



LOUISIANA COASTAL LAW

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Marsh Management and the Public/Private Balance in Land Rights

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Each year, Louisiana loses roughly 30.7 square miles of territory to the Gulf of Mexico.¹ Although other studies have indicated an even higher rate of loss, the fact is that Louisiana is losing a large area of coastal land. Not only is the coastline eroding, but interior marshland is also being lost. Salt water from the Gulf gradually intrudes into areas that were once fresh water killing freshwater vegetation and marshland is lost to natural subsidence (sinking) since this ongoing process is no longer completely counteracted by deposits of sediment.² The lack of sediment deposits are at least in part due to human alterations to the natural hydrological regime of coastal Louisiana.³ Some public agencies and private land-owners are trying to fight this massive erosion, but their efforts are complicated by some basic legal issues and policy arguments.

Over the past several years, much attention has focused on a land management technique called marsh management which is being touted by some as an effective tool to counteract erosion and subsidence in Louisiana's coastal areas. While the term marsh management can encompass a wide range of activities, the discussion here concerns the use of water-control structures (levees, dams, and weirs) to manipulate local hydrology for the purpose of reducing or reversing wetland loss and/or enhancing productivity of natural renewable resources. Marsh management plans attempt to control water levels and water flow to control erosion, promote vegetation growth, prevent saltwater intrusion, and trap sediments. This definition was developed as part of a report entitled, "A Study of Marsh Management Practice in Coastal Louisiana", published in 1990 by the Minerals Management Service of the United States Department of the Interior.⁴ The purpose of the study was to attempt to answer some of the questions that surround this sometimes controversial activity. Rather than settle controversy, the study and ensuing report generated disagreements between participants and interested parties. The Sea Grant Legal Program participated in the study by writing the section entitled "Legal Review and Policy." In the five years since the study was published, several developments have taken place which make it necessary to address this topic again and we also feel it is valuable to present the information in a format that is more accessible and not so burdened with technical details.

We will first discuss some of the major legal issues affecting marsh management and then analyze how current law, regulations, and agency policies have attempted to resolve conflicts. Finally, we will offer suggestions for im-

provements in how marsh management is regulated.

One of the main reasons marsh management is controversial is that little hard scientific evidence exists to show whether or not it is generally effective in mitigating wetland losses. There is a great deal of anecdotal evidence but such evidence cannot be used to determine sweeping policy on such a complex physical process as land loss. The conclusion of the Department of the Interior study mentioned above was that "marsh management is not consistently effective at increasing marsh acreage, reversing salinity influence on habitat composition, or improving marsh to water ratios."⁵ The study found that some managed areas improved marsh to water ratios but seemed to be ineffective in at least 50% of the comparisons.⁶ A significant portion of the study relied extensively on analysis of historical trends in managed and unmanaged areas from 1956 to 1988 but another section consisted of intense field monitoring in two management areas and again yielded mixed results.⁷ Marsh to water ratios increased in one study area but showed no change in the other.⁸ A great deal of criticism has been directed at this study by proponents of marsh management. These critics point to several factors that could have skewed the findings such that the full benefits of marsh management in mitigating and reversing land loss were not recognized.⁹ Another study on coastal wetland loss, restoration, and management in Louisiana published in May of 1994 in the *Journal of Coastal Research* seriously questions the effectiveness of marsh management in contributing to a long term increase in wetlands.¹⁰ The study does say that marsh management might be effective in protecting existing wetlands although impoundments strictly for waterfowl production may cause wetland loss.¹¹ The study was based on a survey of existing literature and comments from expert witnesses at public hearings and analysis of the information gathered by an expert panel. No field studies were conducted for the report. A comprehensive field study by the National Biological Service on the effectiveness of marsh management in preventing land loss is currently underway that will add extensive data to the literature. Additionally, the Department of Natural Resources, Coastal Restoration Division is currently monitoring the effectiveness of marsh management plans funded under the Coastal Wetlands Planning Protection and Restoration Act. Hopefully some questions will be finally answered with enough scientific certainty that policy decisions can be based on facts rather than anecdotal evidence. In August of 1994 the Environmental

Protection Agency held a workshop on Structural Marsh Management in New Orleans. At that workshop scientific information relevant to marsh management was presented by various researchers studying marsh building processes. Specific topics included hydrology, soil chemistry, vegetation, and fisheries. The research presented appeared to be a very promising step in answering some of the important questions about marsh management. Some of the results indicated that certain marsh management practices could be beneficial in restoring and protecting marshland.¹² Several of the researchers stated, however, that it is still very difficult to make sweeping generalizations and will remain so without more scientific information.

We will not discuss the technical aspects of arguments for or against the effectiveness of marsh management. That belongs in the scientific arena. We merely wish to establish that the subject is still controversial and that uncertainty affects the policy decisions and value judgements of regulators and lawmakers.

Public Policy Concerns Affected by Marsh Management

Public access to marsh areas and fisheries production in marsh areas are probably the two most important and hotly debated issues in marsh management policy though land ownership issues are a close third. Another issue beginning to emerge is how marsh management fits in an overall coastal restoration plan. Sediment-starved areas may require diversions of large amounts of sediment-laden water from the Mississippi River and other distributaries to flow over them as was the case before human alterations.¹³ Likewise, some areas may merely need a freshwater influx.¹⁴ There is some concern that if large amounts of acreage is impounded or semi-impounded where diversions are created, the benefits of such diversions will be diminished.¹⁵ Therefore, in some areas, marsh management plans may have to be assessed for their compatibility with large or even small scale coastal restoration projects. Public access is usually affected unintentionally because water-control structures by their nature restrict boat access. Sometimes, though rarely, boat access is intentionally restricted. At least one high visibility marsh management plan used barricades to block boat access to some areas that had been traditionally used by the public.¹⁶ The law concerning public access is clear in the situation of privately constructed waterways but still developing in situations where public water bottoms may be affected by marsh management plans. Recent case law discussed below throws some light on judicial reasoning on this subject. The effect of marsh management on fisheries production is a much less developed area of the law and has become a part of larger national and world wide issues: the clash of private property rights and public benefits and the choice between short term economic gains versus long term sustainability. Policy makers are often struggling with such value decisions and tradeoffs in an environment of scientific uncertainty.

Public Access

Historically, Louisianians who plied the waterways of the states' coastal marshes for their livelihood and pleasures enjoyed few restrictions on their access. The marsh areas were thought to be valuable only for the living resources they produced and not considered worthwhile for private ownership or development.¹⁷ The federal govern-

ment turned over to Louisiana huge areas of low lying swamp and overflowed land in the Swamp Land Grant Acts of 1849 and 1850 under the condition that the proceeds of the sale of those lands be used to "reclaim" them by the use of levees and drains.¹⁸ In the process of selling or granting parcels of land to private parties, the disposition of waterbottoms that may have overlain the land were often left unresolved. In some cases, the water-bodies already belonged to the state by virtue of its inherent sovereignty. Such water-bodies included rivers, streams, and lakes that were navigable in 1812 and water subject to the daily ebb and flow of the tides.¹⁹ In other cases the parcels encompassed nonnavigable and nontidal water-bodies. Some parcels that were sold either had not been surveyed or the surveys were inaccurate and the parties were unaware that the land sold or granted encompassed waterbodies.²⁰ The character of a waterbody determines whether or not it may be privately owned under Louisiana Law and whether the ownership of it may have been presumed to be transferred with title to the land.²¹ There have been disputes over such issues for quite some time and despite numerous judicial decisions and various acts of the legislature such disputes have not been completely resolved. This topic is relevant to marsh management because structures used in many marsh management activities block public boat access to certain waterbodies. If the waterbody is state owned, then permission must be obtained from the state to block it; but if the waterbody is privately owned the structure may be erected without state permission unless it is in the statutorily defined coastal zone in which case a coastal use permit would be required.²² In either case, a federal permit will be required.²³ Both the state Coastal Management Division of the Department of Natural Resources and federal U.S. Army Corps of Engineers, agencies with permitting responsibilities over marsh management structures, take into account the effects of marsh management plans on public access. Since there are still disputes over the ownership of many waterbodies and there is still a public perception that all water-bodies are public some marsh management plans will invariably encounter public opposition. The legal theory behind public use of public lands, fish, and wildlife is based on provisions in the Louisiana Civil Code, Revised Statutes, and Constitution which together comprise the state's "public trust doctrine."²⁴ This doctrine basically results in the State holding certain resources in trust for the use and benefit of the public. Therefore the public has the right to use these resources absent some other overriding public interest.²⁵ However, many marsh management plans block manmade canals, and state law regarding ownership of canals is very different from that governing natural water bodies.

In Louisiana it is generally settled law that navigable canals constructed on private property with private funds are private things in which the public has no access rights.²⁶ The only exception is when the canal is found to have diverted or destroyed a pre-existing natural navigable waterway.²⁷

Canals built by public authorities on public lands are public things.²⁸ Canals built by public authorities on private land can be either public or private depending on the agreement between the public and private entities. A canal built for a right-of-way servitude is subject to public ac-

cess.²⁹ The banks may only be used by the public if they are within the servitude. However, a canal constructed by a public entity on private land under a drainage servitude was not subject to public use.³⁰ A canal constructed on private property by the state on an expropriated right of way servitude for a permanent right of way to float equipment for highway construction and maintenance was found not to be subject to public access for navigation or fishing.³¹ Louisiana courts have also held that a canal constructed under a servitude that had expired reverted to private ownership.³²

Several cases have considered the issue of dedication to public use. A canal constructed as part of a subdivision on the north shore of Lake Pontchartrain and used by the public for several years was held to have been dedicated to use by the inhabitants of the subdivision.³³ However, the mere fact that canals were included on a recorded subdivision plan was not sufficient for the court to find statutory dedication to public use.³⁴

In another case a canal which had been dug by the state on private land as a borrow pit for highway construction and freely used by the public for thirty years was held to be a public waterbody.³⁵ The court based its decision not on prescription, but on a finding that the canal was an arm of the sea and a navigable waterway in fact and in law, and that obstructions to it were prohibited under the criminal code.³⁶ However, in another situation a canal dug on private land by a private party which had been used by the public for over sixty years was a private thing.³⁷ The key finding of fact appears to have been that the owners had posted no trespassing signs for at least 28 years previous to the trial and had continually, from the canals construction, restricted use of the canal to those who had obtained the owner's permission.³⁸

A recent criminal court decision, State v. Barras, dealt with the issue of fishing in a canal claimed by a private owner.³⁹ The dispute had a slightly different twist to it. The defendants were crawfishing commercially in the Atchafalaya Basin, in a canal traversing land owned by a private company that was adjacent to the western levee of the Atchafalaya Floodway. No one knew who had constructed the canal. The fishermen were asked to leave the property several different times, but ignored the warnings. Later, the defendants were convicted of entry on or remaining in a place or on land after being forbidden, and appealed the decision. Their defense rested on the theory that the public had a servitude (a right to make use of) the property.⁴⁰ This was based on the Louisiana Civil Code, which says that the banks of navigable waterways (rivers and streams) are subject to public use, and that "bank" means the land between the ordinary high and low watermark, except that legally-established levees built close to the water will be considered the "bank."⁴¹

Basically, the defense was that since floodwaters from the Atchafalaya and its tributaries regularly covered the land in question, then that land was below the "ordinary high watermark," of the Atchafalaya, and thus part of the river's bank, so it was subject to public use under Article 456.⁴² The Louisiana Supreme Court agreed with the appeals court that flooding did not make the land part of the Atchafalaya's bank.⁴³ Even if the land were part of the bank, and therefore subject to public use, the appeals court observed that the "public use" that the statute means is the kind of use directly related to the navigational use of a stream or river such as tying

off on the bank, or drying nets.⁴⁴ But hunting and fishing are not sufficiently related to use of rivers as commercial "highways" to be part of the public servitude.⁴⁵ Although marsh management was not involved here, the case illustrates legal limitations on the right to pursue public resources on private property.

A recent civil case, Dardar v. LaFourche Realty, illustrates some of the legal issues involved in deciding rights to resources and access.⁴⁶ A private landowner in Lafourche Parish, LaFourche Realty Co. Inc., instituted a marsh management plan under permits from the U.S. Army Corps of Engineers and the Coastal Management Division of the Louisiana Department of Natural Resources.⁴⁷ Under the plan LaFourche Realty used weirs and other structures to control waterflow and limit access to the waterways traversing their land. Lafourche Realty installed a system of gates and fences that closed Tidewater Canal to public use and used guards and patrol boats to maintain the enclosure and regulate boat traffic via the canal.⁴⁸ The Tidewater Canal had been constructed in 1948 with private funds on private property.⁴⁹ The land in dispute included trembling prairie and non-navigable bayous.

The plaintiffs, a group of commercial fishermen, claimed the right of access through the area that Lafourche Realty had enclosed with gates and fences. Fishermen had used the Tidewater Canal and navigable waters of Lafourche Parish for many years, and wanted continued access through the defendant's area.⁵⁰ The state of Louisiana intervened to assert that some of the waterways within Lafourche Realty's fence system were state owned, natural, navigable waterbodies and also asserted ownership of fish and wildlife within the enclosed area. Under Louisiana law, "natural, navigable" waterways and seashore are state-owned and cannot be privately owned.⁵¹

The state claimed that the Tidewater Canal and Wetland System contained tidewaters (waters affected by the ebb and flow of the tide) and many bayous and channels that had been navigable in 1812, when Louisiana became a state. Under the "equal footing" doctrine, Louisiana was given ownership of navigable waters, which include tidewaters whether or not actually navigable, at statehood by virtue of its inherent sovereignty. If the state had retained the ownership of those waters as public things then Lafourche Realty would not be able to limit public access.⁵² The plaintiffs wanted to have the Corps' permit declared void, and a declaration by the court that the affected waterways were subject to public use. Lafourche Realty maintained that it had owned and operated the marsh area as private property since 1921 and that there were no navigable waterways on the property.⁵³

The federal district court found, based on expert testimony, that none of the waters within the Lafourche Realty property boundaries had been navigable in 1812 or subject to tidal ebb and flow but were subject to annual overflow from Mississippi River flooding and from storm surges.⁵⁴ The court thus determined that no waterbodies in the contested area were within the public trust and therefore were privately owned with no public right of use.⁵⁵

The court then addressed the issue of whether there existed a federal navigational servitude under the

holding in *Vaughn v. Vermillion Corp* that when artificial canals divert or destroy preexisting natural navigable waterways they may be considered navigable waterways of the U.S. and thus subject to public use.⁵⁶ The court found that none of the waterways in the area were or would have become naturally navigable and that since the man-made canals did not interfere or obstruct any preexisting navigable waterways there was no federal right of use.⁵⁷

In 1993 the 5th Circuit Court of Appeals dealt with the LaFourche Realty case. The appeals court agreed that the trial court's findings, that there were no naturally navigable waterways or tidelands present in the area at statehood were fully supported by the evidence.⁵⁸ The appeals court found it particularly relevant and important that the overflow that periodically inundated the LaFourche Realty property was not direct ebb and flow from the Gulf of Mexico but fresh water overflow from the Mississippi. Thus the waters in the contested area were not sea or seashore and were therefore susceptible of private ownership.⁵⁹ The appeals court also agreed with the district court on the federal navigational servitude issue but stated that any waterways in the area that had been made navigable through erosion are 'naturally' navigable (for federal servitude purposes).⁶⁰ (parenthetical information added). The appeals court remanded the case on that issue which was ultimately decided in favor of the landowner.

Dardar is an example of how marsh management activities can lead to legal conflicts among private individuals — particularly fishermen and marshlands owners. The conflict in this situation also involved the state and federal governments —with apparently divergent positions. The state was obviously much more interested in ownership and access to the water bodies in question than was the federal government. As discussed below, agency positions on marsh management are not always in agreement which can lead to regulatory delays.

Ownership Issues

Another issue that has slowed acceptance of marsh management is that of to property ownership. Louisiana law provides that the state owns the beds of navigable rivers, streams, and lakes and the sea.⁶¹ The law also provides that when the shores of the sea and navigable lakes erode, the newly formed bed becomes property of the state⁶² unless the landowner can establish his property boundaries and reclaim the property by bulkheading and filling or other structural methods, an expensive endeavor.⁶³ As land is gradually lost, various landowners are affected. In areas where land is physically shifting it may be difficult for a landowner to protect, or even define, the boundaries of his property. There could be title transfer problems, since buyers or tenants may not be sure how much land they are really getting in a sale or lease of eroding land. In recent times, mineral rights disputes have been one of the driving forces behind efforts to prevent erosion and fix boundaries in coastal areas. Erosion will also cause problems in recognizing property boundaries so trespassing situations may develop by mistake.

Levees associated with a private marsh management plan could be used in an attempt to fix boundaries in an area where erosion is a problem. While there's nothing wrong with a landowner attempting to protect his land, there

would be obvious environmental problems if large numbers of landowners sealed off areas of marsh. Problem could arise from flooding and more erosion, because of alterations in natural waterflow patterns. Under Louisiana law, a landowner can do with his land whatever he or she pleases, with the limitation that a landowner cannot take an action that harms another owner's property.⁶⁴ A landowner could therefore be held liable in court for actions that have caused or worsened flooding or erosion on his neighbors' land.

Fisheries Issues

There exists the fear that some marsh management plans may actually be used as mariculture operations, penning wild stock and thus privatizing public fishery resources. These fears were ignited in 1987 when the Louisiana legislature enacted a statute allowing operators of marsh management plans to use nets, screens or other devices to pen aquatic animals in areas up to 8000 acres.⁶⁵ The practice of blocking the passage of fish in any streams, lakes, bayous, or any body of water including crevasses, coulees, and canals in marsh and swamp areas of the state is prohibited except by permit issued by the Department of Wildlife and Fisheries under the aforementioned statute.⁶⁶ There is a very limited number of mariculture permits available for closing off natural marsh areas, and mariculture operations must be stocked with hatchery-raised fish. However, it is difficult to distinguish hatchery stock from wild stock. It would also be difficult to monitor operations for illegal harvesting activities. At this time, there are only two mariculture permits issued. In the 1995 regular session of the Louisiana Legislature, however, the State's lawmakers reaffirmed a connection between mariculture and marsh management when they amended the mariculture law stating: "...mariculture will provide an economic incentive for landowners to undertake management programs that will prevent erosion and deterioration of the invaluable coastal wetlands..."⁶⁷ If a landowner uses a marsh management plan to pen wild stock on his land, he is using public resources in a private fish-farming operation. Those public resources are also sought by commercial and recreational fishermen.

The fisheries issue also involves habitat loss. As wetlands disappear Louisiana loses habitat for wildlife, freshwater, saltwater fish, and shellfish.⁶⁸ Ironically, efforts to protect this habitat can have the effect of blocking migration and movement of the saltwater species, and depriving them of access to life sustaining habitat thereby diminishing their numbers.⁶⁹ Marsh areas are the prime nursery grounds for a large number of marine species. Many of these species are commercially important. When ingress and egress to marsh areas is severely restricted by water-control structures used in marsh management practices, adverse affects on fisheries are to be expected. Indeed, such adverse effects have been studied and documented.⁷⁰ On the other hand, advocates of marsh management argue that marsh preservation benefits fisheries in the long term, which is well worth the short term losses.⁷¹

The issue of private rights versus public or common benefits pervades environmental regulation. To what extent does private land ownership grant rights to exclusive use of a public resource or the right to damage a public resource to satisfy private goals? Conversely, if marsh

management is an effective tool in preventing land loss, does the privately-funded protection of a resource which provides public benefits require public reimbursement in the form of special rights to public trust resources (e.g., fisheries). In other words, a landowner's argument would be that since his private efforts are helping to preserve public resources (public land, natural waterways, fish and wildlife) then such efforts should be compensated with special rights, for example, to privatize wild fish stock, or to close off his land and the waterways within its boundaries. The two cases previously discussed, *Barras* and *Dardar*, have protected landowners rights but also recognized public access issues. Do fishermen or other members of the public have any protected interest in wild fish stock? The Louisiana Constitution, requires the state to safeguard such public resources.⁷² The Louisiana Revised Statutes make clear that fish and wildlife are "public things" vested in the state.⁷³ But these legal provisions do not appear to give individual fishermen the right to any particular fishing grounds, or any particular school of fish.

Louisiana and federal courts, have held that fishermen have no right in fish they have not yet caught.⁷⁴ So it would seem that under the current law, fishermen and shrimpers cannot use the courts to protect their interests in fishery resources unless the basis of the suit relies on some other cause of action such as equal protection under the Constitution or violation of the public trust doctrine, etc.

Takings Issues

The conflict between private land use and protection of public interests is an old one in American law. Historically, the public interest was protected by the government through its police power, while individual property ownership rights have been protected by the taking clauses of the U.S. Constitution and state constitutions. As with many other legal matters the balance between private rights and governmental powers has not always been easy, and a vast body of law has developed in the areas of "taking" and "eminent domain." Under the U.S. Constitution⁷⁵ and the Louisiana Constitution,⁷⁶ individual ownership rights are protected by the requirement of just compensation for property taken from private parties by government. The government may take private land for a public purpose, but must pay for the land.

This part of the law has gotten complicated in the last 20-30 years by the great expansion of regulatory agencies. As more and more regulations have been issued by the agencies, private landowners have gone to court claiming compensation for "regulatory takings." The argument is that some regulations so limit the use of the owner's land that the owner no longer has any use of it — or at least, no economically reasonable use. Occasionally, landowners win with this argument, as in *Lucas v. South Carolina Coastal Commission*, a recent U.S. Supreme Court case which reiterated and some say redefined the guidelines for regulatory takings law.⁷⁷ The Court held that a South Carolina regulation preventing Mr. Lucas from building on his beachfront property required compensation. Basically, the court found that Lucas had lost all economically reasonable use of his land, since there was not much else that he could do with it if he could not build on it.⁷⁸ However, in an attempt to "clean up" some language used in its prior takings decisions the Court

saw fit to expound on situations that constituted regulatory takings. The Court used the concept or analogy that a property owner's title contains a "bundle of rights" that is more or less an understanding on the part of the property owner and society as to what uses may be made of private property.⁷⁹ If regulations that prohibit all economically beneficial use of land fall outside that understanding then the state must compensate the landowner for his loss.⁸⁰ In other words, if the regulations prohibit an activity a landowner knew or should have known he wouldn't be able to do anyway when he bought his property, based on state property law or nuisance law, no regulatory taking will be found under federal constitutional law.⁸¹ An example of an activity that is already controlled by state nuisance law has already been discussed.⁸² Existing state law (since the 1800's) forbids a property owner from altering water flow patterns that results in flooding someone else's property.⁸³ By the same token, depriving an adjacent property owner of water flow is prohibited by state law.⁸⁴ Therefore new regulations restricting activities that affect waterflow and injure another's property would seem to be constitutional under *Lucas*. What about regulations based on newly discovered types of injury would be constitutional. It is now known that sediment transport is very important in maintaining Louisiana's coastal wetlands.⁸⁵ Would alteration of waterflow that did not flood or deprive another landowner of water but deprived his land of sediment be subject to regulation without compensation?

Scientists and regulators are also concerned about the effects of marsh management on fisheries resources.⁸⁶ Regulations limiting marsh management have been based on these concerns. Louisiana law has asserted state ownership of wild birds, quadrupeds, fish, other aquatic life, and oysters since 1926.⁸⁷ The state has prohibited the obstruction of the free passage of fish in any body of water by any means except by water-control structures for conservation purposes since 1974.⁸⁸ If scientific data demonstrates serious adverse effects on state-owned fishery resources from marsh management activities, and new regulations restricting those activities are promulgated, is there a preexisting understanding by a landowner that marsh management could be regulated on that basis?

In the 1995 regular session of the Louisiana Legislature an act was passed that requires compensation when agricultural land is diminished in value by twenty percent or more by a regulatory agency.⁸⁹ Several exceptions are listed but the most pertinent one to the discussion here is that the property owner must show that "the diminution did not result from a restriction or prohibition of a use of the private agricultural property that was not a use already prohibited by law." So again we see the concept of preexisting or background prohibitions on the use of property.⁹⁰ It will be interesting to see how Louisiana courts interpret this statute in future takings cases.

True loss of value must be found by a court, so many regulatory takings claims have not prevailed in federal court. Takings cases depend heavily on the facts of each case, and courts attempt to determine how many rights in a landowner's "bundle" (if any) have been lost to regulation.

Regulatory Structure Affecting Marsh Management

It seems the current legal climate does not favor one

interest (public or private) over the other, but instead specifically calls for a balancing between private and public interests.⁹¹ Although courts are often called on to balance private and public interests regulatory agencies are usually given primary authority to perform the balancing process. Agencies have been delegated the day-to-day regulation of land use and use of fisheries and other resources, because the quickly-changing situations in the coastal environment require scientific expertise and time that the Legislature and the courts do not have.

The regulation of marsh management activities by various agencies has become the most important hurdle to be cleared before instituting a marsh management plan. Federal agencies are required to operate in compliance with their own regulations and the law under which those regulations were promulgated as well as the United States Constitution and any other federal laws that may apply to them. Thus the takings provisions of the U.S. Constitution affect an agency's actions.

State agencies are also bound to operate in compliance with the U.S. Constitution and any applicable federal law but must also comply with their state laws and constitution. The Louisiana Constitution requires that the natural resources of the state "be protected, conserved, and replenished insofar as possible and consistent with the health, safety and welfare of the people."⁹² The Louisiana Supreme Court has held that Article IX Section 1 imposes a duty on all state agencies to uphold this public trust by following a balancing process. The agency must determine that adverse environmental impacts of a proposed project have been minimized or avoided as much as possible consistently with the public welfare. In that balancing process "environmental costs and benefits must be given full and careful consideration along with economic, social and other factors." Further, the court requires the agencies to "consider whether alternate projects, alternate sites or mitigative measures would offer more protection for the environment than the project as proposed without unduly curtailing non-environmental benefits."⁹³

Through their rulemaking powers, permitting, and allocation of funds for agency projects, federal and state agencies have strong voices in the marsh management debate. Unfortunately, the agencies "voices" are not always in unison. Different agencies have different missions - because agencies exist to administer different sets of laws - so agency views of marsh management can conflict, complicating planning for landowners, regulators, and other affected parties.

Given the importance of agencies in marsh preservation issues, readers should have an overview of agency regulatory responsibilities affecting marsh management.

The state and federal regulatory agencies have attempted to balance these competing private and public interests by restricting and modifying activities on public and private land. They have attempted to keep development at a level that at least partially maintains the functions of natural ecosystems and preserves public benefits. To accomplish these goals the agencies have used permitting authority, commenting authority, veto power, and technical advice. Permitting authority allows an agency to grant or deny permission to perform an activity that is regulated by

law as in the case of activities regulated under §404 of the Clean Water Act. Commenting authority allows agencies other than the one passing judgement on the permit to have input in the permitting process. While commenting agencies cannot veto a permit their comments are required to be given consideration and their objections can cause a permit decision to be reviewed by a higher level within the permitting agency (usually the Corps). Such a process has been termed "elevation" in the Corps. The higher authority may or may not accede to the wishes of the commenting agency but in either case the elevation process can cause extensive delays.

An agency has veto power when it has the authority to block another agency from issuing a permit. The permitting agency is forbidden by statute from issuing a permit over the objections of the agency with veto power. Obviously such veto authority puts an agency in a very powerful position, for example, the EPA's veto power in the §404 permit process or a state's Clean Water Act §401 water quality certification authority.

Some agencies merely provide technical advice and information. Such a function while not regulatory can have the effect of promoting an activity merely by making it easier and cheaper to get it started.

Federal

U.S. Army Corps of Engineers (Corps)

The mission of the Corps under §404 of the Clean Water Act is to protect the waters of the U.S. (under the general mandate of the Clean Water Act) by regulating the deposition of dredged or fill material in the waters of the U.S.⁹⁴ Such regulation is to be done in compliance with §404(b)(1) guidelines established by the Environmental Protection Agency for protecting the waters of the U.S., including wetlands, and in compliance with the Corps' regular public interest review.⁹⁵ Under §§ 9 and 10 of the Rivers and Harbors Act of 1899 the Corp's mission is to regulate obstructions to navigation in the waters of the U.S. which includes man-made canals.⁹⁶

Creating levees and other water-control structures in waters of the U.S., including wetlands, falls under the authority of §404. Thus, marsh management which involves water-control structures and deposition of dredged or fill material requires a §404 permit from the U.S. Army Corps of Engineers. Activities that block navigable waterways also require a permit from the Corps under §10 of the Rivers and Harbors Act.

Environmental Protection Agency (EPA)

The mission of the EPA is to protect the environment of the U.S. by abating and controlling pollution, and its role under the Clean Water Act is to protect the waters of the U.S. from pollution.⁹⁷ The EPA role under §404 is to establish guidelines for environmental protection which the Corps must follow in issuing permits for the deposition of dredged or fill material.⁹⁸ The veto authority granted in §404(c) allows the EPA to prevent the Corps from issuing a §404 permit if the Corps fails to address or satisfy these guidelines.⁹⁹

U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS)

The USFWS mandate is to conserve, protect and enhance fish and wildlife and their habitats for the continuing benefit of the American people.¹⁰⁰ The NMFS is mandated

to conserve, manage, develop and achieve continued optimum utilization of the living marine resources of the U.S. for the benefit of its citizens.¹⁰¹ Both of these agencies are given commenting authority in §404 permitting decisions by the Fish and Wildlife Coordination Act.¹⁰² Commenting authority allows the USFWS and the NMFS to comment on Corps permit applications that affect wildlife and fish. While they have no veto power NMFS and USFWS can delay the permitting process by appeals to higher authorities within the Corps. Obviously permitting and veto authority are more powerful means to control marsh management activities. However commenting authority can be almost as effective by causing costly delays. Quite often the permit applicant will agree to modify the project to satisfy the agency's concerns or will withdraw the application.

Natural Resource Conservation Service (NRCS)

NRCS, formerly the Soil Conservation Service, provides technical assistance to landowners and managers seeking to prevent erosion or improve the qualities of their land. The NRCS will devise marsh management plans and give technical advice for their operation. The NRCS has no permitting authority but can have a significant effect on the number of marsh management plan permit applications and the manner in which they are operated simply by providing the free technical expertise.

State

Coastal Management Division (CMD) of the Department of Natural Resources (DNR)

CMD is the main permitting agency in the coastal zone. Marsh management is a specifically regulated activity under the State and Local Coastal Resources Management Act (SCLRMA) which is administered by CMD.¹⁰³ SCLRMA's stated policy is to "protect, develop and where feasible restore or enhance the resources of the state's coastal zone." Other features of the stated policy are: multiple use consistent with maintaining and enhancing renewable resources; adequate economic growth and development; consideration of resources, the environment, and the needs of the people; to enhance recreational opportunities; and to develop reasonable and equitable coastal resources management.¹⁰⁴

Coastal Restoration Division (CRD) of the Department of Natural Resources

CRD is responsible for implementing the Louisiana Coastal Wetlands Conservation and Restoration Act. Under that act CRD is to use appropriated monies to carry out coastal restoration projects called for in the Coastal Vegetated Wetlands Conservation and Restoration Plan (Plan) which must be approved by the legislature.¹⁰⁵ The Plan is developed by the Wetlands Conservation and Restoration Authority composed of, among others, the secretaries of Wildlife and Fisheries, Environmental Quality, and Transportation and Development.¹⁰⁶

Division of State Lands (DSL) in the Department of Natural Resources

DSL is responsible for regulating the use of state lands. The DSL mission is, in part, to protect public ownership of state-owned water bottoms by preventing unauthorized encroachments on those water bottoms.¹⁰⁷ DSL is also responsible for overseeing the reclamation of private lands lost through erosion.¹⁰⁸ DSL has commenting

authority on coastal use permits. Marsh management plans that encroach on state water bottoms require a permit or right of way waiver from DSL. Many marsh management plans fall into this category.

Department of Wildlife and Fisheries (DWF)

DWF comments on effects to wildlife and fisheries in §404 permit decisions through the Fish and Wildlife Coordination Act.¹⁰⁹ The DWF mission is to manage the state's wildlife resources including fish and other aquatic life with the goal of protection, conservation, and replenishment of that wildlife.¹¹⁰ The DWF comments are required to be given full consideration by the permitting agency, in this case, the Corps.¹¹¹ Conflicts are resolved at a higher administrative level. DWF also has commenting authority on coastal use permit decisions through a memorandum of understanding and such comments must be incorporated into the permit.¹¹² Thus the DWF while not a permitting agency has significant power to influence permit decisions. DWF also protects the state's natural and scenic rivers in conjunction with DEQ.¹¹³

Department of Environmental Quality (DEQ)

The DEQ mission is to protect the state's environment from air pollution, water pollution, and other forms of pollution and, in conjunction with DWF, the protection and preservation of scenic rivers.¹¹⁴ DEQ has authority to regulate activities which adversely affect water quality. DEQ can affect marsh management permits in two ways: (1) The federal §404 permit cannot be issued unless DEQ certifies under §401 of the Clean Water Act that the project complies with the state's water quality standards.¹¹⁵ (2) The CMD receives comments from DEQ concerning the project's effect on water quality and must condition coastal use permits (CUP) on compliance with the Louisiana Water-control Law and regulations promulgated thereunder.¹¹⁶ Failure of such compliance or failure to obtain a required permit from DEQ can be the basis for revocation of a CUP.¹¹⁷

Thus we see that the workings of the main agencies regulating marsh management activities can appear to be a confusing gauntlet for prospective marsh managers. The situation can appear to be even more complicated and burdensome in light of the fact that the agencies often have widely differing missions such that conflict between these agencies can occur. For a better understanding of the permitting process it will be necessary to discuss agency positions on marsh management.

Summary of Agency Positions Affecting Marsh Management

FEDERAL

U.S. Army Corps of Engineers (Corps)

The Corps bases its permit decisions in part on a broad public interest review which includes many factors: conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, land use, navigation, shore erosion and accretions, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, and welfare of the people.¹¹⁸ From the

preceding list it is evident that the Corps permit decisions attempt to balance development and conservation. In §404 permit discussions the Corps must also comply with the §404(b)(1) guidelines established by the EPA.¹¹⁹ These guidelines are much more heavily weighted towards environmental protection than is the Corp's general public interest review. The Corps has no special regulations for review of marsh management projects. However, the Corps has determined by consultation with other federal agencies that the amount of acreage permitted for marsh management and the acreage proposed or likely to be proposed for marsh management permits constitutes a major federal action significantly affecting the quality of the human environment.¹²⁰ This finding means that the Corps must prepare a programmatic environmental impact statement (EIS) on marsh management. The marsh management EIS was begun in 1988 but has experienced several delays and will not be finished until later this year. When the EIS is completed, the Corps may develop regulatory policies more specific to marsh management.

Environmental Protection Agency (EPA)

The EPA has taken a cautious approach in its policy towards marsh management. In a statement issued to a marsh management conference in 1989 the EPA stated its policy on marsh management as follows:

"The bottom line is that we believe each marsh management plan continue to be evaluated on a case-by-case basis, and in cases where a permit may be issued-monitoring must be required. We also believe that all wetland functions must be protected and that single functions (such as wildlife protection) not be favored at the expense of the natural system"¹²¹

In 1993 the EPA proposed elevation (referral to a higher level of authority) of a Louisiana marsh management project on Point au Fer Island, meaning that the agency opposed that particular project and would probably use its veto power to prevent issuance of the necessary Corps permit unless the project could be modified to satisfy EPA's concerns.¹²²

EPA objections to the Point au Fer Island marsh management project were that the project would limit the access of marine organisms to a valuable habitat and that manipulating water levels to enhance waterfowl habitat could actually exacerbate marsh loss rather than retard it. EPA stated that scientific knowledge on the effectiveness of marsh management was too limited to make rational permitting decisions and that the agency preferred to wait for the results of ongoing studies.

More recent pronouncements by the EPA indicate that the agency is still in doubt as to the motives and the efficacy of marsh management. At the EPA workshop on Marsh Management held in August of 1994 the agency's representative stated that EPA did not intend to ban marsh management projects but was in the process of developing a policy towards marsh management that would provide consistency in its response to marsh management proposals.¹²³ EPA is attempting to achieve some scientific certainty concerning the efficacy of marsh management practices and the extent of the adverse effects that may result. EPA has

sought expert advice from the EPA Science Advisory Board. To date the report of the Science Advisory Board has not been released. By convening the conference, EPA was attempting not only to gather scientific information from researchers studying marsh management but also input on social and economic issues. The results of several studies were discussed at the conference which indicated that marsh management may be effective in some situations. Such studies will increase scientific knowledge and clarify policy.

National Marine Fisheries Service (NMFS): NMFS has consistently maintained a policy towards marsh management projects that the purported benefit to habitat restoration does not outweigh the reduction of habitat available to estuarine and marine organisms. In a 1994 document NMFS summarized its position on the Louisiana marsh management issue for the EPA Science Advisory Board-Ecological Processes and Effects committee:

"The results of scientific studies of marsh management have consistently documented that these projects cause significant reductions in production or standing crop of estuarine-dependent fisheries. Results of investigations into impacts on wetland loss rates, structure and function are varied and offer no compelling evidence that wetland benefits from management now, or in the future would, offset adverse fishery impacts. Implementation of new marsh management plans should only be considered with great caution until additional high-quality scientific investigations into the impacts of marsh management on functions and values of coastal, tidally-influenced wetlands are completed. These investigations are necessary to achieve a clearer picture of impacts and some resolution of the question of the benefits and trade-offs of marsh management."¹²⁴

Thus, NMFS takes an approach similar to that of EPA, that tradeoffs between the loss of access to habitat and unknown benefits of wetland restoration cannot be effectively analyzed without hard scientific evidence of the latter.

The U.S. Fish and Wildlife Service (USFWS): USFWS and the Louisiana Department of Wildlife and Fisheries (LDWF) have proposed joint guidelines for planning and review of marsh management projects in coastal Louisiana.¹²⁵ The guidelines state that the USFWS considers feasible the "restoration or creation of vegetated wetlands on a localized basis where freshwater and sediment are available and, where new sources of water and sediment are not available, the preservation and enhancement of wetlands via intensive management." The guidelines also recognize "concern over the long-term effects of certain management techniques and the effects of water-control structures on the ingress and egress of estuarine organisms" and state that "providing for the ingress and egress of estuarine organisms must be an important consideration in the design and operation of marsh management plans." However, the guidelines state that such ingress and egress only be provided for "to the degree that such would not threaten the primary

management objective (i.e., maintaining, enhancing, restoring, or creating high quality fish and wildlife habitat)." Thus the USFWS appears to be more receptive to the concept of marsh management than either NMFS or EPA.

STATE

The Department of Natural Resources (DNR) Coastal Management Division (CMD) and Coastal Restoration Division (CRD): Draft guidelines for marsh management plans have been proposed by CMD but not promulgated.¹²⁶ DNR is also monitoring some marsh management plans to gather scientific data on their progress and effects. DNR has prepared a position paper concerning wetland management which applies to both CMD and CRD. The summary of DNR's position on marsh management is: "The DNR maintains that Wetland Management and Hydrologic Restoration should be encouraged in those instances when it can help re-establish historical or maintain current salinity regimes within a hydrologic basin context, and/or contribute to a basin's overall sustainable biological productivity and biodiversity."¹²⁷ The position paper later makes the following statement: "There is ample evidence that when properly applied, wetland management can work and to suggest that it (or hydrologic restoration) should be recommended as the method of choice in certain situations." The position paper concludes by stating: "Hydrologic restoration and wetland management techniques can be used in coastal Louisiana to retard wetland loss and restore marsh areas, but they must be carried out under the supervision and guidelines of DNR's Louisiana Coastal Resources Program and those of other agencies, notably the U.S. Army Corps of Engineers, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the Environmental Protection Agency, and the Louisiana Department of Wildlife and Fisheries. Hydrologic restoration and wetland management ameliorate altered hydrology by reducing abnormal tidal flow and saltwater intrusion and, in the case of active management, reduce water levels for a short time to stimulate marsh revegetation in open water areas."¹²⁸ The DNR position paper on Marsh Management was written in 1993. Since that time there has been a change of secretary and assistant secretary in DNR. Whether these changes will alter DNR policy is not clear.

The CMD regulations also address marsh management: "Impoundment levees shall only be constructed in wetland areas as part of approved marsh management projects or to prevent the release of pollutants."¹²⁹ "Water or marsh management plans shall result in an overall benefit to the productivity of the area."¹³⁰ "Water-control structures shall be assessed separately based on their individual merits and impacts and in relation to the overall water or marsh management plan of which they are a part."¹³¹ "Weirs and similar water-control structures shall be designed and built using the best practical techniques to prevent 'cutarounds', permit tidal exchange in tidal areas, and minimize obstruction of the

migration of aquatic organisms."¹³² "Impoundments which prevent normal tidal exchange and/or the migration of aquatic organisms shall not be constructed in brackish and saline areas to the maximum extent practicable."¹³³

The Wetlands Conservation and Restoration Authority is specifically charged to consider privately funded marsh management plans or projects as conservation and restoration and to include marsh management where appropriate in its comprehensive policy.¹³⁴ To date no privately funded marsh management plans have been included in any of the Coastal Vegetated Wetlands Conservation and Restoration Plans.

Louisiana Department of Environmental Quality (DEQ)

The DEQ assesses marsh management plans in the context of a plan's effect on water quality and whether the plan fits into the overall objective of coastal restoration.¹³⁵ The secretary of DEQ is a member of the Wetlands Conservation and Restoration Task Force within the Wetlands Conservation and Restoration Authority. The Task Force would review any privately funded marsh management plans proposed to be included in the Coastal Vegetated Wetlands Conservation and Restoration Plan for compatibility and consistency with the main goal of the Plan, restoring coastal wetlands.

Louisiana Department of Wildlife and Fisheries (DWF)

The DWF has proposed guidelines for planning and review of marsh management projects in conjunction with the U.S. Fish and Wildlife Service. Refer to that section (p.11) for a discussion of those guidelines.

Division of State Lands, Department of Natural Resources (DSL)

The DSL is responsible for protecting state owned land including water bottoms. DSL reviews marsh management plans in the context of whether the plan encroaches on state-owned waterbottoms.

Conclusion

From the forgoing discussion we see that the regulation of marsh management is complicated by lack of a clear understanding of scientific issues and by conflicts in the missions of the various agencies involved. What can be done to make the process operate more smoothly and fairly and eliminate some of the delays that have frustrated permit applicants?

The first step is to develop reasonable certainty as to the efficacy of marsh management, at least in certain circumstances. This is an absolute requirement. Agencies cannot and will not make important decisions solely on the basis of anecdotal evidence. That does not mean that such evidence is not valuable and it may be very important to the full understanding of marsh management. However, this is the scientific age and anything less than controlled research is not respected enough to be the major support for environmental decisions by regulatory agencies and the scientific community. The monitoring of marsh management plans will thus be an important factor. Once a plan is approved and imple-

mented agencies must have some assurance that if it does not work as expected and environmental damage is occurring as a result of the plan, such damage will be discovered and the appropriate changes will be made. So the regulatory process must have the flexibility to change readily with new information. Such flexibility should cut both ways. If new information shows that certain techniques in marsh management previously thought to be ineffective or harmful are actually effective and beneficial to the goal of restoring marsh, the regulatory process should be able to adjust quickly to accept those techniques.

The other main stumbling block in marsh management regulation is the widely divergent missions of the various agencies in the permitting process. While there is some overlap, each agency is responsible for protecting different components of the marsh ecosystem. When agencies disagree on scientific or policy issues there is no quick way to resolve such conflicts. An applicant can sometimes head off agency gridlock by understanding the permitting process and the goals and positions of the various agencies in advance. If a marsh management plan is designed in a way that satisfies various agency concerns initially then much wasted time and expense can be saved. One of the most effective methods of accomplishing this is through a preapplication planning meeting in which the applicant meets with all the involved agencies and describes the plan and the goals to be accomplished. The agencies can then inform the applicant of any concerns they might have and how those concerns can be addressed. It is often possible for the applicant to then present a plan at the permit application stage that will move smoothly through the permit process.

In many instances, however, a plan cannot meet the approval of all the agencies and still accomplish its main objectives. In those cases it may be necessary for the Congress and the Louisiana legislature to refocus the agencies to an overall goal of wetland restoration even though some specific short term losses may occur. Agencies may need to become components of an interdisciplinary, total ecosystem approach to wetland restoration while maintaining their original emphasis for projects toher than marsh management. Such an approach could be a systematic multi-agency coastal restoration program that would help direct the large federally funded statewide coastal restoration projects and be consistent with those projects. In any event it appears that there will have to be some sort of legislative decision on priorities in marsh management and coastal restoration. Such decisions, however, should be based on scientific evidence which, as already stated is a prerequisite for solving regulatory problems.

Aside from scientific issues there are legal issues that affect marsh management permitting. We have already discussed the property rights and public access issues. It may be necessary to reform Louisiana property law as it relates to water bottoms and reclamation of land lost by erosion. Some have suggested that in certain

areas mineral rights and surface rights be separated. If a landowner did not have to worry about losing mineral revenue opportunities along with loss of marshland it could remove the incentive to fix boundaries with potentially marsh destroying levees. Protecting mineral rights has also been suggested as a way to prevent disputes over some of the larger coastal restoration projects that rebuild land lost through erosion. At least one project has been delayed because the landowner would not allow access to the property for the reclamation project. The landowner's objection was that the project would preempt its right to reclaim the eroded land and result in a loss of mineral rights because the newly formed land would belong to the state. In October 1995 the citizens of Louisiana will vote on a constitutional amendment to allow the state to negotiate a separation of mineral rights from surface rights when the state rebuilds land lost through erosion.¹³⁶ Such a step is seen by some as an equitable way to protect the land surface which has more long term value in exchange for questionable mineral rights. Others see it as a give away of state property. This is not a marsh management issue per se but it is relevant to the supposed goal of marsh management-restoration of coastal marsh and other coastal land. The larger restoration projects, if successful, will preempt the need for some smaller marsh management projects.

The concept of property ownership may have to change. With most of the land in the state privately owned, there is little unaltered habitat left. If habitat alterations reach a point that the basic ecological systems supporting wildlife and humans begin to fail then by necessity restrictions on land use will follow. Society will reach a new conclusion that the rights of land ownership of vital areas must be tempered with responsibility to preserve. Whether the costs of such responsibility is borne by individuals or society as a whole will be a social and political decision.

The public access issue also needs to be addressed. If the public perceives marsh management projects as merely a means to lock up waterways that have traditionally been common highways though the marsh then the public will not support marsh management. The technology exists now to map and identify waterways as public or private or in dispute. Decisions will have to be made on a waterway by waterway basis. Marsh management plans that block public waterways will have to address this issue.

Marsh management may prove to be a valuable tool in coastal protection and restoration. If this is confirmed by scientific research then regulatory and legal changes will probably be necessary. In this technological age law must be able to adapt to new information as well as adapt to social judgements.

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