

**A Central Valley of California Perspective on the Grand Prairie Area Demonstration Project and  
Ideas that Could be Incorporated into a  
Grand Prairie Alternative**

By Dave Smith

The Grand Prairie Area Demonstration Project (GDADP) appears similar in scope, intent, and rationale to many of the irrigation projects constructed in the Central Valley of California during the last 70 years. Foremost, the fundamental premise behind the project is that surface irrigation water must be developed to maintain irrigated agriculture in the face of a declining aquifer. Striking similarities exist between the GPADP and the events that took place in California's Tulare Basin over the past century, including the following:

Naturally functioning wetland systems that could only be described as "national treasures" historically existed,

The region's extraordinary hydrologic features (abundant rainfall for the White River watershed; significant snowmelt from the adjacent massive Sierra Nevada for the Tulare Basin) provided a plentiful water resource that flooded the region's wetlands in a dynamic manner,

Drainage projects allowed conversion to agriculture during the late 1800's and early 1900's, dramatically altering the historic landscape and resulting in significant wetland loss,

Groundwater pumping was initiated around 1910 and allowed the successful development of irrigated agriculture, but was conducted in a non-sustainable manner that ultimately threatened to deplete the aquifer,

Irrigation projects were proposed to provide the water supplies necessary to maintain crop production at current levels.

While the fate of the GPADP and the Lower White River wetland ecosystem remains to be determined, the fate of the Tulare Basin's wetlands has been long since sealed. Over 97% of the Tulare Basin's 500,000 acres of historic wetland have been converted into cropland. The development of flood control and irrigation projects has essentially eliminated the region's natural hydrology. Further, the appropriation of federally subsidized irrigation water to agriculture has left the remaining 3,000 acres of privately owned wetlands without a viable water source. Private wetlands water supplies in the Basin are currently comprised of 92% groundwater – pumped from depths of over 500 feet at a cost that averages \$45/acre-foot. The water supply to the region's single public wetland, the Kern National Wildlife Refuge, was restored with the passing of the Central Valley Project of Improvement Act of 1992 through appropriation of 25,000 acre-feet of federal irrigation project yield to be delivered through a series of aqueducts, canals, and lift pumps. Little hope currently exists for restoring additional wetlands with significant functions and values in the region due to the lack of natural hydrology and reasonably priced water managed supplies for wetlands.

Clearly, it is conceivable that the GPADP and other irrigation projects currently proposed in the White River watershed have the potential to set in motion a chain of events that could eventually lead to a developed water system similar to that currently in place in the Central Valley of California. The relationship between loss of natural hydrology and loss of wetland acres, functions, and values in the Central Valley, particularly in the above-mentioned Tulare Basin, cannot be disputed - it is simply fact. Thus, from the Central Valley wetland wildlife conservation perspective, it would appear extremely important for the Arkansas wildlife community to aggressively seek an alternative Grand Prairie solution that does not involve water diversions from the White River and/or construction of a surface water irrigation system that would facilitate future diversions from the White River.

The development of an irrigation project brings with it several fundamental realities that must be

acknowledged by wetland and wildlife managers. Evidence of these realities is in existence throughout the western United States, particularly in California.

### **Impacts of Irrigation “Plumbing” on Wetlands**

One of the most damaging aspects of a diversion-based irrigation project is the establishment of the “plumbing” necessary to control the hydrology of a naturally functioning wetland system. Alteration of hydrologic processes leaves the most critical element of a wetland system – its water supply – in the hands of water managers charged primarily with extracting the greatest good for society from the controlled water source. Since the somewhat abstract values of wetlands - such as ecosystem function, aesthetics, and recreation - can seldom be quantified in economic analyses to the degree that can be achieved for agriculture, the resultant management decision in times of conflicting water needs is that water goes for agriculture first, then wetlands. The trend in California’s Central Valley for the past 100 years has been for the water management agencies to continue to improve the water distribution system – at the expense of wetlands and aquatic resources – to maximize the economic returns to society from agriculture and development. The plumbing has allowed continual growth and expansion of agriculture and urban development, a far cry from the concept of sustainable resource use.

### **The Reality of Never Going Back**

Irrigation projects are typically authorized to: 1) allow the continuation of agriculture in the face of non-sustainable groundwater use, or 2) permit increases in cropland or irrigated land. In both instances, water is removed from aquatic systems, such as wetlands and rivers, for a form of economic development that is not likely to ever be reversed. Even if the ecological processes of the affected aquatic systems which were not fully understood at the time the irrigation project are subsequently realized, little hope exists for “undoing” the economically valuable agricultural results of the project to restore the original condition of the ecosystem. That would involve the cessation of irrigation or even retirement of cropland, which directly diminishes the economy of the agricultural community that had been established. When the government is the proponent of an irrigation project, such subsequent unraveling of the agricultural society to “fix their mistake” is incredibly unpopular. While the situation in which farmers are faced with ultimately losing crop production capabilities due to their own unsustainable water use is a socially troubling scenario representing poor foresight on the part of the farmers, the negative public perception that arises is compounded many times over when it is the government that supplied the irrigation water that led to the non-sustainable practice.

### **Irrigation Projects Spawn Irrigation Projects**

The development of an irrigation project typically increases agricultural income potential by allowing increased yields, crop diversification, etc. In the event that it doesn’t *increase* agricultural revenue, irrigation typically sustains it through reduced reliance on a declining or doomed resource, such as an aquifer. In simple terms, farmers would never support irrigation projects if they didn’t envision an economic benefit because the cost of operating an irrigation project is generally passed on to the beneficiaries. In either instance, those farmers with access to developed surface irrigation water are better off than those without it. In areas where surface irrigation has not already been developed, this sets in motion a seemingly endless string of irrigation projects that will continue until nearly all growers that can benefit from surface irrigation reaped those benefits.

### **An Alternative to the GPADP**

The GPADP alternative solution presented at the Arkansas TWS meeting on February 7, 2001 appears to have several distinct advantages over the Corps’ GPADP project. The proposal needs some additional feasibility analysis, but appears appropriately based in theory. The following details are offered as potential elements to the proposal. Based on the experience of most wetland wildlife professionals in the Central Valley, the primary objectives of an alternative GPADP proposal should be to:

- Prevent water diversions from the White River
- Prevent the establishment of a comprehensive water distribution system for the Grand

Prairie that could be easily modified, at a later date, into a system capable of diverting water from the White River

- \* Develop surface water supplies sufficient to irrigate 75% (180,000 acres) of the cropland in the Grand Prairie project area
- \* Enhancement of existing water storage reservoirs
- \* Construction of new water storage reservoirs

Water conservation measures (tailwater recovery, pipelines, application systems)

Retire cropland through mechanisms *more lucrative* to farmers than the continued cropping of soybeans and other lower value cash crops

- \* WRP (Special Projects \$ appropriated and not subject to competitive ranking), combined with additional lease of waterfowl hunting rights or sale of WRP land for a duck club
- \* Irrigation storage reservoirs with land use payment (75-100% of land value for loss of cropping potential + 75-100% cost-sharing)
- \* Gain the support of members of the agricultural community that may have been “on the fence” with respect to the GPADP.

### **Fundamental Premises and Benefits of an Alternative Proposal**

The 240,000-acre Grand Prairie Alternative (GPA) will: 1) allow sustainable irrigation farming in the Grand Prairie for future generations and provide growers with the opportunity to responsibly manage the Alluvial Aquifer, 2) be less expensive to Congress than the GPADP, 3) provide farmers of 60,000 acres of cropland with land use options that are more lucrative than continued irrigation farming, 4) preserve the hydrologic and ecological integrity of the Lower White River, 5) increase irrigation efficiency to 80% through water conservation measures, and 6) increase recreational opportunities through restoration of bottomland hardwoods, moist-soil wetlands, and native prairie for species ranging from mallards to black bears to prairie chickens.

Specifically, the GPA will achieve sustainable surface water irrigation capability for approximately 180,000 acres of cropland, which is within 12% of the amount proposed under the GPADP. This will occur without diverting water from the White River or developing a large-scale water distribution project, which could be later modified to divert water from the White River. However, the project will allow the voluntary retirement of the remaining 60,000 acres of cropland through mechanisms that are more lucrative to the farmer than continuation of irrigation farming that would occur with the GPADP. The land retirement element of the program will contribute to the restoration of bottomland hardwoods, native prairie, and other habitats as well as achieve some incidental wildlife benefits through restoration of appropriately designed water storage reservoirs on current cropland.

### **Feasibility Analysis of GPA**

Fundamental to soliciting support for the GPA from the agricultural community will be the development of a reasonably technically sound proposal that cannot be easily dismissed by Corps engineers. Central to this objective will be determining whether it is feasible: 1) for water storage reservoirs to capture and retain the 262,800 acre-feet of water (180,000 ac x 1.46/ac-ft/ac) necessary to meet the irrigation objectives, 2) to achieve 80% irrigation efficiency, 3) to construct the project for less than \$319 million, and 4) to provide an land retirement alternative involving easement payments and waterfowl hunting income that is more lucrative than continued irrigation farming. Finally, the analysis should shed some light on the watershed impacts of diverting sheet run-off from cropland into water storage reservoirs prior to reaching the White River.

A team of biologists, engineers, and irrigation specialists should be assembled as soon as possible to dissect the Corps' assumptions and determine whether, perhaps by shifting costs around, these objectives could be

met. If an ad hoc committee is not capable of conducting this analysis in a timely manner, another option might be to approach an avid waterfowl hunter or major waterfowl conservation donor for the funding required to retain the services of irrigation engineer(s) for a 2-3 month period to assemble and analyze the necessary data. It is quite possible that enough information could be obtained in the first month to determine whether the GPA had a reasonable chance of being feasible. Under that scenario, the full-scale public outreach program would be initiated immediately while the feasibility analysis was in progress.

### **Proposed GPA Mobilization Strategy**

Given that the crucial Congressional Appropriations cycle is rapidly approaching, there may be insufficient time to become immersed in a GPA feasibility analysis that strives for a 100% level of certainty. Rather, it might be more important to quickly join forces with agricultural opponents of the GPADP with a moderately well researched GPA and attempt to cast a reasonable doubt over Congress' considerations of the \$319 million GPADP appropriation. This potentially could fit in with the new administration's desire to reduce government spending. It also might be a good idea to develop the GPA behind the scenes and seek an influential local farmer – or group of producers – to take credit for the proposal and sell it to others in the community, particularly if they have any links to the Governor's Water Task Force.