

# WETLAND MONITORING - SUCCESS IS ALL IN HOW YOU DEFINE IT

ENVIRONMENTAL LAW INSTITUTE CITIZEN SCIENCE SEMINAR

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# CREATED WETLAND SUCCESS - A PRIVATE SECTOR PERSPECTIVE

## OVERVIEW - WETLAND MONITORING & SUCCESS CRITERIA

- WHERE WE'VE BEEN
- WHERE WE ARE
- CHALLENGES FACED
- DATA QUALITY AND QUALITY ASSURANCE/  
CONSISTENCY
- QUESTIONS



## EARLY 2000'S - THE WONDER YEARS

### ...I WONDER WHAT THEY WERE THINKING

- INVASIVE SPECIES
  - MUST MONITOR BUT DO NOT TAKE THESE INTO ACCOUNT WHEN DEFINING THE SUCCESS/FAILURE OF A CREATED WETLAND.
  - NO REQUIREMENT TO TREAT/ERADICATE
- OAK DENSITY REQUIREMENT
  - FAC OR WETTER OAKS @ A MIN. 50 STEMS PER ACRE IN YEAR 1
  - 150 STEMS PER ACRE BY THE END OF YEAR 3 THROUGH CLOSE OUT
- LACK OF DEFINIED SOIL SUCCESS REQUIREMENT
  - IF HYDROLOGY WAS MET, IT WAS ASSUMED THAT THE SOILS CRITERIA WAS SATISFIED



# THE MID-TO-LATE 2000'S - MOVING IN THE RIGHT DIRECTION

## TIMES ARE A'CHANGING

- INVASIVE SPECIES
  - ONLY SPECIES THAT THREATEN THE VIABILITY OF TREES NEED TO BE CONTROLLED.







# THE MID-TO-LATE 2000'S - MOVING IN THE RIGHT DIRECTION

## TIMES ARE A'CHANGING

- INVASIVE SPECIES
  - ONLY SPECIES THAT THREATEN THE VIABILITY OF TREES NEED TO BE CONTROLLED.
  - NO REQUIREMENT TO TREAT/ERADICATE ELSEWHERE OR IN EMERGENT WETLANDS.
- OAK DENSITY REQUIREMENT
  - GONE!
- BIANNUAL VEGETATION MONITORING - SPRING AND FALL
- SOIL PROFILES REQUIRED
  - NOT REQUIRED TO HAVE HYDRIC SOILS, BUT ARE EXPECTED TO SEE A TREND IN THAT DIRECTION.





## PRESENT DAY

### LOOK HOW FAR WE'VE COME

- INVASIVE SPECIES
  - NO MORE THAN 5% AERIAL COVERAGE WITHIN EACH SAMPLE PLOT
  - MUST TREAT ANYTHING LISTED AS MODERATELY INVASIVE OR WORSE ACCORDING TO THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION.
- OAK DENSITY REQUIREMENT
  - STILL GONE!
- VEGETATION SAMPLED ONCE A YEAR DURING THE GROWING SEASON
  - TREE HEIGHT AND PERCENT CHANGE IN TREE HEIGHT MEASUREMENTS REQUIRED
- SOIL PROFILES REQUIRED
  - NOT REQUIRED TO HAVE HYDRIC SOILS, BUT ARE EXPECTED TO SEE A TREND IN THAT DIRECTION.



## CHALLENGES FACED

### HOW IS SUCCESS DEFINED?

- IS THE STEM DENSITY REQUIREMENT TRULY REFLECTIVE OF A 'NATURAL' WETLAND SYSTEM?
  - MIN. 400 STEMS PER ACRE
  - COMPARISON WITH 'NATURAL' WETLAND SYSTEMS?
- HYDROLOGY
  - SUCCESS CRITERIA DIFFERS FROM WHAT IS DEFINED AS A WETLAND PER THE U.S. ARMY CORPS OF ENGINEERS.
- SOME REGULATORS FOCUS ON DIFFERENT ASPECTS OF ADAPTIVE MANAGEMENT TO DEFINE SUCCESS
  - I.E.: REGULATOR A DISREGARDS CERTAIN INVASIVE SPECIES WHILE REGULATOR B WANTS THEM ERADICATED.
- TREES
  - IT IS A CHALLENGE TO ESTABLISH LATER SUCCESSIONAL VEGETATION FROM THE START OF A CREATED WETLAND.



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# DATA QUALITY & QUALITY ASSURANCE/CONSISTENCY

WHO IS COLLECTING THE DATA?

WHAT ARE THEY NOT COLLECTING?

WHEN ARE THEY COLLECTING IT?

ARE THEY QUALIFIED TO COLLECT IT?

WHAT HAPPENS WHEN YOU CHANGE CONSULTANTS?

DIFFERENT ECOLOGISTS FROM THE SAME COMPANY?

VOLUNTEER SPECIES

WHEN TO COUNT?

HOW TALL SHOULD THEY BE TO COUNT?

HOW MANY DO YOU COUNT WHEN DENSE POPULATIONS  
OBSERVED?

MONITORING WELL ISSUES



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QUESTIONS?



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