Results of CBR meeting pertaining to the Input/Output group phone Conference 8/22/05
(text in blue authored by CBR)

We all agreed to modify the current engine to provide Simpas-like functionality rather than develop a separate Excel interface for the Engine. We also agreed that if this effort proved impractical we would further examine the possibility of developing an Excel interface.

- The working concept at this time is that the model will retain the current method of input completely intact but would also include an entry screen that allows users to alter essential parameters. The existing input method uses at least two files including 1) a river description file with the physical geography and 2) one or more "text input files" with environmental conditions, stock specific migration parameters, etc. The "entry screen" method would read selected essential parameters from the text input files and allow the user to alter them before running the model. At the conclusion of the model run, the modified text input file(s) could be saved for sharing with other users and archive purposes.

Issues discussed

1. Development of a Simpas-like entry screen
    a. Pops up first, but retain the option to use current Graphical interface or command-line interface
        - Yes. The pop-up method is a convenient access method for some of the essential parameters used in the model. All the parameters (including the entry screen parameters) are stored in the text input files.
    b. Develop entry fields to select text input files (flow file, fish stocks, etc.) by browsing on local system (Pull down type)
        - Yes.
    c. Develop entry fields to accommodate changing dam operation during the migration season
        - Yes.
    d. Develop entry fields to accommodate changing fish transport operations (primarily date driven)
        - Yes. These need to be defined for the input screen. Is it just start and stop dates?
2. Development of outputs
    a. Archive file, for storing and sharing model runs. Includes all data needed to replicate a model run. Also includes results of model run and a notes section.
        - Yes for input. No for output. At this time, we will be able to create an archive option to save all model inputs to replicate a model run. However, we will not be able to include the run outputs in this archive file. We will need to see about the notes section. It is our intention to try to implement this.
    b. Develop a text-based, easy to read output sheet.

- Yes. We will implement an option to save and/or print the input/output table.

Next Steps

1. Programmers to meet with Jim Anderson and other CBR personnel to assess the difficulty of making the changes to the program.
    - Jim Anderson, Jared Krinke (programmer), Nick Beer, and Susannah Iltis met Monday, August 22, to discuss the creation of the entry screen as part of the model. We did discuss a web-based version, but we are unable to program or support this option. It may be possible to host a web-base archive for submitting model runs and results as a method of sharing and distributing model inputs and runs.
2. The results of this meeting will be communicated to the rest of the group by email.
    - This document. See tables and notes below for items identified by CBR that need clarification and additional items to be included.
3. Develop task list and more detailed time line
    - Since the entry screen will be part of the compiled model, we need to decide the exact elements for input and output fields to be included. Hopefully, there will be time to implement several "templates" if various input/output screens are identified.
4. Next meeting no later than Sept 4.
    - Susannah Iltis on vacation: September 1-12. Nick Beer should be available for most days during this period.

SIMPAS Input/Output 08/22/2005

1	ESU													
2	Fish Stock:	Mixed stock fall chinook. 2003 passage year.												
3	Scenario:	Reference Long-term Operation.												
4	SURVIVAL ESTIMATES	Collection dams		To Salt Survival		w/D Value	D value source							
5			In-River	Transp.	Total									
6	Pop arriving with Transport	3	0.0000	0.0042	0.0000									
7	Survival w/o transport	0	0.4240		0.4282	0.0000								

8	INRIVER SURVIVAL ESTIMATES	LGR	LGS	LMN	IHR	SRM	MCN	JDA	TDA	BON	To Salt	Average	Cumulative
9	Dam plus Pool Survival (Project Survival)	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.848		0.1060	
10	Dam Survival	0.4277	0.4277	0.4463	0.0654		0.3192	0.1126	0.6267	0.6008		0.3783	0.0001
11	Turbine Mortality at Individual Dams	0.502	0.805	0.793	0.839		0.850	0.741	0.857	0.975		0.7953	
12	Cumulative Survival w/o transport	0.000	0.192	0.070	0.056	0.055	0.052	0.036	0.031	0.025	0.3995		
13	To Salt Survival From Head Of Each Pool w/o transport						0.000	0.446	0.525	0.709			
14	TRANSPORT ESTIMATES	LGR	LGS	LMN	IHR	SRM	MCN	JDA	TDA	BON			
15													
16	Transport Dams												
17	Instream migrants arriving at each dam				Then:	0.276	Then:	0.006	0.005	0.00428			
18	Pop collected at…	0.426	0.281	0.346			0.253						
19	Cumulative pop collected	0.426	0.102	0.035			0.015						
20	OUTPUTS	LGR	LGS	LMN	IHR	SR Mouth	MCN	JDA	TDA	BON			System
21										Project	PI	PII	Average
22	Fish Passage Efficiency (FPE)	0.000	0.000	0.000	0.844		0.000	0.496	0.215	1.000			0.319
23	Daily average spill	0.530	0.530	0.490	0.928		0.620	0.861	0.000	Day and Night Data			0.495
24	First period average spill	0.000	0.000	0.000	0.000		0.000	0.000	0.600	0.470			0.134
25	Second period average spill	0.000	0.000	0.000	0.000		0.000	0.000	0.600	0.470			0.134
26	Turbine Passage	0.530	0.530	0.490	0.084		0.620	0.247	0.000	P2 Turbine Passage	0.000	0.000	0.313
27	Bypass Passage (and/or Collection)	0.000	0.000	0.000	0.000		0.000	0.000	0.187	P2 Bypass Passage			0.023
28	Sluiceway Passage	0.000	0.000	0.000	0.025		0.000	0.614	0.096	P2 Sluiceway Passage	0.00	0.00	0.092
29	Spill Passage (Normal Bays Only)	0.000	0.000	0.000	0.818		0.000	0.000	0.078	0.000			0.112
30	RSW Passage	0.000	0.000	0.000	0.000		0.000	0.000	n/a	n/a			0.000
31	FLOW INPUTS	LGR	LGS	LMN	IHR	SR Mouth	MCN	JDA	TDA		BON		To Salt
32	FIRST DAILY PERIOD (Typically Night)									Project	PI	PII	
33	Spill Efficiency	0.0	0.0	0.0	1.3		0.0	1.7	1.6	1.0			
34	Total Flow	32.0	32.0	32.0	32.0		143.0	143.0	143.0	143.0			
35	Total Spill Flow	0.0	0.0	0.0	20.0		0.0	42.9	57.2	113.0			

36	Spill Flow Through Raised Crest	0.0	0.0	0.0	7.0		0.0	0.0	0.0	0.0			
37	SECOND DAILY PERIOD (Typically Day)												
38	Spill Efficiency	0.0	0.0	0.0	1.3		0.0	2.4	1.6	1.0			
39	Total Flow	32.0	32.0	32.0	32.0		143.0	143.0	143.0	143.0			
40	Total Spill Flow (standard & raised crest bays)	0.0	0.0	0.0	20.0		0.0	42.9	57.2	75.0			
41	Spill Flow Through Raised Crest	0.0	0.0	0.0	7.0		0.0	0.0	0.0	0.0			
42	PASSAGE AND SURVIVAL INPUTS	LGR	LGS	LMN	IHR	SR Mouth	MCN	JDA	TDA		BON		To Salt
43	Diel (% of fish passing during first period spill hours)	0.68	0.68	0.83	0.50		0.68	0.50	0.50	n/a			
44	FGE (Both Periods)	0.53	0.53	0.49	0.54		0.62	0.64	0.34		0.35	0.40	
45	Sluiceway or Surface Bypass Collector Efficiency	0.00	0.00	0.00	0.00		0.00	0.00	n/a		0.06	0.47	
46	Bonneville Data ---------->						PH Priority (PH1=1, PH2=2)			2			
47	Bonneville Data ---------->						Capped Spill Hours			16			
48	Turbine Survival	0.91	0.91	0.875	0.91		0.84	0.81	0.84		0.92	0.94	
49	Spillway Survival	0.93	0.98	0.956	0.98		0.96	0.98	0.98	0.98			
50	Raised Crest Survival	0.98	0.00	0.98	0.98		0.98	0.00	0.00	0.00			
51	Bypass Survival	0.98	0.98	0.98	0.98		0.94	0.96			0.98	0.98	
52	Sluiceway or Surface Bypass Collector Survival	0.00	0.00	0.00	0.00		0.00	0.00	0.98		0.96	0.98	
53	Pool Predation Adjustment Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.00
54	Pool Survival	0.530	0.850	0.856	0.861	1.000	0.943	0.778	0.898	0.848			1.000
55	GBD Mortality			Snake River Reach		0.00					L. Columbia Reach		0.00
56	Reach Survival (BON to saltwater for transported fish)												1.00
57	Transport Survival (in barge)												0.98
58	D Value for Transported Fish				Hatchery D Value:		0.00	Mixed D Value		0.18	Wild D Value		0.00
59	Survival Data source												
60	Calibration data												

Need definition / clarification

	Used	CBR Notes
To salt	Row 4, 13, 56	Currently, the model includes survival to the "Estuary" defined as extending to the Astoria Bridge near the mouth of the Columbia.
Raised Crest	Row 30, 36, 40, 41, 50	Is this the same as RSW? The model has support for input and output related to RSW spill and survival.
Capped Spill Hours	Row 47	What is this and how is it used in calculations?
Spill Efficiency	Row 33, 38	Linear vs. Non-linear? Current calibrations of the model use linear equation for IHR, MCN, JDA, TDA, and BON I. How would this input act? SIMPAS has used spill efficiency equations with up to 6^{th} order polynomials. Jim Faulkner has found 2 parameter curves that fit the data at LGR for spill and RSW efficiencies. Since multiple parameters will be needed for each dam to describe the spill efficiencies, this should probably be handled only through the text input files. Typing a number in this entry-screen box should probably supersede any equations defining spill efficiencies.
Total Flow	Row 34, 39	What is this value and over what time period? Need to figure out what this input would be in a time-step model that can use daily observed flows for retrospective runs. As an Input, it could supersede the daily varying input flow values. As an output it could report an average flow over the "Run Period" (See below).
Total Spill Flow	Row 35, 40	Need to figure out what this input/output would be in a daily time-step model as with the Total Flow above.
Bypass / Sluiceway	Row 27, 28	Model does not differentiate between bypass and sluiceway. Can enter "bypass" survival.
Pool Predation Adjustment Factor	Row 53	We would suggest that rather than reduce or increase survival by a percentage that this term be applied to predator density. This is germane since the reservoir survival and passage issues are still being evaluated. They will have a functional form related to other variables and parameters being determined by the reservoir sub-group.
Pool survival	Row 54	Not possible as input. Can report the calculated pool survivals as output.
GBD mortality	Row 55	Not possible as input.

Reach Survival (BON to saltwater for transported fish)	Row 56	Not possible as input. Wait for outcome from Post-Bonneville Group. **Post-Bonneville Group** Product: Methods to assign various forms of latent mortality to in-river migrating and transported fish. Tasks: 1) Determine required outputs from passage model; 2) Determine algorithms for applying latent mortality functions to fish arriving below Bonneville; 3) Determine ranges of mortalities. Timeline: Due to scheduling conflicts of members, this group will not meet until October.

Additional Items

	Used by	**CBR Notes**	**Determined by**
Run Period	OUTPUTS: • Daily average spill • First period average spill • Second period average spill INPUTS: • Total Flow • Total Spill Flow • Spill Flow through Raised Crest	First and last day of the run. This is needed to define the calculation period applied to produce various outputs when running a daily time-step model to produce summary or averaged values for the whole period, e.g., "Daily average spill." Current model inputs for river condition elements such as "outflow" are 365 days long.	Current idea is that this would be based on stock selection, but be somewhat general for defined "seasons."