MONTANA

DEPARTMENT OF

FISH, WILDLIFE AND PARKS

1420 East Sixth Ave.
Helena, Mt. 59620
November 21, 1983

Mr. Peter Paquet
Northwest Power Planning Council
700 SW Taylor St., Suite 200
Portland, Oregon 97205

Dear Peter:

These are some preliminary comments on alternative proposals for selecting high value reaches of streams and cumulative impact assessments. These comments are the collective thoughts of a working group of both fish and wildlife biologists on our staff.

We briefly reviewed the merits of three of the alternatives presented in the discussion paper including endangered species, council production roles, and all essential habitat. Each has limitations but serves a role in any comprehensive classification system. As for cumulative impact assessments, our position remains that it is not a separate system from the classification of streams but a tool that is triggered to reclassify stream reaches based on system-wide impacts within a basin or sub-basin.

Endangered Species

Existing federal law already sets up a mechanism to protect habitat of threatened and endangered species. The data needs would be minimal, as most of the critical habitat has already been identified. This narrow designation would add little or nothing to assist in protection. It would only come into play if the salmon, steelhead, or other fish and wildlife resources were being managed or mismanaged to extinction. This was not the intent of the agencies or tribes, nor does the record indicate that it was the intent of the Council. For these reasons, endangered species should be considered one of a subset of criteria used in a stream classification system.

Council Production Goals

Production goals could apply to salmon and steelhead due to the system-wide natures of impacts on the common resource. However, they have no bearing on the resident fish and wildlife program because the Council does not set production goals for particular basins or sub-basins. Rather, the council reviews statements of losses and mitigation goals due to a particular hydro project or group of hydro projects.

This concept would apply to stream reaches which contributed to mitigation from construction or operation of an existing hydro project. For example, enhancing a spawning stream, providing minimum flows in a river or other mitigation or enhancement efforts would automatically qualify those streams for protective status from future hydroelectric development. These areas contribute to production needed to meet the mitigation goals and would logically be protected from any future hydro development.

All Essential Habitat

In its broadest sense, this alternative could preclude development in all but the smallest headwater streams. Even there the threat to various wildlife species could preclude development. The concept, however, does apply to endangered species, species of special concern, and those reaches of stream that are of the highest quality, the "best of what is left" concept. Whatever habitat is needed to sustain these species, complex of species, or high-quality areas would need to be protected.

This concept also applies to cumulative impact assessments. To trigger a cumulative impact assessment requires identifying essential habitat to put in perspective threshold values needed to identify stream reaches which should be protected to sustain target species. This kind of knowledge is often missing in reviewing a piecemeal, site-by-site development. Therefore, a more cautious approach is needed in permitting future hydro development to allow time to collect the needed baseline information.

We also reviewed the pros and cons of the Montana Stream Classification System which are contained in Attachment A. An obvious inadequacy in our system is its lack of information to classify streams based on their wildlife values. We have found no other stream classification that attempted to include wildlife. Therefore, we proposed criteria in a rating system that could be applied to our existing stream classification system (contained in Attachment B).

I hope these comments are of some use to you and the Hydro Assessment Committee.

Sincerely,

Patrick J. Graham
Bureau Chief
Research and Special Projects

PJG/sk
Attachments
cc: Ron Marcoux

Attachment A

PROS AND CONS OF MONTANA STREAM CLASSIFICATION SYSTEM

The Montana stream rating system requires that the following data attributes be recorded for each stream reach:

-Ingress rating (ingress is the right of the public to fish a reach or willingness of landowner to permit fishing).

-Species of fish present and abundance including presence of large-sized game fish. Biomass of trout species is highly desirable.

-If "Fishes of Special Concern" are present the habitat for each of these species must be classified as: highest valued, high priority, substantial value, or limited value.

-Fishing pressure (determined largely from mail survey).

-Esthetics rating.

The following attributes are recorded when applicable:

-Local community importance (if the stream is one of few streams or only one in the immediate area and is important to a community for scientific study, nature study, and/or recreation).

-Stream is a spring stream or spring creek.

-The sport fishery is based on periodic fish planting.

-Stream is important for trout recruitment.

Advantages of the Montana method are:

-The approach considered factors an experienced fisheries manager would employ in evaluating a stream. As the list above shows, a number of important attributes were considered, yet the information needed is largely available from existing files without additional field work.

-Values can be assigned to the attributes so as to achieve a rational distribution of stream reaches among the classes. In other words the value of the system would be lost if too many stream reaches were in Class 1. On the 1980 Montana stream evaluation map only 10 percent of the miles of streams rated were in fisheries resource class 1.

-The final classification received by an individual stream reach was the higher assigned to the two criteria used in rating the reach, i.e., habitat and species value and sport fishery potential. This proved to be a good decision. Otherwise a mediocre score in one criteria plus a mediocre score in the other would add up to a good classification whereas the reach is, in fact, mediocre.

Attachment A-Continued

-The use of a computer in stream rating allowed a much more detailed approach than the previously used "hand" method.

Obvious disadvantages of the Montana method are:

-The attributes used are tailored to fisheries in Montana but can be adapted to include wildlife.

-Some of the attributes are subjective rather than objective.

-The fact that a stream is important for trout recruitment in itself could result in a rating no higher than Class 3 (Class 1 being highest). There was no provision for increasing the value of remaining spawning streams as others in the system are lost.

Indian Reservations were each treated as a separate entity. In rating streams they did not apply the same criteria.

In conclusion, the Montana stream rating system is certainly not "the last word," but it is a good place to start in developing a procedure for rating hydropower sites. In fact, the Fish and Wildlife Service considered it the "most outstanding" of the evaluation systems developed in the late 1970's under cooperative agreements between the Service and 11 western states (April 17, 1981 letter from Director, Region 6 F & W Ser, to Director, Montana FWP).

Attachment B

PROPOSED
APPLICATION OF WILDLIFE VALUES TO MONTANA'S
STREAM CLASSIFICATION SYSTEM

I. Value Class System

The value class system used for fisheries values must also be used for wildlife to make the combined system compatible. This presents no problem and can easily be adopted. It would be as follows:

CLASS	DESCRIPTION
1	Highest value wildlife resource
2	High priority wildlife resource
3	Substantial wildlife resource
4	Moderate wildlife resource
5	Limited wildlife resource
6	Not yet classified

II. Criteria

The following criteria will be used to determine value classes:

Criterion 1 - Habitat Component

Vertical structure of vegetation
Horizontal diversity of vegetation types
Type and quality of adjacent habitat
Land use of riparian habitat
Age structure of dominant vegetation
Regional abundance of and vegetative adjacent connection with riparian habitat
Width of riparian zone
Number and types of islands present
Presence of special features or habitat components

Criterion 2 - Species Component

Species of special concern (presence and abundance)
Endangered species (presence and abundance)
Large mammals (diversity and abundance)
Upland gamebirds (diversity and abundance)
Waterfowl (diversity and abundance)
Furbearers (diversity and abundance)
Raptors (diversity and abundance)
Small mammals and other birds (diversity and abundance)
Grizzly bear within designated ecosystems (abundance and spring/denning use)

Criterion 3 - Recreation Component

Hunting potential (highest rating only possible if access allowed)
Floating potential/wildlife viewing
Local community importance
Aesthetics (including pristine and non-pristine values)

III. Assignment of Class

The following steps need to be completed before streams and associated riparian habitat can be assigned to the designated classes:

1) Define criteria components.
2) Establish quantative means where possible for assigning point values to criteria components.
3) Establish qualitative criteria where quantative not possible (i.e. aesthetics).
4) Determine the scale of points to be allocated to all three criteria.
5) Determine cutoff point values for assigning classes.

Discussion

It is generally felt that Criterion 1 (habitat) should have proportionately higher point values assigned to each component than the other two Criteria. It should also be noted that there will be an inherent bonus allowed for certain components such as good lands use, special features, endangered and other special species, and grizzly bear. This is intentional and will assure protection of key habitats and species.

Resource Values

For wildlife there has been only one key component identified that will automatically trigger Class 1 assignment. This is grizzly bear spring or denning use within designated Ecosystems.

IV. Application

For each stream rated, point scores will be calculated for each of the three categories and added before assignment. Highest point totals would be included in Class 1 according to point cutoff levels previously determined. This will result in identifying Class 1 streams (and other classes) for wildlife values. These streams will then be compared to those identified under the fisheries value system. If the rankings are different, the highest ranking will be selected for a combined classification and ranking. For example a stream rated Class 1 for wildlife and Class 2 for fisheries would receive a Class 1 ranking for combined wildlife/fisheries values.