Department of **Agriculture and Fisheries**
Biosecurity Queensland

Indian house crow

Corvus splendens

Steve Csurhes
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Queensland Government

Front cover: Indian house crow
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Summary

The Indian house crow is native to an extensive area of India, nearby parts of Asia and the Middle East. It has a well-documented history as an invasive pest overseas, with extensive naturalised populations in eastern Africa, Singapore and elsewhere. Throughout much of its native and introduced range, it is considered a significant pest. Impacts include damage to fruit and grain crops, displacement of native bird species and general urban nuisance.

Indian house crow populations are strongly commensal and depend heavily on open rubbish tips, food scraps and other urban food sources. They readily accept food from people and, provided they are regularly fed, will stay on board travelling ships. As a result, international shipping vessels arriving in Australia from Asia sometimes carry Indian house crows.

This risk assessment presents evidence that Indian house crows are highly likely to become pests in Queensland. They are regularly detected on international shipping vessels, and were recently detected in northern Queensland. If Indian house crows become established in Queensland, they have the potential to damage fruit and grain crops, displace certain species of native birds and almost certainly generate noise and nuisance complaints in towns and cities. In Singapore, there were an estimated 120 Indian house crows per square kilometre prior to official control measures being implemented.

Climate modelling suggests Indian house crows are well-suited to most of northern and eastern Queensland. Since Indian house crows are not established in Queensland, there is an opportunity to prevent this species from becoming a major pest.

Introduction

Identity and taxonomy

Species:	*Corvus splendens*
Synonyms:	Not known
Common names:	Indian house crow, house crow, Indian crow, grey-necked crow, Ceylon crow, Colombo crow
Family:	Corvidae

Taxonomy

The nominate race of *Corvus splendens* (*C. splendens*) exists in India, Nepal and Bangladesh and has a grey neck collar. Five subspecies have been reported: *C. splendens splendens*, *C. splendens zugmayeri* (southern Jammu and Kashmir, Punjab and western Rajasthan), *C. splendens protegatus* (coastal areas, Kerala, the Maldives, Sri Lanka and nearby islets), *C. splendens maledivicus* (the Maldives) and *C. splendens insolens*. *C. splendens zugmayeri* is also found in the dry parts of South Asia and Iran. It has a very pale neck collar. *C. splendens protegatus* is darker grey. The darkest form is the Myanmar form, *C. splendens insolens*. It lacks a grey collar (Rasmussen and Anderton 2005).

Description

Indian house crows are 42–44 cm long (body and tail) and weigh 250–350 g. Their plumage is black and glossy, except for the nape, sides of the head, upper back and breast, which are grey and not glossy (see Figure 1). Their bills, legs and feet are black. The males and females are similar, but the males are slightly larger. Immature birds have little or no sheen to their plumage (Department of Agriculture and Food 2008). Their call is a short, repeated 'caw caw caw' or a nasal 'kaan kaan', but they also have softer calls that they use when resting and during courtship. Indian house crows live for about 6 years in the wild (Department of Agriculture and Food 2008).

Figure 1. The Indian house crow (Photo: M. Karim, Wikimedia Commons, used with permission under a GNU Free Documentation License. ‹http://commons.wikimedia.org/wiki/File:House_crow_Bangalore_India.jpg›).

The Indian house crow is easily confused with four species of Australian native crows and ravens. However, the latter are uniformly black, have white eyes (when adult), are larger and lack the distinctive grey neck of the house crow.

Biology and ecology

The diet of the Indian house crow can be described as broad and highly opportunistic. It includes seeds, fruit, grain, nectar, berries, birds' eggs, nestlings, mammals, reptiles, amphibians, fish, insects, carrion and food scraps. In many areas overseas, the birds feed almost entirely on refuse in and around towns and cities. They spend much time searching for food on the ground but occasionally feed in trees.

Indian house crows are vocal, gregarious birds that are generally unafraid of people. They can be aggressive towards birds of prey. They have been reported to take food from school children and kill chicks of domestic fowls. Breeding pairs repeatedly dive-bomb people who walk too close to their nests.
Indian house crows are suspected carriers of paramyxoviruses such as PMV 1, which can cause Newcastle disease (Roy et al. 1998). Outbreaks of Newcastle disease experienced in India were often preceded by mortality in Indian house crows (Blount 1949). They also carry *Cryptococcus neoformans*, a bacteria that can cause cryptococcosis in humans (Gokulshankar et al. 2004).

Figure 2. Indian house crows feeding their chicks (Photo: JM Garg, Wikimedia Commons; used with permission under a GNU Free Documentation License. ‹http://en.wikipedia.org/wiki/File:House_Crow(Chicks)_I_IMG_0175.jpg›).

Reproduction and dispersal

Indian house crows build nests from sticks, usually in large trees with spreading crowns but sometimes on power poles and other structures. There are usually 3–6 eggs per nest and sometimes several nests in a single tree. The eggs are pale blue-green speckled with brown. In Asia, their nests are sometimes parasitised by another bird, the Asian koel. Australian crows also suffer parasitism from native cuckoo species, especially channel-billed cuckoos. Peak breeding in India and Malaysia is from April to July. Incubation takes 16–17 days and fledging takes 21–28 days.

Indian house crows roost communally near houses and often over busy streets. Roosts comprising several thousand birds have been observed. In Singapore, they prefer roost sites in well-lit areas where there is considerable human activity and where they have access to food scraps.

Origin and distribution

The Indian house crow is native to an extensive area of India and central Asia—from southern coastal Iran through Pakistan, India, Tibet, Myanmar and Thailand to southern China as well as Sri Lanka, the Laccadives and the Maldives (Department of Agriculture and Food 2008).

Naturalised populations exist in coastal areas around the Indian Ocean (including South Africa, Mozambique, Tanzania, Kenya, Somalia, Ethiopia, Mauritius and the Seychelles), along the Red Sea and the Suez Canal (including Sudan, Egypt, Israel, Jordan, Saudi Arabia, Kuwait, the United Arab Emirates, Yemen and Oman), Malaysia, Singapore, Hong Kong and the Netherlands, as shown in Figure 3 (Department of Agriculture and Food 2008).

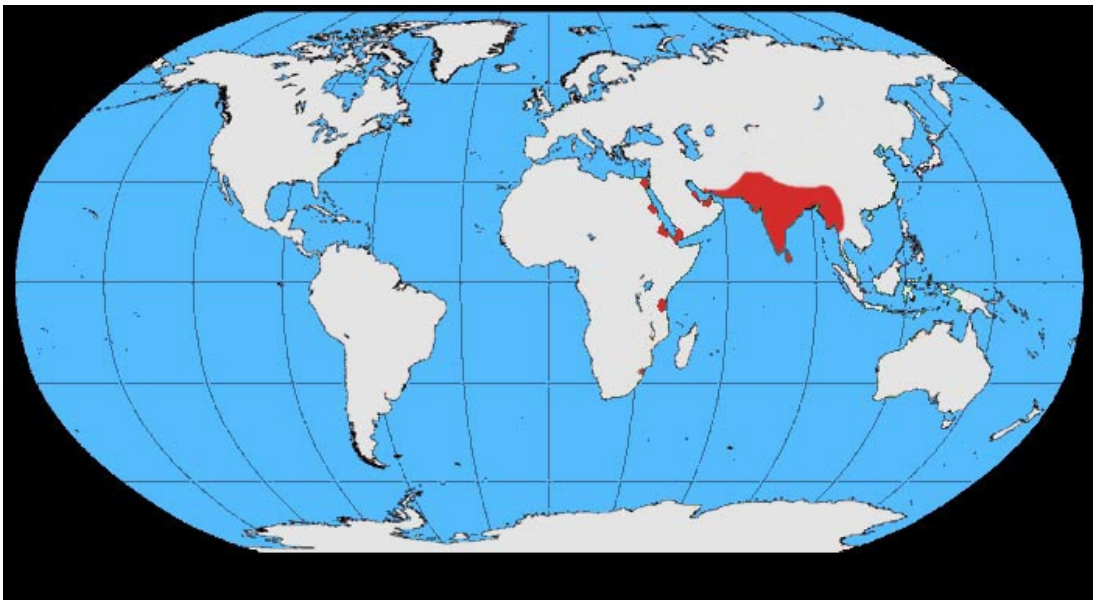

Figure 3. Global distribution of Indian house crows (Source: Wikimedia Commons; used with permission under a GNU Free Documentation License. ‹http://commons.wikimedia.org/wiki/File:Corvus_splendens_map.jpg›).

Indian house crows were introduced to east Africa (near Zanzibar) around 1897 and subsequently spread over a considerable area of coastal eastern Africa and to the north. In 1998, they naturalised in Europe, where they are breeding successfully in the Hook of Holland. They were introduced into Singapore in the 1940s.

Preferred habitat

Indian house crows are strongly commensal, living in close association with people and relying on food scraps and other waste. They prefer highly disturbed habitats within most types of urban and agricultural landscapes and thrive in small villages, towns and cities. In Singapore in 2001, they were the second most abundant bird (behind Indian mynas), with an estimated 120 birds per square kilometre. Efforts to suppress the population were being planned (Seng 2001; Brook et al. 2003; Ryall 2002).

In most (if not all) places, Indian house crow abundance is closely linked to human population size, due simply to the expanding amount of rubbish generated. Nayari et al. (2006) suggest that Indian house crow populations are totally dependent on people and that non-dependent populations may no longer exist.

In India, the crows are widespread and are only absent from forests and high altitude areas. The species undertakes altitudinal and seasonal local movements in colder northern areas of the country during winter. In the mountains they are replaced by the better adapted large-billed crows, and in the forests they are replaced by jungle crows.

Climatically, house crows are best suited to tropical areas. However, the availability of food scraps is probably a more important influence on abundance and distribution.

History as a pest

Overseas

Indian house crows are considered significant pests throughout their range, mainly due to their high abundance in villages, towns and cities, where they create considerable noise and are perceived as a risk to human health. They have damaged fruit trees (e.g. mango, guava, pawpaw, fig, apple, pear, grape and stone fruits) and have raided grain crops, including wheat, corn and sunflowers (Department of Agriculture and Food 2003; 2008). Significant damage to 81% of a corn crop and 55% of a wheat crop have been recorded (Reddy 1998; Dhindsa and Saini 1994). House crows can allegedly kill poultry, newborn calves and newborn goats (Lever 1987; Department of Agriculture and Food 2008). Indian house crows can also have significant environmental effects. Their ability to eat the eggs and chicks of other birds is well documented. In Kenya, they have displaced certain native birds species (Department of Agriculture and Food 2008). They also eat a range of small reptiles, amphibians, mammals and insects (Global Invasive Species Programme 2008). On some islands they are considered a serious threat to nesting seabirds. In some places, such as Singapore, Yemen and various islands, considerable efforts have been made to control Indian house crow populations, with mixed success. During 1984–86, about 240 000 Indian house crows were killed during an attempted control operation in Yemen. The population soon recovered (Al-Saghier 2008).

Current distribution and impact in Australia

Small numbers of Indian house crows have been seen on numerous occasions close to international shipping ports in Australia (mainly in Western Australia, which is closest to ports in southern Asia where the crows are common). In 1942, six Indian house crows lived on board a ship travelling from India to Fremantle (Western Australia) and one pair built a nest from rope scraps and cotton waste near the ship's engine (Lever 1987). However, a naturalised population has so far failed to establish anywhere in Australia (Department of Agriculture and Food 2008). The most recent sighting was of a single crow on 11 October 2010. It was observed at Flying Fish Point, which is about 30 km north of international shipping docks at Mourilyan Harbour, Queensland (Birding-Aus 2010). Subsequent searching failed to detect the bird. This was the first detection of Indian house crows in Queensland.

Pest potential in Queensland

Climatically, Indian house crows are well-suited to a wide range of tropical and subtropical climate types, from high-rainfall coastal areas to the arid zone. They are abundant across these climate types overseas. Climate modelling using Climatch computer software (Bureau of Rural Sciences 2009) suggests that most of Queensland is climatically suitable for Indian house crows (see Figure 4).

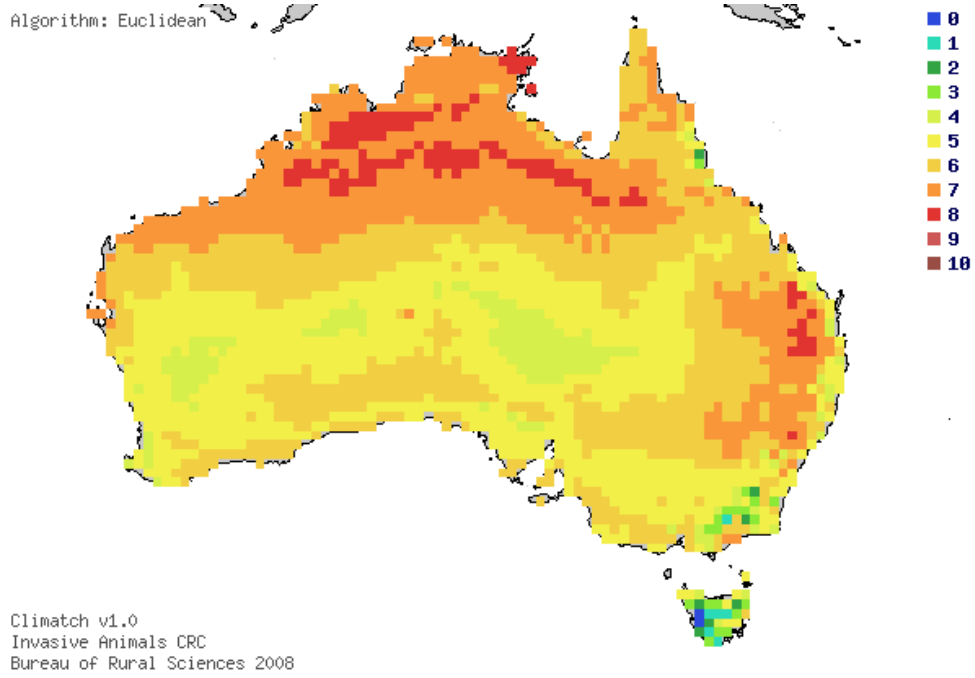

Figure 4. Areas of Australia where the climate is suited to the Indian house crow: red and orange indicate areas that are highly suitable; yellow is marginally suitable; green and blue are unsuitable (Prediction generated using Climatch computer software, Bureau of Rural Sciences 2009).

Only a few areas appear unsuitable. These include the most extreme arid zone in central Australia and cool (temperate) parts of Tasmania, Victorian uplands and upland areas of Queensland's wet tropics.

It seems reasonable to suggest that the impacts of Indian house crows in Queensland would be comparable to those experienced elsewhere. These impacts are like to be in the following areas:

Agriculture. There is risk of damage to certain fruit crops (including mango, guava, pawpaw, fig, apple, pear, grape and stone fruits), especially in and around towns and cities, but potentially in rural areas as well. There is also risk of damage to grain crops, including wheat, corn and sunflowers. Some losses of poultry, newborn calves and newborn goats are possible.

Environment. There is likely to be reduced abundance of certain bird species, especially urban species, because of predation of eggs and chicks and competition for food. Native crows are likely to face strong competition. Small reptiles, amphibians, mammals and insects could also suffer increased predation rates.

Human health and general amenity. There is significant community concern about the risk of bird-transmitted diseases and a constant stream of complaints to councils and governments about the noise and faecal contamination generated by large communal bird populations in urban centres. The costs of ongoing management could be substantial and comparable to, if not greater than, the costs associated with management of feral pigeons and white ibis.

Since Indian house crows are highly commensal, they are likely to find suitable habitat in and around our towns and cities, especially in areas where they can find food scraps. Brisbane appears highly suitable and Indian house crows could achieve a density in this city comparable to that in Singapore. Their preferred ecological niche is currently utilised by native crows, white (sacred) ibis and feral pigeons, three species that have adapted to utilise rubbish and food scraps.

Risk assessment by the Western Australian Department of Agriculture and Food concluded that Indian house crows posed an ‘extreme’ threat to Australia and were highly likely to naturalise (Department of Agriculture and Food 2003; 2008).

Control

Considering the number of ships that arrive in Queensland each year, the risk of introducing Indian house crows into Queensland seems high. While it is difficult to prevent entry, early detection and destruction of isolated specimens appears feasible. Successful detection will rely on effective public awareness. In particular, keen birdwatchers can play a vital role in detection, as they can differentiate house crows from native crows and ravens. Most people are likely to mistake Indian house crows for native crows.

References

Al-Saghier, O (2008). The house crow *Corvus splendens* in Yemen: the problem and impact. In A Woolnough, C Feare and G Meier (eds) Proceedings of the International Invasive Bird Conference, Fremantle, Western Australia: 23.

Birding-Aus (2010). ‹http://birding-aus.org/?p=3385›, viewed November 2010.

Blount, WP (1949). Diseases of poultry. Balliere, Tindall and Cox, London.

Brook, BW, Sodhi, NS, Soh, MCK and Lim, HC (2003). Abundance and projected control of invasive house crows in Singapore. *Journal of Wildlife Management* 67(4): 808–817.

Bureau of Rural Sciences (2009). Climatch. Department of Agriculture, Fisheries and Forestry, Canberra. ‹http://adl.brs.gov.au:8080/Climatch/›, viewed November 2010.

Department of Agriculture and Food (2003). Risk assessment for house crow (*Corvus splendens*). Department of Agriculture and Food, Perth.

Department of Agriculture and Food (2008). Animal pest alert: house crow. National animal pest alert information sheet 2. Department of Agriculture and Food, Perth.

Dhindsa, MS and Saini, HK (1994). Thiram protects sprouting wheat from house crows. *International Pest Control* 36(1): 10–12.

Global Invasive Species Programme (2008). Online database. ‹http://www.gisp.org/about/index.asp›, viewed November 2010.

Gokulshankar, S, Ranganathan, S, Ranjith, MS and Ranjithsingh, AJA (2004). Prevalence, serotypes and mating patterns of *Cryptococcus neoformans* in the pellets of different avifauna in Madras, India. *Mycoses* 47: 310–314.

Lever, C (1987). Naturalised birds of the world. Longman Scientific and Technical, Essex, England.

Nyari, A, Ryall, C and Peterson, AT (2006). Global invasive potential of the house crow *Corvus splendens* based on ecological niche modelling. *Journal of Avian Biology* 37: 306–311.

Rasmussen, PC and JC Anderton (2005). Birds of South Asia: the Ripley guide. Smithsonian Institution and Lynx Editions vol. 2: 598.

Reddy, VR (1998). Bird damage to maize crop on the student's research farm at Rajendranagar, Hyderabad, Andhra Pradesh. *Pavo* 36 (1–2): 77–78.

Roy, P, Venugopalan, AT and Manvell, R (1998). Isolation of Newcastle disease virus from an Indian house crow. *Tropical Animal Health and Production* 30 (3): 177–178.

Ryall, C (2002). Further records of range extension in the house crow *Corvus splendens*. *BOC Bulletin* 122(3): 231–240.

Seng, LK (2001). Finding Singapore's most common bird, *NatureWatch* online magazine. ‹http://habitatnews.nus.edu.sg/pub/naturewatch/text/a094b.htm›, viewed November 2010.