香港戶外生態教育協會
Outdoor Wildlife Learning Hong Kong

Citizen Science for Environmental Education in Hong Kong Freshwater Systems: Challenges, Strategies, and Opportunities



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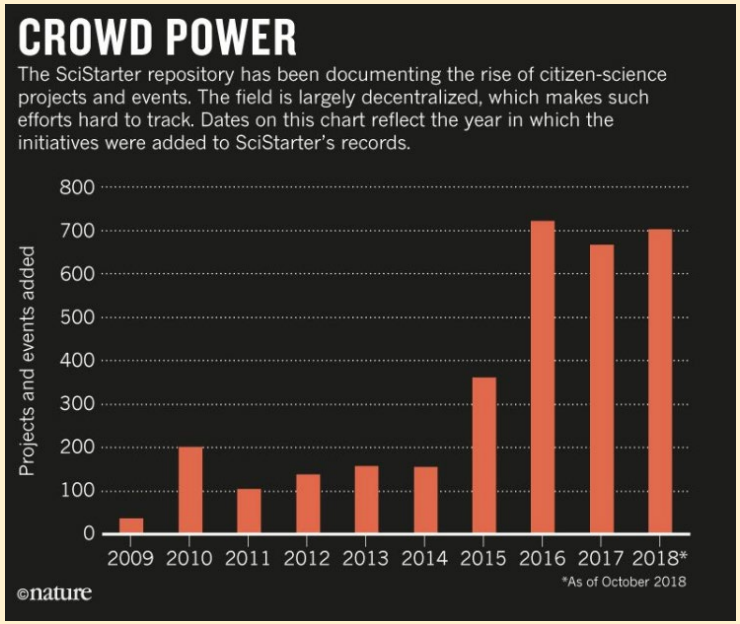
Nurture via Nature

Citizen Science

- Enables large-scale data collection (both spatially and temporally)
- Informs natural resource management, environmental protection, and policymaking
- Fosters public input and engagement for environmental education



Articles

Failures of Engagement: Lessons Learned from a Citizen Science Pilot Study

Caroline Gottschalk Druschke & Carrie E. Seltzer

Pages 178-188 | Published online: 20 Apr 2013

Download citation https://doi.org/10.1080/1533015X.2012.777224

JOURNAL ARTICLE

Emerging problems of data quality in citizen science

Roman Lukyanenko, Jeffrey Parsons and Yolanda F. Wiersma

Conservation Biology
Vol. 30, No. 3 (June 2016), pp. 447-449 (3 pages)
Published By: Wiley

ENVIRONMENTAL Science & Technology

pubs.acs.org/est

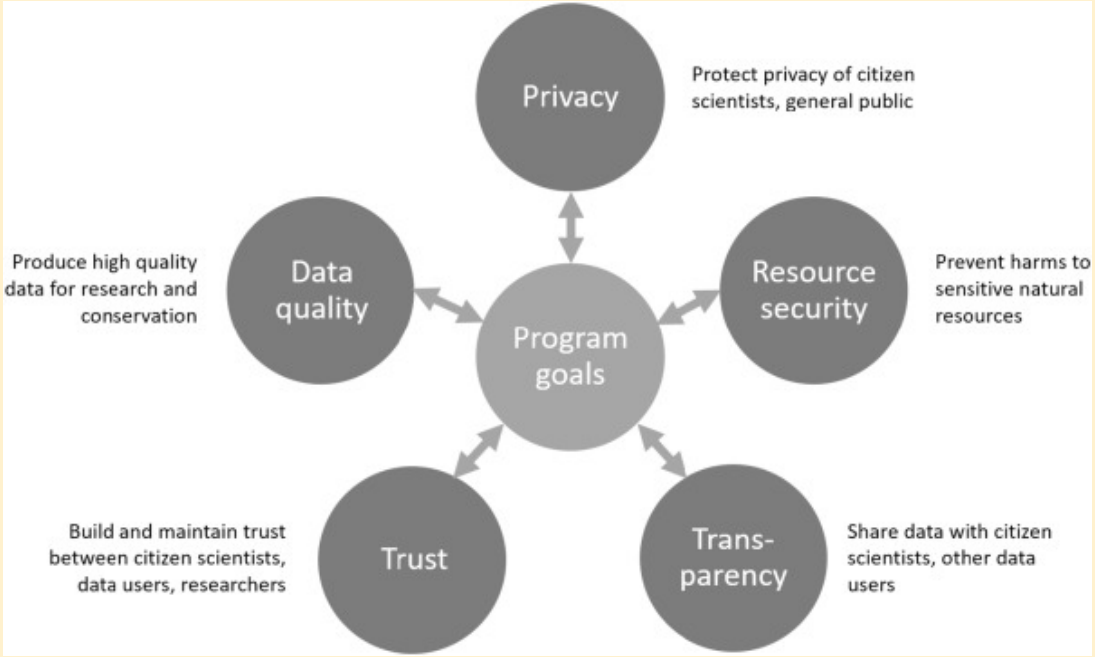
Is Citizen Science Dead?

Christopher S. Lowry*,§ and Kristine F. Stepenuck§

Cite This: *Environ. Sci. Technol.* 2021, 55, 4194–4196

Citizen Science

- Feasibility
- Data quality & quantity
- Level of public engagement
- Ethical issues
- Harm to sensitive natural resources
- etc



Clear goals and objectives to match the needs for science and public involvement

Anhalt-Depies et al.,2019

ECF: Discovering South Lantau Invertebrates

Lantau Freshwater Ecology Classroom

Objectives & Aims

1. To increase the awareness of and interest in freshwater invertebrates among the general public

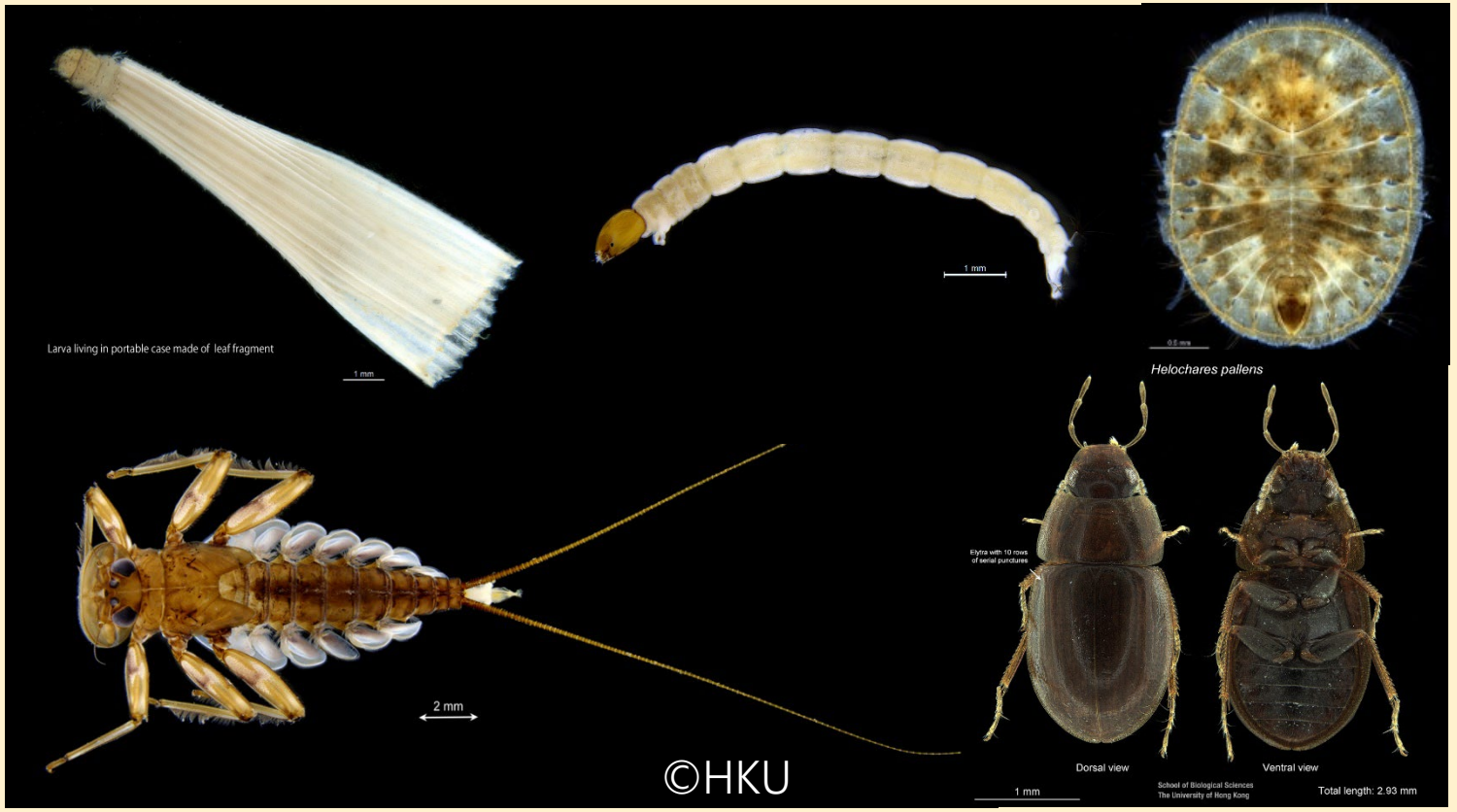
2. To promote and enhance the knowledge of freshwater ecology among the general public

3. To provide baseline ecological data for freshwater habitats in Lantau

Challenges

Hong Kong Freshwaters

- Most accessible habitats (e.g. streams & marshes) are dominated by aquatic macroinvertebrates



Aquatic Macroinvertebrates

1. **Lack of expertise** – very few freshwater ecologists familiar with aquatic macroinvertebrates

- Lack of professionals
- Education Efficiency & Feasibility ↓

Aquatic Macroinvertebrates

2. **Lack of opportunity** – very limited workshops/ courses/ activities/ research

- Lack of awareness
- General public has no prior knowledge
- Public engagement & Data quality ↓

Aquatic Macroinvertebrates

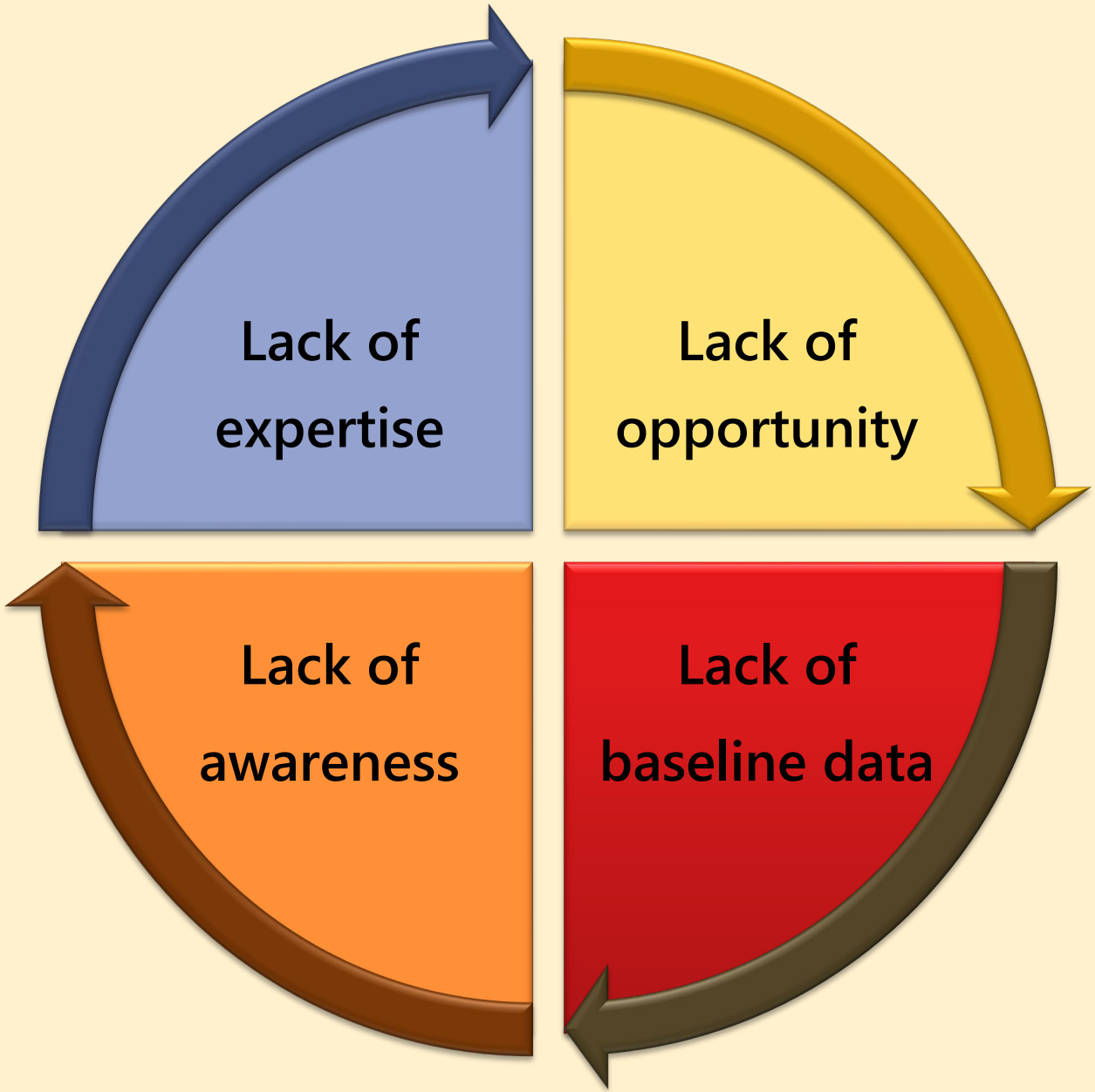
3. **Lack of baseline data** – no baseline data for many of the wetlands/ streams

- Lack of database & tools
- Education efficiency ↓

Aquatic Macroinvertebrates

4. **Lack of awareness** – small & inconspicuous: aquatic invertebrates are not charismatic to the general public!

- Hard to observe
- Feasibility, Education efficiency, Public engagement, & Data quality ↓


Lack of expertise
Lack of opportunity
Lack of awareness
Lack of baseline data

Strategies

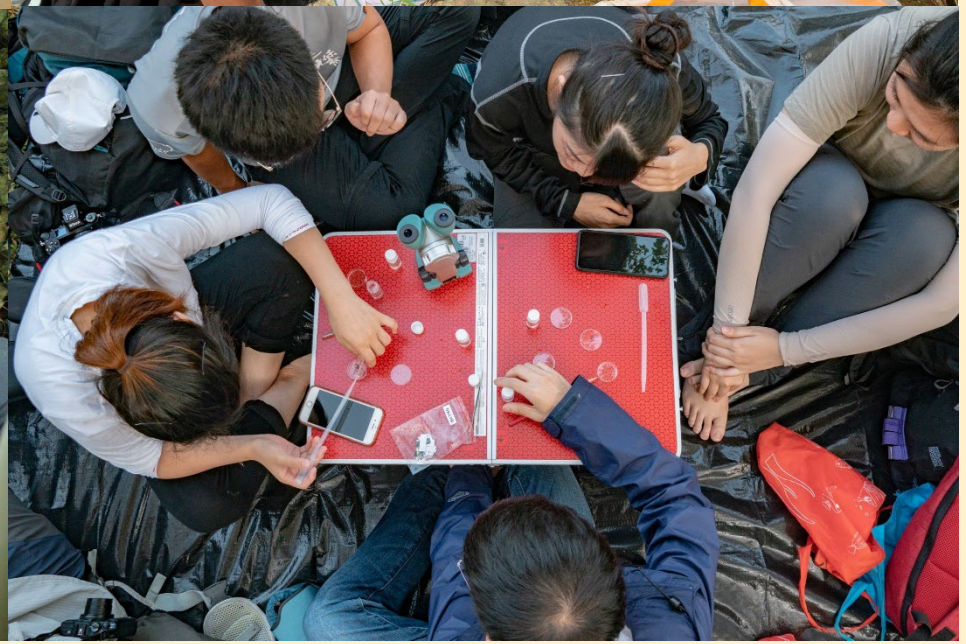
1. Public seminar as a start
   - Outline the importance of FW invertebrates
   - Increase public awareness

Strategies

2. Recruit tertiary students and provide training, equipping them with the knowledge to be tutors (train-the-trainer)
   - 5-day training, including lectures and field trips for 20 students
   - Responsible for leading subsequent citizen science activities
   - Capacity building of citizen scientists and extended participants


班 家 課 表
月 日 星期
石蠅


環保基金
新發現南大嶼
ECF Discovering South Lantau



Strategies

3. Make use of/ develop tools to enhance education efficiency
   - Field microscope
   - Field guide
   - Apps

Strategies

4. Involving participants to involve in design and decision making of the programs
   - Group assignment to design innovative games for knowledge transfer
   - Reduce feelings of exploitation

Strategies

5. Tests to assess their level of understandings
   - Ensure data quality in subsequent citizen science activities

環保基金
「蟲」新發現南大嶼
ECF Discovering South Lantau Invertebrates

大嶼淡水生態教室
LANTAU FRESHWATER ECOLOGY CLASSROOM

大專生導師培訓 (河溪組) 培訓證書
CERTIFICATE OF TUTOR TRAINING (STREAM GROUP)

謹此證明
IT IS TO CERTIFY THAT

中文名

English Name Hello

於2019年10月至2020年1月期間完成導師培訓。

HAS SUCCESSFULLY COMPLETED TRAINING OF THE CAPTIONED PROGRAMME
FROM OCTOBER 2019 TO JANUARY 2020.

資助機構 FUNDED BY

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創辦人及教育總監 FOUNDER AND EDUCATION DIRECTOR
香港戶外生態教育協會 OUTDOOR WILDLIFE LEARNING HONG KONG

證書頒發日期 CERTIFICATE DATE

Strategies

6. Minimize environmental impacts
   - Limit the number of participants
   - Stone method instead of kick sampling
   - Educate the correct attitudes
     - Release organisms back to where they were found
     - Organism collection should only be allowed for education, research and conservation purposes

Future Opportunities

Green and Blue Space Conceptual Framework

Planning Department
HKSARG

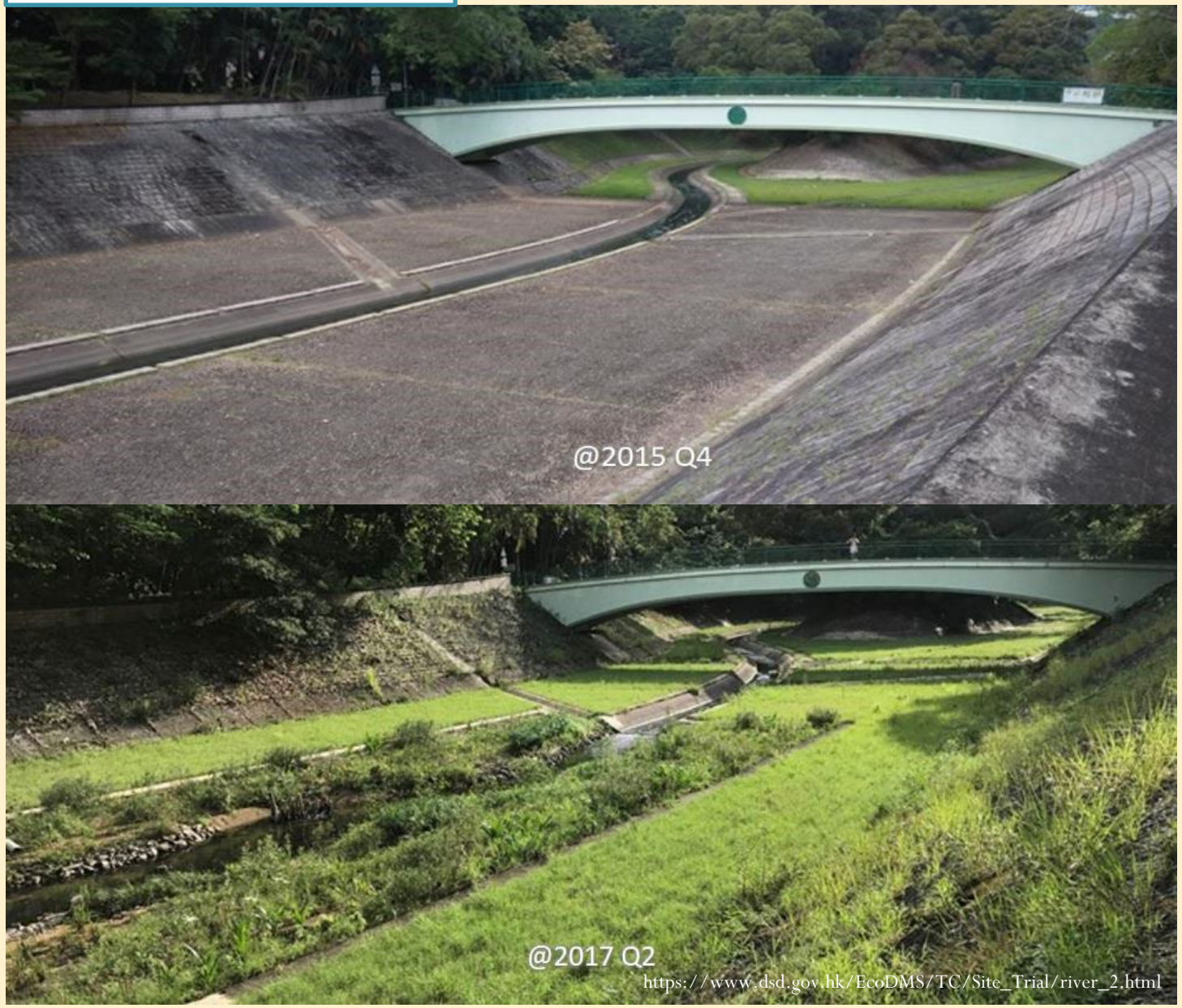
October 2016

Hong Kong 2030+

Ma Wat River


@2015 Q4
@2017 Q2
https://www.dsd.gov.hk/EcoDMS/TC/Site_Trial/river_1.html

Lam Tsuen River



https://www.dsd.gov.hk/EcoDMS/TC/Site_Trial/river_2.html

JC-WISE
Water Initiative on Sustainability and Engagement
賽馬會惜水・識河計劃

2021年12月5日星期日

復耕重建生境 引鄰區「倖存魚」復育 米魚荔枝窩「重生」

上一篇 下一篇

復耕重建生境 引鄰區「倖存魚」復育 米魚荔枝窩「重生」

圖1之1-「米魚」體型細小，分佈局限於華南地區，昔日與農田並存，隨着農……（林嘉怡攝）

Thank You!