods

The breeding survey was carried out during April 2011. April – early May is the most suitable period for a breeding survey of Syrian Serin because all breeding birds are expected to be at least in the nest-building or egg-laying period by early April (Khoury 2001). The survey comprised of 34 point counts, 33 of which were in Al-Barrah, and one between Al-Barrah and Dana village. Additionally, observations were carried out around Dana village to explore further potential nesting sites.

2.1. Search for wintering birds

Several field visits were carried out in north western Jordan, including the areas around Wadi Zarqa, and other wadis in the Ajlun area. There was no clear, systematic methods, except for driving slowly, and stopping and walking at sites with apparently suitable habitat according to expert opinion. This should provide basic knowledge about the general winter distribution in the north.

2.1. Point counts – field methods and data analysis:

The potential breeding area, i.e. areas above 950 m a.s.l. within the Dana Reserve were partitioned into 500 x 500 m grids using Google Earth, 34 of which were randomly selected. The spot counts were located at the centers quadrants (500 x 500 m), but often near their borders due to restricted accessibility and rough terrain. The minimum distance between neighboring points was 300 meters. Spot counts were thus randomly scattered over the various parts of Al-Barrah area.

The counts were performed in the morning, starting usually at sunrise and continuing until 11:00 am. The duration of each spot count was 10-12 minutes, preceded by 5 minutes during which habitat variables were noted and to let birds become accustomed to the presence of the observers. The observers (usually 1-2) counted the birds, which were observed or detected acoustically, within and beyond 50 m and calculated the density of each species according to the following formula (Bibby et al 2000):

$D = (10\ 000 \times \ln(n/n') \times n) / m \times r^2 \times 3.14$

Where D=relative density (per ha); n=total number of individuals, n' = number of individuals beyond 50 m, m=number of spot counts and r = radius of spot count in meters (=50).

Birds passing through some of the spot count sites, but landing shortly on a tree enticed us to correct the numbers in some of the spot counts to avoid overestimations.

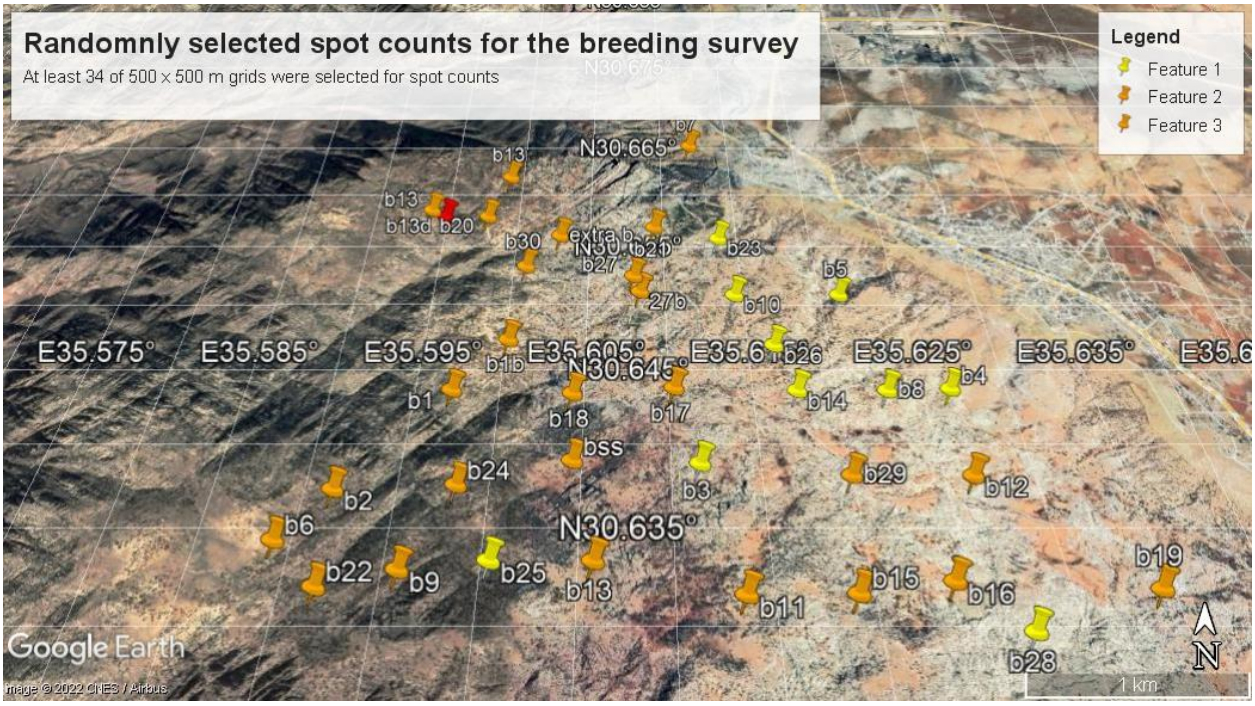


Plate 3: Grids (500x500 m, not shown here) were first randomly selected, and then spot counts were located approximately in the center of these grids.

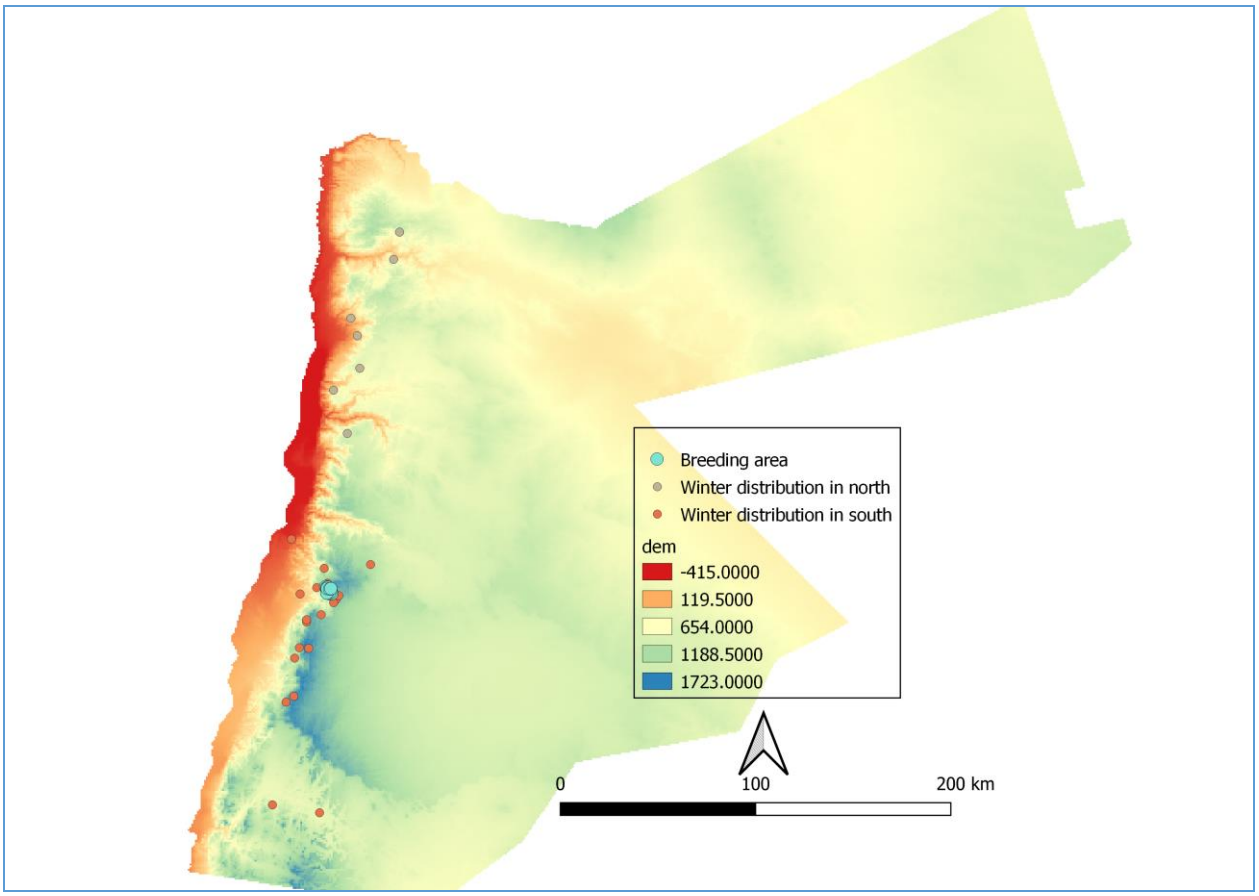


Figure: map showing Breeding area in SW Jordan, and sites where Syrian Serins have been observed in winter.

3. Results and discussion

Winter distribution

The Syrian Serins have been previously recorded in the south at various sites with a large extent of over 100 km (radius) from the rift margins just south of the Dead Sea to Wadi Rum and Disi. Large numbers are frequently seen close to the breeding area, but there appear to be annual fluctuations regarding the winter distribution. During this project we searched for Syrian Serins in the north, as there is lack of data regarding Syrian Serins overwintering in the north, which may originate from breeding populations further north in the Levant. The few new records / sites were near Jerash and Aluk, in addition to previously known sites in the rift margins west of Amman and

west/southwest of Madaba. RSCN rangers reported to have seen the Syrian Serin in Wadi Shu'aib and Ain El-Basha (northwest of Amman) during winter although the exact dates are not recorded. Syrian Serins behave in a nomadic way during winter and cross considerable distances every day, so the chances to encounter them is low during any visit. Thus we will modify our methods in future and focus perhaps on drinking sites, although these may be scattered in the north during the rainy season, and due to the presence of irrigation at farms. Our extensive search in the north did not provide much data, but this indicates that their numbers are limited during winter in the north, they are very scattered and nomadic, or that they are concentrated in still unknown areas.

3.1 Estimated Density and Population size:

The frequency of occurrence in Al-Barrah is 70%, i.e. in 70% of spot counts carried out there, Syrian serins were recorded. The total number of Syrian Serin recorded during spot counts was 43 individuals. Around 30-40 pairs per km² is thus the population density estimated in Al-Barrah. Although the areas with apparently suitable habitat in the Dana Nature Reserve are roughly estimated at 20 km², Syrian Serins were breeding in 2022 only in an area of 11-12 km². As was the case in the previous survey eleven years ago, a large fraction of the areas in Al-Barrah were unoccupied by Syrian Serin, and the area occupied in 2022 is smaller compared to 2011. The population size in 2022 is estimated at 440-490 pairs. A small number of (probably less than 5 pairs) may also breed between Al-Barrah and Dana Village and in the oak-juniper woodland above the Dana terraces.

Table 1: Tends in breeding area and population size of Syrian Serin

Year of study	Estimated Population size (pairs)	Estimated area of occupancy/spring (Km^2)	Reference
2022	440-490	11-12	This report
2011	500-700	14	RSCN 2011
1999	500	15 Km^2	Khoury 1999
1995-1996	650	16-17 Km^2	Khoury 1998, 2003
Trends	Decrease of 25-30% since 1996	Decrease of 30% since 1996	

Table 1: A summary of results from this survey and previous surveys on breeding Syrian Serin *Serinus syriacus* in Dana Biosphere Reserve.

Table 1 summarizes the results of the breeding surveys carried out in the 1990s, 2011 and 2022 using the same method. However, spot counts were carried out in different locations, thus care must be taken while comparing the different surveys. The estimation of areas occupied by breeding birds can be considered accurate and reliable when comparing between the years mentioned. Some marginal areas, e.g. in the eastern part of Al-Barrah, and the north-eastern parts (except for b5) and areas highly disturbed by visitors / picnickers and livestock owners,) are currently not occupied anymore or the serins breed in extremely low density there. These sites were occupied in the 1990s (Khoury 2003). Some parts of Al-Barra woodland are intensively used by herders (especially during winter) and picnickers causing considerable soil erosion and general habitat degradation due to woodcutting, e.g. at and around the "Youth Camp", and thus had a very low density of Syrian serin. Relatively high densities (with apparently more than one pair within 100 meters) were recorded at very few points, e.g. in the southern area, where access is more limited by rugged terrain and distance from roads.

Main threats to the breeding population in Jordan include:

- Overgrazing leading to soil erosion and degradation of vegetation cover
- Wood cutting by visitors and herders.
- Increased access by new asphalt and lack of regulations regarding the use of this area by day visitors in the Al-Barrah woodland, although it is officially part of the Dana Nature Reserve. Visitors often cut branches of the shrubs and trees to make fire, leave a lot of plastic litter behind and cause disturbance to breeding birds.
- Prolonged drought conditions are frequent, i.e. dry years that may be continue for more than a year, causing food shortage during the dry years for the Syrian Serin during its breeding season, and causing further degradation of habitats.
- According to RSCN staff in Amman and their record of confiscated wild animals, Syrian Serins are being trapped during autumn / winter in some parts of Jordan, and sold as cage birds in Friday markets. Numbers being trapped every year, and exact locations where they are trapped are not known. Thus the possible effects and which populations are involved is still to be determined.

The IUCN Redlist conservation category of the Syrian Serin at the national level would be “Vulnerable” according to criteria A, C, and D. However, it could be upgraded to “Endangered” or even “Critically Endangered” according to Criterion B, due to small area of breeding habitat and small population size, both of which have even decreased during the last 3 decades. The same may apply for the entire regional / global population of this species.

We thus recommend to

1) Increase monitoring of the breeding population, to be every second or third year
2) Regulate and limit activities such as livestock grazing and random picnicking in Al-Barrah woodland
3) Increase ranger patrols (of RSCN / Dana Reserve staff) to control illegal hunting, wood cutting and prohibit camp fires in the reserve.
4) RSCN / Reserve management to cooperate with other stakeholders to control undesired activities leading to habitat degradation

References

- Andrews, I. (1995) The Birds of the Hashemite Kingdom of Jordan. Musselburgh.
- Bibby, C., Burgess, N., Hill, D. & Mustoe, S. (2000): Bird Census Techniques. Academic Press.
- Khoury, F. (1998a): Habitat associations and communities of breeding birds in the highlands of south-west Jordan. Zoology in the Middle East 16: 35-48.
- Khoury, F. (1998b): Habitat selection by Syrian Serin *Serinus syriacus* in SW Jordan. Sandgrouse 20(2): 87-93.
- Khoury, F. (2000): The impact of drought conditions on the winter distribution and population of Syrian Serin *Serinus syriacus* in south-west Jordan. Sandgrouse 22 (1): 64-66.
- Khoury, F. (2001): The breeding ecology of Syrian Serin *Serinus syriacus* in Jordan. Sandgrouse 23(1): 68-69.
- Khoury, F. (2003). Feeding ecology of Syrian Serin *Serinus syriacus* in SW Jordan. (in German). Ecology of Birds 25: 5-35.
- RSCN (1995) Dana Nature Reserve: Phase II Bird Survey, March-May 1995. RSCN, Amman.
- RSCN 2000: Important Bird Areas of the Hashemite Kingdom of Jordan. RSCN, Amman.
- RSCN 2011: Dana Biosphere Reserve – Monitoring Program: Syrian Serin Serinus syriacus Breeding Survey 2011. Unpublished report, The Royal Society for the Conservation of Nature. Dana.