Southern BC Chinook Strategic Planning Initiative

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Alternative Strategic Directions for the Management of Southern BC Chinook Salmon

Presentation of Final Report

May 13, 2014.

ESSA | 35 YEARS

LGL LIMITED environmental research associates

Context

- Chinook are very important to BC – socially, economically, ecologically
- Many southern BC stocks have shown concerning patterns of decline
- Broad concern among First Nations, fisheries managers, commercial and recreational fisheries, conservationists, and other stakeholders
- Management actions are required

Chinook Strategic Planning Initiative

- Planning process led by First Nations and DFO
- Collaboration from multiple interest groups

<u>Objective</u>

To develop an Integrated Strategic Plan:

- accounts for the **biological status**
- addresses **causes of recent declines** in productivity and abundance
- identifies **management actions** to improve status

SBC Chinook Strategic Planning Initiative:
Phases & Deliverables

Deliverables	Phase 1 (Technical Analysis)	Phase 2 (Preliminary Planning)	Phase 3 (Integrated Strategic Planning)
1. Special science response document	Complete		
2. Pre-COSEWIC assessment report	Ongoing		
3. Independent science panel report	Complete		
4. Strategic planning framework		Preliminary Steps Complete	We are here

Presentation Objectives

- Review the context and process of the project
- Review the outcomes and lessons learned
- Discuss the recommendations and next steps

Report goals:

- Accurately document and synthesize the process
- Help readers understand *where* SPC got to and *how* they got there
- Detailed materials in appendices

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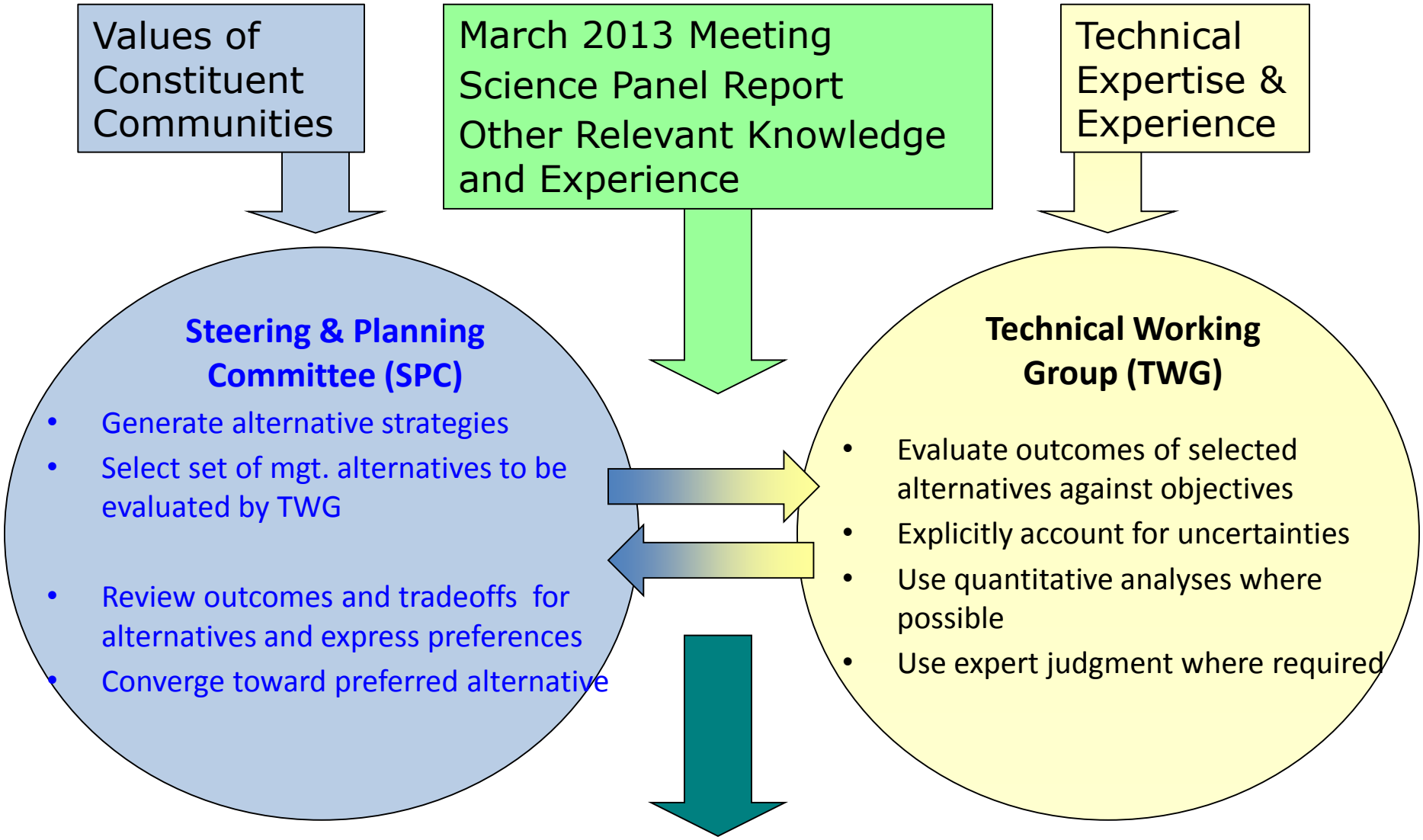
Overarching Goal of Project

*"… to assist the SPC and TWG in working through a **first iteration of the WSP five-step planning process**, applied to the long-term strategic planning for Southern BC Chinook salmon."*

Wild Salmon Policy (WSP)
5-step Planning Process

Relationship between SPC and TWG



Project Schedule – Oct-Jan

Tasks	Type	Partici-pants	Date	Time
Review existing quantitative tools and capacity	*Calls*	*TWG*	***Oct. 16, 23***	*2-hr*
Generate alternative strategies	In-person	SPC, DFO presenters	**Nov. 8**	Full
Select set of management alternatives to evaluate	In-person	SPC	**Nov. 18**	Full
Explanation of technical elicitation process	Web conference	TWG, other scientists	**Dec. 9**	Half
(cont'd) Select alternatives to evaluate	*Web-conference*	*SPC*	***Dec. 9***	*Half*
Evaluation of alternatives against objectives via survey	In-person	TWG	**Jan. 7**	Full
Completion of TWG survey	Remote	TWG	**Jan. 7-15**	

Project Schedule – Feb-May

Tasks	Type	Partici-pants	Date	Time
Explanation of process for eliciting preferences among alternatives. Starting SPC survey	Web conference/ Group work	SPC	Feb. 4	Full
Circulate SPC-prioritized list of learning strategies to subset of TWG for feedback on relative importance, cost, scope, timeframe	In-person	TWG	mid-Feb.	
Review results of elicitation, explore areas of agreement/ disagreement, work toward consensus	In-person	SPC, TWG	Mar. 4	Full
Draft report issued			Mar. 31	
Conference call for major concerns	11 am–1 pm		Apr. 11	
Deadline for comments on report		All	Apr. 23	
Final report issued			May ~9	
Presentation of final report	Web conference	SPC, TWG	May 13	Half

March 2013: WSP Steps 1-3

- Planning priorities / management objectives
- Preliminary set of management options
- Draft performance measures
- Preliminary recommendations
  - "the overall planning process will require several iterations of the Wild Salmon Policy (WSP) steps in order to adequately consider and address the complexity, breadth, and depth of planning issues, concerns, and desired outcomes" (Compass 2013).

SPC Objectives and Sub-objectives

	Sub-objectives from March 2013 workshop.
Biological	**B1:** At least sustain and preferably improve overall salmon abundance
	B2: At least sustain and preferably improve wild salmon abundance
	B3: At least sustain and preferably improve salmon spawning distribution
	B4: Sustain genetic diversity
	B5: Sustain freshwater habitat carrying capacity
	B6: Sustain salmon contribution to ecosystem health
	B7: Reduce management uncertainty
Social	**S1:** At least sustain and preferably increase aboriginal FSC harvest abundance
	S2: *At least sustain and preferably increase aboriginal FSC harvest distribution*
	S3: Maintain or enhance recreational fishery experience
	S4: *Sustain connection with salmon*
Economic	***E1:*** *Maintain or enhance commercial fishery net revenue*
	E2: *Maintain or enhance recreational fishery net revenue*
	E3: *Maintain or enhance commercial fishery employment*
	E4: *Maintain or enhance recreational fishery employment*
	E5: Reduce management costs

WSP Step 2 – Developing Alternatives

- Common understanding of scientific context
- Generating strategies
- Developing alternatives

  → "Alternative Strategic Direction"

  » Definitive management actions not specified

  » Examples of how alternative *could be more* precisely defined

- Learning strategies (developed in parallel)

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Intent of Alternatives

Name	Intent (all involve increased habitat protection)
A	Focus on maintaining current harvest rates via increased hatchery production
B	Focus on CU recovery by decreasing harvest rates
C	Focus on CU recovery by decreasing harvest rates and increasing hatchery production for key stocks, plus habitat restoration
D	Focus on CU recovery by improving habitat (i.e., restoration)
E	Focus on shifting hatchery production to improve information
F	Focus on CU recovery by decreasing both harvest rates and hatchery production, plus habitat restoration

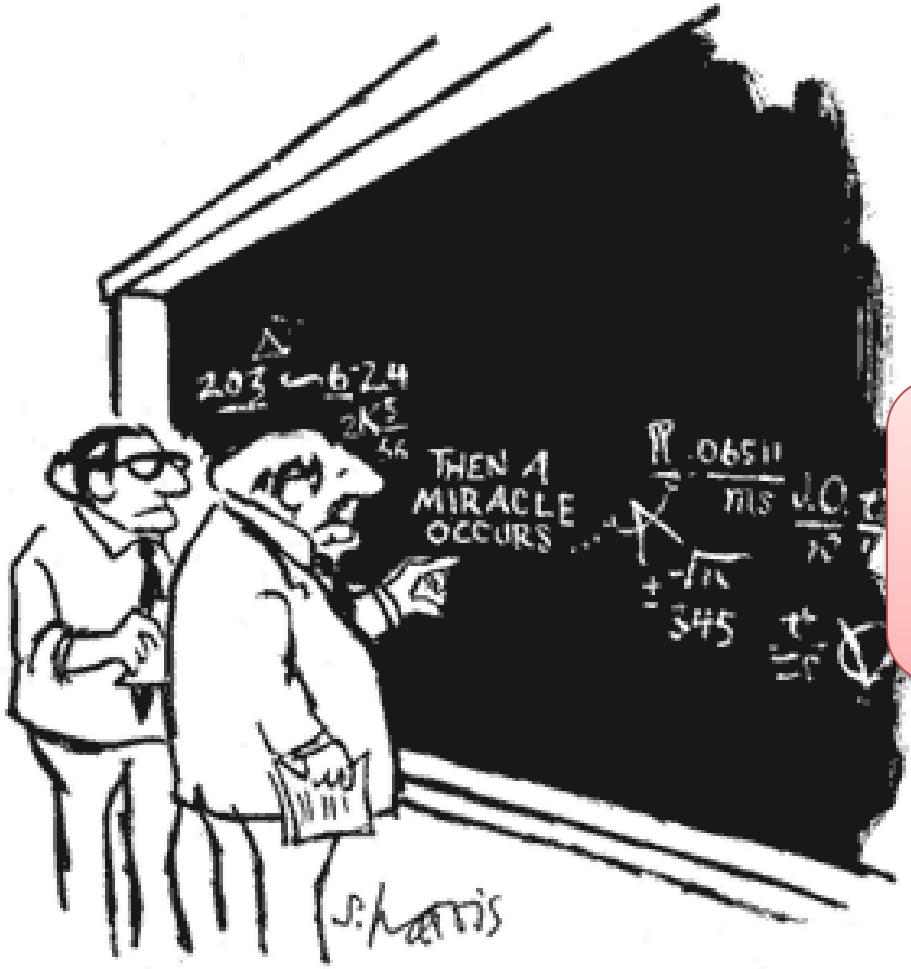
Alternative Strategic Directions

MANAGEMENT ACTION	ALTERNATIVE STRATEGIC DIRECTIONS					
	A	B	C	D	E	F
	Increased enhance. for fisheries	Harvest reduction	Harvest reduction, conservation enhancement and habitat restoration	Habitat improve. focus	Shift enhancement for new indicator(s)	Harvest reduction, enhancement reduction and habitat restoration
Exploitation Rate	↔	↓	↓	↔	↔	↓
Hatchery Production	↑ Harvest focus	↔	↑ Conservation focus	↔	↓ Information focus	↓
Habitat improvement-Protection	↑	↑	↑	↑	↑	↑
Habitat improvement - Restoration			↑	↑		↑

“Key Stocks”

- Defined based on Table H1 in Science Panel Report (SPR) (4 stocks where ER > Adj. Emsy)
  - Important caveats in SPR about calculations
  - Stocks may not be best suited for harvest or hatchery actions
- Consider as *example* of how to more precisely specify
- “Key stocks” will need to be more rigorously defined, with quantitative analyses in future
- “Key stocks” will likely be dynamic

Evaluating the potential outcomes



"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN ~~STEP TWO~~"

Availability of comprehensive, quantitative tools?

Insufficient at this time. Lacking comprehensive tools or not available in time frame.

Use a structured, qualitative, expert elicitation approach

WSP Step 4

WSP Step 4: TWG Evaluation of Alternatives

Technical evaluation of the outcomes of the SPC alternatives against the SPC sub-objectives

- **Policy-neutral** evaluation
- **Qualitative** expert elicitation survey
- Account for **uncertainty**
- **Relative** performance against status quo
- Evaluation against **sub-objectives**
- **Short-** and **long-term** outcomes

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SBC Chinook TWG Evaluation of Alternatives

Alternatives by Sub-objectives (A - B1)

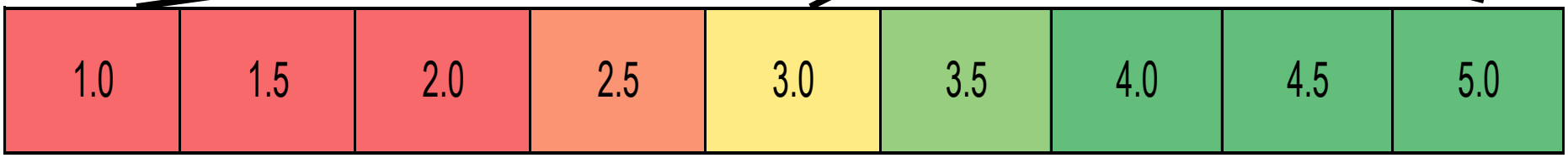
Evaluation of:
Alternative A: Focus on maintaining current harvest rates via increased hatchery production and habitat protection

Against sub-objective:
B1: At least sustain and preferably improve overall salmon abundance

How would the above-listed management alternative perform on the above-listed sub-objective, compared to current management (i.e., status quo) under the following scenarios?

You may check up to 3 boxes for each scenario to reflect uncertainty.

	Much Worse	Worse	About the Same	Better	Much Better	Don't Know	Not Possible to Evaluate
1. Short term (2 generations) under similar ocean conditions (check 1-3 boxes)	☐	☐	☐	☐	☐	☐	☐
2. Longer term (7-8 generations) under similar ocean conditions (check 1-3 boxes)	☐	☐	☐	☐	☐	☐	☐



SBC Chinook TWG Evaluation of Alternatives

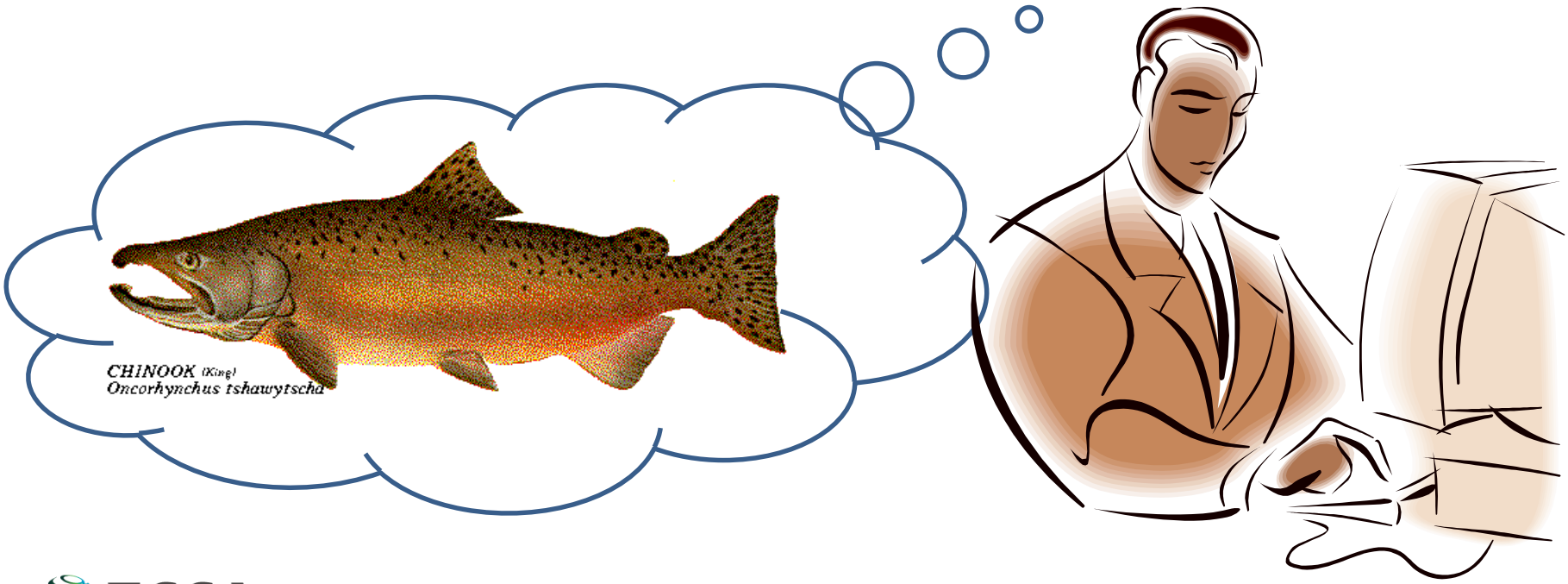
Alternatives by Sub-objectives (A - B1)

What is the basis / evidence for your above rating?

What are the critical uncertainties affecting your above assessment?

Are there likely to be regional differences in your above assessment (e.g., the alternative may perform better or worse for particular CU groups)?

TWG Survey Results



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TWG Survey – Response Rates

Short Term		COUNT of responses						
		A	B	C	D	E	F	G
B1	overall salmon abundance	18	18	18	16	16	17	9
B2	wild salmon abundance	16	16	15	16	15	16	9
B3	salmon spawning distribution	13	13	11	12	11	11	4
B4	genetic diversity	7	7	7	7	4	7	2
B5	freshwater carrying capacity	8	9	8	9	7	7	4
B6	ecosystem health	10	11	10	10	9	11	4
B7	reduce mgt. uncertainty	8	7	6	7	8	7	2
S1	aboriginal FSC harvest	9	8	8	9	6	8	2
S3	recreational fishery experience	7	5	5	6	6	5	1
E1	*commercial fishery revenue*	3	4	3	4	3	2	1
E2	*recreational fishery revenue*	3	3	2	3	3	3	1
E5	reduce mgt. cost	5	5	5	5	5	5	1

MANAGEMENT ACTIONS	ALTERNATIVES					
	A	B	C	D	E	F
Exploitation Rate	↔	↓	↓	↔	↔	↓
Hatchery Production	↑ harvest	↔	↑ conservation	↔	↓ +indicator	↓
Habitat improvement-Protection	↑	↑	↑	↑	↑	↑
Habitat improvement - Restoration			↑	↑		↑

Long Term Median Scores

Long-term - Similar Ocean										1.50
		A	B	C	D	E	F	*Range*		1.75
B1	overall salmon abundance	3.0	4.0	3.5	3.5	3.0	3.5	*1.0*		2.00
B2	wild salmon abundance	2.0	3.5	3.0	3.5	3.5	4.0	*2.0*		2.25
B3	salmon spawning distribution	2.5	3.5	3.0	3.0	3.0	3.0	*1.0*		2.50
B4	genetic diversity	2.0	4.0	2.5	3.5	3.5	4.0	*2.0*		2.75
B5	freshwater carrying capacity	3.3	3.5	3.0	4.0	3.0	3.0	*1.0*		3.00
B6	ecosystem health	2.8	4.0	3.5	3.5	3.0	3.5	*1.3*		3.25
B7	reduce mgt. uncertainty	3.0	3.5	3.0	3.0	4.5	3.0	*1.5*		3.50
S1	aboriginal FSC harvest	3.0	4.0	3.5	3.0	3.0	3.0	*1.0*		3.75
S3	recreational fishery experience	3.0	3.0	3.0	4.0	3.5	3.0	*1.0*		4.00
E5	reduce mgt. cost	2.0	3.0	2.5	1.5	2.5	3.5	*2.0*		4.25

TWG Survey – Qualitative Comments

Three open-ended questions:

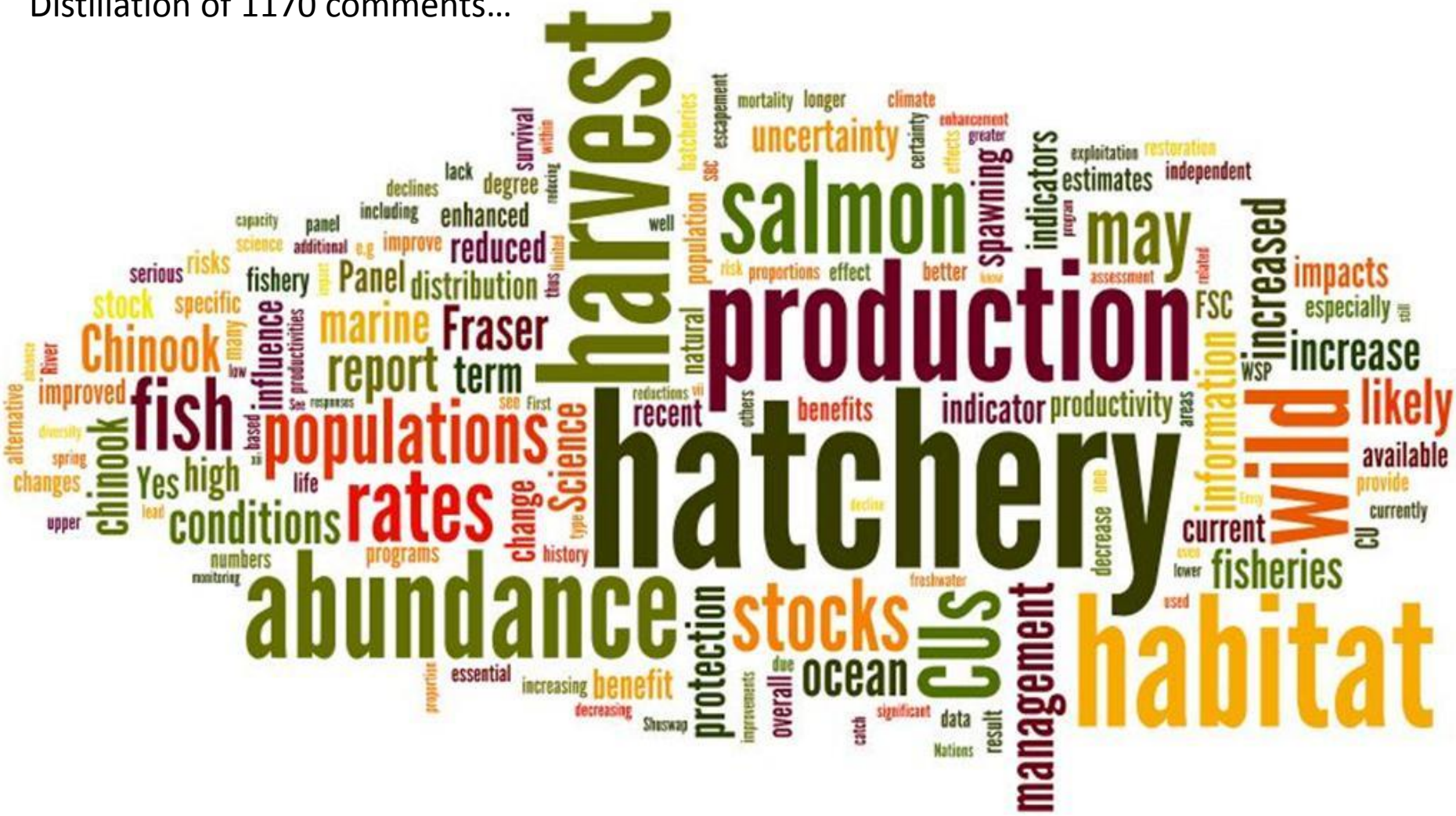
- Basis/evidence for rating
- Critical uncertainties affecting assessment
- Regional differences in assessment

Synthesis = **60** pages >> **18** pages >> **6** pages

Differences in qualitative comments reflect alternative hypotheses of TWG respondents about how both Chinook and management agencies would respond to each alternative

TWG Survey – Qualitative Comments

Distillation of 1170 comments…



WSP Step 5 – Elicitation of Preferences: SPC Acceptability of Alternatives

SPC Task Process:

- Review TWG evaluations (with TWG)
- Discuss the details about each alternative
- Elicit ratings of acceptability (e.g., via clickers)
- View the results
- Discuss the results
- Update rating based on the discussion

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SPC Preferences:
Acceptability of Alternatives

Question:

How would you rate the acceptability of this alternative strategic direction in satisfying your objectives for managing southern Chinook?

1. *Unacceptable*
2. *Dislike*
3. *Acceptable*
4. *Like*
5. *Preferred*

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Principles for Elicitation

- Clarify the question
  - i.e., details about interpretation of the alternative
- Clarify the reasons for your answer (if asked)
  - Explain what you find unacceptable
  - Explain what you would change to make it better

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WSP Step 5 – Alternative-focused Dialogue

Primary purpose of elicitation process:

- Stimulate and focus discussion of different perspectives on alternatives

Dialogue is captured in report:

- “Those who rated this alternative positively or neutrally felt...”
- “Those who rated this alternative negatively felt...”

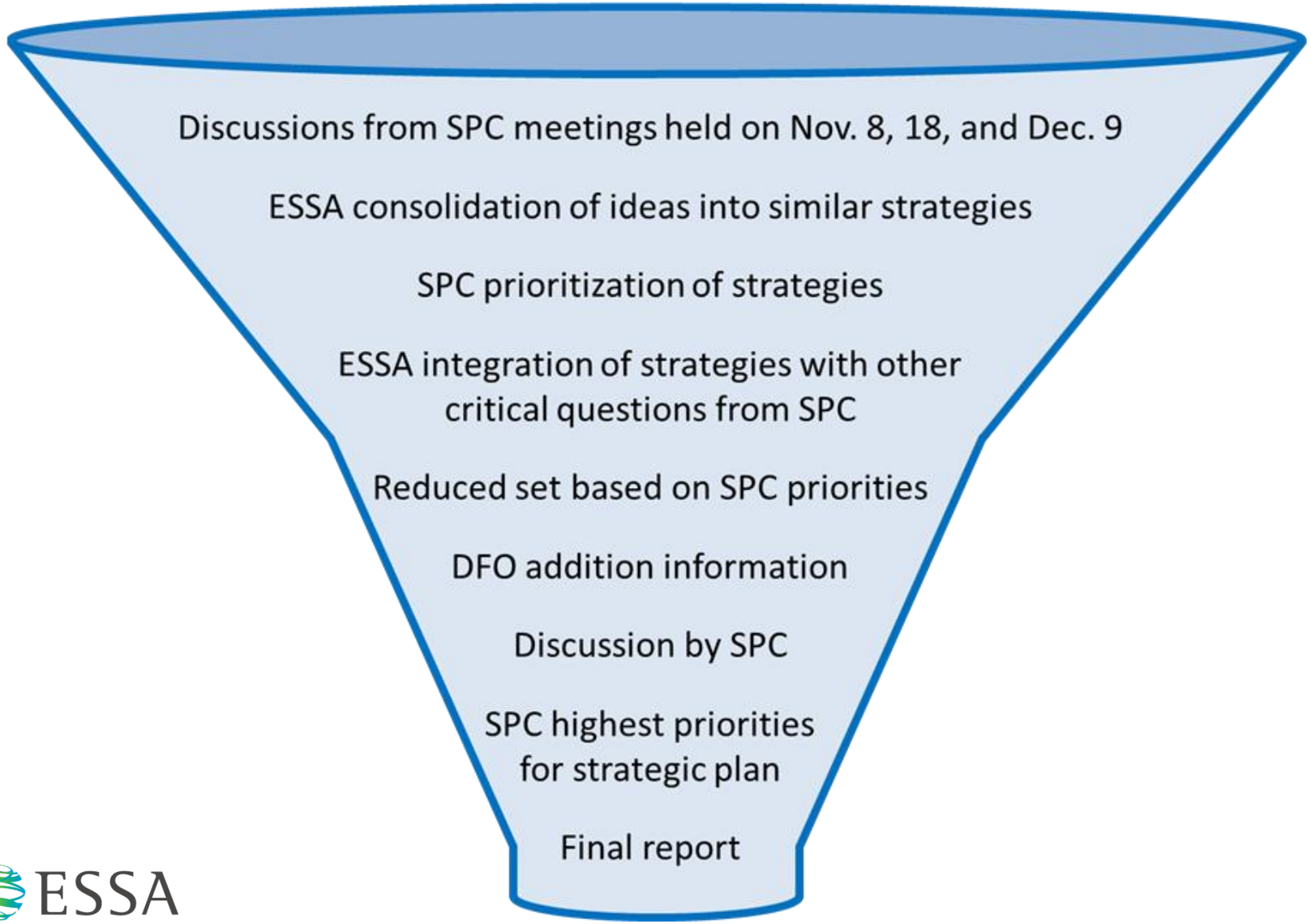
Patterns in Ratings across Alternatives

- Precise distribution of ratings not reported
  - Not meant to be simple voting
  - Invites over-analysis and false sense of precision
- Summary of patterns in broad terms
  - Negative, Neutral, Positive
  - General tendency (if any)

Generalized Sentiments of SPC Respondents Toward Alternatives

Alternative	Summary of ratings of acceptability
Alternative A *(increase enhance for harvest)*	Mostly negative, limited positive
Alternative B *(reduce harvest)*	Evenly negative or neutral, limited positive
Alternative C *(+ conserv. enhance., - harvest, + restoration)*	Mostly negative, limited neutral
Alternative D *(habitat improvement focus)*	Mostly negative, limited neutral
Alternative E *(shift enhancement for new indicator)*	Evenly negative or neutral
Alternative F *(- enhance, - harvest, + restoration)*	Mostly neutral, some positive or negative, none unacceptable

“Learning Strategies”



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Top Learning Strategies

- New indicator stock(s) for U/M Fraser / Thompson
- Importance of CWT info – maintain & review
- What are the risks and benefits of hatcheries
- How does hatchery production affect harvest levels in different fisheries
- Enhance monitoring of catch, encounter, discard
- Develop integrated model to evaluate fishery, place and time specific changes

Conclusions – Points of Convergence

- “Convergence” ≠ consensus
- Pursue both hatchery and harvest actions
- Habitat improvement is valuable component
  - Disagree on extent of potential benefit
- Importance of Learning Strategies
- Need to establish new indicator stock in U/M Fraser / Thompson

Conclusions – Strategic Direction

Alternative F (- enhance, - harvest, + restoration)

- Highest degree of acceptability (not consensus)
- TWG evaluation – similar or better across all sub-objectives
  - EXCEPT “recreational fishery experience”
  - Highest for wild salmon abundance and genetic diversity in long-term
  - Highest for reduced management cost in short/long

Lessons Learned (and/or challenges)

- Time constraints
- Facilitating a balanced pace
- Challenges in specifying strategies and alternatives
- Uncertainties in details of alternatives become apparent later
- Need for qualitative evaluation of alternatives at this stage
- Matching resolution of the evaluation with the inputs/outputs
- **Changing the SPC elicitation approach**
- **Reporting the outcomes**
- Qualitative results of TWG evaluation
- Social and economic evaluations of the alternatives
- Learning Strategies
- Additional working groups

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Lessons Learned:
Changing the SPC Elicitation Approach

- Time requirement
  - In depth review of TWG outputs
  - Time for survey
- Prefer to skip survey, go straight to discussion
- Formality of survey
- Positive reception for clickers & iterative process

Lessons Learned:
Reporting the Outcomes

- Rationale
  - Appropriate and beneficial to give indication of general tendency of participating group
  - No alternatives universally acceptable or opposed, but some tended toward more positive or negative

- Not everyone agreed
  - process does not demonstrate an alternative has “highest degree of relative support” - premature to make such conclusions
  - Summary of general sentiment inappropriate – oversimplifies diversity of concerns

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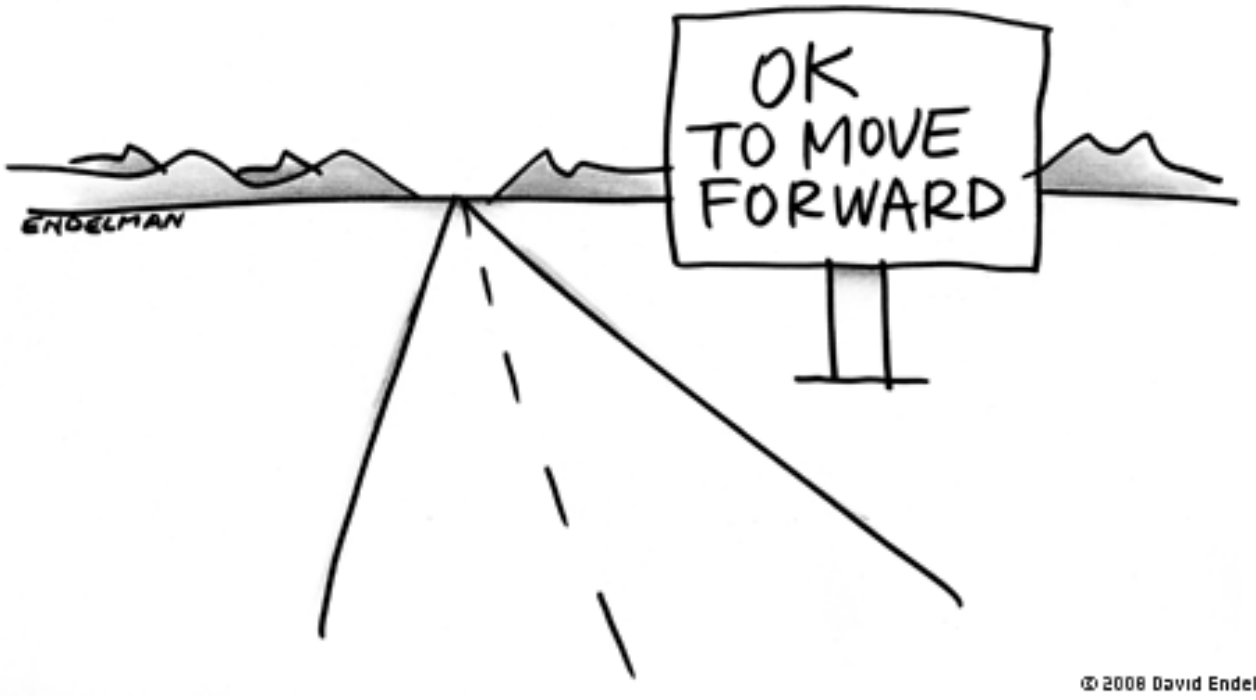
Recommendations

1. Further iterations are required to move (as much as possible) toward consensus
2. More time required
3. More technical input to the SPC from TWG to help better specify alternatives
4. Greater interaction between SPC and TWG in development stage

Recommendations

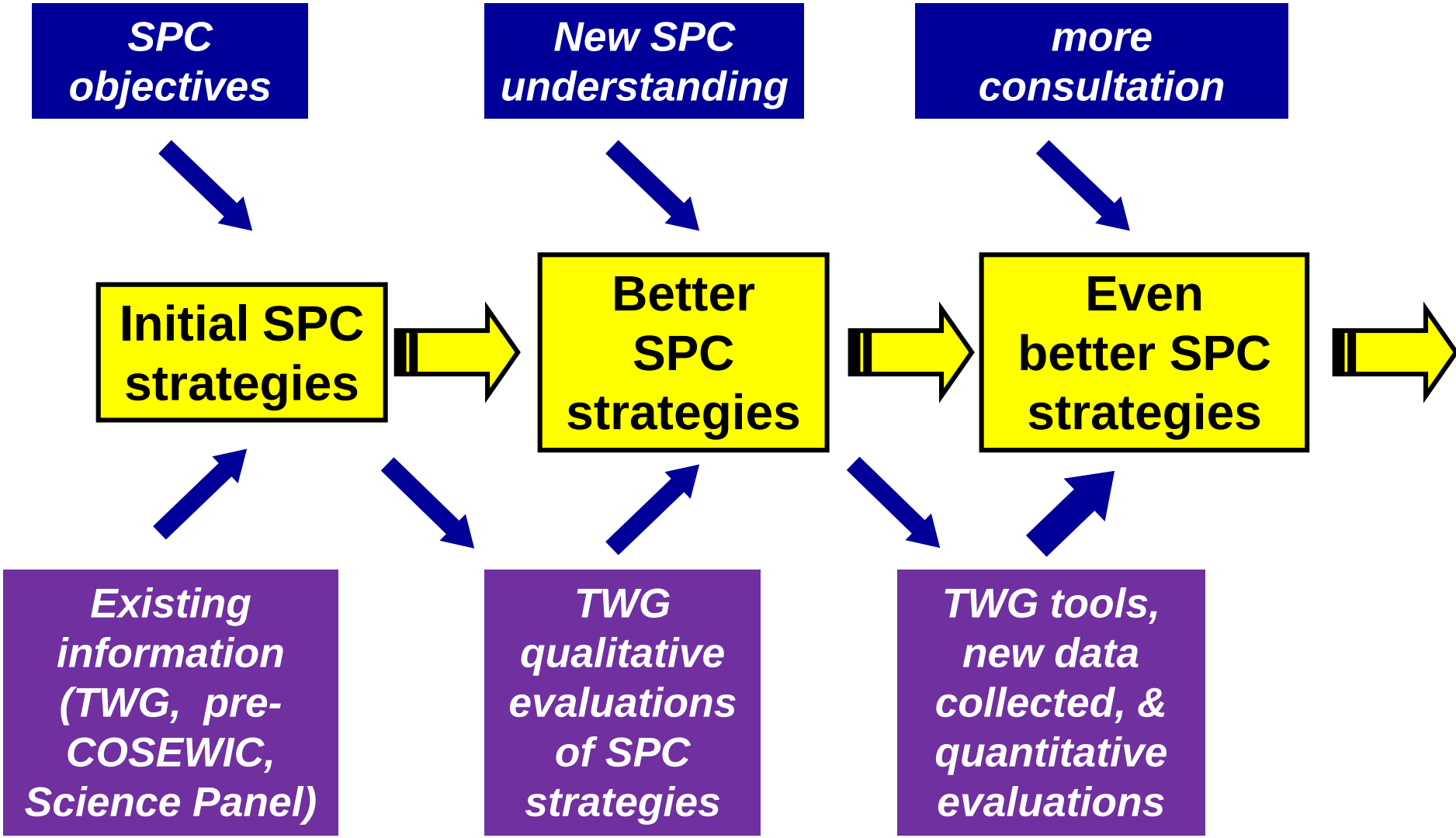
5. Improve the set of technical tools
6. Establish and utilize HSWG and HWG
7. Socio-economic expertise
8. Maintain momentum with current SPC and ensure full First Nations participation

Next Steps



THIS PROJECT

2014 - 2015



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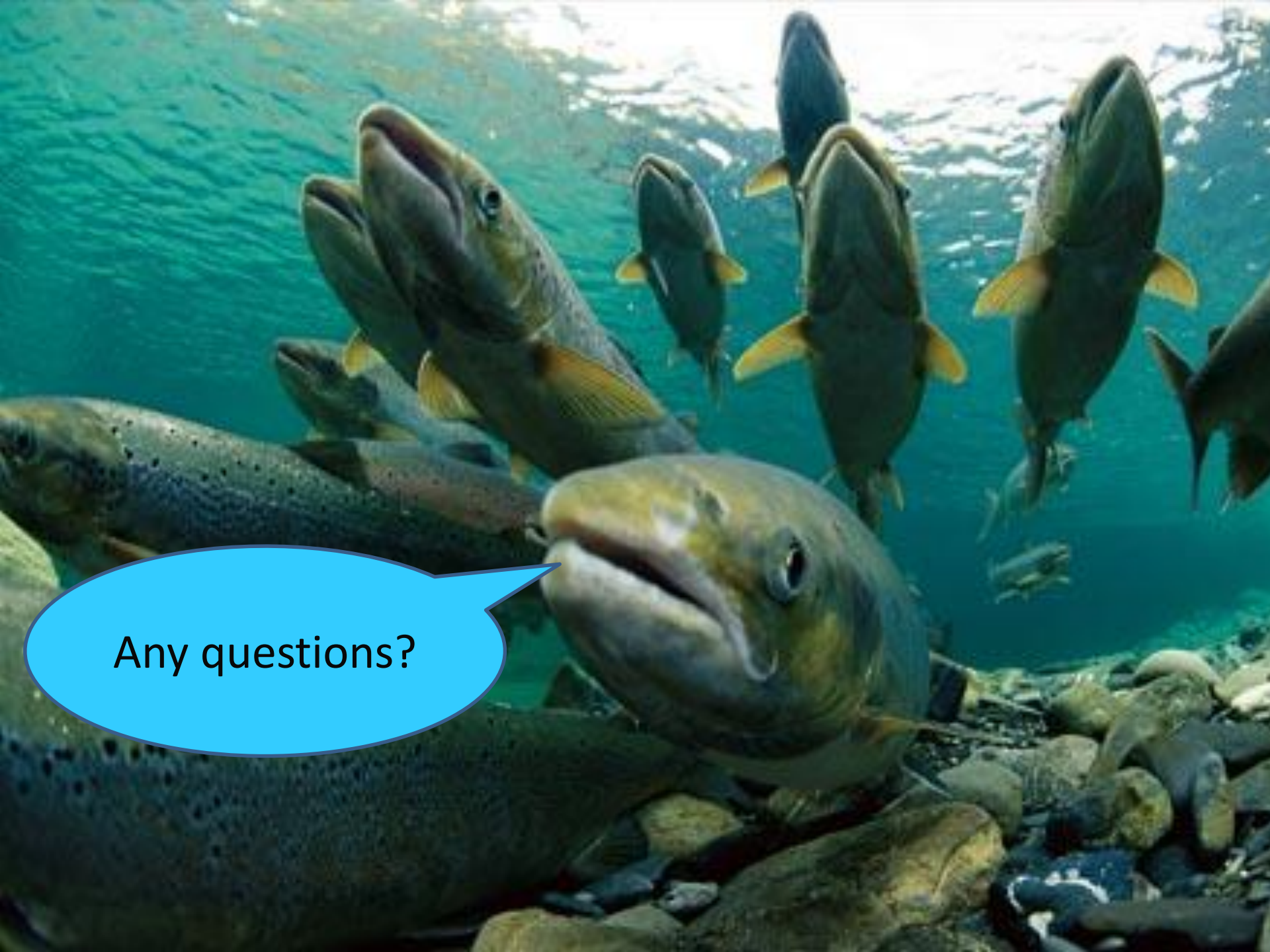
Any questions?