



# Wetland habitat change in the Shenzhen River cross-boundary catchment, China



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# Background

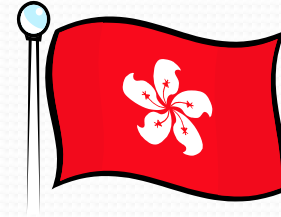
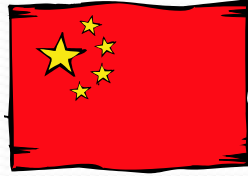
China – rapidly urbanizing  
Coastal development  
Wetland loss

Shenzhen & Hong Kong



# Study Area

Shenzhen



Hong Kong

- China's first Special Economic Zone
- Rapid economic growth



- Once a British Colony
- One Country, Two Systems

# Important wetlands





# Research Objectives

- To analyze the land use change in the Shenzhen River catchment with a focus on **wetlands**
- To investigate the potential **impacts of land use change** on the habitat of **avifauna**

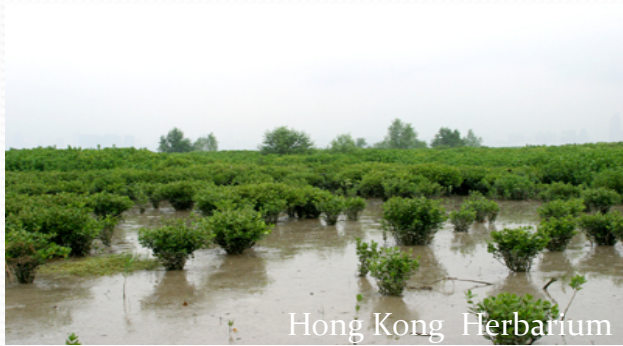


# Methodology

1. SPOT satellite images (1993 and 2008)
2. Ecological and environmental monitoring data
3. Literatures



# Methodology



Hong Kong Herbarium

## Mangrove



WWF-HK

## Gei Wai



Charlie Moores

## Mudflat



WWF-HK

## Brackish wetland

# Methodology



**Cultivated land**  
Long Valley, Hong Kong

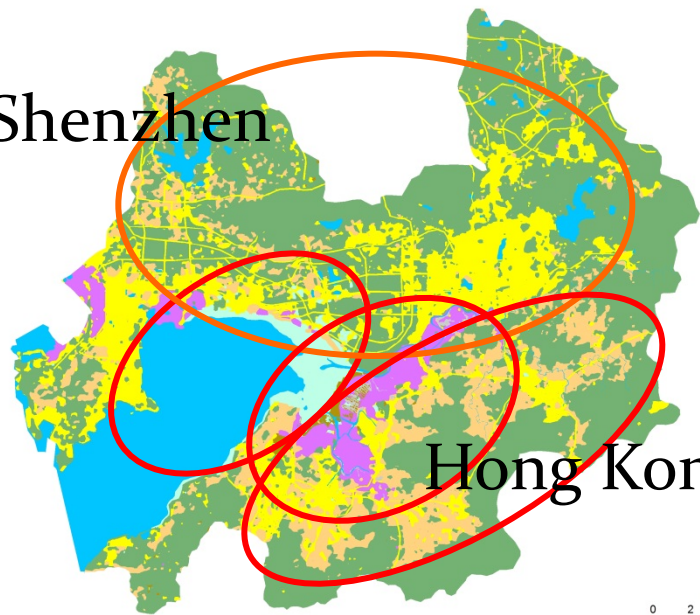


**Urbanized area**  
High rises in Shenzhen  
Futian District



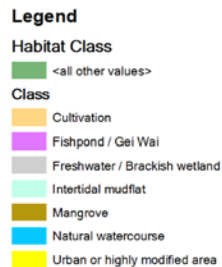
# Results- habitat change

Shenzhen

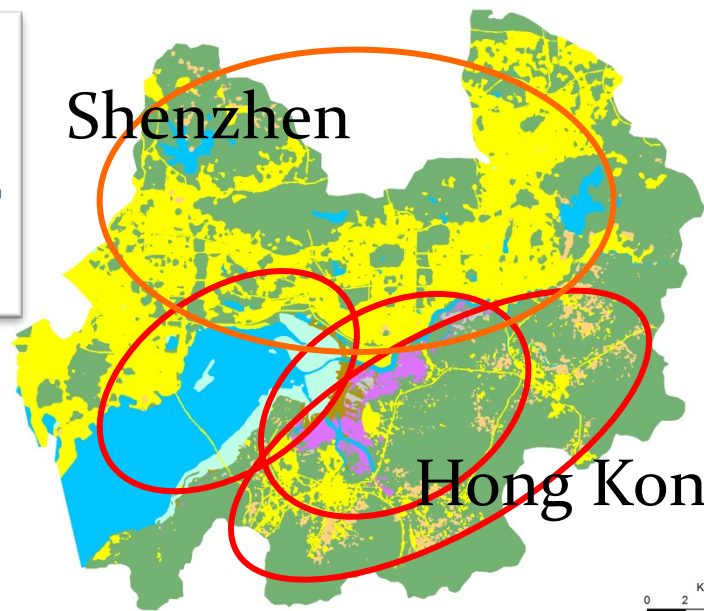


Hong Kong

1993




Shenzhen



Hong Kong

2008

Habitat Class	1993 (Area in km <sup>2</sup> )	2008 (Area in km <sup>2</sup> )	Area change (in km <sup>2</sup> )	% change
Cultivation	86.34	19.72	-66.63	-77.16
Fishpond/GeiWai	27.29	10.39	-16.90	-61.93
Freshwater/Brackish wetland	1.59	1.95	0.36	22.98
Intertidal mudflat	16.22	17.16	0.94	5.80
Mangrove	3.28	5.78	2.5	76.45
Urban or highly modified	134.72	226.30	91.59	67.99



**Habitat change in the Shenzhen River Catchment between 1993 and 2008**

# Results

Potential environmental impacts:

1. Habitat loss, disturbance and fragmentation
2. Water quality degradation
3. Heavy metals contamination



# Results- egretty counts

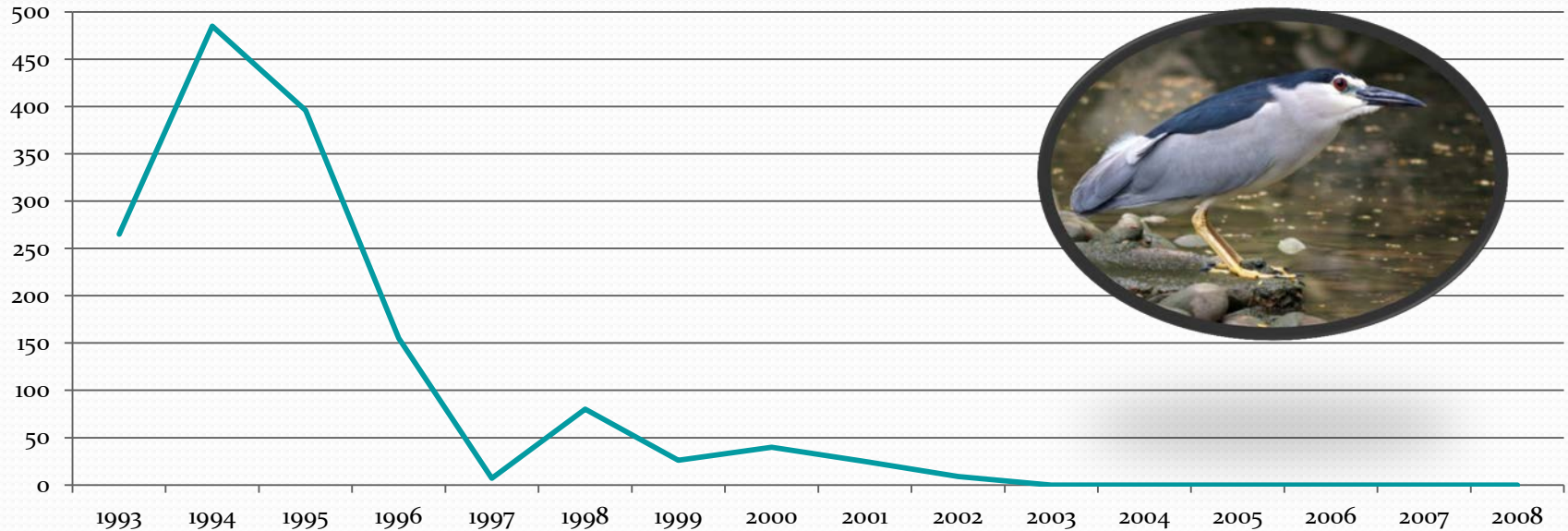
- Egretty counts





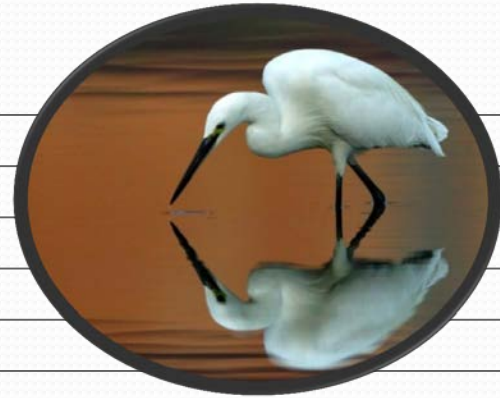
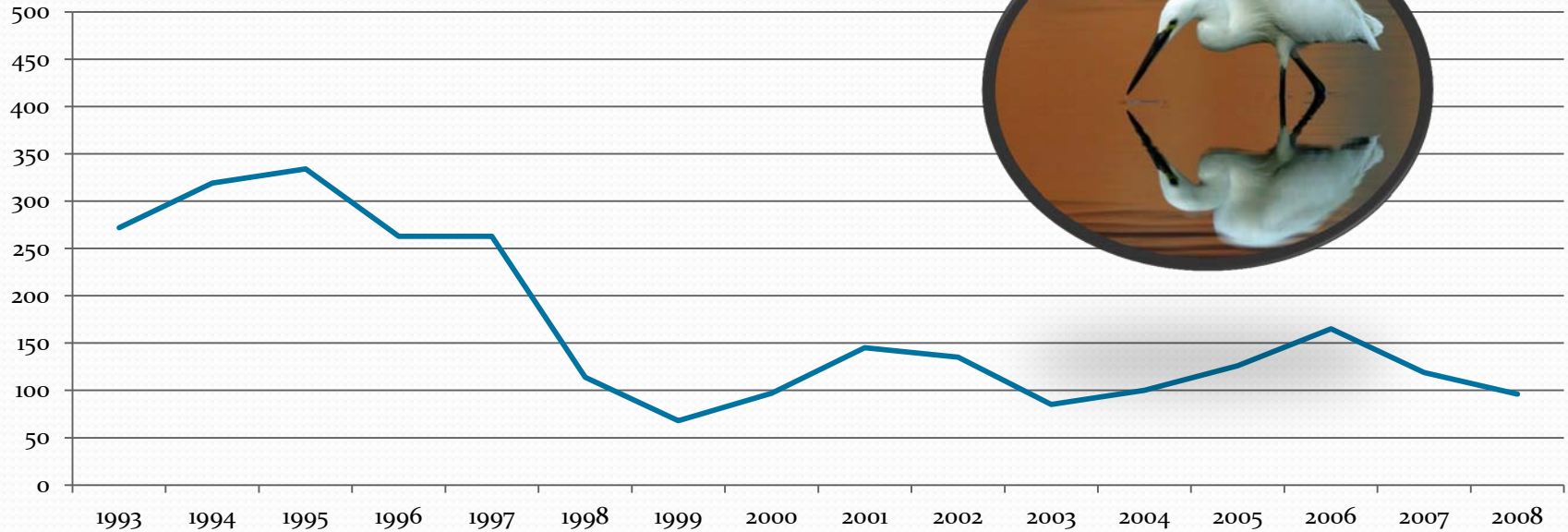
# *Nycticorax nycticorax*

## Black-crowned Night Heron



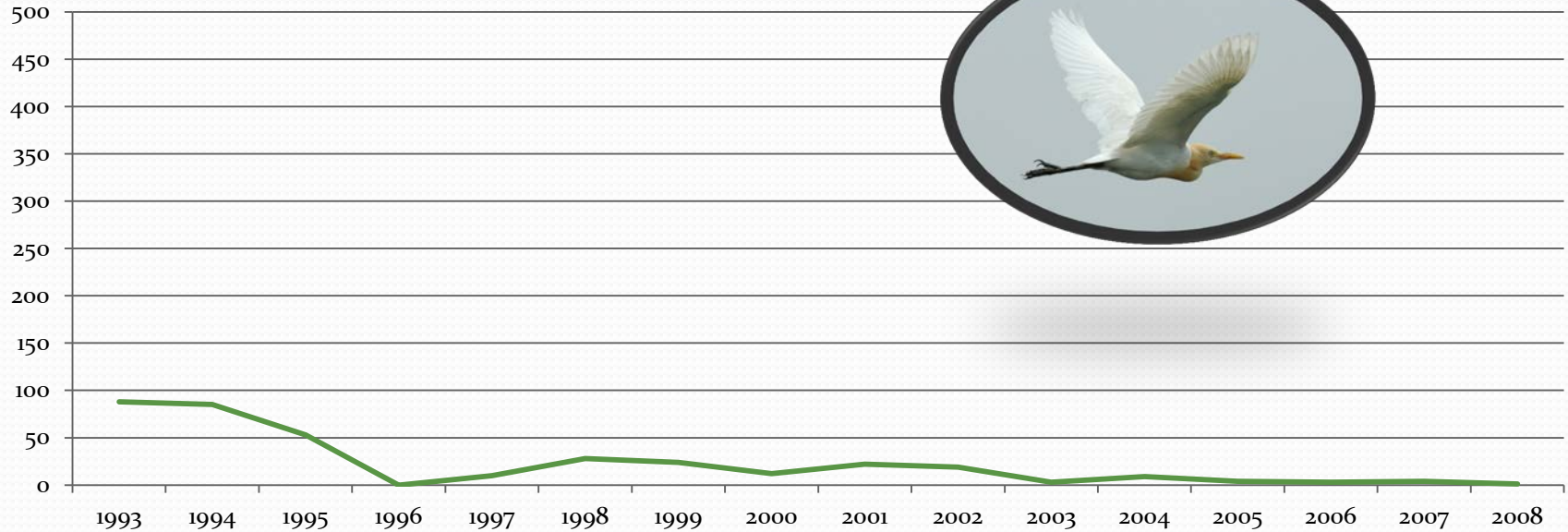
# *Egretta garzetta*

## Little Egret



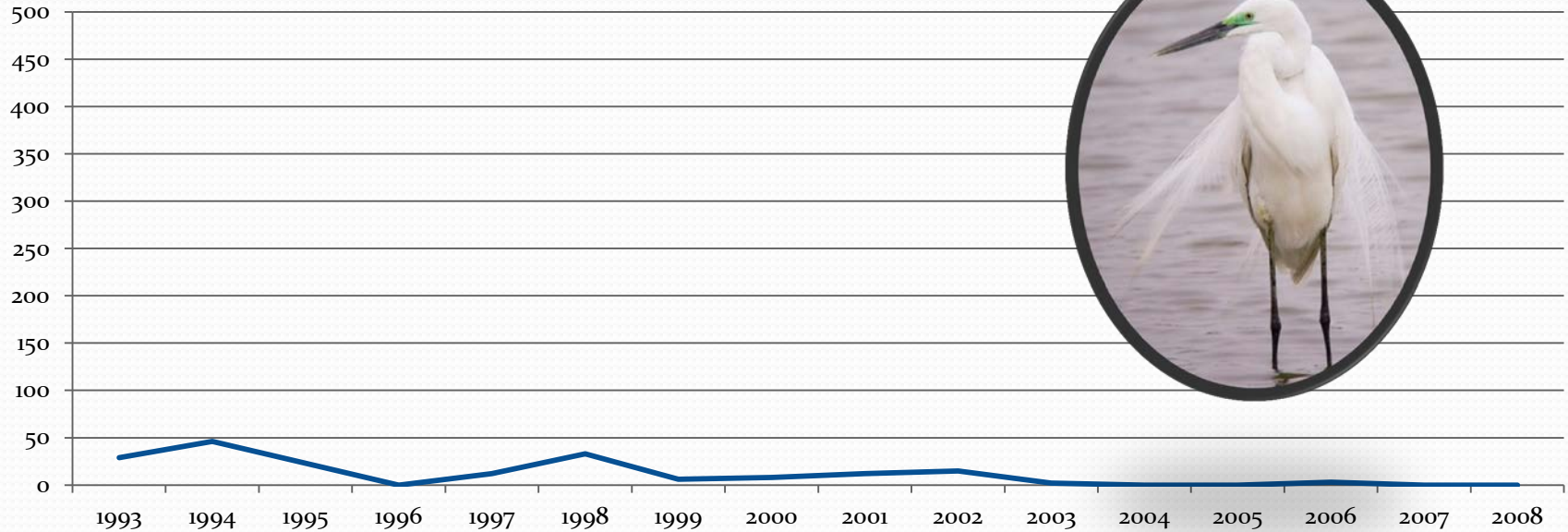
# *Bubulcus ibis*

**Cattle Egret**



# *Egretta alba*

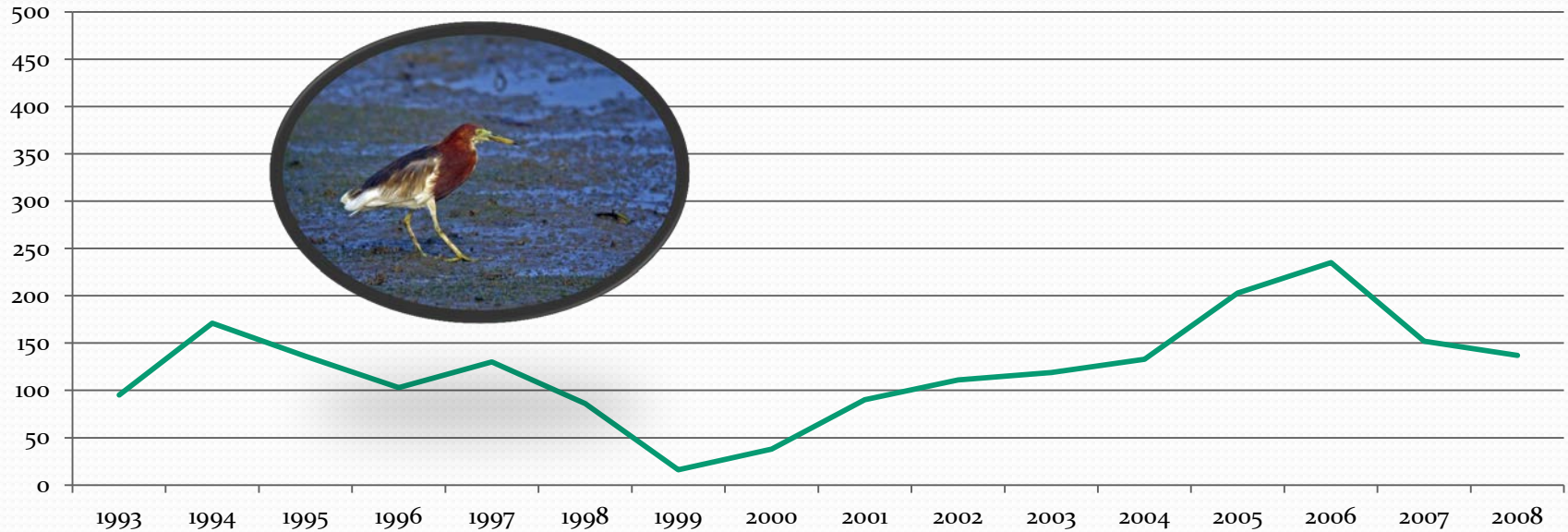
## Great Egret



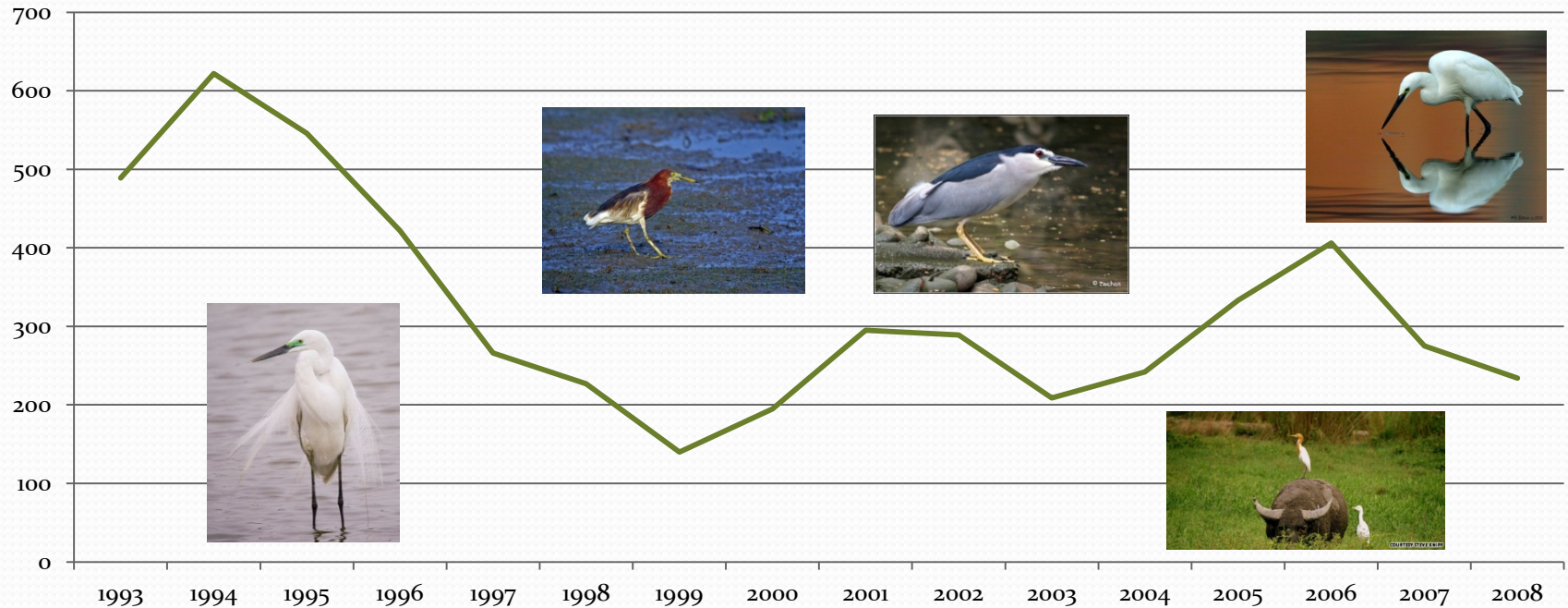


# *Ardeola bacchus*

## Chinese Pond Heron



# Total number of nesting pairs



# Conclusions

- Rapidly urbanizing catchment
- Degradation of wetland habitat
- Decreasing trend of the no. of nesting pair recorded



# Conclusions

- Irreversible
- No Net Loss
- Catchment management
- Cross-border cooperation





# Thank you!



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