Rice Stewardship Partnership
Sustaining the Future of Rice

PROPOSAL TO THE
REGIONAL CONSERVATION PARTNERSHIP PROGRAM
OCTOBER 2014

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The 2014 Farm Bill authorized USDA to create the new conservation program known as the Regional Conservation Partnership Program (RCPP). It promotes coordination between NRCS and its partners to deliver conservation assistance to producers and landowners. NRCS provides assistance to producers through partnership agreements and through program contracts or easement agreements.

RCPP combines the authorities of four former conservation programs – the Agricultural Water Enhancement Program, the Chesapeake Bay Watershed Program, the Cooperative Conservation Partnership Initiative and the Great Lakes Basin Program. Assistance is delivered in accordance with the rules of EQIP, CSP, ACEP and HFRP; and in certain areas the Watershed Operations and Flood Prevention Program.

“This is an entirely new approach to conservation,” said Secretary of Agriculture Vilsack. “We’re giving private companies, local communities, and other non-government partners a way to invest in what are essentially clean water start-up operations. By establishing new public-private partnerships, we can have an impact that’s well beyond what the Federal government could accomplish on its own. These efforts keep our land resilient and water clean, and promote tremendous economic growth in agriculture, construction, tourism and outdoor recreation, and other industries.”

The RCPP competitively awards funds to conservation projects designed by local partners specifically for their region. Eligible partners include private companies, universities, non-profit organizations, local and tribal governments and others joining with agricultural and conservation organizations and producers to invest money, manpower and materials to their proposed initiatives. With participating partners investing along with the Department, USDA’s $1.2 billion in funding over the life of the five-year program can leverage an additional $1.2 billion from partners for a total of $2.4 billion for conservation; $400 million in USDA funding is available in the first year. Through RCPP, partners propose conservation projects to improve soil health, water quality and water use efficiency, wildlife habitat, and other related natural resources on private lands.
RICE STEWARDSHIP PARTNERSHIP
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The USA Rice Federation (USARF) is a national nonprofit trade association for the U.S. rice industry, with engaged membership in all 6 major rice-producing states. As the national advocate for all segments of the rice industry, USARF works to improve government programs, develop and initiate programs to increase worldwide demand, and provide outreach and education to increase on-farm conservation of natural resources and foster producer profitability. Membership includes rice producers, millers, merchants and allied industries, including rice product manufacturers. This diverse and unified approach and commitment to consensus-building makes USARF uniquely qualified to represent the entire rice industry and lead our Rice Stewardship Partnership and this NRCS effort.

Ducks Unlimited, Inc. (DU) is a non-profit conservation organization that conserves and restores North American waterfowl and wetland habitat. With over 1 million supporters, DU works in all 50 states, Canada, and Mexico to conserve, restore, and manage wetlands and associated habitats for waterfowl, other wildlife, and people. These habitats also replenish groundwater supplies, filter pollutants from water, and increase flood storage. Furthermore, wetlands are one of nature’s most productive ecosystems providing for the life cycle needs of 900+ species of wildlife, including many that are at risk. DU is committed to science-based, collaborative, and solution-oriented conservation, and is uniquely qualified to represent the conservation community, and work cooperatively with producers in this NRCS effort.

The U.S. rice industry is important to feeding the nation and North America’s wetland wildlife. Combining the U.S. rice industry – represented by USARF – and the conservation community – represented by DU – is an aggressive approach to innovation, collaboration, and solution-oriented conservation, reflecting the spirit and intent of the Regional Conservation Partnership Program.

Collaborating Partners

- Agri-Drain Corporation
- American Rice Inc.
- Arkansas Rice Federation
- Arkansas Chapter – The Nature Conservancy
- Bunge North America
- California Rice Commission
- Delta Council
- Delta Wildlife
- Farmers Rice Mill
- Garden Highway Mutual Water Company
- Horizon Ag
- Louisiana Rice Mill
- Louisiana Rice Research & Promotion Board
- Lower Mississippi Valley Joint Venture
- MacDon Industries
- Mississippi Rice Research & Promotion Board
- Missouri Rice Producers Group
- Northern California Water Assn.
- RiceTec
- Texas Parks & Wildlife Department
- The Climate Trust
- Unilever
- USA Rice Merchants’ Assn.
- USA Rice Producers’ Group
- Arkansas Assn. Conservation Districts
- Anheuser Busch
- Arkansas Rice Research & Promotion Board
- BASF
- California Rice Research & Promotion Board
- Central Valley Joint Venture
- Delta Plastics
- Dow AgroSciences
- Field to Market
- Gulf Coast Joint Venture
- Kellogg
- Louisiana Rice Growers Assn.
- Lower Colorado River Authority
- Louisiana State University AgCenter
- Mars
- Missouri Department of Conservation
- National Fish & Wildlife Foundation
- Riceland Foods
- Syngenta
- Texas Rice Producers Legislative Group
- The Rice Foundation
- USA Rice Council
- USA Rice Millers’ Assn.
Funding Pool: National

Short Summary: The most widely consumed grain, rice, sustains about half of the world’s population and is a critical dietary staple upon which billions depend. Sustaining the future of rice represents one of the most important factors in the future of our nation’s natural resources and food security.

USARF, DU, and 40+ collaborating partners seek to implement our innovative Rice Stewardship Partnership (hereafter, the Partnership) under the Regional Conservation Partnership Program (RCPP). Never before has a commodity – with production spread across 6 states – asked for designation as a conservation priority. Never before has an entire industry, acting through USARF, committed itself to working with such a broad range of groups to ensure the long-term sustainability of a critical food staple. By innovatively harnessing the power of business and industry, NGOs, educational and government entities, the Partnership will act to conserve water quantity, improve water quality, and create and maintain critical habitat for wetland wildlife and other at-risk species. We will also positively affect air quality, conserve energy, and importantly, support the producer’s bottom line.

The Partnership envisions a $33.7M effort ($20M from NRCS) to support NRCS and at least 800 rice producers in the planning, design, and delivery of conservation practices and enhancements on working lands across at least 380,000 acres. Rice is the only major crop that is 100% irrigated and water quantity is the primary resource concern, with water quality and wetland wildlife (and associated at-risk species) as secondary resource concerns. We will also address air quality by focusing on reducing energy consumption for field preparation and irrigation, improving residue management, and piloting alternative irrigation strategies that reduce greenhouse gas (GHG) emissions. The Partnership will help producers meet or avoid the need for regulations across water, air, and at-risk species resource concerns. And importantly, all activities and advancements will trend to a better bottom line and profitability for producers.

Comprehensive NRCS conservation planning is paramount to ensure high impact project and practice applications and is the fundamental underpinning of this proposal. Using those plan results, the Partnership will focus on all applicable EQIP practices and CSP enhancements, a suite of interim practices, plus MBHI-type continuing efforts to address resource concerns at the field level. Furthermore, another innovation is that the Partnership is integrated with various Water Management Districts (WMDs) to conserve allocations through distribution system enhancements. At a larger scale, the Partnership is engaged in research and technology development in rice varieties and irrigation strategies for water conservation. And lastly, outreach and education efforts are aimed at state water policy, especially in Arkansas, Texas, and California for the future of rice and irrigated agriculture.

Monitoring, evaluation, and applied research will be at practice, field, and landscape level. Our primary field-level monitoring and evaluation tool will be Field to Market’s Fieldprint Calculator for rice. The Calculator uses datasets and methodologies developed by multiple sources, including the NRCS, land grant universities, and USARF, and represent an innovative and accepted way to predict and evaluate outcomes and gauge success at the field level.

In addition, other techniques will be used across various regions and will include direct meter monitoring to assess water savings, and edge-of-field monitoring to determine sediment/nutrient reductions, all within the Gulf Coast. Landscape sediment reduction will be modeled in winter-flooded rice fields across targeted watersheds in the Lower Mississippi River Valley. For wetland wildlife habitat, required by waterfowl and many at-risk species, remote sensing will identify shallow water to be combined with the bioenergetics model TrueMet, to estimate bird population carrying capacity. Taken together, these overall monitoring and evaluation efforts will produce tangible evidence of the Partnership’s success.
**Geographic Area:** Our geographic focus is the approximate 3 million rice-growing acres in Arkansas, California, Louisiana, Mississippi, Missouri, and Texas. From a landscape point of view, this encompasses the Lower Mississippi River Valley, Gulf Coast, and California’s Central Valley. Detailed maps showing regions, states, counties, and rice acres by county are provided below.

**Project objectives and leveraging:** To address our primary and secondary resource concerns of water quantity, water quality, and wetland habitat supporting at risk species, our objectives are:

- **Upfront conservation planning** is our solution to obtaining maximum outcomes for NRCS program delivery. Plan first – implement conservation practices and enhancements second.
- **Maximize number of resource concerns addressed** via prescribed conservation practices and enhancements, all based on conservation plans, using EQIP, CSP, and partner conservation delivery.
- **Integrate irrigation WMD’s conservation efforts** to capture and efficiently deliver available surface water supplies to producers. Couple with on-farm conservation activities.
- **Target 800 rice producers covering 380,000 acres** for conservation delivery with increased effort to identify and recruit historically underserved.
- **Advance development of rice varieties and innovative irrigation strategies** to conserve water, maintain/increase yields, and trend to a better bottom line for producers.
- **Educating decision makers** on water, agriculture, and wildlife/fisheries connections and needs. Focus on challenged states of Arkansas, Texas, and California.

In summary, Federal funds are directed to conservation planning ($2M TA) and EQIP and CSP contracts ($18M FA). The approximate $13.7M in partner contributions are directed to conservation planning, FA to producers for wetland wildlife management (EQIP 644), water conservation improvements by WMDs, development of rice varieties and irrigation strategies to conserve water, outreach and education, and project administration. Of the $13.7M partner contribution, approximately $2.0M is cash to be spent by USARF, DU, and others, while $11.7M is in-kind contributions.

**Project start and end dates:** This project delivery will cover the next 2 years; starting 1 December 2014 and ending 1 December 2016. It is important to know that many project activities are underway as this proposal is being submitted. This fosters preparedness to deliver this ambitious proposal in the 2-year timeframe. The Partnership will build upon EQIP and CSP as detailed below:

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<th>Funding Request</th>
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**Intended Producer and Landowner Participation:** The Partnership is targeting the 9,598 rice producers who grow 3 million acres of rice each year as defined by the U.S. 2012 Agricultural Census. These 3 million acres are but about 7% of the 46 million acres across the 3 landscape geographies in this national project (see maps ). Outreach and education efforts by project leaders and a host of contributing partners will inform 50% (4,799) of RCPP efforts and seek participants who are ready and willing to engage in conservation education, planning, and delivery. This outreach and education effort is being coordinated with other regional RCPP proposals across the U.S. Based on the funding requested and the average size of current EQIP and CSP contracts, plus partner conservation delivery and irrigation system improvements, we anticipate positively affecting almost 9% (840) of the rice producers in this first phase of RCPP. This percentage could increase significantly if WMD improvements are completed and operable in the project period. We estimate that some 380,000 acres will undergo the planning, design and delivery of conservation practices on these working rice lands.
Primary and Secondary Natural Resource Concerns:

**Primary: Water Quantity** - While most of the planet is covered by water, only 2.5% is fresh and agriculture uses 70% of that to grow the food and fiber we need every day. Across rice-growing regions water quantity is THE critical issue for rice producers.

In the **Lower Mississippi River Valley**, most ricelands are underlain by the Mississippi River Alluvial, Sparta, and Chicot aquifers, which are the primary sources of all agricultural irrigation. In many areas irrigation withdrawals are exceeding aquifer recharge rates causing groundwater levels to decline. For example, in eastern Arkansas where over 50% of the nation’s rice is grown, studies have predicted that at the current rate of groundwater withdrawals over 2,500 square miles of aquifers beds will be ≤50% saturated by 2049. This predicted swath of aquifer depletion is equal to all the acres of rice grown in Arkansas! Concern over falling groundwater levels has spurred an update of the state’s water plan by Arkansas Natural Resources Commission (USARF and DU are members on plan committee). Producers in Arkansas and surrounding states clearly see the possibility of groundwater regulations in their future.

Along the **Gulf Coast** of Texas, the primary source of water for rice is surface-water irrigation districts, including the Lower Colorado River Authority (LCRA). In March 2012, in response to drought-induced low lake and river levels, LCRA curtailed irrigation water for downstream rice producers for the first time in history. This decision led to an immediate 52,000-acre reduction (20%) in planted rice. With lake levels still suffering from the persistent drought, LCRA once again was forced to curtail the release of water for downstream rice producers in 2013 and 2014. Indeed the combination of drought, limited water quantity, and competition for this precious resource, has instigated a litany of administrative and legal contests among the Texas Commission of Environmental Quality, various irrigation districts, and agricultural producers. The short-term economic and environmental impacts of these water-allocation decisions have been substantial, yet it is the consequences of additional curtailments on the longer-term future of a rice-based agricultural economy in the Texas Mid-Coast that are of greatest concern.

As determined by the U.S. Geological Survey, **California’s Central Valley** is now in its third consecutive year of drought. All of the Central Valley is experiencing “Exceptional Drought” conditions, the absolute highest drought category. In 2013 the California State Water Board began imposing restrictions on surface water diversions for agriculture. Planted rice declined substantially, from a 5-year average of 560,000 to 465,000 in 2014 (17%). In the Central Valley rice habitat is especially critical to waterfowl and other wetland and at-risk species. In fact, winter-flooded rice fields provide over 50% of the total food resources required by migratory birds. The 2013 restrictions resulted in a significant decline in the amount of winter-flooded rice west of the Sacramento River and forecasts for winter 2014/2015 are dire. Compared to past winter averages of 300,000 acres only 50,000 acres slated for water supply this winter. Indeed rice is the key factor underpinning migratory and at-risk species habitat...
in California’s Central Valley. If rice production fails, it will imperil the Pacific Flyway and have dramatic adverse consequences on the 118 wildlife species which depend on California ricelands.

Across the rice producing states, the Partnership is committed to helping producers find ways to ensure water is available and used in the most efficient manner possible. Conserving water and building an infrastructure to effectively manage existing supplies is the top priority for the Partnership. A prime example is LCRA who is aggressively responding to this need by undertaking a $215 million project that includes a new irrigation storage reservoir. LCRA is partnering in this proposal and has identified $8 million of the project costs (≈4%) which can be directly contributed to achieving our water conservation goals.

Secondary: Water Quality – High rates of sediment and nutrient runoff in the nation’s waters pose a significant threat to the environment and human health. Sediment and nutrient loss is contributing to over-enrichment of waterways causing eutrophication of both fresh water and marine systems. For rice producers within the Mississippi River Valley, where 65% of the rice production in the nation occurs, water quality is a top resource concern. Numerous studies, including NRCS CEAP reports, have found sediment and nutrient loadings from agricultural lands to be a major contributor to the hypoxic zone in the Gulf of Mexico. In the Lower Mississippi River Valley CEAP Report\(^5\) cropping systems using rice or rice/soybeans in rotation, account for 13.5% of the critical undertreated acres in the basin with opportunity for improvements. Therefore, we will work with producers to implement in-field solutions to ensure rice producing lands apply practices – both structural and management – that improve water quality by optimizing fertilizer use and minimizing sediment and nutrient losses.

Secondary: At-Risk Species Habitat – In the area of wildlife habitat, rice production is the single most beneficial commodity crop and produces tremendous wildlife benefits. The *State of the Birds 2013 Report*\(^4\) released by USDA and DOI in July 2013, states “…ricelands support approximately 45% of the North American wintering duck population across the 3 most important landscapes; Lower Mississippi River Valley, Gulf Coast, and California’s Central Valley. These same habitats are also extremely important to shorebirds and other wetland-dependent wildlife…". *Conservation in Ricelands*\(^5\) published in 2008, identifies 32 at-risk species associated with rice field habitats that are determined as threatened or protected by federal or state entities. Overall, the critical link between rice agriculture, major wintering areas for migratory birds, and a forage supply is well documented by industry and NRCS research. The soon-to-be published Mississippi State University report on the results of the NRCS Migratory Bird Habitat Initiative (MBHI) found that flooded rice fields supported high densities of migrating and wintering waterbirds averaging 15 birds/acre versus 2 birds/acre in non-flooded rice fields. Over seven times more shorebirds were observed on shallowly flooded MBHI lands, and the daily survival rate for female mallards on MBHI sites was exceptionally high.
Other Resource Concerns: Air Quality, Energy Efficiencies, and Reducing Producers Input Costs – As a result of addressing the primary and secondary resource concerns above, the Partnership will also foster improvements in air quality, energy use, and on-farm efficiencies. For example, upon conducting a pumping plant efficiency test (CSP WQT01), we determine improvements can be made to reduce diesel fuel use, which means fewer emissions, and reduces input costs. It is these synergies in addressing multiple resource concerns, per producer and practice, which reflect the foundational solutions and outcomes-based approach of this RCPP proposal.

Proposed Objectives: Meeting the increased demand for food in a sustainable manner, while conserving water, improving water quality, and providing critical wetland wildlife habitat with focus on at-risk species, are the overall objectives of the Partnership. The Partnership innovatively pulls together critical leading agricultural, conservation, and environmental organizations to equip rice producers with the support, knowledge, tools, and practices they need to solve current problems and meet the challenges ahead in an environmentally beneficial way. The Partnership aims to advance targeted, on-farm conservation practice implementation to help ensure the sustainability, resilience, and continued productivity of the nation’s rice producing acres by addressing the following 6 objectives:

- **Upfront conservation planning** is our solution to obtaining maximum outcomes for conservation delivery. Plan first – implement conservation practices and enhancements second.
- **Maximize number of resource concerns addressed** per producer and project, via prescribed conservation practices and enhancements based on a NRCS conservation plan, using EQIP, CSP, and partner conservation delivery.
- **Integrate irrigation water management district conservation efforts**, to capture available surface water supplies and efficiently deliver to producers, with on-farm conservation activities.
- **Target 800 rice producers covering 380,000 acres** for conservation delivery, with increased effort to identify and recruit historically underserved.
- **Advance development of rice varieties and innovative irrigation strategies** to conserve water and maintain/increase yields.
- **Educating decision makers** on water, agriculture, and wildlife/fisheries connections and needs. Focus on water challenged states of Arkansas, Texas, and California.

**Water Quantity.** Conserving water is the key outcome of this project. Rice is 100% irrigated, and having adequate supplies of water is fundamental to production. Using EQIP practices and CSP enhancements designed for water-use efficiencies and partner-based conservation delivery, we will improve water management on at least 75% of the acres (285,000 acres).

**Water Quality.** Improving both on-farm production and environmental performance are key goals of the Partnership. We will apply EQIP practices and CSP enhancement that will maximize fertilizer uptake, minimize nutrient losses, and prevent soil loss. We will achieve improvements on water quality on 50% of the project acres, or 190,000 acres.
At-Risk Species. Rice has been called the environmental crop because of its superb habitat-creating production methods, and this habitat value has been well documented. The Partnership will work with producers to incorporate vital wetland habitat management into ongoing farm production efforts. By creating and maintaining habitat on working rice lands, the Partnership will ensure that habitat is provided not only for at-risk species, but also for a host of both aquatic and terrestrial wildlife which depend on wetlands. The objective will be to achieve improvements in wetland habitat (and associated at-risk species) on 50% of the project acres, or 190,000 acres.

c. Actions to be completed for each objective: As the graphic above demonstrates, the Partnership’s resource concerns, objectives, and actions are all fully integrated to deliver solutions and produce outcomes for a sustainable rice industry. With our objectives being implemented across 6 states, and by 40+ project collaborators, every action cannot be identified in this abbreviated section of the proposal. Please find below 2 or 3 primary examples of actions under each objective.

Conservation planning:
- With existing teams and to-be-formed teams, provide expertise and staff capacity to NRCS for planning. Such actions are under pilot scenario in southwest Louisiana, with teams composed of NRCS, DU, SWCD, and Louisiana Department of Agriculture and Forestry.
- Address NRCS backlog of completed plans yet unfunded prescriptive practices.

Maximize number of resource concerns addressed:
- As above – plan first – deliver projects and practices second.
- Leave all EQIP/CSP practices available for integration, add and pilot interim practices.
- Combine partner delivered projects/practices, such as BP-sponsored MBHI, to those of NRCS.

Integrate irrigation water management district conservation efforts:
- Combine WMD capital improvements for water delivery and efficiency with on-farm efforts.
- Engage in water allocation, management, and metering with WMDs.

Advance development of rice varieties and innovative irrigation strategies:
- Develop and grow to seed stock volumes, rice varieties that conserve water, reduce GHG emissions, are resistant to disease, and are herbicide tolerant. These traits address many resource concerns.
- Develop and deploy innovative irrigation strategies that reduce water use and maintain yields. An example is “side-inlet” irrigation.

Educating decision makers:
- Increase engagement and activity on various state water boards and planning committees in water challenged states of Arkansas, Texas, and California.
- Educate decision makers on water, agriculture, and wildlife/fisheries connections and needs, and the value of NRCS programs, through formal committee and planning team participation, and partner communications outlets.

In summary, Federal funds are directed to conservation planning ($2M TA) and EQIP and CSP contracts ($18M FA). The approximate $13.7M in partner contributions are directed to conservation planning; FA to producers for wetland wildlife management (EQIP 644); water conservation improvements by WMDs, development of rice varieties and irrigation strategies to conserve water; outreach and education, and project administration; all to serve over 800 rice producers in this aggressive effort for water conservation.
Application Detail

Maps of area (inserted below) and descriptive narrative: As detailed on Map 1 below, rice is grown within 3 landscapes across the U.S.; Lower Mississippi River Valley, Gulf Coast, and California’s Central Valley. These 3 regions are a combined 46 million acres and represent some of the most productive and valuable agricultural land in the nation. As detailed on Map 2, 3 million acres of rice are grown within these 3 regions, across 6 states, and within 88 counties.

The primary and secondary resource concerns of water quantity, quality, and wetland habitat with focus on at-risk species, are inextricably linked in these rice-growing regions. The historic conditions of these landscapes, as river floodplains and coastal prairies, provided rich soils and ground and surface waters for productive agriculture. These floodplains and coastal prairies are also critical migration and wintering habitat for a myriad of waterfowl, shorebirds, songbirds, and other wetland wildlife including many at-risk species. The modern landscapes reflect agricultural conversion on the vast majority of the acres. Irrigation is the norm using primarily groundwater in the Lower Mississippi River Valley and Louisiana’s Gulf Coast, and surface irrigation delivered by long-established water management districts in Texas’ Gulf Coast and California. This landscape conversion to agriculture, including rice agriculture, has indeed presented challenges and resource concerns for water quantity and quality. However, these 3 regions continue to be the most valuable to migrating birds in North America, in large part due to rice agriculture, and provide 45% of wintering waterfowl habitat needs on the entire continent each year. It is this overlap of resource concerns, and integrated planning to address these simultaneously, that make this proposal innovative, solution oriented, and outcomes based.

Cost effectiveness: The primary considerations in assuring this project maximizes outcomes and cost effectiveness are: (1) requiring and assisting with developing conservation plans as first and foremost step in NRCS program implementation; (2) integrating activities with WMDs and also private corporation and university technology and strategy development for water conservation; and (3) outreach and education to decision makers at federal, state, and local levels on water, agriculture, and wildlife/fisheries connections and needs.

As for conservation planning, this is a key solution to obtaining maximum outcomes for conservation delivery. Plan first – implement conservation practices and enhancements second. With workloads and demands on NRCS field staff this step is at times difficult to accomplish. But with added technical resources from this project, and technical skills of partners, this critical requirement can be met. Advancing water conservation within irrigation districts through aggressive capital improvements and by development of rice varieties and irrigation strategies, our primary resource concern is being addressed at multiple angles. Finally, our broad outreach and education efforts will positively influence decision makers at a critical time when so many competing issues surround water and agriculture in all 3 rice-growing regions.

From a wetland wildlife angle, a formal comparison between two different approaches to working ricelands is illustrated by a recent report from the Rice Foundation. Researched and written by DU, the report estimates the cost of replacing existing working ricelands with restored native wetlands at $3.5 billion. Using this figure and applying it to the approximate 3 million acres upon which rice is grown in the U.S., the cost per acre to duplicate the wildlife benefits provided by rice would be around $1,167/acre. Therefore, it would cost more than $440 million to replicate the wildlife values on the 380,000 acres that the Partnership proposes to affect over the length of this one project. If funded at $33.7 million, and not including the value of water savings or improvements in water quality, the wetland wildlife benefits alone from this project provide greater than a 13:1 return on investment.
c. **Partner collaboration:** Please find below 4 key examples of how our 40+ contributors offer solutions and outcome-based actions.

- Experience and capacity in project administration and coordination – DU is currently active in delivering conservation work with NRCS in all 6 rice-growing states. Since 2009 NRCS has provided DU over $32M in partnership agreements for technical assistance. With staff capacity of DU, USARF, and 40+ Partners, we stand ready to deliver this ambitious first phase of RCPP.

- The Texas rice industry is undergoing extensive challenges due to prolonged drought, and increased competition for water in a state projected to grow from a population of 25 million in 2010 to 40 million in 2050. The Lower Colorado River Authority (LCRA), a regional water and utilities cooperative, is responsible for providing water to the major rice-growing areas along the Texas Coast, as well as the Austin metropolitan area. Indeed competition around water allocations and regulations has become intense. In an effort to aggressively address water needs for rice and prepare for the likelihood of more competition as populations grow, LCRA has launched a major capital improvement effort for water efficiency and storage. This multi-million dollar effort starts with an irrigation reservoir to capture excess river flows when available and improved distribution canals for delivery to rice producers. This initial effort is valued at $215 million in which this RCPP proposal has used a small fraction as partner contribution (<4%). This story is not uncommon in the West where irrigated agricultural land and water resources are incredibly financially valuable. Another ongoing example is the Biggs-West Gridley Water Management District in California’s Central Valley, who with the help of U.S. Bureau of Reclamation is undergoing an identical aggressive capital improvement project. Our integration with these efforts is critical to addressing water quantity, the primary resource concern for rice, and people especially in the West.

- Research, technology development, monitoring, and evaluation all play a significant role in this proposal, especially in regards to rice varieties and irrigation strategies, and positive effects on water conservation. Research and development by private corporations, universities, and producer-funded Rice Research and Promotion Boards, has yielded great results in water conservation. For example, recently published research has shown hybrid rice varieties use 5% less water per acre than conventional varieties, and are 33% more efficient when compared at per-unit yield level. This innovative effort is captured in this proposal with 7 entities collaborating in rice variety development and irrigation strategies.
- Our Partnership has attracted the engagement and participation of 8 national/international food and beverage companies in this first proposal. Although the 9 weeks between announcements for full proposals and due date was short, these companies have already initiated discussions on how to collaborate and effectively influence sustainability in rice for the long term. The RCPP vision of improving stakeholder involvement – and working together to address natural resource concerns – is already producing tangible results. The strengthening and effectiveness of this Partnership through RCPP offers tremendous value for the future of rice sustainability in the U.S.

**Project timeline:** This project delivery will cover the next 2 years; starting 1 December 2014 and ending 1 December 2016. Final report will be delivered 90 days following project end. With our objectives being implemented across 6 states, and by 40+ project collaborators, every action cannot be identified in this abbreviated section of the proposal. Please find primary actions and timelines under each objective.

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<td><strong>NRCS Conservation Planning</strong></td>
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<tr>
<td>Rice varietal development</td>
<td></td>
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<tr>
<td>Corporation technology development</td>
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<tr>
<td>Rice Research Boards/tech development</td>
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<tr>
<td><strong>Outreach/Education to Decision Makers</strong></td>
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<tr>
<td>Engage in state water plans (AR, TX, CA)</td>
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<tr>
<td>Educate policy makers</td>
<td></td>
<td></td>
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<tr>
<td><strong>Administration</strong></td>
<td></td>
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<tr>
<td>Annual/Final reports</td>
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Conservation activity plans, practices, and enhancements: First and foremost, the Partnership will require that activities be guided by NRCS conservation plans, and this Partnership has experience in developing these with producers and local NRCS offices. We want all EQIP practices and CSP enhancements available to carry out recommendations of those plans plus any existing and future interim practices or enhancements. The table below outlines common practices and enhancements applied in rice to target improvements of multiple resource concerns. This outline is based on the AR-LA-MS EQIP cost list, representing approximately 75% of the rice acres. CSP practices are national in scope.

<table>
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<tr>
<th>Practice Name</th>
<th>EQIP Code</th>
<th>CSP Code</th>
<th>Water Quantity</th>
<th>Water Quality</th>
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<td>Variable Frequency Electric Motors</td>
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<td>Early Succession Habitat Management</td>
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<td>Leave Standing Crop</td>
<td>ANM34</td>
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<td>Pollinator Habitat</td>
<td>PLT15</td>
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</table>
Plans for assessing and evaluating results: A solid and organized evaluation plan is a key solution for measuring the success and associated environmental outcomes of the overall project. A comprehensive evaluation plan and its results will strengthen efforts going forward and attract increased support from rice producers, NRCS, and the long list of contributors. While it may not be possible, within staff and budget constraints, to do all things in all places, the Partnership will monitor and evaluate outcomes related to each of the 3 resources – water quantity, water quality, and at-risk species/wildlife habitat – across the 3 landscape geographies of the Lower Mississippi River Valley, Gulf Coast, California’s Central Valley. This plan is wholly a contribution from the Partnership and meets NRCS priority for partners to provide resources to evaluate effects of conservation programs, activities, and practices.

Our evaluation plan is composed of 3 main actions: (1) integration of completed evaluations as building blocks for the project’s foundation; (2) immediate results to be captured and reported in the relatively short 2-year project period ending 1 December 2016; and (3) setting baselines for future evaluations and future phases of project implementation. Below are summaries of specific actions and objectives relative to the overall project evaluation that will be accomplished in this RCPP project. More in-depth detail is provided for the immediate results to be delivered in-whole during the project period.

Integration of Evaluations

- Integrate research conducted and published by the Rice Foundation and Ducks Unlimited, Inc. (DU) entitled Conservation in Ricelands of North America. This endeavor summarized the current state of knowledge on riceland conservation, and charted a course for future research and conservation programs that will further the compatibility between rice production, the environment, and wildlife habitat. The report can be found at: www.ducks.org/ricelands.

- Integrate research conducted and published by the Rice Foundation and DU entitled Estimating the Biological and Economic Contributions that Rice Habitats Make in Support of North American Waterfowl Populations. This research and application models the rice landscapes contribution to supporting winter waterfowl populations across all of North America, and estimates both costs of supplying that habitat, and what investment it would take to replace it with restored native wetlands. The report can be found at: www.ducks.org/ricelands.

- Integrate recently completed rice producer surveys conducted by Q2 Insights (market research firm) which assessed priority producer needs, their priority resource concerns, and preferred conservation practices. These completed surveys also serve as building blocks for the project’s foundation and a baseline to assess progress going forward.

Immediate Results (in more detail)

- Fieldprint Calculator - Field to Market (FTM) Alliance for Sustainable Agriculture - brings together a diverse group of grower organizations; agribusinesses; restaurant and retail companies; conservation groups; universities; and agency partners to focus on promoting, defining and measuring the sustainability of food, fiber, and fuel production. The current membership list is 60 and growing and includes the NRCS, USARF, DU, and numerous other partners in this project.

Field to Market has developed an analytical tool called the Fieldprint Calculator for corn, cotton, rice, wheat, potatoes and soybean producers. It allows producers to better understand and communicate how land improvements and management choices affect overall sustainability performance and operational efficiency. The Calculator estimates field-level performance on the following sustainability indicators; (a) land use (yield), (b) soil erosion; (c) irrigation water use; (d) energy use;
and (e) greenhouse gas emissions. Management information entered into the tool are analyzed and transformed into a "Fieldprint", which graphically represents the producer’s unique operation (see figure). The Fieldprint Calculator is simple to use, though the technology behind it is very complex. The Calculator uses datasets and methodologies developed by multiple sources, including the NRCS. It helps producers visualize and assess how efficiencies and environmental impacts fluctuate based on various practice improvements and management decisions. Producers can also compare their performance against local, state and national averages developed using publically available data.

The Fieldprint Calculator is simple to use, though the technology behind it is very complex. The Calculator uses datasets and methodologies developed by multiple sources, including the NRCS. It helps producers visualize and assess how efficiencies and environmental impacts fluctuate based on various practice improvements and management decisions. Producers can also compare their performance against local, state and national averages developed using publically available data.

This RCPP is an ideal fit for the Fieldprint Calculator. First, data derived from program participants will set a baseline to predict natural resource improvements derived from EQIP, CSP, and other conservation delivery contributions in this project. Second, once improvements and practices are delivered and implemented, before/after comparisons can be made. And lastly, the pool of project participants and their improvement results can be compared to state and national averages to demonstrate environmental progress of this RCPP project. Working together, rice producers, NRCS, and partners can use the results to articulate and communicate the case for sustainable production and continuous improvement.

- **Irrigation Pump Efficiency Evaluation** - Economic data from across the rice-growing regions consistently shows energy consumption as a significant input cost to producing a crop, and the majority of this energy is related to irrigation. For example, in southwest Louisiana, with conventional varieties, drill planted, and flood irrigated, cost analyses show 29% ($192/$643) of the direct cost of producing an acre of rice was due to energy needed to irrigate. A producer’s opportunity and ability to reduce these costs can have an immediate effect on conservation of water, fuel/electricity, and trend to a better bottom line.

Pumping plant installations, improvements, and maintenance are all practices offered under EQIP (practice 533) and CSP (WQT03). However, there is a void in technical expertise and capacity to evaluate irrigation pumping plants, make improvements, and evaluate results. To respond to this need, a partner team in southwest Louisiana comprised of NRCS, LSU AgCenter, Louisiana Department of Agriculture and Forestry, local SWCD’s, and DU, are currently evaluating more than 80 pumping plants per year. A formal technical report is delivered to the producer detailing water delivery rates, energy efficiency rating, any necessary improvements needed, estimated cost of improvements, and time needed to realize return on that investment.
As part of this comprehensive evaluation plan, we will advance the irrigation pumping plant efficiency work another big step forward. We will return to producers who have ample room to make system improvements and assess adoption of these recommendations, barriers to adoption if any, and re-measure efficiency on a sub-sample of pumping plants improved. This evaluation process will therefore be two-fold; technical assistance to assure recommendations are followed through with; and then monitoring and evaluation of efficiency rating and return on investment to assure recommendations given are sound. Lastly, if funding allows, we will expand these pump test teams to the Mississippi River Valley.

GIS/Remote Sensing to Evaluate Wetland Habitat and Water Quality Benefits
Conservation planning teams at the various U.S. Fish and Wildlife Joint Ventures and DU have been perfecting GIS/Remote Sensing methods to identifying and quantifying seasonal shallow water across the rice-growing landscapes. In general, this information can be coupled with data from National Agricultural Statistical Service (NASS), state Departments of Environmental quality, federal and state critical areas for at-risk species, and a multitude of other information to monitor and evaluate a host of resource concerns and conservation needs.

The key premises to modeling shallow surface waters lie in identifying managed versus naturally flooded fields. Managed waters on crop fields tend to be symmetrical; square or rectangular. This contrasts with the asymmetry found in natural flooding where water perimeters follow landscape contours and serpentine drains. Using some complex remote sensing analyses one can quantify acres managed to hold water, acres unmanaged yet temporarily flooded, and acres with no water (see figure below). Once water coverage has been identified and delineated, these acres can be combined with rice crop coverage, and associated waterfowl habitat foraging values, to estimate carrying capacity of the rice landscape at any given time. Furthermore, soil retention/loss data can be coupled with rice and shallow-water coverage to estimate soil retention across that landscape for the fall/winter.
Applied research published in Journal of Soil and Water Conservation details how GIS/Remote Sensing exercises can be used to estimate soil retention in winter managed rice fields in the Mississippi River Valley. Numerous NRCS practices delivered in the recent past, and proposed within this RCPP project, target reducing sediment losses and improving water quality. As part of our comprehensive evaluation, we will perform these detailed analyses and estimate soil retention in rice during fall/winter, across a subset of state-listed impaired watersheds in the Mississippi River Valley. Tentative watersheds selected include the L’Anguille in northeast Arkansas, Big Sunflower in west Mississippi, and Tensas in northeast Louisiana.

In the more routine sense, we will perform waterfowl carrying capacity analyses across each fall/winter season. This will combine the rice acres managed to hold water, plus naturally flooded, current estimates of food availability in rice habitats, and the estimated winter populations. The recently published article by the Rice Foundation and DU entitled *Estimating the Biological and Economic Contributions that Rice Habitats Make in Support of North American Waterfowl Populations* details these analyses. Evaluations to update estimates of food availability in rice habitats in the Gulf Coast and Central Valley of California are contributions delivered in this RCPP project.

**Baseline Establishment**

- A mix of both water quantity and quality baselines will be established during the project period by at least 6 contributors. The LSU Ag Center, Lower Colorado River Authority, and 4 State Rice Research and Promotion Board studies. All of these will provide very useful “before” data to be compared to fields after conservation practices are installed and implemented.

- An integral parameter of foraging carrying capacity of rice landscapes are estimates of waste grain and other food availability after harvest. Numerous studies have shown this to be very dynamic with advances in varieties, harvest timing and techniques, and post-harvest practices. A comprehensive study was completed for the Lower Mississippi River Valley in 2006. Ongoing studies to update estimates for the Gulf Coast and California’s Central Valley are included in this RCPP effort.

- Continuously flooded rice accounts for significant agricultural greenhouse gas (GHG) emissions, mainly through methane (CH\(_4\)). In the U.S., where most rice is produced under continuous flooding, rice is ranked as the largest crop emitter of GHGs. Flooded-rice production accounts for 11% of total agricultural CH\(_4\) emissions in the U.S., ranking third behind enteric fermentation and manure management. This natural resource concern is linked to water management and therefore needs to be addressed. During this project period, we will assess the feasibility and rice producer acceptance of current alternative water management strategies to reduce GHG. Furthermore, we will investigate potential environmental markets that would create income for producers who participate in those programs. The Climate Trust will contribute expertise and time in fulfilling this feasibility exercise.
Different approach to evaluating project outcomes: Although the comprehensive evaluation plan above is a contribution from the Partnership and meets the priority for partners to provide resources to evaluate effects of conservation programs, activities, and practices, one additional approach will indeed require NRCS participation. This Partnership proposes a side-by-side analysis of resource concerns addressed through EQIP and CSP contracts resulting under this RCPP - compared to contracts entered into under standard program delivery and conditions. Our hypothesis is that requiring conservation planning for program participation will result in more comprehensive projects, more resource concerns addressed, and higher levels of environmental performance. Again, this will require NRCS input and coordination, but offers a different approach to evaluating outcomes.

Potential criteria for evaluating and ranking applications: The Partnership proposes to use existing NRCS sign-up periods and existing NRCS evaluation and ranking criteria in each locale. The only requirements for this project would be a history of rice production and requirement of a NRCS approved conservation plan that covers the 3 resource concerns – water quantity, water quality, and wetland habitat with focus on at-risk species habitat. If this is precluded by statute, we request that producers who have an NRCS approved conservation plan that covers the 3 resource concerns be given a significant amount of ranking points in order to ensure only the best applications are selected. We realize the workload this places on field staff hence the vast majority of the partner-requested TA funds will support conservation planners and other needed staff capacity to assist NRCS.

Participation estimate: The Partnership is targeting the 9,598 rice producers who grow 3 million acres of rice each year as defined by the U.S. 2012 Agricultural Census. These 3 million acres are but about 7% of the 46 million acres across the 3 landscape geographies in this national project (see maps). Outreach and education efforts by project leaders and a host of contributing partners will inform 50% (4,799) of the rice producers about RCPP efforts and seek participants who are ready and willing to engage in conservation education, planning, and delivery. This outreach and education effort is being coordinated with other regional RCPP proposals across the U.S. Based on funding requested and average size of current EQIP and CSP contracts, plus partner conservation delivery and irrigation system improvements, we anticipate positively affecting ≈9% (840) of the rice producers in this first phase of RCPP. This percentage could increase significantly if WMD improvements are completed and operable in the project period. We estimate that some 380,000 acres will undergo the planning, design and delivery of conservation practices on these working rice lands.

The Partnership will initiate a special effort to engage the 385 (4%) rice producers estimated to be historically underserved using data from the U.S. 2012 Agricultural Census. Outreach and education efforts by some 20 contributing partners will seek beginning, minority, veteran, or limited resource producers. Although the types of statistics to identify historically underserved producers are rare in the agri-business sector, the Partnership will make an extra effort to encourage such participants.

Meeting or avoiding the need for regulation: Rice producers in each of the 6 states face either existing or potential regulation across all 3 primary/secondary resource concerns addressed by this proposal. The Partnership believes that documenting and measuring the results of voluntary on-farm conservation efforts is the best way to meet existing regulations and obviate the need for future regulation.

In addition a primary objective of the Partnership is to remain engaged with various state water boards and plan committees, especially in Arkansas, Texas, and California, to educate decision makers on water, agriculture, and wildlife/fisheries connections and needs. For example, in Arkansas, DU and USARF are on the State Water Planning stakeholder groups. In Texas we are on the Colorado River Issues Committee and the Lower Colorado River Basin Coalition. And in California, we are engaged in the North State Water Alliance and the Northern California Water Association is a partner in this proposal.
The result of these engagements will be to ensure both interested stakeholders and key decision makers are aware of rice producer efforts to proactively address environmental concerns.

**Requested program adjustments:** Effective implementation of a project this ambitious will require close coordination between the Partnership and the NRCS at the national, state and local levels. We strongly believe in working closely with NRCS, and suggest the establishment of a joint Partnership-NRCS coordination committee. The committee would be responsible for ensuring the project’s success and would engage in joint decision-making, communications, fund allocation, and program adjustments. The following represents an initial listing of program adjustments the committee would discuss:

- **Increase Access to Data** - there is a growing need for more Information System integration in order to fully assist with NRCS conservation planning. Assuming privacy concerns could be overcome the Partnership staff leaders would like access to more NRCS data (Note: implementation of Client Gateway may render this issue moot).
- **CSP Rice Bundle** – this project includes a significant CSP effort. NRCS has effectively used bundles to increase both implementation and effectiveness. In year two of the project, we will take information gleaned from year one and work with NRCS to develop a National Rice Conservation Bundle that synergistically addresses the three resource concerns.
- **NRCS Program Requirements** – we request NRCS remain responsible for AGI, Conservation Compliance, and other associated requirements.
- **TA Funding for NRCS** – The Partnership asks that adequate TA funding also be provided to the 6 state NRCS offices to deliver the proposed 740 EQIP and CSP contracts.

**Acknowledgements:** The Partnership leaders and 40+ collaborating partners would like to express our sincere gratitude to all the NRCS staff who provided expertise, recommendations, and information in formulation of this proposal.

**References:**


VIA EMAIL

SEP 30 2014

Mr. Scott Manley
Director – Conservation Innovation
Ducks Unlimited, Inc.
193 Business Park Drive, Suite E
Ridgeland, Mississippi 39157

Dear Scott:

SUBJECT: USDA Natural Resources Conservation Service Regional Conservation Partnership Program (RCPP) Proposal - Rice Stewardship Partnership – Sustaining the Future of Rice

On behalf of the Arkansas Natural Resources Conservation Service (NRCS), in cooperation with the other five rice-growing states of California, Louisiana, Mississippi, Missouri, and Texas, we are writing to confirm that the Regional Conservation Partnership Program (RCPP) proposal entitled Rice Stewardship Partnership – Sustaining the Future of Rice is compatible with our conservation goals of water quantity, water quality, and wetland habitat enhancement. Arkansas has a rich history in the establishment and expansion of rice agriculture with approximately 1.6 million acres in production during 2014 – 53 percent of the nation’s 3.0 million acres. As the leading state in rice agriculture, we are pleased to see such a high quality proposal to collaborate with NRCS for this critical conservation work.

This RCPP proposal has many foundational attributes which give it a high likelihood of success. Rice as an irrigated crop and as working wetlands provides both nourishing food for people and excellent waterfowl habitat; there is no other commodity crop like it. As co-leaders in this proposal, USA Rice Federation and Ducks Unlimited bring high quality knowledge, skills, abilities, and experience that together have potential to deliver an aggressive and expansive project like this. Both organizations have extensive experience working with agricultural producers. Ducks Unlimited has a long history of conservation partnerships with NRCS in all six states, making the integration of partner technical assistance seamless.

From an operational perspective, this proposal uses resource management systems-level planning as the first step in identifying resource concerns and conservation opportunities on the farm – “plan first.” All practices are left open and available under the Environmental Quality Incentives Program and the Conservation Stewardship Program to meet plan results and directions. This proposal is integrated into various wetland management districts in the west where water conservation has risen to new heights. Overall goals are ambitious but achievable given the innovation, experience, and capacity of the project leaders and over 40 collaborating partners.
Mr. Scott Manley  
Page 2

The proposed $33 million effort ($20 million from NRCS/$13 million from contributors) will provide assistance to at least 840 rice producers across the United States in the planning, design and installation of conservation practices on working lands and water delivery systems on at least 380,000 acres.

The Rice Stewardship Partnership and their project leaders have done an excellent job in reaching out and communicating with the six state NRCS offices, respective State Conservationists, and their leadership. I understand that each State Conservationist was visited personally or by conference call and appraised of the RCPP proposal with the opportunity to share questions and provide advice. We look forward to working collaboratively to accelerate conservation if the RCPP proposal entitled Rice Stewardship Partnership – Sustaining the Future of Rice is selected for funding.

Sincerely,

[Signature]

Michael E. Sullivan  
State Conservationist

cc:  
Carlos Suarez, State Conservationist, Natural Resources Conservation Service, 430 G Street, Suite 4164, Davis, California 95616  
Kevin Norton, State Conservationist, Natural Resources Conservation Service, 3737 Government Street, Alexandria, Louisiana 71302  
Kurt Readus, State Conservationist, Natural Resources Conservation Service, Suite 1321, Federal Building, 100 West Capitol Street, Jackson, Mississippi 39269  
JR Flores, State Conservationist, Natural Resources Conservation Service, Parkade Center, Suite 250, 601 Business Loop 70 West, Columbia, Missouri 65203  
Salvador Salinas, State Conservationist, Natural Resources Conservation Service, W. R. Poage Federal Building, 101 South Main, Temple, Texas 76501