



Florida Onsite Sewage Nitrogen Reduction Strategies Study

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Research Program 101

- 🌀 Investigates public health impacts, environmental impacts, and performance of onsite systems
- 🌀 Program has been around for 30 years
- 🌀 Funded by \$5 surcharge on new septic permits & outside grants
- 🌀 Results have helped shape the industry

Research Review and Advisory Committee



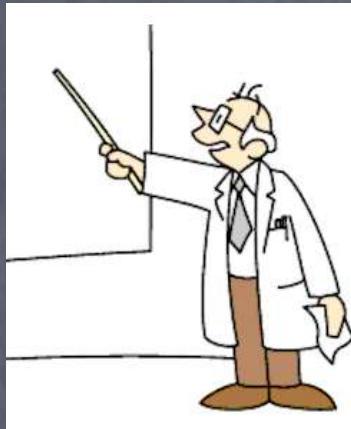
Advise on directions for new research



Review and rank proposals for research contracts



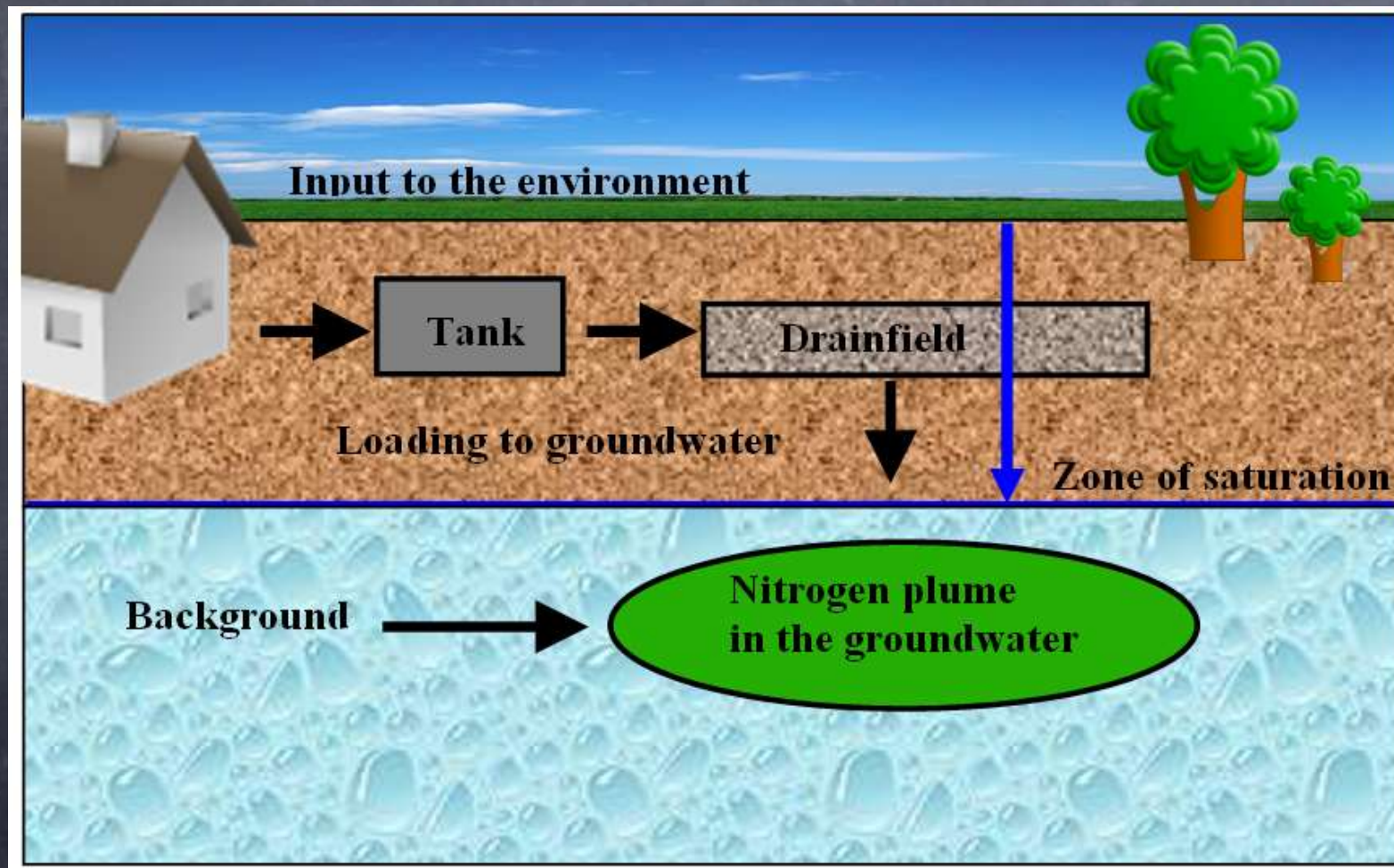
Review draft research reports



What Do Onsite Sewage Systems Contribute?

- 30% of population in Florida served by onsite wastewater treatment systems
- One of the largest artificial groundwater recharge sources in the state
- 90% of drinking water comes from groundwater

Nitrogen From Onsite Systems Depends On:



System usage



Treatment level



Groundwater



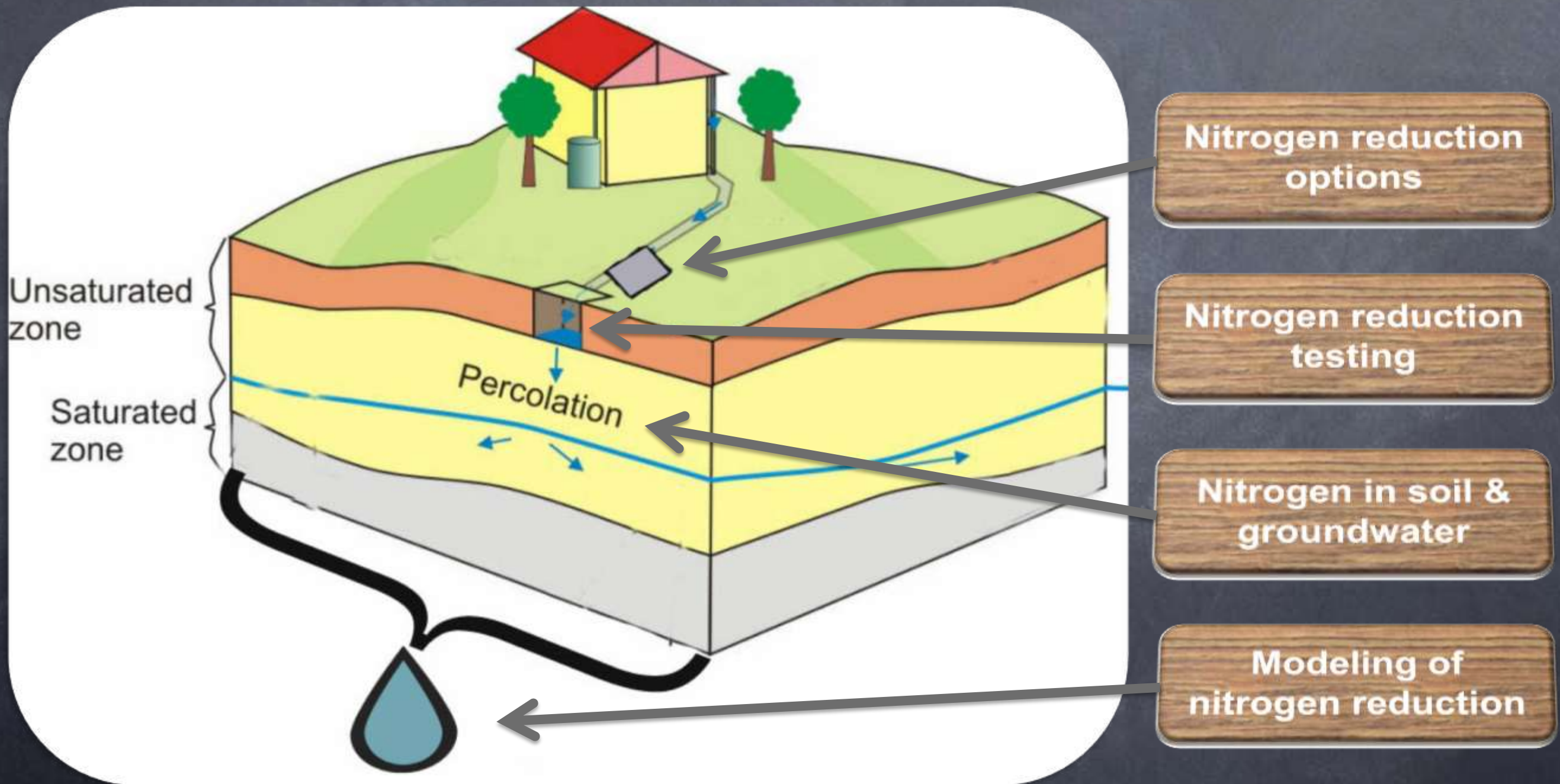
Soil type

2008 Legislative Appropriation 1682

- Instructed DOH to further develop cost-effective nitrogen reduction strategies
- Focusing on passive systems:
 - Use a reactive media for denitrification and no more than 1 pump
 - More similar to conventional onsite systems in their operation and maintenance

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Study cost-effective ways to reduce nitrogen contributed by onsite wastewater treatment systems



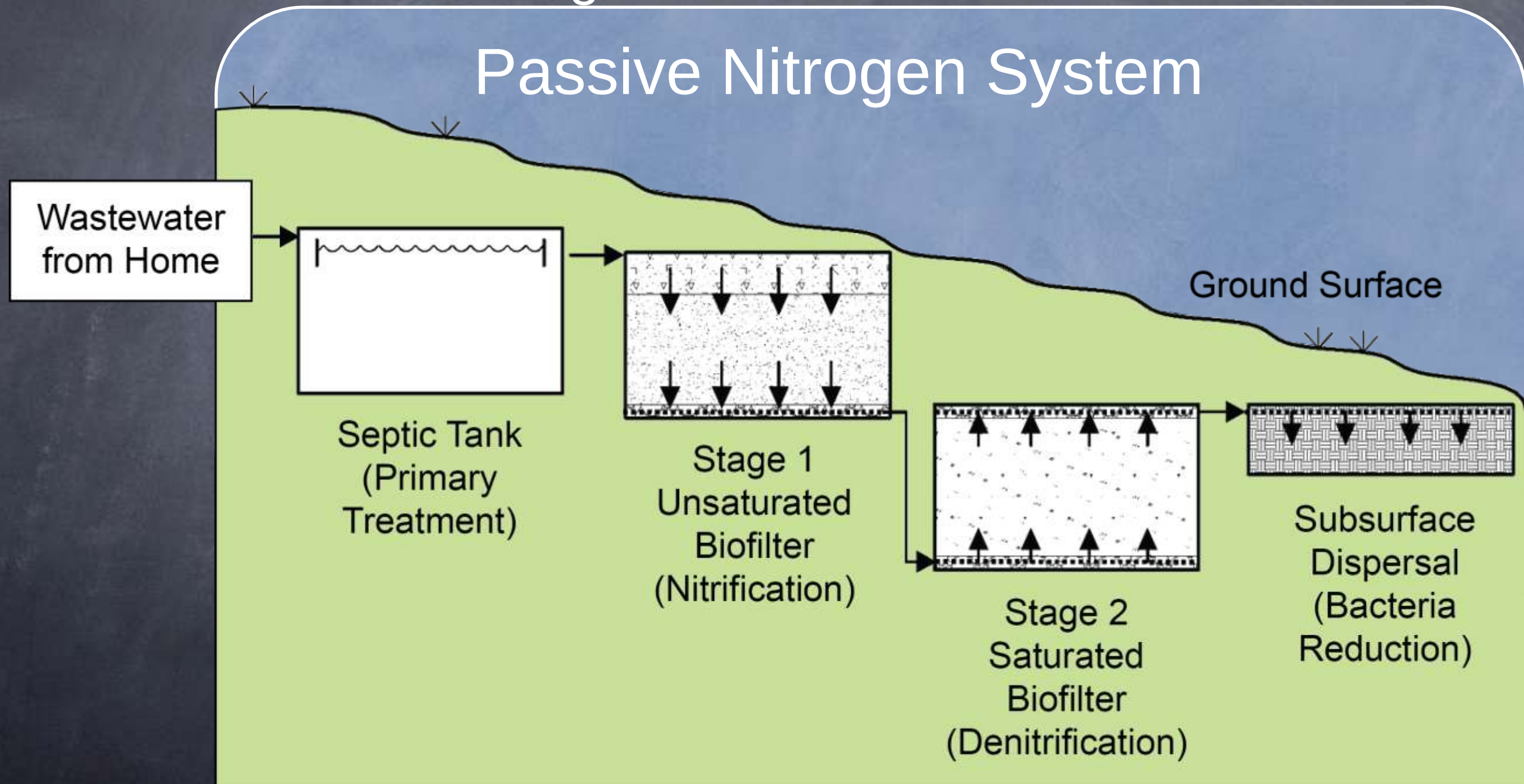
Original image source:

http://www.bgs.ac.uk/science/landUseAndDevelopment/images/urban_geoscience/suds/soakaway.jpg

Install Full-Scale Systems at Actual Home Sites

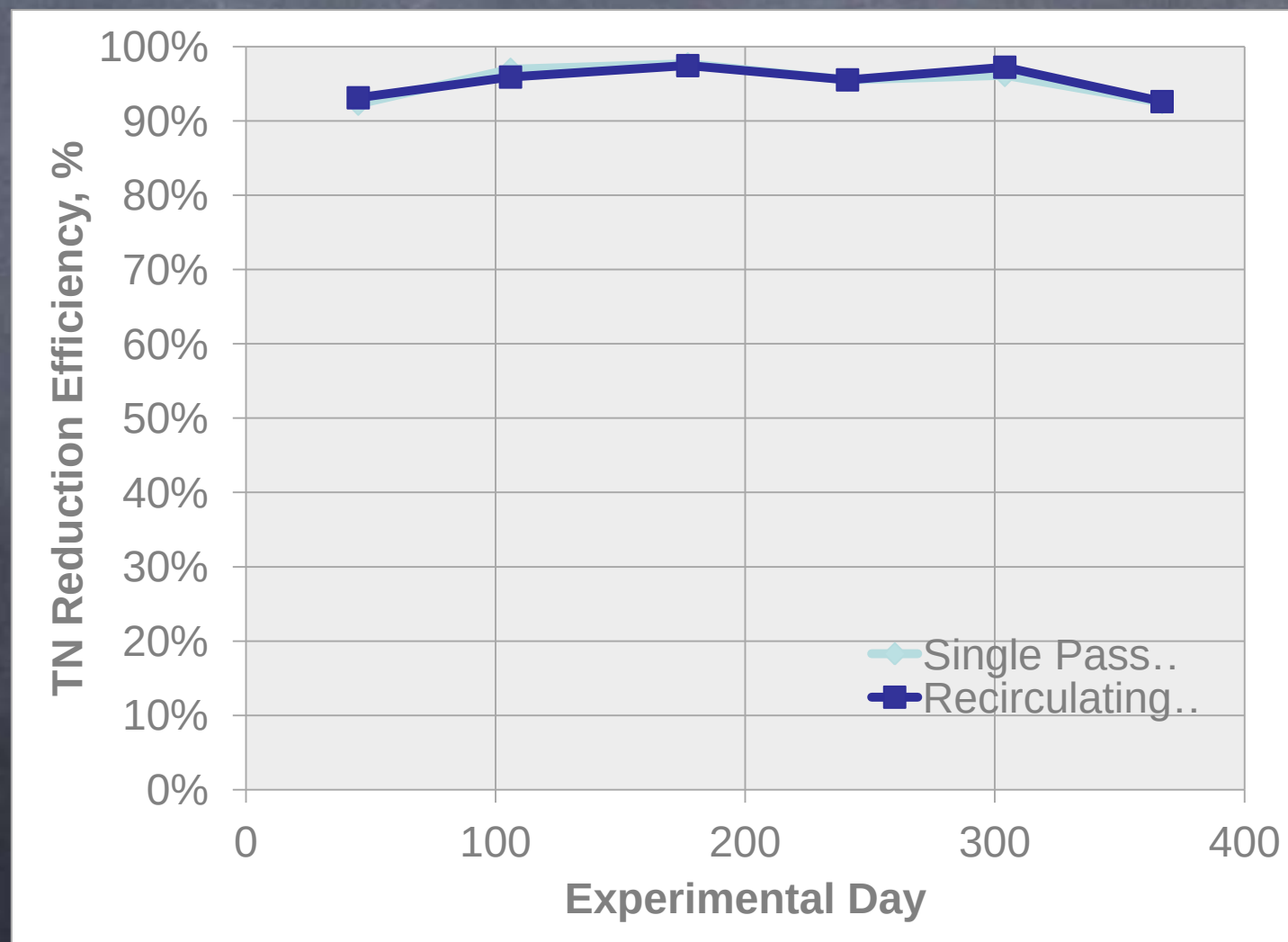
Monitoring 7 sites throughout Florida
8 monitoring events over 12-18 months

Passive Nitrogen System



Test Center Results Show Consistent Treatment To Very Low N Levels

	Stage 1 Treatment Media	Stage 2 Treatment Media	Mean TN (mg/L)	% TN Reduction
Septic tank effluent (pre-treatment)			61.04	
Single Pass	Clinoptilolite	Sulphur	2.60	95.2%
Recirculation	Clinoptilolite	Sulphur	2.54	95.3%



Passive In-Situ In-Ground Test System

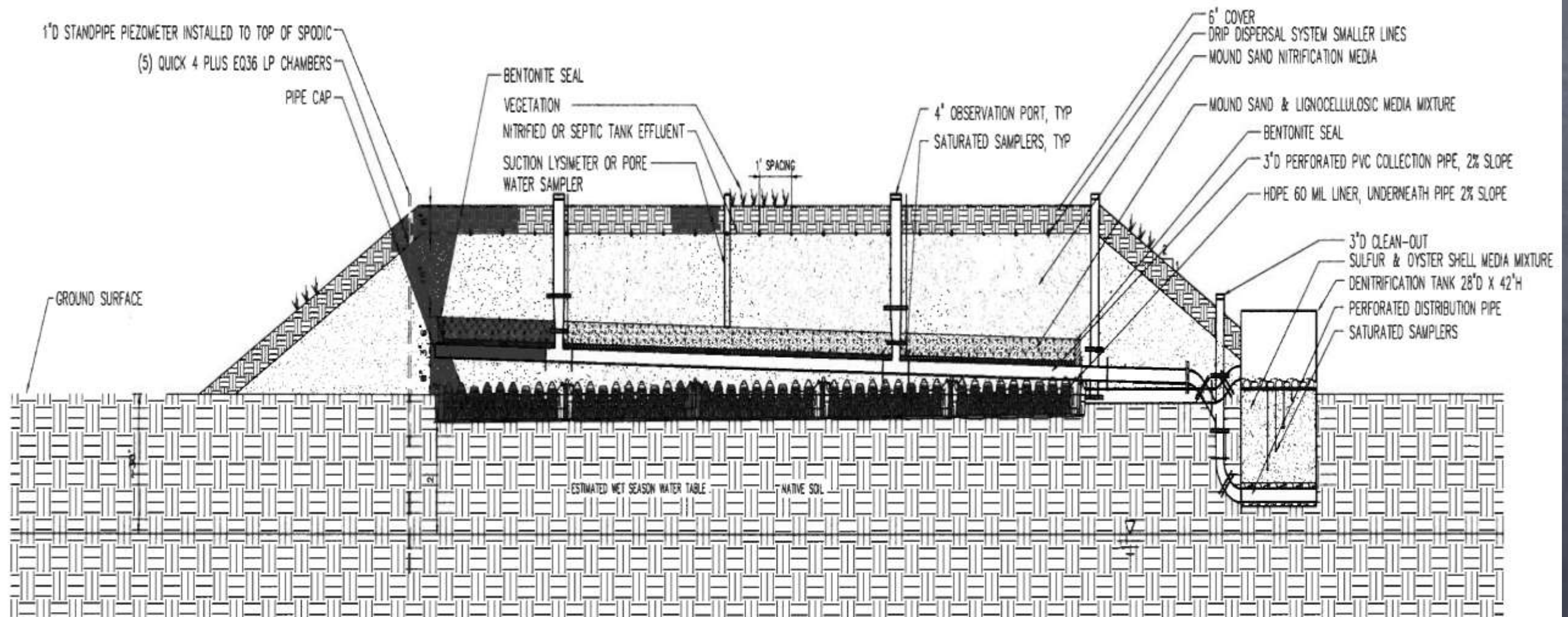


Illustration courtesy of

HAZEN AND SAWYER
Environmental Engineers & Scientists

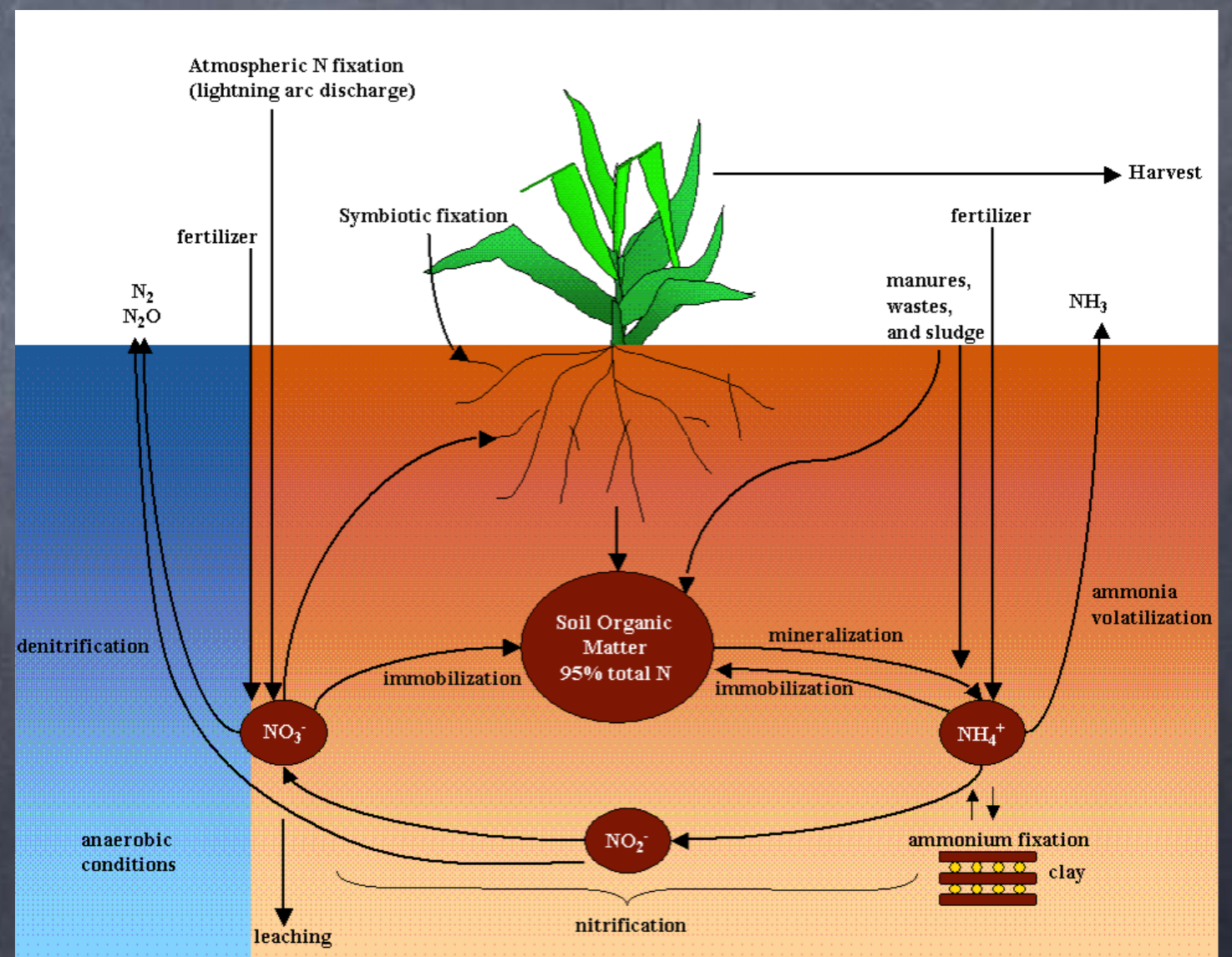
Modeling of Nitrogen Removal

- Develop a simple model to be used for assessment, planning, and siting

- Model to represent treatment effectiveness in soil and groundwater

- Simple to use tool to come from a complex model

- Calibrated to site specific data (4 sites monitored over 12 months)



Project Timeline

2008

Legislative
Appropriation
1682 became
law, \$900,000
appropriated
to DOH

2009

Began
contract

2010

\$2,000,000
appropriated
to DOH

2012

\$1,500,000
appropriated
to DOH

2015

Anticipated
contract
completion
(January)
and final
report to
Legislature
(May)

Summary of Legislative Funding

Total Project Budget	\$5,100,000
2008 Funding	(\$900,000)
2010 Funding	(\$2,000,000)
2012 Funding	(\$1,500,000)
Total Funding to Date	(\$4,400,000)
Balance to Complete	\$700,000

Successful Outcomes From This Study Would Provide:

- Designs for “passive” systems that have been performance evaluated, are effective at removing nitrogen, and are user-friendly for property owners
- Cost estimates for these systems and a comparison of costs to existing approved systems
- Nitrogen fate and transport model that will help in estimating nitrogen contribution from existing and proposed systems
- Opportunities for nitrogen reduction from onsite sewage systems in sensitive watersheds where municipal sewers are not feasible

2012 House Bill 1263

381.0065(4)(x) Florida Statutes

- No governmental entity (including a municipality or county) can require a performance-based treatment system (PBTS) before the study is completed
- Exception is for a passive engineer-designed PBTS
- Does not apply to a governmental entity that adopted a local law, ordinance, or regulation on or before January 31, 2012
- Site specific variances for violations from Chapter 64E-6 F.A.C. can require a PBTS

2012 Budget Implementing Language

Notwithstanding any other law, before Phase 3 of the study is completed, a state agency may not adopt or implement a rule or policy that:

- 1) Mandates, establishes, or implements more restrictive nitrogen-reduction standards to existing or new onsite sewage treatment systems or modification of such systems; or
- 2) Directly or indirectly requires the use of performance-based treatment systems or similar technology, such as through an administrative order developed by the Department of Environmental Protection as part of a basin management action plan adopted pursuant to s. 403.067, Florida Statutes. However, the implementation of more restrictive nitrogen-reduction standards for onsite systems may be required through a basin management action plan if such plan is phased in after completion of Phase 3.

Thank you!



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<http://www.myfloridaeh.com/ostds/research>