

Joey Benevento
Marc Bousquet
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New Data on US Willingness to Consume Asian Carp

Bighead and Silver carp, or, collectively, Asian carp, are severely harmful invasive species that have become widespread in US waterways. Millions of dollars have been spent in efforts to keep them from colonizing new territory, and thousands of pages have been written discussing ways their populations could be contained or reduced. One frequently suggested potential method of cutting back Asian carp populations is to remove them by commercial fishing (Conover, 82; Garvey, 3; Illinois Department of Natural Resources et al., 85). Carp have been overfished to the point of scarcity in their native range, where they are popular food fish (Garvey, 3), but large-scale commercial fishing has not occurred in the United States, because Asian carp meat is not considered a viable product on the American market. However, I conducted my own research in an effort to find out whether Americans are actually unwilling to buy Asian carp meat. My admittedly small data sample suggests that if Asian carp were advertised and made available for purchase in stores and restaurants, enough could be captured and sold to decimate their introduced populations.

My research consisted of asking people to complete a simple one-question survey after looking through a simple nine-slide presentation. The survey question aimed to gauge the respondents' inclination to buy Asian carp over popular food fish that are similar from a culinary standpoint. The slideshare presentation, which, with a slight humorous undertone, presented basic information about Asian carp and the advantages of eating them, was an effort to approximate the way a respondent might be influenced by a television advertisement for Asian carp. Having received 25 responses to my survey, I generalized them to the rest of the US

population, performing calculations to estimate how much carp could be consumed if my respondent group were, in fact, representative of the rest of the nation.

It is of use at this point to detail the contents of the slideshare presentation, both to establish exactly what my respondents saw before taking the survey, and to give the reader of this essay some background information about Asian carp. Slide one was merely a title: “Asian Carp in Less Than Five Minutes.” Slide two appeared under the heading “What Are Asian Carp?” and read, “The term Asian carp refers to both the bighead and silver carp, two invasive species that were introduced to the United States in the 1970s. They are widespread and abundant in the Mississippi River Basin, and continually threaten to enter the Great Lakes.” Slide three was headed “What Do They Look Like?” and contained a labeled picture of each species. Slide four was headed “Why Are They A Problem?” and read, “First, Asian carp are large fish, but they eat plankton that would normally feed invertebrates and small fish, like minnows and shad, that are in turn forage for important sport species. Second, silver carp can be dangerous to humans, because they jump high out of the water when startled by boaters.” Slide five, headed “How High Do They Jump?” displayed pictures of jumping carp. Slide six, headed “How Can We Stop Them?” mentioned some plans that have been suggested, then said, “However, one common and frequent suggestion is that we use them for food, and let commercial fishermen decimate their populations.” Slide seven, headed “Are They Good to Eat?” said, “I can't say I've tried them—they're not sold around here yet. However, in Asia they're so popular that they're farmed by the billions of pounds,” then quoted some praise of carp meat by chefs. Slide eight was headed “Can I Take The Survey Now?” and read “Go ahead! (Unless you want to look at the works cited page).” The last slide contained the citations.

While the presentation may have been slightly droll in its formulaic headings, it certainly

did not have a high entertainment value. Furthermore, with few pictures and a simple black, white, and yellow theme, it was far from visually stunning. There is no reason to believe that its viewers would have found it particularly engaging or persuasive. However, the fact that it is so simple lends some credibility to the answers of the survey, because it ensures that people who reported willingness to purchase Asian carp were not persuaded to do so by reading a great amount of information, or by seeing a masterful, high-production-value ad. Instead, if they needed to be persuaded at all, a bare-bones presentation, which could easily be matched or exceeded in persuasive power by any television ad, was all it took. Thus, my estimations for the amount of carp that could be sold if they were advertised are not predicated on the advertisements being brilliant or even good, but just on them reaching a wide audience.

The survey question itself read as follows: "If Asian carp were being sold in a store or restaurant at a similar price to other, more popular white fish like catfish and tilapia, which would you choose to buy?". There were four options for responses:

- a) I would definitely choose the catfish or tilapia.
- b) I would probably choose the catfish or tilapia.
- c) I am indifferent; I might choose any of them.
- d) I would probably choose Asian carp.
- e) I would definitely choose Asian carp.

Of my 25 respondents, two (8%) chose "a," four (16%) chose "b," eleven (44%) chose "c," eight (32%) chose "d," and none chose "e." Thus, just over three fourths of my respondents reported being at least as willing to buy Asian carp as they are to buy other fish.

According to national data (Oregon State University et al.), tilapia and catfish are the fourth and sixth most popular seafood items in the U.S., the average person consuming 1.45

pounds of the former and 0.8 pounds of the latter annually. Since 44 percent of the respondents to my survey said they were just as willing to buy Asian carp as the two other species, and 32% were more willing to buy it than either one, it would not be entirely implausible to suggest that Asian carp, if advertised and made readily available, could sell more than the two combined, say, 2.5 pounds per person per year. However, erring on the side of caution, we can say that the 32% who favored carp are roughly cancelled out by the 24% who were either reluctant or entirely unwilling to try it, and take the remaining indifferent people as likely to buy the same amount of carp as they do the two other species (not combined, but separately). Even placing carp closer to the less popular catfish, then, we can estimate that the average American might eat a pound of Asian carp per year. This is predicated, of course, on the highly dubious assumption that my sample of 25 represents the entire country, but these are the data available to us.

Thus, even rounding down the US population, we can estimate that the nation could consume about 300 million pounds of carp meat annually. That would translate, however, to an even greater weight of carp captured. Not all of a fish is edible; in most cases, only the fillets are actually consumed. Venugopal's *Seafood Processing* estimates that carp fillets with skin compose 41-49 percent of the weight of the original fish (Venugopal, 352). He does not specify the species of carp, but he only shortly before mentioned the bighead carp among species of commercial importance (341), so it seems likely that he has them included in his 41-49 percent range. We will continue to err on the side of caution, and round the fillet yield up to 50 percent. Thus, twice as much weight in unprocessed carp would be captured as was actually eaten, so the 300 million pound figure from above could be doubled to 600 million pounds.

It is difficult to say precisely what effect an annual harvest of 600 million pounds would have on America's Asian carp population, since there are no comprehensive estimates of the total

amount of Asian carp in the United States. However, an estimate for the Illinois River, one of the larger water bodies carp have invaded and probably the one to get the most publicity and study, does exist. "The biomass of Asian carp produced annually in the Illinois river likely far exceeds 3.1 million pounds," says a report, "perhaps reaching 10 million pounds per year" (Garvey 2-3). Continuing to err on the side of caution, we can accept their higher estimate. It is difficult to say what percentage of the total Asian carp population is contained in the Illinois River. However, the way that every second article written about Asian carp focuses on the Illinois river certainly makes it seem significant. True, it gets a lot of attention because it is a potential corridor into the Great Lakes. Still, a good part of the attention also seems to come from the remarkable abundance of carp in the river. I think it would be absurd to suggest that the Illinois contained any less than one percent of America's Asian carp.

We can work under the assumption, then, that the Illinois River produces ten million pounds of Asian carp annually, which are only one percent of Asian carp produced annually in the US. In this case our caution is extreme, since the Illinois could perfectly well contain five or even fifteen percent of the country's carp. Yet even if it only held one percent, and the country produced fully a billion pounds of carp every year, 600 million pounds of commercially captured carp would mean the majority of that year's carp being removed. Less carp to reproduce would result in far lower numbers of carp the next year, meaning the capture of the same amount of carp would nullify an even larger percentage of that year's yield. It seems that commercial fishing on such a scale would necessarily lead to a complete crash in the Asian carp population.

Of course, these estimates are based on a great deal of oversimplification. They fail to take into account, for example, the essential question of whether or not Americans would actually enjoy Asian carp meat. One can certainly find informal instances of American chefs

praising Asian carp, calling them “not only edible, but delicious” (Draper), or “light, mild, and flaky, akin to delicate crabmeat” (Parola). However, it is impossible to know how the general populace would feel about it. If they loved it, then it could be consumed far more than my estimates suggest. However, if they disliked it, then it would not matter how many people were persuaded to try it, since they would be unlikely ever to buy it again.

Another issue, on a smaller scale, is the question of whether my respondents answered the survey question with perfect honesty. The slideshare presentation made it clear that I thought people should eat Asian carp, so it is possible that some of my respondents, who were for the most part my acquaintances or even friends, might have given positive responses because they believed that was what I wanted. I tried to minimize this effect by making the survey entirely anonymous, not even asking for demographic information, so people would not feel pressured to give the response they thought I was looking for. Furthermore, I imagine most of my respondents realized that I was looking for accurate data, and that it was best to answer honestly. Even so, it would probably be foolish to assume that my respondents were entirely uninfluenced by knowing me personally.

Data needs to be collected on a larger scale before we can make any confident claims about the feasibility of reducing US Asian carp populations through commercial fishing. This could be achieved by distributing a survey like mine to a wide, national pool of respondents. It could also be extremely useful to test the saleability of Asian carp more concretely on a moderate scale. For example, a local television channel that serves a fairly small region could advertise Asian carp, and stores in that region could try selling it for a period of time. Their success or failure in doing so should provide a fairly accurate suggestion of how Asian carp would fare on the American market in general. However, the data I have collected do seem to suggest that

previous literature has been hasty in assuming that the American market is not ready for Asian carp. Instead, a simple ad campaign might be all it takes to make catching and selling them a profitable enterprise, and thus greatly reduce their harmful effects on US waterways.

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