

# ENVIRONMENT AND CONSERVATION FUND (ECF)

## PROJECT 37/2015

### Project Title:

*Impact of suspended sediment, turbidity and streamflow conditions on river biodiversity in the Lai Chi Wo catchment in Hong Kong*

The specific goals of this project are: (1) to understand the links among suspended sediment, water turbidity and river biodiversity, (2) to comprehend the relationship between flow conditions (high flow during the wet season and low flow during the dry season) and river biodiversity, and (3) to examine the influence of agricultural activities on suspended sediment and turbidity at LCW.

### Equipment and collection of data

During the past 2 years (from 1 March 2016 to 28 February 2018), we installed five turbidity sensors and two SSC (suspended sediment concentration) sensors.

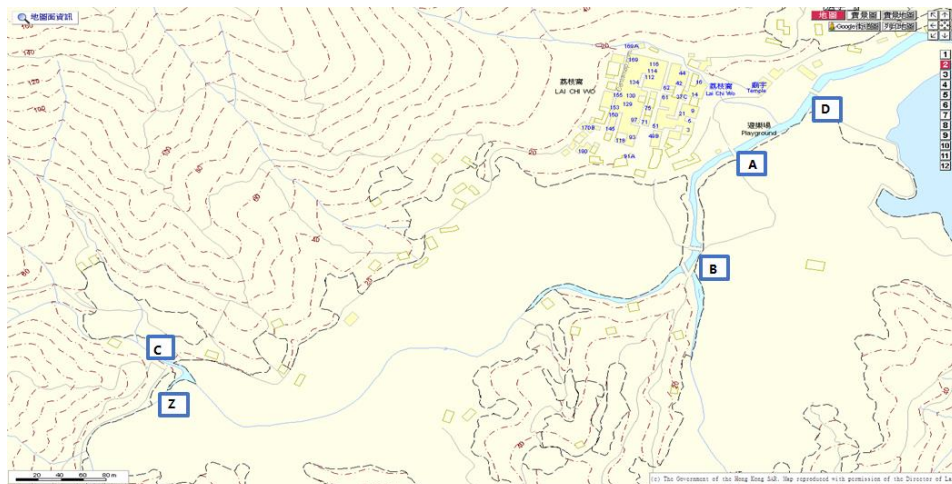


SSC sensor

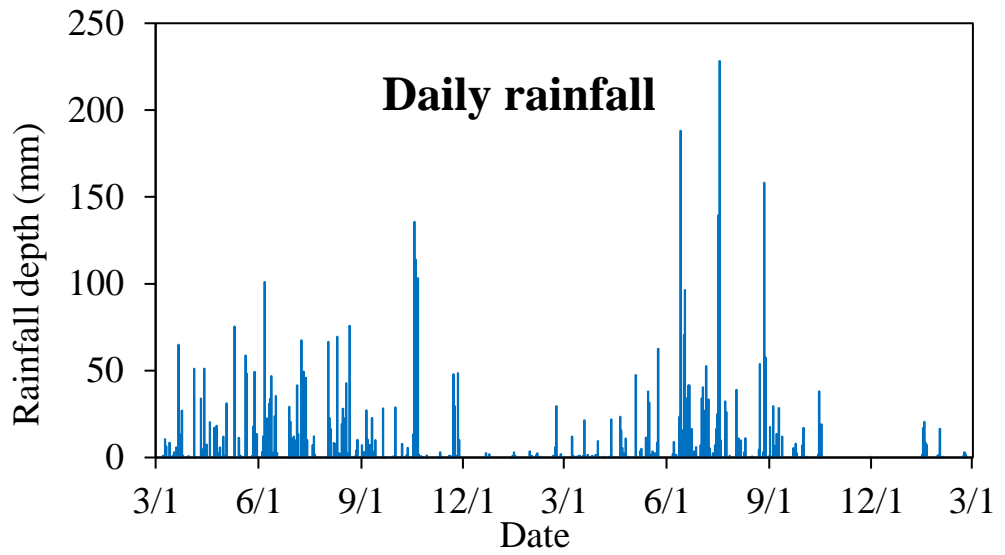


Turbidity sensor

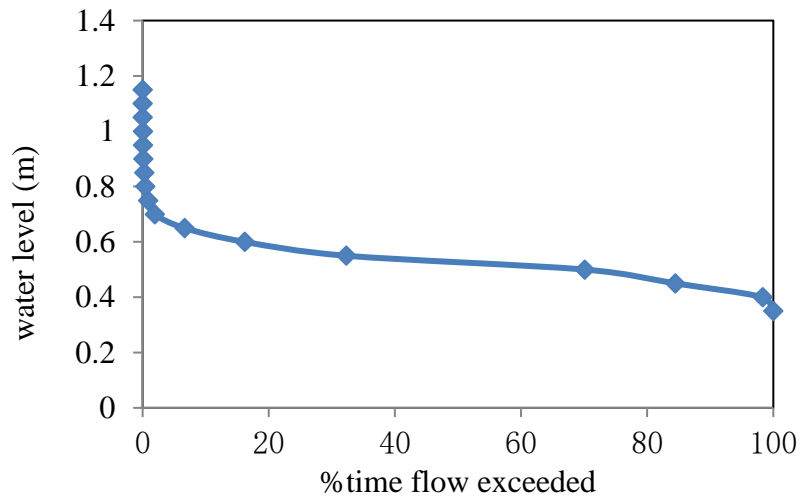
We have collected the river channel dimensions, rainfall data, water level data, water quality data (DO, pH, Conductance, water temperature, turbidity and SSC) and biodiversity data. The biodiversity data collected including mainly fish, small insects and invertebrates. The selected class of living species including Amphipoda, Coleoptera, Decapoda, Diptera, Ephemeroptera, Gastropoda, Heteroptera, Megaloptera, Odonata, Oligochaeta, Plecoptera and Trichoptera.



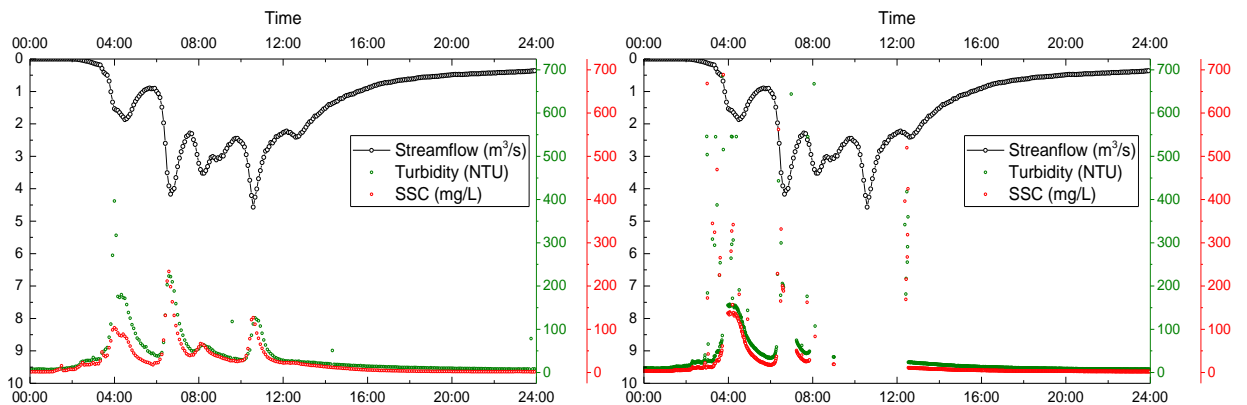
Location of five sampling sites

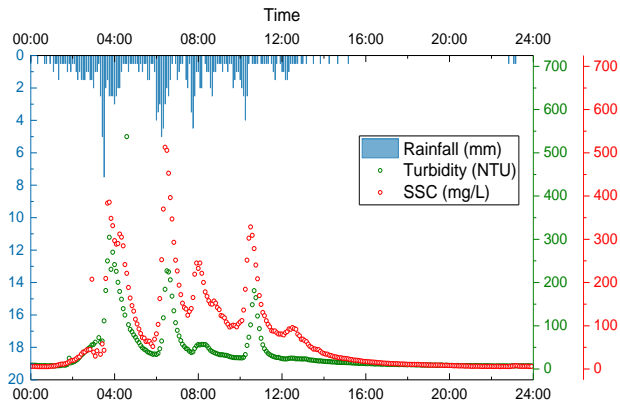


Observed daily rainfall data from 1 March 2016 to 28 February 2018



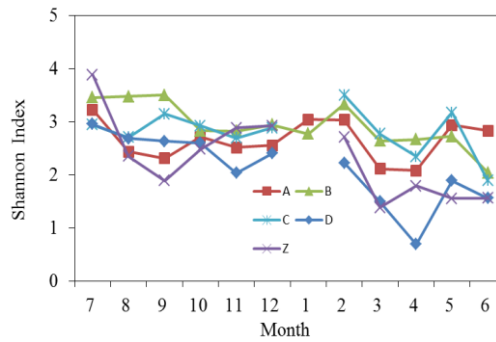
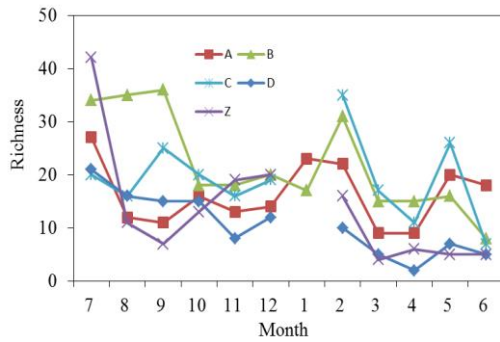
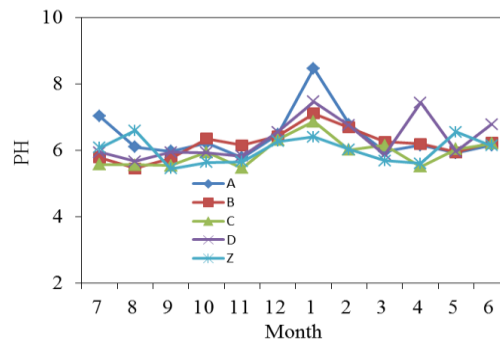
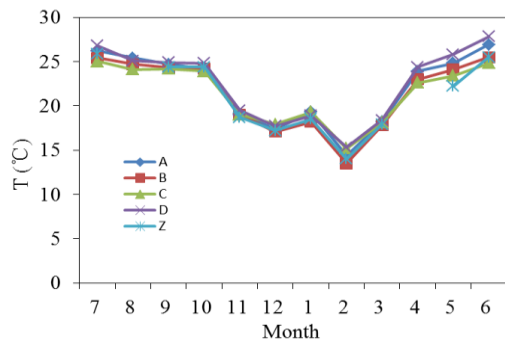
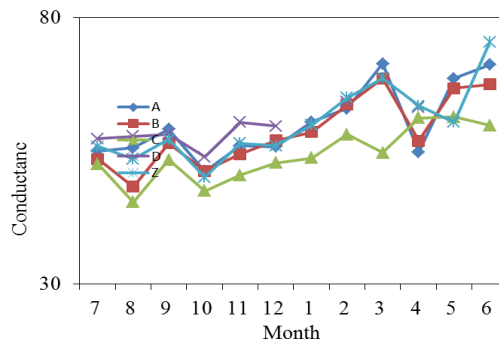
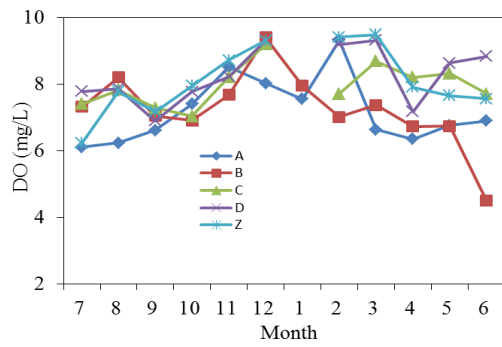
Water level data (Station B)

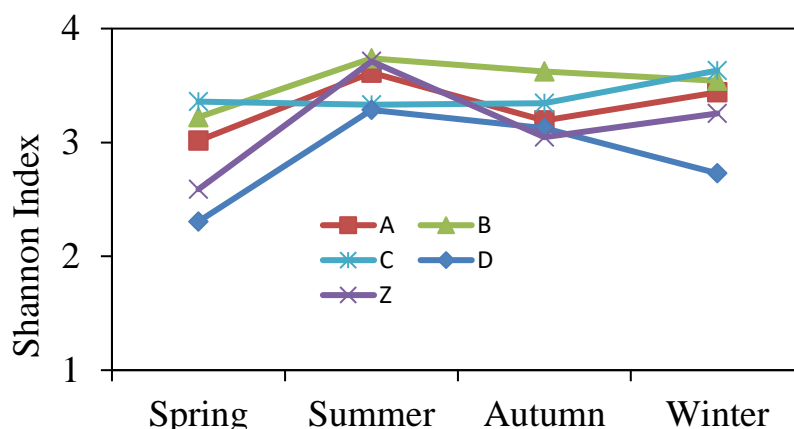




On 13 June, 2017, turbidity and SSC of different stations

### Analysis of data





Seasonal variants of water quality parameters and biodiversity data

153 species of insects and invertebrates were collected throughout the year. Number of species at station D, A, B, C and Z are 52, 72, 93, 81 and 79, respectively.

A total of 21 fish species were collected. The fish species collected from station D, A, B, C and Z are 14, 9, 4, 4 and 2, respectively.

Species	D	A	B	C	Z
<i>Acanthopagrus latus</i>	3	0	0	0	0
<i>Acanthopagrus schlegelii</i>	125	72	0	0	0
<i>Anguilla japonica</i>	2	0	0	0	0
<i>Gerres filamentosus</i>	3	0	0	0	0
<i>Gerres oyena</i>	34	5	0	0	0
<i>Glossogobius giurinus</i>	10	16	0	0	0
<i>Glossogobius olivaceus</i>	4	4	0	0	0
<i>Lateolabrax japonicus</i>	6	24	0	0	0
<i>Mugil cephalus</i>	16	28	0	0	0
<i>Rhinogobius giurinus</i>	121	18	0	0	0
<i>Scatophagus argus</i>	1	0	0	0	0
<i>Takifugu niphobles</i>	1	0	0	0	0
<i>Takifugu ocellatus</i>	13	0	0	0	0
<i>Eleotris oxycephala</i>	7	16	0	0	0
<i>Oreochromis niloticus</i>	0	4	0	0	0
<i>Xiphophorus hellerii</i>	0	0	116	0	0
<i>Kuhlia marginata</i>	0	0	1	0	0
<i>Rhinogobius duospilus</i>	0	0	4	15	4
<i>Misgurnus anguillicaudatus</i>	0	0	8	1	0
<i>Schistura fasciolata</i>	0	0	0	6	6
<i>Oreonectes platycephalus</i>	0	0	0	7	0
Number of fish	346	187	129	29	10