NORTHWEST RESEARCH GROUP

Fish Consumption Survey

Survey Results
July 8, 2015

Topics

- Research Design and Methodology
- Key Findings
- Discussion Points

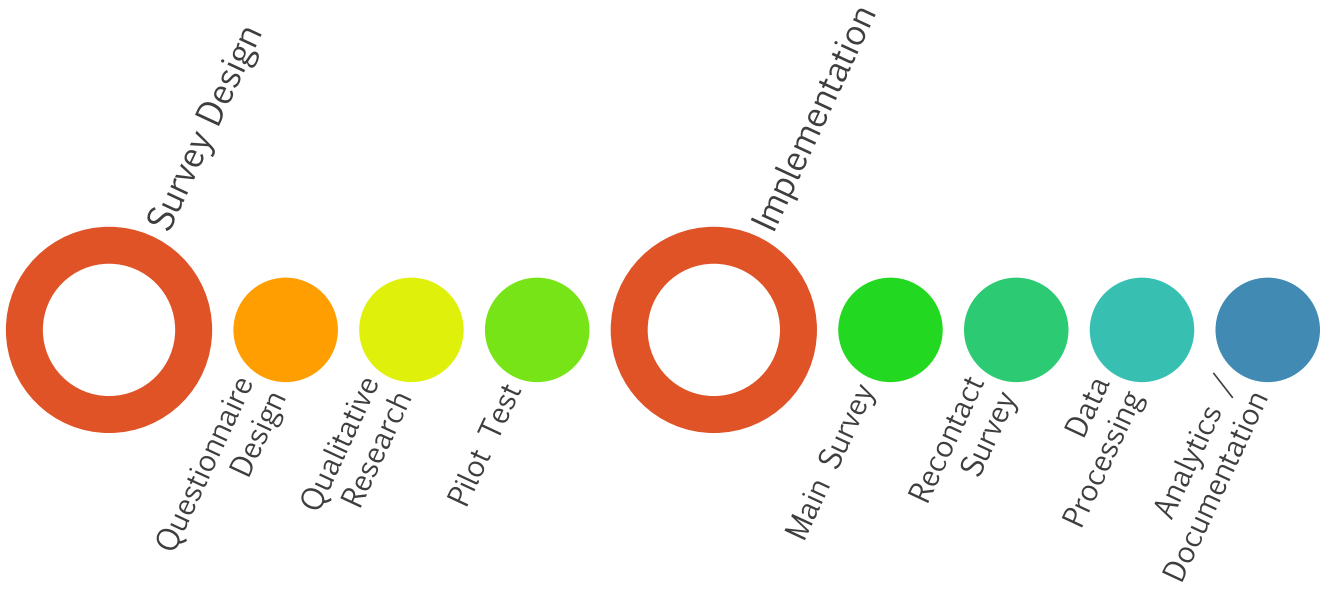
Research Design and Methodology

Background

- Regional evidence suggested that fish consumption rates for some segments of the Idaho population may be higher than the fish consumption rate of 17.65 g/day used by Idaho to protect human health
- A survey of Idaho adults was designed and implemented to obtain a reliable and valid estimate of fish consumption habits
  - In addition to overall fish consumption rates, it was desirable to be able to breakdown consumption rates by source and different consumer groups
- Fish consumption data generated under this project will be used to support the calculation and then adoption of revised HHC that can be shown to be protective of human health in Idaho

Approach

- Approach was to design and implement a telephone survey to gather and analyze information regarding the distribution of fish consumption rates for two groups in Idaho:
  - The general adult population in Idaho
  - Resident Anglers



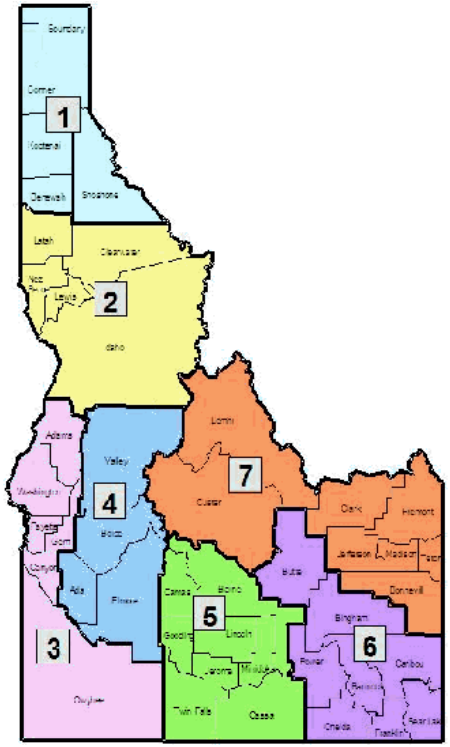
Survey Methodology

- Telephone survey using a dual-frame (landline and cell phone) sample
  - 56 percent of all completed surveys were completed from within the cell phone sample
  - 40 percent of completed surveys were completed with individuals saying they only make or receive calls on their cell phone

Idaho			Cell Phone Sample Plan		Cell Phone Sample Achieved			
Household Data			Completed Surveys		Completed Surveys		Completes with Wireless Only HHs	
Total # of HHs	# Wireless Only	% Wireless Only	Number	% of	Number	% of	Number	% of
579,408	264,191	46%	1,350	30%	2,544	56%	1,825	40%

Stratified Geographically by Health District

- Ensured representation of adult population roughly proportionate to population across the state



Health District	Idaho Population 18+		Sample	
	#	%	#	%
1	162,322	14.2%	642	14.0%
2	84,198	7.4%	381	8.3%
3	177,979	15.6%	722	15.8%
4	324,103	28.4%	1,261	27.6%
5	132,299	11.6%	551	12.1%
6	118,654	10.4%	476	10.4%
7	142,429	12.5%	537	11.8%

Anglers

- Represented an important fish consumer segment as it was believed they would be likely to consume more fish overall, especially more local fish
  - Defined as adults with a valid Idaho fishing license or a combined hunting and fishing license at any time during the 2013 or 2014 calendar years

Idaho			Angler Sample Plan		Angler Achieved	
Population Data			Completed Surveys		Completed Surveys	
Population 18+	# Anglers 18+*	% Anglers	#	%	#	%
1,141,984	296,042	26%	1,350	30%	1,640	36%
** Based on review of sample provided by IDFW*						

Age & Gender Representation

- Even with dual frame sample, some population groups are harder to reach and are less likely to respond
  - Strict quotas ensured that age and gender distributions were roughly proportionate to the population

	Idaho Population 18+		Sample Plan		Achieved	
	Number	%	Number	%	Number	%
Men	567,187	49.7%	2,235	49.7%	2,136	46.7%
18 – 34	185,727	16.3%	730	16.2%	721	15.8%
35 – 54	200,453	17.6%	790	17.6%	745	16.3%
55 +	181,007	15.9%	715	15.9%	670	14.7%
Women	574,797	50.3%	2,265	50.3%	2,434	53.3%
18 – 34	178,553	15.6%	700	15.6%	724	15.8%
35 – 54	199,225	17.4%	785	17.4%	869	19.0%
55 +	197,019	17.3%	780	17.3%	841	18.4%
Total	1,141,984		4,500		4,570	

Other Key Demographics

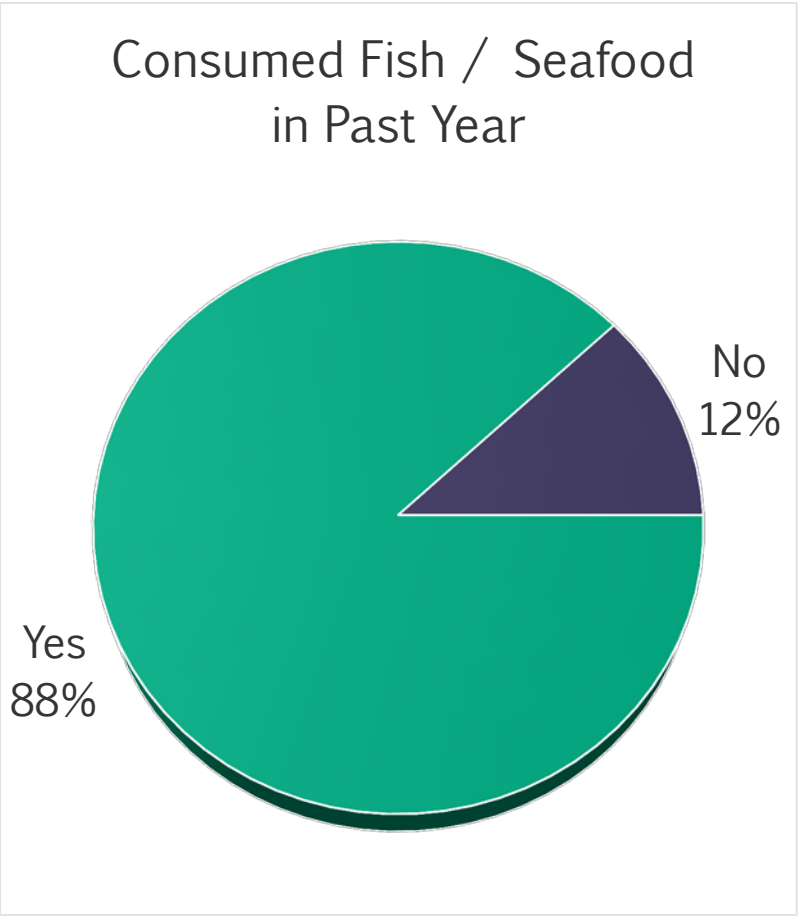
- We also monitored the sample to insure that low-income households (<$25,000) and Hispanics were represented

	Idaho Population 18+		Sample	
	#	%	#	%
<$25,000	140,166	24.4%	1,045	24.9%
Hispanic	102,910	9.0%	401	8.9%

Key Findings

Fish Consumers and Non-Consumers

- Nearly nine out of ten adult Idahoans consume fish or seafood one or more times per year



Total Number of Consumption Events*

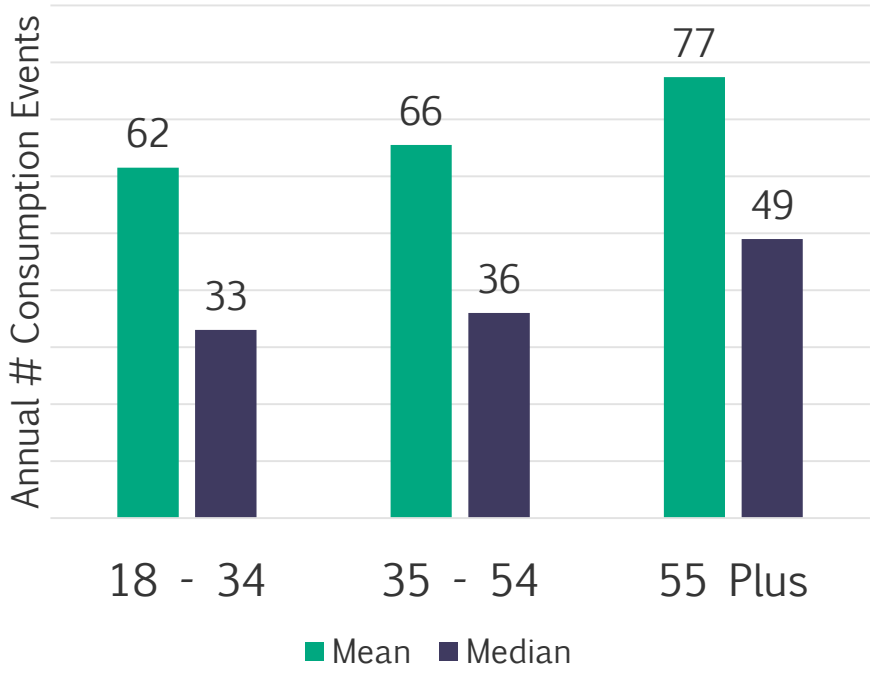
- On average, Idaho adults consume 60 fish or seafood meals or snacks annually

	All Adults (n_w = 4,570)	Fish Consumers (n_w = 4,020)
Mean	60	68
Upper CI	63	71
Lower CI	57	65
Percentiles		
50th	30	38
75th	73	80
90th	144	156
95th	208	220
99th	404	418

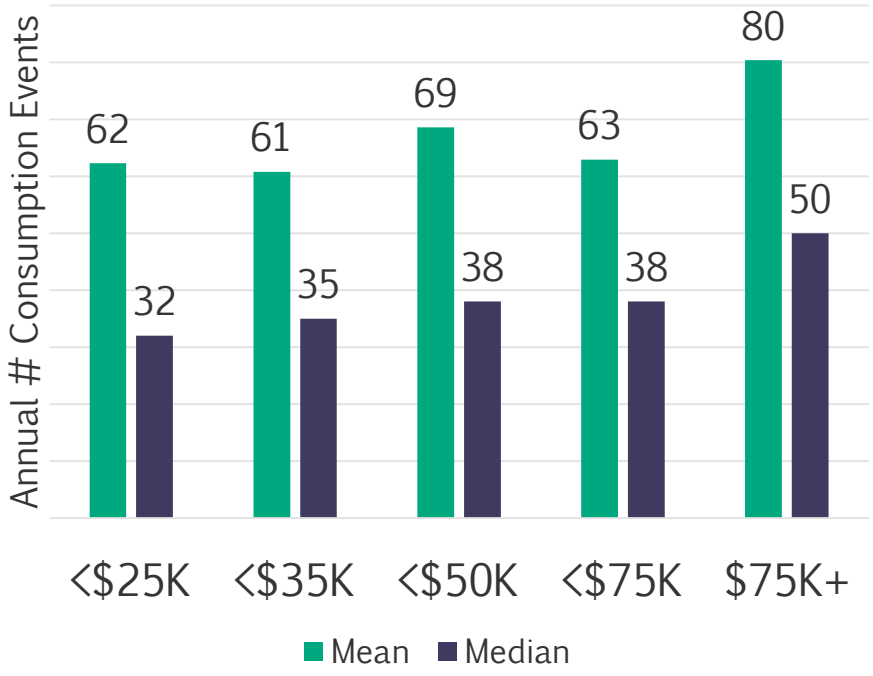
** Consumption events are total number of at home, restaurant, or other meals or snacks consumed in past year*

Consumption Events by Age and Income

Frequency of consuming fish or seafood is highest among older adults

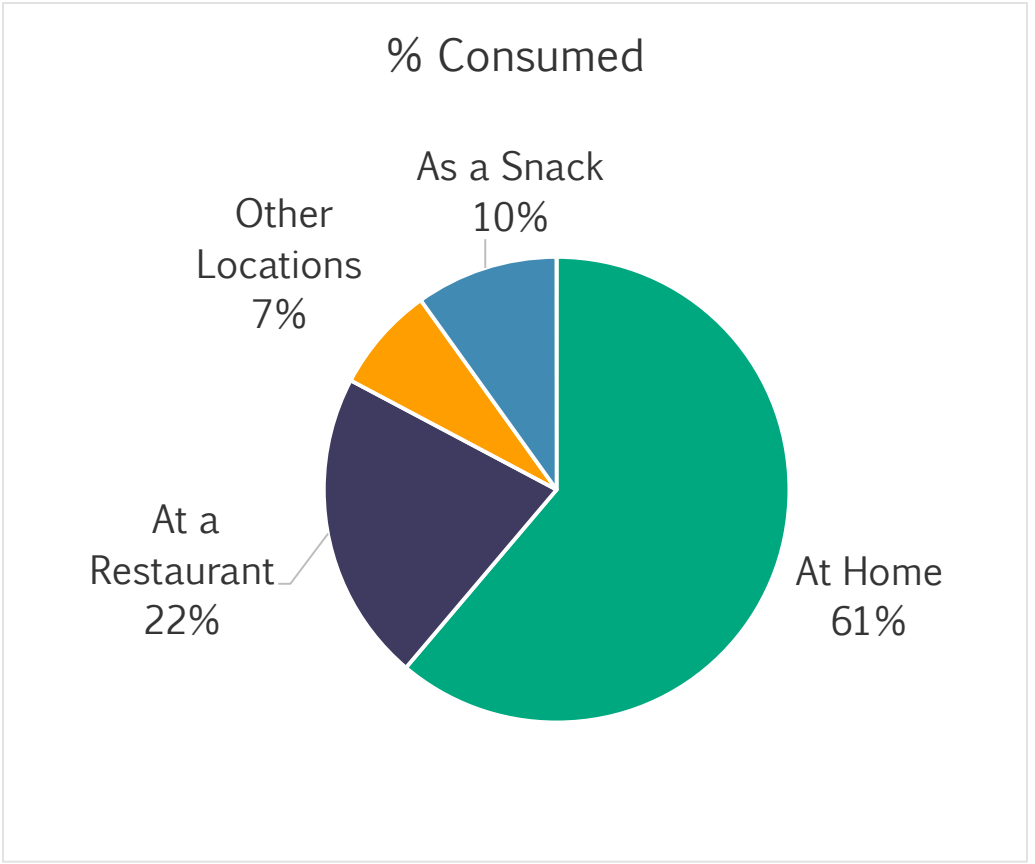


And among high income households



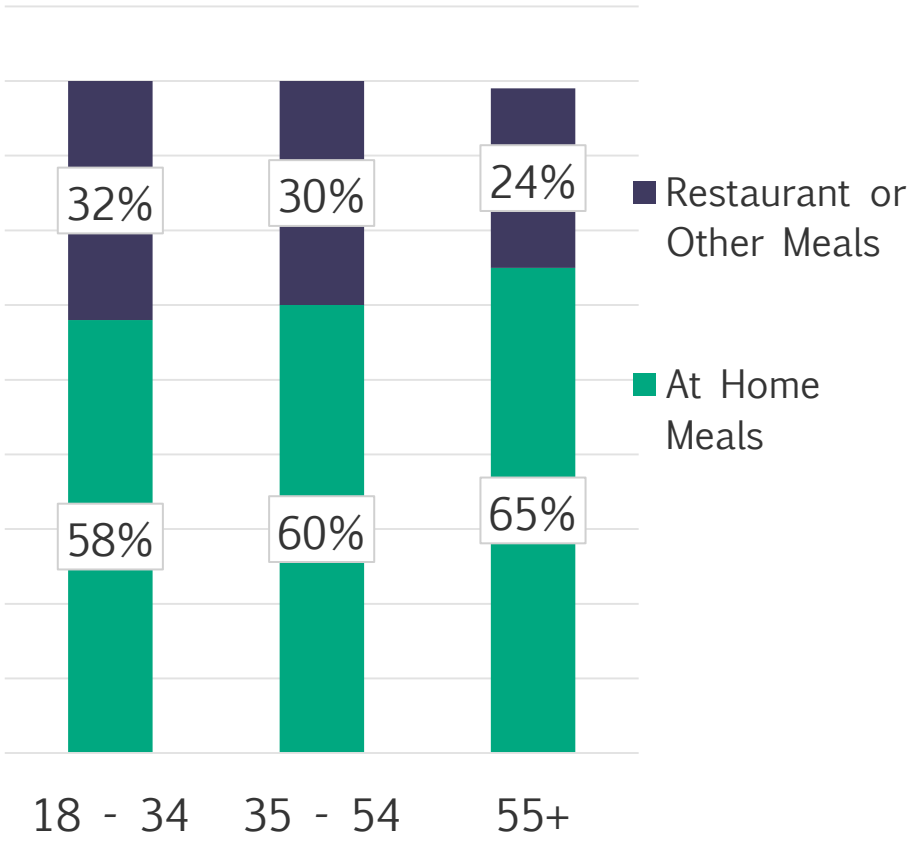
Types of Consumption Events

- Three out of five fish or seafood meals are consumed at home



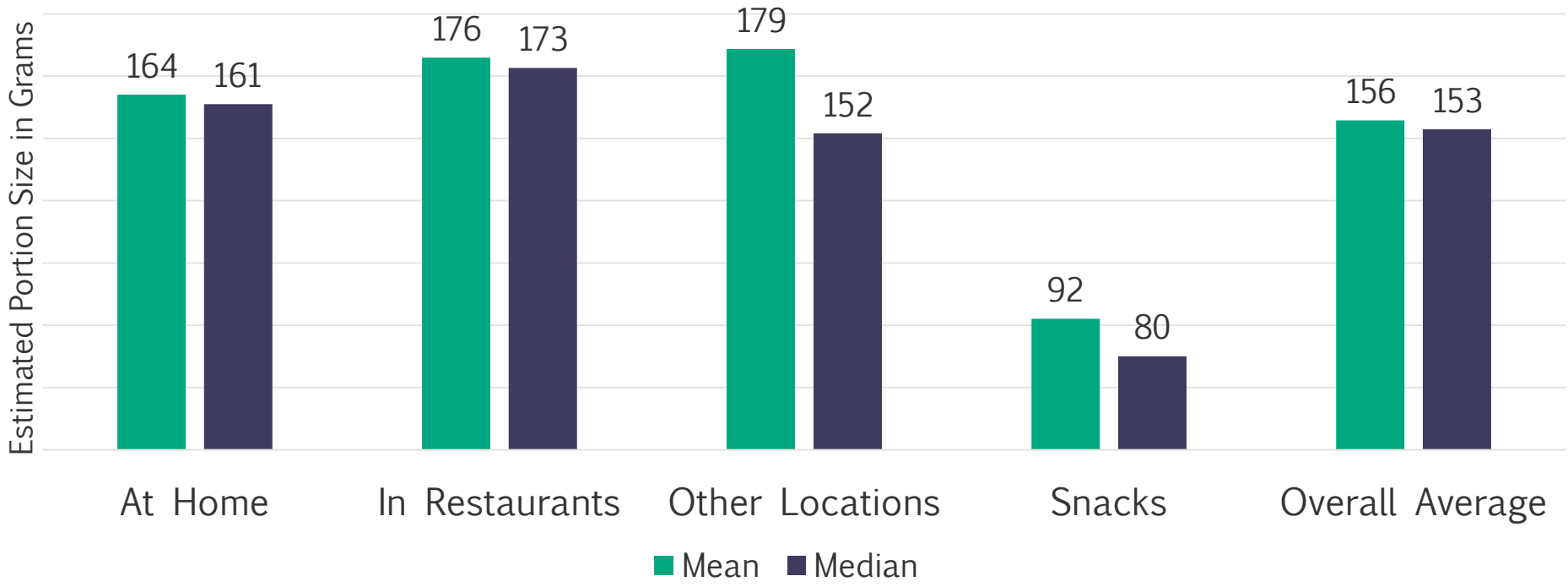
Type of Consumption Events by Age

- While younger adults consume fish or seafood less often, they consume a greater percentage at restaurants or other locations



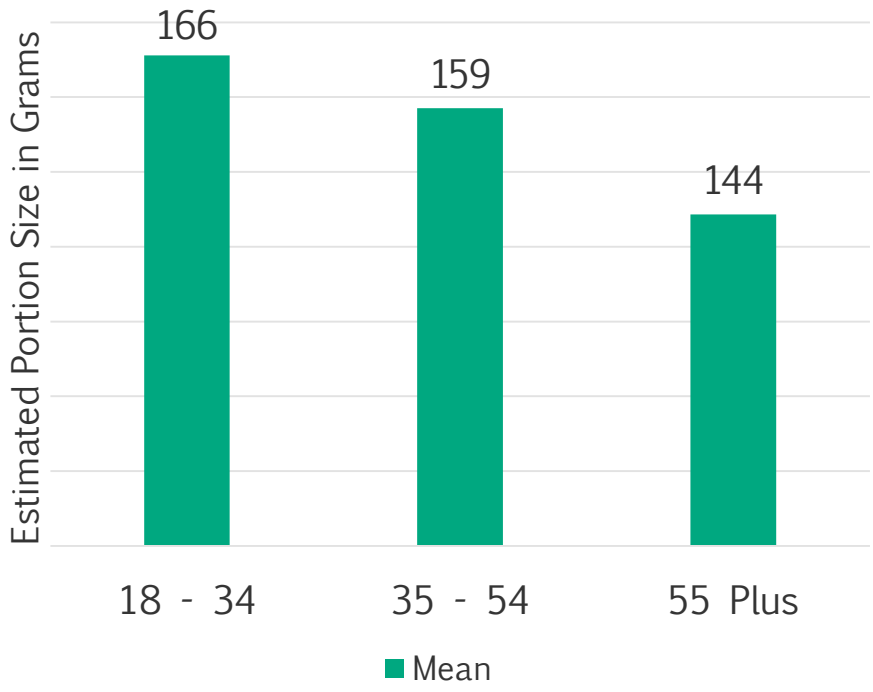
Portion Size Estimates based on FFQ Series

- The average portion size estimates for meals and snacks was just over 155 grams or 5.5 ounces.

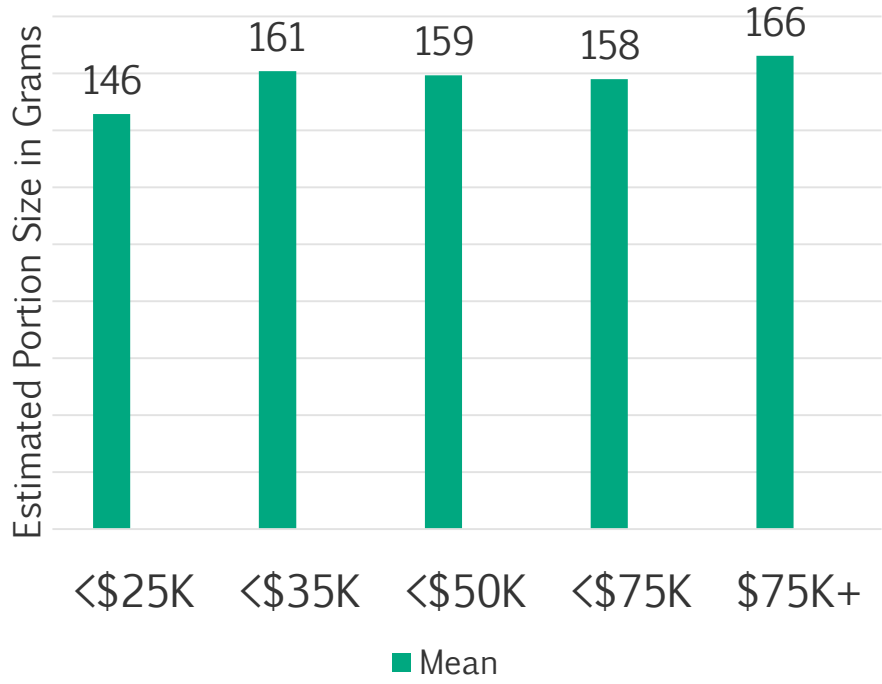


Average Portion Size by Age and Income

While older adults eat fish more often, their portion size estimates are smaller



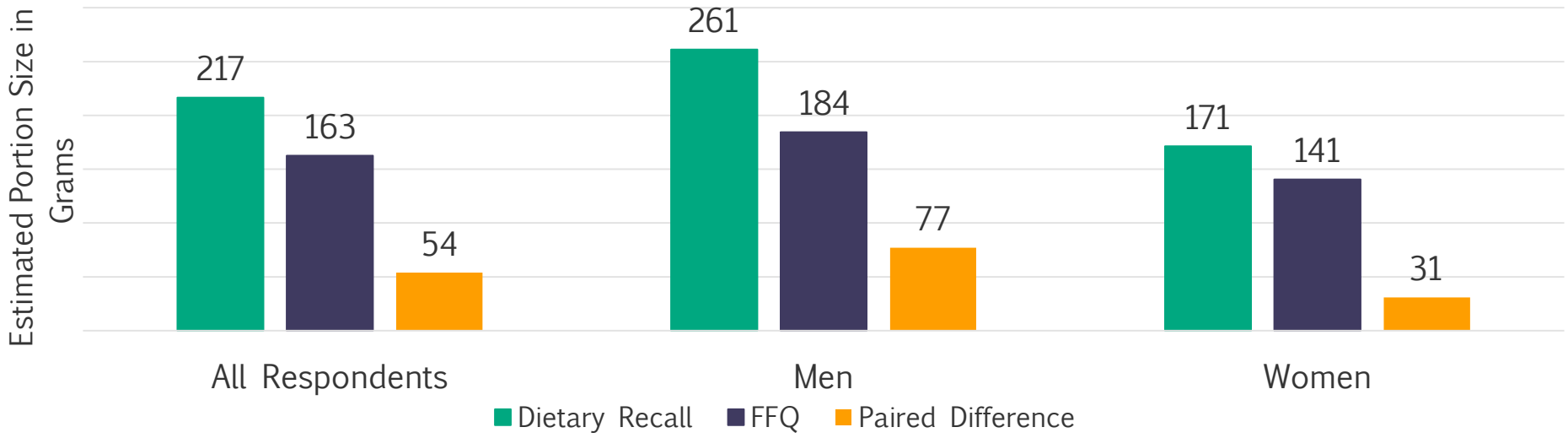
Low income households consume fish less often and they consume smaller portions



*Average portion size is the average across all locations

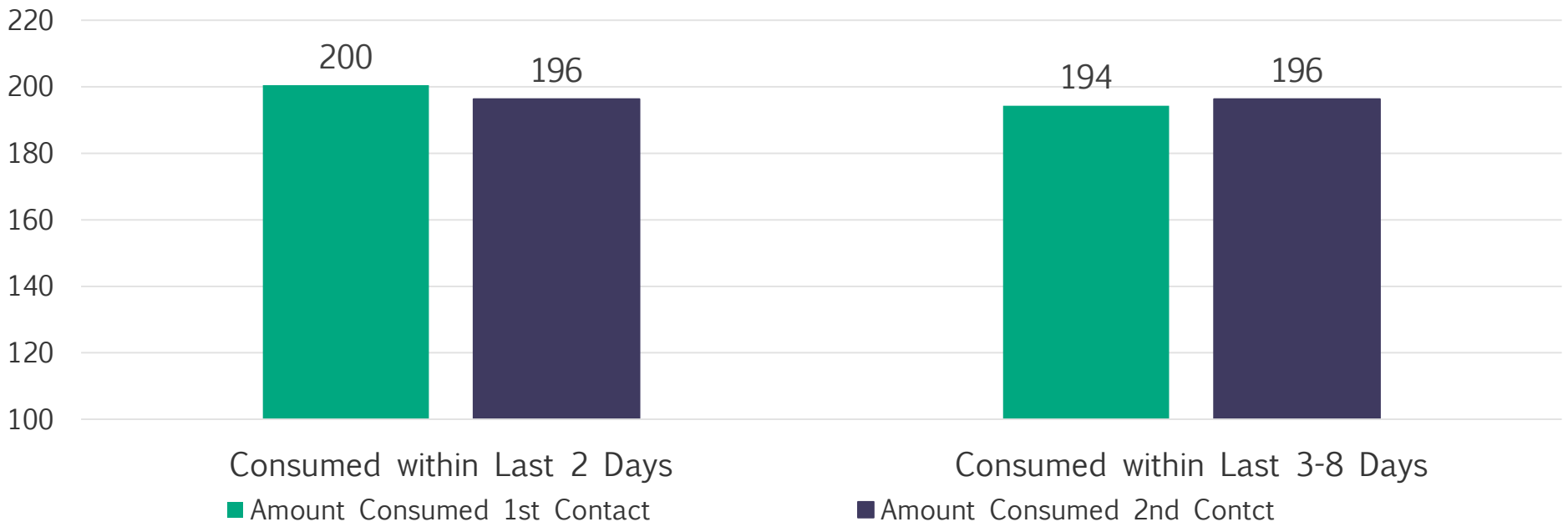
Differences in Portion Size Estimates FFQ versus Dietary Recall

- Portion size estimates provided in the dietary recall questions were about one-third larger than in the food frequency questions
  - The difference was greatest among men



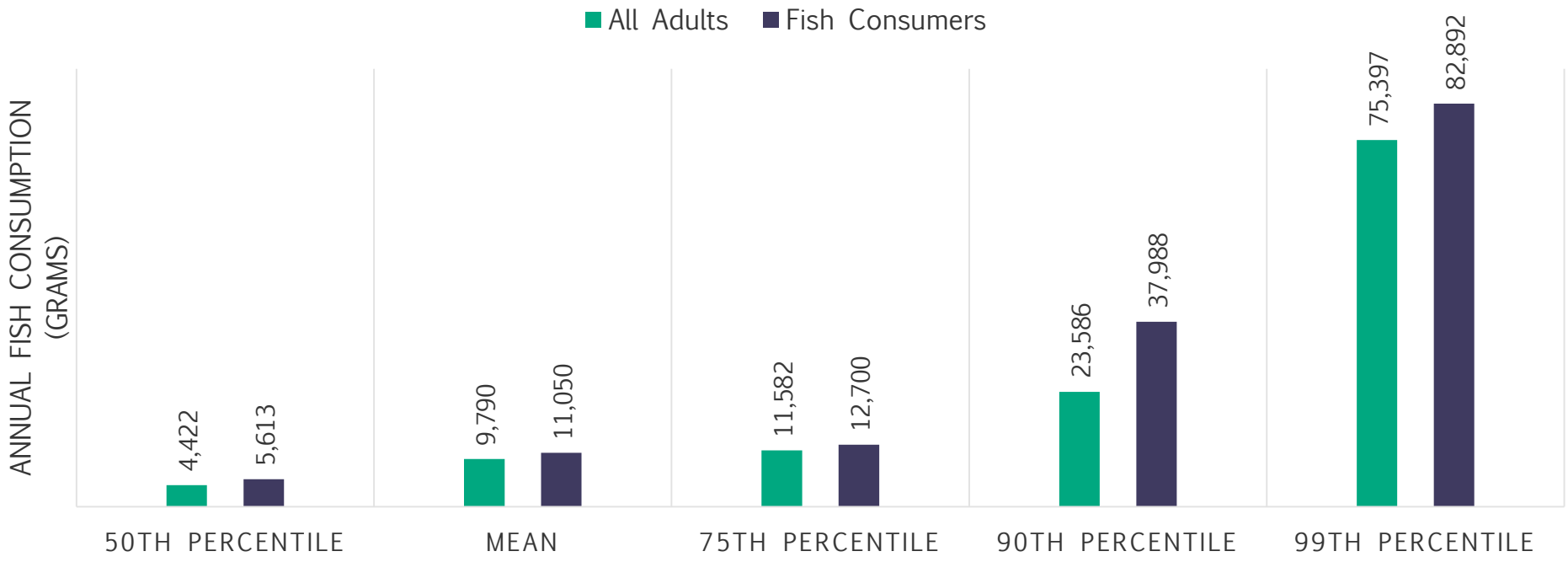
Differences in Portion Size Estimates Main and Re-contact Surveys

- There were no observable differences in portion size estimates between the main and re-contact surveys



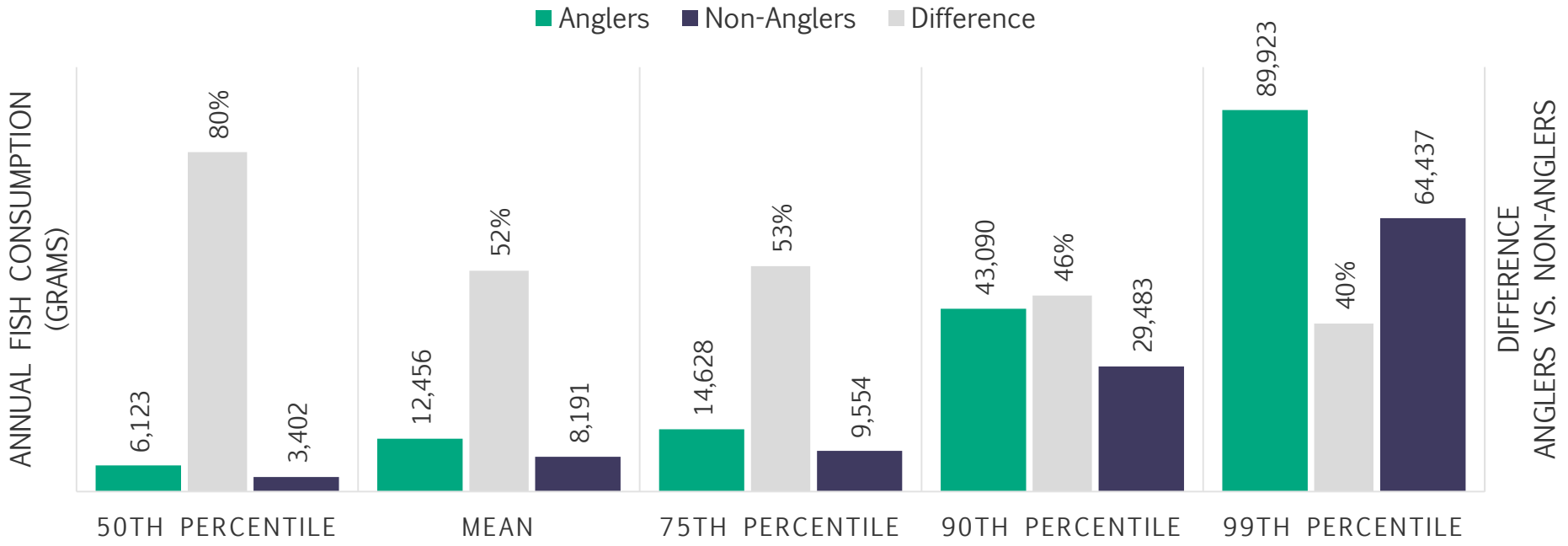
Total Annual Fish Consumption

- On average, Idaho adults consume just under 9,800 grams of fish annually
  - Among fish consumers this figure is 13 percent higher



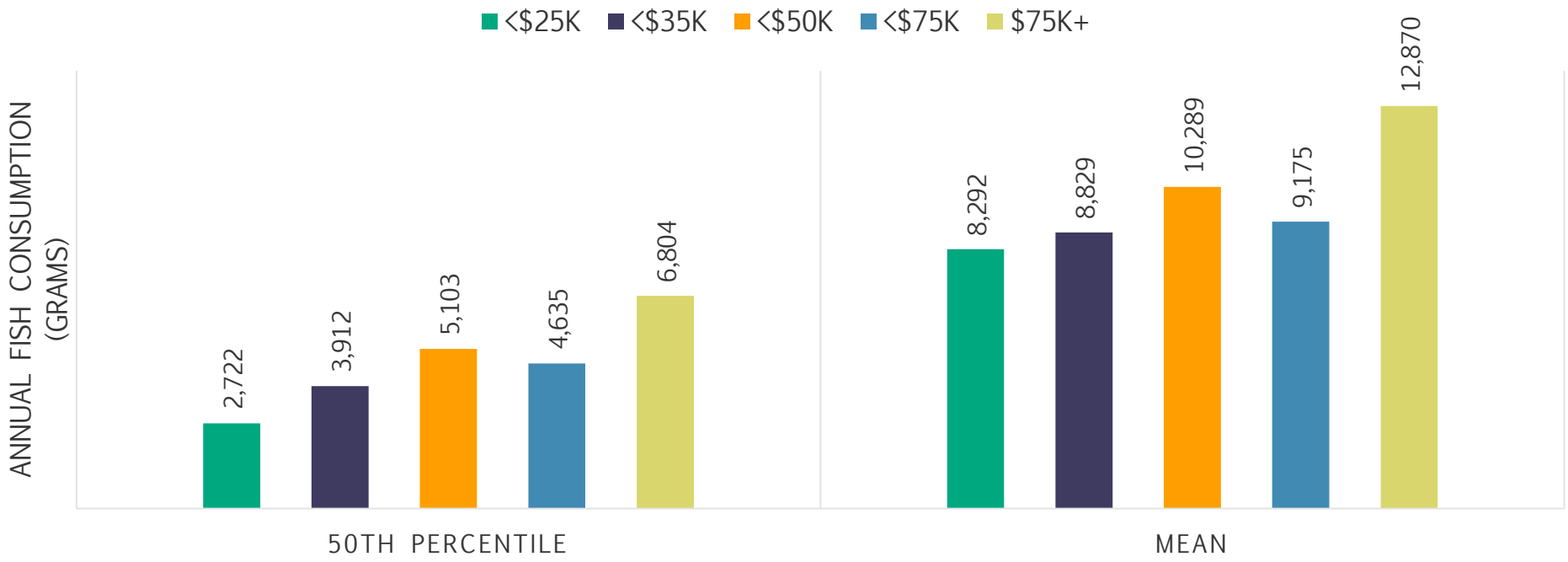
Total Annual Fish Consumption Anglers and Non-Anglers

- Anglers consume approximately 50 percent more fish than do non-anglers



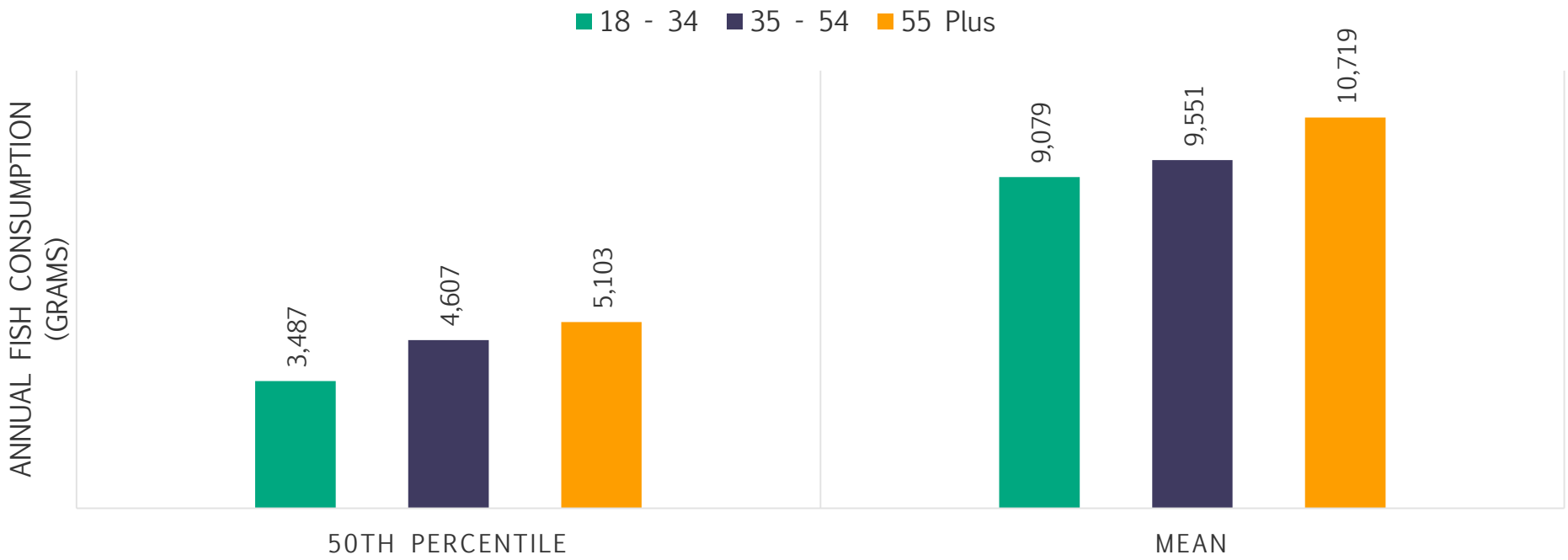
Total Annual Fish Consumption by Income

- Higher number of consumption events **and** larger portion sizes lead to significantly higher consumption rates among higher income households



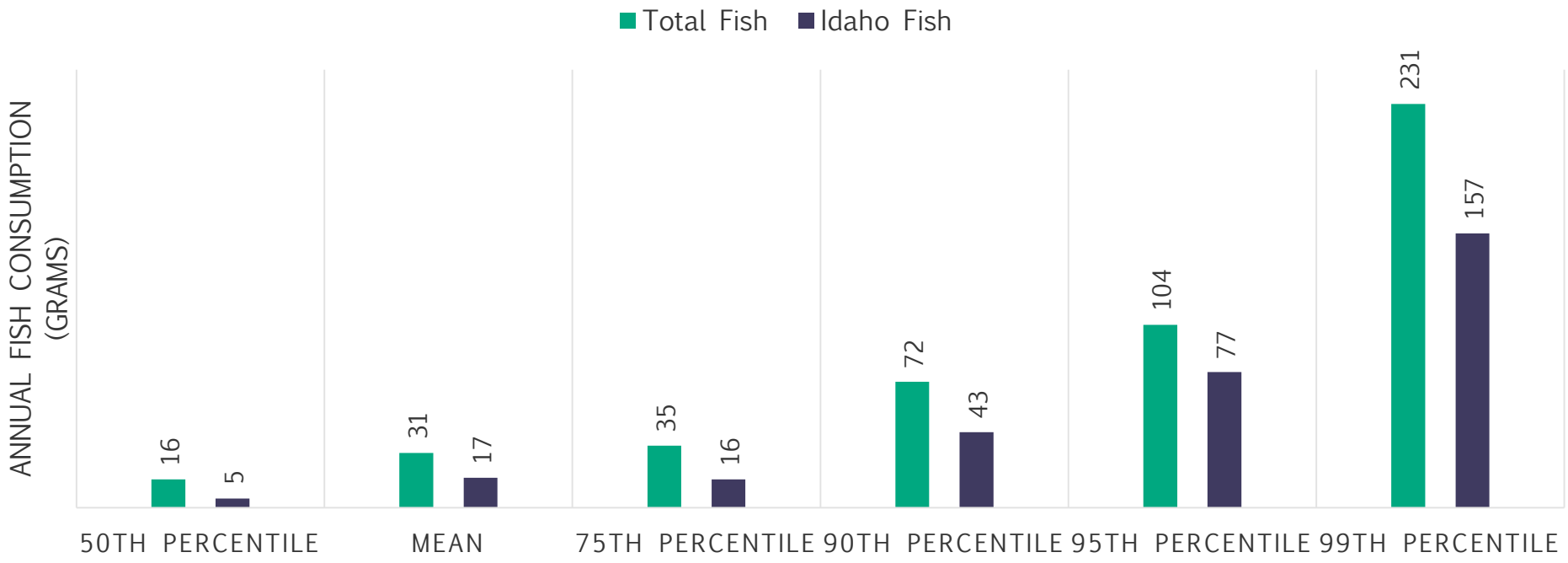
Total Annual Fish Consumption by Age

- Despite smaller average portion sizes, older adults consume more fish due to a higher number of consumption events



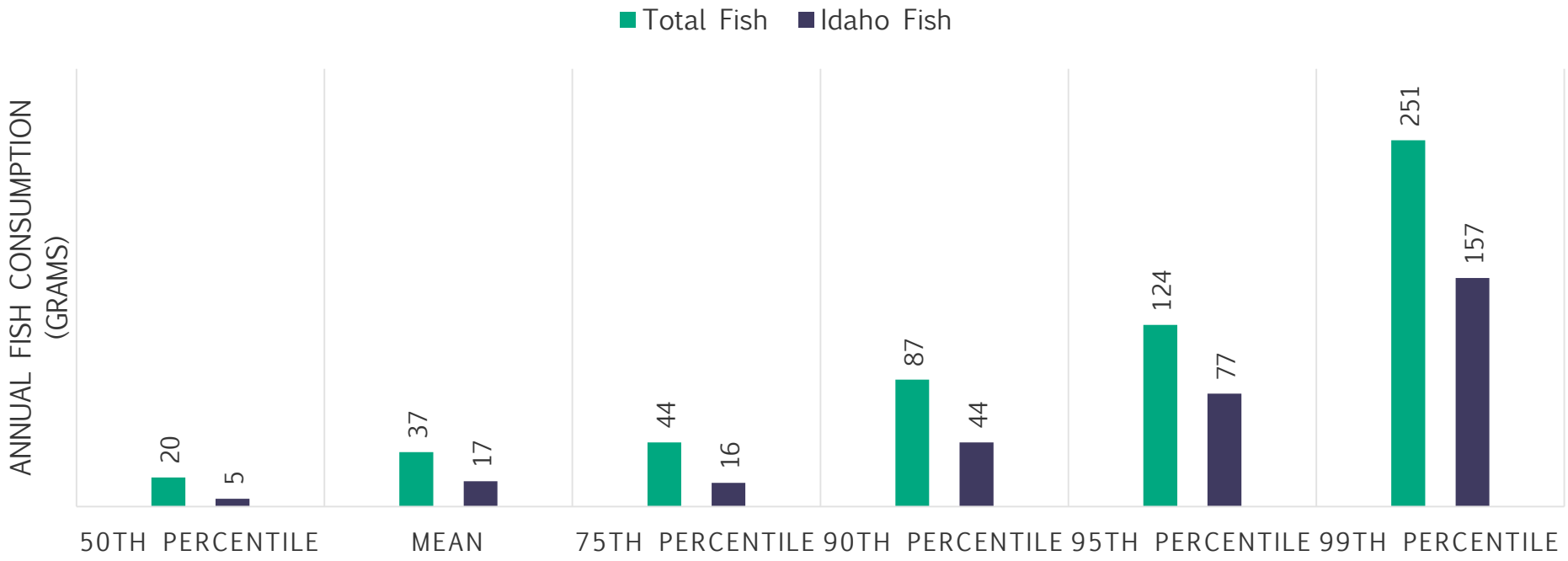
Average Daily Fish Consumption

- Idaho adults who consume fish or seafood consume an average of 31.23 grams/day



Average Daily Fish Consumption—Anglers

- Anglers consume an average of 37.3 grams/day (20% higher than the overall consumption rate)
  - Average daily consumption of Idaho fish is the same for anglers and non-anglers



Reasons for Consumption

Reasons for Consuming

	Fish Consumers
Like It / Enjoy Taste	71%
Healthy / Low in Calories	46%
Alternative to / Something Different than Meat or Chicken	9%

Reasons for Not Consuming

	Non/Light Consumers
Don't Like Taste	49%
Cost	16%
Availability / Hard to Find	9%
Allergies	7%
Vegetarian	4%
Concerns about Pollution / Contamination	3%

Discussion Points

Effects of Demographics on Estimates

Use of FFQ questions

Higher Income Households

- Low income households (<$25K) were represented in the sample at a rate roughly proportionate to their incidence in the population
  - After weighting the percentage of low income households was 29% compared to 25% in the general population
- Higher income households ($50K+) were over-represented
  - After weighting the percentage of higher income households was 44% compared to 26% in the general population
- As higher income households consume more fish, estimates of average daily fish consumption rates from the sample may be higher than in the general population

Age

- Younger adults (<35 yrs.) consume less fish—less often and smaller portions
  - This holds true across all income categories
- Primary reason given for not consuming or consuming infrequently is taste
- Will their tastes change as they age?
- Or will fish consumption rates decrease over time?

FFQ vs Dietary Recall Portion Size Estimates

- FFQ questions yielded smaller portion size estimates than dietary recall questions
- Dietary recall portion size estimates from re-contact survey are more similar to portion size estimates from FFQ questions (provided in the initial contact)
- Portion size estimates from FFQ questions are based on larger sample than dietary recall questions
- Use of portion size estimates from the FFQ questions is supportable and consistent with tribal survey estimates