

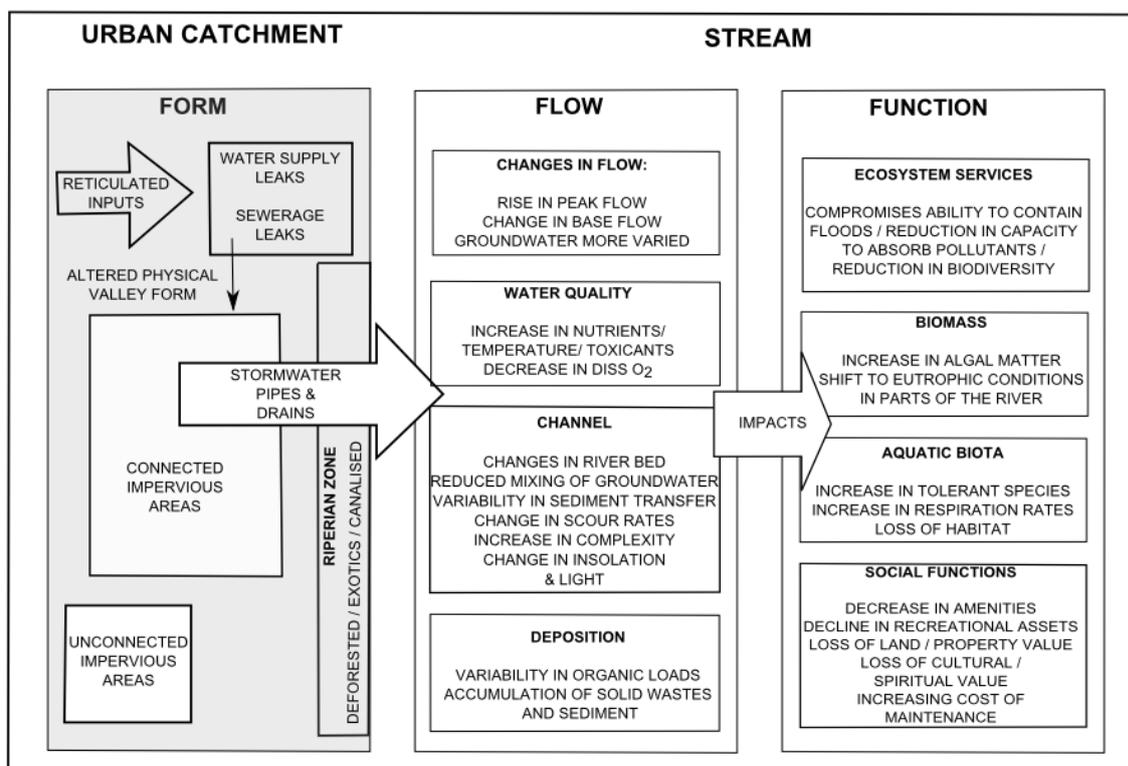
The urban river syndrome - what could be done about it?

Introduction

The Liesbeek Life Plan is a recently formed collaborative effort between the Friends of the Liesbeek and UCT's Urban Water Management research unit. The aim is to provide new knowledge, plans and designs for the Liesbeek river to improve the ecological conditions in the river corridor and simultaneously protect and enhance amenity and social value of the river. A secondary aim is to learn and work together in a community of practice where we explore new ways of thinking from the knowledge and experiences of participants. The idea of a 'life plan', much like a life assurance policy, focuses on building ecological and social resilience in order to safeguard natural systems against multiple risks that affect the river system and public access and enjoyment of the river.

The concept of an urban river syndrome

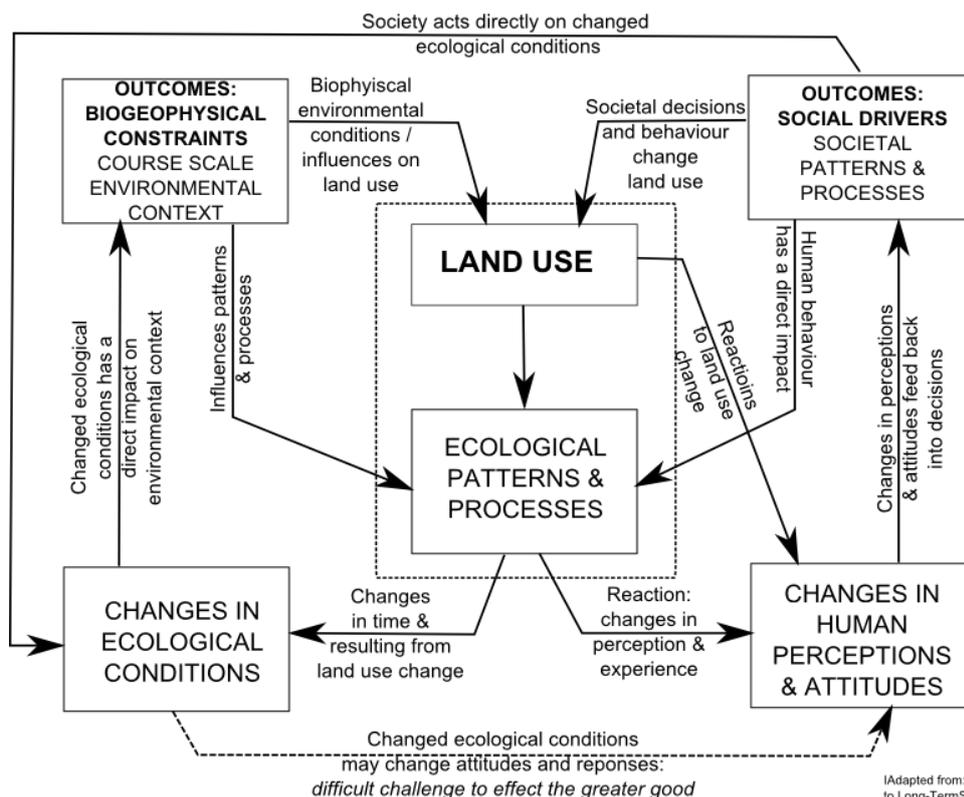
Worldwide people are dominant urban river landscapes and the result is an all too familiar pattern, dubbed the 'urban river syndrome'. The diagram below shows some of the affects of urban rivers on ecological systems and services. It explains, for example, why urban rivers flood surrounding urban areas; why they accumulate excessive pollutants; and why river systems are unable to support a diversity of aquatic plant and aquatic life. It also shows how combinations of infrastructure (e.g. pipes and roads) in urban catchments change the form and flow within urban rivers leading to an accumulation of impacts that affect the functions of the river system. These impacts are driven by the interplay of multiple factors that operate in an urban catchment including climate and environmental change; an insatiable appetite to improve material wealth and well-being; poor management and maintenance of river corridors; and a growing detachment of citizens from natural systems.



Adapted from Walsh, C. et al. (2005) The urban stream syndrome: current knowledge and the search for a cure *Journal of the North American Benthological Society*, Vol. 24, No. 3 (September 2005), pp. 706-723

Social and ecological interactions: enhancing ecology change affects human behaviour

The diagram below presents an argument for enabling and strengthening social and ecological interactions. It is a framework comprises a range of variables (boxes) and processes (pathways and arrows). The top two variables are at a course scale. The right hand box suggests that social and institutional decision making, and on the right, environmental conditions, both directly or indirectly land use. In turn, changes in land use, and ecological patterns and processes influence changes in ecological conditions and have potential to change human behaviour for the better (e.g. positive attitudes) or worse (e.g. negative behaviours that are detached and even threaten ecological processes). Two important processes highlighted in the diagram, are that of creating desirable outcomes. These are motivating factors for restoring urban rivers. The first is to recognise, and take some confidence in the fact that public institutions and societal actions directly affect changes in ecological conditions (e.g. the Friends of the Liesbeek have contributed to river restoration and conservation for over 20 years and have made a difference). Actions also have negative consequences. Secondly, people change their attitudes and perceptions as a result of changing condition observed in improvements to the environment and ecological systems. Arguably an improved urban river system then contributes to public perception and has potential to close the gap on social and ecological interactions (e.g. the Friends of the Liesbeek observe a growing interest in the Liesbeek on social media where restoration work has taken place).



Adapted from: Gimm, N. et al. (2000) Integrated Approaches to Long-Term Studies of Urban Ecological Systems BioScience, Vol. 50, No. 7 (July 2000), pp. 571-584

Landscape urbanism: turning social and ecological interactions into design

The third idea in this letter is to draw the thinking expressed in the previous frameworks a new concept that may help to build the Liesbeek Life Plan. New terms and concepts are often problematic. Sometimes they confuse because they lack clarity of purpose and more often than not they are just new words to describe old ideas – the woes of a post-modern society. However, the landscape urbanism concept could be different. Just as the ecologists in the 1980s began to see rivers as a continuum of life from source to sea (rather than upper, middle and lower courses of the river), so too the idea of landscape urbanism raises new thoughts about the landscape being a continuum of processes that interconnect with the river and the river corridor. Making these connections is especially helpful because the connection is broken – even in the case of the Liesbeek. Landscape urbanism is a fresh approach to planning and design. It is a deliberate shift from traditional landscape architecture discipline that tended to be site specific. It is an approach that sees the importance of connecting people and natural systems, among other processes. In the context of the Liesbeek Life Plan, it is about connecting social habit and behaviour with well being and health of the river and its ecology. Hence the two previous diagrams are more than just abstract theory or frameworks, but suggest an integrated way of thinking about how to approach the Liesbeek Life Plan in dealing with form, flow and function, and then to establish a means of an enabling the connections between people with ecological systems.

Evidence of this is already happening in parts of the Liesbeek where neighbourhoods are taking interest in the state of the river and the river corridor, e.g. the Upper Liesbeek Garden; Paradise Park; Rosebank and Mowbray civic association; and Observatory/Mowbray neighbours. These developments are contributing to the long term vision of the Friends of Liesbeek. At various times they have used the analogy of the river being a `spine' or `backbone' that is connecting to the `ribs' of a human body. The ribs are these neighbourhoods and civic groups who are prepared to collective to improve the environment. The concept of landscape urbanism is therefore an approach that aims to make explicit the connection between society and ecology, and this idea might be a useful way for the development of the Liesbeek Life Plan.