Class II-L Identification Methods Amendment, 2012

California Department of Forestry and Fire Protection

November 7, 2012

General Comments

- CAL FIRE supports the **joint California Department of Fish and Game (DFG) and CAL FIRE plead** language provided to the Board at their June 2012 Forest Practice Committee meeting (Attachment No. 1).

- **If this joint plead language is not acceptable** to the Board, then CAL FIRE supports the currently noticed 45-day rule package, if the Board also adopts the changes provided in our letter (Attachment No. 2).

DFG and CAL FIRE June Plead Changes—Attachment No. 1

- <u>Under “field-based approaches”, add:</u>

4**.** Methods that indicate **<u>subsurface flow</u>** such as:

(1) observation of surface flow in upstream channels above sediment deltas or alluvial fans that have built up on floodplains or in the Class I or II watercourse channel near the confluence; and

(2) audible evidence of subsurface flow located below organic and inorganic debris burying a watercourse channel.

DFG and CAL FIRE June Plead Changes—Attachment No. 1

- **(E)** All Class II-L watercourses designated above shall incorporate requirements stated in 14 CCR § 916.9 [936.9, 956.9], (g)(2) for a maximum distance of 1000 feet, or total length of Class II, which ever is less, measured from the confluence with a Class I watercourse.

Attachment 2: CAL FIRE Comments

1) Clarification of the definition of a Class II-L watercourse.
2) Clarification for the language addressing drainage area for an office-based approach.
3) Clarification on how surface flow is to be used as a field-based indicator.
4) Modification of language addressing channel substrate as a field indicator.
5) Removal of language **requiring** a channel width and depth sufficient to allow large wood transport to a Class I watercourse.

1. Clarification to Class II-L Definition

- Add:
  - Class II-L watercourses may have either continuous surface flow, or surface flow that is not entirely spatially continuous, but surface flow must be the **dominant flow source (>75% of the channel length)** within the lower 1000 feet prior to entry into the Class I watercourse

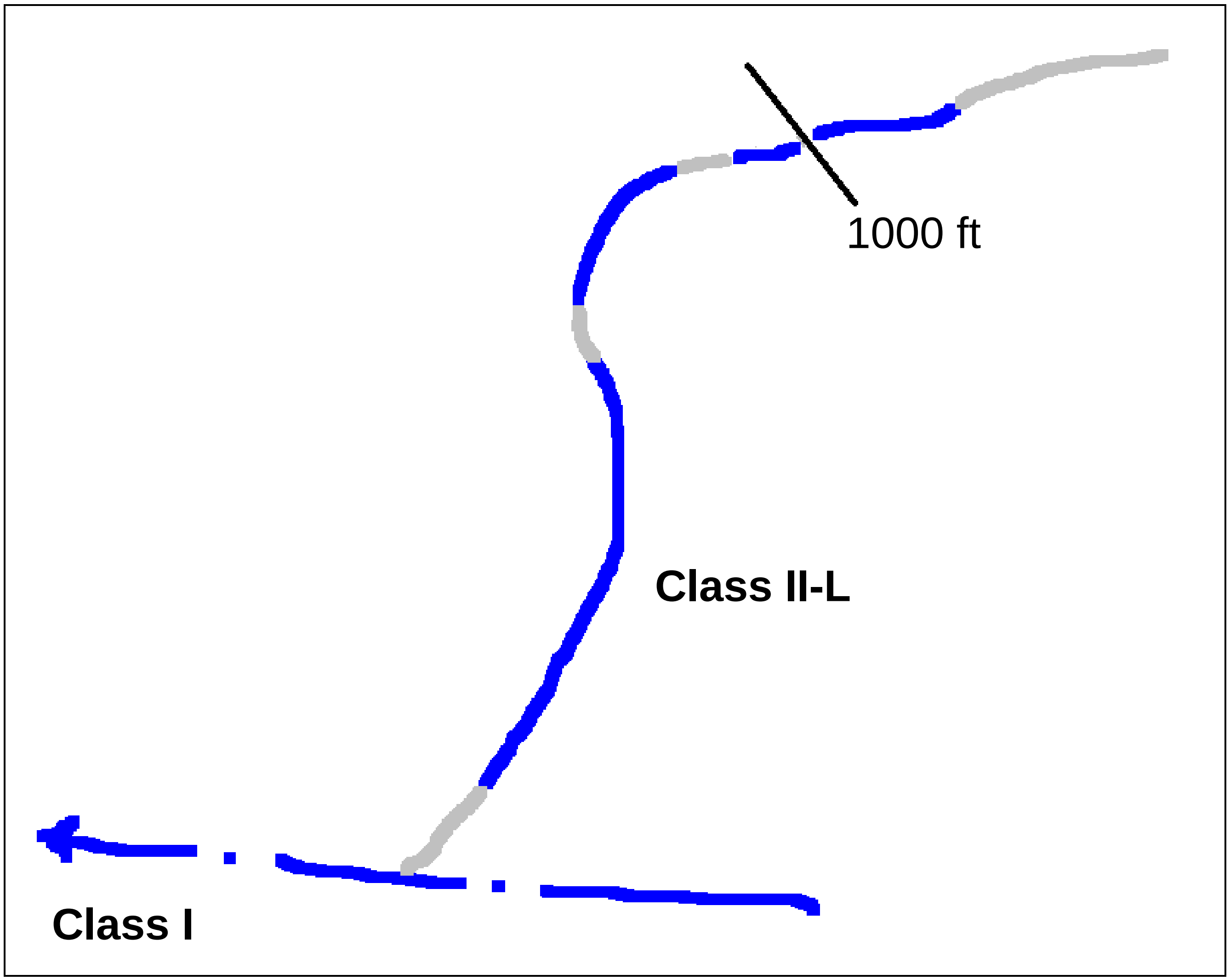
Why??

- "**Significant influx of water**" can be defined as requiring the lower 1000 ft of the channel to have **most** of its length occupied by flowing surface water (we suggest 75%).

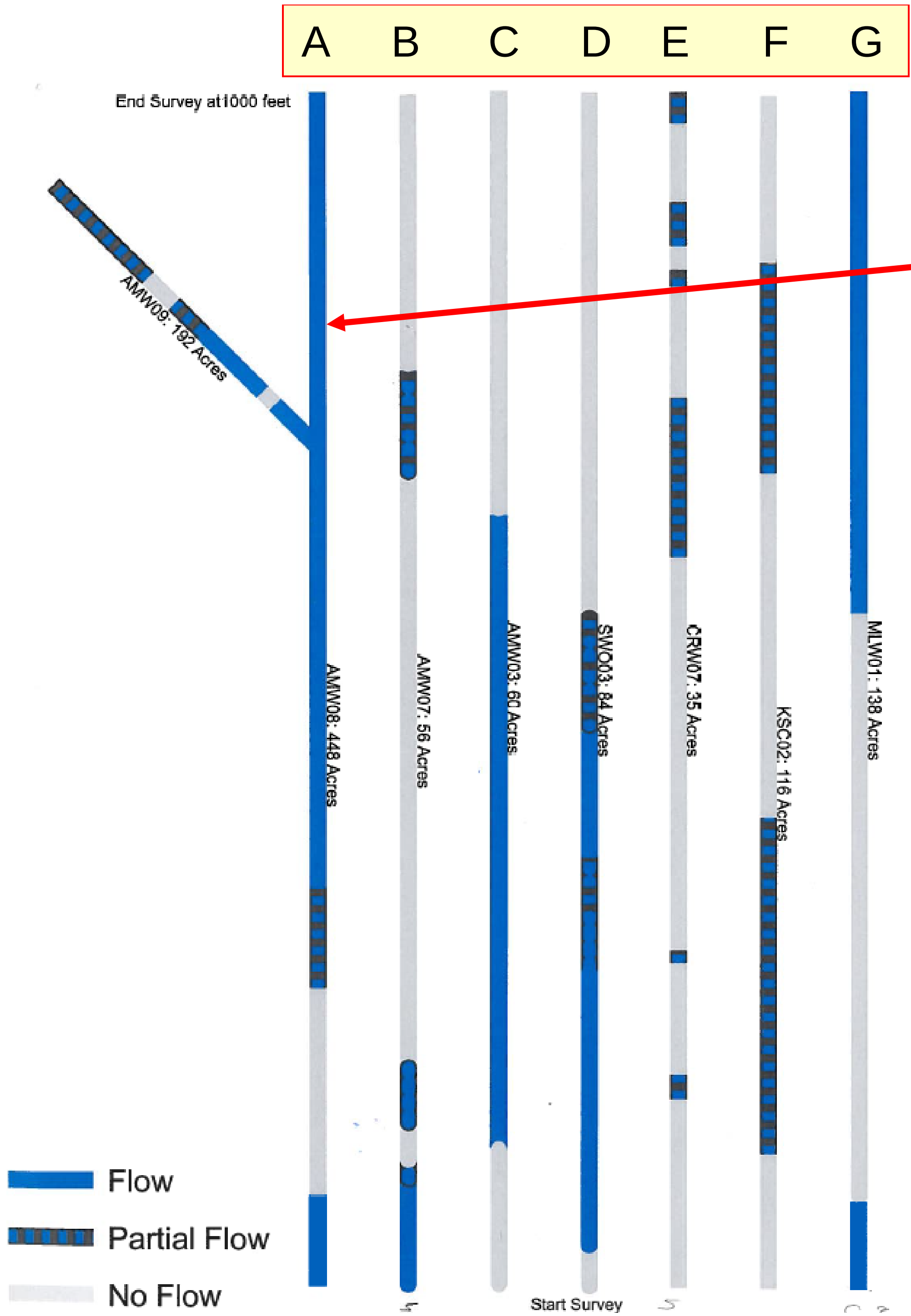
- Addresses the issue of **thermal heating** from solar radiation being a major source of concern for Class II-L typing—since this occurs for **surface water**, not for subsurface flow.

- Allows for "**spatially intermittent**" channels, including situations for:
  - Subsurface flow above sediment deltas above the confluence with a Class I, and
  - Flowing subsurface water due to legacy organic debris and sediment.

Diagram Illustrating ~75% Surface Flow for the First 1000 ft



CTM Examples provided to the FPC



A: 83%

B: 24%

C: 53%

D: 54%

E: 23%

F: 45%

G: 51%

Assumes any blue (flow and partial flow) = surface flow for this example

1. Clarification to Class II-L Definition

- Add:
  - Class II-L watercourses provide watershed products that support state and federally listed anadromous salmonids in downstream Class I watercourses and they may provide habitat necessary to support the long-term viability of **other coldwater dependent species**.

Why??

Larval stage of tailed frog
(*Ascaphus truei*)

- Coastal Tailed Frog (*Ascaphus truei*) and Southern Torrent Salamander (*Rhyacotriton variegatus*).
- Listed in the state of California as <u>species of special concern</u>.

Class II-L watercourses are important for <u>both</u> fish and for providing acceptable habitat for <u>other coldwater dependent species</u>.

2. Clarification for the Language Addressing Drainage Area for an Office-Based Approach

- **Drainage area:** A calculated drainage area for an ownership or a comparable local area known to produce mid-late summer flow based on continuous streamflow monitoring data, past plan experience, or local knowledge, extrapolated over a similar geomorphic region can indicate potential Class II-L watercourses.

3. Clarification on how Surface Flow is to be used as a Field-Based Indicator

- Add: **"Indication of"** significant surface flow contribution to a Class I watercourse…"

This is needed to allow RPFs to make Class II typing determinations at other times of the year than just at or immediately around July 15th of a given year with at least average precipitation.

"Indication of" significant flow allows field indicators to be used by RPFs and agency staff to type Class II-L watercourses.

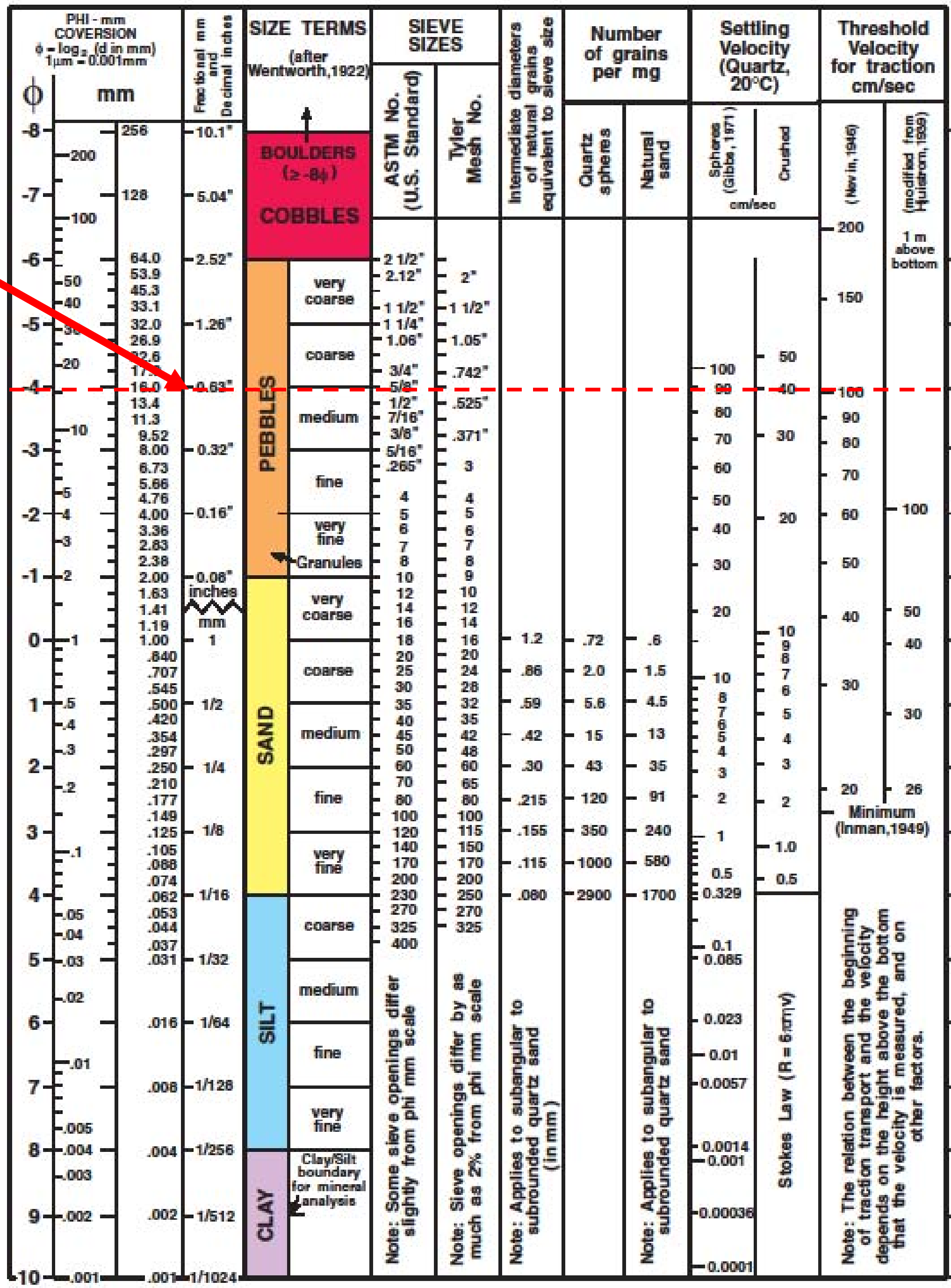
4. Modification of language addressing channel substrate as a field indicator.

- Evidence of a flow regime capable of transporting coarse sediment (coarse gravel and small cobbles 0.6 one inches to five (5) inches in diameter or greater) to a Class I watercourse during peak flows. Channel substrate that includes coarse sediment may also be a characteristic of a Class II-L watercourse.

4. Modification of language addressing channel substrate as a field indicator.

- Class II-L watercourses do not necessarily have coarse gravel substrate in all situations and at all times.
- Stream power during winter storms should be sufficient to move coarse gravel down to a Class I watercourse.
- Coarse gravel should be defined according to the standard **Wentworth classification system** (0.63 in to 1.26 in).

Coarse Gravel



Standard Wentworth Classification System

5. Removal of language **requiring** a channel width and depth sufficient to allow large wood transport to a Class I watercourse.

Language should not be mandatory

- ~~3. Sufficient channel width and depth at bankfull stage to allow transport of large wood, as defined as >12 inches in diameter and six (6) feet in length, to receiving Class I waters, during peak flows.~~

Class II-L watercourses "***may***" be able to supply wood of a size that would function as large wood for the Class I watercourse."

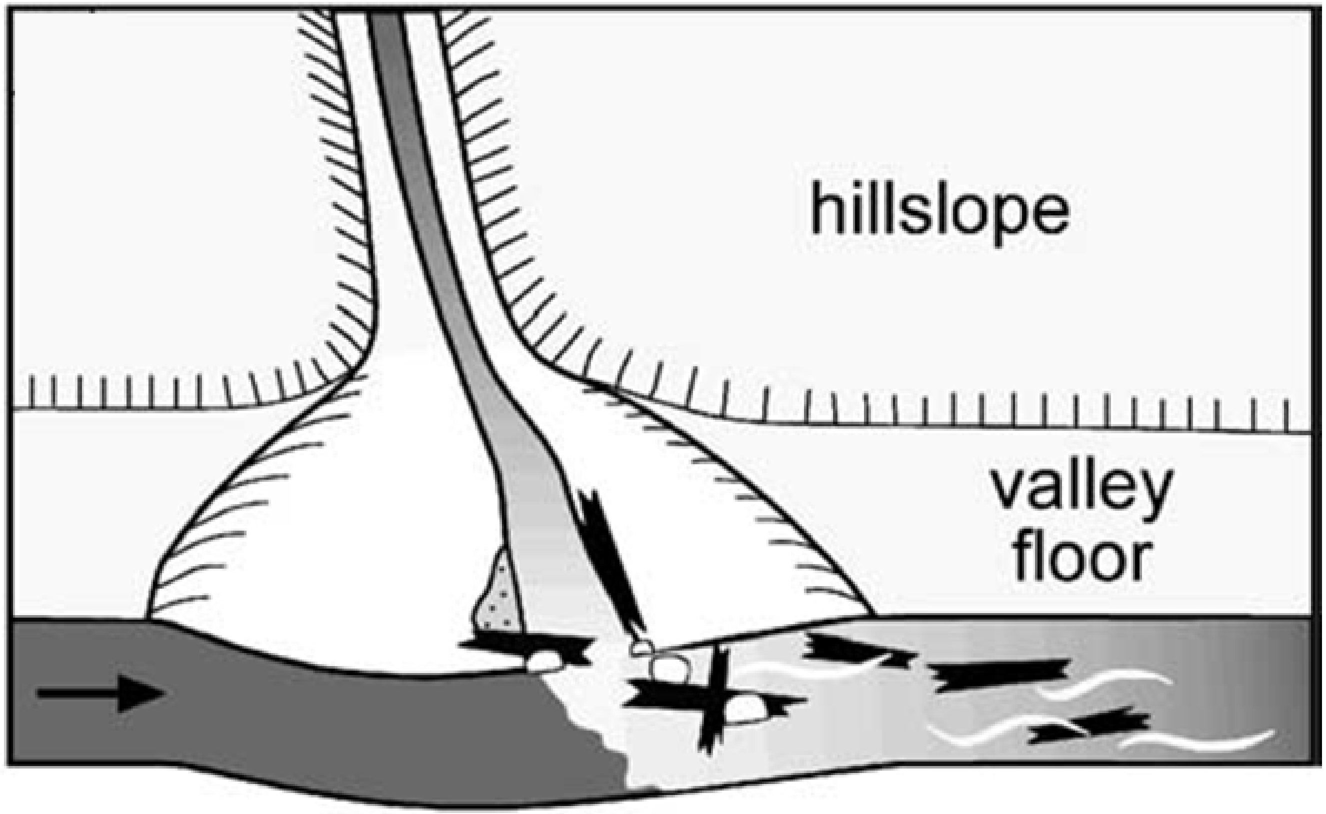
Class II-L watercourses may have high summer discharge to a Class I, but insufficient channel width and depth to transport wood to a Class I.

Why??

- **Class II-L channels are generally very poor at moving large wood down to a Class I, except for channels subject to debris flows and mass wasting.**
  - **Mobile wood is generally ≤ to the channel width.**
  - **Because large wood by definition ranges from 2-3 m long, there is essentially no fluvial export of large wood from most small streams.**
  - **However, episodic debris flows can transport large wood, including pieces longer than the channel width to downstream, low-gradient channels.**
    - Could state that "Class II-L watercourses **may also** be able to transport large wood to a Class I, which would generally occur where watercourses are subject to debris flows/torrents."

Debris Flow Deposit of Large Wood

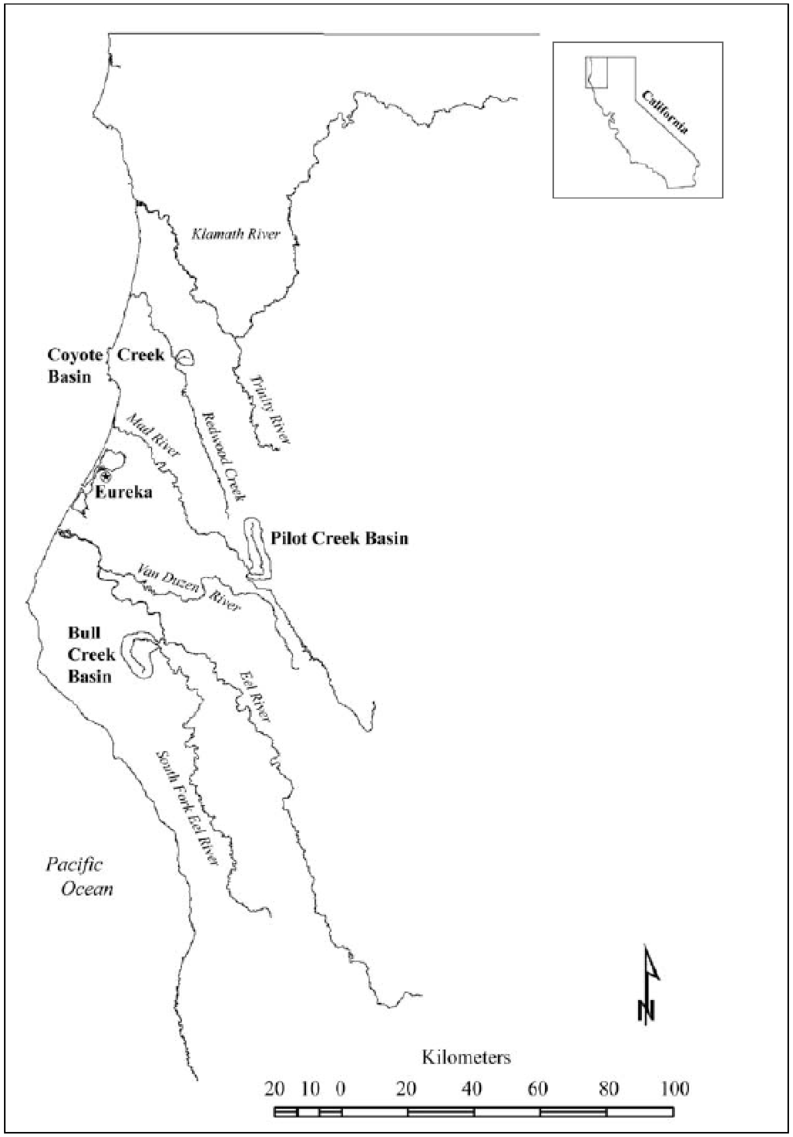
May and Gresswell (2004)

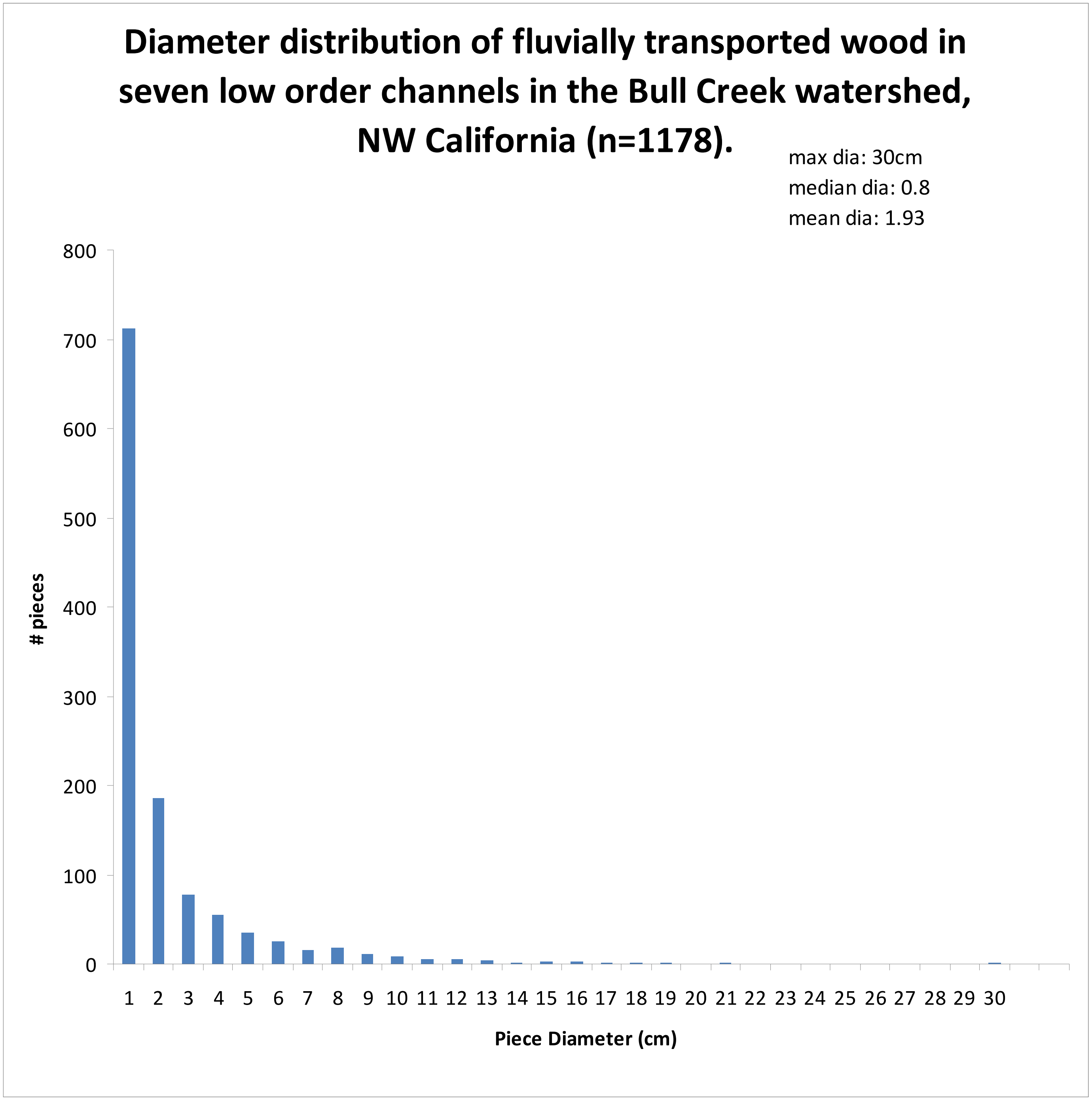


Steep gradient, 2nd order ephemeral channels located in watersheds with unstable areas subject to debris slides, flows, and torrents.

Transport of Wood in Small Headwater Channels (Flanagan 2004)

- Wood transported (n~3,100) in 3 Humboldt County watersheds measured for diameter and length.
- 99% of pieces had a length that was less than or equal to the channel bed width.
- Most of the diameters of transported wood range from **~ 0.5 cm to 4 cm (all less than 12 inches diameter) [small twigs and branches]**.





Flanagan 2004
MS Thesis

Channel sizes range up to 2.7 m width.

The largest storm measured was a 12-year event.

"Larger logs in these systems only move due to adjacent landslides or debris flows."

Mean Diameter = ~0.8 inches

Max Diameter = 29.6 cm (11.7 in)

Beaver Creek, LaTour DSF, Class II-L

Spring-Fed Systems in Volcanic Terrane (Shasta and Tehama Counties)

- **Stable wood accumulations**, limiting downstream transport of wood.
- **High summer streamflow**.

Concepts discussed by Dr. Gordon Grant, USFS PNW, at MSG meeting held on September 19, 2012

Coastal Class II-L Watercourse

XYZ Tributary, NF Caspar Cr, JDSF
Class II-L watercourse

- Stream order = 3rd; USGS "blue-line" stream; drainage area = 190 acres.
- Significant summer discharge: main stem discharge on July 14, 2010 = 0.43 cfs; estimate of discharge for tributary = ~0.1 cfs.
- Channel width and depth likely to be <u>insufficient</u> to allow large wood transport to Class I.

Additional Thoughts…

- 14 CCR Sec. 916.9 (v) [936.9 (v), 956.9 (v)] applies to Class II-L watercourses and allows for **site-specific proposals** (as included in the draft VTAC Guidance Document currently in review).

- The **BOF Effectiveness Monitoring Committee** (expected to be formed in early 2013) may find it appropriate to examine Class II watercourse classification methods and appropriate protection measures.

Questions?