# Appendix B. Detailed Results

This Appendix presents additional results to those presented in Section 5 of the report. Results are presented in graphical form only - we have not provided a narrative describing or explaining these results because of time constraints.

Results in this Appendix are organized into the following sections:

**Section B.1. Sensitivity of Outcomes and Decisions to Effects of Uncertainties.**
These results are similar to Section 5.4 of the report, but looks at the effects of uncertainties on individual jeopardy standards rather than a combination of all three.

**Section B.2. Sensitivity of Outcomes and Decisions to Weightings on Alternative Hypotheses.**
These results are similar to those in Section 5.6 of the report, but looks at the effects of different weightings on passage models, transportation assumptions, and extra mortality hypotheses on individual jeopardy standards rather than on a combination of all three.

**Section B.3. Projected spawning abundance for Imnaha and Marsh Creek stocks.**
This sections shows "Box and whisker" diagrams (see Section 5.7 for an explanation of these diagrams) of simulated distributions of spawning abundance over the 100-year simulation period. Results are presented for an "optimistic" and a "pessimistic" aggregate hypothesis, as defined in Section 5.7 of the report.

**Section B.4. Projected mainstem and tributary harvest rates for Imnaha and Marsh Creek stocks.**
Supplements results in section 5.7 of the report, showing tributary and mainstem harvest rates for these two stocks for "optimistic" and "pessimistic" aggregate hypotheses.

**Section B.5. Further analyses of Smolt-to-Adult Return rates.**
Shows average SARs (see section 5.7 for an explanation of how SARs are generated by the life-cycle model) as a function of the probability of the number of spawners for the sixth best stock exceeding the survival escapement level over 100 years. The results are broken out by passage model/transportation assumptions (CRiSP-T3 and FLUSH-T1/T2), prospective model (Alpha or Delta), and action (A1, A2, A3).

**Again, we caution that these results are only preliminary. Consideration of additional actions and hypotheses, and assignment of weightings to alternative hypotheses, may cause these results to change in the final report. Therefore, the results we present in this section should not be interpreted as implying that one action is better than another. Instead, they should be seen only as an illustration of how these kind of results might be displayed.**

## B.1. Sensitivity of Outcomes and Decisions to Effects of Uncertainties.

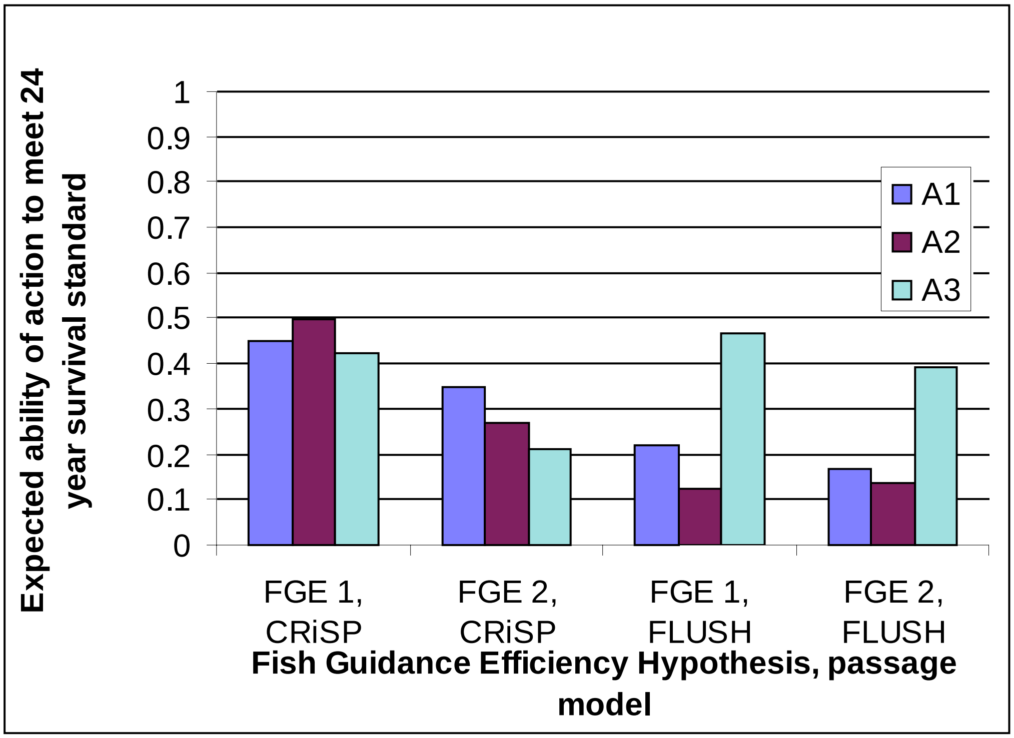



**Figure B.1-1.** Expected ability to meet 24-year survival standard under different FGE hypotheses. CRiSP passage model outputs are coupled with the TRANS3 assumption about transportation survival; the FLUSH passage model is associated with TRANS1 and TRANS2 transportation assumptions.

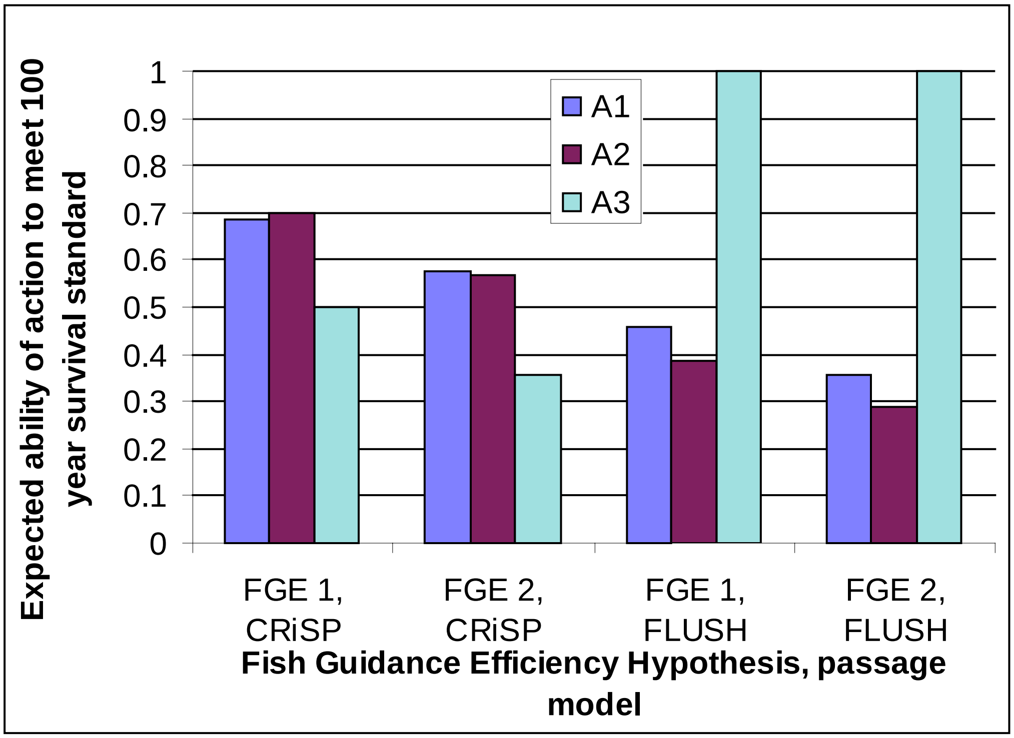



**Figure B.1-2.** Expected ability to meet 100-year survival standard under different FGE hypotheses.

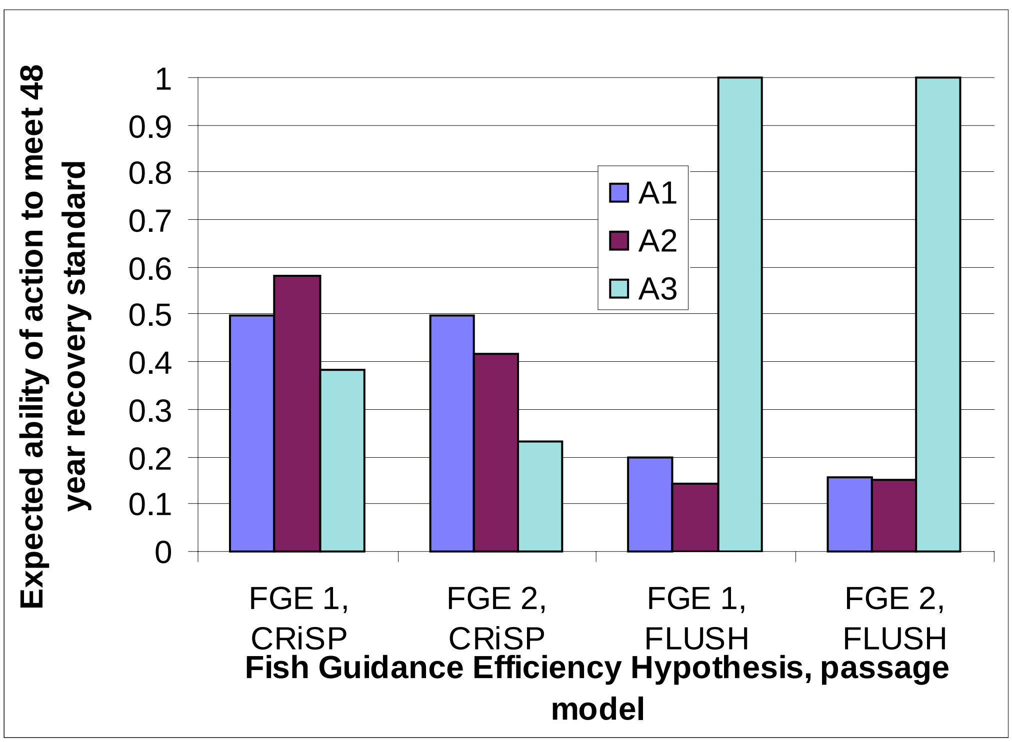



**Figure B.1-3.** Expected ability to meet 48-year recovery standard under different FGE hypotheses.

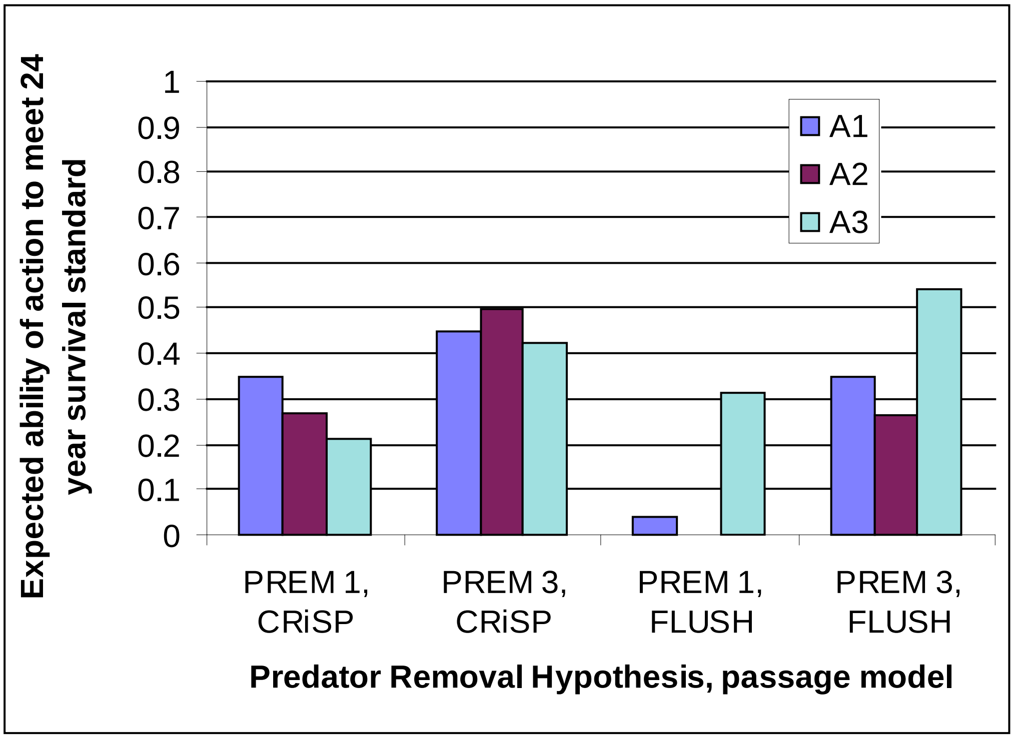



**Figure B.1-4.** Expected ability to meet 24-year survival standard under different Predator Removal hypotheses.

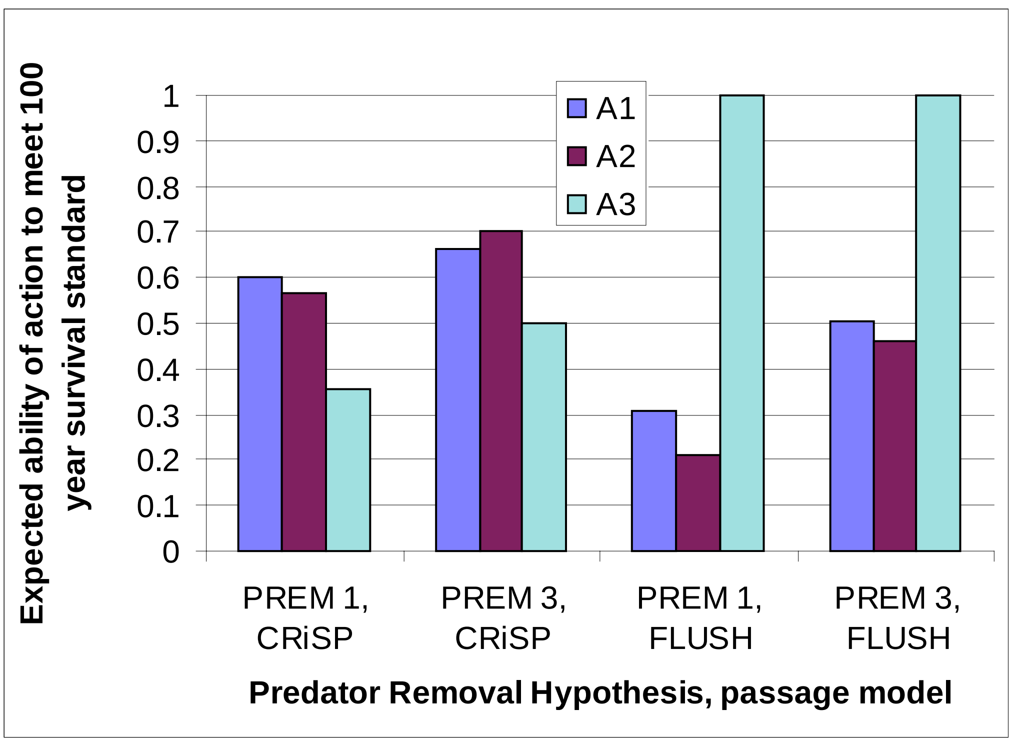



**Figure B.1-5.** Expected ability to meet 100-year survival standard under different Predator Removal hypotheses.

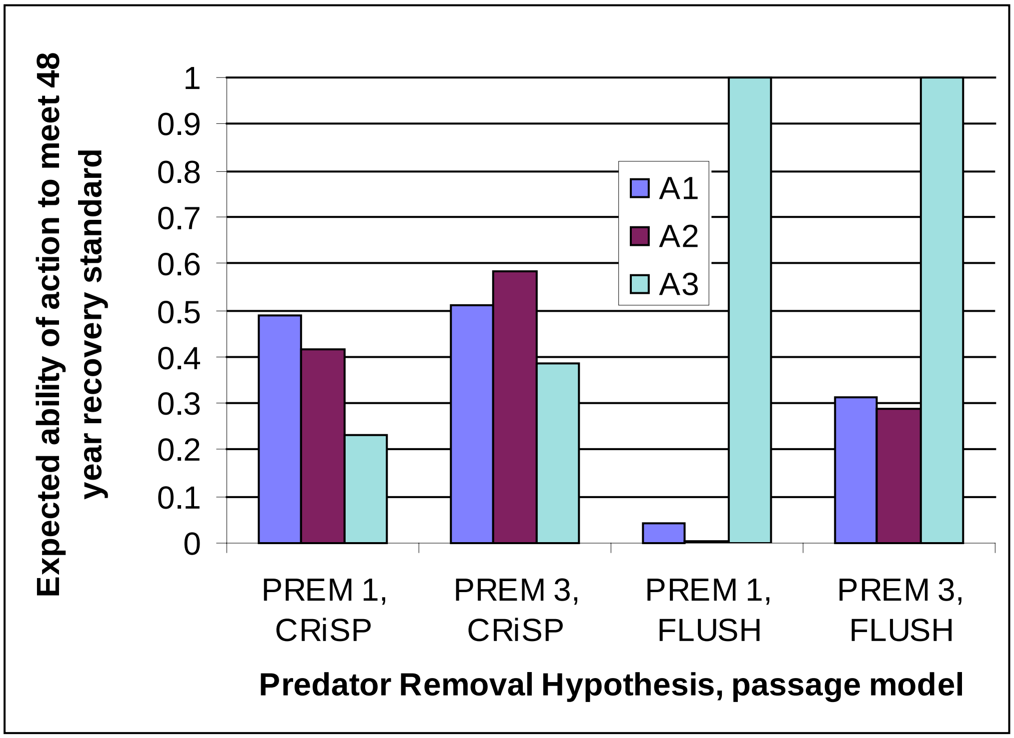



**Figure B.1-6.** Expected ability to meet 48-year recovery standard under different Predator Removal hypotheses.

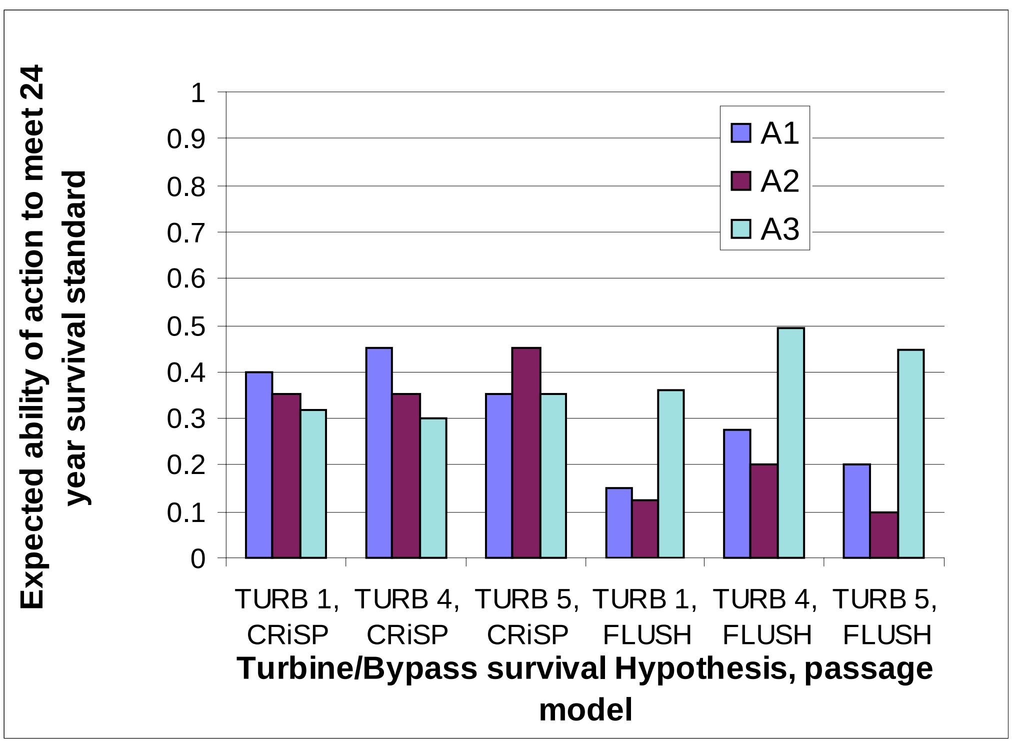



**Figure B.1-7.** Expected ability to meet 24-year survival standard under different historical turbine/bypass mortality hypotheses.

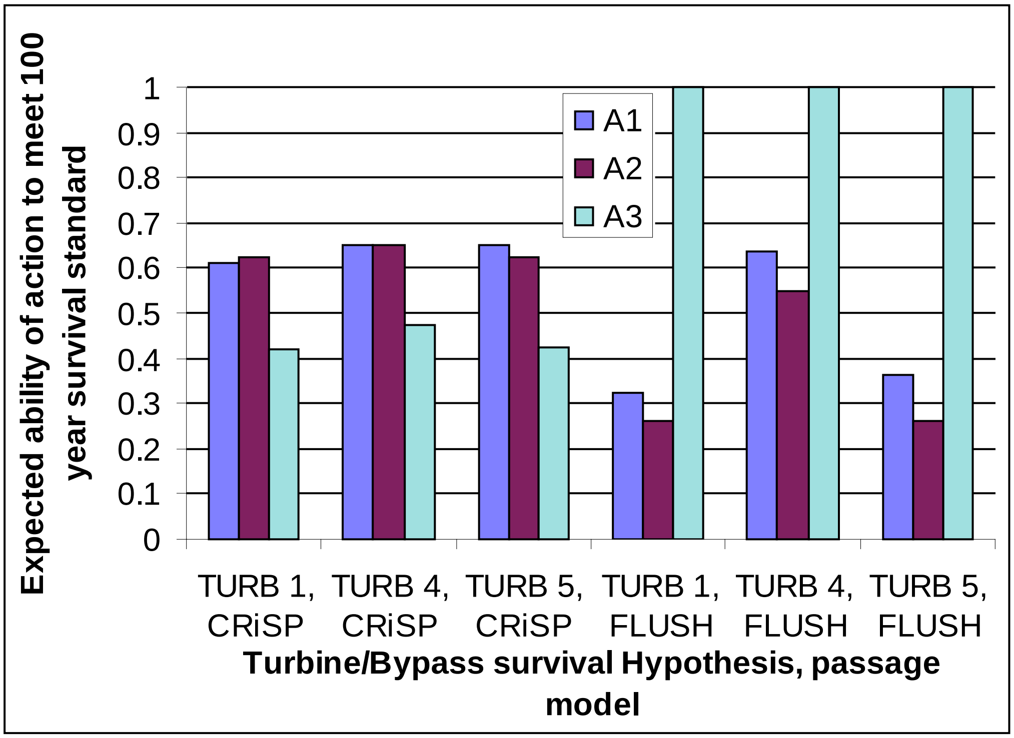



**Figure B.1-8.** Expected ability to meet 100-year survival standard under different historical turbine/bypass mortality hypotheses.

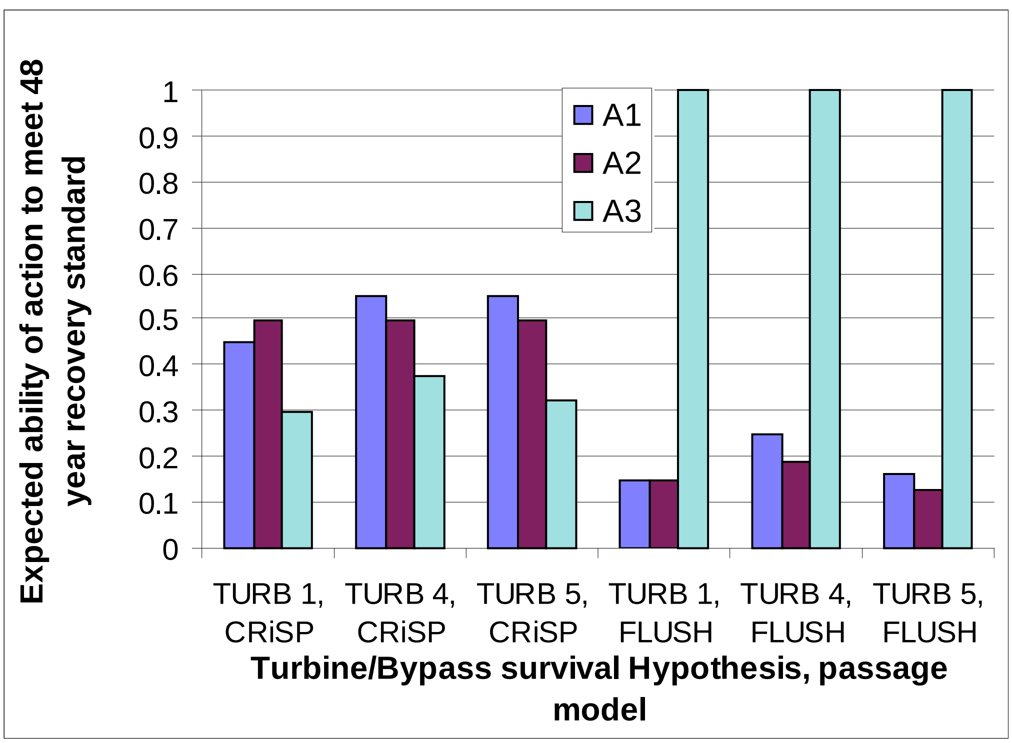



**Figure B.1-9.** Expected ability to meet 48-year recovery standard under different historical turbine/bypass mortality hypotheses.

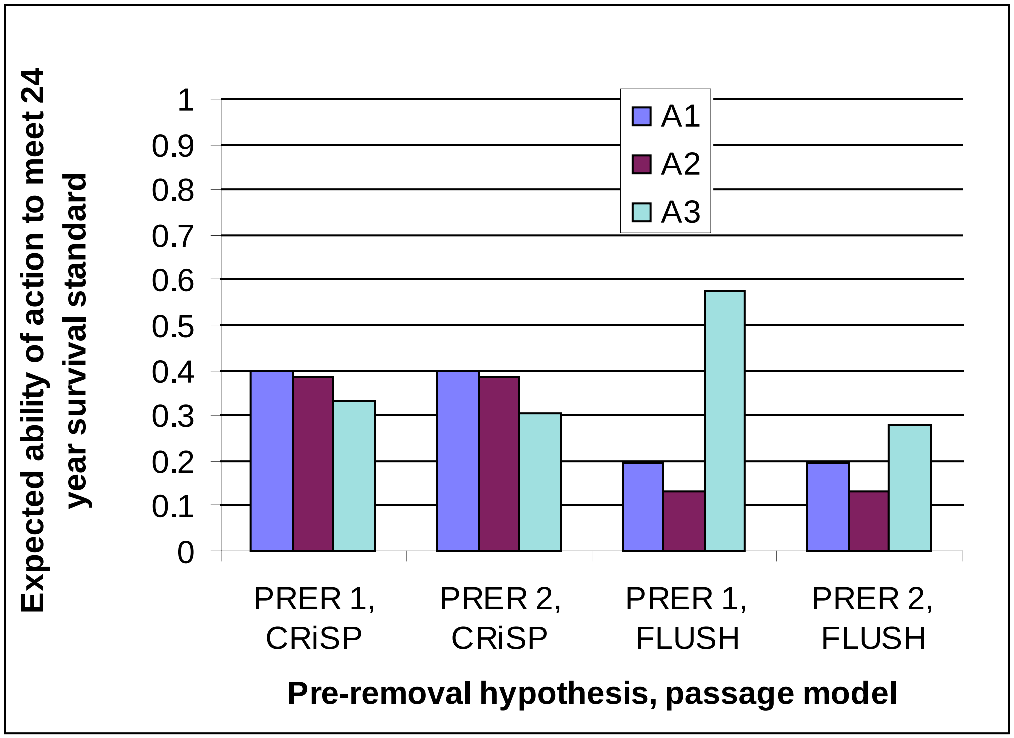



**Figure B.1-10.** Expected ability to meet 24-year survival standard under different Pre-removal period hypotheses.

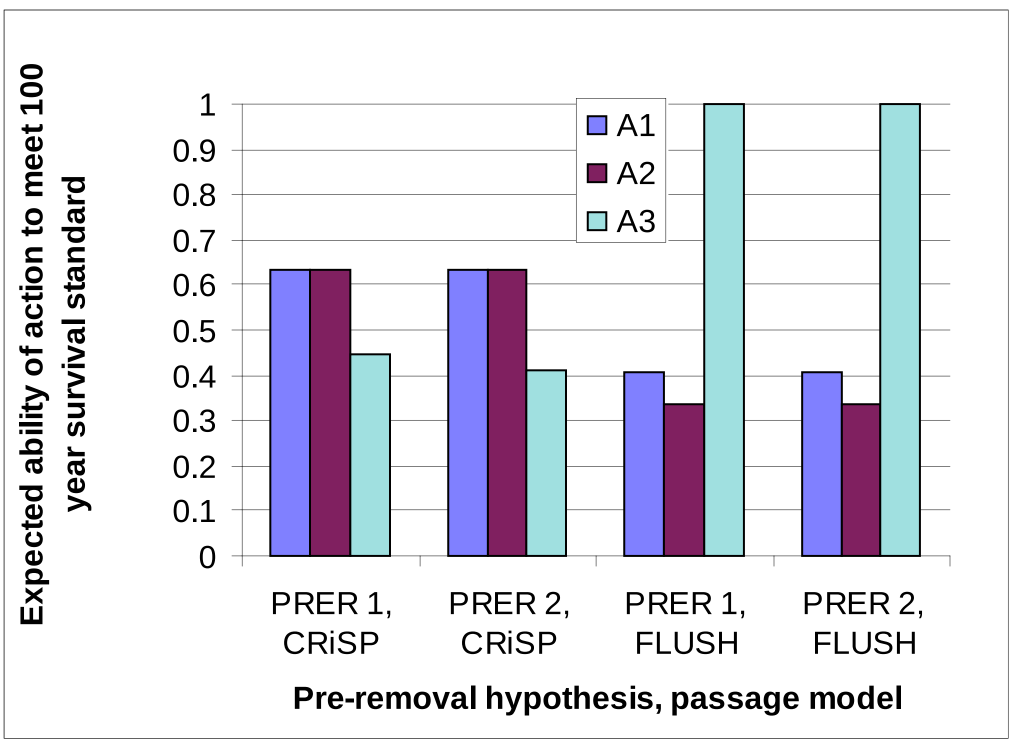



**Figure B.1-11.** Expected ability to meet 100-year survival standard under different Pre-removal period hypotheses.

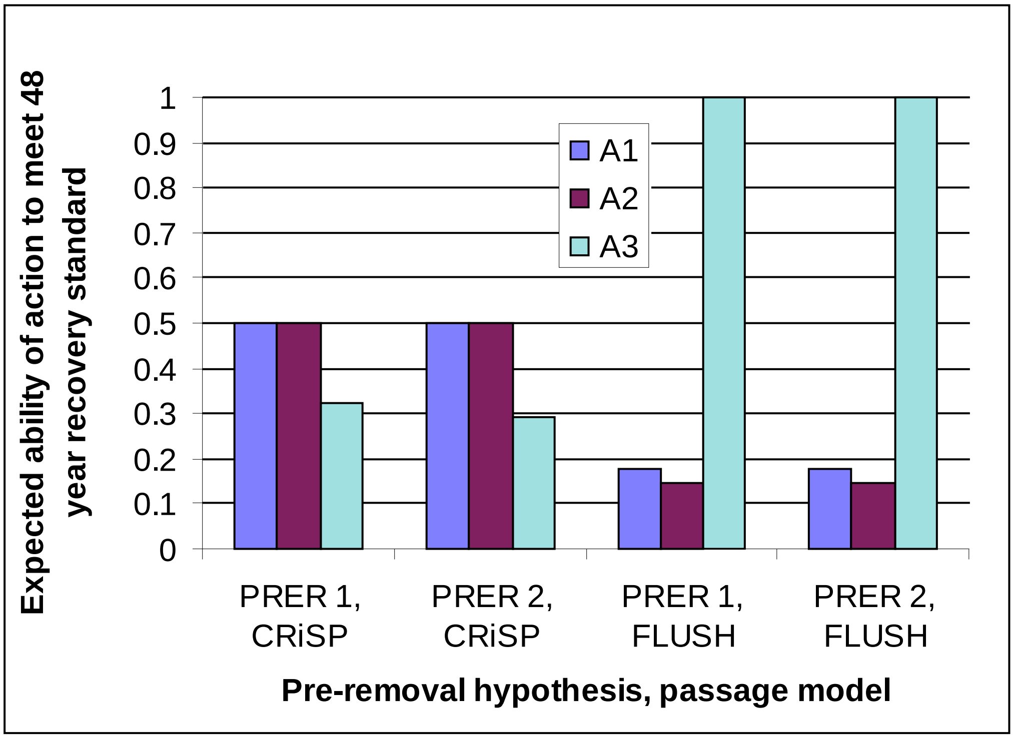



**Figure B.1-12.** Expected ability to meet 48-year recovery standard under different Pre-removal period hypotheses.

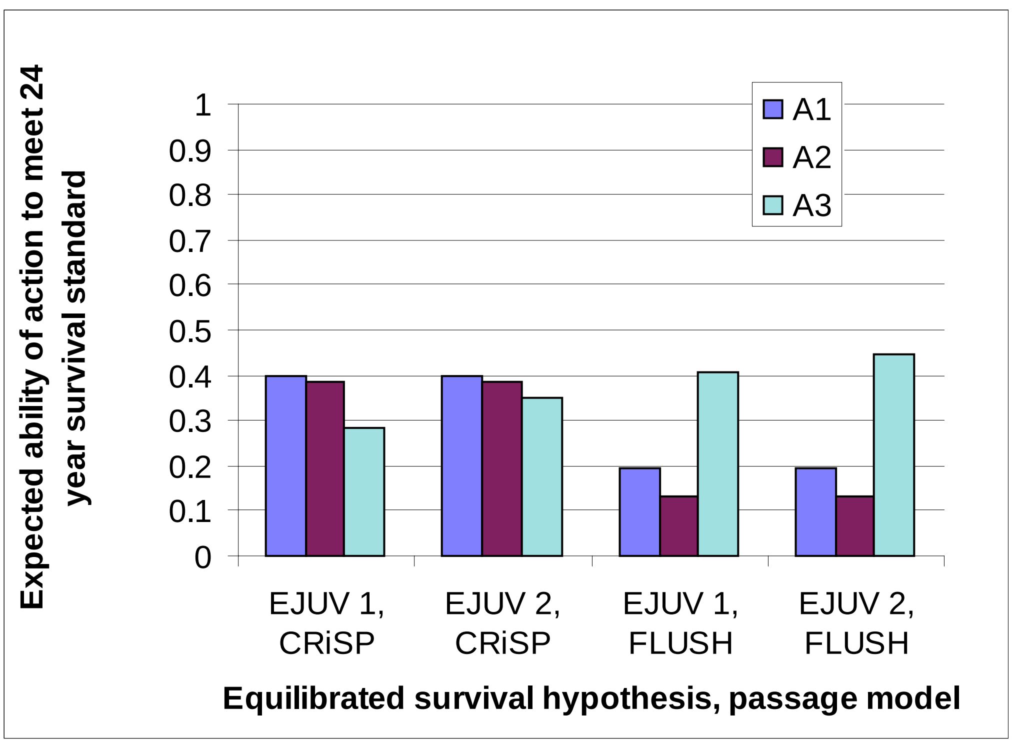



**Figure B.1-13.** Expected ability to meet 24-year survival standard under different equilibrated juvenile survival rate hypotheses.

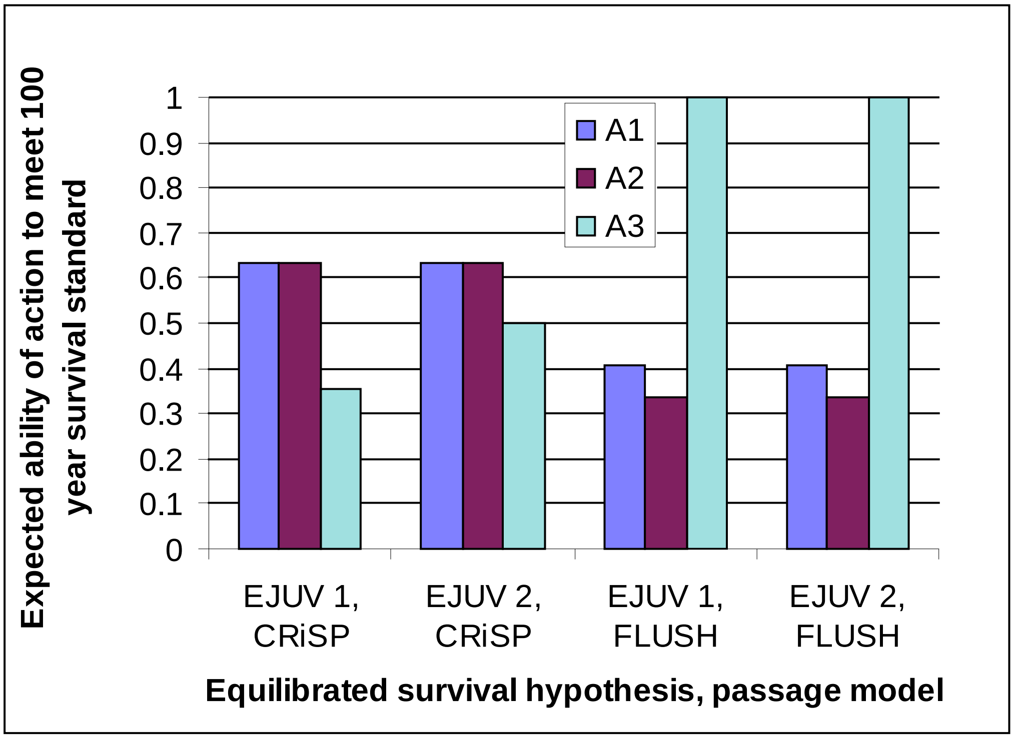



**Figure B.1-14.** Expected ability to meet 100-year survival standard under different equilibrated juvenile survival rate hypotheses.

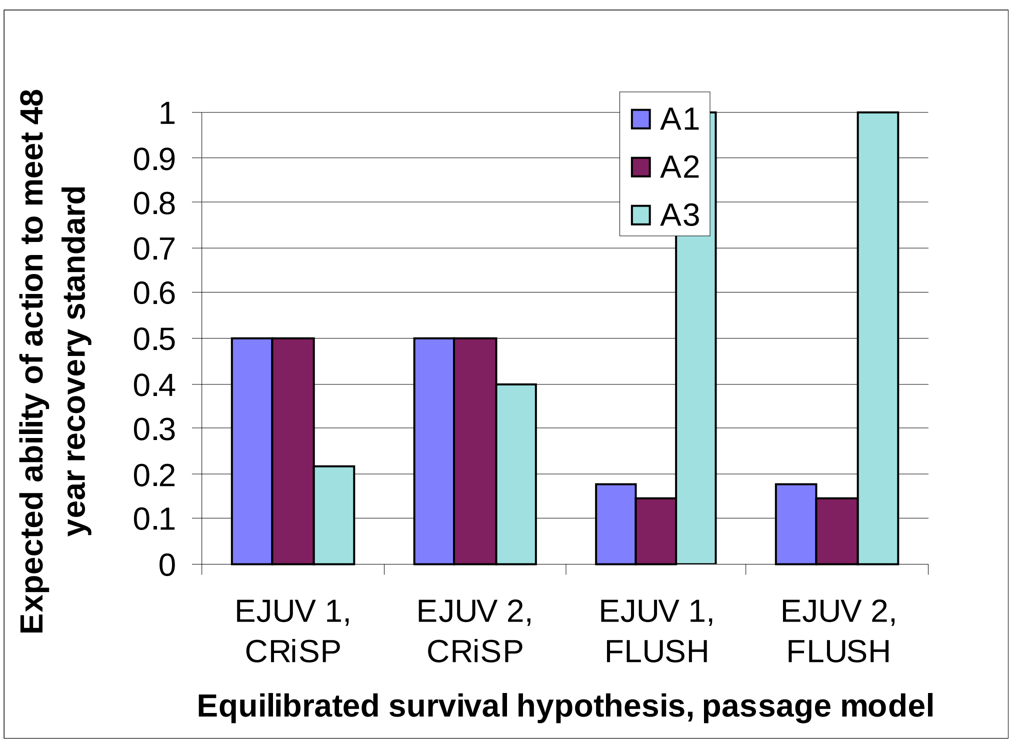



**Figure B.1-15.** Expected ability to meet 48-year recovery standard under different equilibrated juvenile survival rate hypotheses.

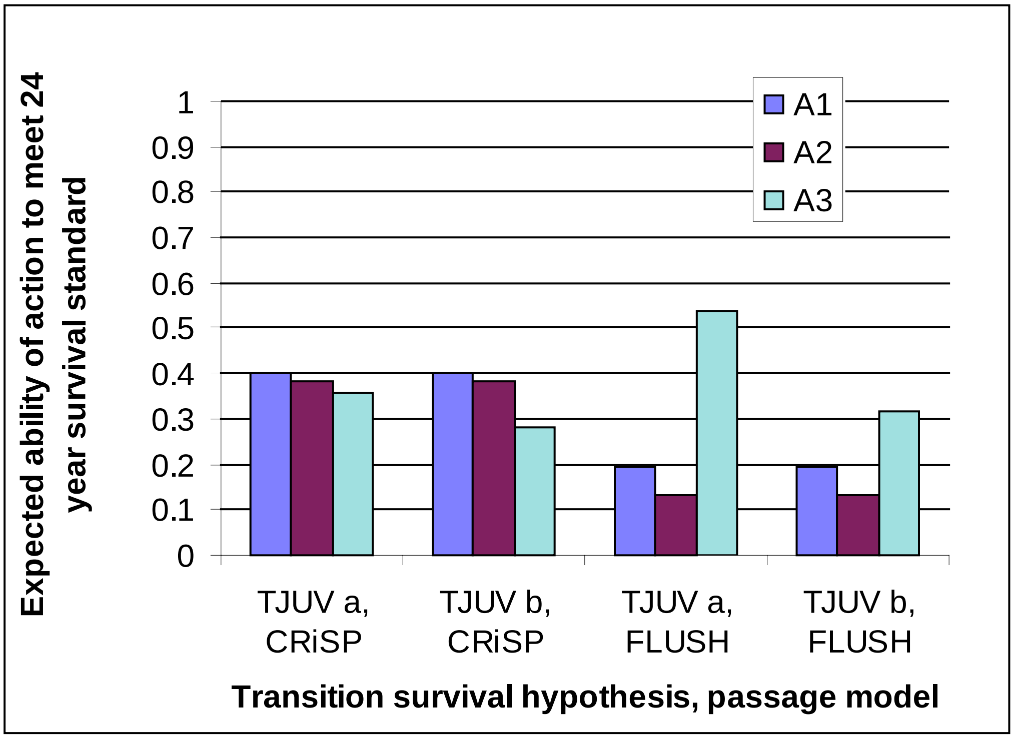



**Figure B.1-16.** Expected ability to meet 24-year survival standard under different transition period hypotheses.

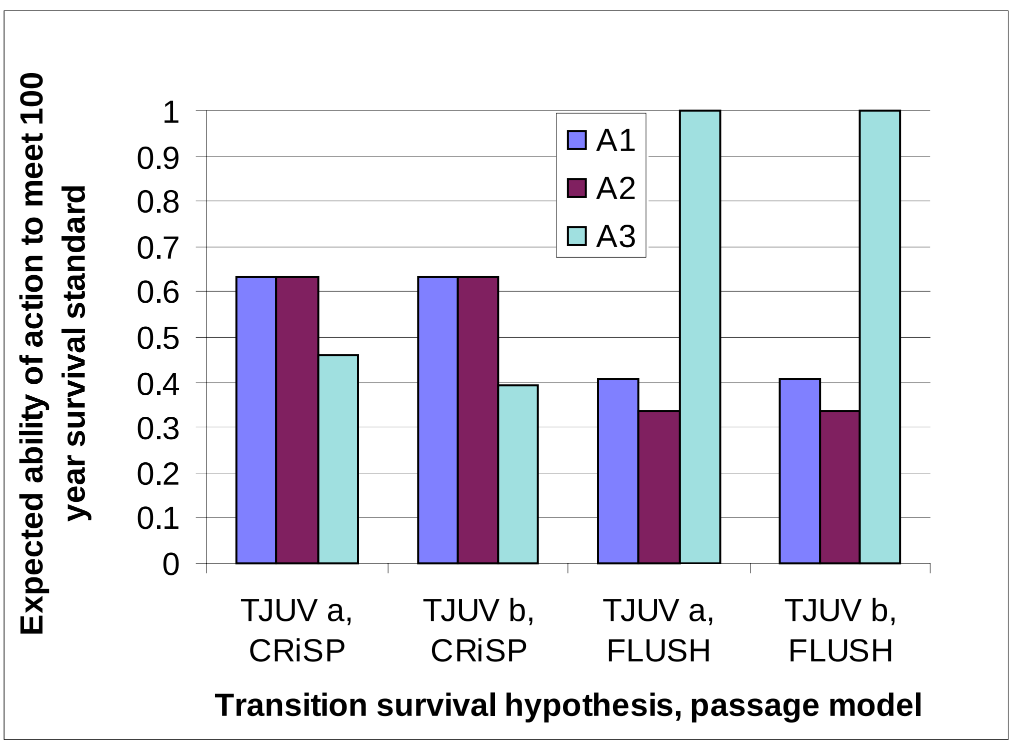



**Figure B.1-17.** Expected ability to meet 100-year survival standard under different transition period hypotheses.

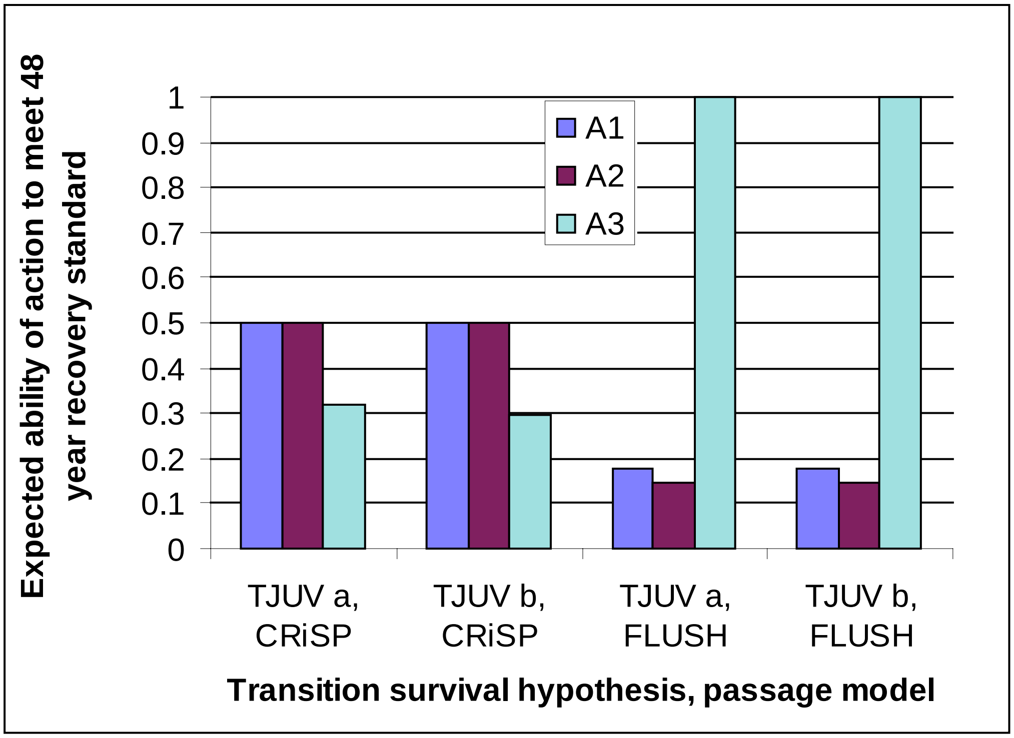



**Figure B.1-18.** Expected ability to meet 48-year recovery standard under different transition period hypotheses.

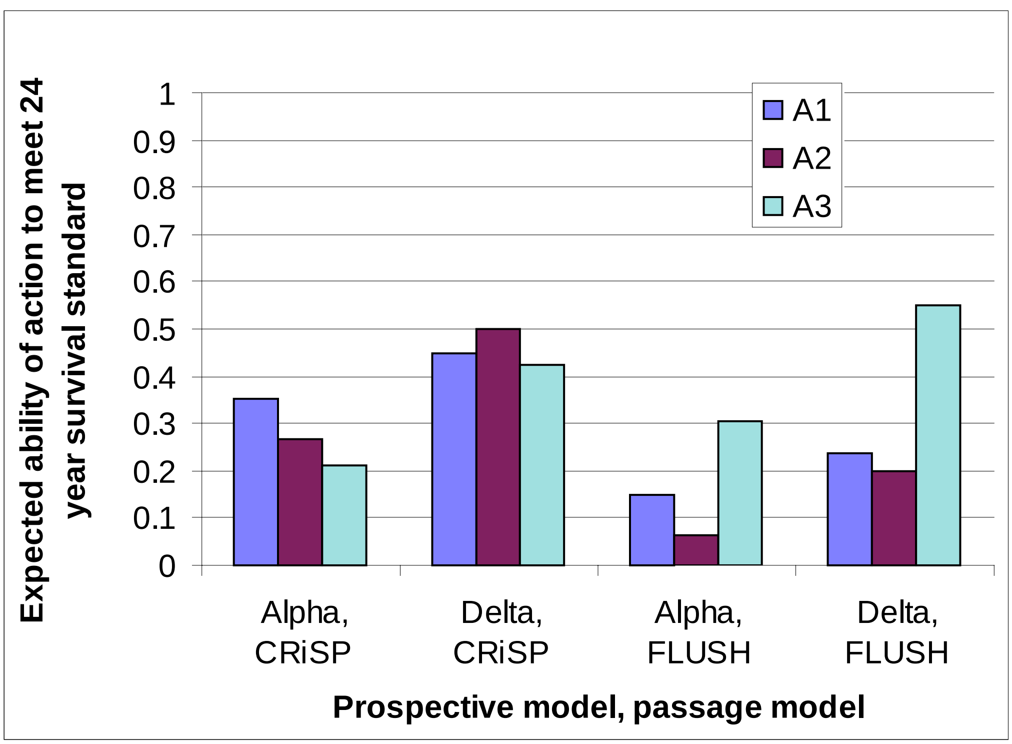



**Figure B.1-19** Expected ability to meet 24-year survival standard under different prospective model hypotheses.

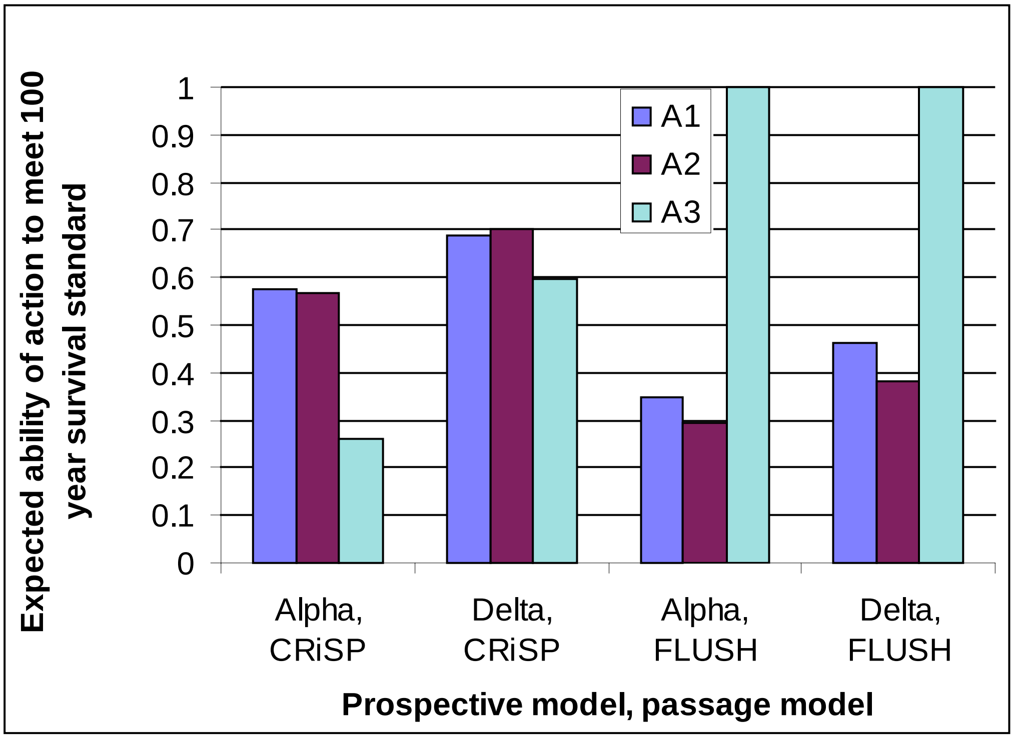



**Figure B.1-20** Expected ability to meet 100-year survival standard under different prospective model hypotheses.

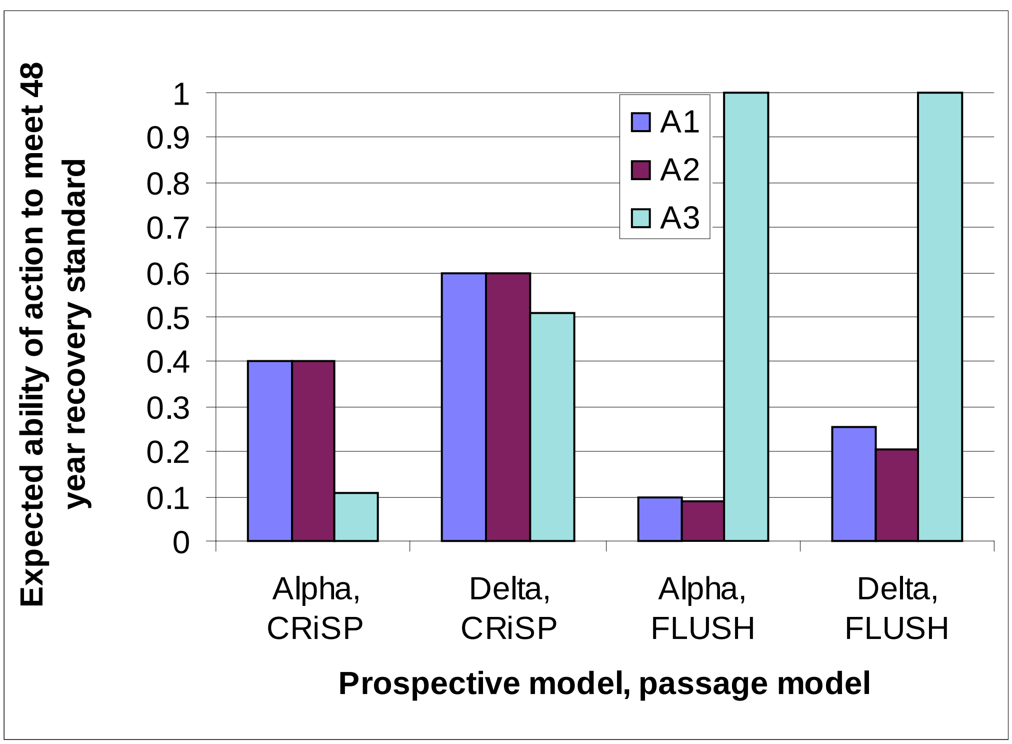



**Figure B.1-21** Expected ability to meet 48-year recovery standard under different prospective model hypotheses.

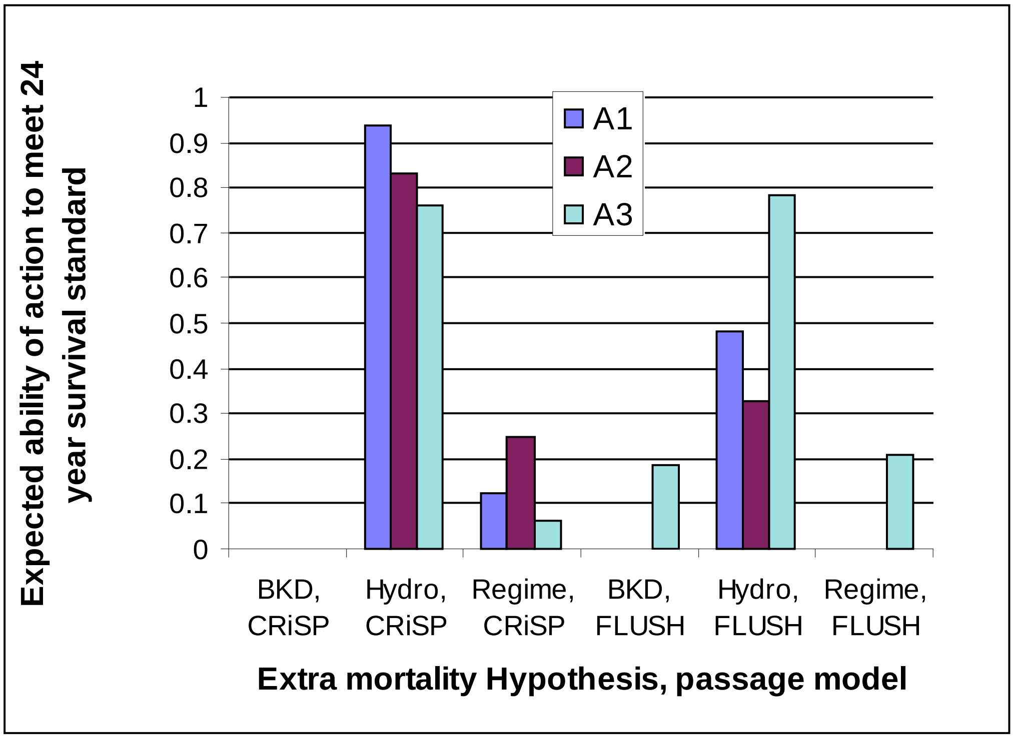



**Figure B.1-22** Expected ability to meet 24-year survival standard under different extra mortality hypotheses.

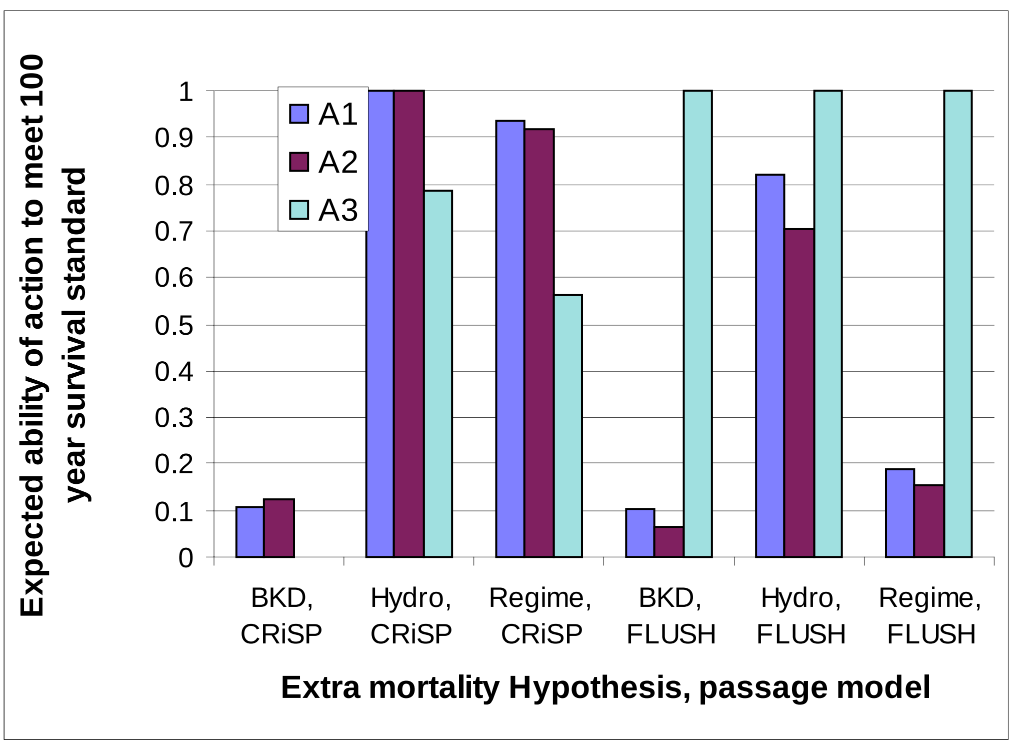



**Figure B.1-23** Expected ability to meet 100-year survival standard under different extra mortality hypotheses.

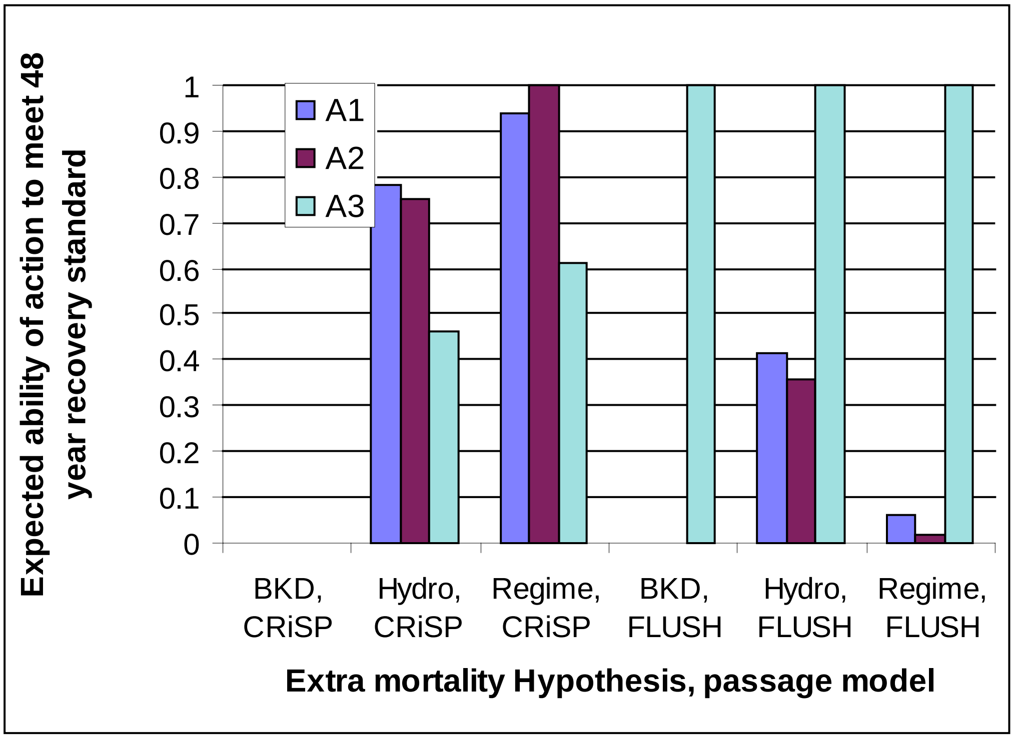



**Figure B.1-24** Expected ability to meet 48-year recovery standard under different extra mortality hypotheses.

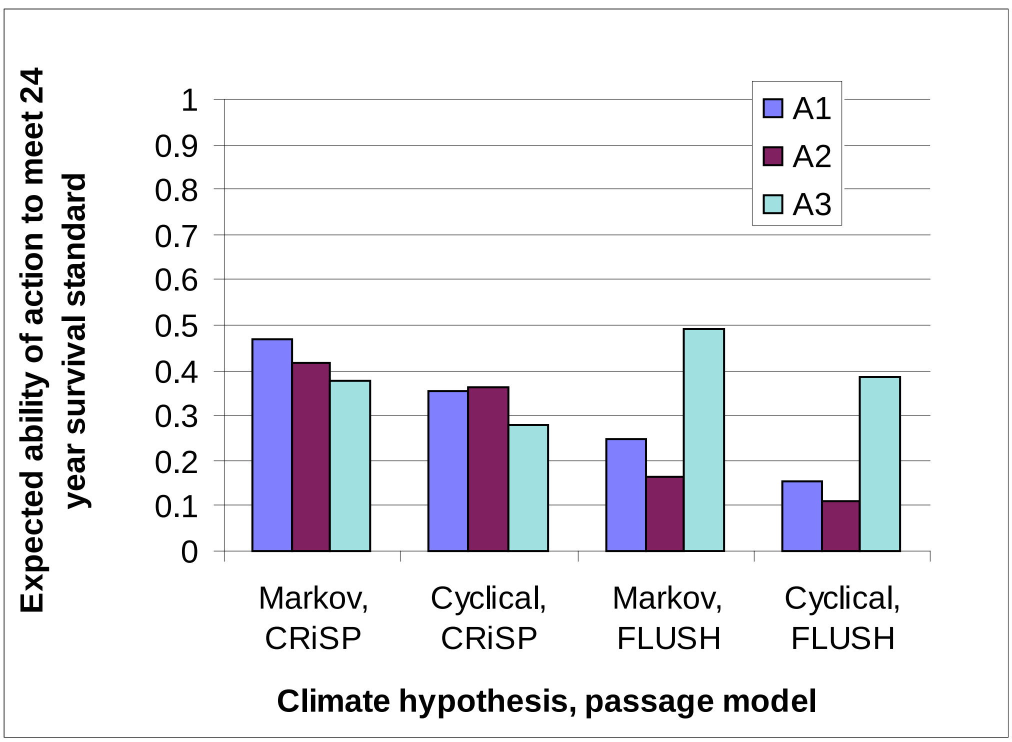



**Figure B.1-25** Expected ability to meet 24-year survival standard under different future climate hypotheses.

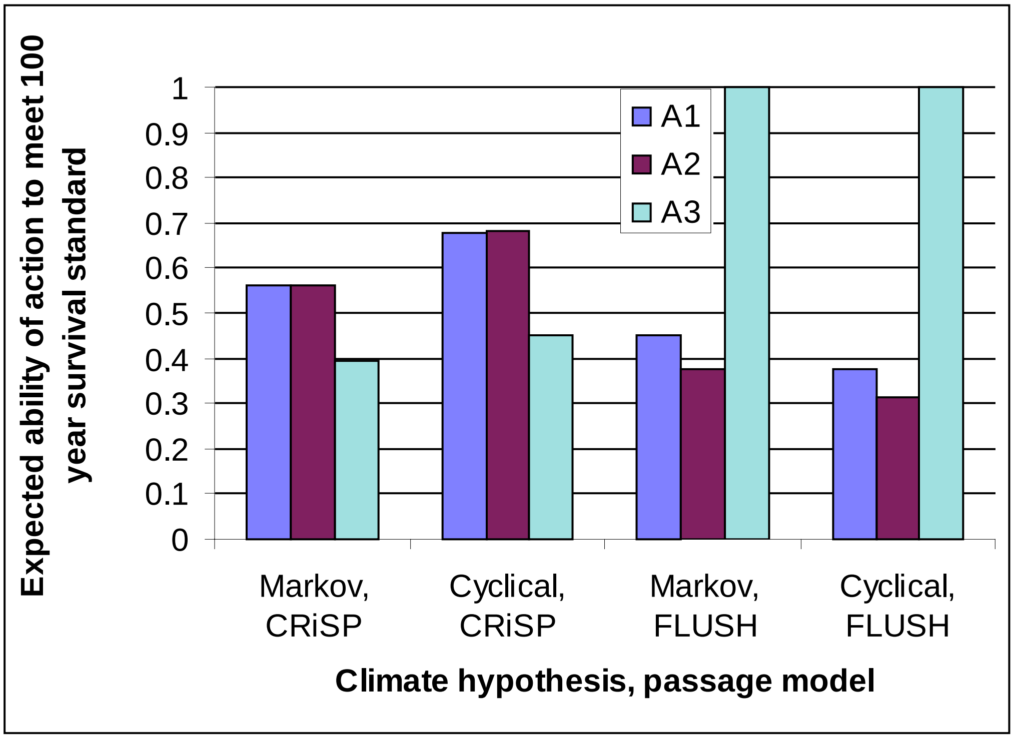



**Figure B.1-26** Expected ability to meet 100-year survival standard under different future climate hypotheses.

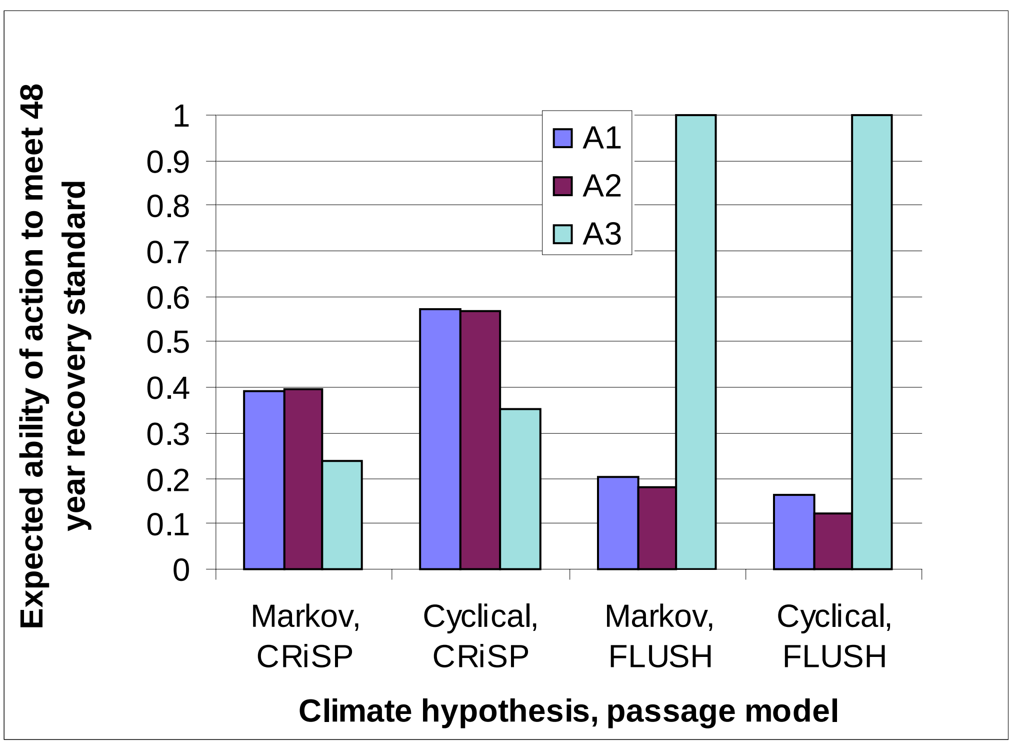



**Figure B.1-27** Expected ability to meet 48-year recovery standard under different future climate hypotheses.

## B.2. Sensitivity of Outcomes and Decisions to Weightings on Alternative Hypotheses.

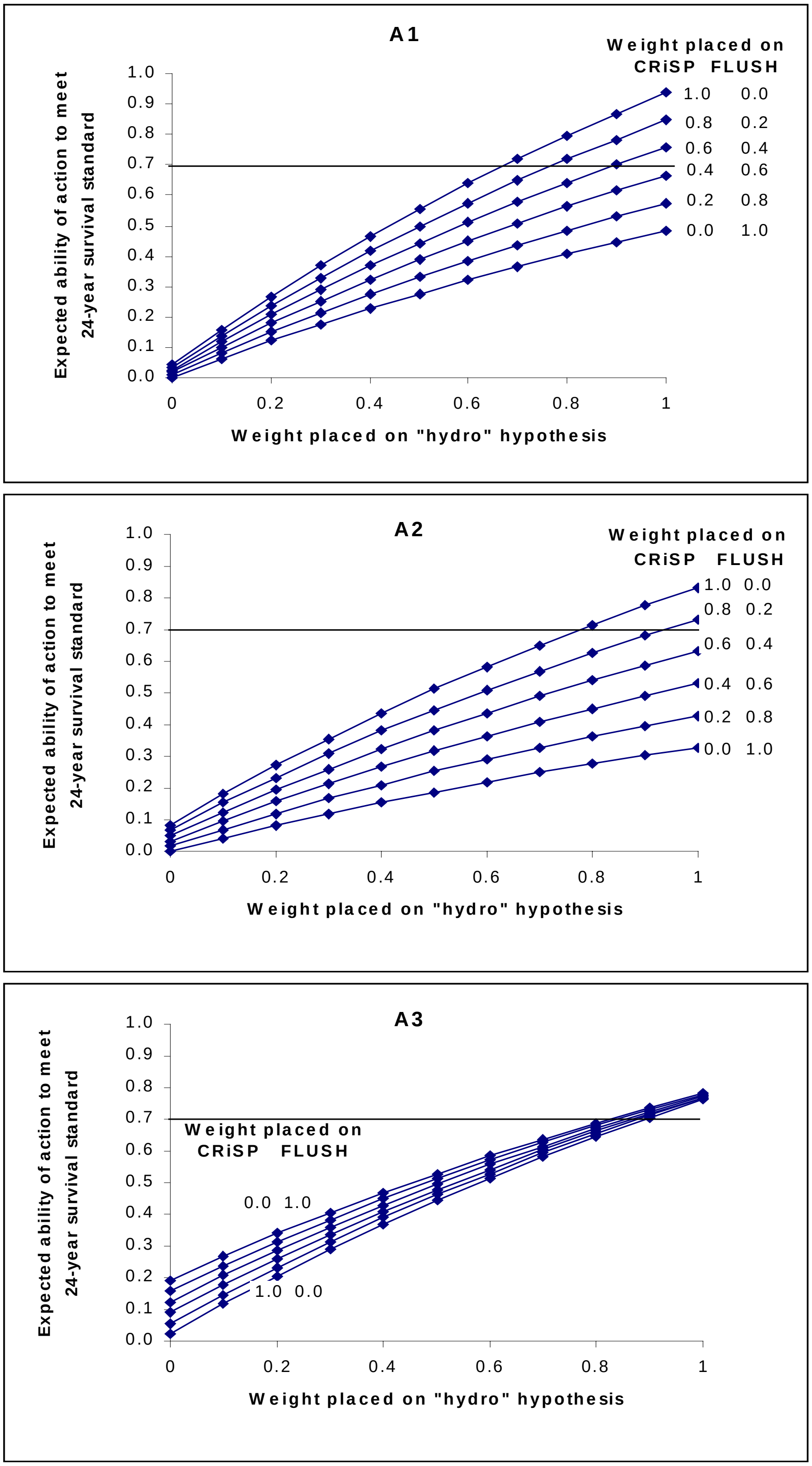



**Figure B.2-1.** Sensitivity of expected ability to meet 24-year survival standard to relative weights on passage model assumptions / transportation assumptions (CRiSP-T3; FLUSH-T1/T2) and extra mortality hypotheses.

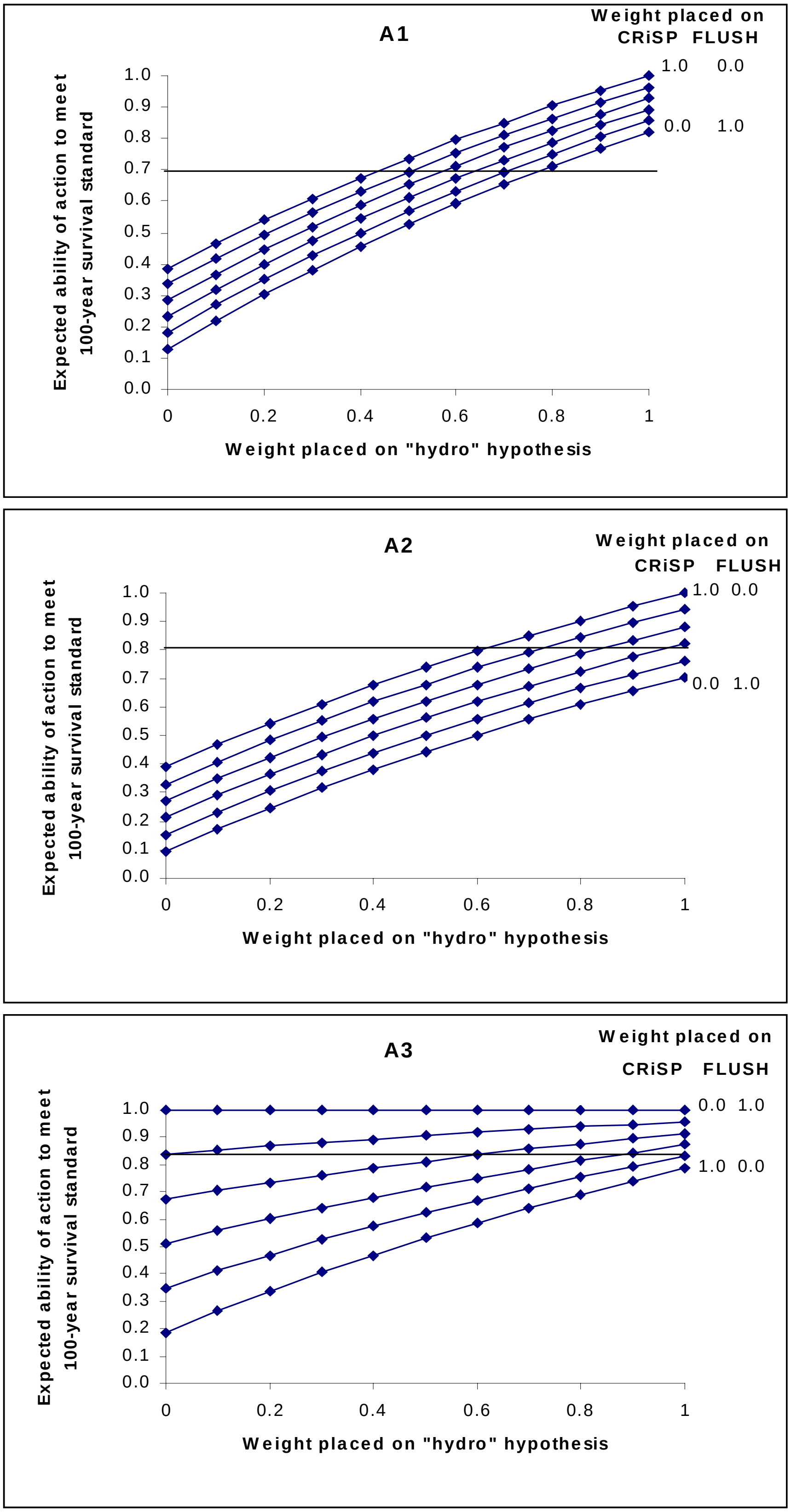



**Figure B.2-2.** Sensitivity of expected ability to meet 100-year survival standard to relative weights on passage model / transportation assumptions and extra mortality hypotheses.

**Figure B.2-3.** Sensitivity of expected ability to meet 48-year recovery standard to relative weights on passage model and transportation assumptions, and on extra mortality hypotheses.

## B.3. Projected spawning abundance for Imnaha and Marsh Creek stocks.

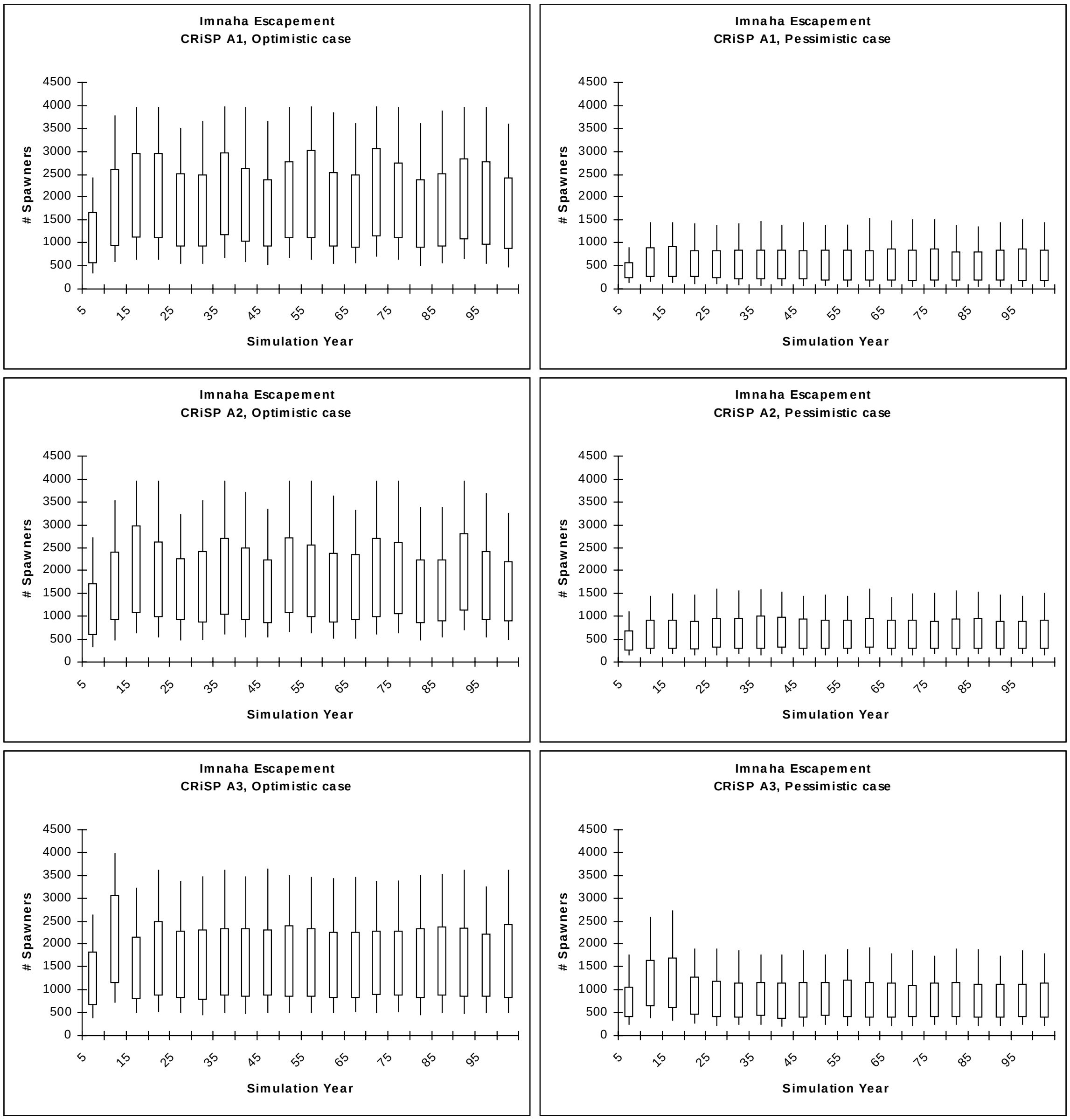



**Figure B.3-1.** Projected distributions of spawning abundance for Imnaha stock using CRiSP passage model assumptions and T3 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.

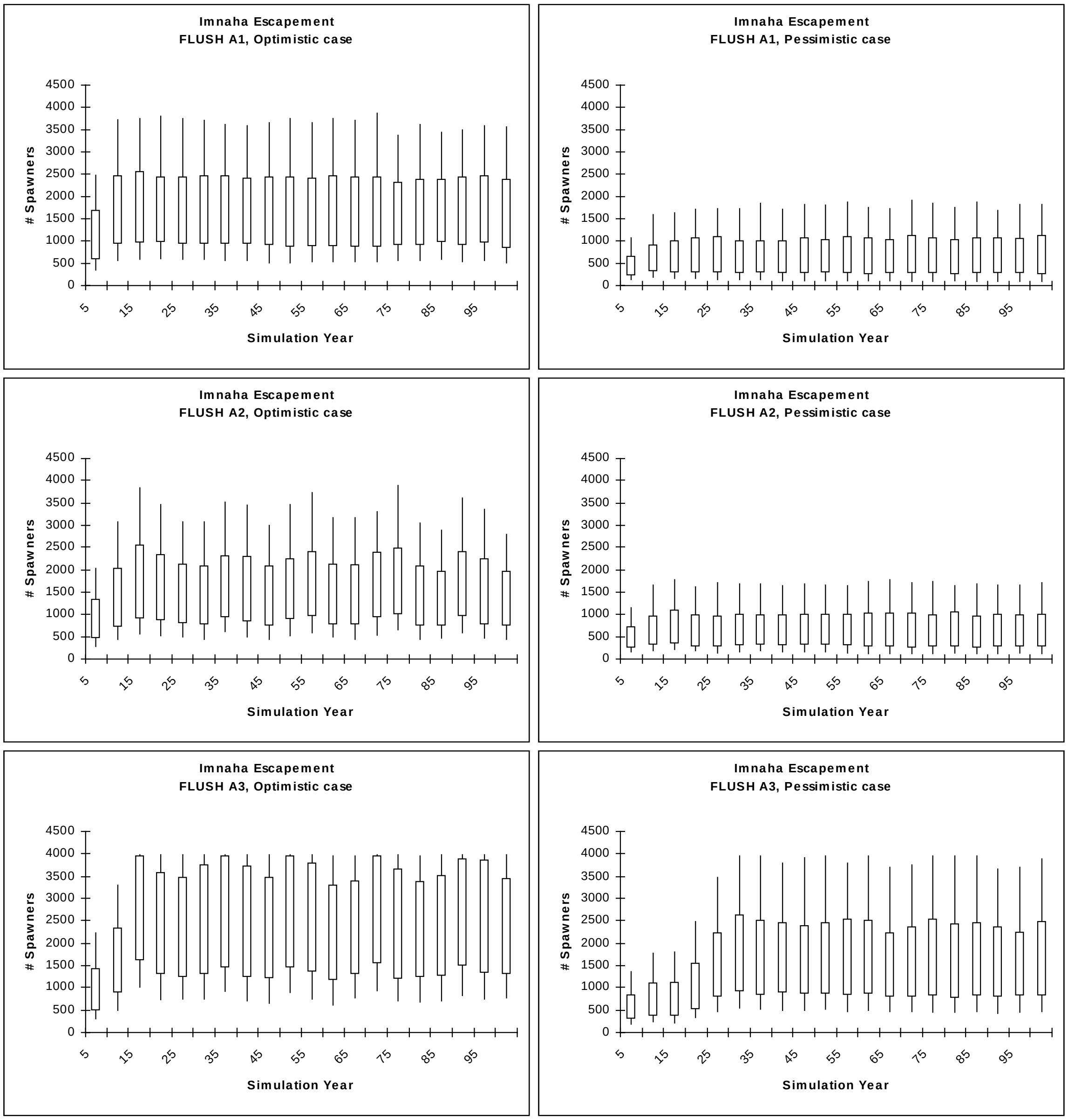



**Figure B.3-2.** Projected distributions of spawning abundance for Imnaha stock using FLUSH passage model and T1/T2 transportation assumptions. "Optimistic" and "Pessimistic" cases are defined in Section 5.7.

**Figure B.3-3.** Projected distributions of spawning abundance for Marsh Creek stock using CRiSP passage model and T3 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.

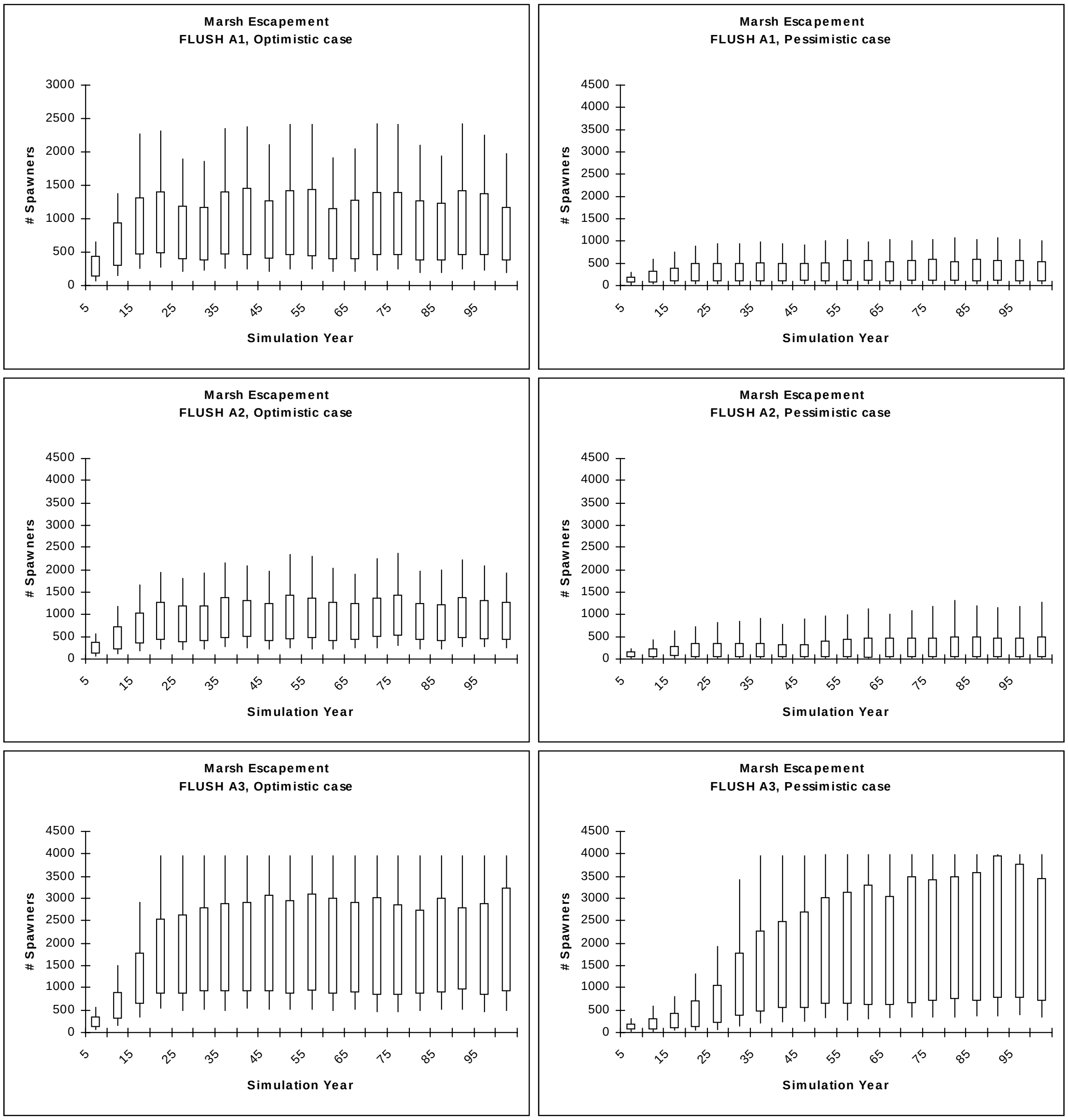
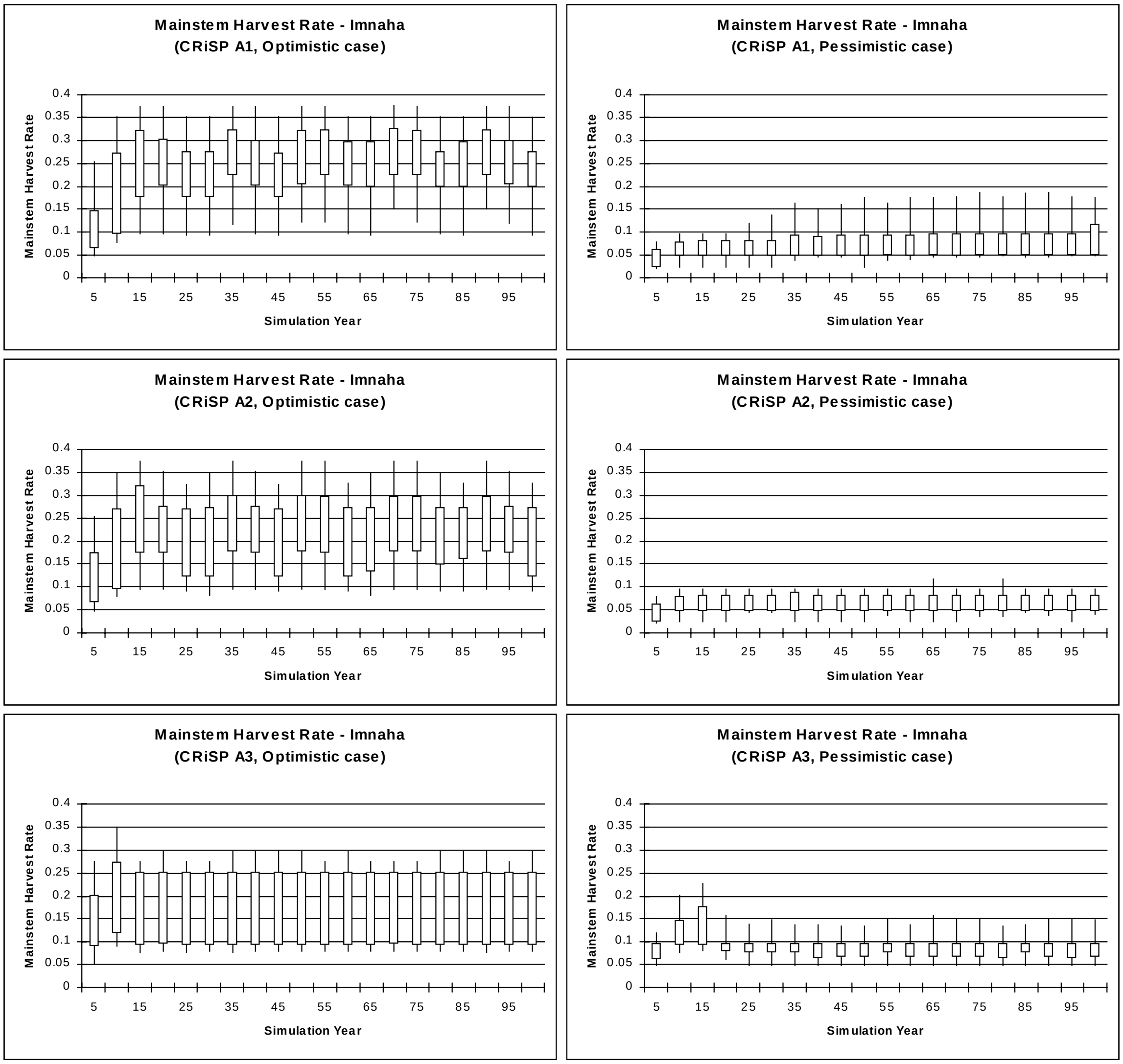
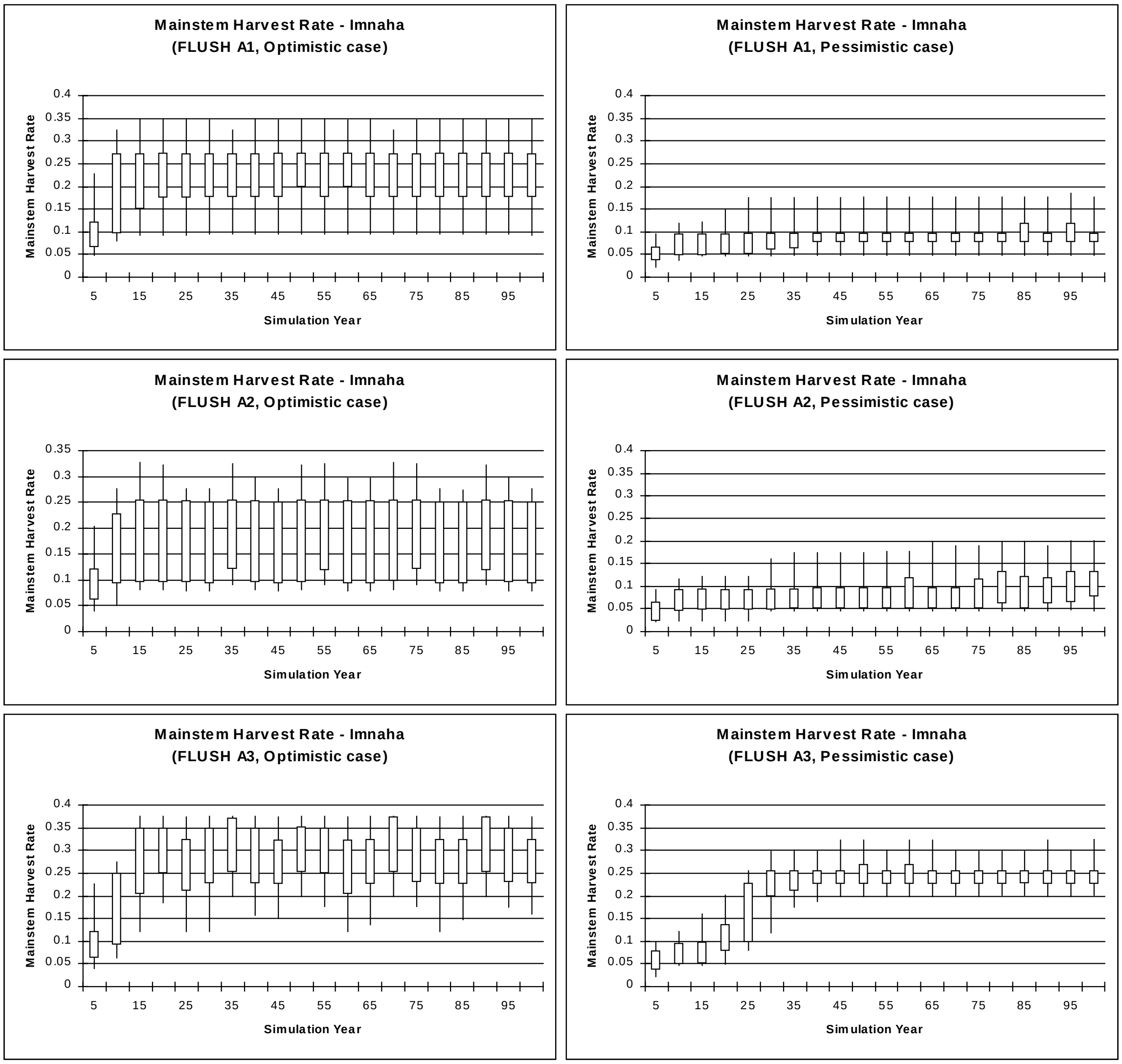



**Figure B.3-4.** Projected distributions of spawning abundance for Marsh Creek stock using FLUSH passage model and T1/T2 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.

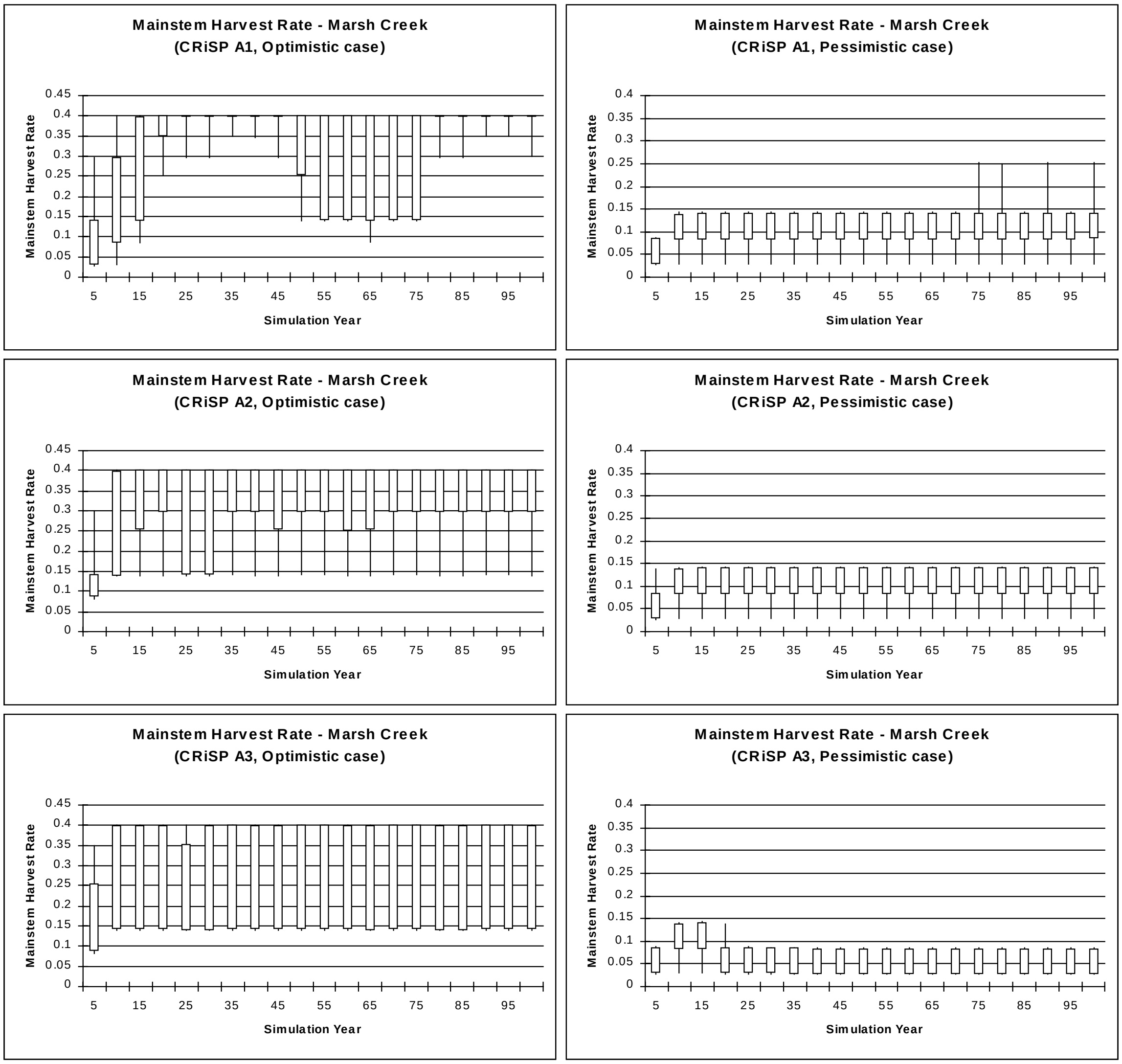
## B.4 Projected Mainstem and Tributary Harvest Rates for Imnaha and Marsh Creek stocks



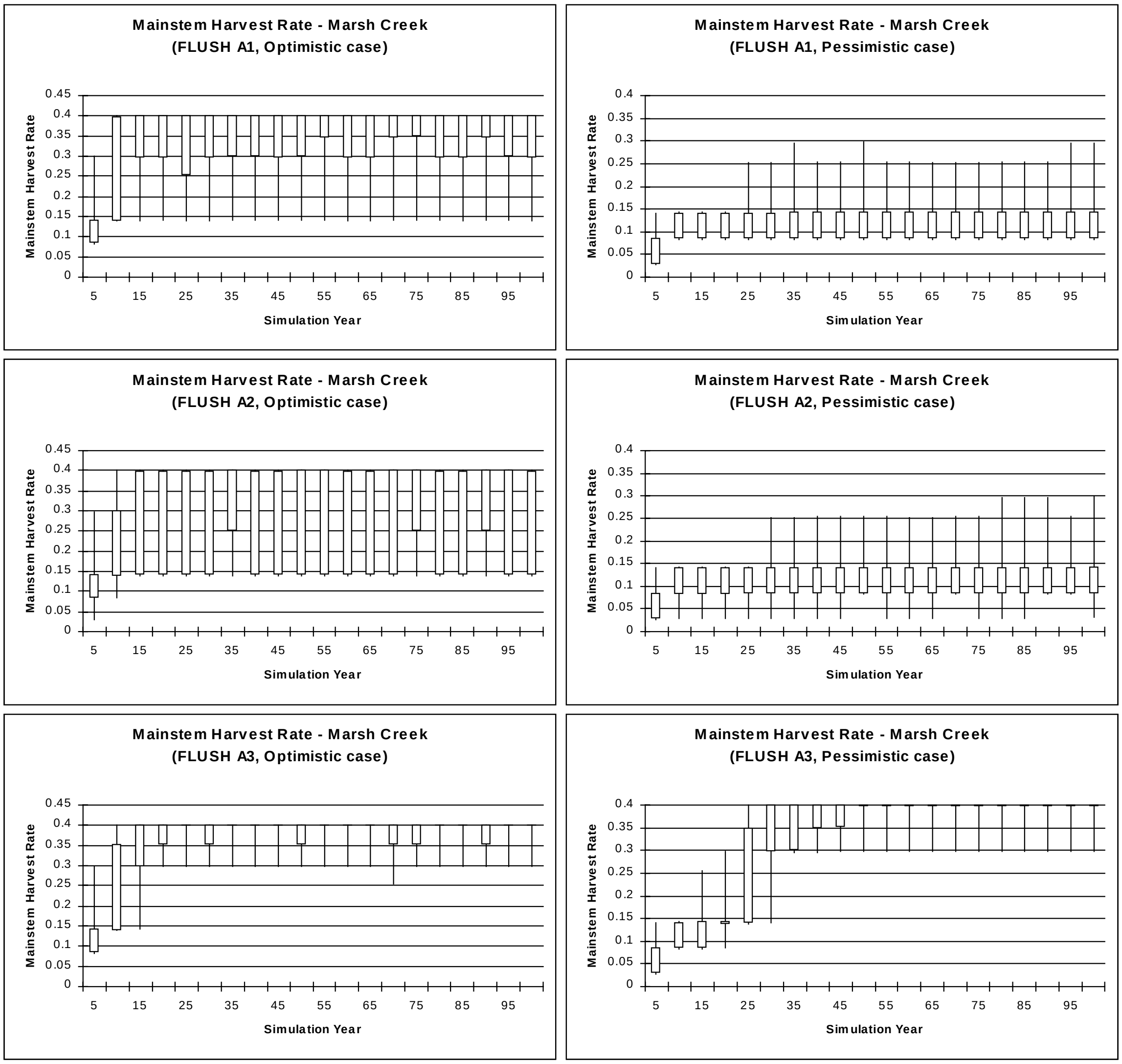

**B.4-1.** Mainstem harvest rates under A1, A2, and A3 for the Imnaha stock of spring-summer chinook over 100-year simulation period for an optimistic and pessimistic aggregate hypothesis based on CRiSP passage model and T3 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.



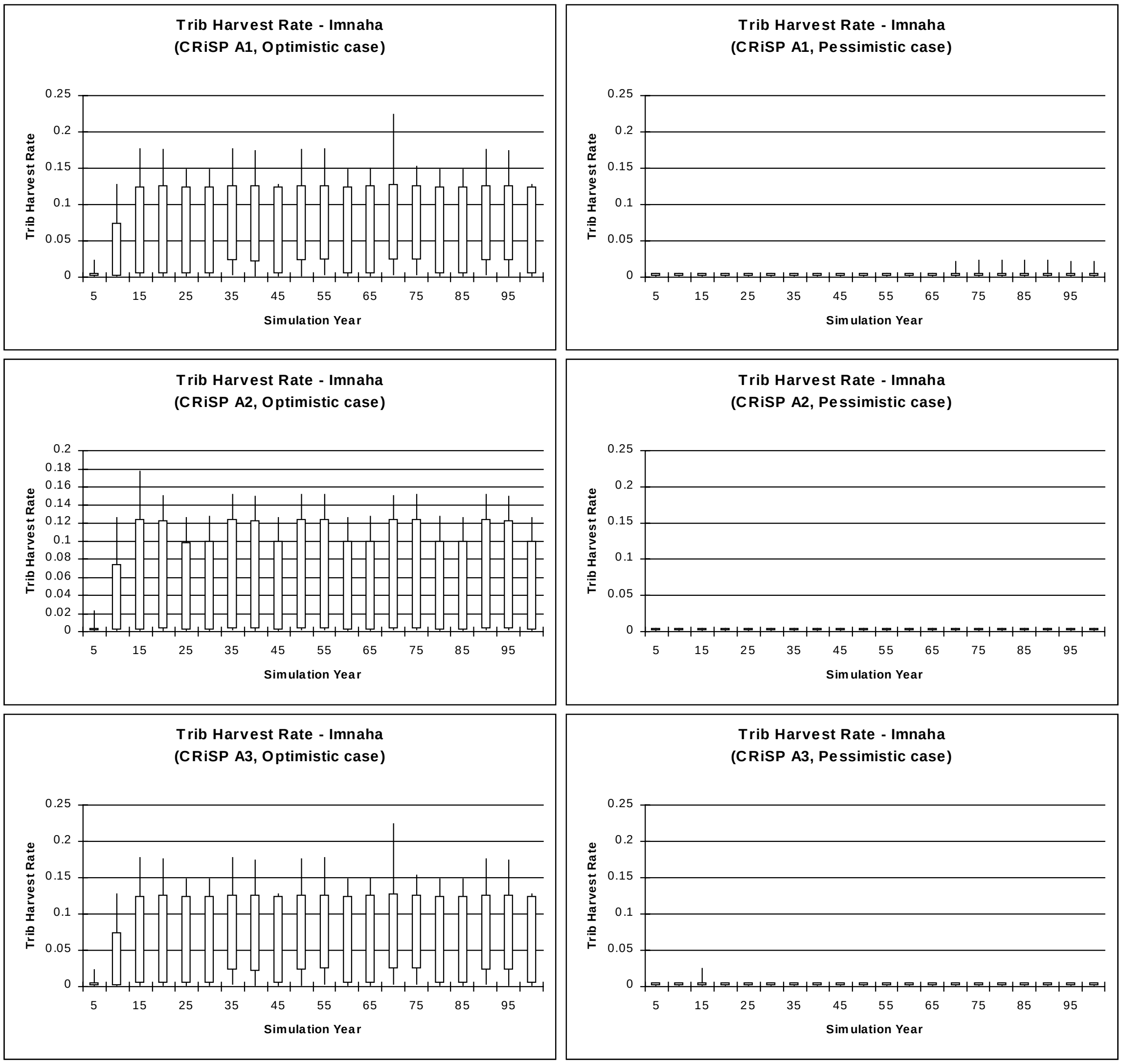

**B.4-2.** Mainstem harvest rates under A1, A2, and A3 for the Imnaha stock of spring-summer chinook over 100-year simulation period for an optimistic and pessimistic aggregate hypothesis based on FLUSH passage model and T1/T2 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.



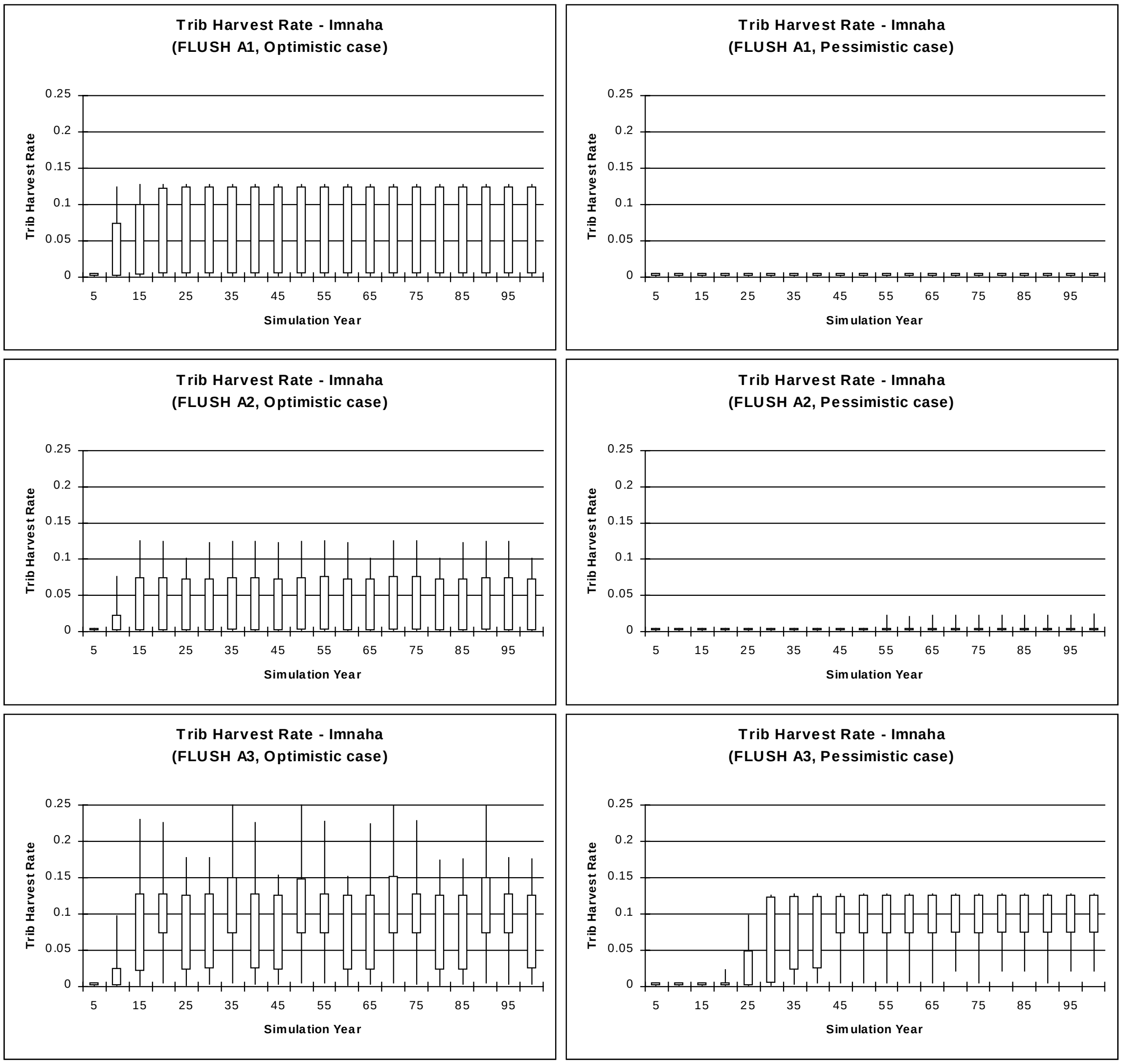

**B.4-3.** Mainstem harvest rates under A1, A2, and A3 for the Marsh Creek stock of spring-summer chinook over 100-year simulation period for an optimistic and pessimistic aggregate hypothesis based on CRiSP passage model and T3 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.



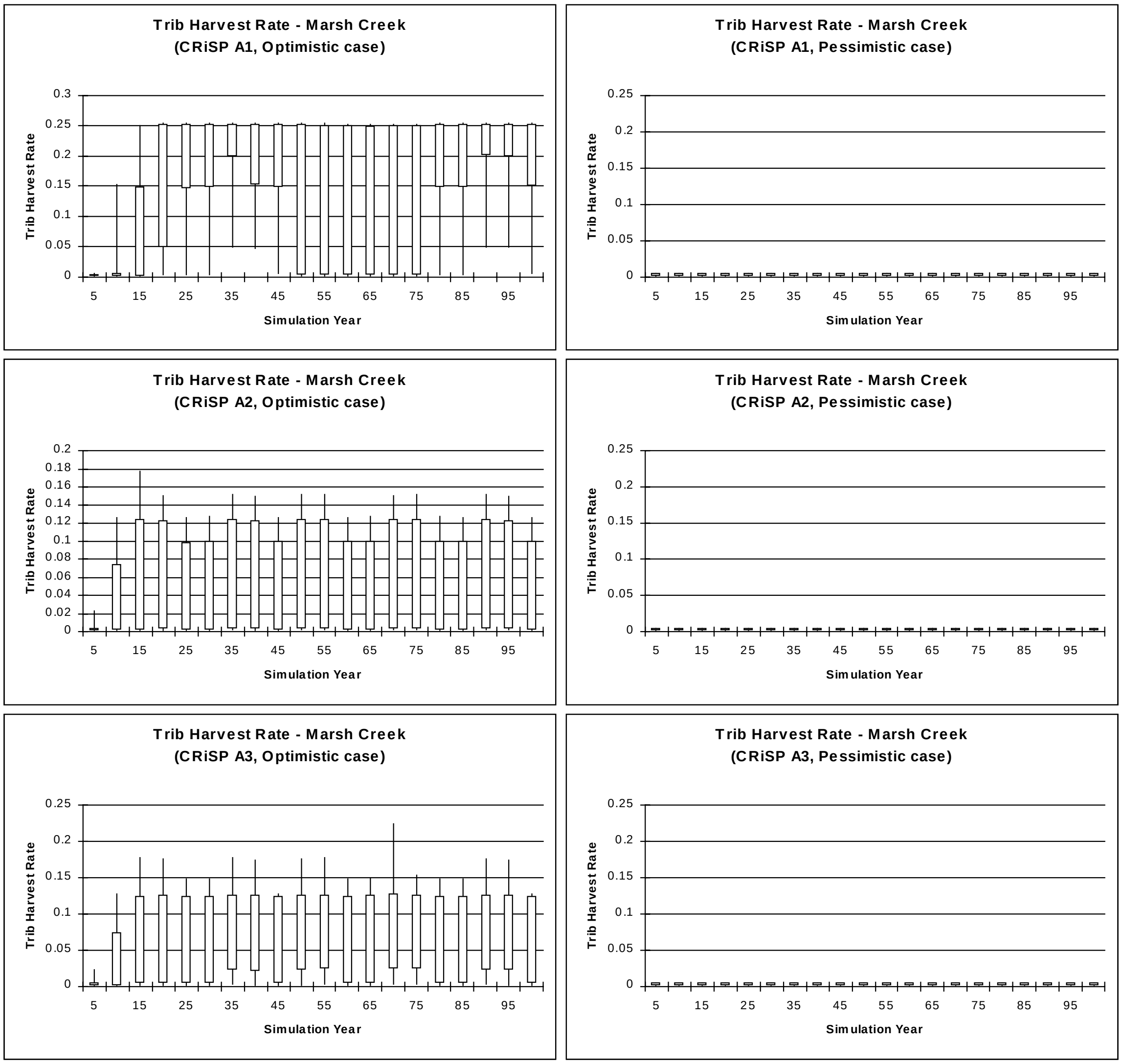

**B.4-4.** Mainstem harvest rates under A1, A2, and A3 for the Marsh Creek stock of spring-summer chinook over 100-year simulation period for an optimistic and pessimistic aggregate hypothesis based on FLUSH passage model and T1/T2 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.



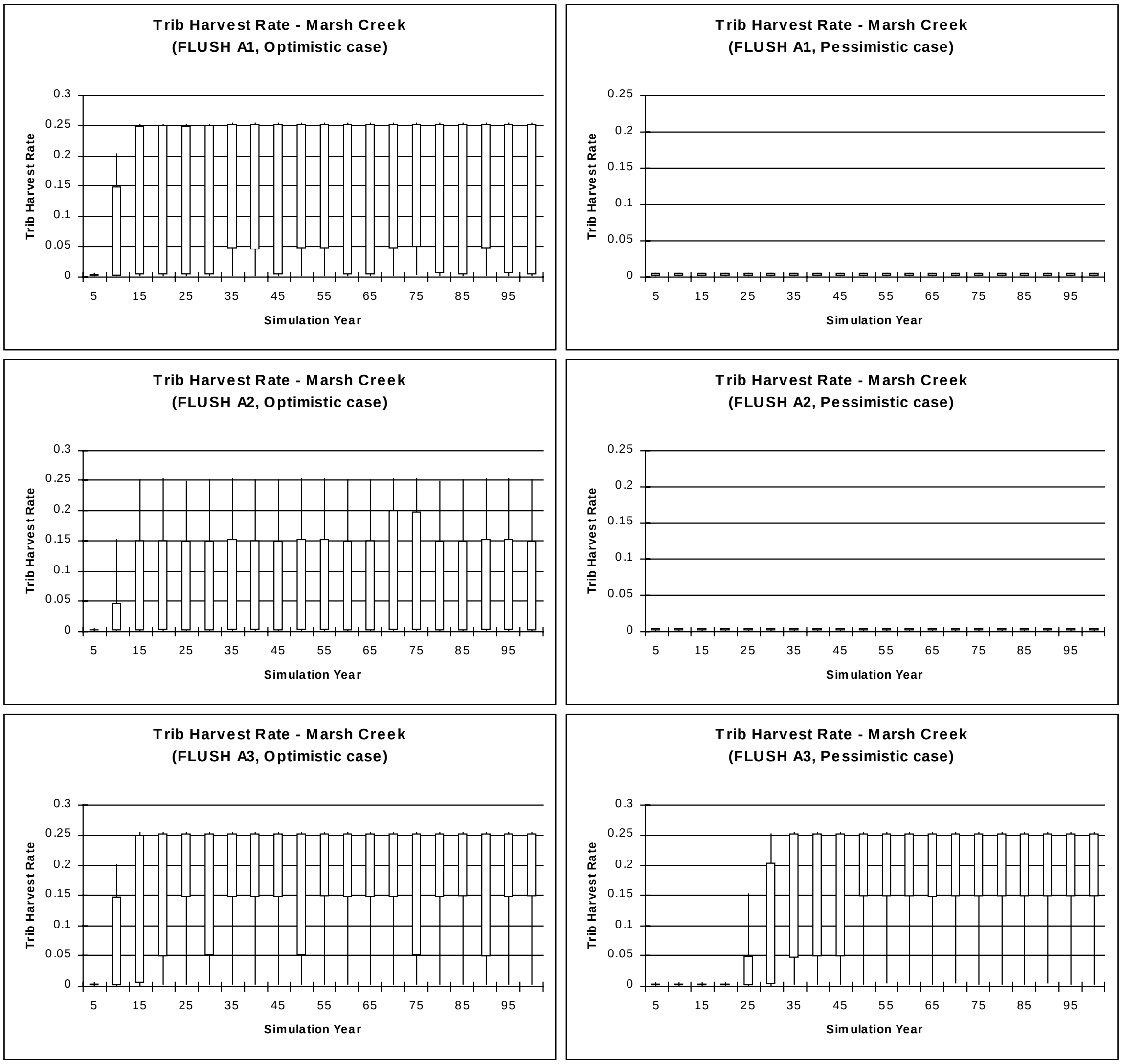

**B.4-5.** Tributary harvest rates under A1, A2, and A3 for the Imnaha stock of spring-summer chinook over 100-year simulation period for an optimistic and pessimistic aggregate hypothesis based on CRiSP passage model and T3 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.




**B.4-6.** Tributary harvest rates under A1, A2, and A3 for the Imnaha stock of spring-summer chinook over 100-year simulation period for an optimistic and pessimistic aggregate hypothesis based on FLUSH passage model and T1/T2 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.




**B.4-7.** Tributary harvest rates under A1, A2, and A3 for the Marsh Creek stock of spring-summer chinook over 100-year simulation period for an optimistic and pessimistic aggregate hypothesis based on CRiSP passage model and T3 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.




**B.4-8.** Tributary harvest rates under A1, A2, and A3 for the Marsh Creek stock of spring-summer chinook over 100-year simulation period for an optimistic and pessimistic aggregate hypothesis based on FLUSH passage model and T1/T2 transportation assumptions. “Optimistic” and “Pessimistic” cases are defined in Section 5.7.

## B.5 Further analyses of Smolt-to-Adult Survival Rates

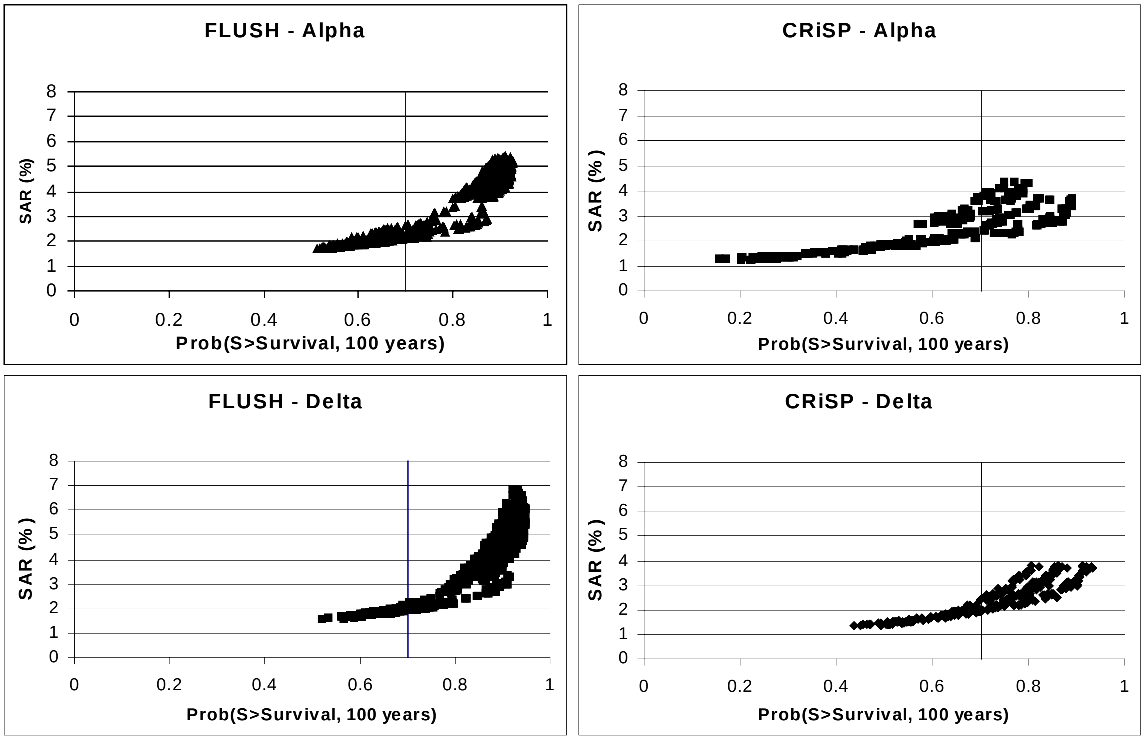



**Figure B.5-1.** SARs as a function of the probability of the spawning abundance of the sixth best stock exceeding the survival escapement level over 100 years. Data are broken out by passage model / transportation assumptions (CRiSP-T3, FLUSH-T1/T2), and by prospective model. The vertical line at 0.7 indicates the NMFS standard of 0.7 probability.

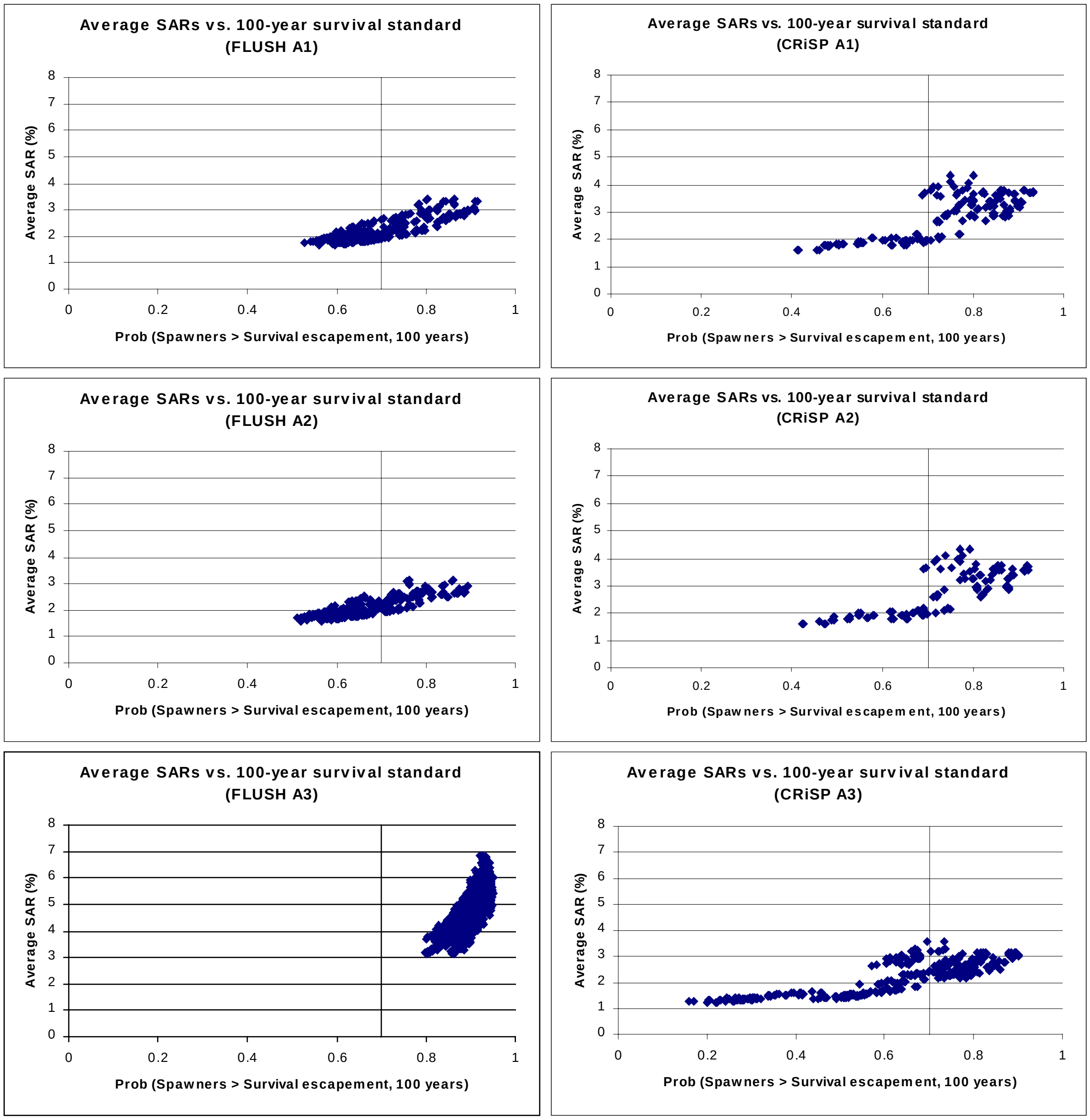



**Figure B.5-2.** SARs as a function of the probability of the spawning abundance of the sixth best stock exceeding the survival escapement level over 100 years. Data are broken out by passage model / transportation assumption, and by action. The vertical line at 0.7 indicates the NMFS standard of 0.7 probability.