

Creating a Resource Out of Nuisance

HYBRID STORMWATER BIOFILTERS

HARVESTING, RETENTION AND TREATING STORMWATER IN
MIAMI

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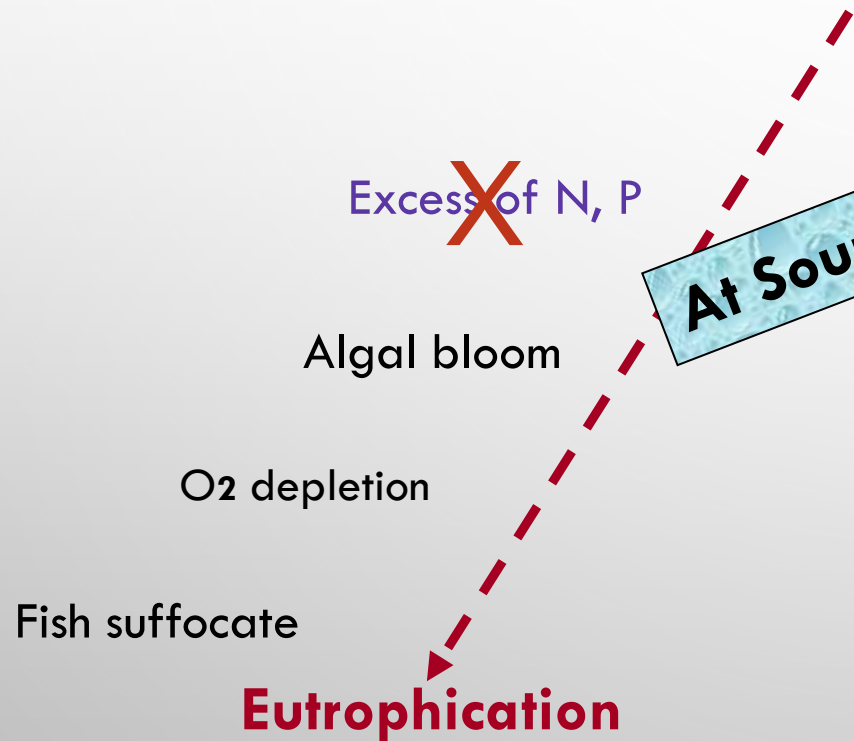
Water Research Center
Tel Aviv University

The Center for Water
Sensitive Cities in Israel
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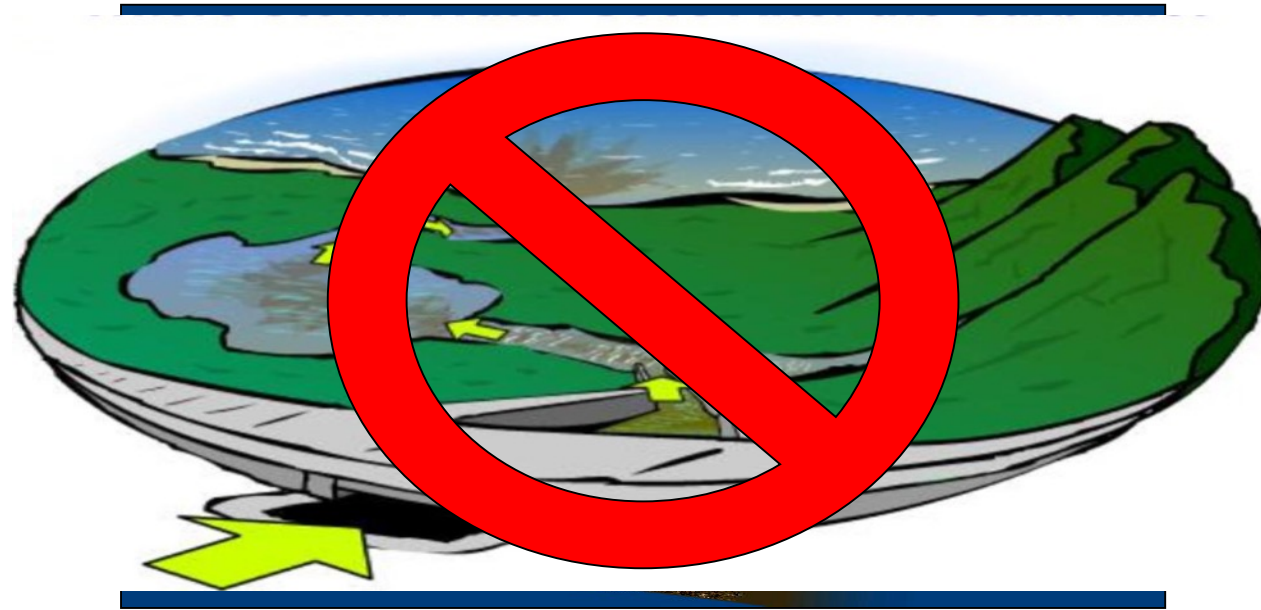
EUTROPHICATION

EXCESS OF NUTRIENTS (MAINLY N & P) IN STORMWATER IS CONSIDERED THE MAIN CAUSES OF EUTROPHICATION
~50% OF WATER BODIES AROUND THE WORLD

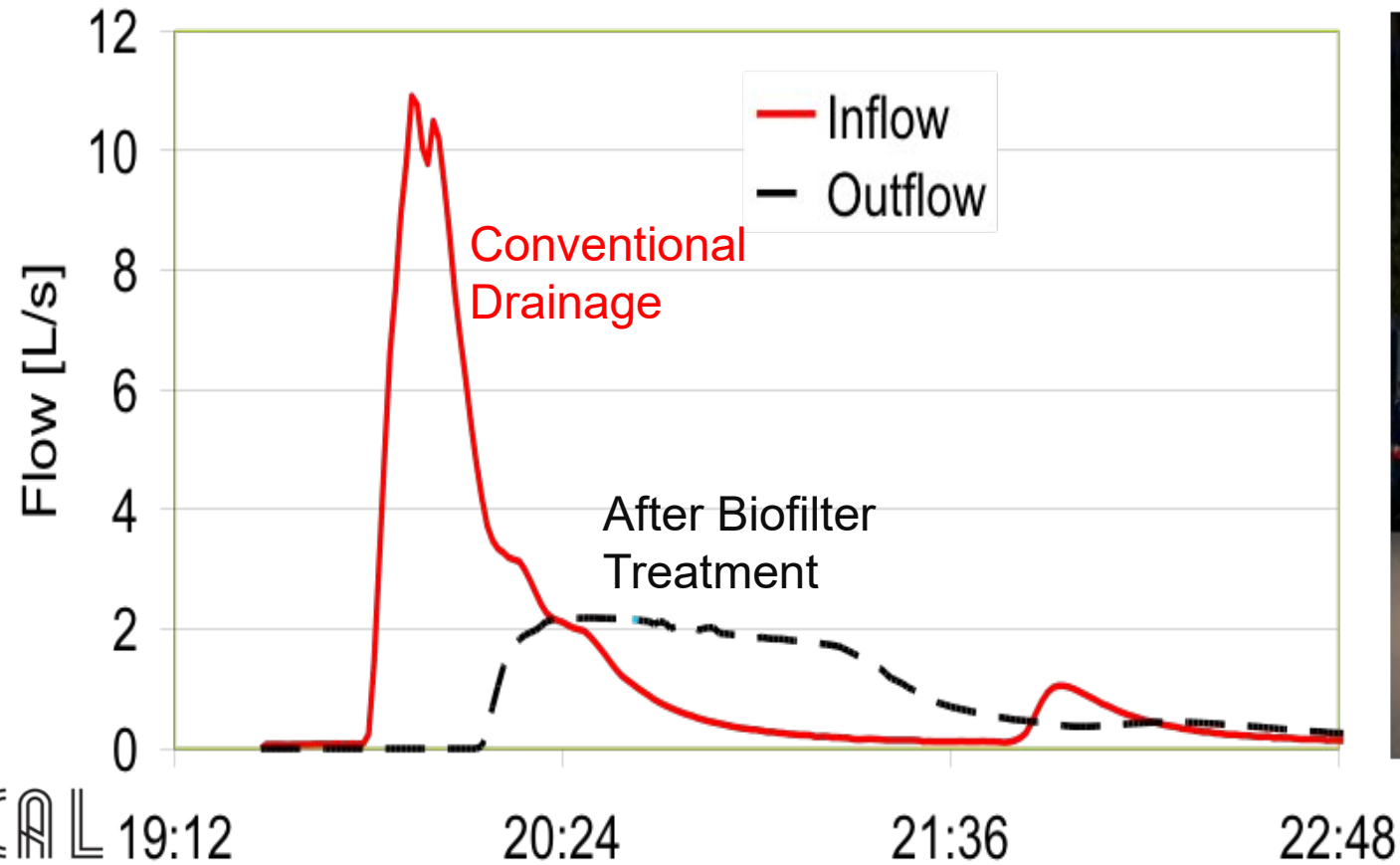


Stormwater contains high concentration of dissolved organic and inorganic compounds, **Nutrients (N&P)**, oil and grease, toxic metals (e.g. Cd, Pb, Zn and Cu) and pathogens.

In **biofilters**, those compounds could be removed mainly by treatment train via the biofilter layers



Mitigating floods via Hybrid Biofilters



Proof of concept in Australia & Israel

- ✓ Operating successfully in 3 cities from 2010, 8000 biofilters in Melbourne
- ✓ Meeting Australia and Israel water guideline quality
- ✓ Aquifer recovery, 73% removal of NO_3

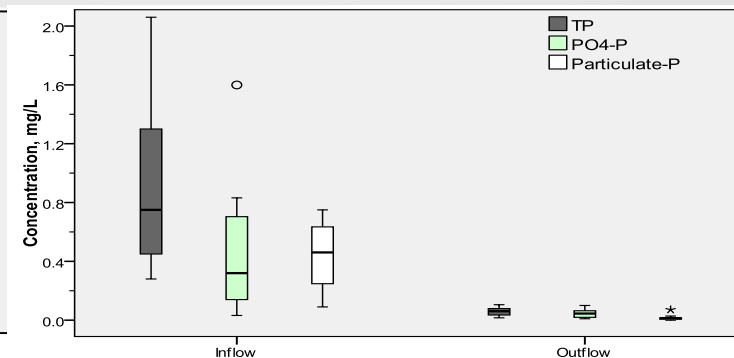
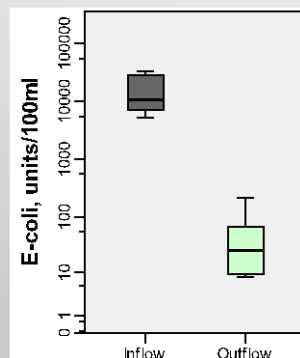
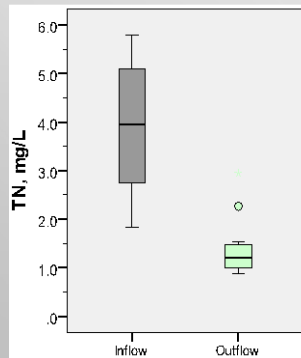
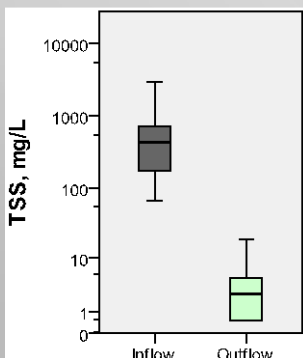


median removal = 92%

median removal = 88%

median removal > 99%

TP median removal = 92%
PO₄ median removal = 88%



• TOXIC METALS >90% REMOVAL

Green/detention roof



Our Strategy is a RETENTION & TREATMENT TRAIN

- ✓ At source solution
- ✓ An integrated water Retention & Treatment via “Green Blue” measures such as **Biofilters** Public amenity & micro climate
- ✓ Piloting (Monitoring, sampling & modeling)



Biofilter green wall



Bio-swale

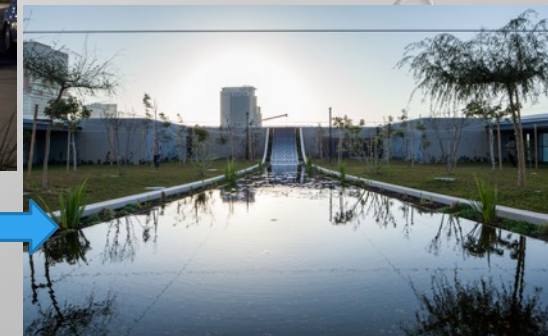


Urban runoff Biofilter



Safely discharge to the bay

Operational leaky storage



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Thank you,

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