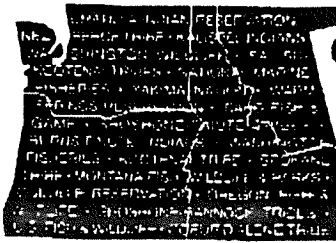


C.M. HALL, ONE

**COLUMBIA  
BASIN  
FISH & WILDLIFE  
AUTHORITY**

August 10, 1995

**TO:** John Coon, Stephen Phillips, Pacific Fishery Management Council, Habitat Committee

**FROM:** Clayton Hawkes, *Clayton* Columbia Basin Fish and Wildlife Authority

**SUBJECT:** Resolution Endorsing California Department of Fish and Game General Fish Screening Criteria

We are concerned that the Pacific Fishery Management Council's (PFMC) endorsement of California Department of Fish and Game's (CDFG) general fish screen criteria may be interpreted as applying to the entire area under the jurisdiction of the PFMC. While CDFG's criteria may or may not fully protect juvenile fish in California, criteria that the PFMC endorses should be acceptable to all affected states.

Measure 7.10A.2 of the Columbia River Basin Fish and Wildlife Program requires that fish screen criteria for the Columbia Basin be based on criteria developed by the National Marine Fisheries Service (NMFS) in concert with the other agencies and tribes in the Basin. NMFS's (Northwest Region) fish screen criteria were revised on February 16, 1995. These revised criteria were reviewed extensively by the Northwest agencies and tribes that are represented on the Fish Screen Oversight Committee, which is chaired by Columbia Basin Fish and Wildlife Authority (CBFWA). The Northwest states also use NMFS's criteria or have fish screen criteria that are very similar to NMFS's. Washington Department of Fish and Wildlife's (WDFW) criteria were revised on January 23, 1995. Hundreds of projects are built to these criteria throughout the Northwest annually.

There are several differences between the CDFG criteria and NMFS-Northwest Region. In general the criteria used in the Northwest are in greater detail (10 pages).

- CDFG requires an approach velocity of 0.33 feet per second (fps). NMFS-NW requires 0.4 fps for salmonid fry (< 60 mm in length) and 0.8 fps for salmonid fingerling (> 60 mm). CDFG criteria make no size distinction. In practice NMFS's fingerling criteria are rarely applied. Fry (< 60 mm) are present throughout most Northwest river systems. For example, fry criteria are used for pump-intake fish screens on the mainstem Columbia River;

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COORDINATING AND PROMOTING EFFECTIVE PROTECTION AND RESTORATION  
OF FISH, WILDLIFE AND THEIR HABITAT IN THE COLUMBIA RIVER BASIN

- The CDFG criteria does not include a maximum exposure time to the screen. NMFS-NW requires that an intermediate bypass be employed if the sweeping velocity will not move fish to the bypass within 60 seconds. NMFS requires sweeping velocity greater than approach velocity; CDFG requires sweeping velocity to be at least two times the allowable approach velocity;
- Mesh sizes: CDFG requires 5/32 inch for round and square openings and 3/32 inch for slotted openings. NMFS has criteria for fry and fingerling. For fry, perforated plate and woven wire screen (round and square, respectively) mesh shall not exceed 3/32, and for profile bar the openings shall not exceed 1.75 mm (0.0689 inch) in the narrowest direction.<sup>1</sup> For fingerlings, screen openings must not exceed 1/4 inch;
- CDFG requires 50% or greater porosity and NMFS requires greater than 27% and 40%, for fry and fingerling, respectively; and
- CDFG has provided no criteria for bypass design. NMFS-NW has several pages of design criteria for bypass design including: layout, entrance, conduit, and outfall. Where a bypass is needed, its design and operation are critical to effective performance of the overall screen facility.

If PFMC endorses CDFG's fish screen criteria, do they not become "Pacific coastal" criteria? The issue concerning whose criteria are more restrictive is debatable. However, it can be anticipated that diverters will try to choose whichever criteria results in the least expense, if more than one set of criteria is applicable.

Criteria from the Northwest should be endorsed concurrently with the CDFG criteria or the CDFG criteria should be amended to specify that they apply only to fingerling-sized salmonids.

#### Attachments

cc: FSOC

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<sup>1</sup>NMFS criteria were revised mainly because 1/8 inch mesh proved to be too large to protect steelhead fry.