Cumulative Effects of Timber Operations on DFG Trust Resources


10 December 2008; Ukiah, CA

Brad Valentine, Scott Osborn, et al.
California Department of Fish & Game
I. Introduction

- Important, impossible
- Time
- Expertise
- Resource
- Aquatic and Terrestrial
- Frustration
II (1 of 3). Definitions (paraphrased)

CCR 15355 (CEQA Guidelines) & CCR 895.1 (Forest Practice Rules).

- Two or more individual effects ... considered together, ... considerable ... compound or increase other environmental impacts
- Changes from 1 or more projects
- Incremental impacts ... past, present, future projects ... individually minor but collectively significant
II (2 of 3). Significance, defined (paraphrased)

- **Significant Adverse Impact on the Environment** … a substantial, or potentially substantial, adverse change … physical conditions … including land, air, water, minerals, flora, fauna, ambient noise, and …

- **Long Term Significant Adverse Effect** on … species … associated with late succession forest stands means an effect that creates an identifiable trend or set of conditions … evidence that a population … extirpated … significant portion of its current range
II (1 of 3). Definitions, Significance

Contribute To A Persistent Decline
III. Some Pertinent Concepts

- Recovery from impacts
- Past, Present, and Reasonably Foreseeable Projects
- Baseline
  - (Natural Range of Variability & Disturbance)
- Thresholds
- Uncertainty
- Global Climate Change
IV (1 of 3). Species Considerations

- Status of Species:
  - Biological (especially locally) & Legal
- Population Viability, Ecologically Functional
- Population Structure & Processes
  - Meta-populations, MVP, Sources & Sinks
- Direct Impacts
  - Direct Mortality
  - Habitat Destruction
  - Habitat Deterioration
  - Delayed
- Indirect Impacts
  - e.g., Changes in Predator / prey Dynamics
IV (2 of 3). Species Considerations

- Species Habitat Needs & Limitations
  - Limitations: Area, Dispersal, Element, Habitat (mix), stage, pollinator, ...

- Mitigation Available, Likely to be Successful?

- Habitat Recovery Rate
  - Available
  - Accessible
  - Duration
IV (3 of 3). Species Considerations

- Biological Assessment Area(s)
  - Context and Significance
    - Same impact / different level of significance
  - Size
    - “Significant Portions of Range”
    - Species (population) – Specific
    - Viability Standard?
    - Area / information Tradeoffs
- Uncertainty
V (1 of 2). Habitat Considerations

- Habitat Type
  (e.g., Seral Stages, Communities)
  - Quantity & Quality
  - Amount, abundance
  - Distribution
  - Trends
V (2 of 2). Habitat Considerations

- Elements
  - On-site & Regional Abundance
  - Recruitment Dynamics, Quality
  - Trends
- Uncertainty
VI (1 of 2). An Approach

- ID impacting activity ► impact ► mitigation
  - Remove Trees ►
    - Change seral-stage structure class ► silviculture, stand info
    - Change element dynamics ► retain/recruit snag/lwd/WT
  - Yard ►
    - Alter hydrology/erosion ► helicopter, …
    - Type-convert (forest to roads/landings) ► temp roads, decommission, …
  - Build/Reconstruct/Use Roads ►
    - Sediment ► …
    - Hydrology ► …
    - Disturbance ► …
    - Access (e.g., poaching) ► …
    - Invasive Species ► …
VI (2 of 2). An Approach

- Avoid
- Mitigate On-site
  - Hypothesis: Maintain forest & processes eliminates significant cumulative affects
    (i.e., light touch forestry = no impacts)
    - Dispersal-limited Species
    - Successional trajectory, element dynamics
- Impossible? Analyses Become Complex
- Leaps Of Logic
VII (1 of 2). Potential CI Examples

- Dead Wood Elements (e.g., Basal-hollows)
  - 2 Processes Critical for Generating
    - Time for Growing Large Size,
    - Repeated Fire for Excavation
      - Rotation Age / Target Size;
      - Fire Prevention / Suppression
    - ± Irreplaceable
  - Identifiable Trend
  - Important Wildlife Habitat Element
  - Local Loss Significant Cumulative Impact
VII (2 of 2). Potential CI Examples

- Spotted Owl
  (But, Take Avoidance Is Required!!)
  - Direct
    - NRF Stand Habitat Definitions
    - NRF Quantities & Distribution
    - Abandonment
  - Indirect
    - Food Base
    - Barred Owls
    - Other Predators / Competitors