

# River, Wetland and Wild Birds in Hong Kong

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## Birds and Rivers

- Composition of birds at upland rivers differ from low-land rivers
  - Upland: Freshwater streams with boulders and rocks, fast-flowing water
  - Low-land: Freshwater marsh and estuary, slow-flowing water, can be tidally influenced



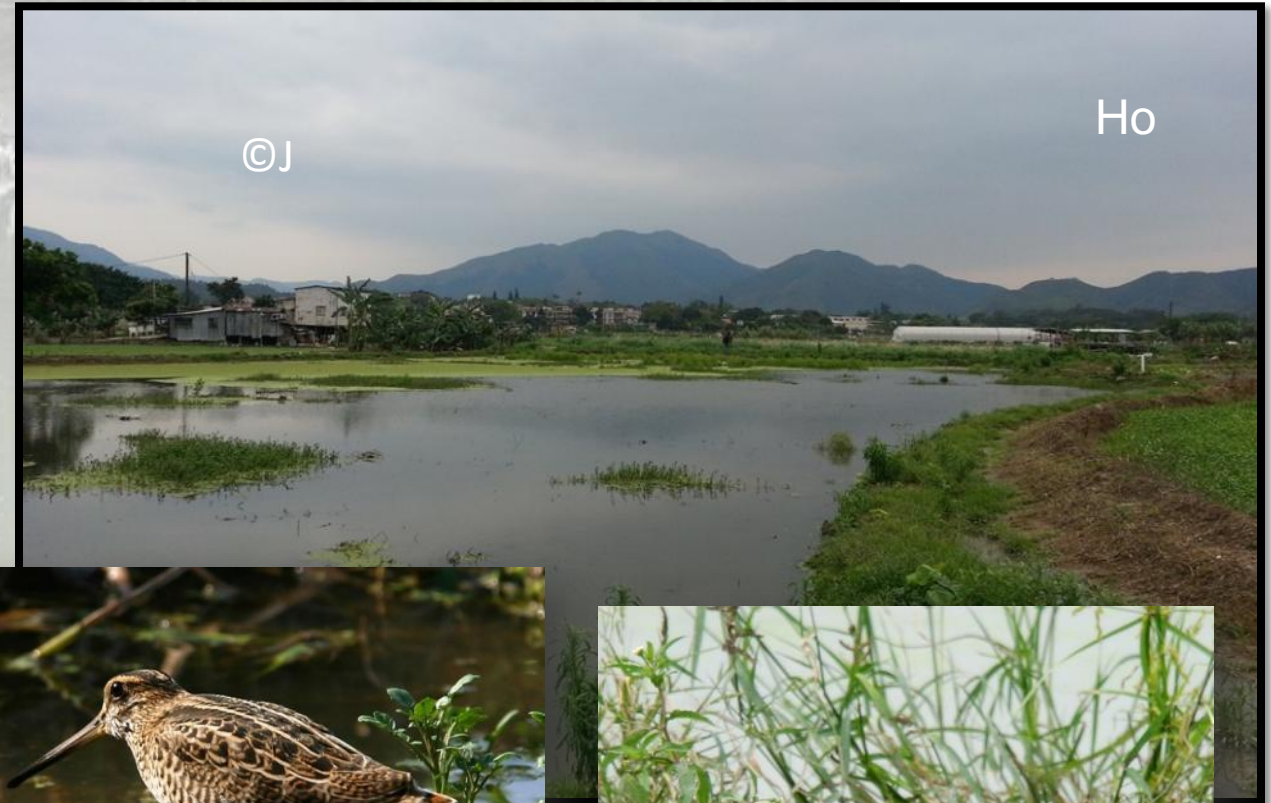
## Birds at Upland Rivers

- Only a few riverine species in Hong Kong
  - Crested Kingfisher 冠魚狗
  - Slaty-backed Forktail 灰背燕尾
  - Plumbeous Redstart 紅尾水鸚
  - Solitary Snipe

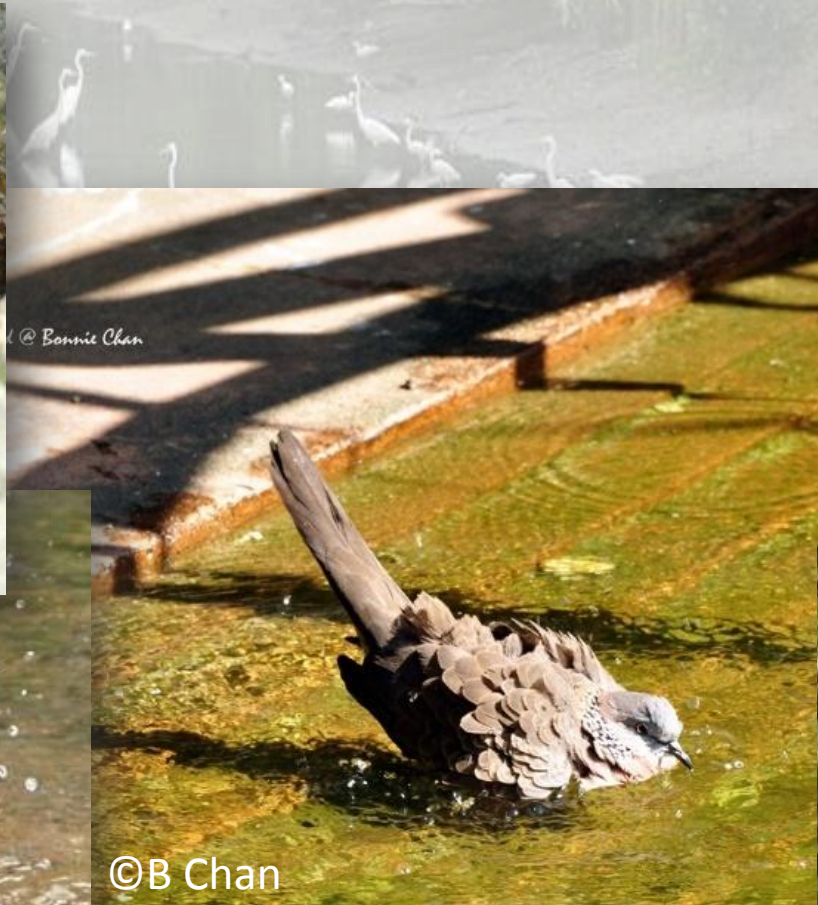


# Birds at Low-land Rivers and Wetlands

- Waterbirds and wetland-dependent species are much more abundant
- A total of **166 species** in HK including resident and migratory species
  - Ardeids 鷺
  - Plovers 鴉
  - Sandpipers 鵞
  - Snipes
  - Kingfishers 翠鳥
  - Jacanas 水雉
  - Rails 田雞
  - Coots 水雞
- Amongst them **~54 species** are **freshwater** dependent



# Birds and Rivers – Bathing, Drinking and Roosting



# Birds and Rivers – Foraging Ground

- Piscivores (fish-eating species)
  - Kingfishers
  - Ardeids



- Insectivores (Insect-eating species)
  - Wagtails 鶺鴒
  - Plovers
  - Starlings
  - Mynas





## Characteristics of Natural Rivers

- Riparian and in-stream vegetation
  - Roosting
  - Protection from exposure to predators
- Natural bottom
  - Foraging for benthic invertebrates

# Many riverine species are sensitive to disturbances/easily frightened

- Bitterns
  - Crakes
  - Snipes
  - Rails
- (many are **rare** or uncommon)



# natural river => drainage channel

Before river training works



After river training works



# Kam Tim River: now and then (1963)



**Cumulative impacts – Sha Po Marsh, Kam Tin**



# Change in Landscape – Kam Tin River



1954



2012



# Change in Landscape – Kam Tin River

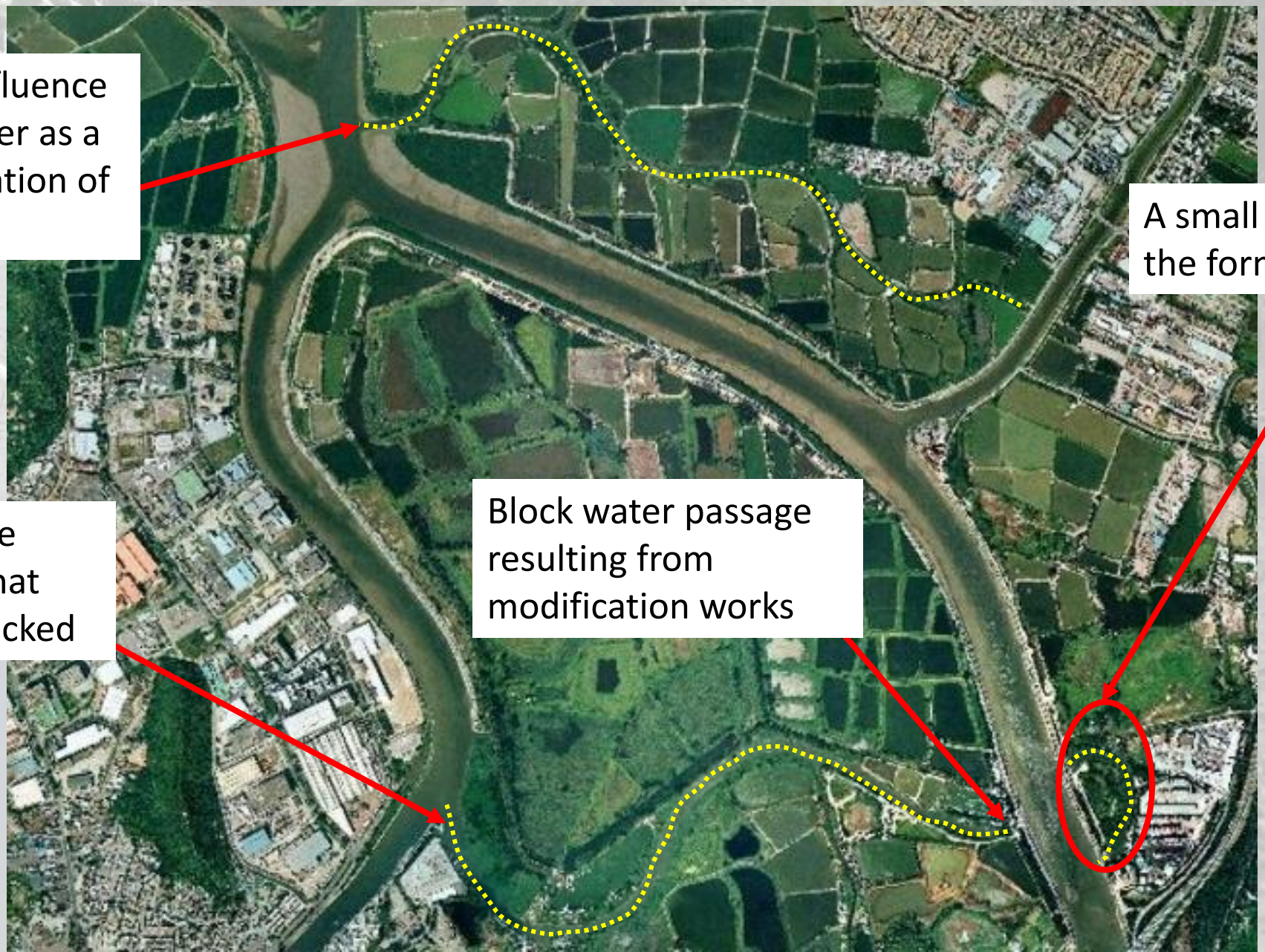


Reduced tidal influence to the former river as a result of the creation of Kam Tin River

A small remaining part of the former natural river

One side of the former river that remains unblocked

Block water passage resulting from modification works



## Impacts of River Modification


- Change of hydrology
- Loss of habitat complexity
- Elimination of aquatic plants
- Reduction of fish abundance and diversity
- Change of landscape



**\*\* Change of ecology → change in bird species composition\*\***

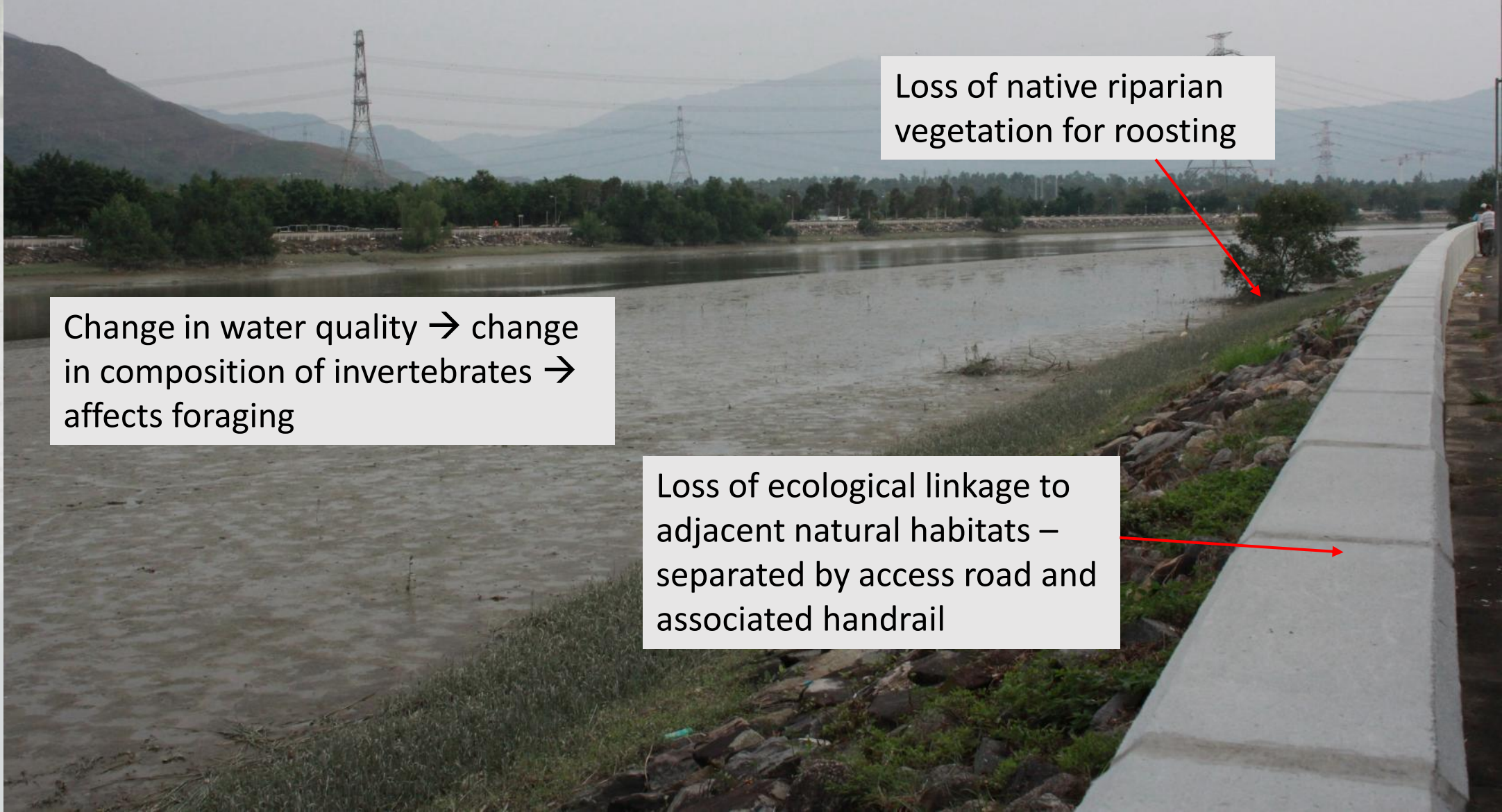
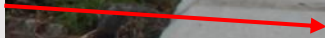
# Other Impacts of Channelization

Loss of native riparian vegetation for roosting

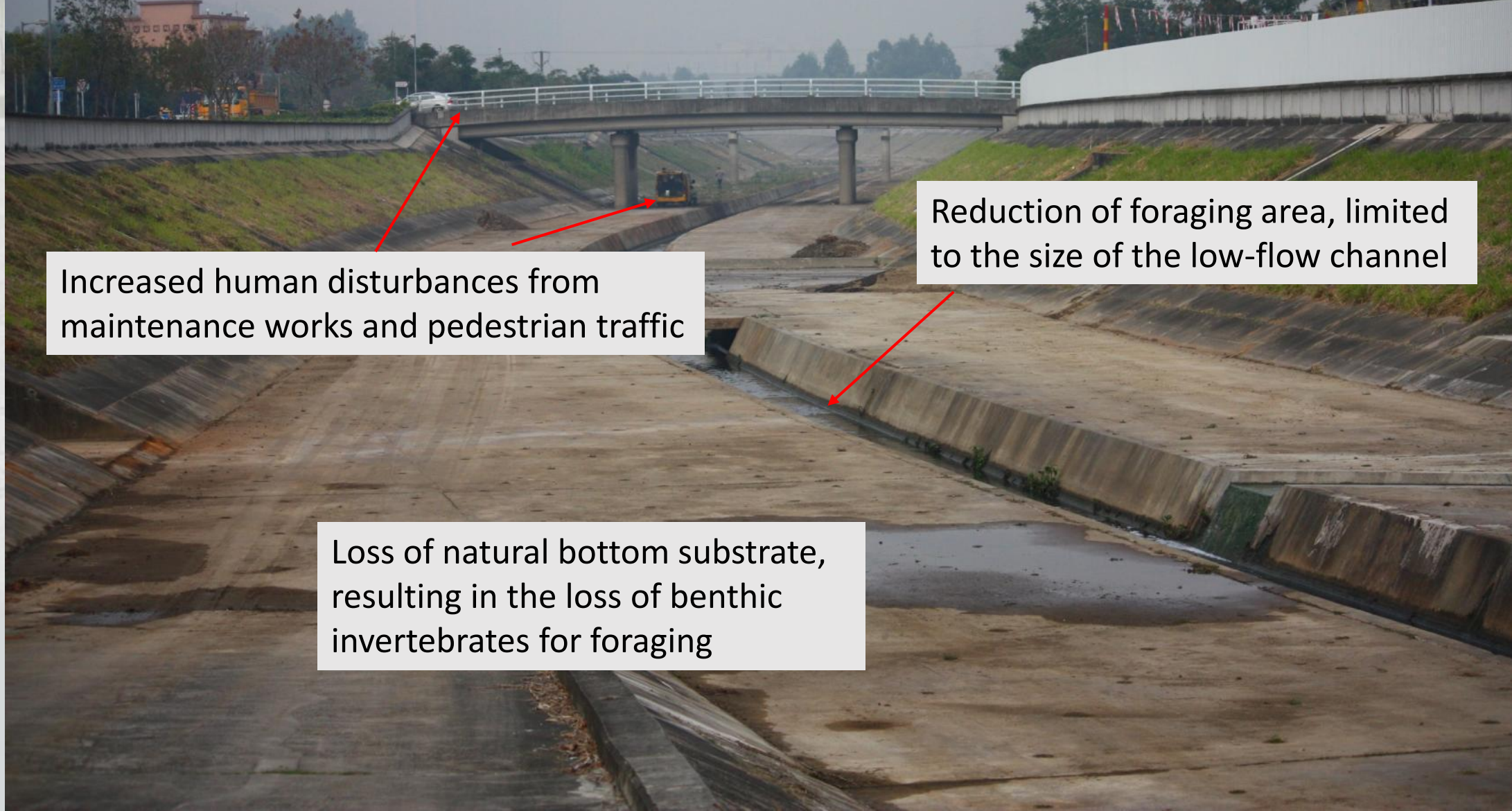


Change in water quality → change in composition of invertebrates → affects foraging

Loss of ecological linkage to adjacent natural habitats – separated by access road and associated handrail



# Other Impacts of Channelization



Increased human disturbances from maintenance works and pedestrian traffic

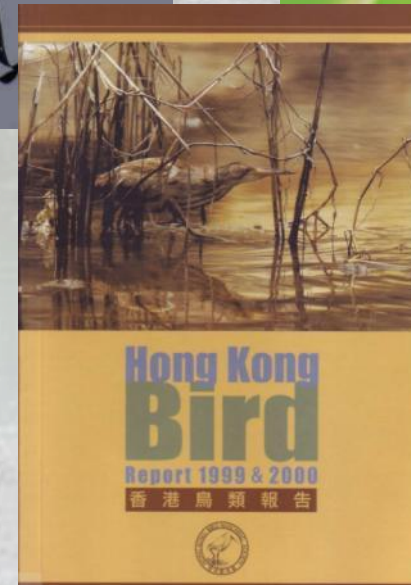
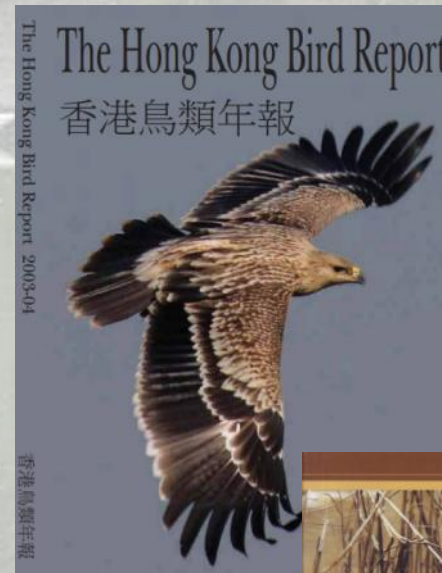
Reduction of foraging area, limited to the size of the low-flow channel

Loss of natural bottom substrate, resulting in the loss of benthic invertebrates for foraging



# Siting Records of Riverine Species – HKBWS Data in the Last Ten Years

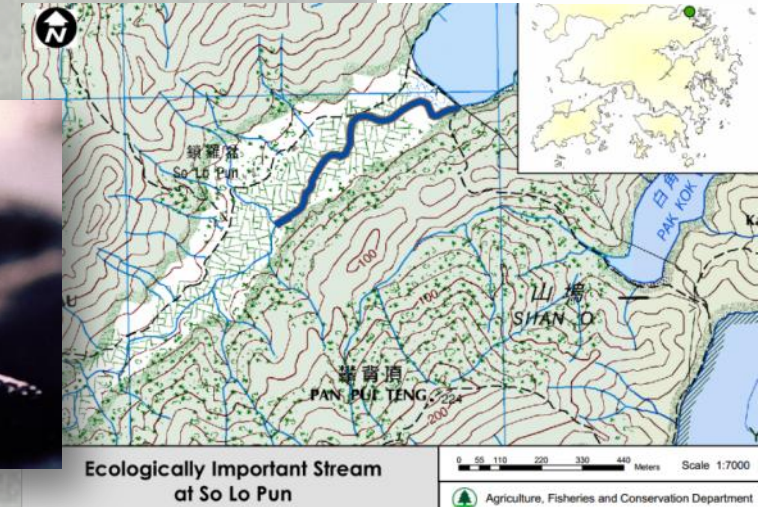
- Selected 3 riverine species
  1. Crested Kingfisher
  2. Slaty-backed Forktail
  3. Plumbeous Redstart
- All 3 species have been recorded in Hong Kong in the past
- Determine:
  - Date of the most recent siting record
  - Location of the siting record
  - Ecological characteristics of the located



# Siting Records of Riverine Species – HKBWS Data

## Crested Kingfisher – 2 records

- Mostly found along fast flowing streams and rivers with wooded banks, resides in riverine habitats.
- Probably a local resident until 1960's.
- HKBWS records – found at So Lo Pun where Ecologically Important Stream locates.



Location	Recorded Year
So Lo Pun	2009
So Lo Pun	2009

# Siting Records of Riverine Species – HKBWS Data

## Slaty-backed Forktail – 7 records

- Found along fast-flowing streams in wooded areas
- All recorded locations include natural streams with little disturbance, even the not-so-well-known Ng Tung Chai
- Numbers declining



Location	Recorded Year
Ng Tung Chai	2003
Tai Po Kau	2004
Ng Tung Chai	2004
Bride's Pool	2009
Shing Mun	2011
Tai Po Kau	2011

# Siting Records of Riverine Species – HKBWS Data

## Plumbeous Redstart – 18 records

- Perches on rocks in streams, rarely found far from running water

- Records were obtained from areas with natural streams
- Including Lam Tsuen Ecologically Important Stream

Location	Recorded Year
Lam Tsuen	2001
Chung Mei, Wun Yiu, Lam Tsuen	2003
Chung Mei, Wun Yiu, Mui Wo	
Chung Mei, Wun Yiu	2005
Lam Tsuen, Nam Chung, Chung Mei, Po Toi, Hong Lok Yuen	2007
Chung Mei, Bride's Pool	2011
Tso Kung Tam	2012



# Major Drainage Projects – EIA Studies

- By comparing baseline bird survey data to post-construction phase monitoring data (EM&A)
  - Any riverine species during the baseline?
  - If yes, are they still present during the post-construction phase monitoring

A screenshot of the Environmental Impact Assessment Ordinance website. The header includes the title "Environmental Impact Assessment Ordinance" and the logo of the Environmental Protection Department, The Government of the Hong Kong Special Administrative Region. A navigation bar contains links for "HOME", "SITE MAP", "CONTACT US", and "SEARCH". The main content area is divided into several sections: "Search by Districts" with an "HKMAP" showing a color-coded map of Hong Kong; "DOCUMENTS THAT ARE CURRENTLY EXHIBITED FOR PUBLIC TO COMMENT" with a list of project profiles including "Application for EIA Study Brief" and "Application for Permission to Apply Directly for Environmental Permit"; "WHAT'S NEW" with a list of updates such as "General Notices" and "Application Statistics"; and "APPLICATION DOCUMENTS IN THE REGISTER" with a list of various EIA-related documents. A "Popular Links" section at the bottom left includes "Alphabetical Search for Application History of Designated Projects", "Environmental Monitoring & Audit (archive)", and "Cyber Help Bench for EIA".



## Major Drainage Projects – EIA Studies

### Limited information available

- EIA 189/2010 Regulation of Shenzhen River Stage IV
  - None of three riverine species recorded during baseline
  - Other records: e. Greater Painted Snipe, White-breasted Water Hen
- EIA 122/2006 Yuen Long, Kam Tin, Ngau Tam Mei & Tin Shui Wai Drainage Improvement Stage 1, Phase 2B - Kam Tin Secondary Drainage Channel KT13
  - Common water birds
- **EIA 110/2005 Drainage Improvements in South Lantau**
  - Baseline – One record of Plumbeous Redstart
  - Monitoring – No records of Plumbeous Redstart so far, however monitoring period is not completed

# Observations from Birdwatchers

- Natural channel vs. new channel at Sha Po, Kam Tin
  - much higher bird diversity in the natural channel
  - limited number of bird species, mainly generalists (s.a. herons and egrets), in the new channel



new channel

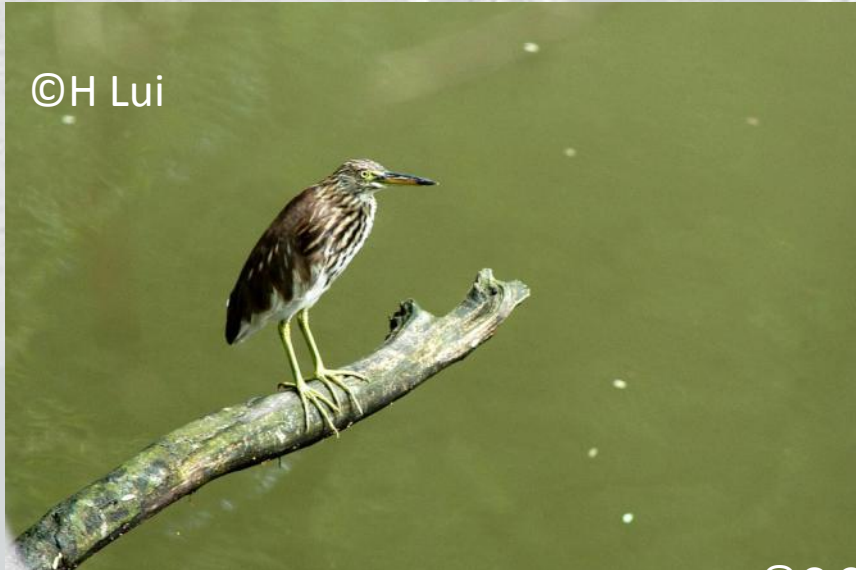


Remaining original channels  
at Sha Po, Kam Tin

# Bird Species Composition after Channelization

## Birds often seen

- Generalist species
- Tolerant to human disturbances
- Common species



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# Bird Species Composition After Channelization

## Waterbirds/wetland-dependent species **commonly seen** at channelized rivers

- Ardeids
  - Little Egret
  - Chinese Pond Heron
  - Grey Heron
- Little Ringed Plover
- Sandpipers
  - Common Sandpiper 磯鵲
  - Green Sandpiper
  - Wood Sandpiper



Little Ringed Plover



# Bird Species Composition after Channelization

## Birds rarely seen

- Plovers
  - Grey-headed Lapwing 灰頭麥雞
- Rails and coots
  - White-breasted Waterhen 白胸苦惡鳥
  - Common Moorhen
- Snipes
  - Greater Painted-snipe
  - Common, Pintail, Swinhoe's Snipes
- Pheasant-tailed Jacana

Grey-headed Lapwing



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## What we are left with...



- Channelized low-land streams provide only a limited amount of foraging opportunities
- Bird diversity decreased at channelized rivers
- Few generalist species adapts to the change

# The more natural substrate the better



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In-stream vegetation provide roosting opportunities for wetland-dependent species

Natural bottom substrate provide foraging opportunities for wetland-dependent species

**Thank you**





# References

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