

# GLOSSARY OF FLOOD TERMS



COMPILED BY



Missouri Coalition for the Environment  
EFFECTIVE CITIZEN ACTION SINCE 1969

**BACKWATER EFFECT** - The rise in water surface elevation caused by some obstruction such as a narrow bridge opening, buildings or fill material that limits the area through which the water must flow. Also referred to as "heading up".

**BASE FLOOD** - A term used in **the National Flood Insurance Program** to indicate the minimum size flood to be used by a community as a basis for its floodplain management regulations; presently required by regulation to be that flood which has a one-percent chance of being equaled or exceeded in any given year. Also known as a 100-year flood or one-percent chance flood.

**BASE FLOODPLAIN** - The floodplain that would be inundated by a **100-year (one-percent chance) flood**.

**BASIN** - The total area from which surface runoff is carried away by a drainage system. Other comparable terms are "drainage area", "catchment area", and "**watershed**".

**C.F.S.** - Cubic feet per second. Used to describe the amount of flow passing a given point in a stream channel. One cubic foot per second is equivalent to approximately 7.5 gallons per second.

**CHANNEL** - A natural or artificial watercourse with definite bed and banks to confine and conduct flowing water.

**CHANNEL CAPACITY** - The maximum flow which can pass through a channel without overflowing the banks.

**CHANNELIZATION** - The improvement of the water carrying capacity or flow characteristics of a natural or artificial channel by clearing, excavation, bank stabilization or other means. Also referred to as channel alterations.

**CROSS SECTION** - A graph or plot of ground elevation across a stream valley or a portion of it, usually along a line perpendicular to the stream or direction of flow.

## CROSS SECTION OF A CHANNEL AND FLOODPLAIN

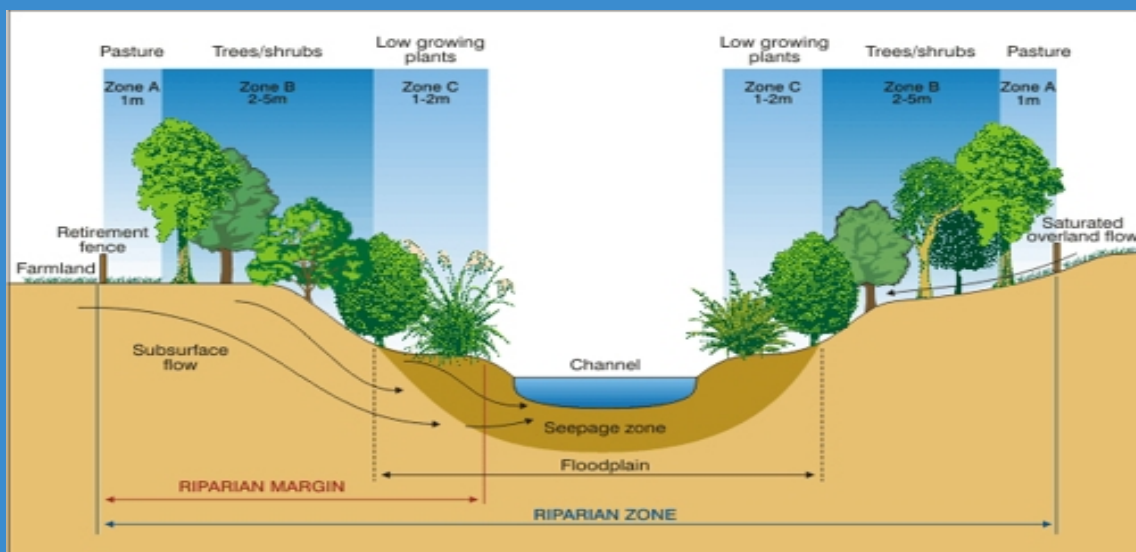


Image credit: Taranaki Regional Council

**DESIGNATED FLOODWAY** - The channel of a stream and that portion of the adjoining floodplain designated by a regulatory agency to be kept free of further development to provide for unobstructed passage of flood flows.

**DESIGN FLOOD** - Commonly used to mean the magnitude of flood used for design and operation of flood control structures or other protective measures. It is sometimes used to denote the magnitude of flood used in floodplain regulations. Also referred to as Project Design Flood.

**THE EMERGENCY PROGRAM** - The initial phase of a community's participation in the National Flood Insurance Program (NFIP) if no flood hazard information is available or the community has a Flood Hazard Boundary Map (FHBM), but no Flood Insurance Rate Map (FIRM). A limited amount of flood insurance coverage at less than actuarial rates is available for all residents of the community.

**EQUAL DEGREE OF ENCROACHMENT** - A rule, used in determining permissible floodplain encroachments, that the floodplain on each side of a stream must be capable of conveying a proportionate share of the design flood flow.

**FLASH FLOOD** - A flood that reaches its peak flow in a short length of time (hours or minutes) after the storm or other event causing it. Often characterized by high velocity flows.

**FLOOD OR FLOODING** - Temporary inundation of normally dry land areas from the overflow of inland and/or tidal waters, and/or from the unusual and rapid accumulation or runoff of surface waters from any source. The rise in water may be caused by excessive rainfall, snowmelt, natural stream blockages, wind storms over a lake or ocean, tsunamis, extremely high tides, or any combination of such conditions.

**FLOOD CONTROL** - Keeping flood waters away from specific developments and/or populated areas by the construction of flood storage reservoirs, channel alterations, dikes and levees, bypass channels, or other engineering work

## FLOOD CONTROL



Human-made levee on the Mississippi  
Image credit: HABS



Flood storage reservoir on Willow Creek  
Photo by Gary Halvorson, Oregon State Archives

**FLOOD CREST** - The maximum stage or elevation reached or expected to be reached by the waters of a specific flood at a given location.

**FLOOD DURATION** - The length of time a stream is above flood stage or overflowing its banks.

**FLOOD FIGHTING** - Actions taken immediately before or during a flood to protect human life and to reduce flood damages such as evacuation, emergency sandbagging and diking, and provision of assistance to flood victims.

**FLOOD FORECASTING** - The process of predicting the occurrence, magnitude and duration of an imminent flood through meteorological and hydrological observations and analysis.

**FLOOD FREQUENCY** - A statistical expression of the average time period between floods equaling or exceeding a given magnitude. For example, a 100-year flood has a magnitude expected to be equaled or exceeded on the average of once every hundred years; such a flood has a one-percent chance of being equaled or exceeded in any given year. Often used interchangeably with "recurrence interval".

**FLOOD FRINGE** - The portion of the floodplain outside of the floodway or coastal high hazard area but still subject to flooding. Sometimes referred to as "floodway fringe". Also used to refer to areas subject to flooding by water with little or no velocity.

**FLOOD HAZARD BOUNDARY MAP** - An official map of a community issued by the **Federal Insurance Administration** on which the boundaries of the floodplain (i. e., subject to the 100-year flood), mudslide and/or flood-related erosion areas having special hazards have been drawn.

**FLOOD HAZARD BOUNDARY MAPPING PROGRAM - Federal Emergency Management Agency (FEMA)** program that identifies flood hazards, assesses flood risks and partners with states and communities to provide accurate flood hazard and risk data to guide them to mitigation actions.

## FLOOD FIGHTING



Flood Fighting in Davenport, Iowa, in 2007.  
Photo by Brad Walker.

## FLOOD HAZARD MAP

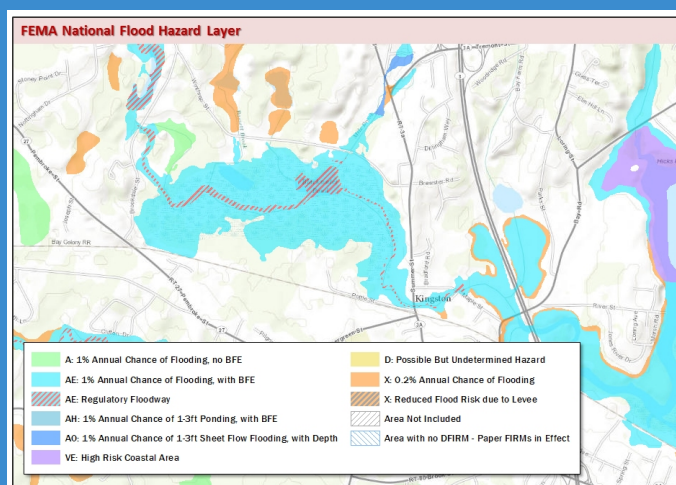


Image credit: FEMA

**FLOOD HYDROGRAPH** - A graph showing, for a given point on a stream, the discharge, height or other characteristic of a flood with respect to time.

**FLOOD INSURANCE** - Insurance on structures and/or their contents for their restoration or replacement if damaged by floodwater.

**FLOOD INSURANCE RATE MAP** - An official map of a community on which the Federal Insurance Administration has delineated the area in which the purchase of flood insurance is required under the Flood Insurance Regular Program.

**FLOOD INSURANCE REGULAR PROGRAM** - The phase of the National Flood Insurance Program under which actuarial rates have been determined.

**FLOOD PROFILE** - A graph or plot of the water surface elevation against distance along a channel drawn for a specific flood or level of flooding.

**FLOOD OF RECORD** - The greatest flood recorded for a location. Usually referred to as the "maximum flood of record". The term is also sometimes used to mean any flood for which there is a measurement of height or other systematic or reliable record useful for technical analysis.

**FLOODPLAIN** - The low lands adjoining the channel of a river, stream or watercourse, or ocean, lake, or other body of standing water, which have been or may be inundated by flood water. The channel of a stream or watercourse is a part of the floodplain.

**FLOODPLAIN DELINEATION** - The process of showing in a graphical form, usually on a map or photo mosaic, areas which have been inundated by a specific flood or which can be expected to be inundated by a predicted flood of specific magnitude.

### FLOOD INSURANCE RATE MAP

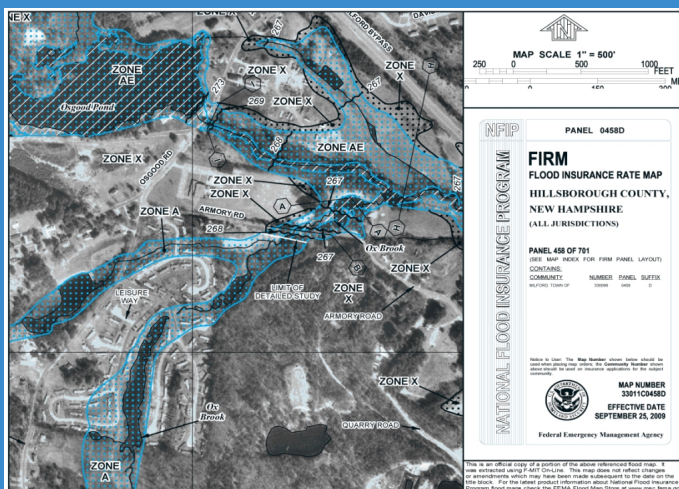


Image credit: NFIP

### FLOOD HYDROGRAPH SHOWING FLOOD CREST

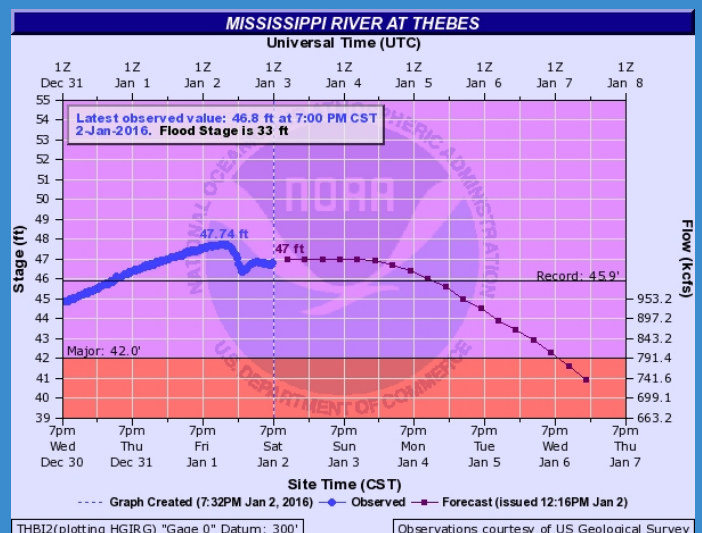


Image credit: NOAA

**FLOODPLAIN MANAGEMENT** - The operation of a program intended to lessen the damaging effects of floods, maintain and enhance natural values, and make effective use of related water and land resources within the floodplain. It is an attempt to balance values obtainable from use of floodplains with potential losses arising from such use. Floodplain management stresses consideration of the full range of measures potentially useful in achieving its objectives.

**FLOODPLAIN REGULATIONS** - A general term for the full range of codes, ordinances, and other regulations relating to the use of land and construction within stream channels and floodplain areas. The term encompasses zoning ordinances, subdivision regulations, building and housing codes, encroachment line statutes, open-space regulations, and other similar methods of control affecting the use and development of these areas.

**FLOOD PROBABILITY** - A statistical expression of the chance (usually as a percentage) that a flood of given magnitude has of being equaled or exceeded in any one year (see flood frequency).

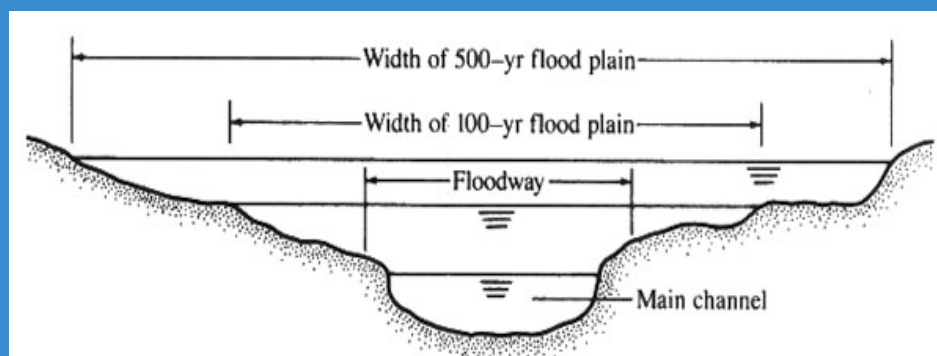
**FLOODPROOFING** - A combination of structural changes and adjustments to existing structures and facilities, their contents and/or their sites purpose of reducing or eliminating flood damages by protecting against structural failure, keeping water out, or reducing the effect of water entry.

**FLOOD WARNING** - The issuance and dissemination of information about an imminent or current flood.

**FLOODWAY** - The channel of a watercourse and those portions of the adjoining floodplain required to provide for the passage of the selected flood (normally the 100-year flood) with an insignificant increase in the flood levels above that of natural conditions. As used in the National Flood Insurance Program, floodways must be large enough to pass the 100-year flood without causing an increase in elevation of more than a specified amount (one foot in most areas).

**GROUNDWATER RECHARGE** - The infiltration of water into the earth. It may increase the total amount of water stored underground or only replenish supplies depleted through pumping or natural discharge.

### FLOODWAY



**Figure 9-4** River channel and flood plain limits

**HYDRODYNAMIC LOADS** - Forces imposed on structures by floodwaters due to the impact of moving water on the upstream side of the structure, drag along its sides, and eddies or negative pressures on its downstream side.

**HYDROSTATIC LOADS** - Forces imposed on a flooded structure due to the weight of the water.

**LEVEL (DEGREE) OF PROTECTION** - The greatest flood level against which a protective measure is designed to be fully effective; often expressed as a recurrence interval (e.g., 100-year level of protection) or as an exceedance frequency (e.g., one-percent chance of exceedance).

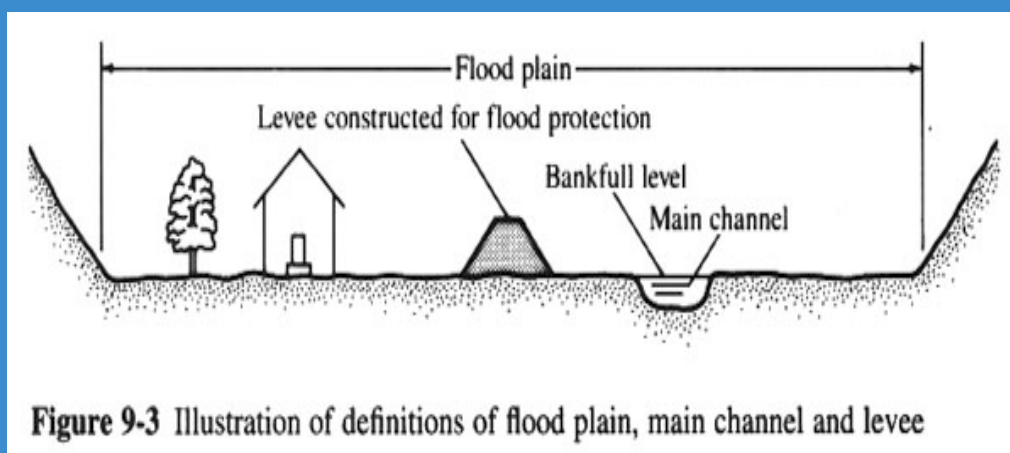
**NATURAL VALUES OF FLOODPLAINS** - The desirable qualities of or functions served by floodplains including but not limited to water resources values (e.g., moderation of floods, water quality maintenance and groundwater recharge), living resources values (e.g., fish, wildlife and plant resources and habitat), cultural resources values (e.g., open space, natural beauty, scientific study, outdoor education, and recreation), and cultivated resource values (e.g., agriculture, aquaculture and forestry). Also referred to as Ecosystem Services.

**NONSTRUCTURAL MEASURES** - All floodplain management measures excepting structural flood control works. Examples of nonstructural measures are flood warning/preparedness systems, relocation, floodproofing, regulation, land acquisition, and public investment policy.

**ONE-HUNDRED YEAR FLOOD** - A flood having a one-percent chance of occurring in any given year and which, over a very long period of time, can be expected to be equaled or exceeded on the average of once every hundred years. Alternate definitions that question the terms of this established definition.

**OVERLAND RUNOFF** - That portion of precipitation which is not intercepted by vegetation, absorbed by the land surface or evaporated, and thus flows overland into a depression, stream, lake or ocean (runoff called "immediate subsurface runoff" also takes place in the upper layers of the soil).

## FLOODPLAIN WITH LEVEE - STRUCTURAL PROTECTION



**Figure 9-3** Illustration of definitions of flood plain, main channel and levee

**PROBABLE MAXIMUM FLOOD** - The most severe flood that may be expected from a combination of the most critical meteorological and hydrological conditions that are reasonably possible in the drainage basin. It is used in designing high-risk flood protection works and siting of structures and facilities that must be subject to almost no risk of flooding. The probable maximum flood is usually much larger than the 100-year flood.

**RECURRENCE INTERVAL** - A statistical expression of the average time between floods equaling or exceeding a given magnitude (see flood frequency).

**REGULATORY FLOODPLAIN** - That portion of the floodplain subject to floodplain regulations (usually the floodplain inundated by the one-percent chance flood).

**REGULATORY FLOODWAY** - The channel and that portion of the adjacent land area that is required through regulations to pass flood flows without increasing the water surface elevation more than a designated height.

**RESERVOIR** - A natural or artificially created pond, lake or other space used for storage, regulation or control of water. May be either permanent or temporary.

**STANDARD PROJECT FLOOD** - A term used by the U.S. Army Corps of Engineers to designate a flood that may be expected from the most severe combination of meteorological and hydrological conditions that is considered reasonably characteristic of the geographical area in which the drainage basin is located, excluding extremely rare combinations. The peak flow for a standard project flood is generally 40 to 60 percent of the probable maximum flood for the same location.

**STREAM** - A body of water flowing in a natural surface channel. Flow may be continuous or only during wet periods. Streams which flow only during wet periods are termed "intermittent streams".

**STRUCTURAL MEASURES** - Flood control works such as dams and reservoirs, levees and floodwalls, channel alterations, seawalls, and diversion channels which are designed to keep water away from specific developments and/or populated areas or to reduce flooding in such areas.

**SUBSIDENCE** - Sinking of the land surface, usually due to withdrawals of underground water, oil, or coal.

**WATERCOURSE** - A natural or artificial channel in which a flow of water occurs either continuously or intermittently.

**WATER SURFACE ELEVATION** - The heights, usually in relation to mean sea level, reached by flows of various magnitudes and frequencies at pertinent points in the floodplain.

**WETLANDS** - Areas that are inundated or saturated at a frequency and for a duration sufficient to support a prevalence of vegetative or aquatic life requiring saturated or seasonally saturated soil conditions for growth and reproduction.



## REGULATORY FLOODPLAIN

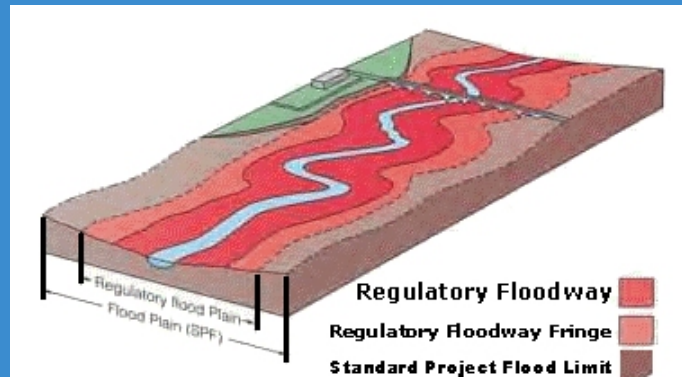


Image credit: The Chartiers Greenway

## MEANDERING WATERCOURSE

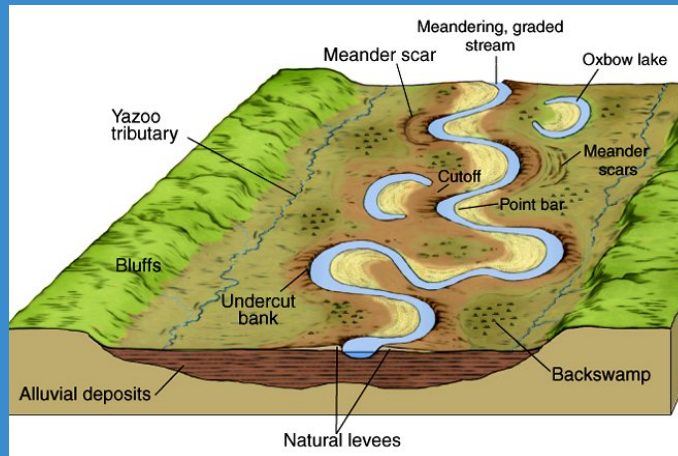


Image credit: University of Idaho

## WETLANDS CROSS SECTION WITH SOILS

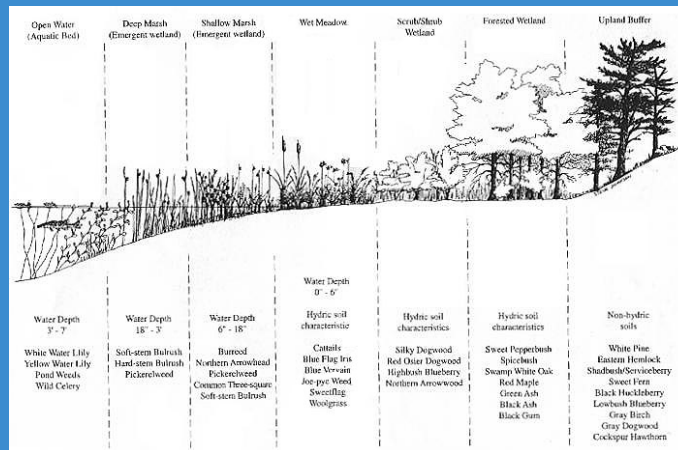


Image credit: New England Wetlands Plants

This glossary was compiled by Missouri Coalition for the Environment to serve as a public resource for understanding flooding in response to the winter 2016 flooding that occurred on the Mississippi River.