The VTAC Committee:
Site-Specific Riparian Management Guidance Documents

Michael Liquori, VTAC Chair
and others…

March 6, 2013
VTAC Participants

• **Members**
  – Mike Liquori, SWC (Chair)
  – Peter Ribar, CTM
  – Dr. Kevin Boston, OSU
  – Dr. Matt O’Connor, OEI
  – Dr. Kate Sullivan, HRC *(through 2011, now USEPA)*
  – Mark Lancaster, 5C
  – Richard Gienger, public
  – Dave Hope, Consultant

• **Agency Representatives**
  – Bill Short, CGS
  – Bill Stevens, NMFS
  – Bryan McFadin, NCRWQCB
  – Drew Coe, CVRWQCB
  – Stacy Stanish, Kevin Shaffer, Dr. Stephen Swales, DFW
  – Pete Cafferata, CAL FIRE

• **CAL FIRE/BOF Assistance**
  – Crawford Tuttle (through 2011)
  – Bill Snyder
  – Duane Shintaku
  – Dennis Hall
  – George Gentry
1. Background Information
2. Board Framework
3. VTAC Guidance Document Overview
4. Next Steps: Pilot Projects
5. Key Outstanding Challenges (unscoped)
Private and Public Land Ownership within the Coastal Anadromy Zone

85-90% of remaining CCC coho salmon exist on private forestlands.
Technical Basis for ASP Rules

Sound Watershed Consulting
Creating Functional Water Environments

Scientific Literature Review of Forest Management Effects on Riparian Functions for Anadromous Salmonids

Chapter 1
INTRODUCTION

for
The California State Board of Forestry and Fire Protection

September 2008

Mike Liquori
Doug Martin
Robert Coats
Lee Benda
David Ganz
Section (v) of the 2009 ASP rules established a regulatory pathway for voluntary site-specific riparian design.
Section V Rules achieve riparian goals through spatially-explicit, context-specific objectives

Established by actual site conditions, not rule assumptions
Board Framework for Guidance Documents
• based on **scientific** principles
• watershed or stream reach scale
• promote **more immediate** short-term functional responses
① Principles, guidelines & procedures
② Permitting efficiencies
③ Reduce regulatory uncertainty
④ Broaden Incentives
• Oct 2010 thru Dec 2012
  ✓ 15 meetings
  ✓ Stakeholder Survey
  ✓ 2 Field Tours
  ✓ Pre-Consultation Guidelines
  ✓ Guidance Document

• 2013 Pilot Phase
  ✓ 1-2 representatives / project
  ✓ Informal email and conference call updates
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   III. Analytical Design
VI. Submission Requirements
VII. Proposal Processing
VIII. Monitoring Strategies
IX. References

Appendices
• Analytical Pathways
  – Standardized Rule Matrix (and example)
  – Situational Scenarios (and example)
  – Analytical Design Process
• Pre-Consultation Guidelines Form
• Watershed Context Information
• Channel Type Definitions
• ASP Rules/Map
• Channel Type Definitions and Diagrams
• Glossary
<table>
<thead>
<tr>
<th>Management</th>
<th>Objective</th>
<th>Suitability Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protect</td>
<td>Minimize disturbance to allow natural recovery</td>
<td>Sites on the trajectory toward recovery</td>
</tr>
<tr>
<td>Maintain</td>
<td>Maintain riparian-dependent exchange functions</td>
<td>Sites where function status is rated good.</td>
</tr>
<tr>
<td>Improve</td>
<td>Improve performance or response timing for one or more key riparian-dependent functions.</td>
<td>Sites where there is potential to promote/enhance aquatic ecological services</td>
</tr>
<tr>
<td>Restore</td>
<td>Restore riparian-dependent functions to levels necessary for sustaining aquatic ecological services.</td>
<td>Sites where function status is rated fair to poor, and where delivery potential is rated medium to high.</td>
</tr>
<tr>
<td>Generally Available</td>
<td>Provide flexibility in addressing other higher-priority issues</td>
<td>Existing conditions and trends that indicate low sensitivity to a particular variable.</td>
</tr>
</tbody>
</table>
**Incentives**

**CAL FIRE**
- California Forest Improvement Program (CFIP)
- Forest Legacy Program (FLP)
- California Forest Stewardship Program

**SWRCB** 319(h), other grants

**Calif. State Parks**
- Habitat Conservation Fund grants
- Land and Water Conservation Fund grants

**USDA**
- Conservation Reserve Program

**NRCS**
- Environmental Quality Incentives Program
- Wildlife Habitat Incentive Program (WHIP)
- Conservation Technical Assistance (CTA)
- Wetlands Reserve Program (WRP)

**US EPA**
- Region 9 grants and funding

**Wildlife Conservation Board**
Quickly determine the potential success of a proposed Section (v) project

Structured Form (field handout)

Voluntary

Does not receive formal agency approval
SECTION V
PROJECT TYPES

LIMITED SPATIAL EXTENT
14 CCR § 916.9(v)(2)
936.9(v)(2),
956.9(v)(2)

DFW CONCURRENCE

CLASSIFICATION MATRIX

LARGER-SCALE PROJECTS
14 CCR § 916.9(v)(3)
936.9(v)(3),
956.9(v)(3)

SITUATIONAL SCENARIOS

ANALYTICAL DESIGN
Pathway 1) Classification Matrix Approach
• A relatively simple assessment procedure
  – Generally applicable goals
  – Common ecological processes & functions
  – Sets priorities among functions

• The project scale is relatively small

• Detailed technical expertise is cost-prohibitive
**Rule Matrix**

**Geomorphic Classification**

**Functional Priority**

<table>
<thead>
<tr>
<th>Site Condition</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Protect</td>
<td>Maintain</td>
<td>Improve</td>
</tr>
<tr>
<td>Mod.</td>
<td>Maintain</td>
<td>Improve</td>
<td>Improve</td>
</tr>
<tr>
<td>Low</td>
<td>Generally Available</td>
<td>Generally Available</td>
<td>Maintain</td>
</tr>
</tbody>
</table>

**Segment Objectives**

<table>
<thead>
<tr>
<th>Segment Objectives</th>
<th>Wood</th>
<th>Temperature</th>
<th>Nutrients</th>
<th>Erosion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protect</td>
<td>Maximize retention of recruitable wood</td>
<td>Maximize retention of vegetation that blocks incoming solar radiation</td>
<td>Maximize retention of existing vegetation</td>
<td>Prevent and avoid ground disturbances that may disturb banks and/or concentrate runoff</td>
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<td>Maintain</td>
<td>Minimize removal of recruitable wood</td>
<td>Minimize reduction in shade</td>
<td>Minimize reduction in nutrient supply</td>
<td>Minimize ground disturbances that may disturb banks and/or concentrate runoff</td>
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<td>Improve</td>
<td>Carefully identify individual tree selection that encourage desired silvicultural responses</td>
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<td>Consider treatments that support recovery of eroding lands (e.g. planting, biotechnical stabilization, etc.)</td>
</tr>
</tbody>
</table>

**Generally Available**

- Treatment constraints for this function are maximized
- Treatment constraints for this function are minimized
- Treatment constraints for this function are minimized
- Treatment constraints for this function are minimized
<table>
<thead>
<tr>
<th>Class</th>
<th>Size</th>
<th>Type*</th>
<th>Wood</th>
<th>Temperature</th>
<th>Nutrients</th>
<th>Erosion</th>
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<tbody>
<tr>
<td>I</td>
<td>Large</td>
<td>Regime</td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
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<td>Low</td>
<td>Low</td>
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<td></td>
<td>Pool Riffle</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
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<tr>
<td>Medium</td>
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<td>Pool Riffle</td>
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<td>Forced Pool Riffle</td>
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<td>Moderate</td>
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<td></td>
<td></td>
<td>Plane Bed</td>
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<td>Cascade</td>
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<td>Small</td>
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<td>High</td>
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<td>High</td>
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<td>Forced Pool Riffle</td>
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<td>Step-Pool</td>
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<td>High</td>
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<td>Cascade</td>
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<td>High</td>
<td>Moderate</td>
<td>Low</td>
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<tr>
<td>II</td>
<td>All</td>
<td>Pool Riffle</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
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<td>Forced Pool Riffle</td>
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<td>Cascade</td>
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<td>Moderate</td>
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<td>III</td>
<td>All</td>
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<td>Varied</td>
<td>Moderate</td>
<td>Low</td>
<td>Varied</td>
</tr>
<tr>
<td>Hotspots</td>
<td>All</td>
<td>Debris Flow Sources</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>High</td>
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<td></td>
<td></td>
<td>Debris/alluvial Fans</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>High</td>
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<td></td>
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<td>Tributary Junctions</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
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<tr>
<td></td>
<td></td>
<td>Class II Junctions</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
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<tr>
<td></td>
<td></td>
<td>Sensitivity Zone</td>
<td>75% SPT</td>
<td>33 feet</td>
<td>66 feet</td>
<td>Variable</td>
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<td>(min 33 feet)</td>
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</tbody>
</table>
**Composition of Vegetation**

C = Conifer [≥70% conifer]
H = Hardwood [≥ 70% hardwood]
M = Mixed [all other cases]

**Relative Tree Size**

S = Smaller than functional
L = Larger than functional
M = Mixed

**Relative Stand Density**

D = Differentiating (active mortality)
F = Fully Stocked (mortality eminent)
U = Under stocked (open, active growth)

<table>
<thead>
<tr>
<th>Riparian Class</th>
<th>Inherent Functional Levels</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Wood Supply</td>
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<tr>
<td>C S D</td>
<td>Moderate</td>
</tr>
<tr>
<td>C S F</td>
<td>Poor</td>
</tr>
<tr>
<td>C S U</td>
<td>Poor</td>
</tr>
<tr>
<td>C L D</td>
<td>Good</td>
</tr>
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<td>M M U</td>
<td>Moderate</td>
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<tr>
<td>Riparian Classification</td>
<td>Site Condition</td>
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<tr>
<td>-------------------------</td>
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<tr>
<td></td>
<td>Good</td>
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<tr>
<td>Channel Classification</td>
<td></td>
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<tr>
<td>Functional Priority</td>
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<tr>
<td>High</td>
<td>Protect</td>
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<tr>
<td>Mod.</td>
<td>Maintain</td>
</tr>
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<td>Low</td>
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</tbody>
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</tbody>
</table>
1. Description of the current riparian condition
2. Description of the evaluation area (watershed scale)
3. Identification of beneficial functions
4. Evaluation of design effects to the beneficial functions
5. Description of the site-specific proposal
6. Implementation schedule
7. Simple monitoring plan
• Common situations

• Use of 3rd-party recovery documents to provide the context and project goals
  – NMFS 2012 – Recovery Plan Documents
  – Habitat Conservation Plans
  – Watershed Analyses
  – etc
For each Situation Scenario:

- Overview
- Typical Suitability Criteria
- Design Factors to Consider
- Treatment Options
- Hazards (red-flags)
- Hypothetical Example(s)
- Submission Requirements
1) Low LWD Loading + Low Riparian Mortality
2. Headcutting and/or Incised Channels
Low Wood Recruitment Potential
High Catastrophic Wildfire Risk

Photo: Mark Lathrop, SPI
Relatively Closed Canopy Riparian Corridors lacking Nitrogen-Fixing Species or with Low Primary Productivity

Parlin Creek, Jackson Demonstration State Forest
Mendocino County
• a sufficient number of nitrogen-fixing deciduous trees distributed at key locations within the stream network;
• a sufficient number of riparian canopy gaps that support primary and aquatic macroinvertebrate production while balancing effects on other riparian functions.

(Wilzbach et al. 2005; Kiffney and Roni 2007; Modenke and Ver Linden 2007; Poor and McDonnell, 2007; others)
6. Sediment Reduction within Riparian Zones
1. Evaluate existing site conditions.
2. Assess watershed conditions.
   – Use existing information sources, CI assessment
3. Determine desired ecological functions.
4. Identify the applicable situational scenario.
5. Determine if additional expertise is needed.
6. Additional considerations.
   – Issues to address Section (v) analysis requirements:
     • Identification of the potential effects to beneficial functions.
     • Detailed description
Pathway 3) Analytical Design
• Conflicting Goals or Complex Issues
• Existing planning reports
  – Direct or adjacent
• Technical Experts and/or Robust Datasets
• Large-scale analysis
• Pathways I or II are not appropriate
Analytical Design

- Riparian Functional Assessment
- Effectiveness Assessment
- Management Objectives
- Implementation
- Riparian Design
Other Key Elements
• **SECTION V RULE LANGUAGE**
• **PRE-CONSULTATION GUIDELINES**
• **MAP OF THE ASP RULE GEOGRAPHIC SCOPE**
• **WATERSHED CONTEXT INFORMATION**
• **CHANNEL TYPE DEFINITIONS AND DIAGRAMS**
• **EXAMPLE USING THE CLASSIFICATION MATRIX PATHWAY**
- RPF/Landowner and Agency training sessions.
  - Summer and Fall 2013.
  - RPF/landowner sessions to be field oriented.
- VTAC website for RPF/landowner education.

http://www.bof.fire.ca.gov/board_committees/vtac/
Next Steps
Pilot Projects
VTAC Potential Pilot Projects

A. Green Diamond Resource Company
   – Canopy gaps & other studies

B. Campbell Timberland Management
   – Wood loading

C. Collins Pine Company
   – Fire Risk

D. LaTour Demonstration State Forest
   – Fire Risk

E. Jackson Demonstration State Forest??
Coast Ranges Region

- **Slaughterhouse THP** (1-10-020 MEN), submitted by Campbell Timberland Management.
  - 17 large wood enhancement sites (35 trees felled).

- **Kestrel THP** (1-11-087 SON), submitted by Gualala Redwoods, Inc.
  - 4 large redwood trees to be excavated or felled into dry part of SF Gualala River.
  - Done under DFW 1600 Agreement; requested by Review Team agencies.

- **Piccolotti THP** (1-10-030 MEN), submitted by The Conservation Fund
  - Per CDFW requirement, the 50 foot wide no-cut zone adjacent to Big River will be subjected to a limited understory thinning conducted to increase individual conifer growth rates.
Northern Interior Region (V2 Pre-Consultation with DFW)

• **Maidenhair THP**, 2-10-031 TEH, submitted by SPI.
  – Standard (non-ASP) width WLPZs for Class I and II watercourses, with no operations in the buffers.

• **North McMullen THP**, 2-10-049 SHA, submitted by LaTour Demonstration State Forest.
  – 75 foot no-cut Class I WLPZ.

• **Tower THP**, 2-10-056-SHA, submitted by W.M. Beaty and Associates.
  – 50 to 100 foot Class I WLPZs based on slope, with 50% overstory canopy retention.

• **Howard Springs THP**, 2-10-082 TEH, submitted by SPI.
  – 100 foot Class I WLPZs in 2 units, with a 50 foot no-cut for the first 50 feet and 50% overstory canopy retention for the second 50 feet.
• New Practices
• Sensitive Resource

Integrated Monitoring Strategy
• **Compliance** – Did they do it as designed?

• **Implementation** – Did the action lead to the desired effect (or not)?

• **Effectiveness** – Does the effect support the ecology?

• **Validation** – are our assumptions correct?
effective, systematic monitoring is beyond any single landowner

We need a coordinated approach.

(provides incentive too...
Section (v)(10):

“pilot projects and guidance shall address cumulative and planning watershed impacts”

Our Approach:

- Existing Literature
- THP Section
- Other Processes
• Offsite Mitigation
  – Collaborative enhancement efforts
  – Promotes priority enhancement sites

• Simplified Permitting
  – Make it easier to do good things

• Set a Track Record
  – Increase willingness to engage by landowners
Likeliness to propose project under Section V rule

- **Highly/Moderately Likely**: 35%
- **Unlikely**: 40%
- **Never**: 20%
How can we leverage these markets to improve incentives that promote riparian stewardship?