STREAM PROTECTION ZONE (SPZ)

State Forester Forum

What Are Stream Protection Zones?

Every forest stream in Idaho, whether one foot or one hundred feet wide, exhibits the collective impacts of the man-made and natural changes and activities occurring along its banks and adjoining uplands. This extremely sensitive environment, including the stream bottom, banks and lands adjacent to the stream's high-water marks, defines the *riparian area*. In the realm of forest management, Idaho defines this riparian area as the Stream Protection Zone (SPZ). Similar shore-side environments exist for lakes.

The SPZs are a very special geographic part of the forest containing water-impacted rock, soil, plants and animals. The SPZs are important because they are ecologically active with waterborne fish, insects, reptiles, water-dependent birds, mammals, and plants ranging from mosses to a multitude of grasses, shrubs, and tree species.

Why Are SPZs Important?

SPZs protect streams and lakes from road and skid trail sediment runoff, maintain stable temperatures with shade and weather buffering (thermal cover), and provide stream stability and structure with plant roots and woody debris. The wetter riparian areas have mixed soil structure and organic matter layers that make up a complex water-filtering sponge, supporting hundreds of interdependent species of plants and animals. Protecting SPZs from logging impacts is important to maintain water quality and fish and wildlife habitat.

What Is Required by the Idaho Forest Practices Rules?

For simplicity in protecting and regulating forest practices near streams and lakes, the SPZs are defined in the Forest Practices Rules as lands extending 75 feet (slope distance) out from each side of the high water marks for a Class I stream; similarly, the SPZ of a lake consists of the lands extending 75 feet out from the high-water mark of the shoreline. The SPZs for a Class II stream (non-fish-bearing and no domestic use) extend 30 feet of slope distance on each side of the high water marks. These distances are minimums, and the distances should be wider under certain conditions. Wider SPZs are often recommended for streams or lakes with a fishery or domestic use (Class I) adjacent to steep sideslopes. *Lakes require an approved site-specific riparian management plan prior to conducting forest practices*.

The SPZ widths should vary with the landforms, vegetation, and stream orientation. SPZ width above major domestic water intakes should be increased beyond the 75-foot minimum. A non-fish-bearing stream that is used for domestic-water purposes must be given a 75-foot minimum SPZ on each side for one-quarter mile (1,320 feet) upstream from water intakes. Operators are cautioned to note that both Class I and Class II streams may have dry beds part of the year. Forest practices are not excluded in SPZs, but soil and stream disturbance must be avoided and vegetation disturbance kept to a minimum. Ground-based harvesting equipment is not allowed in SPZs. Road and trail construction within SPZs can only be done for approaches to crossings.

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Forest Practices
No. 6
October 2009

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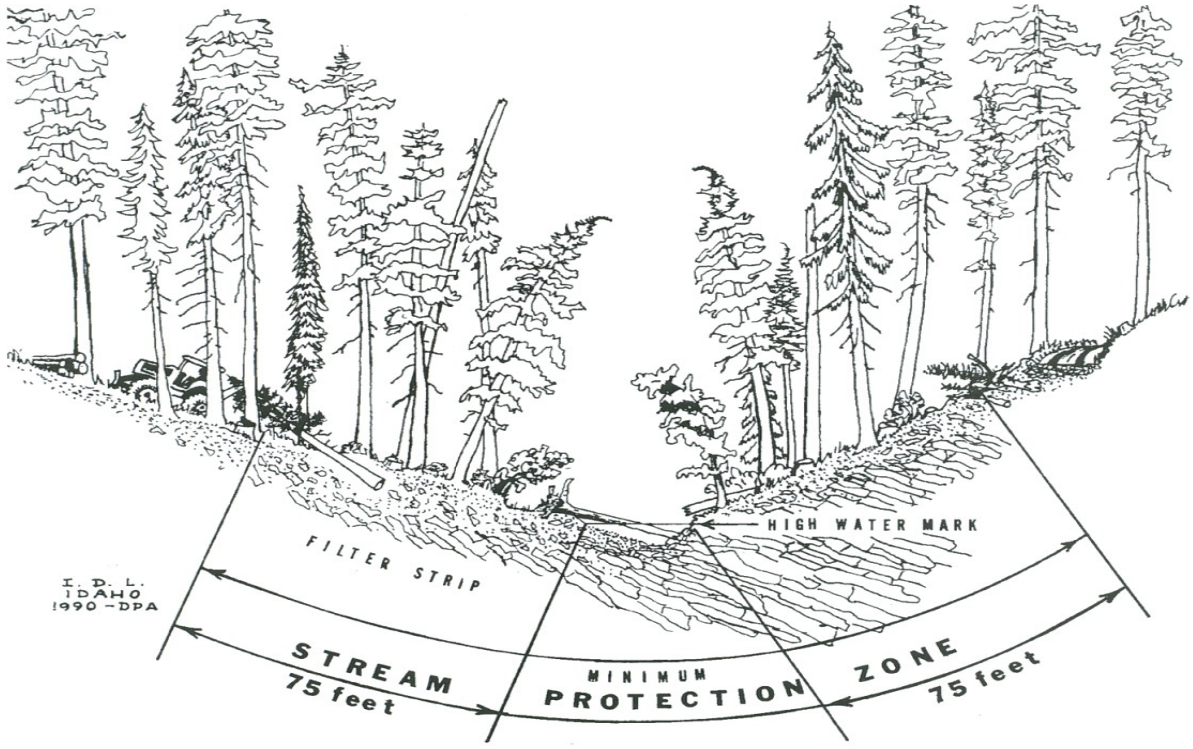
Cumulative Watershed Effects (CWE) rules are for special streams where a group of landowners, a Watershed Advisory Group (WAG) or the IDL cooperatively develops site-specific Best Management Practices for a special, selected watershed.



CLASS I

HOW DO WE PROTECT SPZS?

Roads and Trails: New roads, landings, and skid trails are generally not allowed in the SPZ along streams. Use of old roads or skid trails in the SPZ requires an approved variance and can be allowed if opening up an old, existing road will not impact water quality. All drainage and erosion-control systems (e.g., culverts, ditches, berms, cross-ditches, mulching) should be checked and maintained prior to the wet season and whenever operations are shut down or completed. Trails shall be cross-ditched when not in use and at the end of the operating season, or at job completion.

Stream Crossings: When constructing, reconstructing, or reusing a stream crossing (e.g., culverts, bridges or fords), contact a local IDL Private Forestry Specialist for guidance on required permits and proper construction techniques. With some limitations, most stream-crossing structures installed as part of a forest practice can be permitted through IDL. A signed, approved permit (Supplemental Notification Form) must be issued to the operator prior to installation.

All stream-crossing installations must be minimum

in number and comply with the Stream Channel Alteration Rules.

When installing bridges, culverts or fords, special care for water quality and fish habitat must be taken. This includes thoughtful timing of installation and careful consideration of all fish-passage rules (see Forester Forum No. 12). The sediment caused by these necessary disturbances can be made negligible by construction between periods of fish migration and egg incubation. For example, there are seven to eight months in the year when cutthroat trout are not reproducing. The IDL Private Forestry Specialists or Interdisciplinary Team technical specialists can advise operators on stream and fish situations and appropriate timing of streambed alterations.

Culverts: Permanent culverts should be large enough to carry the stream's 50-year peak flow, which may occur in any given year. Permanent *relief culverts* must not be less than 12 inches in diameter. Culvert installations on fish-bearing Class I streams must also meet all of the fish-passage criteria listed in the Stream Channel Alteration Rules. Extra care must be taken in the design and installation of hydraulic-design, non-embedded culverts to ensure fish passage. Carefully read IDL State Forester Forum No. 12 to obtain information on fish-passage rule compliance. Also, refer to the table listed under rule *040.02.e* in the Forest Practices Rules to determine required culvert sizes.

Fords: A stream-alteration Supplemental Notification Form must be approved and signed prior to the installation of a ford. Fords should cross the stream at right angles and ensure fish passage. During times of salmonid spawning and egg incubation, and in areas around domestic water intakes, ford installations must be limited to low-water, dry or frozen conditions. The streambed must be rocky, and rock and gravel must cover the approaches and bottom to prevent sediment discharge into and down the stream. (See IDL State Forester Forum No. 7—*Fords: When, Where, Why, and How*)

Temporary Crossings: These are used to keep equipment out of Class I and II streams. An approved variance may be required. They must be removed immediately after use or prior to the end of the operating season.

Timber Falling: Use directional falling techniques and skills to keep timber out of the creeks; trees should be felled to fall away from streams. Do not limb in or over the streams. Near streams, use whole-tree skidding and do limbing and trimming where the debris will not get in the stream. Maintain all leave-tree minimums in the SPZs of Class I and Class II streams; there should be a relatively continuous distribution of these required leave trees left along the streamside areas.

Skidding and Yarding: Keep equipment and disturbance away from streams and SPZs. Use cable on tractors/skidders or cable systems to remove timber from the SPZ. Do not drag logs or skid in or through streams. Cross ditch all sloping trails immediately after using them. On logged areas adjacent to Class I or Class II streams, ground-based skidding should not be conducted on slopes exceeding 45% without an approved variance.

Large Organic Debris and Shade Requirements: A mix of snags, hardwood trees, and conifers must be left in the SPZ along Class I and Class II streams. Large organic debris (LOD) are those trees and snags within 50 feet of a stream that maintain bank stability, and as they naturally fall, over time, provide the pools and riffles that enhance fish numbers and water quality. In many circumstances, these snags and trees protect fish from winter-freezing kills and overly warm waters in summer. The LOD-formed pools and riffles reduce the stream flow velocity and the bank and channel-cutting energy of the stream. The LOD-formed pools and riffles trap and store sediment, and provide resting and cover habitat for aquatic animals.

Portions of felled or bucked trees not meeting the LOD definition must be removed from streams. Slash resulting from harvesting operations must be continuously removed from Class I streams.

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Winter Logging: Stream crossings of snow and ice usually have some dirt and slash in them which must be pulled and piled above high-water marks of streams. Packed-snow skid trails are often acceptable in SPZs when the ground is frozen. Where snow and ice are used for a temporary stream crossing, or packed snow is used to allow equipment entry into the SPZ, an approved variance is required.

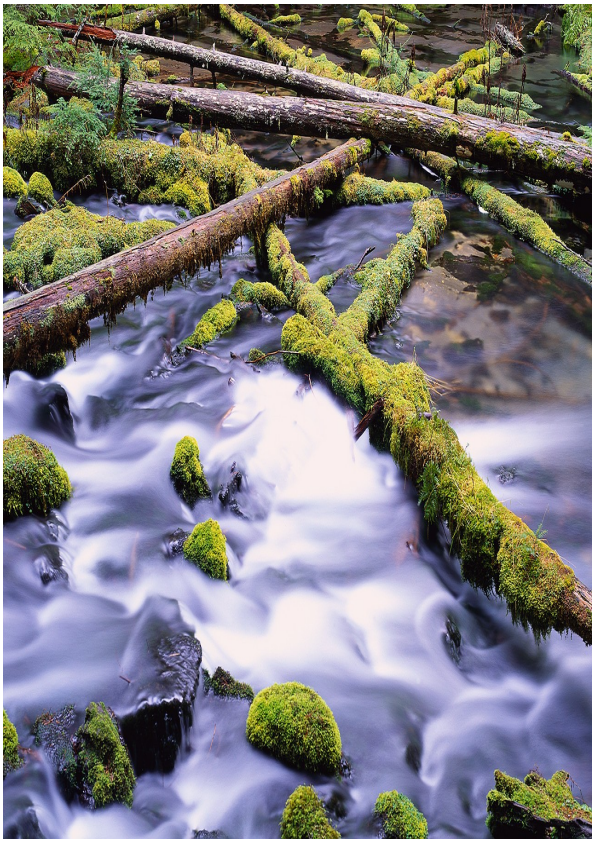
Burning Debris: Burning in or near the SPZ may cause erosion, nutrient flushes into the water, and soil sterilization where riparian vegetation should grow. Direct ignition of prescribed burns is limited to hand piles within the SPZ of streams; all other direct ignitions shall occur outside of SPZs. Hand piles must be at least 5 feet from the ordinary high-water mark of streams. No mechanical piling of slash or fuels is allowed in a stream's SPZ except for the construction of filter windrows for erosion control. Always pile and burn outside of the SPZ (or as distant as possible) to minimize burning effects on the stream.

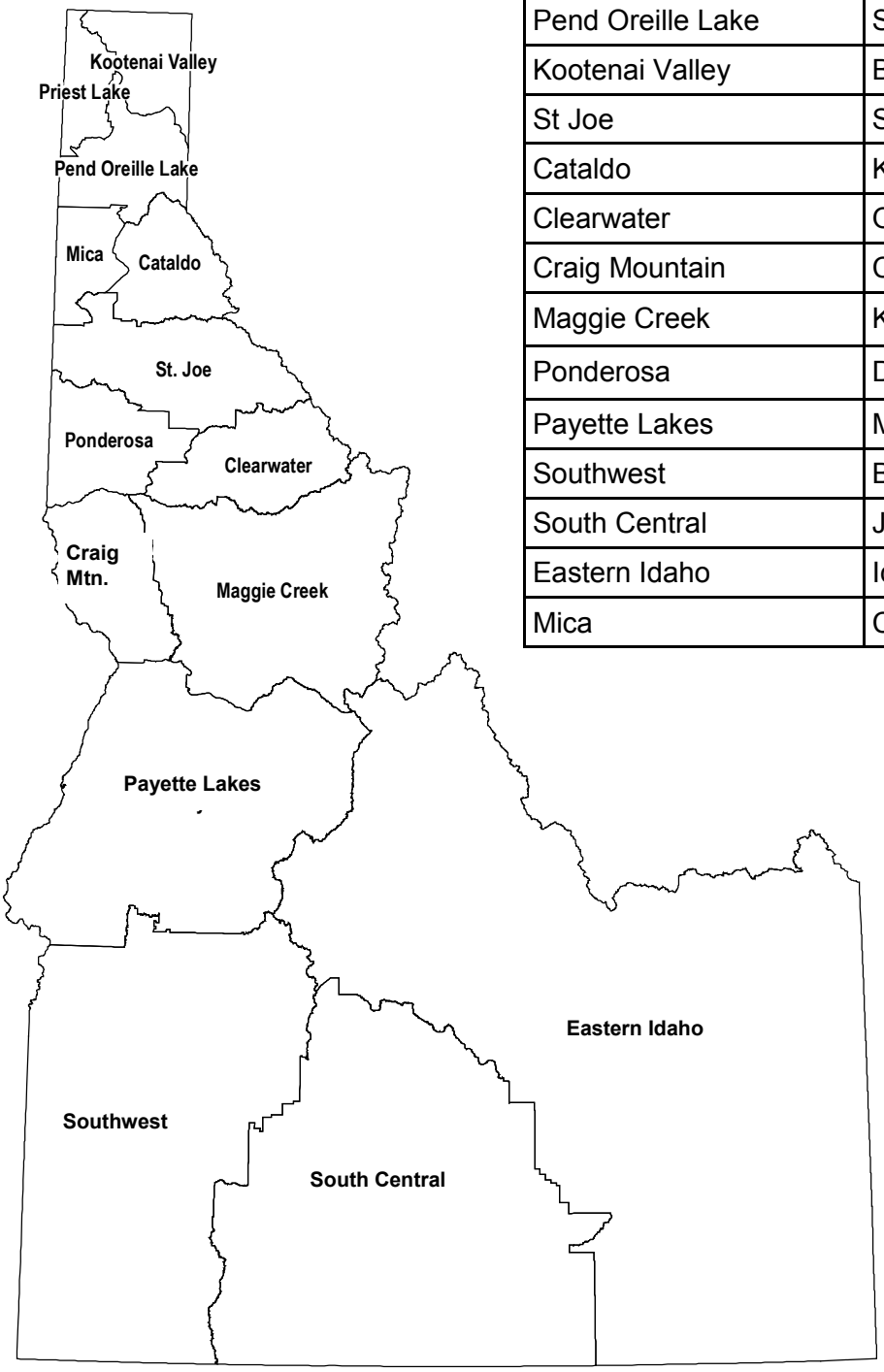
Chemicals and Petroleum Products: With the exception of chemicals approved for aquatic use, pesticides and herbicides shall not be applied within 25 feet of a stream by hand, or 100 feet by aircraft. Ground application of fertilizers will be restricted to leave at least 10 feet untreated on each side of all streams, ponds and lakes.

Petroleum products in mobile or stationary tanks, with over a 200-gallon capacity, shall be kept 100 feet or more from streams with impervious containment dikes.

Fueling operations should never occur where spillage could result in the introduction of these petroleum chemicals into a stream, lake or other area of open water.

Consult the Forest Practices Rules for detailed information and requirements on forest practices in the STREAM PROTECTION ZONE.



FOR MORE INFORMATION CONTACT ANY IDAHO DEPARTMENT OF LANDS PRIVATE FORESTRY SPECIALIST

Area Office	Location	Phone
Priest Lake	Coolin	(208) 443-2516
Pend Oreille Lake	Sandpoint	(208) 263-5104
Kootenai Valley	Bonners Ferry	(208) 267-5577
St Joe	St Maries	(208) 245-4551
Cataldo	Kingston	(208) 682-4611
Clearwater	Orofino	(208) 476-4587
Craig Mountain	Craigmont	(208) 924-5571
Maggie Creek	Kamiah	(208) 935-2141
Ponderosa	Deary	(208) 877-1121
Payette Lakes	McCall	(208) 634-7125
Southwest	Boise	(208) 334-3488
South Central	Jerome	(208) 324-2561
Eastern Idaho	Idaho Falls	(208) 525-7167
Mica	Coeur d'Alene	(208) 769-1577