Appendix B: Detailed results from the SAR and T:M modeling for fish transported from Little Goose Dam

For each migration year (MY) and fish grouping (wild Chinook salmon, hatchery Chinook salmon, wild steelhead, hatchery steelhead), we tested a suite of 5 models (Table B1) to investigate the relation between *SAR* and factors day of year and mode of migration (Transported or Migrant), and the interaction of factors. The best fitting models based on $QAIC_c$ are listed in Table B2 and corresponding *SAR*s and T:M ratios are illustrated in Figures B1-B42. Information regarding the best fitting T:M curves relative to standards for comparison is summarized in color-coded summary charts in the main text (Figures 6-9). Note that because all fish in these analyses were released above Little Goose Dam, the factor release location is not included in the models.

Table B1. Possible models for Little Goose transport data. Codes for factors: D—day of year; T—Mode of migration (Transported or Migrant). In the list of models a "+" means the factor entered the model additively, and a "*" means there was an interaction between the terms.

#	Model
0	0
1	D
3	T
5	D + T
9	D + T + D*T

Table B2. Best fitting models based on AIC. Codes for factors: D—day of year; T—Mode of migration (Transported or Migrant). In the list of models a "+" means the factor entered the model additively, and a "*" means there was an interaction between the terms.

MY	Model	Factors affecting SAR
		Wild Chinook Salmon
1998	1	D
1999	1	D
2000	9	D + T + D*T
2001	5	D + T
2002	5	D + T
2003	9	D + T + D*T
2004	9	D + T + D*T
2005	5	D + T
2006	3	T
2007	5	D + T
2008	5	D + T
		Hatchery Chinook Salmon
1998	9	D + T + D*T
1999	5	D + T
2000	9	D + T + D*T
2001	5	D + T
2002	9	D + T + D*T
2003	3	T
2004	9	D + T + D*T

Table B2 (continued).

MY	Model	Factors affecting SAR
2005	5	D + T
2006	9	D + T + D*T
2007	5	D + T
2008	9	D + T + D*T
	Wild Steelhead	
1998	9	D + T + D*T
1999	3	T
2000	9	D + T + D*T
2001	3	T
2002	5	D + T
2003	5	D + T
2004	5	D + T
2005	5	D + T
2006	5	D + T
2007	9	D + T + D*T
	Hatchery Steelhead	
1998	1	D
1999	5	D + T
2000	9	D + T + D*T
2001	3	T
2002	1	D
2003	9	D + T + D*T
2004	5	D + T
2005	5	D + T
2006	5	D + T
2007	5	D + T

Each of the two factors tested was important in a majority of the best fitting models, with date (D) occurring in 37 of 42 cases, and mode of migration (T) occurring in 38 of 42 cases (Table B2). In the 4 models that did not include mode of migration, *SAR*s of transported fish and migrants were not statistically different. Accordingly, the estimated T:M ratio was equal to 1.0 across the entire season in these cases. (It is likely that the T:M ratio was also not significantly different from the adjusted-baseline standard, though we did not conduct formal statistical tests of this hypothesis).

If a model included only mode of migration (Model 3), or included day of year and mode of migration but not the interaction between the two factors (Model 5) (total of 24 cases), the estimated T:M ratio was constant (not equal 1.0) throughout the range of available data. If the model contained an interaction between day of year and mode of transportation (Model 9) (14 cases), the estimated T:M ratio included a trend through time (either upward or downward).

In the figures that follow (Figures B1 – B42), *SAR* (%) and Transport:Migrant (T:M) ratios are plotted versus date for each migration year and fish grouping based on the best fitting models (Table B2). *SAR*s are measured from outmigration at Little Goose Dam to adult return to Lower Granite Dam. The scale of the y-axis for T:M ratio varies from figure to figure. To provide a

visual cue to the varying scales, each figure has a shaded region ("stripe") that spans T:M = 0.5 to T:M = 2.0.

Substantial variability exists in the details of the *SAR* and T:M plots (Figures B1 – B42). Regarding the relationship between estimated T:M ratios and standards for comparison, information contained in these plots is summarized in color-coded charts in the main text (Figures 6-9).
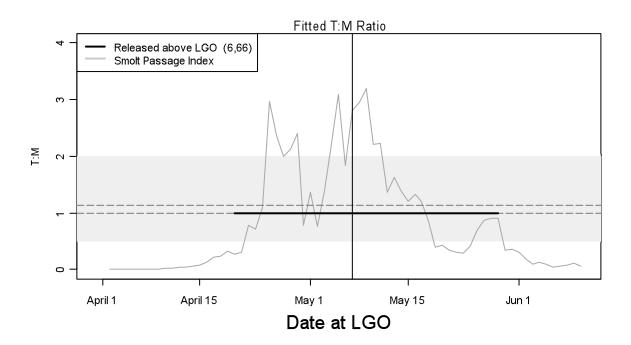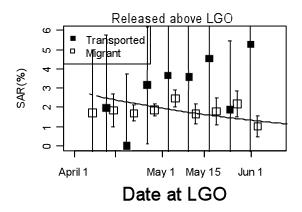
Wild Chinook 1998

Released above LGO

Fitted T:M Ratio

Figure B1. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 1998. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
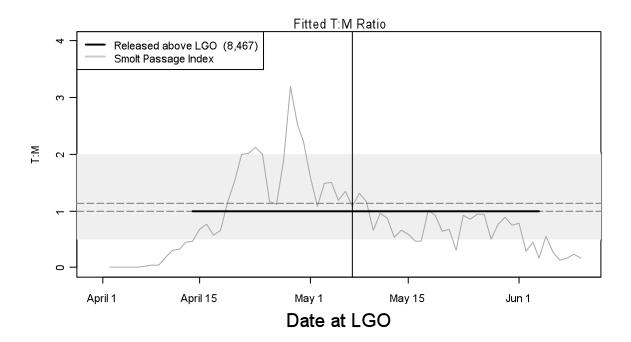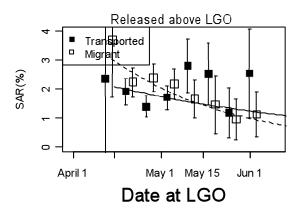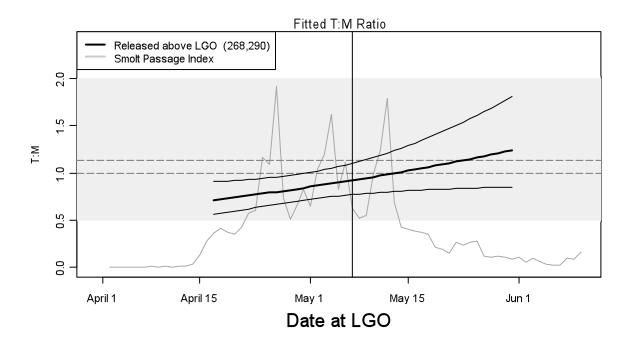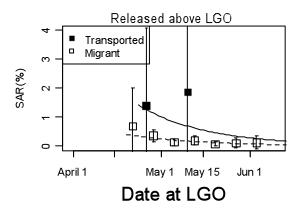
Wild Chinook 1999

Figure B2. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 1999. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
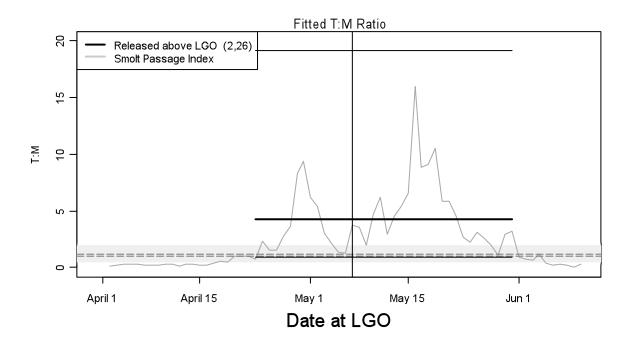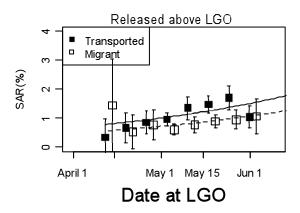
Wild Chinook 2000

Released above LGO

Fitted T:M Ratio

Figure B3. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 2000. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
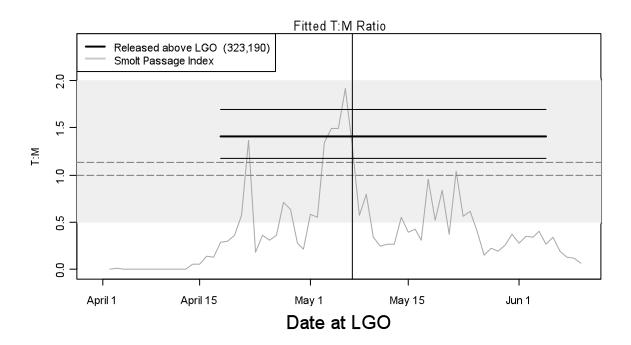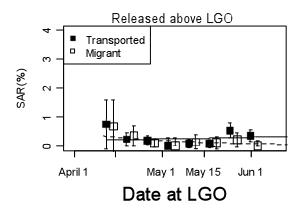
Wild Chinook 2001

Released above LGO

Fitted T:M Ratio

Figure B4.   SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 2001. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
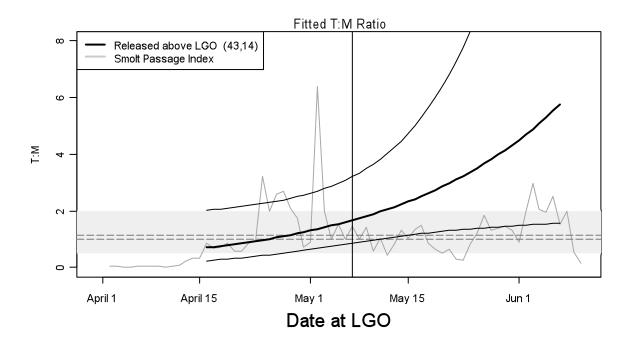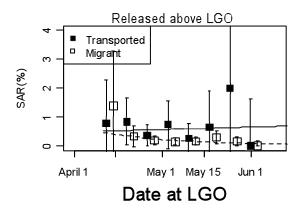
Figure B5. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 2002. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
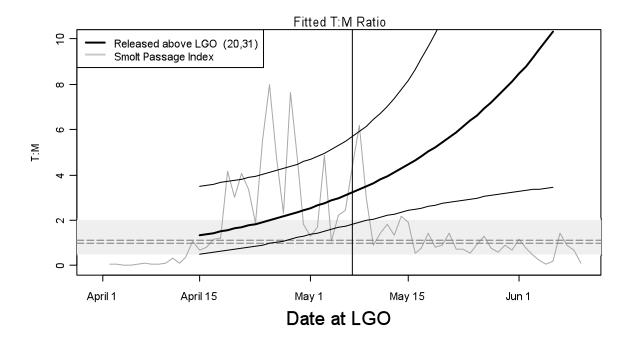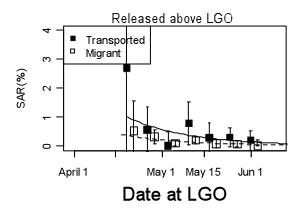
Wild Chinook 2003

Released above LGO

Fitted T:M Ratio

Figure B6. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 2003. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
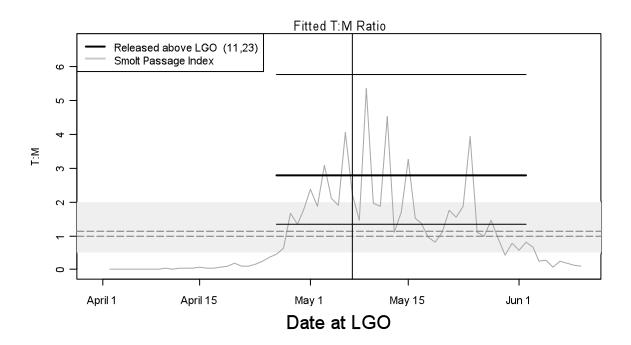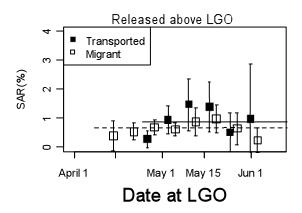
Wild Chinook 2004

Released above LGO

Fitted T:M Ratio

Figure B7. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 2004. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
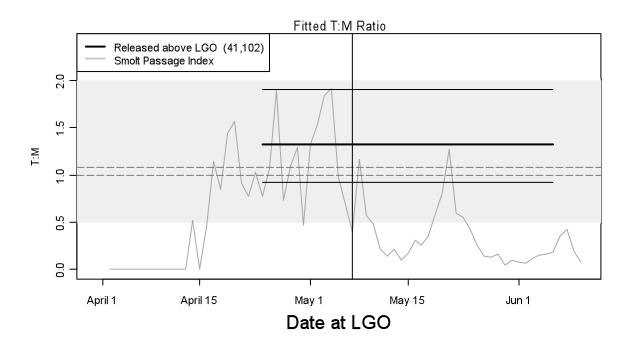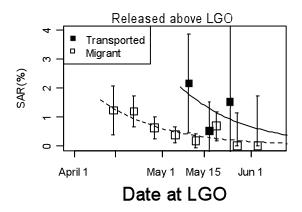
Wild Chinook 2005

Figure B8.   SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 2005. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
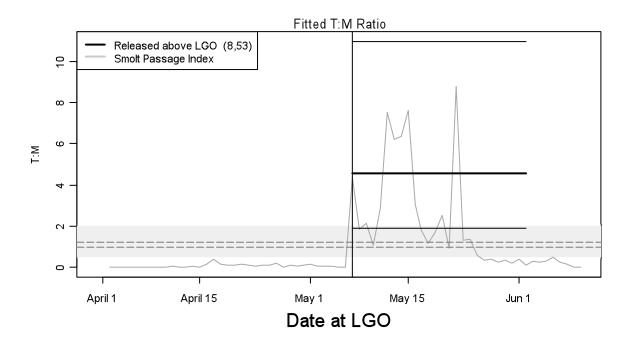
Wild Chinook 2006

Figure B9. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 2006. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
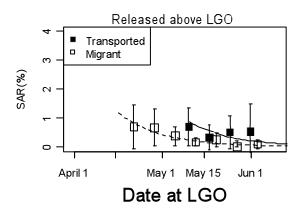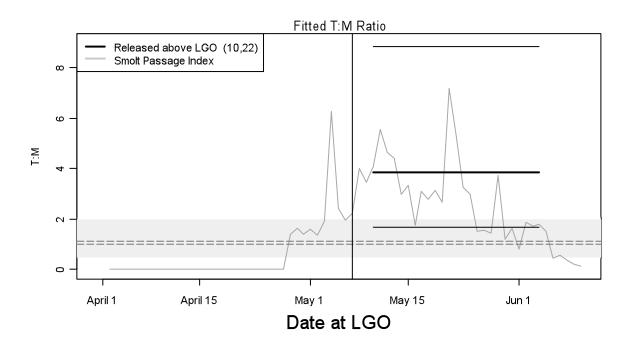
Wild Chinook 2007

Released above LGO

Fitted T:M Ratio

Figure B10. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 2007. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
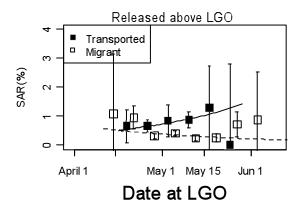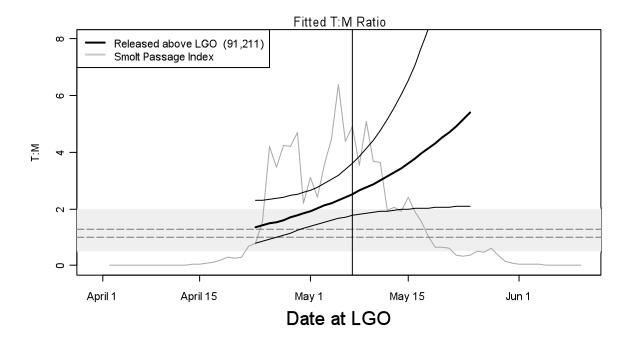
Wild Chinook 2008

Released above LGO

Fitted T:M Ratio

Figure B11. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild spring/summer Chinook salmon from migration year 2008. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
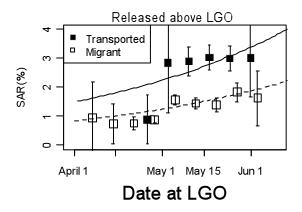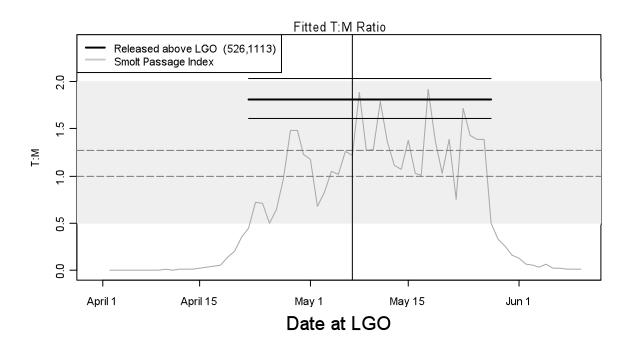
Hatchery Chinook 1998

Figure B12. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 1998. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
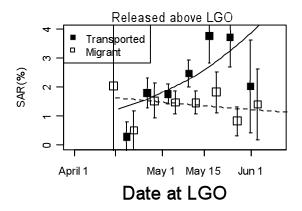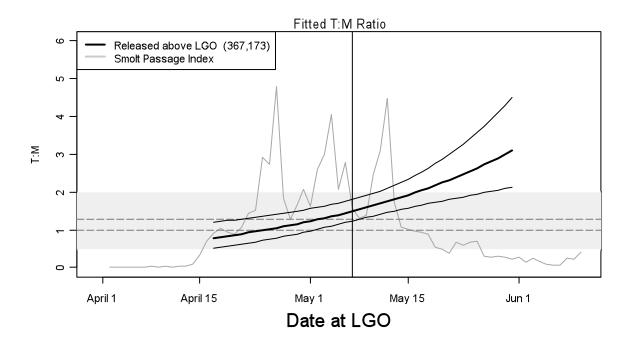
Hatchery Chinook 1999

Figure B13. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 1999. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
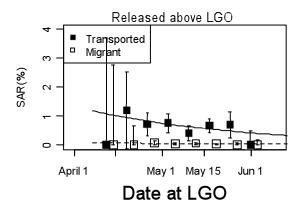
Hatchery Chinook 2000

Figure B14. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 2000. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
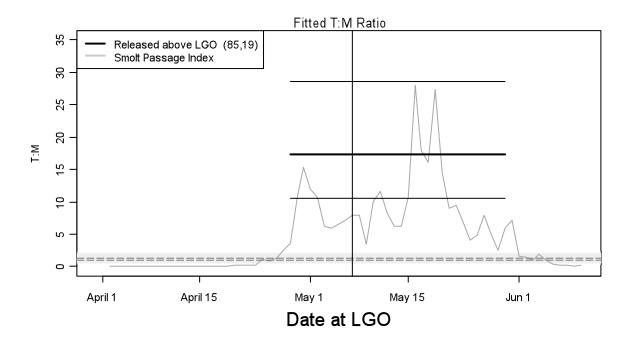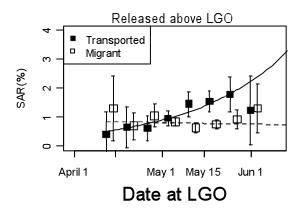
Hatchery Chinook 2001

Released above LGO

Fitted T:M Ratio

Figure B15. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 2001. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
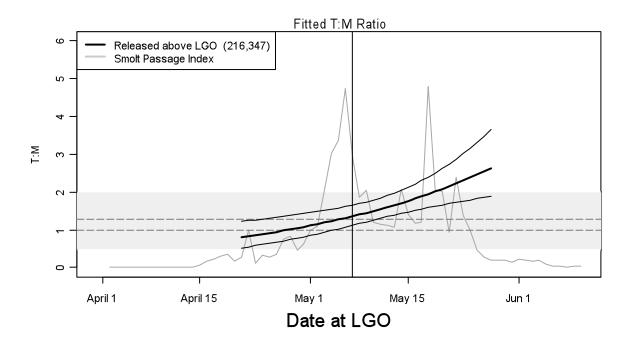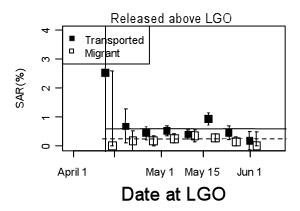
Hatchery Chinook 2002

Figure B16. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 2002. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
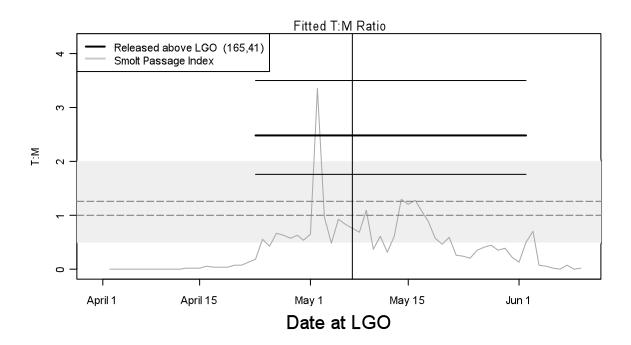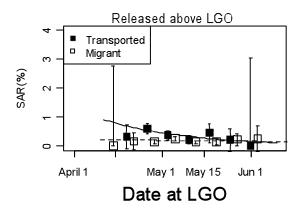
Hatchery Chinook 2003

Released above LGO

Fitted T:M Ratio

Figure B17. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 2003. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
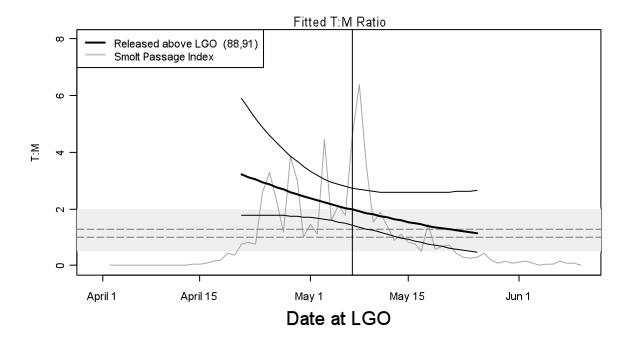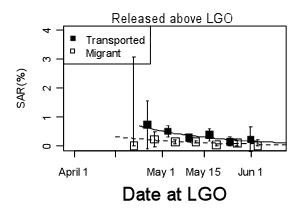
Hatchery Chinook 2004

Figure B18. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 2004. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
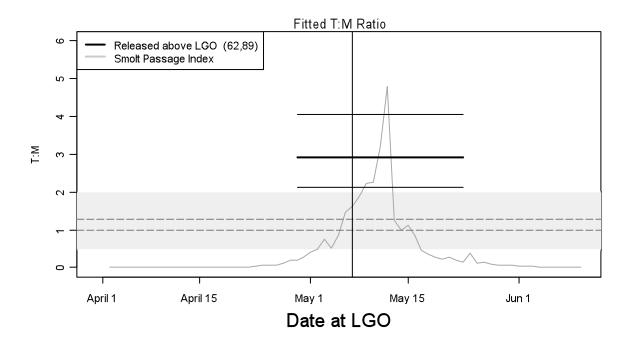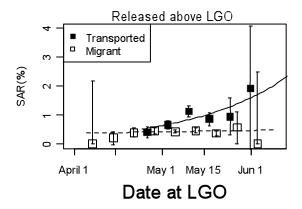
Hatchery Chinook 2005

Figure B19. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 2005. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
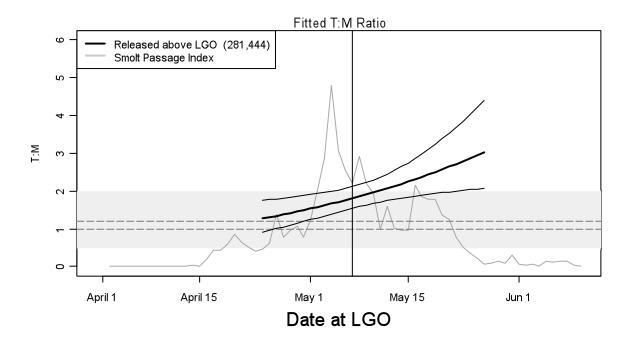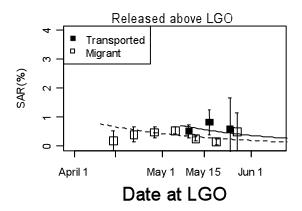
Hatchery Chinook 2006

Figure B20. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 2006. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
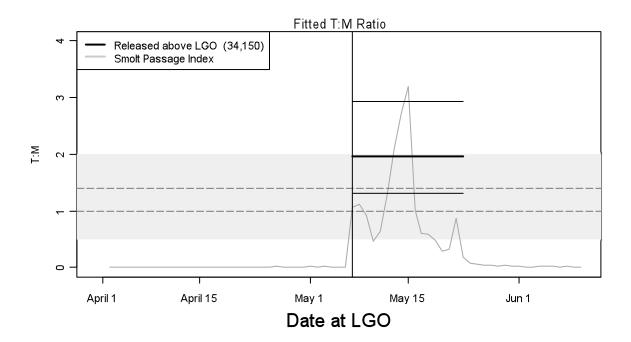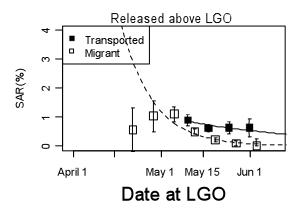
Hatchery Chinook 2007

Figure B21. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 2007. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
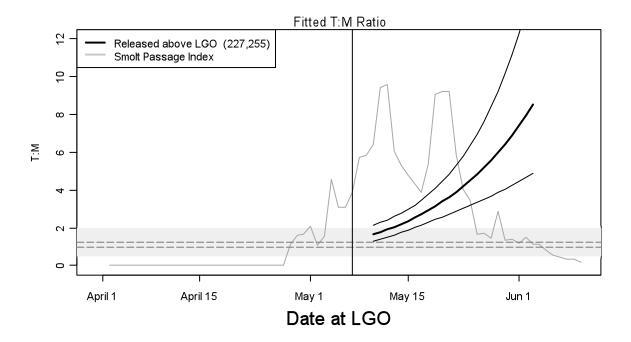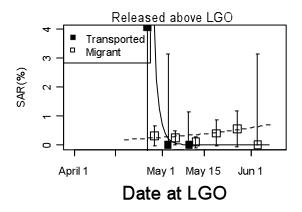
Hatchery Chinook 2008

Figure B22. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery spring/summer Chinook salmon from migration year 2008. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
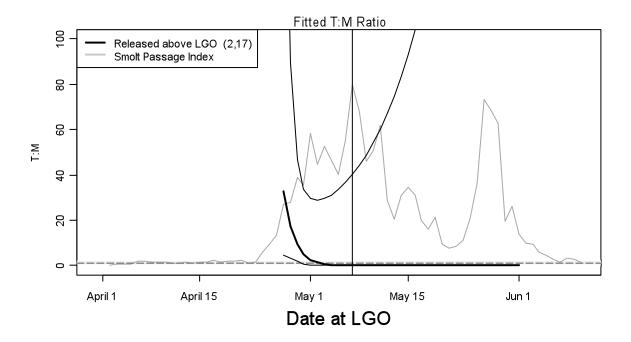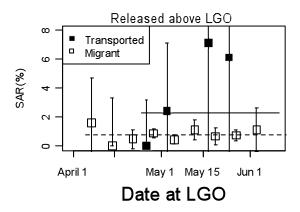
Wild Steelhead 1998

Released above LGO

Fitted T:M Ratio

Figure B23. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 1998. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
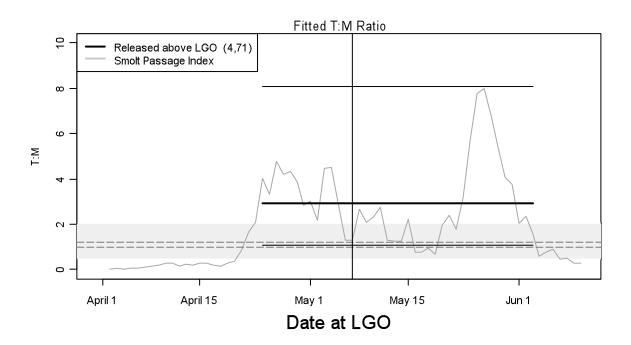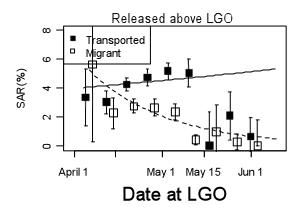
Wild Steelhead 1999

Figure B24. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 1999. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
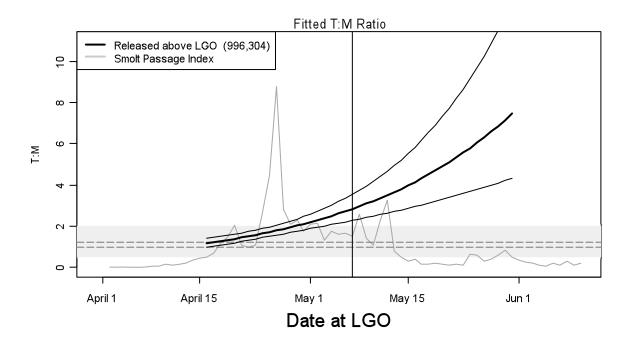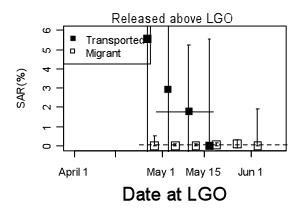
Wild Steelhead 2000

Figure B25. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 2000. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
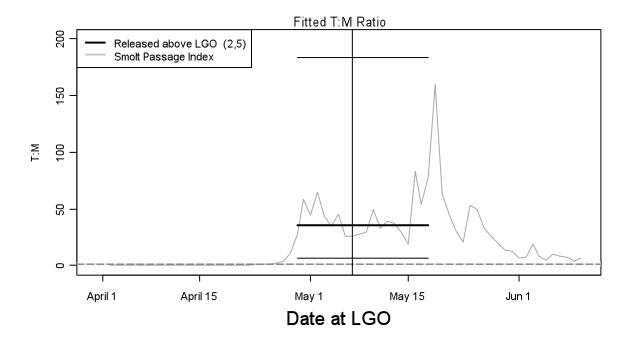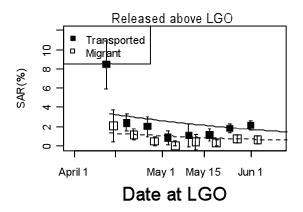
Figure B26. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 2001. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
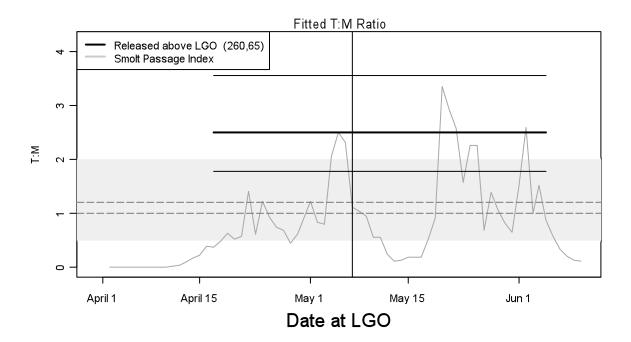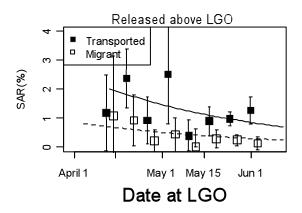
Wild Steelhead 2002

Released above LGO

Fitted T:M Ratio

Figure B27. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 2002. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
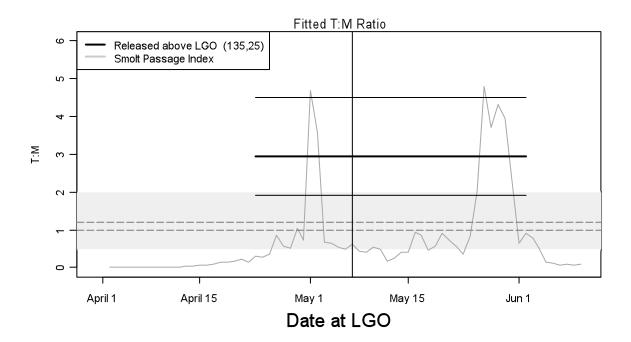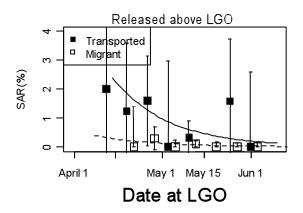
Wild Steelhead 2003

Figure B28. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 2003. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
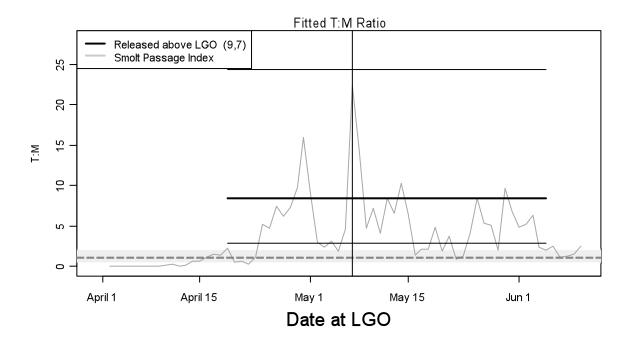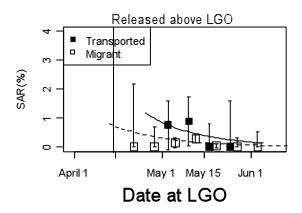
Figure B29. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 2004. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
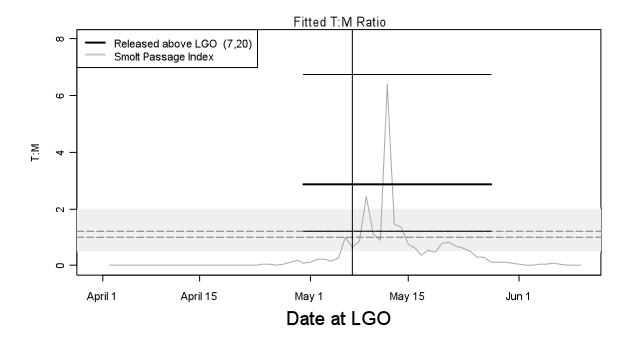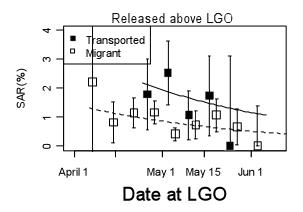
Wild Steelhead 2005

Released above LGO

Fitted T:M Ratio

Figure B30. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 2005. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
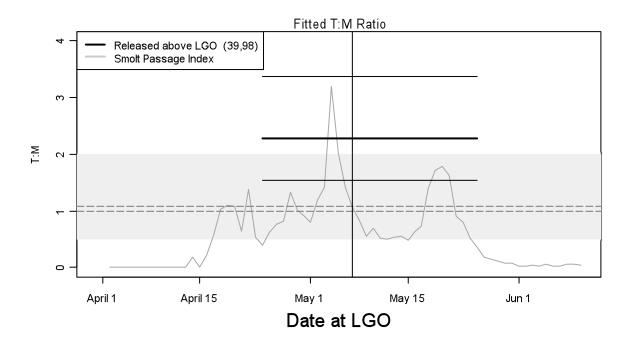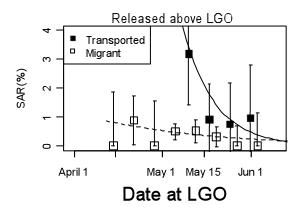
Wild Steelhead 2006

Figure B31. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 2006. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
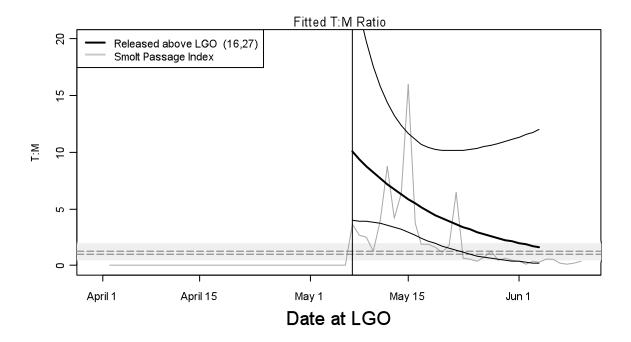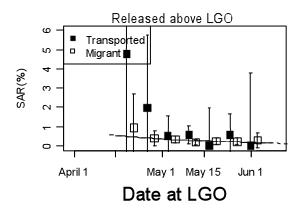
Wild Steelhead 2007

Figure B32. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River wild steelhead from migration year 2007. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
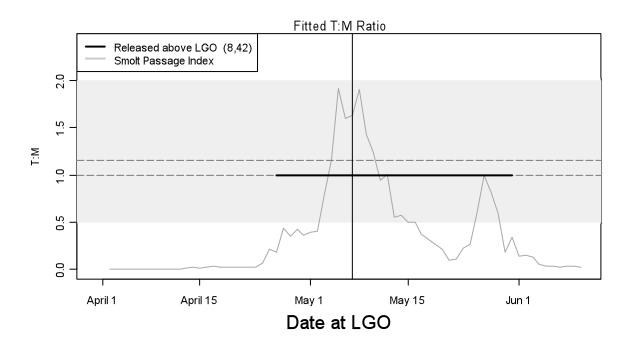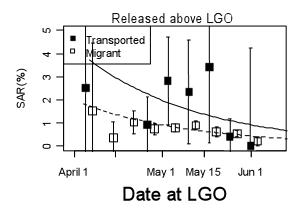
Hatchery Steelhead 1998

Released above LGO

Fitted T:M Ratio

Figure B33. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 1998. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
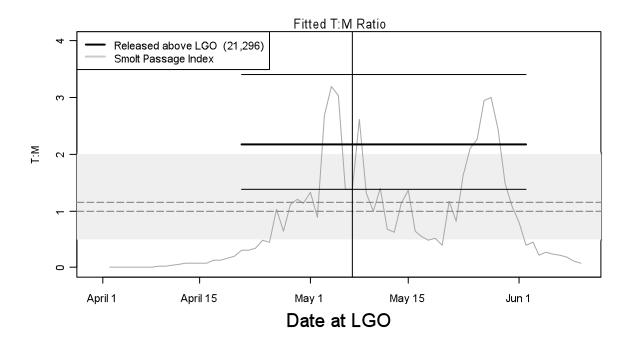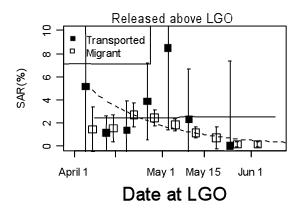
Hatchery Steelhead 1999

Figure B34. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 1999. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
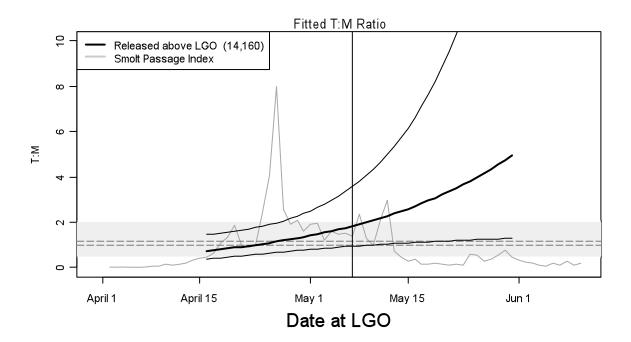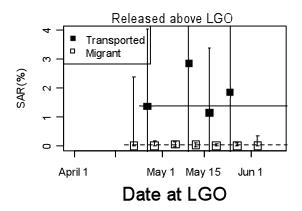
Hatchery Steelhead 2000

Figure B35. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 2000. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
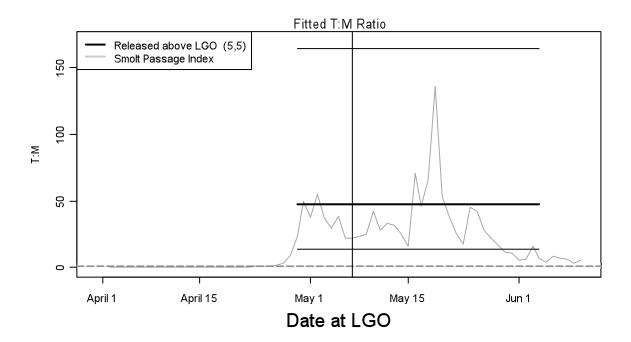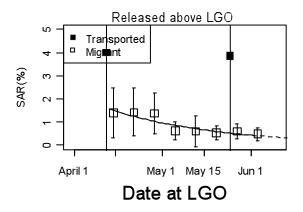
Hatchery Steelhead 2001

Figure B36. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 2001. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
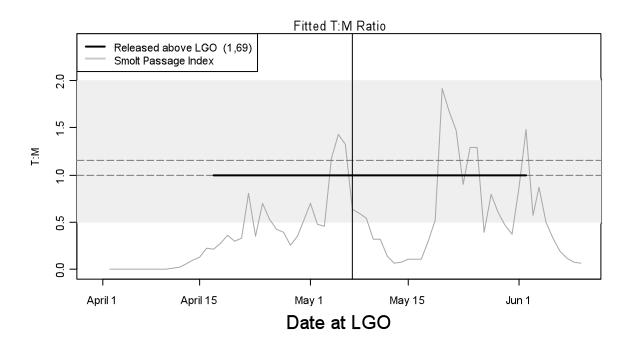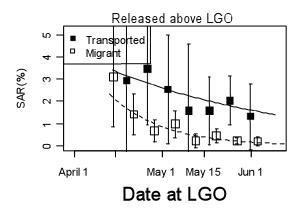
Hatchery Steelhead 2002

Figure B37. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 2002. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
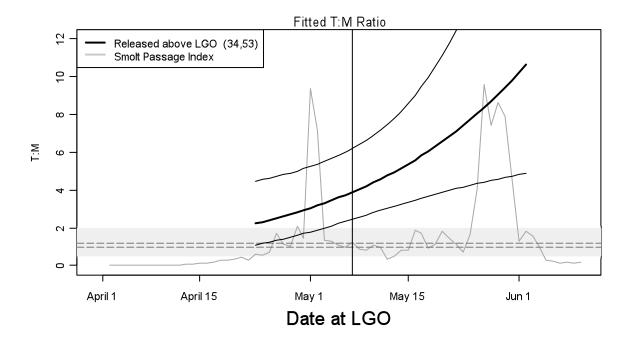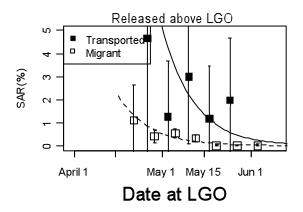
Hatchery Steelhead 2003

Released above LGO

Fitted T:M Ratio

Figure B38. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 2003. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
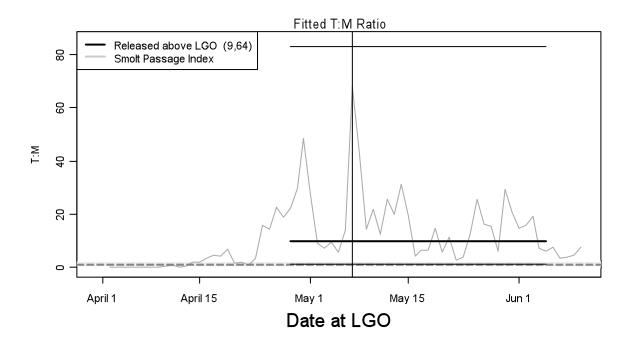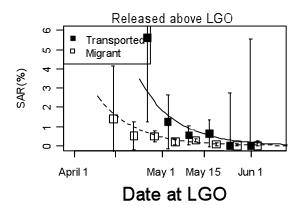
Hatchery Steelhead 2004

Released above LGO

Fitted T:M Ratio

Figure B39. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 2004. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
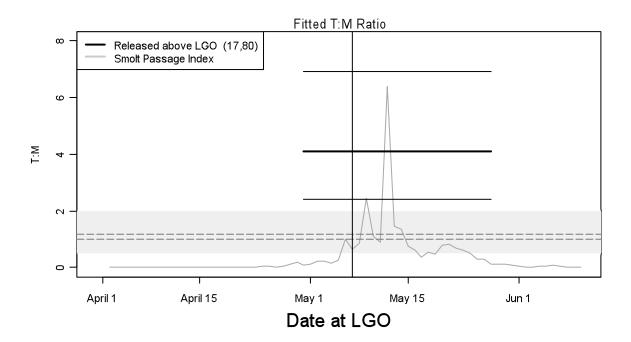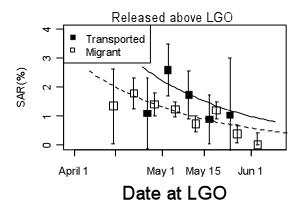
Hatchery Steelhead 2005

Figure B40. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 2005. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
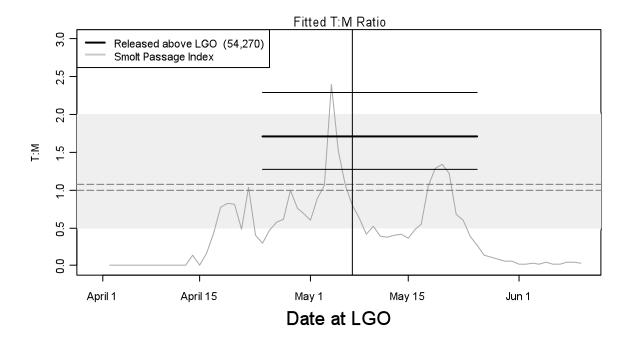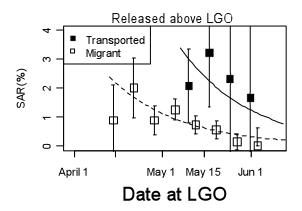
Figure B41. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 2006. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.
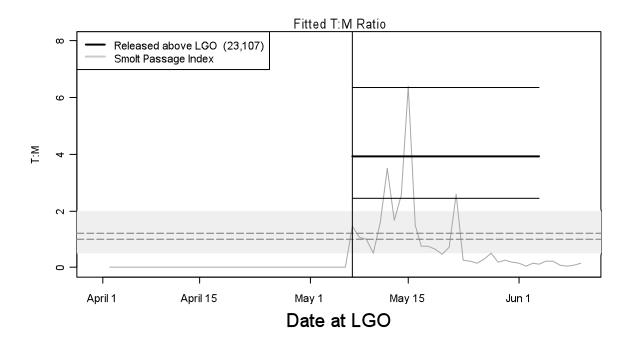
Hatchery Steelhead 2007

Figure B42. SAR (%) and Transport:Migrant (T:M) ratios versus date for Snake River hatchery steelhead from migration year 2007. Fish were tagged upstream from ("above") Little Goose Dam and either transported from Little Goose or released in or directed to the tailrace after detection. SARs are measured from outmigration at Little Goose to adult return to Lower Granite. Plots of SARs include points for weekly cohorts with vertical bars representing 95% confidence intervals, and lines representing predicted SAR for transport (solid) and migrant (dashed) groups. In the T:M plot, the heavier curves represent the predicted relationship of T:M versus date, the lighter curves represent the 95% confidence envelope around the curve. Horizontal dashed lines represent either 1.0 or the adjusted comparison line (see text for details). Legend of the T:M plot includes numbers of adult fish (in parentheses) in the transport and migrant groups, respectively. Smolt Passage Index in the T:M plot represents relative abundance across the season.