Comments provided by California Department of Fish and Wildlife Select Portions of Technical Rule Addendum #2

August 19, 2014

DFW Comments on inclusion of Turbidity within "Sediment Effects":

a. Sediment Discharge and Turbidity Effects. Sediment-induced CWEs occur when earth materials transported by surface erosion or mass wasting ~~erosion~~ discharge into ~~enter~~ a stream or other waterbody~~stream system at separate locations and are then combined at a downstream location~~ to produce a change in water quality or channel condition. The discharged ~~eroded~~ materials can originate from the same or different projects and at the same or different times. Potentially adverse changes are most likely ~~to occur~~ in the following locations and situations:

- ~~Downstream areas of reduced l~~Low-gradient stream reaches ~~gradient~~ where sediment from a new source may be deposited in addition to sediment derived from existing or other new sources.

- ~~Immediately downstream from w~~ Where sediment from a new source is combined with sediment from other new or existing sources and the combined amount of sediment exceeds the transport capacity of the stream.

- Any location where sediment from new sources in combination with ~~suspended~~ sediment from existing or other new sources significantly reduces the survival and ability to meet life--requisite needs of fish or other aquatic organisms or reduces the quality of waters used for domestic, agricultural, or other beneficial uses.

Comment [CDFW1]: Low-gradient reaches can be within the project area, not necessarily downstream.

Comment [CDFW2]: "Existing" should be defined; e.g., does it include "potential"?

Comment [CDFW3]: What about "future" sources from "reasonably foreseeable future projects"?

- Channels with relatively steep gradients which contain accumulated sediment and debris that can be mobilized by sudden new sediment inputs, such as debris flows, resulting in debris torrents and severe channel scouring.

Potentially significant adverse ~~impacts of~~ cumulative effects of sediment ~~and turbidity~~ ~~inputs~~ discharge may include:

- Increased turbidity and treatment needs or reduced suitability for domestic, municipal, industrial, or agricultural water use.

- Direct mortality of fish and other aquatic species.

- Reduced growth and survival of juvenile salmonids, and impaired spawning and rearing habitat for salmonids.

- Reduced viability of aquatic organisms or disruption of aquatic habitats and loss of stream productivity caused by filling of pools, loss of cover and plugging or burying streambed gravel.

- Accelerated channel filling (aggradation) resulting in loss of streamside vegetation and stream migration that can ~~cause~~ accelerate~~d~~ bank erosion and warm water.

-Accelerated channel filling (aggradation) resulting in increased frequency and magnitude of overbank flooding.

- Accelerated filling of downstream reservoirs, navigable channels, water diversion and transport facilities, estuaries, and harbors.

- Channel scouring by debris flows and torrents.

- Nuisance to or reduction in water--related recreational activities.

Situations where sediment production potential is greatest include:

- Sites with high or extreme erosion hazard ratings.

- ~~Sites~~ Where ground-based yarding occurs~~which are tractor logged~~ on steep slopes.

- Where timber operations occur during the winter period.

- Where road and landing facilities have not been hydrological~~l~~ly disconnected from watercourses

- Where drainage structures and facilities do not comply with current standards.

- Where timber operations occur on ~~U~~unstable areas.

DFW Comments on updating language as it pertains to Peak Flows:

e. Effects on Instream Flow Regimes~~, Including Peak Flows and Low Summer Flows~~ **~~Peak Flow Effects~~**.- CWEs ~~can be~~ caused by management-induced increases in peak flow ~~increases in streams~~ during storm events are ~~difficult to anticipate~~specific to scale and to silviculture and other management practices. Peak flow ~~increases~~ may increase~~result~~ from management activities that reduce rainfall interception loss and vegetative water use (i.e., transpiration), reduce water percolation and retention in soil through soil compaction and thereby increase surface run-off, ~~or~~ produce openings where snow can accumulate (such as ~~clear-cutting~~ in clearcuts and -on roads and landings,~~site preparation~~ intense wildfire areas), or ~~that change~~alter the timing of flows by affecting ~~producing more efficient~~ the routing of runoff ~~routing~~ (such as insloped and hydrologically-connected roads). ~~While t~~These ~~i~~Increased peak flows ~~s, however, are likely to be small relative to natural peak flows from medium and large storms, they~~ can ~~produce~~ intensify~~increased~~ streambank erosion, channel incision,~~,~~ and head cutting ~~ward channel migration in erodible landscapes~~. Impacts on channel morphology are likely to

Comment [CDFW4]: This is not a project effect.

be greatest where streambeds are composed of gravel and finer material. Increases in peak flows generally diminish with decreasing intensity (even--aged verse uneven--aged) or ~~of~~ percentage of the watershed harvested, as well as ~~and~~ the length~~ening~~ of the flow recurrence interval~~s of flow~~. Peak flow effects are ~~more~~ pronounced and detectable ~~easier to detect~~ in small watersheds, areas characterized by ~~where~~ rain-on-snow events ~~occur~~, and for relatively small runoff events (e.g., two-year return interval flow). ~~Research to date on the effects of management activities on channel conditions indicates that channel changes during storm events are primarily the result of large sediment inputs.~~Hydrologic conditions recover~~y~~ from increased peak flows ~~generally occurs~~ within approximately 10 to 20 years~~,~~ depending on timber type, regeneration success, site quality, pre-commercial thinning operations, and other factors~~etc~~ .

CWEs can be caused by management-induced reductions in low-summer flows.

Comment [CDFW5]: Need a treatment of this topic.

DFW Comments on replacing "Late Seral" with "Late Successional":

f. Late s~~Seral (Mature)~~uccessional f~~F~~orest ~~Characteristics~~stands:

Determination of the presence or absence of mature and ~~over-mature~~ old-growth forest stands~~ and their structural characteristics~~ provides a basis from which to ~~begin an~~ assess~~ment of~~ the influence of management on associated wildlife. These stands are characterized~~stics~~ by ~~include~~ large trees contributing to ~~as part of a~~ multilayered canopy and the presence of large numbers of snags and downed logs that contribute to an increased level of stand decadence and complexity. Late s~~eral stage~~uccessional forest ~~amount forest~~ stands may be evaluated by estimating the percentage of the land base within the project and a ~~the~~ biological assessment area occupied by stands ~~areas~~ conforming to the ~~following~~ definition~~s~~ provided in 14 CCR 895.1. Late successional

forest stands of lesser extents than those as defined may be evaluated in a similar manner. ~~:~~

~~Forests not previously harvested should be at least 80 acres in size to maintain the effects of edge. This acreage is variable based on the degree of similarity in surrounding areas. The area should include a multi-layered canopy, two or more tree species with several large coniferous trees per acre (smaller subdominant trees may be either conifers or hardwoods), large conifer snags, and an abundance of large woody debris.~~

~~-~~Previously harvested forests are in many possible stages of succession some of which may be late-successional forests; others stands ~~and~~ may include remnant patches of late ~~seral stage~~successional forest~~, which generally conform to the definition of unharvested forests~~ but do not meet these ~~acreage~~ criteria. Even if ~~they are~~ small in extent, they may be considered late successional based on stand age and structural attributes. A key consideration is the landscape distribution of late-successional forest stands and sizes of intact blocks of these stands in providing functional habitat for interior forest species and of sufficient size to ameliorate "depth-of-edge" effects.

g. Late ~~Seral~~ successional ~~Habitat~~ habitat ~~Continuity~~continuity:

Projects containing areas meeting the definition~~s~~ for late ~~seral~~ successional ~~stage characteristics~~forest stands must be evaluated for late ~~seral~~ successional habitat continuity and functionality. The fragmentation and resultant isolation of late ~~seral~~ successional habitat types is one of the most significant factors influencing the sustainability of wildlife populations, especially those not adapted to edge environments.

F~~This f~~ragmentation may be evaluated by estimating the ~~amount of the on-site~~ number of acres within both the project area, ~~and~~ as well as the biological assessment area occupied by late ~~seral~~ successional forests stands greater than ~~80~~ 20 ~~–~~10 acres in size (or smaller considering the mitigating influence of adjacent and similar habitat, if applicable)

Comment [CDFW6]: meaning what?

Comment [CDFW7]: what "these criteria"?

and less than one mile apart or connected by a corridor of similar habitat.

DFW Comments on including Guidance on assessment of GHG:

G. Greeenhouse Gas ~~REENHOUSE GASES~~ (GHG) Impacts~~MPACTS:~~

Cumulative GHG e~~E~~ffects occur atmospherically where individual potential impacts are combined to produce an effect that is greater than any of the individual impacts acting alone. ~~Factors to~~ Tasks that may be ~~-~~consider among others in the evaluation of cumulative GHG effects are listed below.

1. Identify greenhouse gas emissions either directly or indirectly that may have a significant effect on the environment.

2. Identify GHG emissions that conflict with an applicable plan, policy or regulation adopted of the purpose of reducing GHG emissions.

3. Quantify the potential impacts, or lack thereof, through synthesis of the following metrics:

A. Identification of planning horizon for GHG impacts assessment

B. Inventory, growth and harvest over planning horizon

C. Harvesting e~~E~~missions over planning horizon

D. Long-termed storage from milling and wood product manufacturing over planning horizon

~~**A.**~~**E.** Project sequestration over planning horizon

Comment [CDFW8]: Redundant; already covered under the general definition.

Comment [CDFW9]: How is one to evaluate or determine this? Criteria?

DFW Comments on inclusion of Wildfire Hazard and Risk:

H. Wildfire Hazard and Risk

Modifications to fuel loading through timber ~~harvest activities~~ operations and stand-tending operations and cultural practices may affect wildfire hazard and risk. In turn, these ~~this~~ can have the potential~~ly affect~~ to create, increase or decrease cumulative effects to watershed, soil, and biological resource values~~ effects~~ . The extent of ~~A~~alteration to ~~of~~ overstory and understory structure and composition, as well as to fuel bed depths ~~, are affected to varying degrees~~ varies depends~~ing~~ on the applied silviculture and ~~, selected~~ yarding methods, and the types of site preparation employed. ~~, or alternative treatments identified within a Plan~~. Fire is an important habitat-~~-~~forming process for fish and wildlife; protection of fire-induced elements and provision of fire-mediated habitat processes should be considered. Metrics that may be utilized to address fire hazard or risk may include:

◊ Crown bulk density

◊ Crown base height/Height to live crown

◊ Flame lengths

◊ Use of adjacent landscapes

◊ Fire weather

◊ Current fuel loading

◊ Overstory vegetative communities

◊Understory vegetative communities

◊ Rate of spread

◊ Use of project area

◊ Ignition and fire history

◊ Physical setting (e.g., highways near the project area)