

Clearing and Snagging (ft)

Definition

Removing snags, drifts, or other obstructions from a channel.

Scope

This standard applies to the clearing of trees and brush and the removal of sediment bars, drifts, logs, snags, boulders, piling, piers, headwalls, debris, and other obstructions from the flow area of a natural or excavated channel.

Purpose

To increase the flow capacity of a channel by improving its flow characteristics; to prevent bank erosion by eddies; to reduce the forming of bars; and to minimize the occurrence of ice jams.

Special attention shall be given to maintaining or improving visual resources and habitats for fish and wildlife, where applicable.

Conditions where practice applies

Any channel or floodway where the removal of trees, brush, and other obstructions is needed to accomplish one or more of the listed purposes. If clearing and snagging are likely to result in channel erosion, either the clearing and snagging shall not be done or practices to prevent erosion shall be applied concurrently with the clearing and snagging.

Design criteria

The capacity of the channel, both before and after improvement, shall be determined by use of Manning's Formula, using applicable values of the retardance factor, "n" for both conditions. The value of "n" used to determine channel capacity after improvement shall reflect the degree of maintenance expected in future years.

The area to be cleared and snagged shall include the perimeter of the channel, the flow area of the floodway, or both. Adjacent trees or other objects that may fall into the channel shall also be included. Clearing and snagging may be specified for other areas, including berms, for use as temporary disposal areas or travelways, or for planned conservation uses.

Channel stability shall not be impaired by clearing and snagging. The criteria for determining channel stability in open channels (582) shall be complied with.

Plans and specifications

Plans and specifications for clearing and snagging shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

Clearing and Snagging Specifications

All trees, stumps, and brush within the perimeter of the channel shall be cut as close to the ground as the cutting tools permit. If other areas are to be cleared, the trees, brush, and other woody vegetation shall be cut within the maximum distance above the ground level specified.

Trees shall be felled in such a manner as to avoid damage to other trees, property, and objects outside the limits of clearing.

Down trees, logs, drifts, boulders, debris and other obstructions lying wholly or partly in the channel shall be removed. Piling, piers, headwalls, and sediment bars that obstruct the free flow of water shall be removed if so designated in the project plan.

If herbicide treatment is planned, the stumps and brush in the specified area shall be treated at the time of clearing according to the recommendations of the manufacturer of the herbicide specified or being used.

The use of explosives in all clearing and snagging

operations shall be in strict compliance with applicable state statutes and regulations.

If channels are located in cultivated areas or in areas of high value land, trees, logs, and all combustible material resulting from the clearing and snagging operations shall be burned, buried, or piled in designated disposal areas as specified for the project. All burning shall be performed outside the channel and shall conform to regulations in effect in the area. In other areas, such as woodland or rangeland, where burning is prohibited, material shall be disposed of in such a manner that it does not float away or reenter the channel. Residue from burning and noncombustible material shall be buried outside the channel or placed in designated disposal areas. All buried material shall have an adequate earth cover to permit proper land use.

Measures and construction methods that enhance fish and wildlife values shall be incorporated as needed and practical. Special attention shall be given to visual resources protecting and maintaining key shade, food, and den trees and to stabilization of disturbed areas.

Planning considerations for water quantity and quality

Quantity

1. Possible downstream flooding.
2. Effect of changed drawdown on bank stability.
3. Effect of changed flow conditions on ground water recharge.

Quality

1. Effects of discharge changes on the flood plain and channel relative to erosion and sediment production, both during construction and after establishment.
2. Effects sediment load, sediment- attached substances, organic loadings.
3. Relationships between stream quality and aquifer quality where ground water recharge occurs.
4. Temporary and long-term effects on visual quality of water and landscape.
5. Effects on onsite and downstream water temperatures.