

FLIP CHART NOTES

#1.

How does monitoring scale?

- with the scale/size of project?
- with the scale of predicted effect?
- with the scale of anticipated risks?



NMFS?



USFWS?

#2

Purpose of monitoring (Boesch)

1. Trends
2. Goals – compliance, validation
3. Precaution
4. Development/calibration of models
5. Research
6. Public Information
7. Emergencies – anticipate

#3

Ultimate Issue ESA

- Risk of extinction/population decline (Delta Lambda) attributable to the project

First tier approach/necessary condition

- Factors closely linked, and defined as contributing to

#4

1st Tier of allocating monitoring effect (Bartell)

1. Explicit statement of risk/undesired events for 14 ESUS
2. What are the probabilities of those? (with and without dredging?)
3. Prioritize on basis of these.

Add physical and other things that help interpretation (Boesch)

#5

Criteria for selecting monitoring options

1. Relation to salmonids
2. Ability to detect change – including other changes to system

3. Ability to detect project impact – including statistical power (choose statistical power, type II – related to risk)
4. Ability to lead to management – decision-making process
5. Testing of hypotheses
6. Testing of assumptions
7. Relation to jeopardy decisions
8. Cost-effectiveness
9. Contribution to new knowledge
10. Relationship to risk
11. Relationship to conceptual model
12. Physical and other measurements that help interpretation (e.g. CORIE)

#6

Risk

	Low	High	
	No/less monitoring	Don't do it (None)	Low
	Second orders priorities (Toxics)	Focus \$\$ here (Biological)	High
			Uncertainty
			N.B. Indirect effects

#7

Decisions

1. Highest priority issue for monitoring is shallow-water peripheral habitats with qualification of habitat for Coastal Cutthroat.
2. Decision – tree (itself adaptively changeable) should be a part of proposal

#8

Shallow-water peripheral

1. Emergent vegetation cost-effective
2. Fish use (growth)
 - Exploratory. Validation. Tie in with existing research. Hatchery fish in periphery – or wild?



Integrate

3. Habitat opportunity, Bathymetry, Salinity, Depth and Velocity. Tie with (OAIE)

- Validation
- Exploratory? → Management options
- 4. Food etc. as components of habitat

#9

Scope / other monitoring issues

- In-channel – during dredging entrainment?
- Can use some existing data
- Determine whether existing data is adequate

Toxics

- integrate with existing effort (I.T.P. statement for USFWS)
- integrate with peripheral

Bathymetry of whole system, or subsystems

#10

Duration

- After 5 yrs (planning))
- Evaluate and modify
- Adaptive monitoring plan
- Use - cost effectiveness
 - efficiency
 - results
 to change / modify program
- Depends on parameters / response

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Issues

1. Linkage to project
2. Administrative flexibility
3. Relate to our understanding of system and conceptual model
 - close link to c.m.?
4. A necessary condition of monitoring is informing need of regulatory agencies to make jeopardy decisions
5. Integration to monitoring of larger system
6. How does uncertainty map onto risk?

#12

Action Items 1.

Project managers – Formal annual evaluation of monitoring?

- Composition of such a group or groups (agencies and independent peer reviewers)?

Project managers – Willingness to try out pilot scale-learning by doing – new management options? e.g. small – scale

B.A. – Explicitly integrate monitoring of this project into other efforts

#13

Monitoring (Baptista)

- testing hypotheses

1. Physical factors

Low uncertainty

Low risk

2. Toxics

Higher uncertainty

Low risk

3. Biological factors

Moderate uncertainty

Higher risk

#14

Administrative flexibility options

1. ESA re-initiation
2. Standing committees
integrated models and monitoring
3. Informal feedback
 - Academia
 - Action Agencies
 - Regulatory
 - Contractors

Emphasize relationship to other actions;

- integration
- interdisciplinary

Composition – representation of all agencies

- peer review → outside / independent

ISAB or other existing groups?

#15

1. Is there institutional flexibility enough to allow changes in monitoring program, as well as management?
2. Does ESA already involve issues of adaptive management? Re-initiation process allows reconsideration of effects and monitoring program?