**A Lobster Lesson**

My rubber soles slipped on the deck as I wrestled with the rope. The boat tipped almost vertically into the water under the weight of the trap, but my grandfather stood unwavering in front of me on his sturdy sea legs. “I can see it now! We almost have it!” he called to me over his shoulder as we made the final tug on the trap’s line, lifting the wooden cage, tangled in seaweed and barnacles, from the sparkling waves. Joseph O’Shaughnessy was a New-Englander and a grandfather, a runner and a bridge player. He held many roles throughout his life, but above all he was a lobsterman. As a fisherman’s granddaughter, I learned about the lobster world over buckets of shellfish in the backyard and weekly trips to the Pier Market. I learned that everyday my grandfather pulled wooden cages, marked by his own personal buoy, out of the water to see if his bait had attracted any lobster. However, I could only understand the complexity of my grandfather’s business as I stood proudly beside him as co-captain of the 32-foot long *Terry O*.

That sultry afternoon on board the ship, salty spray stung my cheeks as we bounced over waves towards our next trap. I shielded my raw palms from the wind because the struggle to pull the first trap off the ocean-floor had taken a toll on my un-calloused hands. After laboring to drag the nine-square-foot cage through the water, my grandfather and I had discovered that the trap was empty. I glared into the nets with frustration and disbelief. Not one lobster had entered our trap all day? My grandfather threw the line back into the water, unsurprised. Limited resources, he explained, made empty traps a routine discovery for a lobsterman in New Hampshire.

As a resident of New Hampshire, my grandfather, along with the other members of Hampton Harbor, was limited to lobster-fishing off of its short, 13.4-mile coastline. Additionally, the length of fishing lines prevents the fishermen from working more than five miles off shore[i]. According to the New Hampshire Fish and Game Department, 1,952 fishermen held lobster

licenses in 2008[ii]. Therefore, 1,952 lobstermen shared a 67-square-mile area of ocean. Both space to stage buoys, floating markers for lobster traps, and the number of lobsters in that small area were extremely scarce. Although my grandfather wanted hundreds of traps full of lobster, the scarcity of space and game, classified as "land" economic resources, forced him to choose a limited number of locations to place his buoys. This rationing of space between the lobstermen in New Hampshire kept the fishing economy functioning and encouraged competition between the sailors[iii].

As I began to understand the role of scarcity in my grandfather's profession, I kept my fingers crossed that we would have better luck with our next trap. I braced myself by the engine of the *Terry O*, inhaling the fishy aroma of our bait bucket and listening to the constant rumbling of the machine's propeller. Shielding my eyes from the blinding sun, I scanned the deceivingly lengthy coastline for my grandfather's maroon and gold buoys. I spotted turquoise, green, white, black, and brown figures bobbing over waves, but it seemed that our maroon and gold markers were nowhere to be found. My grandfather steered with confidence, knowing exactly where he would find his next trap. "Granddad," I yelled over the engine's roars. "In all of this space, how do you decide where to drop your buoys?" Looking back, I recognize his explanation as a simple description of opportunity costs.

After realizing the scarcity of space he had to place buoys off of the New Hampshire coast, my grandfather had to make important choices. More specifically, in choosing the locations for his buoys, he had to consider the cost of giving up one location in order to cast a trap in another location. The trade-off between these two trap-locations resulted in an opportunity cost. As an example, he pointed to a vacant space of ocean just a few yards away from our boat. This area, he explained, was the next most desirable location to the current place

of his buoy. He had heard from another fisherman that this spot sometimes trapped eight lobsters at a time. However, he gave up this location in order to occupy one he thought was more profitable. Although he passed up some potential lobsters, he decided that the comparative advantage of the second location was greater. Through this process of incurring opportunity costs, my grandfather decided where he wanted to cast his buoys.

Just as my grandfather finished explaining the placement of his traps, he launched the anchor into the ocean and we drifted to a stop beside a maroon and gold cylinder. It bobbed over ripples as if attached to nothing, but I knew that just twenty meters down, a potentially crowded cage waited. Once again, we took hold of the thick rope and heaved it over our tired shoulders. The trap emerged from the water majestically, and to our delight, countless crimson claws snapped through the gaps in the wood. I marched in place triumphantly as my grandfather measured the lengths of the shellfish, but to my horror, he tossed every other lobster back into the water. “Granddad!” I cried, “Why are you throwing away our game?!” This time, diminishing marginal returns would give me my answer.

The concept of diminishing returns is defined as getting less and less extra output when adding additional doses of an input while holding other inputs fixed[iv]. This economic principle applied to my grandfather’s business in two ways: the number of lobsters and the number of traps. First, after years as a fisherman, he had learned that he could only sell about 15 pounds of lobster to the Hampton Pier Market every day. On average, he pulled up about 23 pounds of lobster per day. After he had brought up fifteen pounds of lobster, each following shellfish provided him less and less profit. The marginal profit of each additional unit decreased as the number of units increased, because lobsters can only be sold one day after they are caught. In deciding how many

lobsters to keep and how many to throw back, my grandfather chose the number which would provide him with the greatest marginal return.

I was also surprised to learn that my grandfather placed six buoys off the coast of New Hampshire instead of the maximum of eight. The number six came from careful marginal analysis, or comparing marginal cost with marginal benefit. This is because after six buoys, the cost of fuel outweighed the profit that two additional buoys would provide him. In 2008, fishermen sold their lobster at a market price of $3.25 per pound[v]. Going between six buoys, my grandfather had to put $0.50 of each $3.25 towards fuel. Increasing his course to eight traps would cause $0.75 to come out of that income. The marginal cost of two addition buoys outweighed the marginal benefit of two additional buoys, because he could not live on a $2.50 per pound salary and brought up his necessary 15 pounds of lobster in the first six traps. After the sixth trap, or the sixth unit of input, the marginal return of following traps decreased, bringing in an unprofitable number of lobsters and increasing the cost of fuel.

With another lobster lesson learned, I clung to my grandfather's apron as we flew off towards the next maroon and gold buoy. On the slippery deck of the *Terry O*, while studying lobster length and color, I learned about limited resources, opportunity cost, diminishing returns, and marginal analysis. I loved to be my grandfather's right-hand-girl, but I didn't know then that I would learn some of the most important economic lessons as I yanked on a wet rope, dragging up traps under the New Hampshire sun.

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[i] The Official New Hampshire Government Website, *New Hampshire Maps and Geography*, http://www.nh.gov/visitors/maps.html (February 20, 2010).

[ii] The New Hampshire Fish and Game Department, *Licensing in New Hampshire*, http://www.wildlife.state.nh.us/Fishing/fishing.htm (February 20, 2010).

[iii] Campbell R. McConnell, Stanley L. Brue, Sean M. Flynn, *Economics: Principles, Problems, and Policies, Eighteenth Edition* (New York: The McGraw-Hill Companies, Inc., 2009), 5.

[iv] Ibid, 157.

[v] Sandra Dinsmore, "New Hampshire Lobster Industry Still Hurting," *Waterfront Times,* July 15, 2008 (http://www.workingwaterfront.com/online-exclusives/NH-lobster-industry-still-hurting/13214/).