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# ENVIRONMENTAL PLANNING & DESIGN

THOUGHTS FOR THE 21<sup>ST</sup>  
CENTURY

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# AREAS OF CONCERN 1987

Clean air and clean water – protections at the Federal level.

- Hazardous waste
- Natural resource protection
  - Land use laws
    1. Wetlands
    2. Stormwater quantity and quality
    3. Steep slopes
    4. Tree protection
    5. Endangered species



# INTRODUCTION

*When we try to pick out anything by itself, we find it attached to everything in the universe.*

*John Muir*





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## NATURAL RESOURCE PROTECTION

PLANTS

WILDLIFE

SOIL

SURFACE WATER

GROUNDWATER

GEOLOGY


AIR

Protection requires understanding how the physical environment impacts the biota that are found on a site.

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Trees give us shade and  
oxygen and wood to build  
our houses, but all the while  
they are recording what is  
happening around them.

It's important to see the big picture.



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# TIMELINE – STORMWATER REGULATION

1962

Rachel Carson publishes *Silent Spring* documenting the environmental harm caused by indiscriminate use of pesticides.

1972

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

1987

In the Water Quality Act of 1987, Congress responded to the stormwater problem by defining industrial stormwater dischargers and municipal separate storm sewer systems (often called "MS4") as point sources

1993

New York City DEP starts to implement stormwater quality regulations to protect the public drinking water supply in the reservoirs serving New York City.

TODAY

Most states and towns in the northeast have stormwater regulations and require that both the quantity and quality of runoff be addressed as part of an application for development.

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# COMPARISON – PROTECTING PLANTS

## Then

- Tree protection ordinances
- Endangered species surveys – often from records that dated back to the 1800s or early 1900s

## Now

- Tree replacement requirements and time-of year restrictions for cutting trees
- Invasive species identification and management
- Use of “native” species over ornamental
- Creation of “pollinator pathways”
- Habitat restoration
- Re-wilding the lawn

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# COMPARISON – MANAGING STORMWATER

## Then

- Stormwater was considered “clean” water
- Control of quantity and rate of discharge were the key goals to minimize downstream flooding
- Most stormwater models used rainfall data from the 1970s to predict runoff.

## Now

- Stormwater plans must address both quantity and quality in design
- Infiltration and recharge of groundwater is encouraged where appropriate
- Designers are beginning to plan for the larger storm events (“100 year”)

## The Future

- Acknowledgement that storm events are both more intense, and more frequent
- Updating rainfall data to use in predictive models
- Both inland and coastal flooding must be anticipated and planned for





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# SUMMARY

The challenge today is to look at a plan and try to anticipate what the site or project may look like tomorrow, or in twenty years. Topics like preservation of open space and protection of vulnerable species are more challenging every day, because people do not like to be told what they can and can't do with their land. Adaptive reuse, restoration, and resiliency are all critical concepts in the 21<sup>st</sup> century.





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# THANK YOU FOR YOUR TIME.

Questions?