

How Waterfowl Conservation
Benefits All Birds

— A Force for Nature —
Wetlands America Trust



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THE POWER OF WETLANDS

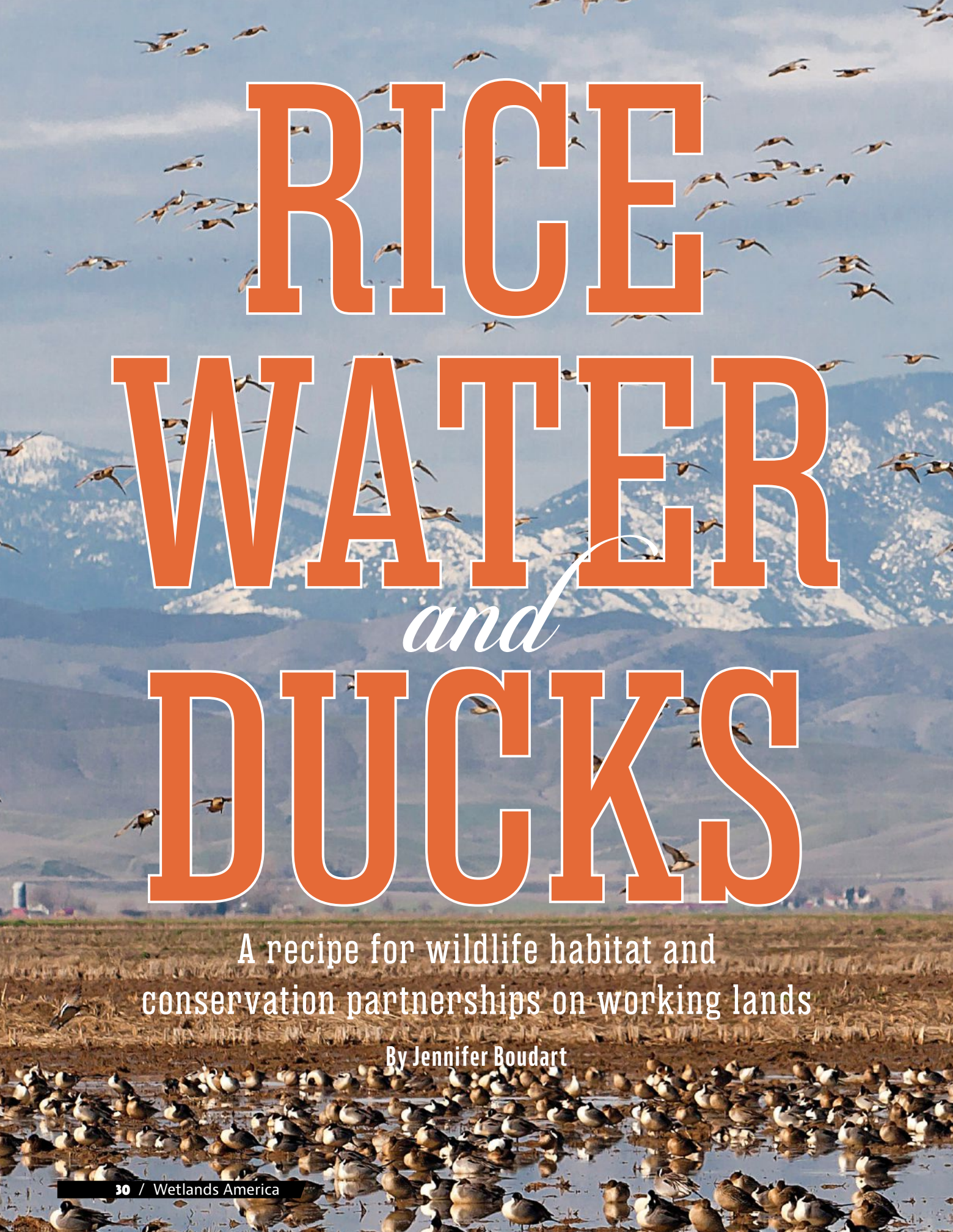
SAVING THESE
INVALUABLE
HABITATS
FOR WILDLIFE
AND PEOPLE

GUARDIANS OF THE BOREAL FOREST

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TO CONSERVE
ONE OF EARTH'S
LARGEST ECOSYSTEMS

A large flock of ducks is shown in flight across the sky, with many more ducks gathered in a wetland area at the bottom of the frame. The background features rolling hills and mountains under a clear blue sky.

RICE WATER *and* DUCKS

A recipe for wildlife habitat and
conservation partnerships on working lands

By Jennifer Boudart



When it comes to staple foods—those that form the mainstay of the basic human diet and provide significant energy and nutrients—rice ranks high on the list. In fact, this grain is a staple food for more than half the world's people. In the United States, the average person consumes 26 pounds of rice annually. Rice is affordable, nutritious, and versatile. The grains are packaged for steaming or boiling, of course, but rice can also be processed into ingredients for everything from breakfast cereals to beer, from pasta to pet food. An inventory of your own kitchen likely would turn up a surprising variety of products containing rice in one form or another.

Rice is a major US crop—nearly 3 million acres of rice will be harvested this fall for a total yield of roughly 12 million tons. Most of the harvest will take place on farms in six rice-growing states: Arkansas, California, Louisiana, Mississippi, Missouri, and Texas. These states supply nearly 90 percent of rice consumed in the United States. The rice that is not consumed domestically—typically around half the harvest—is shipped to more than 100 countries worldwide.

Feeding an ever-expanding global population has required farmers to find ways to increase yield while maintaining quality. American rice producers have met this challenge quite successfully. Over the past three decades, they've increased rice yields by more than 50 percent. At the same time, rice agriculture has had to become increasingly sustainable, as water and land resources are under growing pressure.

American rice farmers constantly work toward the goals of producing more rice while using less water and less energy; improving water, soil, and air quality; and managing their land to support

biodiversity. For rice farmers, sustainability is a cause that strikes very close to home, as they often live on the land where they work. They recognize that sustainability is crucial not only to protecting food security but also to protecting the land that supports people's livelihoods and a healthy environment.

Feeding People and Wildlife

People aren't the only enthusiastic consumers of rice. Waterfowl love rice too. Indeed, the same rice lands that supply food for your table also supply valuable food for wintering and migrating waterfowl and a host of other migratory birds. The practice of intentionally flooding rice fields after harvest provides a source of highly nutritious foods for waterfowl by creating conditions similar to the original wetland habitats that existed in areas where rice is now typically cultivated. Dabbling ducks find waters filled with waste grain, weed seeds, and invertebrates. Geese eat waste grain along with roots of rice stalks and shoots of sprouting plants.



Due to widespread loss of wetlands across the southern and western United States, large numbers of waterfowl now rely heavily on flooded rice fields for wintering habitat. The major rice-production areas in the United States align with DU's highest-priority waterfowl wintering areas: the Central Valley of California, the Gulf Coast, and the Mississippi Alluvial Valley. Rice agriculture provides 35 percent of the food resources available to migrating and wintering dabbling ducks in these areas.

Ducks Unlimited has worked with rice farmers for many years to develop operations beneficial to both rice agriculture and wetland wildlife and was one of the first organizations to partner with farmers to flood harvested rice fields for waterfowl. This practice benefits farmers in several ways, including helping control weeds and preventing soil erosion.

Al Montna is the owner-operator of Montna Farms, a 5,000-acre rice and conservation operation based in Sutter County, California. Montna has been a DU volunteer since 1970. The family operates the Dingville Duck and Social Club, which has its own DU chapter that has raised over \$1 million for conservation. The Montna family, working with DU, was the first to protect rice land with a permanent working lands easement that includes a winter-flooding component. This easement is held by Wetlands America Trust. The visionary leadership of Montna helped bring DU and rice farmers together to form today's important partnership.

"While working with USA Rice and DU, we saw prime opportunities to enhance sustainability, reduce input costs, and provide great habitat," Montna says, "so we formed a partnership that benefits not only wildlife but also rice farmers, hunters, and American citizens alike. Over 1 million rice acres hold shallow water each winter across the Central Valley, Gulf Coast, and Mississippi Alluvial Valley. And the Rice Stewardship Partnership has impacted 625,000 acres with additional conservation practices. We are just beginning to tap the full potential of working lands programs that support our agriculture partners, our communities, and the ducks."



By flooding fields after harvest, rice farmers provide crucial migration and wintering habitat for many species of wetland birds such as American avocets. This practice also prevents soil erosion, improves water quality, and helps control weeds.

Ensuring a Sustainable Future

In 2013, DU worked with the USA Rice Federation to establish the Rice Stewardship Partnership, the first-ever conservation program developed specifically for producers of a single commodity. USA Rice is the national nonprofit trade association for the rice industry, representing stakeholders ranging from farmers and millers to sellers and allied businesses.

"As one of the top five producers of rice in the world, the US rice industry is committed to growing our rice crop using techniques that are sustainable and contribute environmental benefits to the surrounding areas," says Josh Hankins, director of grower relations and Rice Stewardship Partnership for USA Rice. "The Rice Stewardship Partnership provides our industry an excellent opportunity to effectively tell our conservation story and to broaden our base of support."

The goal of the partnership is to offer rice producers several on-



Brian Baer

The Mosaic Company Promotes Rice Stewardship

Since 2015, the Mosaic Company has supported the Rice Stewardship Partnership and helped farmers strengthen their nutrient stewardship practices while conserving wildlife habitats. Mosaic is committed to promoting on-farm best management practices that improve nutrient stewardship, conserve wildlife habitat, and help farmers stay productive and profitable.

To ensure optimal nutrient uptake in rice production and minimize nutrient losses that may impact nearby water resources, Ducks Unlimited and Mosaic are working together to educate rice farmers on 4R Nutrient Stewardship practices. Following the 4Rs of right nutrient source, right application rate, right time, and right place helps farmers minimize input costs. By following 4R Nutrient Stewardship practices, rice farmers also help improve water quality locally and downstream by capturing crop nutrients that might otherwise enter waterways.

Through the Rice Stewardship Partnership, Mosaic, Ducks Unlimited, USA Rice, NRCS, and more than 420 supply chain partners are helping farmers increase sustainability and profitability on their farms while conserving wildlife habitat.

**THE MOSAIC COMPANY
FOUNDATION**



Rice is a staple food for more than half the global population. To meet growing demand, US rice farmers have increased yields by 50 percent while significantly reducing greenhouse gas emissions, soil loss, and water and energy use.

farm conservation options focusing on water quantity, water quality, and wildlife habitat, all while working toward a more sustainable bottom line. To meet this goal, the partnership engages leading agricultural and conservation organizations to deliver the support, knowledge, tools, and practices rice producers need. It also pursues policy, publicity, and fundraising opportunities to support farmers.

DU and USA Rice work closely with the US Department of Agriculture's Natural Resources Conservation Service (NRCS) and the Regional Conservation Partnership Program (RCPP), the latter serving as an important source of financial assistance for rice producers. To date, the partnership has been awarded nine RCPP

projects across all six rice-growing states, resulting in more than \$80 million in financial assistance. In addition to NRCS funding, financial support also comes from dedicated sponsors across the supply chain (see sidebar).

Conservation strategies for participating farmers usually entail water-efficiency recommendations that help conserve water and reduce demand on surface and groundwater resources. Strategies may also involve water-quality practices such as reducing sediment in runoff, managing nutrient application, and applying integrated pest management. Measures to improve soil and air quality also come into play, including reducing emissions of methane, a common greenhouse gas from wetlands.

Dr. Scott Manley, DU's director of conservation programs for the Mississippi Alluvial Valley, spearheads the Rice Stewardship Partnership for DU. Manley says supporting rice farmers' conservation efforts is directly in line with DU's mission. "Helping rice farmers to further improve on-site operations is crucial to our success because working rice lands are vital to waterfowl and other wildlife," he says. "Rice farmers are indeed great stewards of the soil, water, and our other natural resources."

Making a Difference on the Family Farm

Brothers Mike and Scott Sullivan are fourth-generation farmers in northeast Arkansas, the nation's number-one rice producing state. Mike's son Ryan and Scott's son Gavin represent the fifth generation. Together, the family grows rice and soybeans on 18,000 acres.

As RCPP participants, the Sullivans flood their fields in winter both to improve water quality and provide habitat for waterfowl. By



Rice fields provide a variety of food resources for migrating and wintering waterfowl. Dabbling ducks find an abundance of waste grain, weed seeds, and invertebrates. Geese eat waste grain as well as the roots of rice stalks and shoots of sprouting plants.



kansas. They have converted almost 100 percent of their 2020 rice crop to row rice. Research has proven that water use for row rice is equal to or less than multiple-inlet levee rice. The Sullivans report a number of other benefits too, including fewer trips across the field and more ease with crop rotation, thanks to the ability to use the same rows when planting soybeans after rice the following year, and then rice after soybeans. This minimum tillage conservation practice has allowed the family to reach many of their sustainability goals, including improved soil health, reduced labor, reduced energy consumption, and lower equipment costs per acre.

A Long-Term Commitment to the Land

Tim Gertson, a fifth-generation rice farmer, owns and operates G5 Farms with his cousin Daniel. They farm more than 1,400 acres of rice near Lissie, Texas, with rotations of cattle and wildlife habitat. They began farming independently 12 years ago.

Gertson has secured several NRCS contracts since 2010. With this support, he has leveled land and installed permanent irrigation control structures on 900 acres, with more to be added in the coming years. He reports that these improvements have already reduced water usage by 40 percent. He has also implemented nutrient-management practices on the farm to help improve water and air quality.

Each winter thousands of migrating northern pintails, snow geese, American green-winged teal, and other waterfowl arrive on G5 farms, where Gertson captures water on his fields after harvest. It's a reminder of how important rice production is for these birds.

Gertson wants his efforts to have a long-term impact. "My boys want to be farmers just like their dad and someday farm the same land our family has been working for the last 111 years," he



Ryan and Mike Sullivan, who grow rice near Burdette, Arkansas, have adopted a number of irrigation and tillage practices that have made their operation more sustainable and profitable.

closing their water-control structures in October, they can capture rainfall over the winter, thus giving sediments and nutrients in the water time to settle before the fields are drained in February. "The system that works for rice farming also works great for waterfowl," Mike Sullivan says. "And with more than 1 million acres of rice grown in Arkansas every year, we are ground zero for migrating and wintering mallards, white-fronted geese, and many other waterfowl species."

The Sullivans also have implemented several sustainable irrigation strategies, including alternate wetting and drying (AWD). This method involves controlled and intermittent irrigation—executing timely drawdowns to capture summer rains and break methane formation (which results from the action of microbes under flooded conditions). Using AWD helped the Sullivans significantly reduce water use and methane emissions without hurting crop yields.

The Sullivans work closely with the USDA Agricultural Research Service's Delta Water Management Research Unit in Jonesboro, Ar-



Tim Gertson, a fifth-generation rice producer from Lissie, Texas, has significantly reduced water use on his farm and implemented nutrient-management practices that improve water and air quality.

Supply Chain Sponsors Make the Difference

Financial support from many supply chain sponsors has been crucial to the success of the Rice Stewardship Partnership. Funders include the USDA Natural Resources Conservation Service, National Fish and Wildlife Foundation, Walmart Foundation, Mosaic Company Foundation, Nestlé Purina PetCare, Chevron U.S.A., Entergy, RiceTec, Anheuser-Busch, Freeport-McMoRan Foundation, Irene W. and C.B. Pennington Foundation, BASF, American Rice, Inc.– Riviana Foods, Inc., Joe W. and Dorothy Dorsett Brown Foundation, Delta Plastics, Corteva Agriscience, Wells Fargo, Farmers Rice Milling Company, Horizon Ag, Turner’s Creek & Bombay Hook Farms, MacDon Industries, Riceland Foods, Cargill, and Ducks Unlimited Major Sponsors.

US Rice and Reduced Environmental Impacts

(per hundred pounds of rice produced)

Field to Market 2016 National Indicators Report (based on linear trend analysis, 1980–2015)

↑ **39%**
land use
efficiency

↓ **52%**
water use

↓ **34%**
energy use

↓ **41%**
greenhouse
gas emissions

↓ **28%**
soil loss

explains. “Without being able to make a living for my family and maintain the natural resources to keep my land in production, there wouldn’t be anything left to hand to this sixth generation.”

A Natural Partnership

Mike Felkins began farming 30 years ago. Today, between farming and managing other farms, he oversees around 4,200 acres in California’s Sacramento Valley. Having hunted waterfowl since the age of 12, Felkins naturally was interested in linking his two passions.

“If you watch where waterfowl go, you can see for yourself that rice farmers, duck hunters, and conservation efforts like rice stewardship are all tied together,” Felkins explains. “Here in California, we work together to provide phenomenal winter habitat for waterfowl in the state.”

Felkins was glad to see the natural partnership between rice and ducks formalized, and joining the Rice Stewardship Partnership opened up more resources for him to implement conservation practices on his farm. He says he can also see differences in the numbers of all kinds of birds using his fields after implementing rice stewardship habitat practices. “Rice stewardship has been a win for wildlife habitat and a win for us financially,” he notes.

Unified support from conservation and commodity groups on policies that impact farming is crucial to the program’s success, Felkins says. “We are all together on this,” he explains. “If groups like Ducks Unlimited weren’t involved in conservation on agricultural lands, it would make it that much more difficult for the rice industry. We are proactive together in all aspects of farming, from on-the-ground conservation all the way to the Farm Bill.”

Conservation has always been a priority for Felkins, and, as a

waterfowler, helping keep the duck population healthy is important to him. “In today’s world conservation has become an even bigger issue than it was in the past. We need to keep things diversified and keep many different species healthy in this working-land environment,” he explains.

Building on Conservation Achievements

Manley applauds the efforts of farm families like these. “Agricultural production practices can be managed in great ways for wildlife, and that is what you see these farmers doing today,” he says.

At the close of 2019, the Rice Stewardship Partnership celebrated an impressive milestone—625,000 acres of conservation impact. Hankins credits the success of the Rice Stewardship Partnership to its unique ability to unite an entire industry. “This partnership puts aside any differences the variety of partners in the group may have,” Hankins observes. “We continue to work together to protect vitally important working-land habitat, and I’m so proud to be a part of this journey.”

Manley echoes that sentiment. “The Rice Stewardship Partnership has fostered an unprecedented level of trust and respect among rice producers, conservation organizations like DU and NRCS, and the full suite of supply chain investors, from RiceTec to Nestlé Purina PetCare to the Walmart Foundation. And with this trust and respect there is no limit to what can be accomplished for working rice lands and wildlife.”

Jennifer Boudart enjoys writing about science and conservation topics for readers of all ages. She has developed content for textbook publishers, museums, and organizations such as Ducks Unlimited.

RICE STEWARDSHIP PARTNERSHIP

