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香港觀鳥會
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By email only

3 May 2019

Dear Ms. Cheng,

Comments on the Environmental Impact Assessment for Shuen Wan Golf Course
(EIA-260/2019)

The Hong Kong Bird Watching Society (HKBWS) is aware that the captioned project is beneficial to the non-in-situ land exchange proposal for the long-term conservation of Sha Lo Tung. We understood the loading limitation at the Shuen Wan Restored Landfill (SWRL) due to the waste boundary and the need of a water tank to prevent surface runoff with agrochemicals from being discharged into Tolo Harbour. We also noticed the project proponent tried to take some measures to minimize the adverse impacts of the 18-hole golf course at Shuen Wan. However, we still consider that the scale of development is too large and would have grave impacts on the Collared Crow (CC) night roost. Below are our concerns and comments on the Environmental Impact Assessment (EIA) report for the proposed Shuen Wan golf course.



1. CC night roost at SWRL is of global, regional and local conservation importance

1.1. Background and conservation importance of CC

The IUCN Red List Category for CC was up-listed to “Vulnerable” in 2018. A paper published in 2016¹ reviewed recent and historical records of CC, and considers that the current global population of the bird species was overestimated, and should in fact be almost 2,000 individuals including 1,709 (>90%) in mainland China. **Hong Kong accounts for the second largest population of CC in China, with 362 individuals which is about 20% of the national population.**

In Hong Kong, there are only two known communal roosts, one at the Mai Po Nature Reserve and the other at SWRL². These roosts attract birds from the Deep

¹ Leader, P. J., Stanton, D. J., Lewthwaite, R. W. and Martinez, J. (2016). A review of the distribution and population of the Collared Crow *Corvus torquatus*. *Forktail* 32: 41-53

² Stanton, D. J., Smith, B. R. and Leung K. K. S. (2014). Status and roosting characteristics of Collared Crow *Corvus torquatus* at the Mai Po Nature Reserve, Hong Kong. *Forktail* 30: 79-83.

Bay and Tolo Harbour areas, respectively. In 2007-2008, the CC night roost for the Tolo Harbour population formed at Yim Tin Tsai. Since 2011, the roost has formed at SWRL, and the **maximum count at this site is 117 individuals** recorded in 2014. This population at SWRL therefore **accounts for approximately 30% of the Hong Kong population and 6% of the world population.**

1.2. Difference in CC abundance at SWRL night roost between HKBWS and EIA data

HKBWS obtained permission from the Environment Protection Department and has been conducting monthly CC surveys (i.e. in the same week every month) from the SWRL driving range since August 2017. Our vantage point is within the existing driving range, which has the advantage of providing close and accurate counts and observations of CC behavior and habitat usage as it is less than 400m from CC night roost at SWRL, whereas the vantage point chosen by the consultant at a higher point near Lo Fai Road has the advantage of wider views for observations both inside and outside the project site, but it is about 1km from the CC night roost. At such a long distance from the CC night roost and with minimum light condition around sunset, it is suspected that the counting at Lo Fai Road would be difficult (Figure 1). Perhaps this is the reason why **our dataset (Table 1 and Figure 2 below) has significantly less noise than that in the Appendix 10.3b of the EIA report.** We have also recorded more bird species at the driving range during our monthly CC survey (i.e. over 60 species) than are mentioned in the EIA report (i.e. Project site: 43 species; Assessment area excluding the Project site: 57 species).

Table 1. Maximum counts of Collared Crows roosting at SWRL[^]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	-	-	-	-	-	-	-	116	109	79	75	45
2018	39	31	42	81	74	91	97	104	87*	87	62	79
2019	33	34	49	76	-	-	-	-	-	-	-	-

[^]Source: unpublished HKBWS data

*Count was an underestimate as the survey was forced to stop 15 minutes before sunset due to change in operation hours of the driving range after extensive damage caused by Super Typhoon Mangkhut on 16 September 2018.

Section 10.4.4.26 of the EIA report stated that *“Fluctuations in numbers of Collared Crows at final roosts were recorded throughout the study, without obvious patterns. These changes were thus not likely due to seasonal changes (e.g., recruitment from breeding or migration), but suggested that some birds did not roost in the Project Site every night, and the existence of alternative night roosts in nearby areas.”* **We do not agree with the above as a seasonal pattern is observed in our dataset.**

The breeding season of CC in Hong Kong is known to start in early February³, thus the seasonal fluctuation should be related to its nesting and breeding activities. A local paper on Collared Crow stated *“Seasonal fluctuations in the number of individuals joining roosts are usual amongst communally roosting corvids, increasing in early summer and falling during autumn (dos Anjos et al. 2009). Preliminary findings from a study in progress confirm that this seasonal pattern is found in the Collared Crow roost at Mai Po.”*⁴ **Importantly, the seasonal pattern observed in our monthly survey matches the trend from the previous study of CC at Mai Po, and confirms that a pattern is found in the CC roosting populations in Hong Kong. The drop in the communal roosting CC population observed at SWRL in autumn and winter occurs as mature individuals take up breeding territories and remain near their nest-sites at this time, rather than simply going to alternative nearby night roosts as suggested in the current EIA.**

It is known that *“Immature crows may spend the night in the roost year round, but adults of breeding age generally use the roost only during the non-breeding seasons”* for American Crows which also communally roost⁵. Moreover, the advantage of communal roosting is well-known, including *“a decrease in the chance of predator approach going unobserved, some physical protection against adverse weather, the facilitation of the meeting and pairing of unrelated individuals and probably maximising the chances of finding rewarding food sites the next day...It has been suggested that young corvids tend to follow older individuals and recruitment to the communal roost is common.”*⁴ **As such, the communal roost is particularly important year-round for the juvenile CCs and for “information exchange” between CCs or between adults and juveniles. Therefore, the seasonal fluctuation observed in fact further confirms the conservation importance of the CC night roost at SWRL.**

2. Not all alternative options of the proposed project are fully considered

2.1. Justification of the proposed scale of 18-hole golf course is not understood

It was repeatedly mentioned in Chapter 2 of the EIA that the project site small for an 18-hole golf course and quoted the American Society of Golf Course Architects⁶ that the minimum area for an 18-hole golf course should be at least 49ha. However, referring to the same document, there are in fact several options for an 18-hole golf course (Figure 3). *“This means an 18-hole course of all short par 3s could be*

³ <https://www.hbw.com/species/collared-crow-corvus-pectoralis>

⁴ Stanton, D. J., Smith, B. R. & Leung, K. K. S. (2014). Status and roosting characteristics of Collared Crow *Corvus torquatus* at the Mai Po Nature Reserve, Hong Kong. *Forktail*, 30: 79-83.

⁵ <https://www.audubon.org/news/where-crows-go-night>

⁶ <https://asgca.org/wp-content/uploads/2016/07/Building-a-Practical-Golf-Facility.pdf>

built on as little as 30 acres (~12ha), while an intermediate length or executive course of 18 holes of par 3s and 4s would require 75-100 acres (~30-40ha), and a full size par 72 course would need 120-200 acres (~49-81ha). This assumes, of course, only usable land which does not allow for wetlands, restricted areas, or land not easily made part of the golf area.”⁷ Therefore, the amount of land required for an 18-hole golf course is highly variable but the current project seems to have only considered a full course golf course.

A comparison of other 18-hole golf courses (all over 100ha in size) were made in section 2.4.8.12 of the EIA, but it missed the **Clearwater Bay Golf & Country Club, which is also a 18-hole golf course but of just about 50ha in area and was commented as having “some pretty amazing views but is quite short, even from the back tees.”⁸** It is likely that the Shuen Wan Golf Course may receive similar comments.

Given that the proposed golf course would “*probably be the smallest 18-hole golf course in Hong Kong*” (Section 2.4.8.26) and there are other 18-hole golf courses in Hong Kong which are much larger in size. We consider that the project proponent should clarify:

- Why is only a full course considered for the proposed 18-hole golf course, but not other options such as an executive course which has less land requirement?
- Who are the targeted users of this proposed golf course? How unique is this proposed golf course (e.g. filling a different niche in the market)?

2.2. A 9-hole golf course was originally proposed at SWRL and no justification was provided for the change to an 18-hole golf course

In Section 2.9.1.1 of the EIA report, the proposed project was claimed to be supported by the Tai Po District Council (TPDC). **However, there were no details on the support of a 9-hole or an 18-hole golf course at SWRL.**

According to a document to the Legislative Council prepared by Home Affairs Bureau in 2001 titled “*Summary of results of consultation with District Councils regarding the 21 ex-PMC (i.e. former Provisional Municipal Councils) projects which the LCSD has recommended to accord priority*”⁹, the **proposed golf-course at Shuen Wan Landfill (including one 9-hole golf course and one golf driving range) was recommended to proceed with priority.** It stated “*The Hong Kong Jockey Club has agreed to sponsor about 80% of the project cost*” and “*a temporary golf driving*

⁷ <https://asgca.org/faq-how-much-land-do-i-need-to-build-a-golf-course/>

⁸ <https://www.golfinhongkong.com/golf-courses/clearwater-bay-golf-and-country-club/>

⁹ https://www.legco.gov.hk/yr00-01/english/hc/sub_com/hs51/papers/e1216-02.pdf

range is currently provided on the site for use by the public.”

At the Recreation, Sports and Cultural Affairs Committee meeting under the TPDC on 15 September 2004, representatives of the Environmental Protection Department (EPD) even stated that **“given the limited area at the SWRL, only a 9-hole golf course can be built”**¹⁰. And up till 2009, a 9-hole golf course was still a preferred option as *“EPD, after consulting relevant B/Ds (Bureaux and Departments), carried out an open Expression of Interest exercise in 2009 to invite all interested parties to submit proposal on developing a 9-hole golf course”*¹¹.

However, the Government at some point changed the plan. *“The Government intends to invite the private sector to develop an 18-hole golf course at the restored Shuen Wan Landfill site. The DFMC of TPDC supported the proposal in September 2011.”*¹² **However, it is uncertain what the justifications from the Government for the change from 9-hole to 18-hole golf course were.**

2.3. Reduction in the scale of golf course and ancillary facilities were not considered

According to the Technical Memorandum on EIA Process, **“avoidance” should be firstly considered to mitigate the impacts on important habitats and wildlife**¹³. However, only scenarios of “with” or “without” the proposed 18-hole golf course, alternative construction methodologies and alternative layout options for the driving range were discussed in Chapter 2 of the EIA report.

Given the **high conservation importance of the CC night roost at SWRL** as presented in Section 1 above and the **18-hole golf course development would lead to significant loss in CC night roost habitat** (will be explained in Section 3 below), we consider that **a reduction in development scale (e.g. an 18-hole executive course or a 9-hole golf course) is a possible alternative to avoid the significant impact on the CC night roost by retaining the continuous strip of plantation at the southern, southeastern and eastern boundary of the project site, but this was not fully considered in the current EIA report.** Taking The Hong Kong Golf Club Deepwater Bay 9-hole course as an example, 18 holes can also be played from slightly difference tee boxes but hitting the same green¹⁴ and the area of the golf course is just about 8ha.

¹⁰ <https://www.districtcouncils.gov.hk/archive/tp/english/welcome.htm>

¹¹ https://www.legco.gov.hk/yr17-18/english/pac/reports/70a/app_16.pdf

¹² <https://www.legco.gov.hk/yr13-14/chinese/panels/ha/papers/hacb2-866-1-ec.pdf>

¹³ <https://www.epd.gov.hk/eia/english/legis/memorandum/annex16.html>

¹⁴ <https://www.golfinhongkong.com/golf-courses/the-hong-kong-golf-club-deepwater-bay/>

Moreover, there are two scenarios for the proposed development. According to Section 2.5.1.2 of the EIA, the major difference between the two development parameters is that Scenario 1 consists of 84 VR training rooms and 2 administrative office, while Scenario 2 would replace that with 26 rooms for staff quarters and 60 rooms for overnight accommodations. **However, it is not explained if these facilities (e.g. VR training rooms and overnight accommodations) are essential components of the proposed golf course and how would they support the golf course operation.** It is uncertain why large amount of VR training rooms is needed next to a real golf course and driving range, and when there are already VR golf facilities in the urban areas of Hong Kong. Also, it is also unclear who will be the target users of the overnight accommodations, given the golf course would only operate during daytime and only the driving range would operate until 10pm. **If these ancillary facilities are taken out of the proposed project, it would reduce the loading on the SWRL and the footprint of the ancillary building of the golf course, and thus a continuous strip of plantations can be retained for the CC night roost.**

3. Adverse impacts on the CC night roost were underestimated

3.1. Misleading presentation of data on CC habitat usage at SWRL night roost and significant loss in the CC night roost habitat

From the observations during our monthly CC survey, **we generally agree with the extent of the plantation used by CC for roosting as presented in the EIA** (i.e. plantations at the southern, southeastern and eastern boundary of the driving range) (refer to Figure 10.7a and 10.7b of the EIA).

However, we do not agree with the presentation and analysis of the data as shown in Figure 10.7c and 10.9 in the EIA. Also, the cumulative frequency of CC at grid M8 in Figure 10.9 of the EIA report should be “8” instead of “3”, which is inconsistent with the data presented in Figure 10.7a and 10.7c of the EIA (Figure 4). **We are concerned the current data presentation used in the EIA actually downplayed the CC usage at the plantation and significantly underestimated the adverse impacts on this important CC night roost in Hong Kong.**

Using the same data, a different way of presentation is shown in **Figure 5**. Five grids with the highest number of cumulative frequency (i.e. CC revisit the area more), cumulative abundance (i.e. support high number of CC population), and the average abundance per night roost usage (i.e. cumulative abundance divided by cumulative frequency) were highlighted on the map.

The highest cumulative frequency and abundance shared the same five grids. However, interestingly, the grids with the highest average abundance per usage does not include two grids with the highest frequency and abundance (i.e. N6 and O6). So combining the result of these three categories, the whole stretch of plantation of about 9ha in area used by the CC is important and should be conserved (Figure 5).

However, **only 1.2ha of the plantation** at the southern boundary which was said to be frequently used by CC will be preserved (Figure 4). **We consider that this is in fact more than 85% loss in the night roost habitat, and the impact on the CC night roost should be “High”** rather than “Moderate” as stated in Table 10.9.2 of the EIA.

The EIA concluded that CC has *“flexibility on using roosting sites”* and they *“only roost on a few trees...do not display strong fidelity to particular spots along the plantation at the waterfront for roosting”* (Sections 10.6.1.13 and 10.9.2.27 of the EIA). Although CC does not have a strong preference on a certain tree individual for roosting, **it is clear that CC consistently preferred the plantations at the southern, southeastern and eastern boundary of the driving range**, but not the trees at the northern, northwestern and western boundary. **Given not much detailed information is known on the specific habitat requirement for the CC night roost at SWRL and the high conservation importance of the CC roosting population at SWRL, a “precautionary approach” should be taken. We consider that this continuous strip of plantation of about 120m in width and about 9ha in size should be preserved.**

3.2. Usage of tuffgrass and plantations as pre-roost should not be overlooked

From the current EIA, the Tai Po Sewerage Treatment Works (TPSTW) was used by CC the most for pre-roost. According to the CC roosting records at SWRL submitted to the HKBWS between 2011 and 2017, CC was seen using the tuffgrass at the upper driving range for pre-roost all the time (personal communication with Mr. Richard Lewthwaite). However, this behaviour was not observed when we started our monthly survey in August 2017. It was suggested that this was related to the change in the operation of the driving range due to the damage done on the facilities by Super Typhoon Hato on 23 August 2017, about a week before our survey.

During our monthly surveys from 2017 till now, at least 20% of the survey dates CC was observed using the tuffgrass for pre-roost, sometimes they were seen pre-roosting directly on the tree tops of the plantations around the driving range (Figure 6). *“Prior to roosting, many corvids often congregate at locations away from the final roost site, forming what is known as a pre-roost. These pre-roost gatherings*

have rarely been studied and their function is poorly understood; it has been suggested that pre-roost gatherings of corvids are not simply a consequence of many individuals approaching the same roost area but, like communal roosting, have a particular function."⁴ **Given not much information is known for the pre-roost at/around SWRL, "precautionary approach" should be taken. The usage of tuffgrass as pre-roost should not be underestimated, and the loss in tuffgrass should not be unmitigated** (Table 10.9.2 of the EIA). Tuffgrass management favouring the usage of CC as pre-roost should be implemented as much as possible around the night roost (e.g. at the driving range and on the green roofs of the ancillary buildings of the golf course).

We cannot confirm the usage of TPSTW due to limitation of our vantage point, however, it was seen that CC gradually came back into the driving range at the southwestern corner of the plantations (which is from the direction where the TPSTW is located) and slowly move their way towards the east hopping between tree tops (Figure 1). **The use of dots for the presentation of the pre-roosting and final roosting location in the EIA (Figure 10.5 of the EIA report) would miss out the fact that the plantations/trees in between the sites would be used by CC as a movement corridor. We are concerned the usage of some areas of the plantations would be underestimated as well.**

Conclusion

The HKBWS considers that the current development scale of the proposed 18-hole golf course would have **great and significant adverse impact on the CC night roost at SWRL, which is one of the two known roosting sites in Hong Kong and accounts for about 6% of the global CC population.** We understand the proposed project is related to the long-term conservation of Sha Lo Tung, **but the CC night roost should not be comprised for this project and is not necessary to do so. Other alternative development options should be considered to retain the continuous strip of plantation at the southern, southeastern and eastern boundary of the project site,** in order to conserve the SWRL CC night roost of high conservation concern. **We consider that there should not be any conflict between nature conservation at Sha Lo Tong and at SWRL.** HKBWS hopes that our comments would be taken into consideration during the EIA process. Thank you for your kind attention.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Woo Ming Chuan', with a large, stylized flourish at the end.

Woo Ming Chuan
Senior Conservation Officer
The Hong Kong Bird Watching Society

cc.
AFCD
The Conservancy Association
Designing Hong Kong
Green Power
Kadoorie Farm and Botanic Garden
WWF – Hong Kong

Figure 1. A minimum of 100 Collared Crows flew up into the sky together and gradually moved from the southwestern corner of the SWRL towards the southeastern corner just before roosting. The photograph was taken on 29 August 2017, 15 minutes after sunset and 5 minutes before civil twilight ended, at the lower driving range about 200m from the plantations. It is uncertain how accurate counts and observations can be obtained from the vantage point chosen by the EIA consultant near Lo Fai Road about 1km from the Collared Crow night roost.



Figure 2. Change in Collared Crow abundance at SWRL night roost within a year (Source: unpublished HKBWS data).

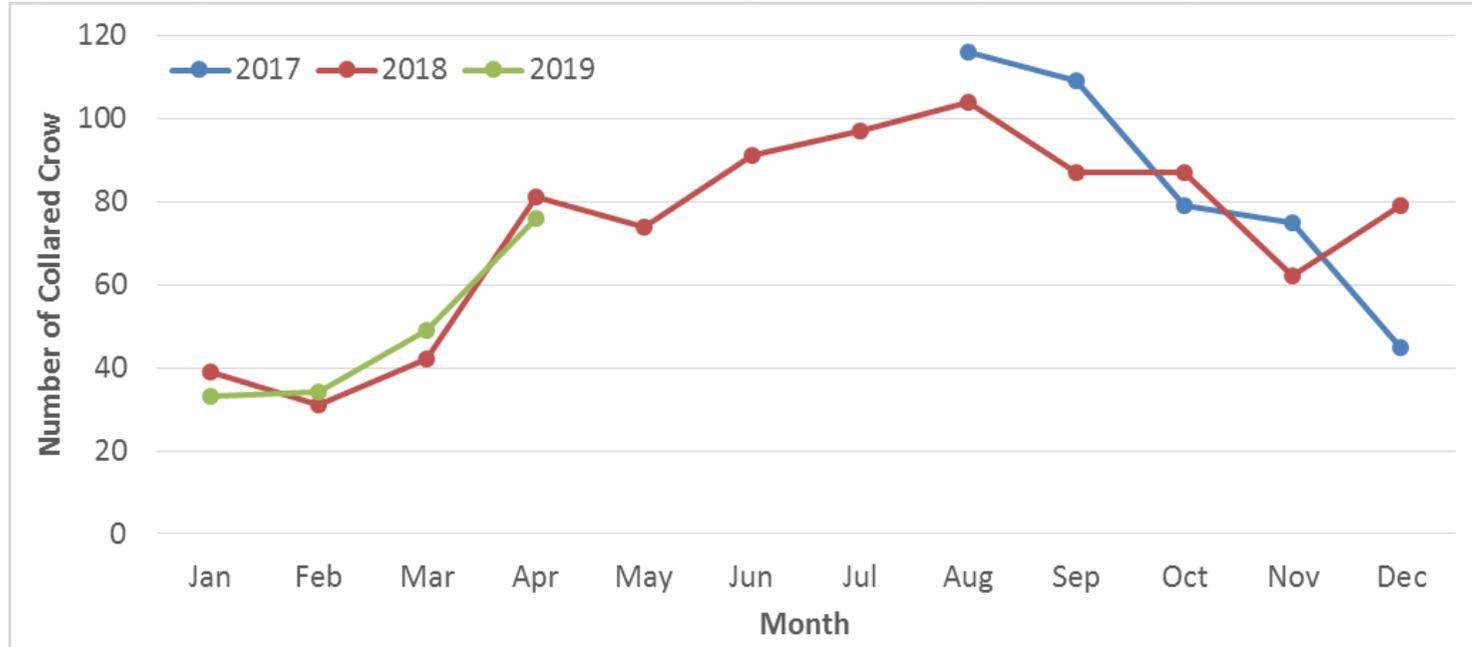


Figure 3. Different requirements for an 18-hole golf course from the American Society of Golf Course Architects. Notice that 49ha is only the minimum area requirement for a full size golf course.

Requirements for 18 Holes of Golf				
Minimum	Pitch & Putt	Par 3	Executive	Full Size
Acreage	5-12	20-40	50-100	120 and up
Par	54 ~2-5ha	54 ~8-16ha	55 - 65 ~20-40ha	65 - 73 ~49ha and up
Total Length	900 yds.	1800 yds.	2500 – 4000 yds.	4500 – 7000 yds.
Tee Size				
Mats	6' x 6'	10' x 10'	10' x 10'	10' x 10'
Grass Covered	*100ft.	*400 ft. - 4000 ft.	*4000 ft. - 6000 ft.	*6000 ft. plus
Green Size				
Oiled sand	900	*1200 - 2000	*2000 - 3500	*3500 plus
Artificial turf	*600 - 1200	*1200 - 2000	*2000 - 3000	*3000 plus
Natural Grass	*1200 - 2000	*2000 - 3000	*3000 - 5000	*5000 plus

**Note: Figures are square feet*

Figure 4. We do not agree with the presentation and analysis of the data as shown in Figure 10.7c and 10.9 in the EIA (please also refer to Figure 5 below). The cumulative frequency of CC at grid M8 in Figure 10.9 of the EIA report should be “8” instead of “3”, which is inconsistent with the data presented in Figure 10.7a and 10.7c of the EIA. We are concerned **the current data presentation used in the EIA actually downplayed the CC usage at the plantation and significantly underestimate the adverse impacts on this important CC night roost in Hong Kong.** Moreover, **only 1.2ha of the plantation** at the southern boundary which was said to be frequently used by CC will be preserved. **We consider that this is in fact more than 85% loss in the night roost habitat, and the impact on the CC night roost should be “High”.**

Figure 10.7a in EIA
(cumulative frequency at grid M8: 8)

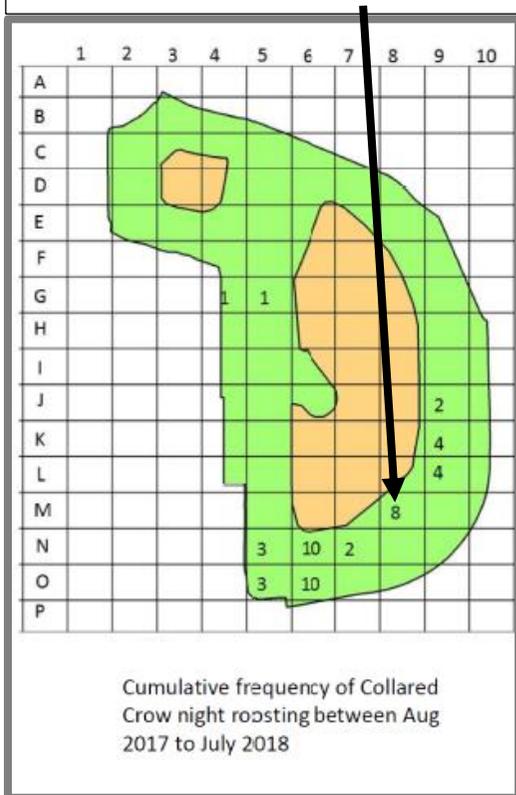


Figure 10.7c in EIA
(cumulative frequency at grid M8: 8)

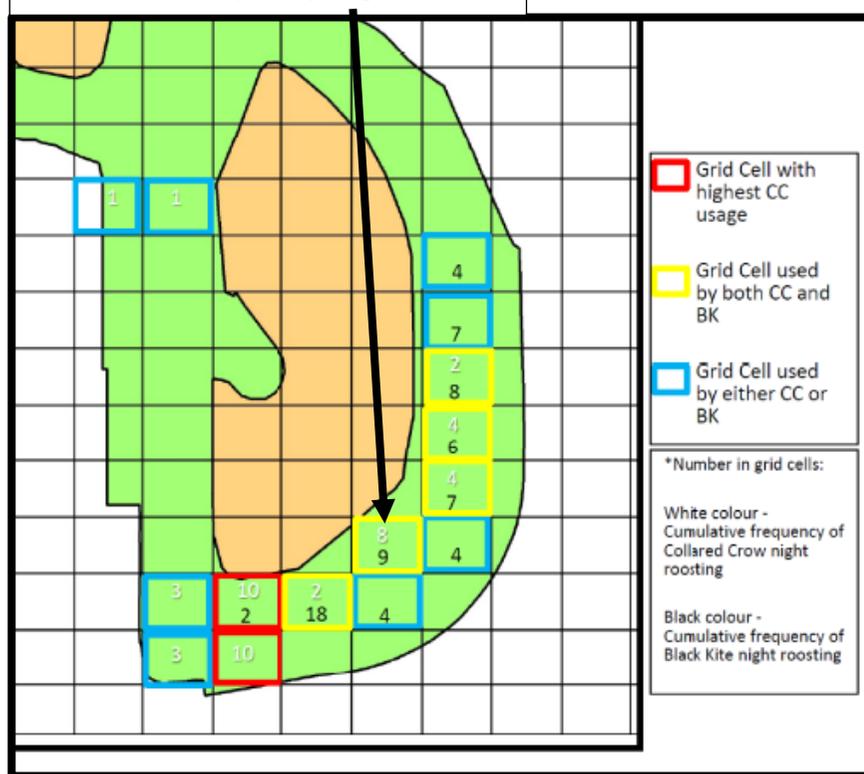
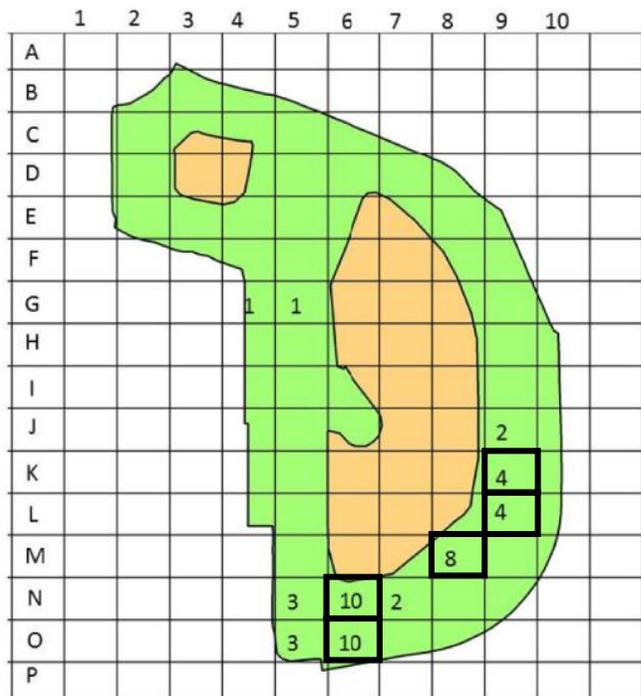


Figure 10.9 in EIA
(cumulative frequency at grid M8: 3)

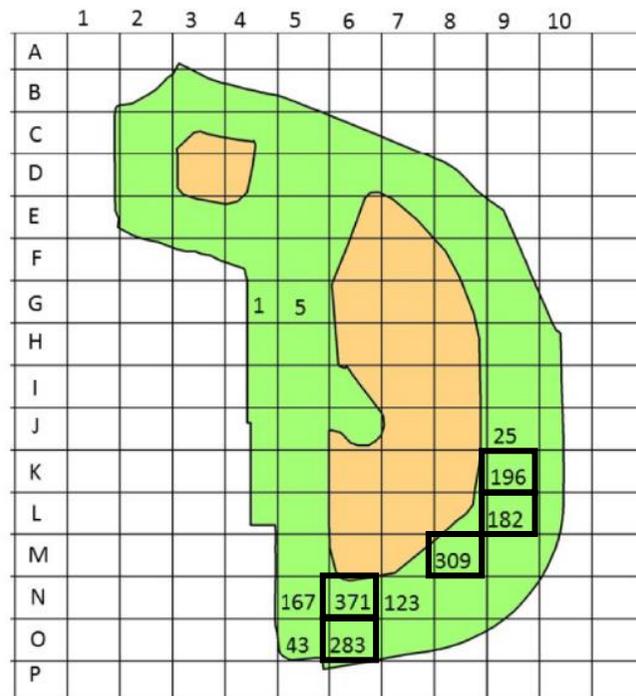


Only 1.2ha CC night roost will be preserved, which is over 85% loss.

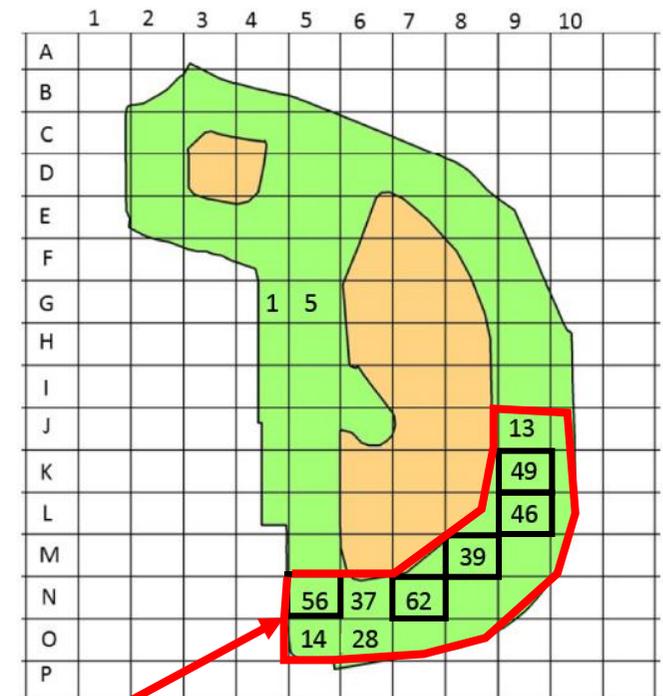
Figure 5. Five grids with the highest number of cumulative frequency (i.e. CC revisit more), cumulative abundance (i.e. support high number of CC population), and the average abundance per usage (i.e. cumulative abundance divided by cumulative frequency) were highlighted on the map (indicated by the **black boxes**). **The highest cumulative frequency and abundance shared the same five grids. However, interestingly, the grids with the highest average abundance per usage does not include two grids with the highest frequency and abundance (i.e. N6 and O6). So combining the result of these three categories, the whole stretch of plantation of about 9ha in area used by the CC (approximately indicated by the red boundary) is important and should be conserved.**



Cumulative frequency of Collared Crow night roosting between Aug 2017 to July 2018



Cumulative abundance of Collared Crow night roosting between Aug 2017 to July 2018



Average abundance per use of night roost by Collared Crow between Aug 2017 to July 2018

This stretch of plantation of about **9ha** in area used by CC is important and should be conserved.

Figure 6. During our monthly surveys from 2017 till now, at least 20% of the survey dates CC was observed using the tuffgrass for pre-roost, sometimes they were seen pre-roosting directly on the tree tops of the plantations around the driving range as well. The importance and adverse impacts on these habitats should not be underestimated.

