

2. Salmonid Use Descriptions

i. Bull Trout Juvenile Rearing and Spawning. EPA is proposing a bull trout juvenile rearing and spawning use for the waters identified in the maps previously referenced. This use is intended to protect moderate to high-density summertime bull trout juvenile rearing near their natal streams in their first years of life prior to making downstream migrations, and bull trout spawning through fry emergence typically occurring from the fall through the spring in the same waters. In general, EPA is proposing this use in the upper reaches of the applicable river basins, where this use typically occurs.

ii. Salmon and Steelhead Core Juvenile Rearing. EPA is proposing a salmon and steelhead core (moderate- to high-density) juvenile rearing use for the waters identified in the maps previously referenced. This use is intended to protect core salmon and steelhead juvenile rearing that occurs in the summer. This use is generally found in a river basin's mid-to-upper reaches, downstream from juvenile bull trout rearing areas. Protection of these waters for salmon and steelhead juvenile rearing also provides protection for adult spring chinook salmon that "hold" (wait in a river reach) throughout the summer prior to spawning, and for migrating and foraging adult and sub-adult bull trout, which also frequently use these waters.

iii. Salmon and Trout Juvenile Rearing and Migration. EPA is proposing a salmon and trout juvenile rearing and migration use for the waters identified in the maps previously referenced. This use is intended to protect salmon and steelhead (trout) moderate- to low-density juvenile rearing and migration, during the period of summer maximum temperatures. During the rest of the summer and other months of the year, salmon and steelhead juvenile rearing and migration is likely to be of higher density. This use designation reflects the fact that salmon and steelhead juveniles will use waters during the summer that have higher temperatures than their optimal thermal range. Salmon and trout juvenile rearing and migration is generally found in the middle and lower part of a basin, downstream of the salmon and steelhead core rearing use. In many river basins in Oregon, this use extends all the way to a river basin's terminus (*i.e.*, confluence with the Columbia River, Snake River or Pacific Ocean). EPA is also proposing salmon and trout juvenile rearing and migration use to protect for general juvenile rearing for resident rainbow trout.

iv. Salmon and Steelhead Migration. EPA is proposing a salmon and steelhead migration use for the lower Willamette River (50 miles upstream from the confluence with the Columbia River), the John Day River (from the confluence with the North Fork River downstream to the confluence with the Columbia River), and the portion of the Snake River in Oregon (from the Washington-Oregon border to Hells Canyon Dam).

Salmon and steelhead migration occurs all year, but primarily in the spring and early summer or in the late summer and fall. Although fewer fish migrate during the summer maximum time period, migration is the most prevalent life stage use that occurs during that period in these waters. Some isolated salmon and steelhead juvenile rearing may occur in these waters during the period of summer maximum temperatures, but when it does, such rearing is usually found only in the confluence of colder tributaries or other areas of colder waters.

The summer maximum temperature criterion is designed to protect migration both during that time period and, more importantly, during other times of the year when the majority of migration occurs. This is because the criterion assures that the water temperatures stay cool enough in the summer that the natural seasonal cooling that occurs during other times of year results in achievement of temperatures that are protective of migration.

v. Salmon and Steelhead Spawning Through Fry Emergence. EPA is proposing to designate a spawning through fry emergence use for the protection of salmon and steelhead trout spawning, egg incubation, and fry emergence in the times and places indicated on the maps previously mentioned. Generally, these life stages occur: (a) From late winter through early summer for steelhead trout (mid-upper reaches); (b) from the late summer-fall through spring for spring chinook (mid-upper reaches); and (c) from the fall through spring for coho (mid-reaches), chum, and fall chinook (the latter two in lower reaches).

vi. Other Salmonid Uses Considered. EPA considered designating separate salmonid uses for (a) bull trout spawning and (b) steelhead smoltification. For purposes of this proposed rule, however, EPA determined that these uses can be protected by the temperature criteria associated with other salmonid uses EPA is proposing today. See Temperature Guidance p. 31. For bull trout spawning, EPA believes that its

proposed "bull trout rearing and spawning" use category will be protective, and for steelhead smoltification, EPA believes that its proposed use category, "salmon and steelhead spawning through fry emergence" will be protective.

Bull trout generally spawn in the late summer and fall in the same waters where young and resident juvenile bull trout rear. EPA decided that a combined bull trout spawning and rearing use with a single numeric temperature criterion (12°C/54°F) that limits summer maximum temperatures would protect both the rearing that occurs year-round and the spawning, egg incubation, and fry emergence that generally occurs fall through spring. EPA proposes this approach for two reasons. First, data indicate that if the summer maximum temperature is 12°C/54°F, temperatures will naturally decrease to levels that are protective of bull trout spawning (9°C/48°F) when it occurs in the late summer and fall, and further decrease to protect egg incubation (2–6°C/36–43°F) when it occurs over the winter. Second, there may be some areas where bull trout spawn in the summer, but in those situations, the existing summer maximum temperatures are likely to be colder than 12°C/54°F and in those situations the existing cold water alternative criterion discussed in section III.C.vi.b. would apply and the applicable criterion would be the existing maximum temperatures.

Salmon and steelhead smoltification occurs in the spring as these fish migrate to the ocean and go through the adaptation process for saltwater. Steelhead are believed to be the most temperature-sensitive salmonids during smoltification, which is why a separate designated use and criterion of 14°C/57°F was recommended in the Temperature Guidance. EPA believes that its proposed water quality criteria for temperature and associated designated uses would effectively protect steelhead smoltification. In particular, the proposed salmon and steelhead spawning through fry emergence use designation includes a 13°C/55°F criterion that would apply from the fall through the spring until either May 15th or June 15th in nearly all the waters where steelhead smoltification occurs.

3. Specific Locations and Times for the Salmonid Uses

EPA, in coordination with the Oregon Department of Environmental Quality (ODEQ) and the Services, established an interagency team to designate where and when the salmonid uses described above apply for waters in the State of