

Table 9. Assessment Methods for the Warmwater Riverine Community

Assessment Variable	Assessment Criteria	Species/Life Stage	Assessment Method	Meets Constraint		
				1	2	3
Instream flow	Habitat area	White sturgeon/adult, juvenile	Relationship between flow and spawning habitat area (Parsley and Beckman 1994)	No	No	Maybe
	Abundance index	*White sturgeon	Relationship between white sturgeon juvenile abundance and outflow rates (Kohlhorst et al. 1991)	Yes	Maybe	Maybe
	Habitat area	Striped bass/spawning	Relationship between flow and habitat area based on specific lifestage criteria	No	No	Maybe
	Spawning distribution	American shad/adult	Relationship between flow and virgin shad abundance (California Department of Fish and Game 1981)	Yes	No	Maybe
	Abundance index	American shad/juvenile	Relationship between flow and juvenile abundance (Stevens and Miller 1983)	Yes	No	Maybe
	Abundance index	*Sacramento splittail/juvenile	Relationship between flow and juvenile abundance index (California Department of Fish and Game 1992b)	Yes	Maybe	Yes
	Habitat area	*Sacramento splittail/all	Relationship between flooding (in bypasses, backwaters, and main river margins) and habitat area (California Department of Water Resources 1994)	Yes	Yes	Maybe
	Transport rate	*Striped bass, *American shad, white sturgeon	Rate of movement of particles (hydrodynamic model)	Yes	Maybe	Yes

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Table 9. Continued

Assessment Variable	Assessment Criteria	Species/Life Stage	Assessment Method	Meets Constraint		
				1	2	3
Instream flow	Transport rate	Chinook salmon	Rate of movement of particles (e.g., juveniles) to downstream habitats (hydrodynamic model)	Maybe	Maybe	No
Temperature	Survival	*Chinook salmon, steelhead trout/adult, juvenile	Relationship between temperature and survival rates (Raleigh et al. 1986)	Yes	Maybe	Yes
	Habitat area	*Chinook salmon, steelhead trout/spawning, incubation, rearing	River length or area meeting specified water temperature criteria	Yes	Yes	Yes
	Survival	American shad/all	Relationship between temperature and survival rates (Stier and Crance 1985)	Yes	Yes	No
	Survival	*Striped bass/spawning, eggs, larvae	Relationships between temperature and spawning and temperature and survival (California Department of Fish and Game 1987, Crance 1984)	Yes	Maybe	Maybe
Diversion impacts	Proportion of flow diverted	All	Ratio of diversion volume to inflow volume	Yes	Yes	No
	Proportion of screened diversions	*All screenable species/all life stages	Ratio of number of screened diversions over total number of diversions	Yes	Yes	Yes
Habitat	Habitat area	*All, including productivity	Area of habitat restoration meeting specific criteria (e.g., based on species needs) relative to area of existing habitat that meets the same criteria	Maybe	Yes	Maybe

Table 9. Continued

Assessment Variable	Assessment Criteria	Species/Life Stage	Assessment Method	Meets Constraint		
				1	2	3
Habitat	Habitat area	*Terrestrial invertebrates	Area of habitat restoration meeting specific criteria (e.g., based on species needs) relative to area of existing habitat that meets the same criteria	Maybe	Maybe	Yes
	Habitat area	Splittail/spawning Striped bass/juvenile	See "Instream Flow"			
Water quality	Toxic load	*All	Change in toxic load, pesticide use data, industrial and municipal discharge data	Maybe	Maybe	Maybe
	Transport rate	*All	Rate of movement of toxins out of the rivers (hydrodynamic model)	Maybe	Maybe	Maybe
Fishing	None proposed					
Artificial production	None proposed					
Species interaction	None proposed					

Notes:

An asterisk (*) indicates that the assessment method, as applied to the species and life stage identified, may be included among the tools used for the impact assessment in the Programmatic EIR/EIS.

Under "Meets Constraint", constraints 1, 2, and 3 are discussed in the text and briefly defined as:

1 - The assessment criteria must be measurable.

2 - The measurement error of the assessment criteria must be lower than the range of differences among alternatives.

3 - The assessment criteria must make it possible to identify important differences and similarities between alternatives.