



Panel on Environmental Affairs, and
Panel on Planning, Lands and Works
Legislative Council

20 February 2004

Dear Chairperson,

Re: Joint meeting on “Impact of construction works on rivers in Hong Kong”
23 February 2004

In regard to the captioned issue and stream conservation in Hong Kong, we would like to express the following:

Ecological importance of lowland streams

(1) Biodiversity is surprisingly high in our lowland stream system; including some 3 mammals (e.g. Eurasian Otter), ~50 birds (e.g. Crested Kingfisher), ~10 reptiles (Reeves’ turtles), ~130 fishes (e.g. Ayu) and ~105 dragonflies. Lowland streams are a significant component of Hong Kong’s biodiversity.

(2) About 120 freshwater fish species are indigenous to Hong Kong; over 80% of these can only be found in lowland freshwaters.

Threats

(3) River engineering works: **channelization** is the most detrimental to local freshwater biodiversity as such work **causes irreversible destruction to natural stream habitats** by

- permanently altering the hydrology by desnagging, straightening and enlarging the existing stream, and
- greatly reducing habitat complexity by engineering practices such as concrete-lining and desilting.

(4) In the Technical Memorandum (TM) of Environmental Impact Assessment Ordinance (EIAO), the criteria for assessing the ecological value of a study site stipulate that only natural stream section over 100m in length is considered important. In Hong Kong natural, lowland section of many streams are less than 100m but still support high biodiversity; such criterion thus affects assessment.

(5) EIAO TM’s criteria for assessing the ecological value of species, which based heavily on

local, national and international legislations, fail to reflect the true conservation value of the recorded species. Unlike mammals, birds, amphibians and reptiles, **none of our freshwater fish are protected in Hong Kong** although some 30 species are in immediate danger of becoming extinction. This greatly hampers the ecological assessment of Hong Kong streams while applying the EIAO TM.

(6) Currently only Tai Ho and Sha Lo Tung streams are designated as Site of Special Scientific Interest (SSSI). Other streams of high ecological value, e.g. Lin Ma Hang and Tan Shan River in NENT, are still unprotected and subject to channelization pressures.

Weak justification in certain cases

(7) Channelization of streams not subject to flooding pressure has often been conducted, causing unnecessary destruction of natural streams and freshwater habitats. Channelization of Tong Fuk stream and Luk Tei Tong marsh on Lantau are examples to illustrate the problem. In the Tong Fuk case, no flooding threatening the survival of nearby villagers was reported, while there is no resident in Luk Tei Tong. In addition, freshwater marshes play an important role in absorbing heavy rainfall, and thus play an important role in flood prevention.

Flaws of existing channelization practices

(8) In Hong Kong, engineers' endeavours to make these flood channels environmentally friendly usually fail, the 'environmentally friendly designs' recommended in the Environmental Protection Department website.

(http://www.epd.gov.hk/epd/english/environmentinhk/eia_planning/guide_ref/drainage1.html) could only mitigate visual impact on the stream, rather than retain/enhance the ecological value of the affected stream itself as all the recommendations are focused on the dry surface of floodways/stream banks, which cannot be used by aquatic wildlife:

(9) the usual channel design of containing 80% of the annual flow to a concrete-lined low-flow channel renders most of the eco-friendly designs on the floodway and channel banks completely useless for aquatic wildlife.

(10) the usual environmentally friendly designs, e.g. grasscrete, marshcrete, masonry bank, are targeted at the channel banks and floodway, which serves no better value than a concrete-lined smooth channel for aquatic wildlife; simply because they are confined within the concrete-lined low-flow channel almost year round.

(11) the usual design to greatly enlarge the channel capacity means the baseflow will be so low that aquatic life is stranded to death.

(12) the usual design to make the channel surface as smooth as possible for unobstructed discharge means the aquatic wildlife cannot find shelter from floods/sun.

Recommendations

Measures to protect rivers in Hong Kong – ecological / specific observations

(13) The Government's policy on stream conservation should be clarified. Please note that a proposal for designation of Lin Ma Hang stream as a SSSI was submitted to the Government by the University of Hong Kong in 1999 is still in consideration after four years. Apart from this particular stream, a total of some 15 streams of high ecological value are awaiting protection.

(14) In considering the current fiscal deficit, the Government should also review the justification, ecological impact and mitigation measures of approved channelization projects included in the Drainage Master Plan by the Drainage Services Department (DSD), and other drainage plans of other government departments including the Territorial Development Department and Home Affairs Department. For instance, the Lin Ma Hang stream is now threatened by *Package C of Drainage Improvements in Northern New Territories*. Channelization of this stream of extreme high ecological value could result in the extinction of two to three endangered fish species.

(15) In order to preserve the natural heritage of lowland streams and wetlands while protecting lives and properties, planners and engineers are urged to think carefully about eco-friendly methods to tackle the flooding problem, from land-use planning to REAL eco-friendly channelization approaches. Examples are riverine greenway planning, distant embankment, and ecologically sensitive channelization methods such as alternating desilting and riprap.

(16) Ecological restoration is a real possibility for many of the channelized streams, including those close to rural areas and wildlife habitats. To ecologically restore the “nullahs” would not only enhance the survival chance of many lowland aquatic life-forms, but also the aesthetic value of these rivers in an urban landscape.

Policy/administrative observations

(17) In addition to the specific engineering concerns KFBG believes that a more holistic view needs to be taken of Hong Kong's natural watercourses and flooding-related issues. This may require a fundamental assessment of the assumptions that have led to the current situation.

Budget and Policy-level

(18) Recognize that channelization is not the sole solution to flood prevention and that not



all rivers MUST be channelized.

(19) Consider the value of natural flood control and prevention in plan making and assessment of planning proposals

(20) Review of budget allocation (especially capital works) for DSD

(21) Review of cumulative impact of currently operating flood prevention measures and make assessment of future needs based on these requirements

(22) Independent review of the effectiveness of the current strategy with reference to international best practices and cost/benefit analysis comparisons

Greater transparency - enhanced public consultation

(23) Recognize that DSD has no limited ecological knowledge and leverage knowledge of appropriate government departments and other experts

(24) Proactively invite consultation on case-by case basis

(25) Public review of justification criteria for capital works (esp. cost/benefit analysis)

(26) Greater conflict of interest due diligence for small scale local projects

(27) Where capital projects are proposed documented evidence must be presented that there is threat to life or major threat to property

Administrative procedures

(28) Review of ecological survey requirements for drainage projects of all sizes.

(29) Create mechanism for cumulative assessment of small-scale projects in flood-sensitive areas

(30) Consideration of ‘Do not build’ option for developments in areas with a high risk of flooding

(31) Consideration of alternative strategies where flood event likelihood is remote.

(32) Review of timing and necessity for clearing substrate from drainage channels.

(33) Recognition of the value of undeveloped land for flood mitigation.

(34) Consideration of designating undeveloped areas as flood absorption zones and limiting further development there

(35) In areas where life is not threatened by flooding consider if provision of sandbags and a compensation fund is a cheaper option than capital works

(36) SINCE NO LOWLAND STREAMS ARE PROTECTED AT THE MOMENT, IT IS RECOMMENDED TO PRESERVE A REPRESENTATIVE SET OF LOWLAND STREAMS IN A NATURAL STATE AS NATURAL HERITAGE SITES.