



*Integrated Market-like Strategies to Meet the Iowa Nutrient Reduction Strategy - A Solution to Gulf Hypoxia: **The Farmer Part of the Equation***

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Company Snapshot

Overview

- RES is the premier provider of ecological and water resource solutions in the US
- RES founded in 2007
 - In 2014, RES acquired EBX, founded in 1998
 - In 2016, RES acquired Angler Environmental, founded in 1999
- 40,400 acres of restored and protected wetlands
- 180+ miles of streams restored and conserved
- 225 mitigation sites, completed or in process
- 20,000 acres of custom, turnkey mitigation solutions
- Over 350 storm water management facilities designed and constructed
- 600 commercial, municipal and residential storm water management facilities maintained
- 240 tons of water quality nutrient reductions
- 400 erosion and sediment control inspections at active construction sites across eight states
- 3,700 acres of endangered species habitat restoration and preservation
- 10,000,000 restorative trees planted across all operating regions
- Over 1,750 federal and state permits received using RES-supplied compensatory mitigation solutions.

Mission

Resource Environmental Solutions (RES) delivers comprehensive ecological restoration and water resource solutions that help project developers obtain required permits and stay in compliance when projects impact wetlands, streams and habitats

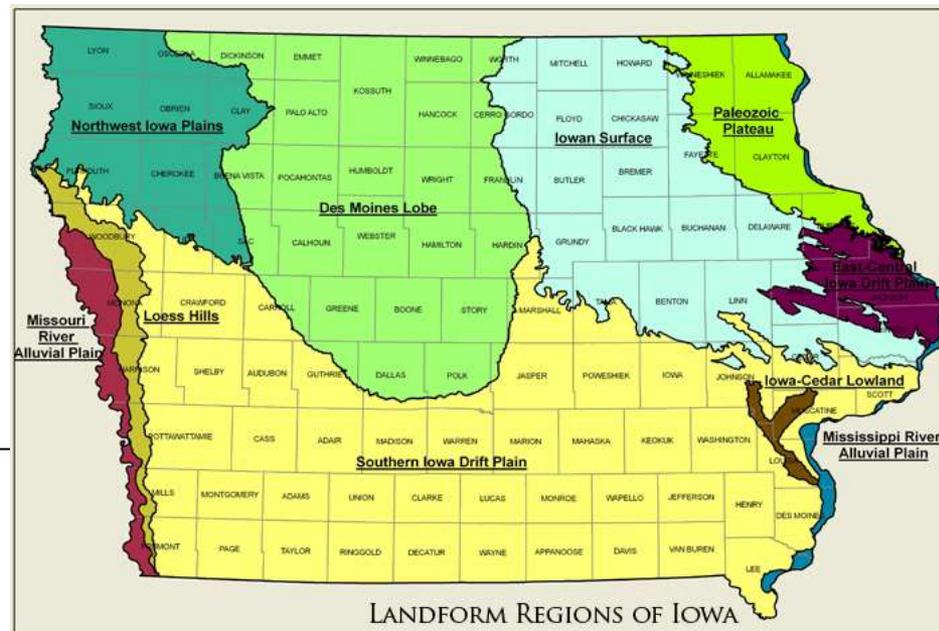
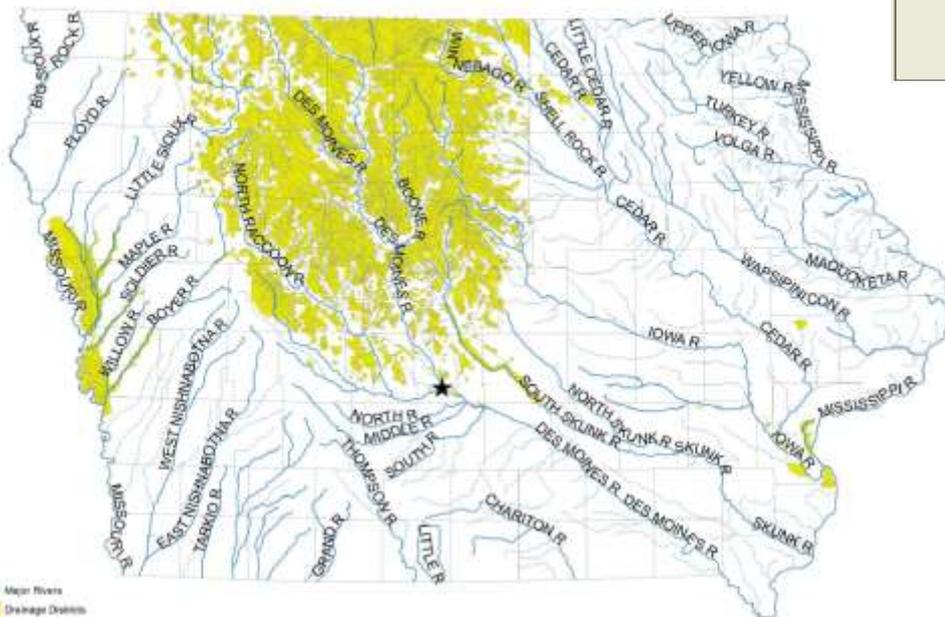
We help clients manage risk from operations in environmentally sensitive areas by providing proactive project impact analyses, streamlining permitting processes, and limiting liability and regulatory exposure



Iowa Landscape

- 9.9 million tiled acres
- 3,000 drainage districts
- 92% of N and P budget for Iowa is agriculture-related

Iowa Drainage Districts



Regulatory/Government Context

- Gulf of Mexico Hypoxia Workgroup since 2008
- Iowa Nutrient Reduction Strategy emanating from Gulf work (PS/NPS)
- Farm Bill Programs ongoing – cost-share/practice-based
- Resiliency Funding – \$97M in HUD National Resilience
- Swampbuster – USDA
- MS4



Iowa Nutrient Reduction Strategy (INRS)

- Iowa is one of 12 states taking part in Hypoxia Plan
- 2013 INRS – Obligation to reduce TN 75% and TP 66% for both PS and NPS
- 10-year window for WWTPs to upgrade to be spared from having to meet INRS reduction standards
- Currently, it is a “voluntary” program, but it is anticipated that nutrient limits will be enforced in next 5-10 years
- Trading/offsets anticipated as option
- DNR allows for early crediting in advance of formal establishment of trading program



Source: Iowa State University

Basic Market Factors that Need to be Defined

- Regulatory Drivers and authorizations-demand?
- Eligibility of Buyers and Sellers
- Baseline requirements before trade
- Lifespan of BMP practices
- Sale period requirements
- Currency-N,P,S and impervious acre
- Service Area-where can you sell credits?
- Liability for success
- Trading Ratios (Uncertainty, Delivery and/or Retirement)
- Options other than trade
- Verification process
- Pricing



Farmer/Landowner Considerations

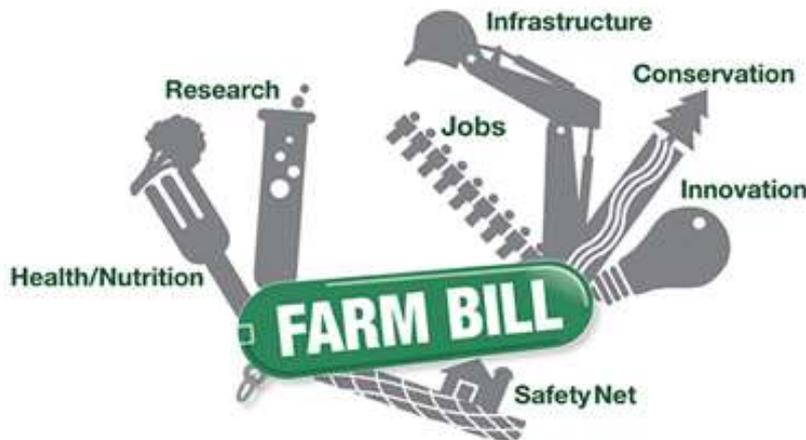
- Approval to submit application and certify and sell credits
- Baseline analysis assistance
- Acreage and practices for credit generation
- Any restrictions on land use or crop rotation?
- Timeline (annual/10-years/permanent)
- Payment?
- Responsibilities for installation and management of practices
- Responsibilities to maintain baseline and pay property taxes
- Access and right of inspection
- Performance liability for credit generation and sales
- Insurance
- Default

Swampbuster

- Program dates back to 1985 Farm Bill and creates disincentives to converting wetlands for agricultural production by limiting access to benefit programs
- Farming wetlands prior to December 23, 1985 (“prior converted wetlands”) is exempt
- Those who planted wetlands converted between December 23, 1985 and November 28, 1990 were ineligible for benefits in the years the crop was planted
- Currently, to maintain eligibility, producers must certify: **a)** that they have not produced crops on wetlands converted after December 23, 1985 and **b)** that they did not convert a wetland to make agricultural production possible after November 28, 1990
- Mitigation, including mitigation banks, is available to prevent or correct swampbuster non-compliance

Swampbuster (cont.)

- The 2014 Farm Bill added crop insurance subsidies to the list of benefits that could be lost to swampbuster due to non-compliance
- The limitation applies to wetlands converted after February 7, 2014:
 - An entity would be ineligible for crop insurance subsidies if impacts are five (5) acres or greater; or
 - For conversions less than 5 acres, the subsidy is lost unless the landowner pays into a wetland restoration fund or undertakes mitigation
- Swampbuster non-compliance on just one of the producer's farms could lead to the loss of program benefits for all of the producer's lands



“It’s like a Swiss Army knife.”

- President Obama 2/7/14



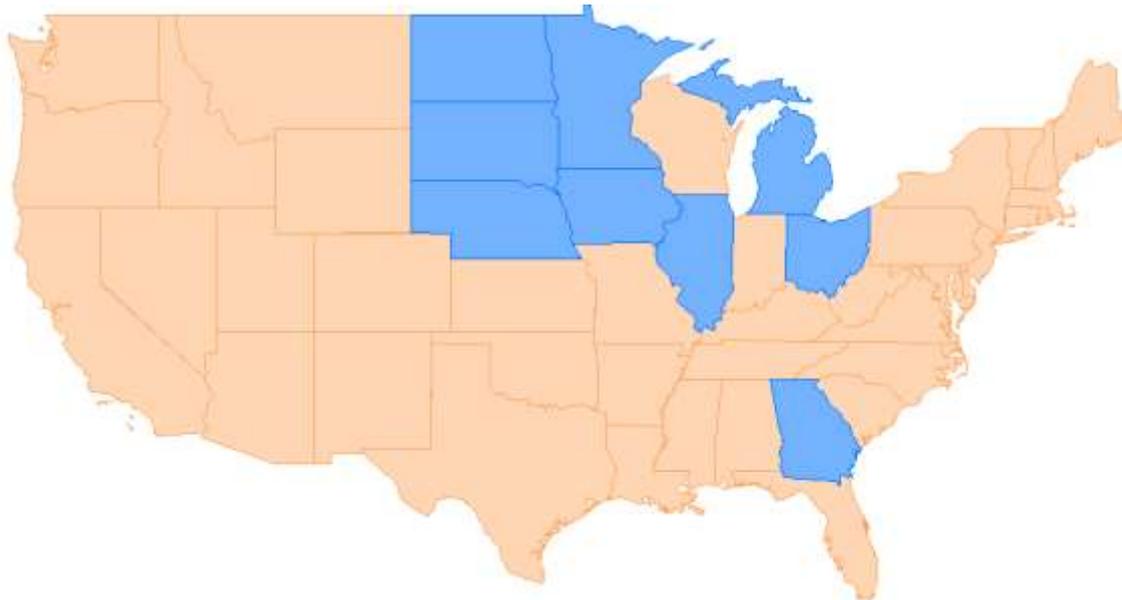
Swampbuster Mitigation

- Currently, no formal NRCS approach
- Mitigation under the program is for the express use of agricultural impacts
- Are the standards less rigorous than 404 mitigation? Service Area? Functional protocol? Credit schedule?
- Focus on mitigating small and seasonally cropped wetlands; deep storage is not a favored restoration approach
- Question of whether mitigation can be stacked with water quality credits



NRCS

- \$9 million available to jumpstart in FY 2016
- NRCS retains oversight
- Priority given to states with a large number of wetland determination requests, such as Iowa
- Announced an award for 10 projects in South Dakota, Ohio, North Dakota, Nebraska, Minnesota, Michigan, Iowa, Illinois, and Georgia



Agriculture in Iowa

- **Buyers or Sellers?**
- Buyers:
 - Swampbuster
 - Nutrient reduction
- Sellers:
 - Swampbuster
 - Nutrient reduction
 - Other
- Is the agricultural community prepared to pay?



Project Concepts

- Look at urban/rural interface
- Understand upstream drainage opportunities
- Target beneficial agricultural lands
- Integrated Concept
 - Nutrient load reductions for the benefit of municipalities
 - SRF Watershed Restoration opportunity
 - Integrate flood benefits
 - Integrate swampbuster?
 - MS4
 - Source protection
 - Other

Major Considerations for Ag as a Supplier

- Legal ability to stack and integrate (stacked capital vs stacked resources)
- More refined definition of NRCS Swampbuster mitigation requirements of market
- Analysis of cost/benefit by undertaking alternative nutrient reduction projects
- Define type of project: wetland, streams, drainage water management
- Clarity on nutrient reduction efficiencies
- Clarity on INRS



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