

Revitalising Water Bodies

# Ecological Restoration of Yuen Long Bypass Floodway

**Mr. Gary K. L. CHOW**

**Mott MacDonald Hong Kong Limited**

**18 November 2015**



## Yuen Long Bypass Floodway (YLBF)

- 3.8km-long drainage channel from Yuen Long Main Nullah to Kam Tin River.
- Comprising an inflatable dam, pumping station and engineered wetland.



## Yuen Long Bypass Floodway (YLBF)

- Designated Project under the Environmental Impact Assessment Ordinance (EIAO).
- Ecological Habitat Management Plan (EHMP) covering the ecological mitigation measures was prepared for the EIA Study and formed an Environmental Permit Condition.



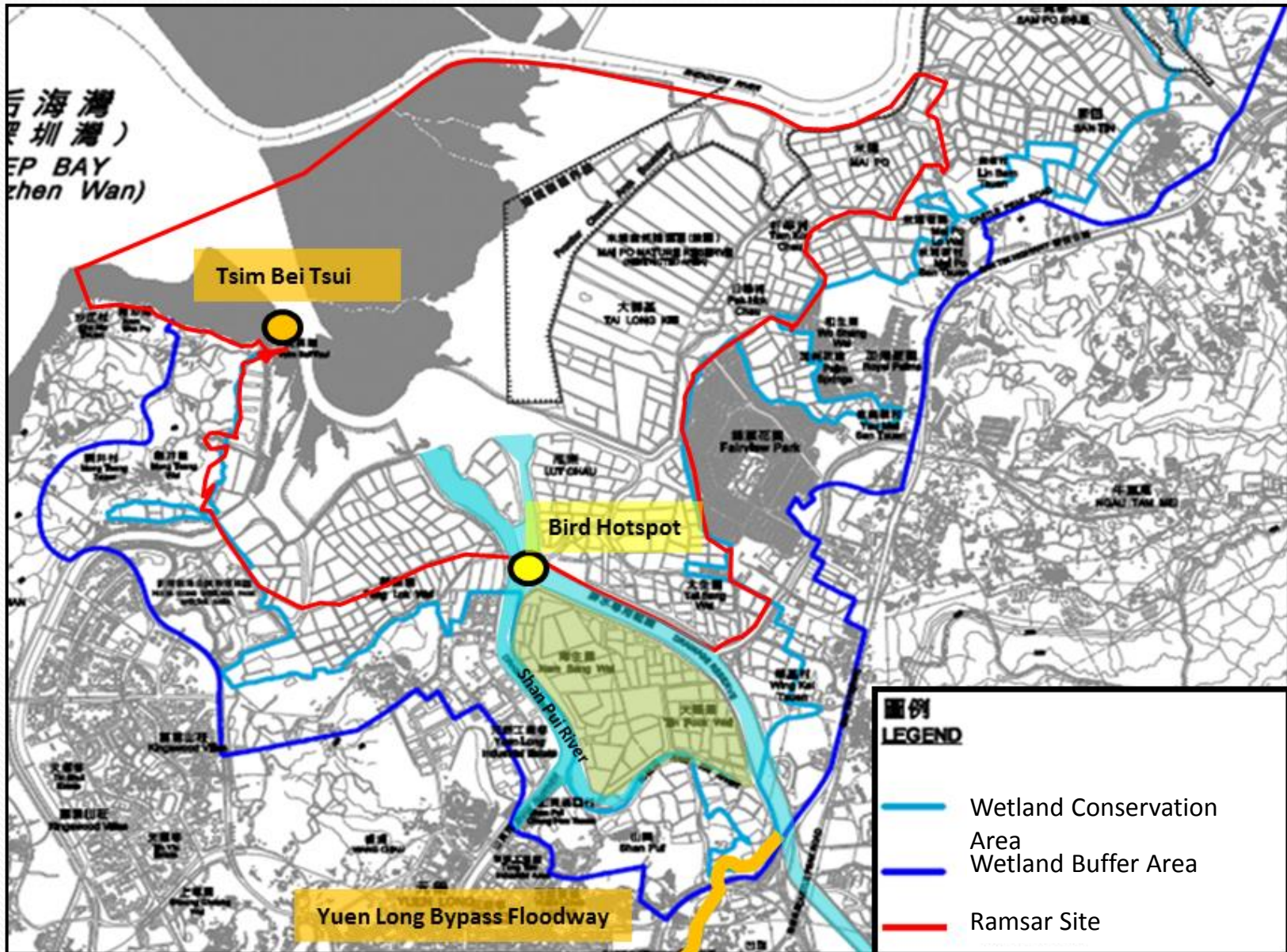


## Ecological Review

- 2006: Construction works completed
- 2013: DSD commissioned Mott MacDonald to review the ecological performance of the YLBF.



# YLBF as part of the Inner Deep Bay Wetland Ecosystem



# Geographic Location of YLBF



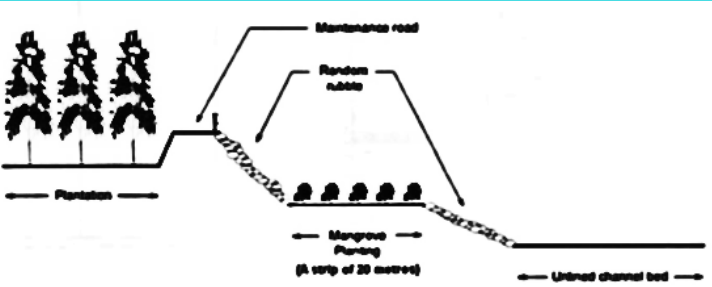
Mott MacDonald

Bird Hotspot

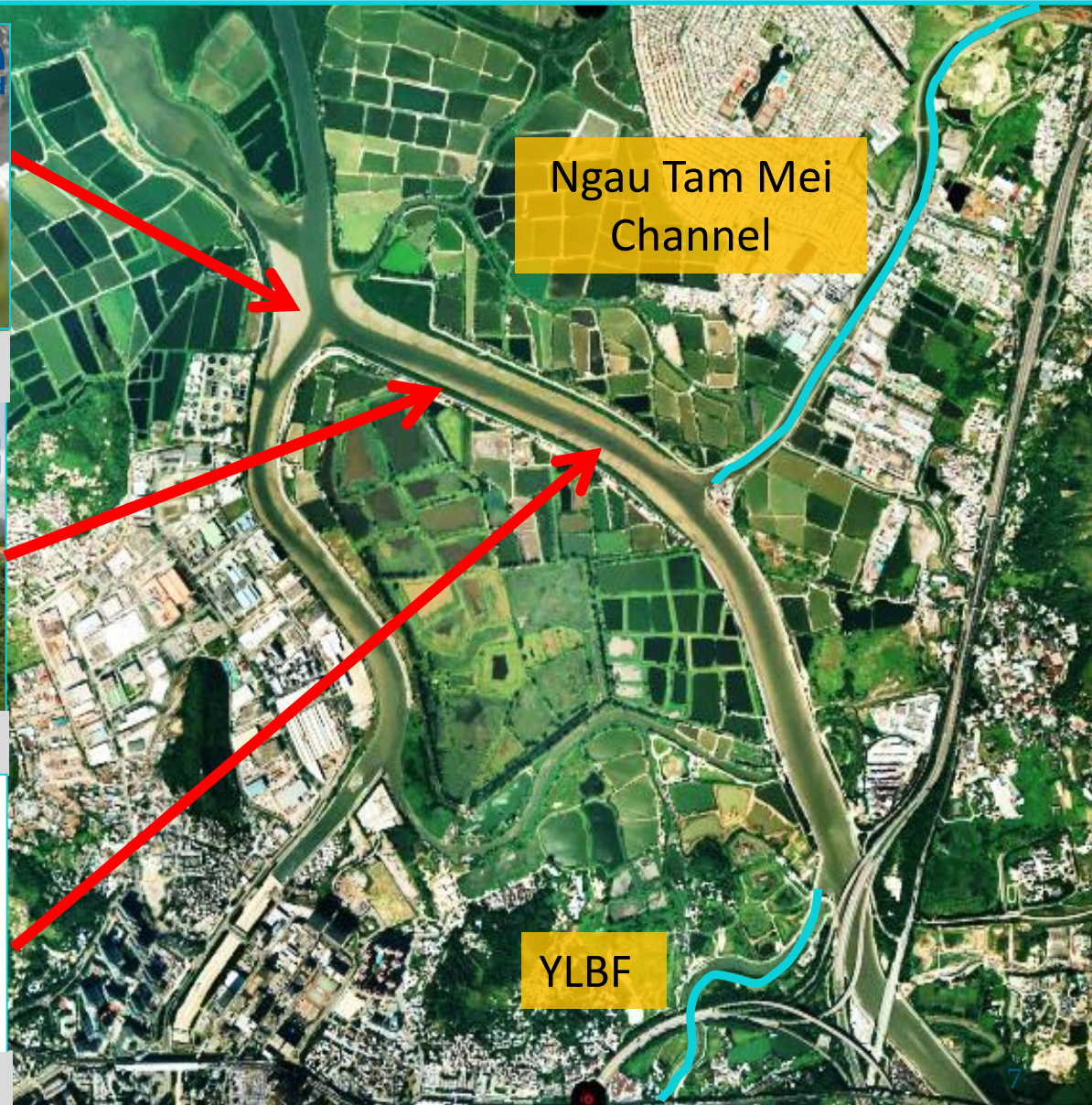


Mott MacDonald

Mangrove



Two-stage Design



Ngau Tam Mei Channel

YLBF

## Freshwater Ecosystem

- YLBF mainly a freshwater wetland system due to inflow of freshwater from upstream and proximity from estuarine area.
- Bird species in the YLBF is dominated by freshwater bird community.
- EIA recommended the compensation of freshwater wetland.



## Recommendation

Enhance the freshwater wetland and meet the target set in the EHMP.

### First Trial:

- Maintain the inflatable dam
- Increase water pumping frequency to attain a relatively low and desirable water level.



## Lower Stream Section

Water level drops



Before



After



## Lower Stream Section

- Wetland habitat and riparian vegetation established
- Wetland birds start to utilize the vegetated habitat



## Bird Species Recorded – Lower Stream Section



## Bird Species Recorded – Lower Stream Section



Black-faced Spoonbill  
黑臉琵鷺

# Middle Stream Section



Before



After



Intermediate stage

Wetland habitat established

## Bird Record at Middle Stream Section



## Bird Record at Middle Stream Section

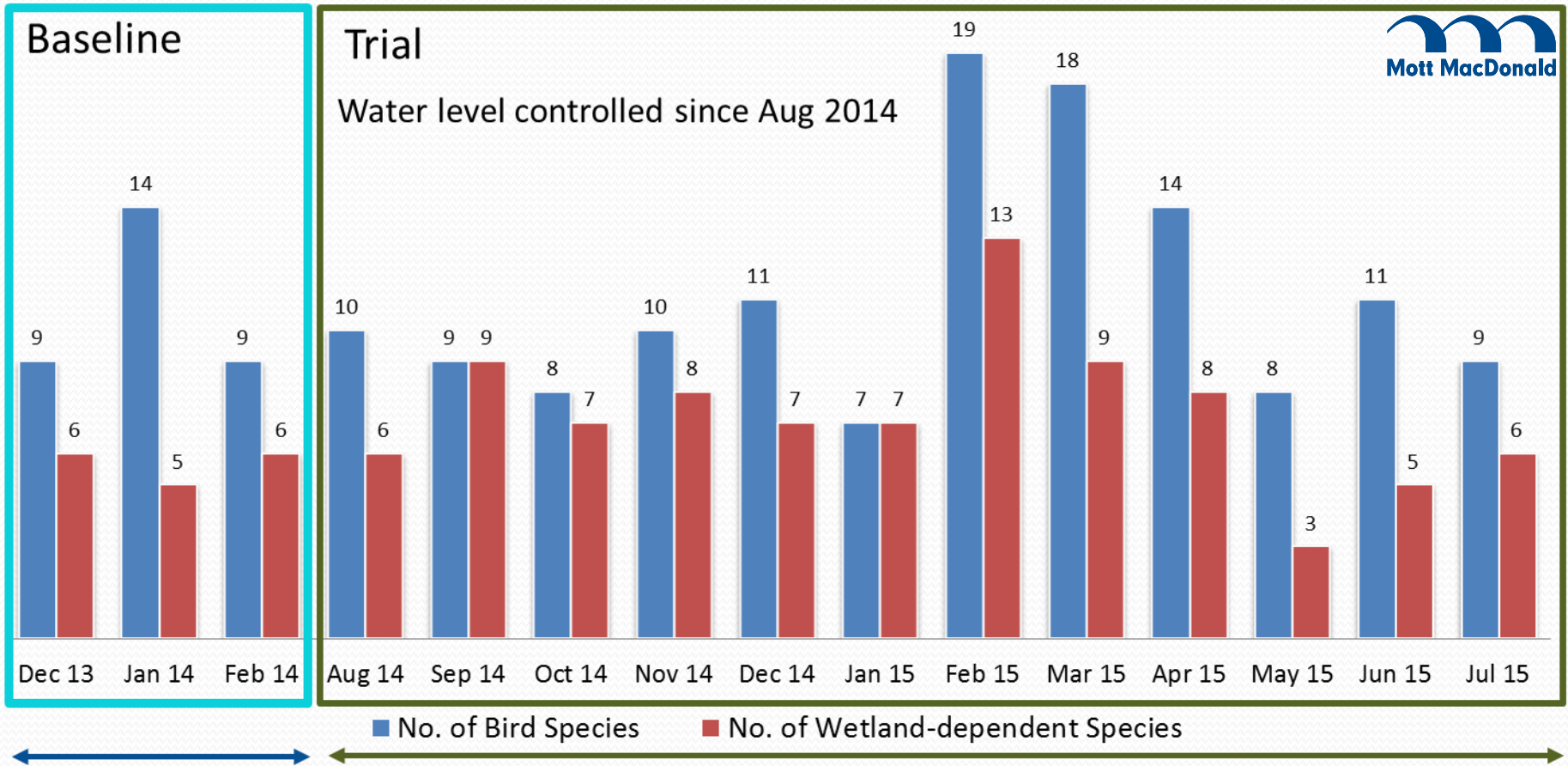


Greater-painted Snipe 彩鵲

# Comparison of Bird Species Before and After Trial

## Lower Stream

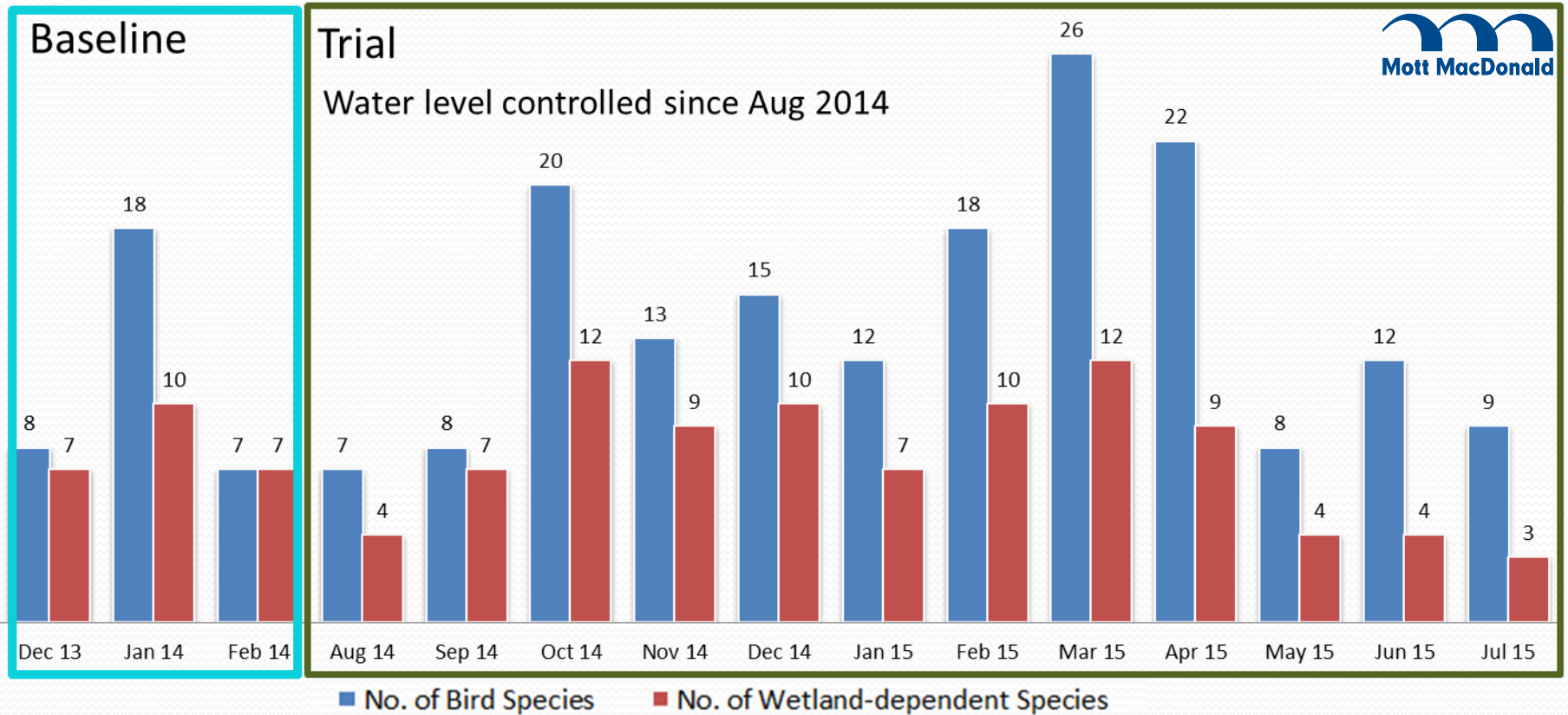
- Slight increase in bird species after trial measures implemented



# Comparison of Bird Species Before and After Trial

## Middle stream

- Slight increase in bird species after trial measures implemented



## Target species recorded

Target species set in the EHMP Common Name	Scientific Name	Bird species recorded at YLBF
1. Little Egret	<i>Egretta garzetta</i>	✓
2. Chinese Pond Heron	<i>Ardeola bacchus</i>	✓
3. Common Teal	<i>Anas crecca</i>	
4. White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	✓
5. Common Moorhen	<i>Gallinula chloropus</i>	✓
6. Greater Painted-snipe	<i>Rostratula benghalensis</i>	✓
7. Little Ringed Plover	<i>Charadrius dubius</i>	✓
8. Green Sandpiper	<i>Tringa ochropus</i>	✓
9. Wood Sandpiper	<i>Tringa glareola</i>	✓
10. Common Snipe	<i>Gallinago gallinago</i>	✓
11. Common Kingfisher	<i>Alcedo atthis</i>	✓
12. Bluethroat	<i>Luscinia svecica</i>	
13. Pallas's Grasshopper Warbler	<i>Locustella certhiola</i>	
14. Black-browed Reed Warbler	<i>Acrocephalus bistrigiceps</i>	
15. Oriental Reed Warbler	<i>Acrocephalus orientalis</i>	
16. Dusky Warbler	<i>Phylloscopus fuscatus</i>	✓
17. Zitting Cisticola	<i>Cisticola juncidis</i>	
18. Black-faced Bunting	<i>Emberiza spodocephala</i>	
	No. of target species	11

## Initial Result of the Freshwater Wetland Restoration

- Wetland habitat re-established after suitable water level maintained
- Freshwater bird community recovered

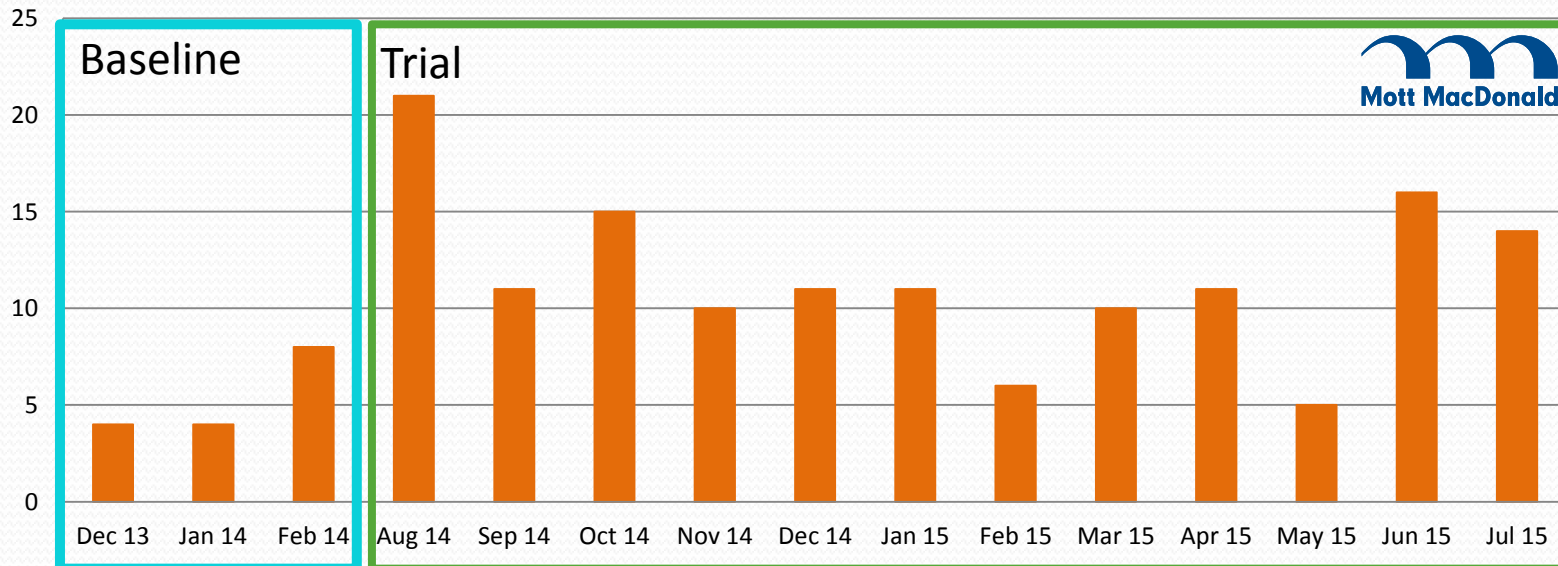


## Species Highlight - Chinese Pond Heron (池鷺)

- A species of conservation concern in Hong Kong.
- Its population in Hong Kong declines in last twenty years, probably due to loss of freshwater pond.



### Abundance of Chinese Pond Heron recorded in YLBF



## Tung Shing Lei (東成里) Egretry

- Located at about 400m to the east of YLBF
- Active breeding activity during the summer season



Tung Shing Lei Egretry

## Further Enhancement Measures

### Targets

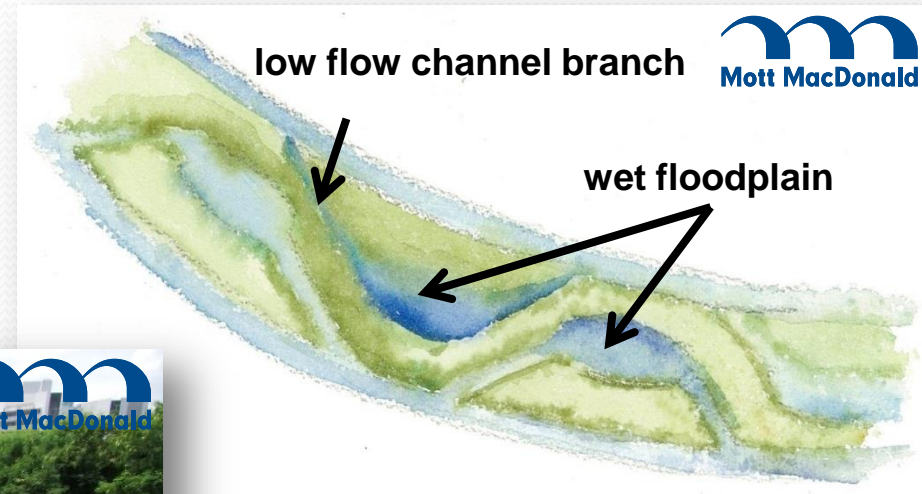
- Create suitable wetland habitat
- Provide more roosting and foraging habitat for wetland birds and other fauna

### Measures

- Creation of Floodplain (shallow water wetland)
- Planting along Channel side
- Floating platform

## Creation of Flood Plain

- Extend the wetland area



## Planting Alongside the Channel

- Provide shading and perching habitat



## Floating Platform

- Deployment of Floating Platform at lower stream section
- Provide a perching and foraging platform for wetland birds (free from human disturbance)



## Experience Share

- Clear understanding of the ecological background before setting targets
- Gather information not only from the Channel but also the wider area, as the ecosystems are interconnected
- Pay attention to any mismatches between target habitat/species and surrounding environment.



# Q & A

## Thank you!

