**4R Plus Website Copy For Review**

*Please review and make copy edits using “track changes” or by adding a “new comment.”*

**Slide 3/Home page**
Headline: Make the most of your most valuable asset

Subhead: Your best asset is right under your feet. And keeping it healthy is more important than ever.

**Slide 4/Home page continued – scroll down**

**Nutrient management and conservation for healthier soils**

Healthy soil retains nutrients and moisture – and can generate a corresponding increase in productivity, profitability and resiliency. It also can increase the value of your land for the next generation.

4R Plus involves precise nutrient management to provide nutrients when the crops need them and targeted conservation practices that retain soil and nutrients, enhance soil health and improve water quality.

 (4R Plus is … graphic)

**4R Plus makes agronomic and economic sense**

It all works together. When you improve soil health, you enhance crop growth and increase soil productivity, which can boost your yield potential and return on investment.

Examples:

* Practices like no-till mean fewer trips across the field
* 4R fertilizer practices increase nutrient uptake and reduce nutrient losses
* Soils with better structure hold more water and nutrients
* Cover crops and strip-till reduce erosion, decrease runoff and increase organic matter
* Healthy soils allow crops to better withstand weather extremes

The soil that provides your living is one of your most prized assets and keeping it healthy and productive goes right to the bottom-line.

**Slide 5 – 4R Nutrient Management Tab**

**The 4Rs of nutrient stewardship**

By implementing 4R nutrient stewardship practices, you optimize the nutrients you apply to maximize nutrient uptake and minimize field losses. Using the 4Rs allows you to keep the nutrients in the root zone and available when the crop needs them during the growing season.

 (Insert The 4Rs of Nutrient Stewardship graphic)

Learn more about 4R nutrient stewardship best management practices. (Hyperlink to http://www.nutrientstewardship.com/)

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Pull quote and photo – Darin Stolte

“I’ve been using the 4Rs for some time. I’ve increased my yields by utilizing nutrients more efficiently. I’m able to reduce nutrient runoff by applying them when the crop is ready to uptake them. I also use split-applied nitrogen because I have many soil types and some cannot hold a large amount of nutrient at once. Corn yields have increased by 25–30 bushels/acre using the 4Rs. In 2015, one field averaged above 250 bushels for the first time.”

– **Darin Stolte**, corn, soybean and alfalfa farmer, 2016 4R Advocate award winner, Jones County, Iowa

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**10 Reasons to Utilize 4R Nutrient Stewardship Practices**

Source: The Fertilizer Institute

 1. An efficient, effective, science-based use of plant nutrients to achieve agronomic, economic, social and environmental benefits.

2. Optimized yield with less nutrient loss to the environment due to matching nutrient supply with crop requirements.

3. Crop fertilization program consisting of right fertilizer application source, rate, time and place.

4. Positive impact on soil health.

5. Enhanced soil organic matter levels by producing more root and crop residue biomass.

6. Maximize the ability of the soil to provide all essential nutrients in adequate amounts and proportions for plant growth.

7. Efficient use of water through the combined interaction of soil, nutrients and water.

8. Efficient plant nutrient uptake and reduced loss to the environment by keeping nutrients in the root zone.

9. Maximize fertilizer ROI by preventing nutrient loss and increased productivity.

10. Framework to encourage discussion between farmers and crop advisers about improving fertilizer management.

**For more information from The Fertilizer Institute go to (link to** <http://www.nutrientstewardship.com/4rs/>**)**

For more **lists** to help your nutrient management and conservation efforts, visit the Resources page. (hyperlink to Resources page)

**Slide 6 – Conservation Practices**

**What’s the “Plus”?**

The "Plus" in 4R Plus relates to in-field and edge-of-field conservation practices that increase the resiliency of your soil and improve water quality. These practices help your soil remain productive, even under variable weather conditions. “Plus” practices help retain moisture, soil and nutrients, and reduce erosion and runoﬀ. And the end result of healthier soil is higher productivity, better return on investment, less nutrient loss and cleaner water.

Examples of "Plus" practices include:

(Insert 6 practices with corresponding photos)

Learn more about in-field and edge-of-field conservation practices:

Conservation Choices, Your Guide to 32 Conservation and Environmental Farming Practices, Natural Resources Conservation Service. (Hyperlink to: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ia/newsroom/factsheets/?cid=nrcseprd412634)

Soil Health Key Points, Natural Resources Conservation Service, February 2016 (Hyperlink to: https://nrcspad.sc.egov.usda.gov/DistributionCenter/pdf.aspx?productID=1027)

CleanWaterIowa.org, Iowa Department of Agriculture and Land Stewardship. (Hyperlink to: https://www.cleanwateriowa.org/farm/)

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**10 Ways to Build Healthy Soils**

Sources: Natural Resources Conservation Service, Iowa State University Extension, The Nature Conservancy

 1. Minimize soil disturbance by reducing tillage.

2. Keep the soil covered by leaving crop residue on the soil surface.

3. Grow cover crops that protect the soil and feed soil microorganisms between cropping seasons.

4. Apply adequate fertilizer and manure using the 4R principles of right source, right rate, right time and right place.

5. Diversify soil biota with plant diversity in cropping and pasture systems.

6. Control field traffic to reduce compaction which destroys soil structure.

7. Add a small grain or alfalfa to a corn:soybean rotation.

8. Utilize contour buffer strips, field buffers and stream buffers.

9. Enroll highly erodible areas into the Conservation Reserve Program.

10. Use prescribed or rotational grazing.

**For more information on Soil Health, go to these sources:**

NRCS – hyperlink to <https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>

Iowa Soil Health Management Manual –hyperlink to <https://store.extension.iastate.edu/Product/Iowa-Soil-Health-Management-Manual>

Building Soil Health – hyperlink to <http://drupal-01.exnet.iastate.edu/adair/article/new-soil-health-management-manual-field-guide-and-assessment-card-available>

Soil Health Practices hyperlink to <https://www.nrcs.usda.gov/wps/PA_NRCSConsumption/download?cid=nrcseprd1318196.pdf>

reThink Soil: The Nature Conservancy; (November 2016) hyperlink to [www.nature.org/soil](http://www.nature.org/soil)

For more **lists** to help your nutrient management and conservation efforts, visit the Resources page. (hyperlink to Resources page)

**Slide 7 – 4R Plus On Your Farm Tab**

**Choose the 4R Plus practices that best fit your farm**

4R Plus practices are more effective when they are targeted in areas with the greatest runoff, nutrient loss and soil loss. No farm is the same, so talk to your crop adviser about the 4R Plus practices that are best for your acres.

 Insert “When 4R Nutrient Management Meets …” graphic from the brochure.

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**10 Practices to Reduce Soil Erosion**

Sources: Iowa State University Extension, Iowa Learning Farms, Natural Resources Conservation Service

 1. Reduce or eliminate tillage to leave more crop residue on the soil surface.

2. Provide a continuous living crop – cover crop - between row crop seasons to protect the soil and utilize unused nutrients.

3. Build stream buffers to trap soil and nutrients before they enter streams.

4. Use grassed waterways to channel water from the field through vegetation and retain sediment and nutrients in the field.

5. Slow water movement, reduce runoff and soil loss with prairie strips.

6. Add terraces to slow water movement on hillier slopes and increase water infiltration.

7. Trap water and soil within crop rows with contour farming practices.

8. Convert highly erodible land to permanent vegetation by enrolling it in the Conservation Reserve Program.

9. Add another crop to a row crop rotation to break up pest cycles and improve soil biodiversity.

10. Incorporate rotational grazing of livestock to give previously grazed sections time to regrow.

**For more information on reducing soil erosion, go to:**

Soil Management/Environment. Iowa State University Extension and Outreach. Hyperlink to <https://www.extension.iastate.edu/soilmgt/>

Soil Conservation. Iowa Learning Farms. Hyperlink to <https://www.iowalearningfarms.org/page/soil-conservation>

Conservation practices that help improve soil health, reduce soil erosion, improve water quality, and provide other natural resource benefits. Conservation Choices: Soil Health Practices. Natural Resources Conservation Service. April 2017. Hyperlink to <https://www.nrcs.usda.gov/wps/PA_NRCSConsumption/download?cid=nrcseprd1318196.pdf>

 For more **lists** to help your nutrient management and conservation efforts, visit the Resources page. (hyperlink to Resources page)

**Slide 8 – Benefits Tab**

**Protecting the greatest earth on Earth**

Iowa is home to some of the world’s best farmland. Implementing 4R Plus practices will help safeguard and improve the health of Iowa soil and water, which is important to the long-term quality of life for Iowans and sustainability of farming.

**4R Plus makes agronomic, economic and environmental sense**

(Insert graphic)

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**Slide 9** – **Success Stories Tab**

**When one of us adopts 4R Plus, it matters. When all of us do, it’s transformative.**

Farmers across Iowa are implementing 4R Plus practices to help ensure better soil health, higher productivity and cleaner water down the road.

“I use nutrient management practices and changed my tillage practices to strip tillage. I’ve also incorporated cover crops. When I consider the money I spend on different types of insurance to protect my assets, my most important asset as a farmer is my land.”

– Tim Smith, corn and soybean farmer, Wright County, Iowa

“I use strip-tillage, strip-cropping, variable-rate nutrients and cover crops. I started the conservation practices for economic reasons, especially strip-tilling. A neighbor wanted me to try strip-cropping. We found out that the economic benefits from it are tremendous, and it’s also a great conservation piece. It keeps the soil intact and actually holds more snow in the wintertime.”

– Dean Sponheim, corn and soybean farmer, Mitchell County, Iowa

"I know that if we don’t take care of the ground, the ground isn’t going to take care of us. We feel it is our legacy to leave the farm in better shape than when we got it."

– Jolene Riessen, corn and soybean farmer, Ida and Sac counties, Iowa

“I did an equipment cost analysis for eight years and concluded I was saving $65 per acre in equipment and $27 an acre in labor costs each year with a combination of strip-till/no-till compared to conventional tillage. Using no-till, strip-till and cover crops, I’ve seen organic matter levels grow from 3 percent in 1984 to 4 to 6 percent in 2015.

– Wayne Fredericks, corn and soybean farmer, Mitchell County, Iowa

Find more success stories:

**Clean Water Iowa** (hyperlink to https://www.cleanwateriowa.org/success-stories/)

**Iowa Corn** (hyperlink to https://www.iowacorn.org/corn-production/environmental/farmer-to-farmer-insights/)

**NRCS** (hyperlink to https://www.nrcs.usda.gov/wps/portal/nrcs/main/ia/newsroom/stories/)

**Soil Health Partnership** (http://soilhealthpartnership.org/farmers.html)

**Slide 10 – Iowa Nutrient Reduction Strategy Tab**

**Safeguarding Iowa’s water and soil**

Safeguarding Iowa’s water and improving the health of our soil is important to the well-being of our future. To that end, Iowa has set aggressive goals in reducing nutrient losses. It’s called the Iowa Nutrient Reduction Strategy or INRS. We’ll need nutrient management plus conservation practices to meet INRS goals, which are to reduce nitrogen and phosphorus loading into Iowa waters from non-point sources (including agriculture) by 41 and 29 percent, respectively.

**INRS nitrogen & phosphorus reduction practices**

These charts show the effectiveness of specific practices at reducing nitrogen and phosphorus as outlined in the INRS. (note charts will include the attribution symbol graphic below)

Source: Data from the INRS (IDALS, IDNR, ISU CALS). Images courtesy of Iowa Soybean Association. 

Nitrogen Load Reduction (add chart shown in ppt)

Copy under the Nitrogen chart:

Average nitrate-nitrogen concentration or load reduction as a percentage. Error bars represent one standard deviation above and below the mean. Dashed line represents the 41% nitrogen reduction goal for nonpoint sources.

Phosphorus Load Reduction (add chart shown in ppt)

Average phosphorus load reduction as a percentage. Error bars represent one standard deviation above and below the mean. Dashed line represents the 29% phosphorus reduction goal for nonpoint sources.

**10 Ways to Reduce Nitrogen Loads from Drained Cropland in the Midwest**Source: Iowa State University Extension and University of Illinois Extension

1. Improve nitrogen management using 4R nutrient stewardship practices.

2. Plant cover crops to take up water and nutrients from the soil.

3. Increase perennials in row crop rotations to reduce both drainage flow and nitrate loads.

4. Use adjustable, flow-reduction structures placed in the drainage system.

5. Reduce drainage intensity with wider-spaced tile lines and/or place them closer to the surface.

6. Recycle drainage water by storing it in a pond or small reservoir and then returning it back to the field through the drainage tile during dry periods.

7. Add bioreactors to channel tile water through a carbon source - usually wood chips - and denitrify the water.

8. Incorporate wetlands to remove nitrates through denitrification, plant uptake and reduction in flow.

9. Install a two-stage drainage ditch to retain nitrates through uptake by the grasses and by biofiltration when tile water passes through the vegetation.

10. Use saturated buffers to allow tile water to be redirected into the vegetative buffer and seeps through the buffer’s root zone.

**Sources:**

Reducing Nutrient Loss: Science Shows What Works: Iowa State University Extension and Outreach. SP435. September 2014. hyperlink <https://www.cals.iastate.edu/sites/default/files/misc/183758/sp435.pdf>

Christianson, L.E., J. Frankenberger, C. Hay, M.J. Helmers, and G. Sands, 2016. Ten Ways to Reduce Nitrogen Loads from Drained Cropland in the Midwest. Pub. C1400, University of Illinois Extension. Hyperlink <http://draindrop.cropsci.illinois.edu/wp-content/uploads/2016/09/Ten-Ways-to-Reduce-Nitrate-Loads_IL-Extension-_2016.pdf>

For more **lists** to help your nutrient management and conservation efforts, visit the Resources page. (hyperlink to Resources page)

**Slide 11 - Resources**

**Check out the list of online resources about 4R Plus.**

4R Plus

Brochure (Hyperlink to brochure PDF)

4R Plus Educational Module (Hyperlink to module PDF)

Cost-Share Options

There are state, federal and other financial assistance programs available for implementing 4R Plus nutrient management and conservation practices, including the Iowa Department of Agriculture and Land Stewardship Water Quality Initiative, Environmental Quality Incentives Program, the Conservation Stewardship Program, the Conservation Reserve Program and others.

You can check with your county Soil and Water Conservation District office for information on these and other cost-share programs. (Show Iowa counties map)



Click on the IDALS link below and select the county on the Iowa map for contact information of the county Soil and Water Conservation District staff members and district commissioners who can provide assistance and details on technical and financial programs.

<https://idals.iowa.gov/FARMS/index.php/districtMap>

Iowa Department of Agriculture and Land Stewardship Programs <http://www.iowaagriculture.gov/dept_C.asp>

Natural Resources Conservation Service Iowa (<https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/farmbill/?cid=stelprdb1193811>)

Drake University (Cost share page in the works – we will add if it’s live when this site goes live)

Measuring Soil Health

The Soil Health Institute and Soil Health Partnership have endorsed a number of soil health measurements. Examples of the specific Tier 1 measures include organic carbon, pH and available water holding capacity. Testing soil on a regular basis and using these indicators can help you best manage your crop and soil.

 Soil Health Institute (http://soilhealthinstitute.org/national-soil-health-measurements-accelerate-agricultural-transformation/)

Cover Crops

Iowa Department of Agriculture and Land Stewardship (https://www.cleanwateriowa.org/cover-crops)

Iowa Learning Farms (https://www.iowalearningfarms.org/content/cover-crop-resources)

Iowa State University Extension and Agriculture (https://www.extension.iastate.edu/alternativeag/covercrops.html)

Midwest Cover Crop Council (http://mccc.msu.edu/)

Practical Farmers of Iowa (http://www.practicalfarmers.org/member-priorities/cover-crops/)

USDA Risk Management Agency (https://www.rma.usda.gov/)

4R Nutrient Management

The Fertilizer Institute (http://www.nutrientstewardship.com/4rs/4r-principles/)

Field Days and Events

Iowa Corn (https://www.iowacorn.org/events/)

Iowa Learning Farms (https://www.iowalearningfarms.org/)

Iowa Soybean Association (http://www.iasoybeans.com/calendar/)

Practical Farmers of Iowa (http://www.practicalfarmers.org/news-events/events/field-days/)

Soil Health Partnership (hyperlink: http://soilhealthpartnership.org/field-days---events.html)

Iowa Nutrient Reduction Strategy

Iowa Department of Agriculture and Land Stewardship (https://www.cleanwateriowa.org/iowa-nutrient-reduction-strategy)

Iowa State University (http://www.nutrientstrategy.iastate.edu/)

Conservation Planning

Natural Resources Conservation Service Iowa (https://www.nrcs.usda.gov/wps/portal/nrcs/site/ia/home/)

10 Lists(PDF of each list will be provided. List to be alphabetized. *Note: lists not already included in the website copy can be reviewed in the separate Word doc – 10 Lists – provided.*)

Advantages of Healthy Soils

10 Ways to Build Healthy Soils – included slide 6

10 Reasons to Utilize 4R Practices – included slide 5

Phosphorus Fertilizer Best Management Practices

Advantages of Cover Crops

Best Management Practices for Cover Crops

Ways to Reduce Nitrogen Loads from Drained Cropland in the Midwest – included slide 10

Advantages of Reduced Tillage

10 Practices to Reduce Soil Erosion - included slide 7

Cost-Share Programs

Advantages of Reducing Soil Erosion -

4R Best Management Practices for Nitrogen Fertilizer - Right Source

4R Best Management Practices for Nitrogen Fertilizer - Right Rate, Time and Place

10 Management Practices for Collecting Soil Samples -

**Slide 12 - About**

**4R Plus Partners**

4R Plus is developed by agricultural and conservation organizations as a part of the Iowa 4R Plus program to support farmers’ efforts to implement precise nutrient management and conservation practices.

 (Insert logos/company names and links – see slide 13).

***MM will develop this page after TNC has determined if logos will be used or if we are just listing companies and linking to websites.***

**4R Plus in the news** (Most recent story listed first)

Find the latest articles on 4R Plus or related nutrient management and conservation efforts in Iowa.

**Farmers return to cover crops to improve soil and water quality**

http://qctimes.com/business/farmers-return-to-cover-crops-to-improve-soil-and-water/article\_5766106b-15d8-583d-8453-7d5e148fa8f7.html

**Trout reintroduced to Iowa river headwaters**

http://www.thegazette.com/subject/sports/outdoors/trout-reintroduced-to-iowa-river-headwaters-20170703

**The Nutrient Reduction Strategy: Creating A More Resilient Iowa**

https://iowalearningfarms.wordpress.com/2017/07/13/the-nutrient-reduction-strategy-creating-a-more-resilient-iowa/

**Initiatives and funds help improve water quality**

http://www.hpj.com/ag\_news/initiatives-and-funds-help-improve-water-quality/article\_da8b6e6d-4c68-5d0c-b558-7eaebf38aa48.html

**Inquisitive neighbors encouraged at soil health field days across Midwest**

http://www.prweb.com/releases/soil-health-partnership/field-days/prweb14463185.htm

**Slide 13 – Contact Us Tab**

**Answers to your questions**

Specific questions about nutrient management and conservation practices for your farm likely are best addressed with your crop adviser.

For questions about the following, please visit our Resources (hyperlink) page.

4R Plus

Financial Assistance

Measuring Soil Health

Cover Crops

4R Nutrient Management

Field Days and Events

Iowa Nutrient Reduction Strategy

Conservation Planning

*Inquires section – these will go to the Iowa TNC office:*

4R Plus is developed by agricultural and conservation organizations as a part of the
Iowa 4R Plus program.

Contact 4R Plus by filling out the form below. (All required fields.)

Name:

Email:

Phone Number:

Comment/Question: