For Immediate Release

Flooding of Rice Fields Tantamount to Keeping Up Waterfowl Habitat

MEMPHIS, Tenn., Tuesday, March 20, 2001 - Arkansas' White River Basin is a critical link for nearly half of North America's waterfowl that annually migrate along the Mississippi Flyway.

While there is no better place on earth to find waterfowl hunting success, there is a black cloud on the horizon, because in the heart of this drainage, water supplies are declining for the ducks, the geese and the hunter.

The White River Basin drains lands from the north above the Missouri border, westward almost to Oklahoma, later funneling that flow into the Mississippi River just west of Rosedale, Miss. (*http://www.srh.noaa.gov/lzk/html/whitervr1.htm*). This 100 or so miles of north-south flyway annually satisfies migrating waterfowls' three major needs for survival: 1) food, 2) water and 3) sanctuary.

The Grand Prairie region is located within the southern portion of this drainage basin. Once a tallgrass prairie, today it is thousands of acres of rice fields with the city of Stuttgart, Ark., as its hub. It was the commercial production of rice that began in the early 1900s on this flat landscape, which attracted more waterfowl to the area.

With surface water and the abundance of food, the Grand Prairie soon became a regular stopover for the continent's largest concentration of mallard ducks. Mild winters

during the 1920s made this area home to some two to three million migrating ducks and geese each winter. Along with the ducks, sport hunting flourished around Stuttgart.

With an abundant seasonal population of ducks and geese frequenting the Grand Prairie, farmers and landowners soon learned that by flooding fields and green timber impoundments, they could provide ample hunting opportunity for sportsmen and women. And during the seasons that followed, they learned that controlling the surface water with dams, levees and reservoirs controlled the area's waterfowl. Today, water management has become the century-old traditional way to create and maintain waterfowl hunting opportunity.

While the success of rice farming boosted the Grand Prairie economy, waterfowl hunting helped give rise to the area's moniker: *"The rice and duck capital of the world."*

Providing prime habitat for both waterfowl and hunters each fall, thousands of acres of rice fields and greentree reservoirs are filled each season with water pumped from the basin's rivers, streams and bayous, and from the ground.

Arkansas landowners, farmers and hunters have been very fortunate to have plenty of relatively inexpensive water available to pump over a comparatively flat terrain and a soil type that readily held water on its surface. However, most of the water used for irrigation within the Grand Prairie – more than 80 percent – has come from the ground.

Surface water can legally be drawn from most of Arkansas' rivers, streams and bayous by simply dropping a suction pipe hooked to a pump into the flow. This type of withdrawal is perhaps the least expensive and used extensively by rice farmers throughout the drainage area who till land adjacent to a river, stream or bayou.

Others provide waterfowl habitat by simply closing a few levee gates, then turning on the same irrigation wells that were used to produce rice and soybean crops during the summer. Rainfall is relied upon to maintain water levels during the fall and winter and to provide new surface water for feeding waterfowl.

"If it rains you're generally okay," said Harley Gill, a long-time duck hunting guide who lives on the Grand Prairie. "But we've been without [adequate rainfall] water during six of the past eight years, and one year we had no [rain] water at all."

Years ago, when rice farming and waterfowl hunting were on the rise, some things were starting to change below the Grand Prairie's surface.

As rice production increased after the Great Depression and well-drilling technology improved, greater demand for irrigation water was placed on the Grand Prairie's shallow alluvial aquifer. Because rice is an aquatic grass, typically grown in a flooded cultural system where water leaching and evaporation take their toll each summer, some fields require two acre-feet of irrigation and more just to bring a crop to harvest.

During the 50 years that followed, the water level of the alluvial aquifer declined nearly 100 feet. A cone of depression then began developing between Lonoke, Stuttgart and DeWitt as increased pumping pulled the water table lower.

The same soil properties which make about 300,000 acres of the Grand Prairie's soil suitable for rice and soybean farming – less than a foot of topsoil layered over a semi-permeable clay cap at least two feet thick – also inhibit surface recharge of the alluvial aquifer. Research into the plight of the Grand Prairie's alluvial aquifer indicates recharge

has long been a problem. And the groundwater demand for farming has probably exceeded the aquifer's natural ability to recharge since about 1910.

Today, the Little Rock, Ark.-based National Water Management Center, working in conjunction with the U.S. Geological Survey, expects that irrigation demand will exhaust the shallow aquifer's useable commercial supply of water by 2022.

"If you're not out of water, you're not worried about it," said Grand Prairie farmer Bob Bevis, offering a modern-day take on the old musical standard: *"You don't miss your water until the well runs dry."* However, Bevis, along with many other area farmers, has already seen his wells run dry.

Hydrologists have been documenting the rapid spread of the alluvial aquifer's cone of depression. Groundwater surveys show that the drying is moving south at the rate of approximately 1,500 feet per year and west at about 450 feet per year. To the north, some of the wells around Carlisle and Slovak are declining at the rate of about three feet per year.

The Grand Prairie is a "critical groundwater area" as defined by Arkansas state law, the first such troubled area ever identified as having serious problems with both shallow and deep aquifers within the state.

Most of the irrigation water used for rice farming and waterfowl hunting continues to be pumped from the ground. And as shallower wells run out of groundwater, larger and unrestricted deeper wells are being punched into the region's sparta aquifer.

Grand Prairie businessman Jake Hartz knows all too well how deeper groundwater contained within the sparta aquifer can be difficult to target and track. "We had a well set at 260 feet," recalls Hartz of an irrigation site drawing on the deeper sparta aquifer. "The

(pump) screen was all the way down at 800 feet and it's already pumped air," he said of the deeper, lower yielding aquifer that locals once thought contained water-bearing sand at least 500 feet thick.

Compounding the problems that could result from a "drill-deeper" irrigation strategy is the fact that the area's purest drinking water comes from the deep sparta aquifer.

"As the water gets less, everybody puts in more wells," said Grand Prairie farmer Freddie Stecks of many local users' willingness to spend more money to lift water to the surface from deeper and deeper wells. U.S. Geological Survey figures show the number of wells, most now deeper, are increasing where irrigation use is the greatest, that being north of Stuttgart.

As if dwindling groundwater supplies weren't presenting the farmer, landowner and waterfowl hunter with enough problems, climatic weather patterns during the past three years have further dried their individual chances for success.

Temperatures during the summer of 2000 reached all-time highs. Rainfall was almost nonexistent and for the third consecutive year the Grand Prairie was designated a federal disaster area because of continuing drought conditions.

While these Arkansas rice and soybean farmers were once again eligible to receive low-interest loans in an effort to recoup at least a portion of their losses, their futures remain bleak because of increasing energy costs and the probability of more weather-related yield reductions.

Grand Prairie farmer John Ed Tarkington said the water levels in his irrigation wells have continued to drop. Shallow wells on his farm that once produced 1,500 to 2,000 gallons

per minute, now produce only 700 to 800 gallons and those slowed flows have nearly doubled crop irrigation time.

Roy O. McCallum, III said he would again welcome the opportunity to reflood some of his harvested rice fields during dry winters to help eliminate the remaining stubble and red rice, while creating much-needed waterfowl habitat. But simply pumping groundwater has become too costly, he said.

On the wintering grounds, "the biggest need for waterfowl is habitat, and habitat for waterfowl is water," said Neal Compton with Ducks Unlimited, Inc.

On the Grand Prairie, "…water is the lifeblood of the farm," said farmer Bob Bevis. "We're at a crisis now."

A decade ago, Congress directed the U.S. Army Corps of Engineers to seek a workable solution to the Grand Prairie's groundwater use problems. What has evolved is a comprehensive and environmentally friendly irrigation plan - including a pump on the White River, pipes, ditches and on-farm reservoirs.

The Corps' plan mirrors how individual farmers and landowners throughout the White River Basin have for years drawn on nearby surface water. But the plan also improves on-farm irrigation storage and irrigation efficiency for Grand Prairie participants, while ensuring significantly more available winter habitat for waterfowl migrating through the region.

Inhabitants of the Grand Prairie have prospered during the past century because of production agriculture and the agribusiness that followed. Sport tourism also brought more money into the region because of the area's abundant waterfowl resources.

"Irrigated agriculture is necessary to the Grand Prairie in order to have an economy," said Gene Sullivan, executive director of the White River Irrigation District (WRID). "But we can no longer support the kind of waterfowl population that we really need in this area."

The ability to irrigate is crop insurance for the farmer. And irrigated crops typically produce greater yields at harvest than their dryland counterparts. Without Grand Prairie farmers and landowners significantly reducing their reliance on groundwater and altering their cultural practices to ensure greater irrigation efficiency, production agriculture and thousands of acres of waterfowl habitat here may be doomed.

Below the Grand Prairie's surface, water still can not move fast enough to recharge the shallow alluvial aquifer, the area farmers' primary source of groundwater for irrigation.

"Most (land) will go out of irrigated agriculture within the first 25 years of this century," said area groundwater expert Danny Goodwin with the Little Rock-based National Water Management Center. And the yield reductions associated with dryland farming seldom produce enough profit to justify most agricultural operations, U.S. Department of Agriculture figures show.

"There is a solution to our problem *if* we can develop surface water," said Bevis, referring to the Grand Prairie Area Demonstration Project (GPADP) which is serving as a national model for engineering agriculture's ability to ensure profitable production.

For Grand Prairie rice and soybean farmers like Bevis, deciding on a future is relatively simple. "Without water, we can't survive," he said.