

7. Install water bars at least 10 feet away from the edges of gullies and roads.
8. If gullies or roads must be crossed, install water bars and water turnouts at the approaches to prevent channeling water from firebreaks into these areas.



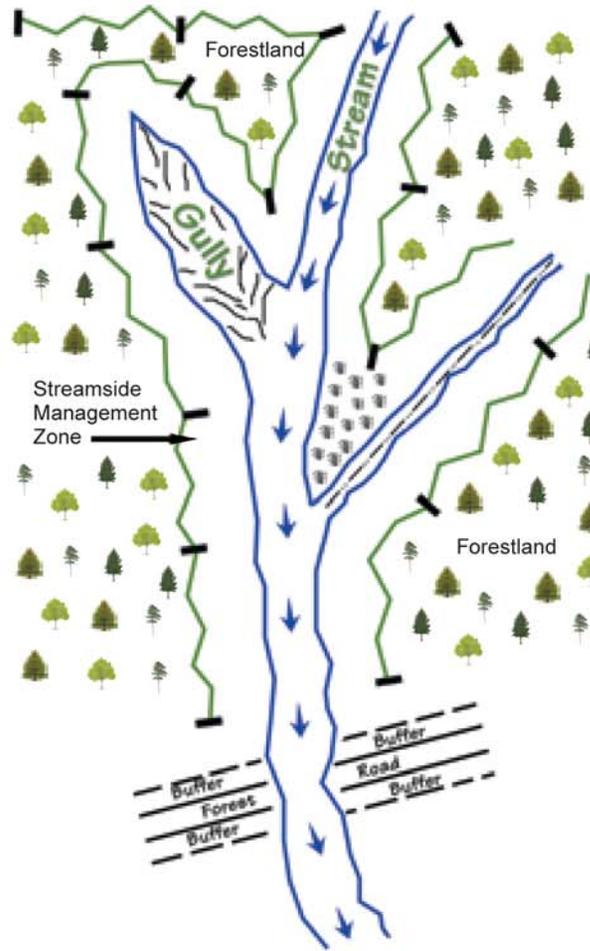
A water bar with turnout moves water away from the main firebreak.

9. Treat active gullies the same as streams, using appropriate buffers and plowing practices.

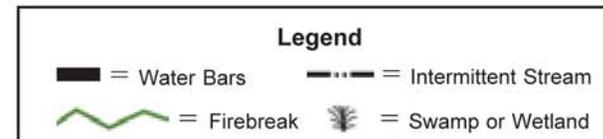
Best Management Practices take a small amount of extra time, but result in firebreaks that will serve you and the environment well.

Please take the time to walk your property with a forest ranger or forester and discuss Best Management Practices before the work begins.

Further information is presented in *Georgia's Best Management Practices for Forestry* manual. Visit the GFC website at <http://www.gatrees.org/ForestManagement/documents/BMPManualGA0609.pdf> or call your local GFC office.



Establishment of SMZs and water bars are important for water quality when installing firebreaks near streams, gullies, wetlands, and roads. Water bar placement and SMZ widths are determined by slope and stream type.



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Firebreak Plowing and Water Quality

General Procedures for Compliance with the Clean Water Act



The Georgia Forestry Commission is required to follow Best Management Practices (BMPs) when providing landowners with firebreak plowing services. **BMPs** are methods used to prevent or reduce soil erosion and water pollution as required by the federal Clean Water Act. Under the provisions of this Act, landowners can be subjected to fines of amounts up to \$50,000 per day for water quality violations that occur on their property.

General procedures for pre-suppression firebreaks:

1. Plan location of firebreaks.

Aerial photographs, soil maps and topographic maps combined with an on-site evaluation will help identify the streams, gullies and highly erodible sites on the property. Proper planning will ensure that firebreaks are effective and environmentally sound.



GFC Ranger and landowner plan firebreak location.

2. Use natural barriers such as roads and fields as firebreaks where possible.



A woods road serves as a natural firebreak.

3. Identify Streamside Management Zones (SMZs).

SMZs are buffer strips adjacent to streams that require special management to protect water quality. They are determined based on steepness of the slope and whether the stream flow is intermittent or permanent. SMZ width may range from 20-100 feet (see Chart 1). Wider SMZs may be required for protected water supply reservoirs.

Slope Class	Minimum Width of SMZ on Each Side		
	Perennial (ft.)	Intermittent (ft.)	Trout (ft.)
Slight (<20%)	40	20	100
Moderate (21-40%)	70	35	100
Steep (>40%)	100	50	100

Chart 1 - SMZ widths by slope class and stream type.

- Exclude firebreaks and fire from SMZs when possible.
- If firebreaks must be connected to a stream, construct them by using hand tools or by back-blading with a dozer in the SMZ.



Ranger back blades with dozer to minimize soil disturbance in an SMZ.

4. Install firebreaks on the contour rather than along property lines.

5. Create firebreaks with a flat blade or disc-harrow. These breaks erode less than plowed breaks.

6. Install water bars¹ with water turnouts² in firebreaks according to BMP recommendations (see Chart 2).

¹ A **water bar** is a hump or small dam-type structure created to redirect surface water drainage patterns.

² A **water turnout** is an extension of a firebreak water bar into a vegetated area to disperse and filter surface water runoff.

Grade of Firebreak (percent)	Distance Between Water Bars (feet)
<2	300
5	135
10	80
15	60
20	45
30	35
40*	30

Chart 2 - Spacing of water bars.

* Use grades of 40% and steeper only for short stretches.