

Continuing south on U.S. 65 in Louisiana you will find other outstanding recreational areas—Lake Yucatan near Newellton, La., and Lake Bruin State Park near St. Joseph, La.

A Louisiana resident fishing license is \$2 per year for persons over 16. A non-resident license for those over 16 is \$5, and a 7-day license is \$2.

In Mississippi, some of the more highly utilized lakes are Moon Lake in Coahoma County, Beulah Lake in Bolivar County, and Eagle Lake in Warren County. The Mississippi Game and Fish Commission

reports that these lakes have been providing excellent fishing for many years.

The Mississippi resident fishing license is \$3 for fishing with artificial bait or from a boat. A resident fishing from the bank with natural bait does not need a license. The nonresident fishing fee is \$6 for an annual license, while a permit for 3 days costs \$1.50.

If you lean toward water sports, with the emphasis on fishing, you and your family will enjoy the natural horseshoe lakes of the Mississippi Delta.

Try them and see what I mean!

Flood Plain Safeguards: A Community Concern

GILBERT F. WHITE



AS TOWNS GROW and as rural areas are settled, they often wake up to find that overnight they have lost precious reaches of land along valley bottoms. Sometimes it is a subdivision which cuts up a tree-bordered channel. More often it is scattered houses or industrial plants which take over the lowlands. Once invaded, these corridors of water and bottom land, with their distinctive vegetation and bird and mammal populations, are destroyed for public recreation and wildlife use and can be reclaimed only at rather heavy expense.

Because the valley lands commonly are subject to overflow from their streams, they lend themselves in a unique manner to community action to promote wise use of land in the public interest. With a few rare exceptions, every stream gets out of its banks from time to time and uses its flood plain to carry the flows that it cannot accommodate in its normal channel. The hazard of flooding at any given elevation

above the channel can be estimated with some confidence, but the year of occurrence cannot be predicted.

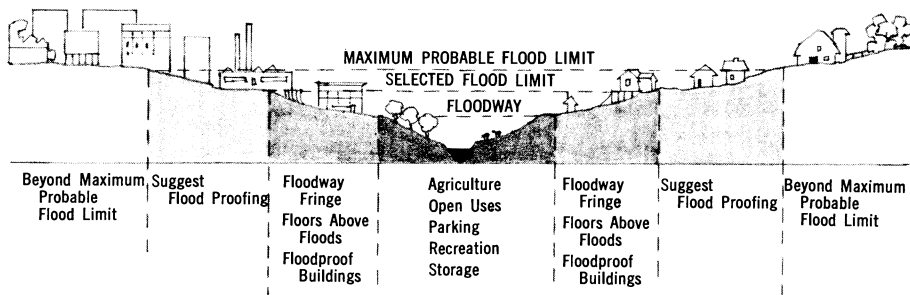
Often newcomers to a river valley are completely unaware of the risk of the stream rising far above its banks. Even old residents may not have experienced the great floods that come on the average of once in 200 years, and yet may strike 2 years in a row, as in the Connecticut valley in the early 1950's.

Once it is recognized, the flood hazard may become the basis for community measures which will preserve open space for desirable recreation and for habitat protection.

Several types of regulation are used by public groups to guide the use of flood



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plains. These include subdivision regulation, zoning, building ordinances, and channel encroachment restrictions. Some exist only on the statute books and are not applied. It takes a body of informed and concerned public opinion to support land use regulations.

Subdivisions may be permitted under rules that require the subdivider to leave the natural waterways clear of obstructions for drainage purposes or to dedicate strips of valley bottom for open space use. A number of California county planning boards, among others, now encourage any new development to leave the flood plains clear.

Zoning ordinances by counties or cities may restrict the flood plains to designated open uses, as in numerous sections of the Tennessee Valley or in Del Norte County, Calif. One Pennsylvania township permits agricultural, recreational, wildlife sanctuary, forestry, game farming, and public utility rights-of-way, and allows residential lots to include part of the flood plain zone so long as no structures are erected there.

In Anderson County, Tenn., the county zoned the land along the Clinch River and its tributaries and also the shores of the new Melton Hill reservoir.

City building ordinances may prevent structures from being constructed within the reach of ordinary floodwaters. For example, in several upstate New York towns residential use is permitted along flood plains so long as no structures are put in the way of floods: The houses are elevated above estimated flow lines and pleasant open space remains along the stream itself.

Many States, such as Indiana and New Jersey, now have regulations to prevent

the natural river channels from being obstructed unduly by filling, dumping, or construction. Not infrequently, a fill on one side of a valley will cause higher flooding on the other side or construction in a channel will lead to ponding of water upstream or to higher velocities in the stream. The State agencies use their police power to prevent this kind of damaging invasion of the flood plains.

Civic Groups Must Help

As with zoning and other regulations, effective policing of stream encroachment depends heavily upon the alertness and the persistence of citizen groups. State officers cannot be aware of all the places where valley filling is taking place. Subdivision plans need to be questioned by affected property owners. Zoning ordinances will neither be enacted nor enforced unless they have lively public support. Officials of Federal mortgage insurance agencies cannot always be informed as to where mortgages are proposed for new buildings in a hazard area.

People of the local community who know the flood conditions and the needs for the land must be prepared to speak up before the flood plain disappears beneath asphalt or brick.

The legal justification for stream encroachment, subdivision, and building regulations is generally clear. Wherever local zoning is authorized, the opportunity to make special provision for flood hazard is open—subject to State laws.

Nevertheless, it sometimes is argued that there is no solid legal basis for flood plain regulations. This argument usually is voiced by real estate operators who want freedom of action or by local of-

ficials who are unfamiliar with their own powers or with the practical experience of counties and cities in other parts of the United States.

Reviews of the legal experience with flood plain regulation may be obtained from the Tennessee Valley Authority.

But regulation should not be thought of as simply prohibiting the using of flood plains. It encourages wise use. It does not rule out uses that are in the public interest. Flood plain regulation has several purposes: To prevent any encroachment which would cause injury to others; to protect the health and safety of people who would be exposed to flood danger; to prevent the victimization of property owners who unknowingly might take on flood risk; to prevent public agencies from being saddled with the cost of bailing out or protecting people who locate in hazard areas; and to promote the general welfare of the community.

A reasonable regulation would permit intensive use of a flood plain where that would be in the interest of commercial growth, providing the structures do not increase the flood risk to others and are flood proofed—see chapter on page 146—to minimize public loss and personal danger. In some valleys, the soil deposited by previous stream overflow may serve best if preserved so that shallow ground water supplies are recharged when the floods go overbank.

The emphasis is upon making rational and conscious choices among the techniques which society has for dealing with flood hazards.

This is where the fact of flood dangers may favor a different kind of solution than for other, higher lands.

When the public expenses that result from exposing new property to flooding are taken into account, it may be found more desirable to hold the land in open uses than to develop it any further.

Or the desirable improvements may be in the direction of park or wildlife refuge management.

Essential to the planning and community decision leading to flood plain regulation is adequate flood information, including the heights of past floods, the probable extent of future overflows, and

a map showing areas subject to flood. This should show the limits of whatever frequency of flooding can be determined. Starting at the streambank where water overflows every 2 or 3 years on the average, a cross section across a valley runs up to points beyond which water rises only once in a hundred years or even less frequently. But the infrequent flood may come next year bringing catastrophe.

The more detailed reports, such as those prepared by the Corps of Engineers in their Flood Plain Information Reports, as in Metropolitan Denver and Detroit, and by the Tennessee Valley Authority for scores of places in the TVA area, show several zones according to estimated frequency of flooding. They also give details on floodway capacity and constrictions. Certain of the maps prepared for the Soil Conservation Service watershed surveys indicate the boundaries of land subject to 25-year or 50-year frequency floods. Flood hazard maps published by the U.S. Geological Survey usually give the limits of the maximum flood of record (a solid fact where the zones are called into question in court) and give a basis for estimating the recurrence interval of different height flows.

Soil Survey Maps Used

In some places, the soil survey maps of alluvial soils are used as a rough delimitation of flood hazards, although alluvial soil—the product of past stream deposits—does not necessarily coincide with present stream overflow. The Lower Salford Township supervisors in Pennsylvania adopted the soil survey delineation of alluvial soils as a basis for setting a flood plain conservation district. And a new subdivision plan for Worthington—Green Valley near Towson, Md., used soil survey classification for designating lowland to be kept in open space.

In some regions, just the publication of the basic flood hazard report has a significant influence upon land development without any formal regulations. The maps of flood hazard prepared by the U.S. Geological Survey in cooperation with the planning agencies in the north-eastern Illinois metropolitan area are used

by land appraisers and mortgage agencies. These maps also are a major help in the efforts of the Cook County Forest Preserve District toward acquisition of new park lands.

Federal agencies now use such data in their decisions on location and design of new public structures and highways

and also in insuring of private mortgages.

Wherever streams overflow their banks the possible ways of dealing with flood hazard deserve to be taken into account in planning for wise use. Regulations by local agencies help to do this, and in many valleys may lead to open space uses which are not impaired by flooding.

Farm Ponds Add Up to Oceans of Recreation

FRED P. MILLER and WILLIAM J. HORVATH



EVERY SUMMER thousands of city dwellers and suburbanites are replacing that drive to the ocean or lake with a trip to a farm pond as the paying guests of farmers across the Nation. A dairy farmer in Maryland's rolling Piedmont said of his pond, "From the standpoint of esthetics and family enjoyment, this is the greatest asset on my farm." Many urban people would agree that the farm pond is a potent recreational asset for them as well.

For farmers, the recreational benefits of a pond have often more than justified their investment. That is to say nothing of increased values from water conservation or providing water for the livestock, fire protection, wildlife, and from supplemental irrigation.

Farmers are not the only persons putting in ponds, however. The local Extension Service offices and the Soil Conservation Service offices are being contacted more and more often every year by people living in urban communities and in cities who have purchased a piece of land or a small farm "just out-of-town" and want to know how to build a pond for recreational purposes.

Let us consider some of the things a

farm pond must have in order to become an enjoyable asset.

The swimming, fishing, picnicking, and the other recreational activities which millions of Americans are enjoying each year from farm ponds did not come about by simply digging a hole or damming a gully. Without an understanding of essential features of design and construction, it is unwise to undertake a farm pond as a do-it-yourself adventure.

You can obtain published information through your local office of the Cooperative Extension Service, the Soil Conservation Service, or soil conservation district.

These agencies can provide competent technical assistance or steer you to other State and Federal agencies which may help you. They can inform you of State and local health and water laws.

In many instances, cost-sharing can be made available through the USDA Agricultural Stabilization and Conservation



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