

**For discussion on  
28 January 2019**

**Legislative Council Panel on Environmental Affairs**

**Enhanced Management of Wild Pigs**

**PURPOSE**

Nuisance related to wild pigs has been proliferating in Hong Kong in recent years. This paper informs Members and seeks their views on the proposed enhancement measures by the Government to address the nuisance.

**WILD PIGS IN HONG KONG**

2. Wild pigs are not domestic pigs that have been abandoned or gone strayed. Among the native wild animals in Hong Kong, wild pigs are the largest terrestrial mammals. Adults could reach 150kg in weight, 1m in shoulder height and 1.6m in body length. Large males are very powerful and usually have a pair of prominent canine teeth protruding from their mouths. Wild pigs scatter throughout the territory especially the country parks and are adaptive to different habitats, including woodlands, scrublands, grasslands and agricultural areas. Individual wild pigs can move around in an extensive area on a regular basis. They are also very good swimmers and can swim across islands or along coastlines.

3. Wild pigs are opportunistic omnivores that feed primarily in the countryside by rooting and grazing. Around 80-90% of their diet is composed of plant matters, including fruits, seeds, roots and tubers. They also eat invertebrates such as earthworms and small vertebrates as supplements. All these food sources are abundant in the countryside. Owing to their opportunistic feeding behavior, wild pigs also readily accept food from human sources. Wild pigs accustomed to foraging in urban areas are mostly active at night, or occasionally in early morning; however,

there has been some behavioural changes in recent years.

4. Wild pigs have the highest reproductive rate among hoofed terrestrial mammals. They reach sexual maturity and can produce offspring at about one year old. Breeding occurs all year round and the population size may increase fivefold in 12-15 months under favourable conditions, where a pair of adults can over such a period give birth to and raise an average of eight offspring to independence.

5. Wild pigs were once common and regularly hunted in the rural areas in Hong Kong in the past. In recent years, owing to habitat improvement and the control of hunting by the Government, as well as a combination of the characteristics of wild pigs including high reproductive rate, opportunistic diets and the absence of threat from natural predators to the adults, the wild pig populations have gradually grown in the countryside areas throughout Hong Kong.

6. Based on data collected from the territory-wide surveys by the Agriculture, Fisheries and Conservation Department (AFCD) in 2002-2006, wild pigs were more abundant in the New Territories and less common on Hong Kong Island and Lantau Island. However, more recent surveys conducted during 2012-2016 showed that they had become more common on Hong Kong Island and still remained uncommon on Lantau Island (**Annex A**). Their populations had also expanded to other outlying islands, including Po Toi Island, Double Island and Lamma Island.

## **EMERGING NUISANCE AND THREATS OF WILD PIGS**

7. In recent years, wild pigs have become an emerging nuisance in Hong Kong, especially the urban areas. The number of complaints/reports on wild pigs received by AFCD soared from 225 in 2011 to a record high of 738 in 2017, reflecting a dramatic increase by more than threefold in seven years (**Annex B**). We have also been receiving increasing number of complaints from District Councils (DCs), notably the Southern DC, Central and Western DC, Wan Chai DC, Sai Kung DC and Tai Po DC. The wild pigs which caused nuisance were mostly accustomed to feeding or scavenging refuse in urban or public areas. The complaints were usually related to environmental hygiene problems owing to leftover food

or faeces. In general, most reports were received from the residential or built-up areas adjoining country parks on Hong Kong Island and the New Territories. The reports reflected the growing intensity of human-wildlife conflict, which was related to factors including population density of wild pigs, changes in their feeding behaviour, and more accommodating attitude of people towards wild pigs in rural areas.

8. Like some other wild animals which are prone to create nuisance (e.g. monkeys), once wild pigs are strongly accustomed to accepting food from feeding or scavenging near residential areas, they will return to the same areas to feed regularly. Some wild pigs may even actively approach human for food. This behavioural routine puts passers-by on an increasing risk of direct conflict with wild pigs.

9. Though naturally secretive and wary of contact with human, wild pigs are powerful animals and can cause serious injury to human if provoked, or when they feel threatened. Among the 14 cases of public injury caused by wild pigs reported to AFCD in the past decade (2009 – 2018), 12 occurred between 2016 and 2018. The increase in the number of reported injury cases in 2016-2018 is commensurate with the mounting reports of wild pigs in areas around human establishments (**Annex B**).

10. Despite the limited number of reported injury cases, wild pig attacks could lead to serious injuries or even fatalities. Wild pigs pose a high risk to public safety if they attack members of the public (particularly to children).

## **PROPOSED ENHANCED MANAGEMENT MEASURES**

11. In light of the proliferating wild pig nuisance in the past few years, AFCD has reviewed the current situation, international practices and the pros and cons of various control measures. AFCD plans to adopt a multipronged approach to abate the nuisance that might be caused by wild pigs to the public, as elaborated below.

## **Management of Wild Pigs**

12. Hunting is by far the most widely adopted and effective wild pig management measure in the world as at today. Before 2017, if wild pigs caused injury to human beings and/or damaged properties and if other management measures were found to be ineffective, they would be removed by hunting operations by the two civilian hunting teams under the authorisation of both the Police and AFCD. Hunting operations have been suspended since 2017 to address the growing concern of some local individuals/organisations about animal welfare and the safety constraints for conducting hunting operations in public or residential areas. Compared to hunting for which less than one pig per operation is hunted on average, other methods, as described in the ensuing paragraphs, have proven to be safer and more effective in tackling wild pig nuisance and in removing wild pigs that would pose immediate or potential danger to the public especially in urban or residential areas. Having considered all relevant factors in particular the public safety concerns, AFCD has no plan to resume hunting by the civilian hunting teams.

### *Pilot Capture and Contraception/Relocation Programme*

13. Since 2017, AFCD has started exploring the Capture and Contraception/Relocation Programme (CCRP) as a pilot scheme to address persistent wild pig nuisance in urban areas. CCRP involves capturing the nuisance-causing wild pigs for contraception and/or relocation to remote countryside areas to alleviate the nuisance with immediate effect. AFCD is evaluating the effectiveness of the pilot CCRP using contraceptive vaccine developed for mammals, GonaCon™, in controlling the fertility of mature female wild pigs in Hong Kong. GonaCon™ is a multi-year immuno-contraceptive vaccine that would prevent mammals from entering a reproductive state as proven by captive trial. It has been found to be effective for at least four to six years on captive wild pigs in an overseas study and is safe to pregnant animals. Since GonaCon™ is yet to be registered for use on wild pigs, AFCD is co-operating with the Department of Agriculture of the United States and the Department for Environment, Food and Rural Affairs of the United Kingdom to conduct field trials of GonaCon™ on wild pigs in Hong Kong. In addition, AFCD has been studying the feasibility of conducting surgical sterilisation on wild pigs.

14. The initial results of the pilot CCRP up to December 2018 are in

**Annex C.** A total of 37 operations were conducted with 130 wild pigs captured, among which 54 suitable individuals received contraceptive treatment (including both GonaCon™ and surgical treatments). To effectively alleviate the nuisance, 92 wild pigs (some of which had also received contraceptive treatment) were relocated to the remote countryside areas.

15. AFCD will continue the pilot CCRP and work closely with local and overseas experts to refine the capture and contraceptive procedures and evaluate the effectiveness of contraceptive treatments. Since the implementation of pilot CCRP, an average of three wild pigs have been captured per operation, indicating a higher capture efficiency than that of hunting where an average of less than one wild pig was hunted per operation. AFCD is recapturing wild pigs administered with GonaCon™ for pregnancy test and the preliminary result of the effectiveness of GonaCon™ will be available in late 2019. AFCD will also assess the effectiveness of relocation by monitoring the tendency of relocated individuals to return to built-up areas.

#### *Handling of High-risk Individuals*

16. While AFCD will continue the pilot CCRP and explore other practical means to address nuisance caused by wild pigs, some wild pigs might still pose imminent risks to public safety particularly those which (1) have attacked people; or (2) are accustomed to searching for food around built-up areas, or to approaching and snapping food from people, and also get irritated easily. Given the safety concerns and potentially serious consequences of wild pig attacks, we will euthanise wild pigs which meet one or both of the above criteria, in order to safeguard public safety. Such wild pigs will be captured by darting and euthanised by established methods by a veterinarian.

#### *Monitoring of Populations and Movement*

17. Wild pigs are usually solitary or in small group, secretive, widespread, and have a wide home range. These features make the monitoring of wild pigs very difficult. AFCD will enhance existing efforts on monitoring the population, distribution and movement of the species using camera traps and global positioning system tracking technology. AFCD will also undertake a survey to estimate the total population of wild pigs in Hong Kong with a view to gathering more

information to guide the future management strategy.

### **Reduce Food Attraction**

18. In recent years, more and more wild pigs have lost their natural fear to human owing to repeated contact with people with food as reward. The possibility of human-wild pig conflict and/or wild pig attack increases when more wild pigs associate people as stable sources of food.

19. AFCD has been working closely with relevant departments, especially the Food and Environmental Hygiene Department (FEHD), to eliminate food attraction at black spots by removing food residue, erecting banners to remind the public not to feed wild pigs, and improving the public refuse collection facilities to prevent wild pigs' access to food residue in the refuse. FEHD has also stepped up enforcement at the feeding black spots. If feeding activities lead to hygiene problems, offenders will be liable to a fixed penalty of \$1,500 under the Fixed Penalty (Public Cleanliness and Obstruction) Ordinance (Cap. 570).

20. With a view to deterring scavenging of refuse by wild pigs, AFCD has commissioned a consultancy study to develop refuse collection facilities conducive to reducing raids by wild pigs and is working with relevant departments on the improvement of refuse collection practices in nuisance hotspots.

### **Public Education**

21. Since the nuisance and threats are strongly related to feeding of wild pigs by the public, AFCD has launched a programme "Wildlife Smart" to encourage community participation in reducing undesirable human-wildlife interactions. In addition to stepping up publicity efforts to enhance awareness, AFCD will continue to intensify its efforts to educate the public on the impacts of feeding on wildlife and discourage such actions, through a series of publicity and education programmes, including promotion in the traditional media and social media (e.g. YouTube Channel and Facebook page), as well as organisation of fun day, roving exhibitions, lectures and visits, etc., and put up banners and posters at sites frequented by wild pigs.

22. In addition, AFCD will also formulate technical guidelines on measures to reduce the raid of wild pigs in public facilities and private properties for reference by Government departments and the property management agents respectively, and to assist farmers to deal with wild pig nuisance in farms. AFCD will also conduct more publicity on dos and don'ts when public members encounter wild pigs. When encountering wild pigs, members of the public should keep calm and stay away from them as far as possible. One must not get near them or drive them away with any objects lest there should be danger. If necessary, one may hide behind some robust and large barriers, and wait until the wild pigs leave before proceeding with one's activities. If wild pigs are found searching for food on farmland, farmers could erect sturdy fences to protect crops or use infra-red auto-trigger lightings to deter wild pigs. Farmers should not drive wild pigs away from the farmland with any object, and should immediately keep dogs under restraint so that the wild pigs will not feel threatened and react in self-defence. When a wild pig is posing immediate threats to life and property, one should report to the police for emergency assistance.

## **CONSULTATION**

23. To gauge views of the general public on the proposed multipronged management measures against wild pig nuisance, AFCD has consulted the Nature Conservation Sub-Committee of the Advisory Council on the Environment, relevant DCs (including Central and Western, Eastern, Southern, Wan Chai, Wong Tai Sin, Sha Tin and Tai Po) and non-governmental organisations (including Animals Asia, the Society for the Prevention of Cruelty to Animals, Kadoorie Farm and Botanic Garden and Ocean Park Conservation Foundation). All of them supported in general the proposed management measures to enhance the existing handling of wild pigs. Some organisations supported that more extensive public education programmes should be conducted, while others proposed to introduce a territory-wide feeding ban to control feeding of wild pigs. Some organisations suggested that the efficiency of the nuisance control operations should be further enhanced, including increasing the number of wild pigs receiving contraceptive treatment and frequency of CCRP operations. Some organisations considered that hunting operations should be resumed to control the proliferation of wild pigs in the territory

whereas a few, on the other hand, explicitly opposed to hunting or euthanasia of wild pigs.

## **WAY FORWARD**

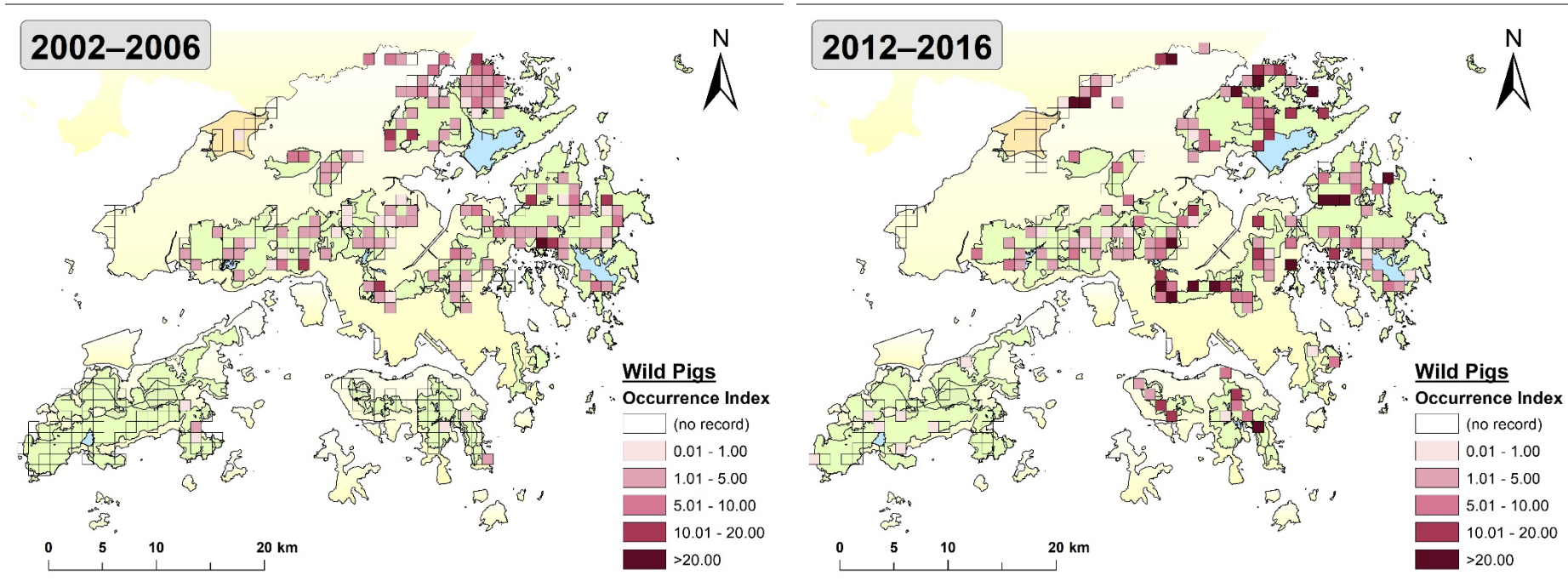
24. The Government will implement the proposed multipronged management and public education measures in paragraphs 12 to 22 above, and conduct regular reviews on their effectiveness, for enhancing the management strategies and exploring new initiatives to tackle nuisance caused by wild pigs. To this end, an advisory group comprising local and overseas experts in the fields of ecology, wildlife management, veterinary medicine, etc., will be established to advise on the implementation and review of the management and public education measures.

25. Members are invited to note and comment on the proposed management and public education measures.

**Environment Bureau**  
**Agriculture, Fisheries and Conservation Department**  
**January 2019**

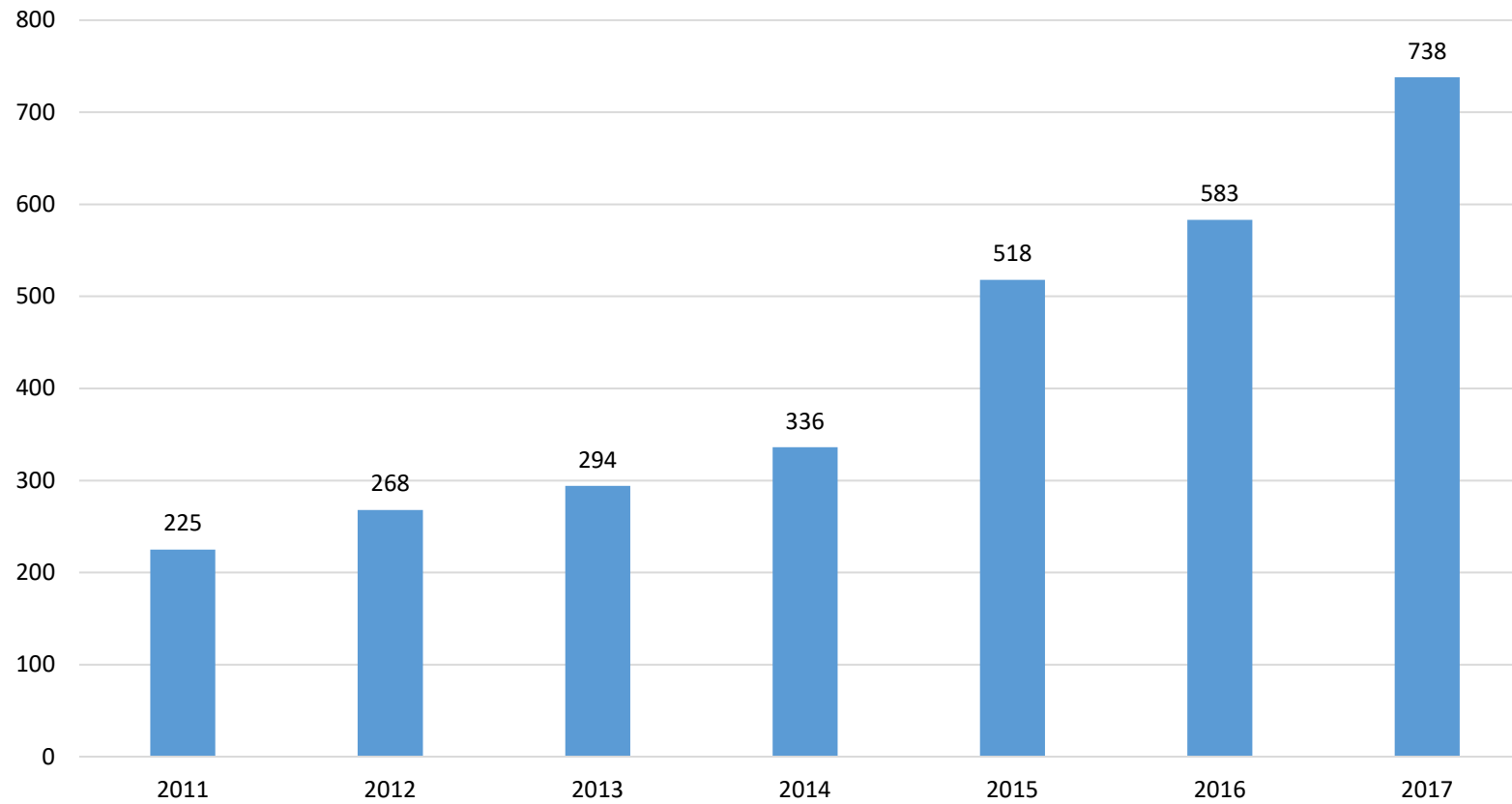


**Occurrence Index and Distribution of Wild Pigs at Surveyed Sites in Hong Kong**



**Number of Wild Pig Complaints/Reports Received by AFCD**

**Number of Cases**



**Pilot Capture and Contraception/Relocation Programme for Wild Pigs  
(1 October 2017 – 31 December 2018)**

<b>Date of capture</b>	<b>Location</b>	<b>District</b>	<b>Number of wild pigs captured</b>	<b>Number of wild pigs received GonaCon™</b>	<b>Number of wild pigs received surgery</b>	<b>Number of wild pigs relocated*</b>
Oct-17	Carmel Road	Southern	4	2	0	1
	Stanley Plaza	Southern	4	1	0	2
Dec-17	Sassoon Road	Southern	5	0	0	5
	Carmel Road and Stanley Plaza	Southern	4	0	0	4
Jan-18	Shek Pai Wan	Southern	6	0	0	4
	Shek Pai Wan	Southern	3	0	0	3
	Chung Hom Kok	Southern	5	0	0	5
Feb-18	Stanley Plaza	Southern	3	2	0	3
	Chung Hom Kok	Southern	4	2	0	0
	Carmel Road	Southern	6	3	0	6
Mar-18	Coombe Road	Wan Chai	0	0	0	0
	Carmel Road	Southern	2	1	0	2
	Coombe Road	Wan Chai	5	3	0	5

<b>Date of capture</b>	<b>Location</b>	<b>District</b>	<b>Number of wild pigs captured</b>	<b>Number of wild pigs received GonaCon™</b>	<b>Number of wild pigs received surgery</b>	<b>Number of wild pigs relocated*</b>
Apr-18	Shek Pai Wan	Southern	4	2	0	4
	South Bay Road	Southern	3	1	0	3
	Nam Fung Road	Southern	2	1	0	2
	Chung Hom Kok	Southern	5	1	0	4
May-18	Dragon Leaping Trail	Eastern	2	0	0	0
	Sham Wan Road	Southern	5	0	3	0
Jun-18	Ocean Park	Southern	1	0	1	0
	Braemar Hill	Eastern	3	1	0	3
Jul-18	The University of Hong Kong	Central and Western	2	0	0	2
	King San Path	Tuen Mun	3	2	0	3
	Ocean Park	Southern	2	0	0	2
	The University of Hong Kong	Central and Western	1	1	0	1
Aug-18	Ocean Park	Southern	3	1	0	3
	Piper's Hill	Sha Tin	6	2	2	0
	Peel Rise	Central and Western	0	0	0	0

Date of capture	Location	District	Number of wild pigs captured	Number of wild pigs received GonaCon™	Number of wild pigs received surgery	Number of wild pigs relocated*
Sep-18	Coombe Road	Wan Chai	3	3	0	0
	Peel Rise	Central and Western	5	4	0	5
Oct-18	Piper's Hill	Sha Tin	4	3	0	0
	Che Ha	Tai Po	3	2	0	3
Nov-18	Chung Hom Kok	Southern	5	2	0	4
	Carmel Road	Southern	2	2	0	2
	Aberdeen Country Park	Southern	8	3	0	5
Dec-18	Pak Fuk Road	Eastern	4	1	0	4
	South Bay Road	Southern	3	2	0	2
<b>Total</b>			<b>130</b>	<b>48</b>	<b>6</b>	<b>92</b>

\* Some of them had received contraceptive treatment before relocation.