

Economic Importance of Sportfishing in the Matanuska-Susitna Borough

Prepared for:

Matanuska-Susitna Borough
Economic Development Department

Prepared by:

Steve Colt and Tobias Schwoerer
Institute of Social and Economic Research
University of Alaska Anchorage
www.iser.uaa.alaska.edu



31 August 2009

contact:
steve.colt@uaa.alaska.edu
tobias.schwoerer@uaa.alaska.edu

[this page intentionally blank]

Table of Contents

Summary	1
Introduction	2
Methods	2
Results	6
References	10

Table of Tables

Table 1 Economic importance of sport fishing in the Mat-Su Borough	1
Table 2. Angler days spent fishing in Mat-Su Borough.....	2
Table 3. High case regional spending per in-region angler day, by region using total spending amounts reported by Southwick/ADFG	4
Table 4. Difference in spending pattern assumptions between low, medium, and High cases	6
Table 5 Economic importance of sport fishing in the Mat-Su Borough	6
Table 6. Direct spending from Mat-Su sportfishing – High case.....	7
Table 7. Economic importance of Mat-Su sportfishing – High case	8
Table 8. Direct spending from Mat-Su sportfishing – Low and Medium cases	9
Table 9. Economic importance of Mat-Su sportfishing – Low case	9
Table 10. Economic importance of Mat-Su sportfishing – Medium case	10

Acknowledgments

The authors thank Kathrin Sundet and Bill Romberg of the Alaska Department of Fish and Game, Sport Fish Division, for providing data on fishing effort within the Mat-Su Borough.

Summary

We estimated the economic importance of sport fishing in the Matanuska-Susitna (Mat-Su) Borough. We based our estimates on year 2007 data. These data come from a recent major study conducted by the Alaska Department of Fish and Game (ADF&G).¹ We allocated a portion of the economic effects for the Southcentral region to the Mat-Su Borough based on relative numbers of Southcentral angler days that occurred within the Borough boundary. Our estimates include a range of results because it is not possible to say with certainty how much of the total reported spending on things like boats, cabins, or food is due exclusively to sport fishing. Also, angler spending patterns in the Borough may be different from overall Southcentral patterns.

Overall, our estimates show that:

- In 2007, resident and nonresident anglers fished almost 300,000 days in the Matanuska-Susitna (Mat-Su) Borough.
- Anglers spent anywhere between \$63 million and \$163 million in the Borough on goods and services primarily used for sport fishing. Alaska residents spent an average of between \$126 and \$517 per angler day, while nonresidents spent an average of between \$344 and \$602.
- After accounting for multiplier effects, this spending generated between 900 and 1,900 jobs and between \$31 million and \$64 million of personal income for people who work in the Borough.
- Mat-Su sport fishing activity also generated between \$6 million and \$15 million in state and local taxes.

Table 1
Economic importance of sport fishing in the Mat-Su Borough

(estimates based on Southcentral modeling results allocated using angler days)

	Low	Medium	High
Mat-Su angler days	295,981	295,981	295,981
as % of Southcentral	16.5%	16.5%	16.5%
Direct spending (\$)	62,766,103	118,185,916	162,841,500
Average spending \$ per angler day	212	399	550
Economic contribution			
Employment (average annual)	904	1,180	1,900
Income (\$)	31,406,254	40,118,532	63,660,732
Local & state taxes (\$)	6,085,357	7,721,572	14,957,085

¹ Southwick Associates and Alaska Department of Fish and Game, 2008. Economic Impacts and Contributions of Sportfishing in Alaska, 2007.

Available at: <http://www.sf.adfg.state.ak.us/Statewide/economics/>

Introduction

We have estimated the economic benefits of sport fishing activity occurring within the Matanuska-Susitna (Mat-Su) Borough, using data from year 2007. Our estimates are based on the recent study entitled, *Economic Impacts and Contributions of Sportfishing in Alaska, 2007*.² It contains estimates of angler spending patterns within three regions: Southcentral, Interior, and Southeast. We also used year 2007 data from the ADFG annual Statewide Harvest Survey (SWHS).³ These data allow us to allocate economic benefits to the Mat-Su Borough.

Methods

Step 1. Determine number of angler days spent fishing in Mat-Su Borough

ADF&G provided us with a data extract from their raw survey data on fishing effort in year 2007. The extract included all fishing sub-areas within the Mat-Su Borough. The estimated total number of angler days is 295,981.⁴ Since there is no separate data on Alaska resident vs. nonresident split, we have assumed that the nonresident fraction is the same as it is for Southcentral – 39.6% nonresident. Thus, we estimate that Mat-Su angler days account for 16.5% of total Southcentral angler days.

Table 2. Angler days spent fishing in Mat-Su Borough

	Alaska Resident	Res. %	Nonresident	Nonres. %	Total
Mat-Su Borough angler days	178,886	60.4%	117,095	39.6%	295,981
% of Southcentral	16.5%		16.5%		16.5%

Step 2. Determine appropriate values for spending per angler day

The ADF&G economic survey measured direct angler spending by the location of the expenditure, not by the location of the fishing that generated that expenditure. This approach makes good sense, but it means that some caution must be used when

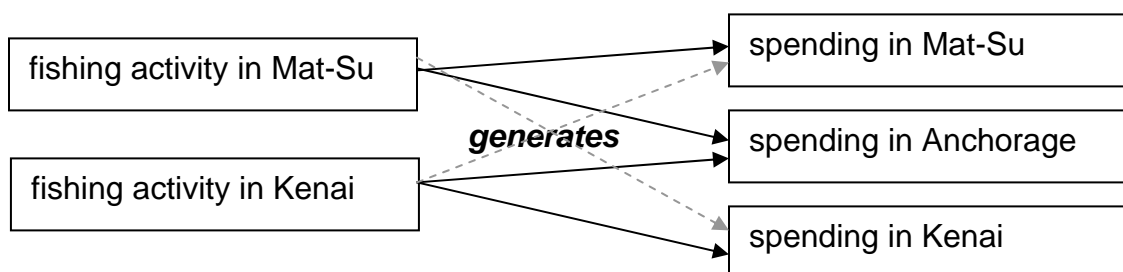
² Southwick Associates and Alaska Department of Fish and Game, 2008. *Economic Impacts and Contributions of Sportfishing in Alaska, 2007*. Available at: <http://www.sf.adfg.state.ak.us/Statewide/economics/>

³ These year 2007 SWHS data have not been formally published as of August 2009. Statewide and regional numbers are reported in the economic impacts study and numbers for areas within the Mat-Su Borough were provided by ADF&G.

⁴ About 8% of these angler days were generated at locations with less than 12 respondents to the ADF&G angler survey. While ADF&G recommends not using these data points because of the sampling error involved, we have included them because we are aggregating over all of the 118 locations that have this problem.

interpreting the spending data. Figure 1 shows how fishing in one area can cause angler spending in another area. For example, a German tourist who fishes on the Little Susitna River might spend significant amounts of money in Anchorage. Clearly, Anchorage is the major recipient of this type of spending that relates to fishing outside of Anchorage. The lighter, dotted lines in the figure reflect the idea that fishing in Mat-Su causes very little spending in Kenai, and vice versa.

Figure 1. Relationship between location of fishing and location of spending



Because the data on angler days and the data on spending within each region were collected in two separate surveys, we must use caution when speaking of “spending per angler day.” Specifically, we need to remember that a simple calculation of spending in a region per angler day of fishing in that same region is a mixture of two different quantities that were measured in two separate surveys.

Each of the five regions that ADF&G uses in its economic significance reporting are large enough that this problem is unimportant as a practical matter. Clearly Southcentral and Southeast are distinct economic regions. Even the Cook Inlet subregion includes Anchorage plus the major fishing locations close to it.

With this caveat in mind, we calculated numbers for “spending per angler day” in various regions based on the total spending numbers reported by the Southwick/ADF&G study. Table 3 shows these ratios. We looked carefully at these regional ratios to determine whether an allocation of total Southcentral *spending* to Mat-Su and non-Mat-Su subregions could be done based on the relative numbers of angler days. We wanted to consider whether some adjustment was needed to capture the possibility that money associated with Mat-Su fishing is spent outside the Borough. Using the ratios for the Cook Inlet subregion would be inappropriate, because Anchorage weighs too heavily in those numbers. We concluded that the best approach was to use the Southcentral region numbers for average spending per angler day as the basis for determining economic activity within the Mat-Su Borough.⁵

⁵ We also looked at regional patterns of spending on fuel, guides, groceries, and lodging to verify that no adjustment was needed based on this spending.

Table 3. High case regional spending per in-region angler day, by region using total spending amounts reported by Southwick/ADFG
(dollars spent in the region per angler day of fishing in the region)

Statewide	Resident	Nonresident	Total
Licenses & stamps	5	15	9
Trip	151	321	223
Package	-	127	54
Equipment	297	38	187
Real Estate	50	102	72
Total	502	604	546

Southcentral	Resident	Nonresident	Total
Licenses & stamps			
Trip	167	332	233
Package	-	127	50
Equipment	302	41	199
Real Estate	47	102	69
Total	517	602	550

Cook Inlet	Resident	Nonresident	Total
Licenses & stamps			
Trip	162	327	226
Package	-	49	19
Equipment	383	46	252
Real Estate	56	149	92
Total	602	571	590

Other Southcentral	Resident	Nonresident	Total
Licenses & stamps			
Trip	180	343	248
Package	-	290	120
Equipment	112	31	79
Real Estate	25	3	15
Total	317	666	462

Interior	Resident	Nonresident	Total
Licenses & stamps			
Trip	100	443	182
Package	-	155	37
Equipment	317	31	249
Real Estate	18	61	28
Total	435	691	496

Step 3. Determine total Mat-Su spending, jobs, and income based on Southcentral spending per angler day

We multiplied the average spending per angler day in Southcentral by the number of Mat-Su angler days to determine total spending in Mat-Su from sportfishing activity that occurs in Mat-Su. We then applied the economic multiplier values for the Southcentral region from the Southwick/ADF&G analysis to these spending numbers. For the High case, our final results for direct spending, jobs, and income occurring in Mat-Su are simply equal to 16.5% of the ADF&G values for all of Southcentral.⁶ The 16.5% number is the Mat-Su share of Southcentral angler days, as determined above in step 1. The 16.5% share is assumed to be the same for resident and non-resident angler days because we have no direct data to indicate otherwise.

Step 4. Develop Low, Medium, and High cases to better reflect the uncertainty about spending patterns

As a final step we considered the fact that much of the spending on equipment, real estate, and even on trips may not be attributable solely to sport fishing. ADF&G attempted to address this issue by asking survey respondents to say what percentage of their equipment and real estate spending was attributable to sport fishing. They used those percentages when determining the total spending and average spending per angler day. However, we believe these numbers represent a high case estimate of spending that relates directly to fishing. There are three reasons for this belief. First, as we have already mentioned, some of the spending associated with Mat-Su fishing may occur in Anchorage. Second, some of the spending on a trip whose “primary purpose” is fishing might well have occurred anyway, albeit in a different pattern. Third, the ADF&G numbers reflect the total, or overall, economic effects of all existing sportfishing. However, if one is interested in how a *change* in fishing opportunities might translate into a *change* in spending, the resulting numbers are lower. That’s because many expenditures are fixed costs. People who fish 10% more days are not going to buy 10% more hip waders or 10% more cabins.

We developed Low and Medium cases by assuming lower expenditures in some categories – especially equipment and real estate. The Low case uses 75% of the reported numbers for trip-related and package categories and none of the equipment and real estate category spending. For the medium case we include 100% of the trip-related and package expenditures, 50% of the reported equipment spending, and 25% of the reported real estate spending. The High case includes 100% of all spending reported to ADF&G for all categories – trip-related, package, equipment, and real estate. The following table summarizes these assumptions.

⁶ ADF&G did not develop Low, Medium and High cases. They only reported one set of estimates. These correspond to our High case estimates.

**Table 4. Difference in spending pattern assumptions
between low, medium, and High cases**

(Fraction of total reported spending that is included in each case, by category)

	Low	Medium	High
Licenses & stamps			
Tri-related	75%	100%	100%
Package	75%	100%	100%
Equipment	0%	50%	100%
Real Estate	0%	25%	100%

Results

Overall, our estimates show that:

- In 2007, resident and nonresident anglers fished almost 300,000 days in the Matanuska-Susitna (Mat-Su) Borough.
- Anglers spent anywhere between \$63 million and \$163 million in the Borough on goods and services primarily used for sport fishing. Alaska residents spent an average of between \$126 and \$517 per angler day, while nonresidents spent an average of between \$344 and \$602.
- After accounting for multiplier effects, this spending generated between 900 and 1,900 jobs and between \$31 million and \$64 million of personal income for people who work in the Borough.
- Mat-Su sport fishing activity also generated between \$6 million and \$15 million in state and local taxes.

**Table 5
Economic importance of sport fishing in the Mat-Su Borough**

(estimates based on Southcentral modeling results allocated using angler days)

	Low	Medium	High
Mat-Su angler days	295,981	295,981	295,981
as % of Southcentral	16.5%	16.5%	16.5%
Direct spending (\$)	62,766,103	118,185,916	162,841,500
Average spending \$ per angler day	212	399	550
Economic contribution			
Employment (average annual)	904	1,180	1,900
Income (\$)	31,406,254	40,118,532	63,660,732
Local & state taxes (\$)	6,085,357	7,721,572	14,957,085

High Case. We first present results for the High case, because they correspond most directly to the previously published spending numbers.

Table 6 shows estimated direct spending from Mat-Su sportfishing. More than \$163 million was spent, of which more than \$70 million came from people who came from outside Alaska. Residents spent heavily on equipment, while nonresidents spent heavily on trips and packages.

Table 6. Direct spending from Mat-Su sportfishing – High case

	Alaska Resident	Nonresident	Total
Licenses & stamps	-	-	-
Trip	29,961,901	38,879,365	68,841,266
Package	-	14,846,871	14,846,871
Equipment	54,058,396	4,779,358	58,837,754
Real Estate	8,383,744	11,931,864	20,315,609
Total	92,404,041	70,437,459	162,841,500
Average spending \$ per angler day	517	602	550

Table 7 shows our High case estimates of the economic importance of Mat-Su sport fishing. Under the High case assumptions, the direct spending by anglers immediately generates 1,300 jobs and almost \$40 million of income. After multiplier effects are included, Mat-Su sport fishing generates 1,900 jobs and \$63.7 million of personal income for people working in the Borough.

Table 7. Economic importance of Mat-Su sportfishing – High case

HIGH case	Alaska Resident	Nonresident	Total
Mat-Su angler days	178,886	117,095	295,981
as % of Southcentral	16.5%	16.5%	
Direct effects			
Spending			
Income	17,957,673	21,536,960	39,494,633
Employment	588	713	1,301
Multiplier effects			
Income	10,841,421	13,324,678	24,166,099
Employment	264	335	599
Total effects			
Income	28,799,095	34,861,638	63,660,732
Employment	852	1,048	1,900
Tax revenues	14,259,233	15,433,546	29,692,779
Local and state	7,513,582	7,443,503	14,957,085
Federal	6,745,651	7,990,043	14,735,694

Spending on fishing also generates significant amounts of tax revenues. As the original ADFG study authors stress, these numbers must be interpreted with special caution, since they reflect average, overall ratios of economic activity to tax collections.⁷ However, it is clear that much of the spending, especially by nonresidents, does contribute incremental revenues through taxes on lodging, meals, rental cars, and sales.

⁷ Southwick/ADFG study, p. 56.

Low and Medium Cases. The following tables show the results for spending, income, and jobs for the Low and Medium cases.

Table 8. Direct spending from Mat-Su sportfishing – Low and Medium cases

LOW case	Alaska		Total
	Resident	Nonresident	
Licenses & stamps	-	-	-
Trip	22,471,426	29,159,524	51,630,950
Package	-	11,135,153	11,135,153
Equipment	-	-	-
Real Estate	-	-	-
Total	22,471,426	40,294,677	62,766,103

MEDIUM case	Alaska		Total
	Resident	Nonresident	
Licenses & stamps	-	-	-
Trip	29,961,901	38,879,365	68,841,266
Package	-	14,846,871	14,846,871
Equipment	27,029,198	2,389,679	29,418,877
Real Estate	2,095,936	2,982,966	5,078,902
Total	59,087,035	59,098,881	118,185,916

Table 9. Economic importance of Mat-Su sportfishing – Low case

LOW case	Alaska		Total
	Resident	Nonresident	
Mat-Su angler days	178,886	117,095	295,981
as % of Southcentral	16.5%	16.5%	
Direct spending (\$)	22,471,426	40,294,677	62,766,103
Average spending \$ per angler day	126	344	212
Economic contribution			
Employment (average annual)	351	553	904
Income (\$)	11,192,675	20,213,579	31,406,254
Local & state taxes (\$)	1,827,203	4,258,154	6,085,357

Table 10. Economic importance of Mat-Su sportfishing – Medium case

MEDIUM case	Alaska Resident	Nonresident	Total
Mat-Su angler days	178,886	117,095	295,981
as % of Southcentral	16.5%	16.5%	
Direct spending (\$)	59,087,035	59,098,881	118,185,916
Average spending \$ per angler day	330	505	399
Economic contribution			
Employment (average annual)	468	712	1,180
Income (\$)	14,923,567	25,194,965	40,118,532
Local & state taxes (\$)	2,436,270	5,285,302	7,721,572

References

Alaska Department of Fish and Game 2008. Economic Impacts and Contributions of Sportfishing in Alaska, 2007. Available at:
<http://www.sf.adfg.state.ak.us/Statewide/economics/>