

Ponds — Planning, Design, Construction

Introduction

For many years farmers and ranchers have been building ponds for livestock water and for irrigation. By 1980 more than 2.1 million ponds had been built in the United States by land users on privately owned land. More will be needed in the future.

The demand for water has increased tremendously in recent years, and ponds are one of the most reliable and economical sources of water. Ponds are now serving a variety of purposes, including water for livestock and for irrigation, fish production, field and orchard spraying, fire protection, energy conservation, wildlife habitat, recreation, erosion control, and landscape improvement.

This handbook describes embankment and excavated ponds and outlines the requirements for building each. The information comes from the field experience and observation of land users, engineers, conservationists, and other specialists.

An embankment pond (fig. 1) is made by building an embankment or dam across a stream or watercourse where the stream valley is depressed enough to permit storing 5 feet or more of water. The land slope may range from gentle to steep.

An excavated pond is made by digging a pit or dugout in a nearly level area. Because the water capacity is obtained almost entirely by digging, excavated ponds are used where only a small supply of water is needed. Some ponds are built in gently to moderately sloping areas and the capacity is obtained both by excavating and by building a dam.

The criteria and recommendations are for dams that are less than 35 feet high and located where failure of the structure will not result in loss of life; in damage to homes, commercial or industrial buildings, main highways, or railroads; or in interrupted use of public utilities.

Local information is essential, and land users are encouraged to consult with specialists experienced in planning and building ponds.

Figure 1 Typical embankment and reservoir

