

Catch-and-Release Fishing:  
The Subversion of an Archetype and the Transformation of an Ethic

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### Abstract

This study analyzes the connection between water pollution and the rise of catch-and-release fishing in the United States and in the Mid-Atlantic in particular. This study provides a brief history of catch-and-release fishing and details those factors (in addition to water pollution) that have contributed to its increased popularity in the United States. Some of these include a desire to protect fisheries (voluntary catch-and-release), government mandated catch-and-release, socioeconomic background, cultural background, gender, race and other factors. Through a review of the literature, interviews with Mid-Atlantic anglers and other experts as well my own personal experience, I found that for many groups of anglers pollution did contribute to the rise of catch-and-release fishing in the Mid-Atlantic.

Keywords: Catch-and-release, water pollution, toxins, fishing, angling, Mid-Atlantic.

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### Dedication

This thesis is dedicated first and foremost to the practitioners of hunting-gathering activities and their elegant game and rioting harvests. May they and their children long express their human distinctiveness with the natural food systems of the world.

### Acknowledgments

To those anglers, hunters, gatherers and researchers of the Mid-Atlantic who took their time to talk with me and ensure my path was always both purposeful and truthful—thank you. My heartfelt thanks in particular to Doug Jackson and Grizzly who piqued my curiosity early on then stayed with me through to the end.

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## Chapter One: Introduction and Discussion of the Issues

“The charm of fishing is that it is the pursuit of that which is elusive but attainable, a perpetual series of occasions for hope.”

— Author Unknown

To say that I grew up around fishing would be an understatement and probably not even the best way of putting it. I grew up fishing, yes, but it would be more accurate to say that I grew up eating fish that I caught. This was true for almost everyone in the community where I grew up in Alaska. We were on the road system, there was a small airport, we had grocery stores and most of us were not so poor that we could not have bought the food we needed. But still we fished and ate virtually all of our catch. Some fish we would eat fresh right out of the water while others would be pressure cooked in jars or freeze for the long, dark winter that is always just around the corner in that part of the world. Looking back on my life to this point, I can honestly say that catching and eating fish has been the glue that has held my life together economically, spiritually and even physiologically. As a result, I am deeply attached not to fishing but to catching and eating.

After moving to the Washington, D.C. area this past winter, one of the first things I did was excitedly explore the local waterways with a fishing rod in hand. But this would not be a community of anglers with whom I would easily be able to integrate. Most of these were urban anglers, catch-and-release fishermen, some of

whom did not even enjoy the taste of fish and virtually all of whom never kept the fish they caught. As I met anglers and learned more about the culture of fishing in my new home, I started to hear a recurring theme that went something like this: “Do I eat fish from this river? Almost never. Maybe one a month. There is a lot of toxic stuff in that water you know.” One local went so far as to call Potomac River fish “fecal fish.” Although I was not naive about catch-and-release fishing or the myriad environmental problems that can plague urban areas, I had never contemplated the connection that might exist between the two.

While my first inclination was to catch and eat fish, the first angler who mentioned pollution sowed the seeds that led me to doubt my commitment to catching and eating. As I began to read nearly a half-century of studies on Mid-Atlantic fisheries, water pollution and the reactions of anglers, I, like the other anglers I had met, became distrustful of the water and of the fish. I became fearful of the unseen toxins that might be lurking in the water, infecting the flesh of fish and threatening to poison me in some mysterious way. After just one fish meal in the Mid-Atlantic, I found myself, for the first time ever, a catch-and-release angler compulsively casting over and over again for reasons that are still unclear to me.

Having already interviewed many anglers and related experts, I started my review of the literature. I opened books and leafed through papers in order to finish answering one question that researchers seem to have paid far too little attention to: has water pollution encouraged the rise in popularity of catch-and-release fishing in the Mid-Atlantic since the 1950s? During the early stages of my research, I found that

a distinct gap existed between the body of knowledge on water pollution (and how it affected fish and anglers) and the factors that determine whether an angler will eat his catch (subsistence) or practice catch-and-release. Although extensive research exists in the field of catch-and-release as well as waterborne pollution and its effects on aquatic life, there is a distinct lack of research addressing how water pollution has contributed to the rise in catch-and-release fishing here in the Mid-Atlantic and across America. After interviewing local fishermen and reviewing the literature I realized that, for many anglers, water pollution and the possibility of its presence in sport fish contributes significantly to their decision of whether or not to practice catch-and-release fishing. Other influences include concerns about the long-term health of fish stocks (voluntary catch-and-release) and government mandated catch-and-release. More complex factors include socioeconomic background (eating caught fish may be an important source of food for some economically disadvantaged anglers), cultural and racial background (eating caught fish is culturally important to some groups), gender (men and women can have different fishing and fish eating practices and preferences), and other factors.

As my research progressed I saw that there was more to this question of whether Mid-Atlantic water pollution was encouraging fisherman to abandon subsistence and take up catch-and-release. I quickly realized that in addition to this question I also needed to understand the ancient relationship between humans and one of the most archetypal of human activities—feeding oneself by fishing. Questions were revealed and answered such as: does catch-and-release fishing satisfy the same

need in humans as subsistence angling? What is that need and why does it persist when cheap food is easy to come by? I found that the best way to frame the answers I found was through Carl Jung's notions of the collective unconscious and the personal subconscious. These describe how and why ancient desires (some would call them instincts) such as fishing are manifest in people and to what extent we do or do not have control over them.

Finally, I wrapped my findings in a personal narrative. Through this study my contention was that many Mid-Atlantic anglers moved to catch-and-release when studies, stories and books detailing water pollution and fish-borne toxins first started to make their way into the public sphere in the 1960s, '70s and '80s. Since I was not in the region during that time, I used own experience of moving to the area as a barometer to measure what it may have been like for Mid-Atlantic anglers to relatively suddenly be faced with the knowledge that water pollution may prevent them from ever eating caught fish again. Whether because of any credible threat to my health or simply out of fear, I ate one caught fish from the Potomac River, then, for the first time in my life, became an entirely catch-and-release angler.

Although this research helps fill a distinct gap in the body of knowledge regarding how water pollution has driven subsistence anglers toward catch-and-release, it is also a personal journey. My own experiences, when contrasted with long-time local anglers, add an intimate layer to a solid foundation of research. I expected that my personal transition from rural living and one ethic of fishing to urban living and an entirely new fishing ethic would be a traumatic one. But I found that this

research and the many wonderful people I met along the way made the move bearable, even pleasant, and absolutely enlightening.

#### A Review of the Literature

In researching this study I ranged far and wide in my search for appropriate texts with which to build on the interviews I had already completed and to test my hypothesis. In particular I drew heavily from the body of hunting literature, which is much larger than that of fishing. Although fishing and hunting might not appear to be very similar, fundamentally they are quite similar and I consistently treated them as such throughout this study in order to more fully develop my ideas. Doing so allowed me to tap into a wealth of knowledge on everything from ancient (and modern) hunting-gathering cultures to contemporary discussions of hunting ethics, game management policy, philosophy, even animal rights. Books such as *A Hunter's Heart: Honest Essay on Blood Sport* by David Petersen, *In Defense of Hunting* by James A. Swan, and *The Island Within* and *Heart and Blood: Living with Deer in America* by Richard Nelson widened my gaze by exposing me to ethical, moral and practical dimensions to hunting I had never considered. I also gained from these books an increased appreciation for those who feed themselves from natural food systems. And, as one story in *A Hunter's Heart* points out, "Hunters have not yet had the chance to learn a hunting counterpart to catch-and-release," meaning, of course, that all hunters are the equivalent to subsistence fishermen and a true catch-and-release equivalent does not exist among their ranks (126). This fact makes hunting literature particularly valuable

in understanding the relationship between the kill and the meal and the perceived value of that activity. Hunting literature is also rich in tales of trophy hunting, which can, in some cases, be likened to catch-and-release fishing, although trophy fishing does also occur. Although trophy hunters do not always seek trophy animals simply for the mount (some hunters want good meat and a trophy animal if possible), trophy hunting is about some or all of the following: the tremendous challenge of stalking and claiming the largest animal, competition (with fellow hunters and with nature itself) and to dominate, “own” or outwit an animal (Eliason 258). These are motivators not uncommon in catch-and-release fishing as well. For hunters and fishermen, catching/killing something is important for most of us (although this does not preclude a fruitless hunt still being considered “successful”), and, though we may not always admit it, many of us would just assume catch/kill a large one. But, the similarities do not go much farther since not harming fish is a core value for many catch-and-release anglers while in trophy hunting a kill is the goal and ideally the result of any hunt.

Continuing in the hunting literature genre are three of the most significant pillars in the house of my research: *Meditations on Hunting* by José Ortega y Gasset, *The Tender Carnivore and the Sacred Game* by Paul Shepard and *The Archetypes and the Collective Unconscious* by Carl Jung. In *Meditations on Hunting* Ortega y Gasset asserts that hunting has consistently been among man’s most important activities from both a spiritual and practical standpoint. Ortega y Gasset’s writing proved instrumental in my discovery of hunting (and fishing) as not just a way to

occupy man's time or fill his belly, but as an archetypal activity that transcends the tangible or even the quantifiable. From the first page in *Meditations on Hunting*, Ortega y Gasset writes that hunting has sustained human life emotionally, spiritually and physically for thousands of years and only in recent times ("a rather stupid time" according to Ortega y Gasset) have such activities been demoted to the status of "sport" or "diversion" (29-30). "From what does man need to divert himself?" Ortega y Gasset asks. Ortega y Gasset spends the rest of the book answering that question and repeatedly showing that what man needs is quite simply to hunt.

From there it was a natural progression to Carl Jung's *The Archetypes and the Collective Unconscious*. This book crystallized what I had absorbed in *Meditations on Hunting* in regard to modern man's perpetually raging internal battle between the blind desires of the primitive self (collective subconscious) and the more superficial and malleable contemporary self (personal unconscious). Shepard's research helped reinforce my assertion that by understanding our ancient and modern desires to fish we can better understand whether man can be truly satisfied with catch-and-release fishing. Shepard calls the Pleistocene "our only time," and thus implies that human happiness is indeed tied to not just fishing but also eating our catch—something many Mid-Atlantic anglers are denied due to pollution and other factors.

In an effort to quantify happiness, I turned to a more contemporary author, Michael Pollan and his book *The Omnivore's Dilemma*. Although Pollan does not probe our human past searching for answers for the present like Shepard or Ortega y Gasset, he does give us a method for quantifying happiness among animals, a method

I seamlessly transferred to people. While Pollan focused on the plants and animals themselves and an eater's relationship with them, Gary Paul Nabhan took a broader approach to include the aesthetic and cultural aspects of being a modern hunter-gatherer in his book *Coming Home to Eat: The Pleasures and Politics of Local Foods*. I further explored the culture of hunting-gathering peoples (fishing specifically) in David James Duncan's infamous fishing book, *The River Why*. Although humorous and wonderful for that reason alone, Duncan captured the culture of fishing so well that at least on one occasion in this paper, I quoted one of Duncan's characters to describe my own experience of angling.

In the spirit of Shepard but with slightly more zeal, *Against Civilization*, an edited volume by John Zerzan, explores the negative attributes of civilization including the possibility that humans are less happy or fulfilled emotionally or spiritually than their ancient ancestors. This book points out the human need for archetypal activities like fishing and suggest that modern civilization does not sufficiently attend to these needs. It is for this reason, the book's authors suggest, that the modern world is riddled with social problems. Although this point is impossible to quantify scientifically, I do, at least partially, subscribe to the school of thought based on my own experiences.

The books described above helped focus my gaze and informed my path. But to ensure I was indeed treading the right path and that it was a credible path, I dug into the peer-reviewed literature. My search started broadly with inquiries for studies attempting to articulate the various motivations for engaging in catch-and-release

fishing. Among these were “Catch-and-Release Fishing: A Comparison of Intended and Actual Behavior of Marine Anglers” by Wallmo and Gentner, “Personal and Situational Determinants of Catch-and-release Choice of Freshwater Anglers” by Sutton, “Understanding the Fish Harvesting Decisions by Anglers” by Hunt et al., “Segmenting Anglers Using Their Consumptive Orientation Profiles” by Kyle et al. And finally, for both historical and general information on catch-and-release, I used “Understanding the Complexity of Catch-and-Release in Recreational Fishing: An integrative Synthesis of Global Knowledge from historical, Ethical, Social, and Biological Perspectives” by Alinghaus et al. and others. In all there are some 250 academic studies about catch-and-release fishing (Donaldson et al. 79). In developing a profile of the typical catch-and release or subsistence angler, I used the above studies but also relied heavily on the Virginia-based outdoor sports research group, Responsive Management.

From there my research progressed to the question of how had anglers come to be anglers in the first place and more importantly, how does an angler’s past and present situation inform whether he is a catch-and-release or subsistence angler? These studies included “Using Recreation Specialization to Understand Conservation Support” by Oh and Ditton and “Early Life Experiences and Adult Sports Participation” by Sofranko et al. Further narrowing the field, I looked at how gender, race and other factors informed angler behavior. These studies included “Anglers’ Appraisals of the Risk of Eating Sport-Caught Fish from Industrial Area: Lessons from Chicago’s Calumet Region” by Westphal et al., “African-American and Anglo

Anglers' Attitudes toward Catch-and-Release Aspect of Fishing" by Hunt et al. and "Contaminated Fish Consumption in California's Central Valley Delta" by Shilling et al.

These studies and my own experiences fishing in the Mid-Atlantic were starting to form a picture of who Mid-Atlantic anglers might be, where their fishing traditions may have come from and how their race, gender and socioeconomic and recreation backgrounds might be informing what type of angler they were. From there it was necessary to discover how pollution was affecting their fishing areas. The studies I turned to included: "PAHs and PCBs Deposited in Surficial Sediments Along a Rural to Urban Transect in a Mid-Atlantic Coastal River Basin (USA)" by Foster and Cui and two studies on flame retardants titled "Brominated Flame Retardants as Possible Endocrine Disrupters" by Darnerud and "Brominated Flame Retardants: Cause for Concern?" by Birnbaum and Staskal. Other studies looked at the economic and health implications for not controlling water pollution, such as "What Are the Economic Health Costs of Non-action in Controlling Toxic Water Pollution" by Easter and Konishi.

The next step was naturally to discover how those same waterborne toxins are affecting game fish and further informing an anglers' choice to either keep or release his catch. These studies included: "A Comparison of Revealed, Stated, and Actual Behavior in Response to a change in Fish Quality" by Ready et al., "Fish Consumption and Concentrations of Polybrominated Diphenyl Ethers (PBDEs) in the Serum of Older Residents of Upper Hudson River Communities" by Fitzgerald et al.,

“The Welfare Effects of Toxic Concentration in Freshwater Fish” by Montgomery and Needelman, “Exploratory Assessment of Sportfish Consumption and polybrominated diphenyl exposure in new York State Anglers” by Spliethoff, “Human Mercury Toxicity and Ice Angler Fish Consumption: Are people Eating Enough to Cause Health problems?” by Flahety et al., “Anglers’ Appraisals of the Risk of Eating Sport-Caught Fish from Industrial Area: Lessons from Chicago’s Calumet Region” by Westphal et al. and “Contaminated Fish Consumption in California’s Central Valley Delta” by Shilling et al.

#### Research Methods and Techniques

While most of the resources mentioned above served to sharpen my thesis in its final stages, my earliest research was general and unstructured, serving primarily to orient myself within my new home which would also be my research arena. After joining the local fishing scene by simply taking up rod and reel and heading to the river, I started to conduct informal interviews with anglers, state Game and Fish agents and park rangers. These took place mostly in person, but also by phone. These early interviews gave my research direction but my inquiry lacked structure. After meeting many anglers, I decided that the most appropriate research model for this project would be that of the case study. I chose this method in order to accommodate several distinct sources of information within one large group, that of Mid-Atlantic anglers affected by water pollution.

Key cases included two anglers, one from the Shenandoah River area and another from the Potomac River. These men were interviewed on several occasions (in person and by phone) and together with a review of the literature and my own experience, formed the backbone of this project. Sub-cases included women, racial minorities and those of varying socioeconomic backgrounds. Outlier cases included poachers and other groups that appeared to buck broader cultural trends willfully or out of ignorance. These sub-case studies and outlier case studies were, for the most part, explored through the literature and secondhand account and not through personal interviews.

While the case study method described the broad structure of my research, I found that elements of ethnography were highly useful when observing distinct groups of people—fishermen. Westphal et al. wrote, “Ethnographic methods are ideally suited to answering questions about motivations for complex behavior that happens within a larger context of social interactions and cultural processes” (49). I found the study by Westphal et al. somewhat similar to my own and I incorporated their ethnographic approach into my own case study method often. For example, Westphal et al. described how unstructured interviews build trust between researcher and subject, which I also found this to be the case. I found that allowing conversations to start and progress naturally elicited much more in-depth and personal information than did structured or formal (sit down) interviews. Furthermore, I found that approaching a prospective interviewee as an angler

primarily and as a researcher secondarily built and maintained trust and produced more candid and detailed information.

I also included my own experiences of fishing from both Alaska and my new home in the Mid-Atlantic. My perspective was appropriate because my experience was relevant to the subject of this thesis. My experience of growing up as a subsistence fisherman in Alaska contrasted sharply with the dominant catch-and-release ethic I found in the Mid-Atlantic. Out of fear of waterborne pollution, I soon became a catch-and-release angler myself. This process of transitioning from subsistence to catch-and-release had been taking place across the Mid-Atlantic since the 1970s, according to my hypothesis, and I found myself both excited and horrified to be experiencing it myself. I seized the opportunity to analyze the process and my own motivations. This analysis together with interviews and a review of the literature constituted the research for this thesis.

#### Further Research

Research is lacking in the following area: the body of literature seems to agree that an angler's decision to keep a fish is often heavily dependent on the species of fish—some are more desirable for eating than others (Wallmo and Gentner 1459). This means that an angler might be more inclined to practice catch-and-release with less desirable species than with more desirable species. If these less desirable species were, for some reason, favored over more desirable species by water conditions such

as water pollution, this could be yet another factor influencing the rise of catch-and-release.

### Writing About Fishing: Lessons learned and Challenges Encountered in the Writing of This Thesis

As a journalist, I have often wanted to look back on a researching and writing project with an eye toward improving my approach. I imagine most authors, given the opportunity, would relish such an experience. But for most journalists, time is not in great supply and slowing down to reflect is a luxury few can afford. I too had not given myself the luxury of this experience until now.

“As with most sporting literature,” Stephen Tanner writes, “there are two principal strains [of fishing literature]: the how-to and the how-wonderful” (80).

Although I find this statement sadly true for the bulk of fishing literature, I am happy to say that this thesis steps outside this convention. With this project I wanted to both expose a glaring gap in the research and explore the double-face of angling: a primal activity of killing and eating on the one hand and a gentlemen’s “sport” of leisure and conservation and on the other. I could not agree with Tanner more than when he said, “Some of the best trout fishing is done in print rather than in streams” (79). Writing and fishing are my two greatest pleasures and I take them both in volume. While it is true that “fishing and writing share a deep affinity,” each satisfies a very different part of my being (79). Spending the day at a river and eating from its waters satisfies the archetypal man within me and nourishes my animal appetite. Writing about fishing

allows me to intellectually explore the experience and to exercise all that is new and modern in me. For me, the collective unconscious and personal subconscious were reconciled and unified in the writing of this thesis.

Ernest Hemingway shared my enthusiasm for writing and fishing, devoting many fiction and non-fiction stories to the pursuit of fishing both for food and for sport. While it may not be uncommon for an angler to also be a writer or for a writer to also be an angler, I was pleased to learn that although Hemingway did occasionally prance the banks with fly rod in hand, he, like myself, very often made a meal of his catch. Most of Hemingway's writing on the subject of trout fishing took place in the 1920s, but his focus soon changed to deep-sea fishing when he moved to Key West, Florida in 1928, then later to Cuba (Tanner 80). Many of these stories are a wonderful example of what I believe to be Hemingway's inherently subsistence nature. Apparently fellow authors, Ezra Pound and Gertrude Stein, begged Hemingway to abandon writing about fishing (Tanner 81). He never did.

As I started this project, I realized that the kind of passion Hemingway and I shared for the written word and fishing was only going to get me so far. Early on, it became clear that a project of this magnitude and scope would require a new quiver of journalistic skills and techniques. I would have to glean as many of these techniques from the pages of Hemingway as I could and then go out and develop my own. Many of the anglers I encountered in the early stages of my research, for example, were less willing to engage in extensive dialogue with me if I presented myself as an academic and graduate student first and as a fellow fisherman second.

When I spent time getting to know anglers as fellow fishermen and nothing more, the stories flowed and details of the project came naturally and did not impede most conversations. Westphal et al. encountered similar obstacles in their study of human fish consumption patterns in Chicago's industrial Calumet region. The researchers found that unstructured interviews were ideal because they help built trust and participants can define their own experience rather than adjusting their experience to fit the researcher's framework (Westphal et al. 49). While trial and error forced me toward these unstructured interviews long before I read the study by Westphal et al., their study did ultimately inform and contribute to my research. In addition to unstructured interviews, Westphal et al. used participant observations in order to reveal important information not obtained in interviews such as: "details forgotten or deliberately omitted from verbal descriptions," and "actions so habitual that research participants are not aware of them" (Westphal et al. 49). Using this ethnographic approach, I was able to more fully understand the "motivations for complex behavior that happens within a larger context of social interactions and cultural processes" (Westphal et al. 49). By observing subjects before an interview, I was able to witness their interaction with other anglers, the fishing environment and most importantly, the fish. While not strictly "scientific," these casual observations provided a large and very valuable bank of practical knowledge through I could employ to interpret interviews and literary research.

Another significant hurdle to overcome in the researching of this thesis project was how to structure a complex web of interrelated issues in a readable and focused

format. A 2003 study of a New England overfishing crisis by Daley encountered a similar problem: “Without having a person, regulatory agency or group at fault, it was difficult to find a conventional organizing mechanism for all of our reporting” (30). This was also the challenge in reporting on how pollution has driven anglers away from subsistence toward catch-and-release. Water pollution and angler motivations are both very large and fast-moving issues in the Mid-Atlantic. The challenge for me was at least partially overcome by structuring interviews and literary research within the context of my own story about the exciting and sometimes painful transition from one distinct fishing community to another. My observations and emotional reactions throughout this process provided a relevant, engaging and unifying influence and supplied at least one perspective where interviews and the literature may have been lacking. My own story, as it turned out, was the wonderfully focused confluence of water pollution and fisherman motivations in the Mid-Atlantic.

## Chapter Two: Discussion of the Research

If there is one unifying memory in my life, one elemental action that eclipses all others, one moment when I was the most myself, the happiest, the most human, then that time was when I was knee deep in snow beside an ice-bound river in Alaska, with fishing rod in hand.

As long as I can remember, I have always fished, sometimes at sea, sometimes by a lake or river; this time I was fishing the upper stretch of the Anchor River in late October for spawning Arctic char. The river was iced-in except for a thin necklace of

steaming water flowing between ice-bound banks, a space just big enough for a fly to be inserted and for a fish to be extracted. My father was upriver somewhere out of sight and I was casting into a shallow area where the riffles kept the ice from sealing the river's surface entirely. The air was absolutely still and the old cottonwood trees groaned as they shed the night's ice from their branches. The falling ice daggers stuck in the snow around the trunks and glinted in the rising sun, bristling defensively. I cast the impossibly orange glow-bug out onto the ice with just enough force that it slid into the thin strip of water beyond. The current grabbed the fly and took it downstream, my rod tip rhythmically bumping and catching on each pebble and snag. When the fly surfaced far down current I pulled it in, dragged it across the sheet-ice then warmed it in my hands to melt the ice from its synthetic fibers. I cast again. I could do this for hours, days, a lifetime.

An hour later, the line went tight over the edge of the ice and moved up-current slowly. I pulled the rod-tip up and an unseen fish pulled it back down. This was the point, the culmination of all the day's efforts. I was suddenly all feel, smell, sound and sight. That time of year the fish are slow but still strong and as cunning as ever.

Driving to this river with my father, I hadn't felt anything in particular beyond the texture of the car seat fabric, the grip of the steering wheel, the dry hot air from the heater. But with the fish hooked my senses were lit up and I was indisputably a predator, using every one of my faculties to bring that creature to shore. The fish had fulfilled its role as prey and had lost half the battle already by deciding the fly looked

like something to eat. But there were still cards to be played by both parties and there would be no giving up easily—life was on the line. With cool repose, the fish ducked under the ice and whether intentionally or not, the line was cut.

After another eternity of patient casting, the next fish raced down-stream and, lacking the cool, calculating mind of the first, soon tired in its panic. I broke through the ice with my feet to get to the open water and held its dark muscled body in one hand at the water's surface. I admired the traits that made it desirable to its mates, scary to its foes, invisible to its prey: unsearching black hole eyes, pink inside purple spots over a blush of acid green along its flank, gaping mouth pulling water in and mechanical gills pushing it out over my pink and white hand. Electric pulses shot up my arm each time the fish contracted its muscles in a bid for freedom.

The fire I built hissed the water from wet twigs and sent glowing bits of leaves up into the still air. I had made that fire a hundred times before in a hundred different places with sticks, leaves, moss, trash, whatever was lying around. Folded neatly in foil and stuffed with the butter, garlic and onion I always carry with my fishing gear, the fish was placed in the fire to cook. I was hungry and I had caught a fish; nothing made more sense in that moment than to eat my catch. Together, the fish and I had acted out the most ancient and meaningful interaction on earth. “The greatest and most moral homage we can pay to certain animals on certain occasions is to kill them with certain means and rituals” (Ortega y Gasset 101). We had pitted our wits, strength and instincts against each other and both our lives had been defined in the process.

### A Fish Out of Water: My Journey to the Mid-Atlantic and This Research

Before I read Michael Pollan, Paul Shepard, Aldo Leopold or José Ortega y Gasset, before I moved to the Mid-Atlantic or started this thesis, I used to go fishing with little thought or intention beyond procuring a meal for myself. I fished in this way across my home state of Alaska as well as in Hawaii, Mexico and many other places around the world—almost 30 years of perpetually being engaged in the catch, the kill and the meal. But after moving to the Washington D.C. area, my understanding of what the simple act of fishing meant was turned on its head by a totally pervasive ethic of catch-and-release fishing. Having grown up in a culture of eating fish, I was well aware that the food fish provide can mean different things to people—to some it is survival and to others an unnecessary but welcomed treat. Before moving to the Mid-Atlantic I was totally ignorant of the fact that the act of *fishing* itself, quite independent of its food component, can also mean very different things to different people.

For the first time, I was not part of the fish catching and consuming pack that had always surrounded and embraced me. In the fishing cultures I had come from there had always been a clear ethic and a code of conduct, and our intentions were simple and pragmatic—we were in search of food. During the long summers where I grew up in Homer, Alaska, my family and most others we knew spent a great deal of time fishing by dip-net, gillnet or rod and reel for a meal that night or to stock the freezer for the dark winter ahead. We called this “subsistence fishing” and it was all

about food. This was hard work but immensely and inexplicably pleasurable at the same time. Although we were not ignorant of catch-and-release fishing and even practiced it when the species was undesirable or we did not need the food, I never gave the practice much credence or thought. Indeed, in many Alaskan villages the term “catch-and-release” is rarely used in public schools out of consideration for the subsistence nature of life there (Lyman 29–36).

After moving to the Mid-Atlantic, I naturally bought a rod and reel and began fishing the Potomac River about 30 minutes from my house. I wanted to experience the foreign land through a familiar activity and to meet people who were like me. Anglers came out in droves to cast for small- and large-mouth bass, catfish of a few different varieties, pan fish, carp and other species that were new to me. I felt at home those first few trips exploring the river, passing fishermen standing alone or in pairs talking; men in boats casting or trolling; fathers, uncles or grandfathers teaching young boys to tie knots, bait hooks, cast with the proper flick of the wrist. But by my third or fourth excursion, it finally sunk in that although folks seemed to be catching fish, they were not keeping them, ever.

While it was common among my fishing peers back home in Alaska to release some and keep others depending on need, mood or species, the aim was virtually always to return home with something to eat. In their essay “Consumptive Orientation of Anglers in Engerdal, Norway,” Aas and Kaltenborn noted that, like much of Alaska, in many parts of Scandinavia, if an angler goes fishing he is meant to return with fish to eat or he will draw scorn from others (751). Although I was excited to be

fishing in a new place and in the presence of such an active fishing community, I did not feel entirely at home. “I eat maybe one fish a month,” one angler told me.

Another told me with a sort of salt-of-the-earth pride that he had eaten a bass once before he was married. It was delicious, he said. But he wouldn’t eat fish these days. Those fellows seemed to be the big eaters as I fished the rest of the evening without finding another angler who was there for a meal—many of them have not partaken of a wild fish meal ever. It seemed like I should have had so much in common with those folks, but oddly, I felt alone.

Those first two days of fishing got me thinking about just how differently people can view the same activity and value what they get out of it. I was the proverbial fish out of water here, even if none of the actual fish were. Robert Jones contemplated this same issue in his essay “It Wouldn’t Be the Same,” in which he quotes his friend Edward Hoagland: “A fisherman is basically a predator and I’m wondering, can a predator’s instincts really be satisfied just by hooking a fish and letting it go?” (Jones 125). What Jones discusses in this essay is the deep-seated, emotional “why” of fishing which, at its root, is a primal expression of who we are as humans—animals in search of food. Although Jones’ essay questions the validity of catch-and-release angling, those few days I had spent along the Potomac River among the multitude of catch-and-release fishermen made me question this assumption. Could it be that the choice to keep or release one’s catch, the very issue I was deeply hung up on, could be minimally consequential when we look at why we humans are drawn to fishing in the first place?

José Ortega y Gasset called the hunting of game (which includes fishing), “a deep and permanent yearning in the human condition” (40). Although I clung to my consumption-based fishing approach vehemently, it was true that I got a lot more from a fishing excursion than just a meal. Indeed, Ortega y Gasset later added, “killing [eating] is not the exclusive purpose of hunting” (58). I had to admit, I enjoyed many of the same things as my fellow Mid-Atlantic catch-and-release anglers—solitude, nature, sometimes a friend to chat with, the pursuit of game. How different were we really? As I would discover, the answer to this question, for me, had everything to do with what was compelling the angler to either keep or release his catch.

I wanted to know if I was the only one who had been fishing his whole life and had not thought about the meaning and impact of my actions and the ethical and philosophical conversations to be had about being a modern hunter-gatherer. While a study of Alaskan angler motivations would have to wait, I found myself ideally placed to learn more about how Mid-Atlantic anglers had become the anglers they were. Were regional anglers indeed as catch-and-release focused as I had seen or did the Potomac River just happen to be a hub for this ethic? Were the differences between my ethics and those of the anglers around me as simple as that they were urban anglers while I was a rural angler? If the region is becoming increasingly catch-and-release oriented then how and why did that ethic come about and is it indicative of other parts of the country? Or were the effects of culture and pollution driving a

Mid-Atlantic catch-and-release ethic that transcended rural and urban environments and traversed city boundaries and state lines alike?

Because fishing had filled more of my hours, days and thoughts than practically anything else, and because I was surprised that I had never contemplated the role of fishing in modern civilization and in my own life, I was eager to learn what I could about this most archetypal of human activities taking place in the most urban of environments.<sup>1</sup>

#### Catch-and-Release Fishing: A Practical Activity Ritualized

“Beneath the veneer of civilization there lurks the barbarian, and beneath the barbarian the savage, and beneath the lowermost trace of culture there lies exposed a solid core of animal appetite.”

— Graham Clark, *Savagery to Civilization*

Up until the last few hundred years of human history, the question of *why* people fished was not a complicated one: we fished for food and little else. Although once simple, this archetypal image of humans no longer reflects the current state of culture

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<sup>1</sup>. In this paper, the Mid-Atlantic is defined as the following U.S. states: Delaware, Maryland, New Jersey, Pennsylvania, Washington D.C., Virginia, New York and West Virginia. Although research was not necessarily gathered on each state, the trans-state nature of watersheds made it necessary to refer to the “Mid-Atlantic” as a whole.

or behavior. In light of my own distinctly subsistence-based fishing ethic smashing headlong into the catch-and-release ethic of my new home in the Mid-Atlantic, I have found that the question is not simply *why* but also *how* did a catch-and-release ethic evolve among humans and in particular, here in the Mid-Atlantic. Fishing is, or at least was, an activity designed for procuring food. But somewhere along the line, fishing, like many other human activities, was ritualized and the true purpose of the pursuit became less clear (“Compelled to Fish” Duda 24). “Neolithic man,” says José Ortega y Gasset, “who is already cultivating the soil, who has tamed animals and breeds them, does not need, as did his Paleolithic predecessor, to feed himself principally from his hunting. Freed of its obligatory nature, hunting is elevated to the rank of a sport” (40). Although Neolithic man probably did not practice catch-and-release fishing, the face of the activity would continue to change, culminating in the modern catch-and-release ethic, which we see here in the Mid-Atlantic among other places.

#### Chasing the Fox: Comparing Other Ritualized forms of Hunting-Gathering

“As I came home through the woods with my string of fish, trailing my pole, it being now quite dark, I caught a glimpse of a woodchuck stealing across my path, and felt a strange thrill of savage delight, and was strongly tempted to seize and devour him raw; not that I was hungry then, except for that wilderness which he represented. Once or twice, however, while I lived at the pond, I found myself ranging the woods

like a half-starved hound, with a strange abandonment, seeking some kind of venison which I might devour, and no morsel could have been too savage for me.”

— Henry David Thoreau, *Walden*

As the last of the fall leaves dropped and grumbling throngs of migrating geese flapped in from the north to carpet the National Mall, this notion of the ritualization of archetypal activities was just beginning to take hold in my mind. But because I was almost too close to fishing, I was having trouble gaining the necessary perspective and objectivity required to analyze this complex issue. I needed to look at other formerly subsistence activities steeped in both ritual and instinct.

As luck would have it, two weeks into November, my wife and I found ourselves in the middle of one of the most intensely ritualized hunting-gathering activities in America. The fox hunt—or rather, the fox chase as it was recently renamed by the People for the Ethical Treatment of Animals (PETA), is one of the most unusual and fascinating spectacles of the modern hunting-gathering movement.

My wife and I had been invited for a day out with the 82-year-old Wicomico Hunt Club on O’Neal Farm near Bethel, Delaware. Hounds, horses and the Mid-Atlantic’s finest families had turned out and all were impeccably groomed and dressed for the occasion. The focus and dedication of the riders and manic hounds suggested a hunt but the pomp and circumstance of everyone involved (including the animals), and the conspicuous absence of weapons of any kind told me this was

something else entirely. This was a hybrid activity meant to satisfy the urge to give chase (the hounds seemed to be the most honest about their intentions), to hunt, to be in nature, but it also acknowledged our modern identity as creatures who want to hunt but no longer need to, or in some cases, no longer have the stomach for it. This was not unlike catch-and-release fishing after all.

Even before PETA insisted the activity be renamed, in most American fox chasing circles the “hunt” had long been neutered of the unsavory killing that the original name implied. But in the sport’s birthplace of England, where the hunt is often still a hunt, fox hunting has become immensely unpopular. In a 2000 *New Statesman* story, Geoffrey Wheatcroft quotes *The Observer*, “It is not so much the killing of foxes that concerns those who want to see it banned. It is its ritualization” (25). Wheatcroft, who is not in favor of banning fox hunting, later expands his analysis to include other “field sports” (including fishing): “It is perfectly true that all field sports have a large element of ritual about them, in that their primary aim is not to cause pain, nor even to kill living creatures as simply or efficiently as possible” (25). Answering his own question, Wheatcroft adds, “People hunt [and fish] because they love it” (25).

As a guest, I was given a 95-page booklet (the glossary alone was 5 pages) describing everything about the chase from the sport’s history to dress and attire as well as how to speak to Field Masters and fox alike. As a complete outsider and as someone totally bewildered and overwhelmed by what was going on around me, I

immediately sat down near some kenneled hounds and read the booklet cover to cover.

First, the booklet described the main purposes of the chase (the booklet consistently used the word “hunt”): “The main purpose of mounting a horse on a hunting day is to follow hounds, either to watch them work or to listen to their music.” These hounds, the very same licking my neck through kennel wire at my back, were called Penn-Marydel hounds, which I learned, after asking around, stood for Pennsylvania, Maryland, Delaware. These were a celebrated local variety ideally suited for the chasing conditions in that part of the country.

In his essay, Wheatcroft points out that fox hunting dogs are bred for a very special purpose: “If the only purpose were to kill foxes with dogs, you would use whippets” (25). José Ortega y Gasset also found that dogs were key to the hunt and broached the question of whether we are hunters at all without the presence of our earliest domestication (86). Ortega y Gasset suggests that in domesticating the dog, the dog may also have domesticated us—that the relationship between man and dog has infused man with some level of animal instinct and dog with some level of reason (89). The club booklet went on to state that hounds should produce “a grand volume that will thrill the primal core of our being.” This being my first fox chase, I wasn’t entirely sure what I was feeling but I would say that my primal core was probably more confused than thrilled. The dogs, the horses, the dress, the jargon—the activity of fox chasing was beginning to mirror what I was seeing in catch-and-release fishing—an elaborate ritual focused less on the prize than on everything leading up

the prize. Fox chasers have their scientifically bred and carefully cared for hounds and horses, catch-and-release anglers have their scientifically crafted fly rods and flies tied with an entomologist's eye. And both groups have their accessories and outfits.

The rich, musky smell of horses mixed with expensive perfumes as the assembled pack of riders moved past me from the staging area to the edge of a large open field. Beyond the rows of cut corn stalks was a wall of second-growth trees where foxes supposedly lived. Dogs bellowed from their kennels and shoved their noses through the slats for just a whiff of what was going on. First-time riders were lectured in etiquette, rules and attire by their mothers or upright men with bright red coats and black helmets. Scuffs on leather and out-of-place hairs on horse and rider were efficiently attended to as the group made ready to head out. Horseless and clueless, my wife and I were not invited to participate.

When the riders were ready, dog kennel gates were flung wide and the calm repose of the scene was transformed. The hounds ran to the front of the group with obvious understanding and wild anticipation of what was about to happen. Searching for the aroma of fox, their noses vacuumed the sod of scent, gurgling and howling all the while. I was starting to see why fox chasing was so much about the hounds—their manic and sometimes hilarious manner was absolutely mesmerizing to watch. Aldo Leopold, a favorite author of mine, wrote about dogs in *A Sand County Almanac*—the meaning of those lines was just now coming into focus for me: “The dog, when he approaches the briars, looks around to make sure I am within gunshot. Reassured, he

advances... wet nose screening a hundred scents for that one scent, the potential presence of which gives life and meaning to the whole landscape” (67). Mark Twain took note of hunting hounds’ less noble traits in *Roughing It*: “And all this time the dog is only a short twenty feet behind the coyote, and to save the soul of him he cannot understand why it is that he cannot get perceptibly closer; and he begins to get aggravated, and it makes him madder and madder to see how gently the coyote glides along and never pants or sweats or ceases to smile; and he grows still more and more incensed to see how shamefully he has been taken in by an entire stranger, and what an ignoble swindle that long, calm, soft-footed trot is; and next he notices that he is getting fagged, and that the coyote actually has to slacken speed a little to keep from running away from him—and then that town dog is mad in earnest, and he begins to strain and weep and swear, and paw the sand higher than ever, and reach for the coyote with concentrated and desperate energy” (50-51).

With the killing gone from these hunts, perhaps the focus has been turned to the hounds because their motivation, unlike ours, has not changed since the dawn of time—they are hunting fox, not chasing them. Although a kill may not be the result of their efforts, they chase as though it is. The booklet described how the sound of the hounds stimulated the chaser’s primal heart, but the booklet failed to guess at what the scent of the fox did for the hounds. Without the need for fur, meat or predator control, it appeared that these chasers were living almost vicariously through their hounds.

A signal imperceptible to all but the hounds released them to charge across the field toward the trees. The horses danced sideways and their riders pulled the reins to keep them from running after the dogs. When the hounds were nearly to the trees, the riders heeled their horses and the first group started off across the field at a trot. The second, less senior group followed a few minutes later and soon all disappeared into the trees with the constant baying of the hounds our only way to track their movements.

Just as my wife and I started to talk about what a terrible spectator sport fox chasing is, a truck full of non-riders drove up and offered us a lift to the action. We bumped and jerked along a forest road for a few miles before stopping in a clearing where we all piled out. The uniform layer of dry dead leaves on the ground betrayed every movement we made but once we all sat quietly on rocks or on the rail of the truck bed the woods went silent—the forest seemed totally lifeless. Moments later a grey fox came trotting nonchalantly down the two-track, the hounds yipping and howling somewhere far off in the distance. Two hundred yards away, the fox looked up towards our group and froze in a long shard of sunlight. After a moment, the fox abruptly turned right and disappeared into the trees. So far the fox did not seem in any real danger and my wife wondered out loud if the sport became known as fox chasing because no one could ever get close enough to the fox to actually dispatch it.

We had enough time to eat lunch before the riders and hounds made it to where we had seen the fox. PETA may have been the first to call it fox chasing, but the frenzied dogs and ill-behaved horses made it clear to me that regardless of intention,

this was more of a chase than a hunt. The chase itself is more than enough of a challenge (and for some a thrill), not to mention ever catching up with the wily fox. Once the dogs had scoured the area bumping into each other and darting back and forth between the horses' legs, the troop took off in a cloud of dust and the now familiar smell of horse and perfume. As we loaded back into the truck for the ride back, someone whispered, "look!" We all looked up as the grey fox emerged from a thicket and trotted down the same two-track the horses and dogs had blazed moments before.

After such a short time in the Mid-Atlantic, I had already come face to face on multiple occasions with the confluence of mass culture and primitive urge, with the intersection of consumerism and the reality of nature, and where survival and instinct met elaborate ritual. The familiar world of hunting and gathering had never seemed so foreign or so fascinating to me.

### An Ageless Archetype

On a particularly balmy mid-afternoon this last August, I found myself astride a bicycle winding through a D.C. area neighborhood. I turned onto an urban trail and rode for a few miles with trees on one side and a freeway on the other. It wasn't what I had in mind but it would have to do. After a mile I saw a secluded tennis court-sized park that opened up beyond a row of dark purple decorative plum trees. In the back corner shrouded in cattails, was a small pond no more than two car lengths wide or long. The freeway roared not more than 50 feet behind the pond on the other side of a

fence. I stopped along the trail's edge to take a closer look. On the opposite bank were two boys staring intensely at the water. In their hands I could see spools of line with a strand leading out between their fingers, pinched tight and white with anticipation, to a bobber where the line made a 90-degree turn down into the murky void below. Both boys were blond with shaggy hair although one was taller than the other. Their bikes were out on the grass, crumpled where they had ditched them in their race to the pond. I laid my own bike down and peered at the boys through the cattails as I ate a granola bar. Although both boys had shaggy hair, the taller boy had carefully crafted shaggy hair and the purposefully casual clothes to match. The shorter boy was shaggy by neglect and his clothes were the same kind of hand-me-downs I always had as a kid. I identified with the latter boy immediately.

The shorter boy was clearly the more experienced fisherman and his companion was studiously following his example. As I watched them I felt a little like a voyeur and very much like a social scientist, observing these strange urban creatures reenacting rituals 50,000 years old (Arlinghaus et al. 80). Just like myself at that age (and until recently in fact), these boys didn't waste a moment contemplating the purpose of fishing; they just did it, and it looked like nothing made them happier. The catching of fish was serious business to these boys and for the first time since moving to the Mid-Atlantic I started to think that perhaps these people and I were not so different after all. Maybe growing up here wasn't very dissimilar to growing up in Alaska, or anywhere for that matter...

The shorter boy tugged his line and the water rippled a few inches beyond his bobber. He paused, then yanked the line hard, wrenching his body sideways with the effort. He pulled the line in hand over hand, letting the shiny stiff monofilament coils tangle around his feet. I watched through the cattails, deeply excited for his catch, almost as if it was my own. The boy pulled the fish to the bank and its thrashing body splashed water on the boy's shoes. It looked like a pan fish of some kind, but most of the fish in this part of the country were new to me. The taller boy leaned over his shoulder, trying to mask his excitement with "cool." I gripped fistfuls of cattails to see better as the shorter boy reached down to grasp the gasping creature at the end of his line. I wondered if he would cook it right there or put it in a cooler to eat at home later? Was he partial to the straightforward head-and-gut cleaning job or was he the fastidious fillet type? Perhaps he would pull up a long string of live fish from the pond and add this one to the lot. Or maybe he would surprise me and spring for the ultimate gamble and use this fish as bait and try for a bigger fish.

Suspense got the better of me and I leapt up to meet the boys. The shorter boy didn't look up as I approached. He knelt with one foot on the line as the fish swirled in the shallows. He carefully wetted both his hands in the pond then eased one hand under the fish's belly. He pulled a pair of rusty pliers from his cargo pant pocket and probed the creature's tiny mouth with them, gently loosening then removing the barbless hook. The boy submerged the fish and slowly moved it back and forth in the water. There would be no cooking fire here, no smell of charred skin and steamed flesh, and there would not be a meal prepared by mom later either. This fish was

going free, and judging by the boy's mastery of catch-and-release practices (wetting of the hands to not disturb the delicate slime layer on many species, moving the fish back and forth in the water to pass water over its gills to help resuscitate it) this was how he treated all fish. This boy didn't remind me of myself after all. When the fish was gone and the boys had stood, I asked, in a casual manner that was intended to mask my profound curiosity, how the fishing was. They shrugged, forcing back their excited smiles at just having landed a fish. I mentioned that I was from Alaska and, trying to impress these boys that were almost a third my age, that I was actually a professional angler—a commercial fisherman. The shaggy boy immediately said, "Commercial fishing, that's bad for the environment!"

If José Ortega y Gasset is right and the best way to honor some animals in certain circumstances is to eat them, then it stands to reason that the best way to honor that same creature under different circumstances is to let it go free (101). But it is also true that our culture has become so self-absorbed and concerned only with its own matters that the education of children deals mainly with matters of civilization (Heinberg 119). It is almost impossible for modern man to see the world in any way except through the lens of civilization. This was just the beginning of a larger and very drawn-out epiphany that would teach me so much about something I had spent my whole life believing I already knew so much about.

Catch-and-Release: An Overview

Although my carefully crafted notions of what it meant to be a fisherman were crumbling, new groups of fishermen were coming to light with unexpected motivations and backgrounds. Suddenly thinking about fishermen as either catch-and-release or subsistence seemed too simplistic. While it is true that there are two overarching groups of fishermen, one keeping some or all of their catch and the other keeping little or none of their catch, both groups are *fishing*, and it very well could be that the act is more telling than the result.

But the question is *why* and *how* did these two umbrella groups diverge from one another and what distinguished one from the other? And, most importantly, how do anglers choose (either consciously or unconsciously) which group they will be a member of? When I turned to the research, I found that there were at least 250 academic studies of catch-and-release fishing (Donaldson et al. 79).

To get a basic idea of where fishing trends have moved in the United States and where they may be headed, I turned to Responsive Management, a Virginia-based research firm that specializes in statistical analysis of outdoor recreation. I also looked to the U.S. Fish and Wildlife Service and other governmental organizations for details on how anglers are plying American waters, whether they are eating or releasing their catch and what they might be telling researchers about their motivations.

Currently, there are approximately 30 million fishing license holders in America who are 16 or older (“Cause and Effect” Duda 24). Groups such as the American Sport Fishing Association and the U.S. Department of the Interior place the

total number of anglers (including those of all ages) much higher, around the 50 million mark (“The Future of Fishing” 9). Worldwide, angling participation varies widely (from just 1 percent in southern Europe to upwards of 40 percent in Scandinavia) Cook & Cowx 857). Harvest rates also vary considerably (up to 90 percent harvested in Scandinavia) (Cook & Cowx 857) and even among species (some species, such as “course fishing for non-salmonid species in the U.K. (Arlinghaus et al. 78), have an almost 100 percent release rate) (Cook & Cowx 858). According to this same study by Cook and Cowx, 11.5 percent of the world’s population engage in fishing, landing some 47.10 billion fish annually (857). Of these landed fish, about 36.3 percent were harvested (17.09 billion fish) weighing 10.86 million metric tons (Cook & Cowx 857). According to a 2000 study, 11 million saltwater anglers took 78 million fishing trips catching 445 million fish, of which 253 million fish were released (57%) (Arlinghaus et al. 78).

Between 1981 and 1999, catch-and-release rates have climbed from 34 percent to 59 percent in the U.S. (Arlinghaus et al. 78). While only 11.5 percent of the world’s population engages in fishing, 63.7 percent of caught fish are not harvested (although not always in catch-and-release fishing) (Cook & Cowx 857). Whether all these released fish survive or not is the subject of a large body of literature covering post-catch stress and mortality. However, given proper handling and gear use (lures instead of baited hooks, for example), it is believed that for many species, such as bass, post-catch survival rates are very high (approaching 94-99%) (Pope & Wilde 39; Hall et al. 235).

So, where did all these catch-and-release anglers come from and how did they decide to stop keeping their catch in favor of releasing it? There is no simple answer to this question and each angler interprets and practices catch-and-release very differently. For many anglers, catch-and-release has become a distinct activity or sport and is almost totally independent of its subsistence fishing roots. In a very broad sense, catch-and-release may have simply filled the void created when civilization “liberated” humans from subsistence living. It could also be that many of today’s catch-and-release anglers took up the sport as children and carried it on into adulthood. It is my contention that water pollution also played a role in motivating Mid-Atlantic anglers (and others around the U.S.) to abandon subsistence fishing in favor of catch-and-release. A more pragmatic answer is that, at least in developed countries, laws requiring catch-and-release fishing of all fish, some species, or fish of a certain size compel anglers in certain places at certain times of the year to release their catch (Cook & Schramm 73). Ultimately, each angler is unique and consciously or unconsciously chooses his or her own preferred fishing method based on some or all of the factors described above.

The Root of a Fishing Ethic: How do Fishermen Become Catch-and-release or Subsistence Anglers?

When I am home, visiting my parents, I often look through old photo albums. These crisp glossies printed from negatives remind me that even with my digital camera equipment and addiction to taking photos, I have no bound albums for friends or

future children to look through. The photos show my parents, young with hopeful smiles, driving to Alaska for the first time in the early 1970s. Other photos show them casting off black pebble beaches, gardening and meeting one another for the first time in the office of my father's halibut charter fishing business—Halibut King Charters. My father took my mother fishing that day as a first date. I turn the pages and the images show my birth, my mother holding me at a few weeks old in a chest-carrier with a rifle in her hands, me poking a dead fish on the beach in Mexico, stalking through tide pools in Alaska and Hawaii, holding a paper halibut I had made with white tape trim. The images continue with fishing and boats and gardening and wonderful meals. The fishiness of my family, even before I was born, seems to have sealed my fate as someone who would grow up to be obsessed with the pursuit of fish. Although my upbringing lacked the drama of the protagonist's in David James Duncan's *The River Why*, I have always related to the following sentiment: "it can be said that I was interested in this art [fishing] not just from an early age, but from literally before any age at all: I felt the adrenalin rush as Ma set the hook to those steelhead, experienced her excitement as she played them, heard her satisfied grunts as she clubbed them, grew strong as she ate them" (13).

Once a child has been introduced to fishing and grows with it through his life, he has to, at some point, make a decision whether fishing is about food or something else. Although a 2009 study by Sofranko et al., found that being exposed to fishing as a child does not necessarily lead to fishing as an adult, being exposed to fishing as a child and/or repeatedly being exposed to fishing throughout life (especially repeated

exposure throughout the formative years) does significantly increase the chances of becoming an avid angler (425).

How conscious or unconscious this decision is differs for each angler. However, it has been suggested that by understanding “recreation specialization,” we can better understand how a given fisherman might become a catch-and-release angler (Sutton & Ditton 49). According to a 1977 study by Byron, the more experienced some anglers become the more their focus is likely to shift from consuming fish to enjoying other aspects of the fishing experience such as preservation of the resource and habitat, enjoyment of nature and of the general fishing experience quite independent from catching (174). The act of fishing itself becomes the goal for these dedicated anglers, who may or may not have been subsistence anglers originally. Supporting the work of Byron, Oh and Ditton found a connection between an angler’s specialization (within the discipline of fishing) and attitudes toward environmental conservation (Oh & Ditton 556). The more fishing became central to an angler’s life, and the more he chose a specific discipline, technique or path within fishing, the more likely he was to be favorable to various forms of conservation, including habitat protection and restoration and fisheries conservation as well as other types of environmental conservation. When Cooke and Schramm contrasted recreational and commercial fishermen’s attitudes and motivations in their 2007 study, they found that while commercial fishermen place value primarily on caught fish themselves, catch-and-release fishermen place value in the simple knowledge that fish are somewhere in the water, whether they are able to

catch them or not (74). In this model, commercial fishermen can be likened to subsistence fishermen in that their consumptive habits drive their fishing practices and their sense of accomplishment is directly connected to a meal or food product. The catch-and-release fisherman places value on the living fish, a sentiment which is quite independent of whether he is able to catch those fish or not (Cooke & Schramm 74). Both are equally valid but both are very different.

#### A Brief Historical Background of Catch-and-Release Fishing

“Catch-and-release” is succinctly defined by Arlinghaus et al. as “the process of capturing fish by using hook and line, mostly by rods and reels, and then releasing live fish back to the water where they were captured” (77). The authors go on to say that catch-and-release fishing can be voluntary or due to harvest restrictions imposed by governmental organizations or other groups (77). Catch-and-release fishing has traditionally and historically followed closely behind growing civilizations because of the overexploitation of fish stocks (Arlinghaus et al. 78). Although fishing, as we know it today, probably started about 50,000 years ago (Arlinghaus et al. 80), fishing for a purpose other than food (catch-and-release) was first recorded in ancient Egyptian imagery dating to 1283 B.C.E. (Arlinghaus et al. 81). As Greece and Rome came to dominate the region the attitude toward fish and fishing changed. Fish in springs and other clear water were sacred, almost godlike, and fishing in general was mostly reserved for wealthy or noble people, though it is not clear what percentage of anglers were practicing catch-and-release (Arlinghaus et al. 81). Romans were the

first to use artificial baits for fishing such as lures and flies (Arlinghaus et al. 81). In Medieval Europe (around the 13th century) overfishing became a problem as populations grew (Arlinghaus et al. 81). As a result, inland waters came to be almost exclusively controlled by lords who leased fishing rights to a burgeoning class of commercial fishermen (using rod and reel and other means) and these lords also fished the waters themselves (Arlinghaus et al. 81). As printing came into wide use in Europe (1440 C.E.), catch-and-release fishing, aided by printed guide books such as *The Country Farm* (1307 C.E.), the *Heidelberg Fishing Tract* (1493 C.E.) and *The Complete Angler* (1653 C.E.) which featured fly patterns and fishing locations, grew in popularity (Arlinghaus et al. 81). Around the same time, *A Treatyse on Fysshynge wyth an Angle* (1496 C.E.) argued for the sustainable harvest of fish (Arlinghaus et al. 82). Through the middle ages, both France and England instituted mandatory catch-and-release laws at various times to protect fish stocks (Arlinghaus et al. 82). Although the literature does not show that water pollution affected fishing, a growing population and the probable pollution problems associated with that growth combined with widely practiced subsistence and catch-and-release fishing probably did affect fishing to some degree.

From the early years of catch-and-release fishing, the activity was tightly controlled by the ruling class. The purpose of this was religious, as in the case of the Greeks and Romans, and then later in Western Europe it was a means to control the power of the masses. After the Plague killed one-third of England's population in 1348 C.E., many formerly rural people who had been forced off their land returned to

the countryside with the intention to live off the fish and game that were there in abundance (Arlinghouse et al. 82). Strict laws preventing commoners from fishing were enacted in an effort to keep the lower classes from becoming too independent and empowered, a major factor in the Peasant Revolt of 1381 (Arlinghouse et al. 82). This must have been what José Ortega y Gasset meant when he said “In all revolutions, the first thing that the ‘people’ have done was to jump over the fences of the preserves or to tear them down, and in the name of social justice pursue the hare and the partridge” in *Meditations on Hunting* (40). Despite the balance of power occasionally shifting away from the noble classes to favor the commoners, fishing, particularly catch-and-release fishing, was slowly but surely establishing itself in western culture as a gentlemen’s activity (Arlinghaus et al. 83).

The rapidly growing body of angling books in the 19th and 20th centuries in Europe increasingly favored catch-and-release fishing (Arlinghaus et al. 83). Although catch-and-release fishing as a distinct ethic probably originated in England, when America was colonized the immigrants largely reverted to a more consumptive fishing ethic. This was probably due to the wild and apparently resilient nature of an unspoiled continent (Kellert 56). Roman Catholics, whose numbers grew in America from 5 percent in 1850 to 17 percent in 1906, ate fish throughout the year in keeping with their religious traditions (Arlinghaus et al. 84). Additionally, the anthropocentric attitude of many of these Christians was not in keeping with catch-and-release values and environmental conservation (Arlinghaus et al. 87). However, rapid and massive environmental exploitation led to dwindling fish stocks in America and the rise of

relatively effective governmental and non-governmental regulating bodies (Kellert 56). Within a few hundred short years, fish stocks in many parts of America were stretched thin from overexploitation. What had taken the English almost a millennium took the Americans just a fraction of that time. As early as 1734 in New York and 1822 in Massachusetts, fishing rights were limited due to overexploitation by fishermen (Arlinghaus et al. 84). With pollution due to industrialization and over exploitation now factors, an ethic of catch-and-release was being widely promoted in the popular books of the time and became increasingly practiced among many anglers (Arlinghaus et al. 85). In 1939 the influential author Lee Wulff wrote, “There is a growing tendency among anglers to release their fish. Game fish are too valuable to be caught only once” (XV). With the knowledge that fish stocks were not infinite came an increased willingness among many anglers to release some or all of their catch regardless of whether state regulations were in effect or not. For unknown reasons, the English-speaking countries of the world have been the most willing to accept catch-and-release fishing, particularly voluntary catch-and-release fishing (Arlinghaus et al. 85).

Diverse factors contributed to the rise of catch-and-release in the United States, including the attitudes many European immigrants brought with them, the Civil War, overexploitation of natural resources, overpopulation and urbanization. Yet it is my contention that another factor—pollution—has also played an increasingly large role in encouraging catch-and-release fishing in the last half century in America.

### Toxic Waters: The Beginning of a Paradigm Shift Among American Anglers

In America pollution played a significant role in both the declines of certain fish stocks and, more importantly, in the move toward voluntary and mandatory catch-and-release. Although the catch-and-release ethic gained momentum through the 1800s and early 1900s, it did not take hold among many anglers until the 1960s and 1970s when environmental pollutants were first being scientifically documented in fishing waters across America. Rachel Carson's book *Silent Spring* was instrumental in revealing the science behind the synthetic pesticide dichlorodiphenyltrichloroethane (DDT) and its effects on both the natural environment and people. For many Americans, *Silent Spring* represented a paradigm shift in American popular culture, spawning a new way of thinking that many of us take for granted now—that the health of people is inextricably linked to our environment. This shift in conscience was so dramatic and widespread that DDT was banned in the United States in 1972 and later throughout the world (for agricultural use) under the Stockholm Convention. After the infamous disasters at Three Miles Island in 1979 and Chernobyl in 1986, nuclear radiation became another invisible and frightening environmental contaminant on people's minds about the same time.

Fueling this paradigm shift was the ability and desire of the scientific community to more thoroughly document environmental conditions through the 1960s, 1970s and 1980s and on to today. Starting with *Silent Spring*, a genre of environmental literature was born bridging the divide between the average person and

the scientific community. The more science was completed on environmental contaminants, the more people cared. The more people cared, the more scientific studies were demanded by the public. Not only were cities growing and access to fishing locations decreasing but now the simple, nostalgic and decidedly “human” activity of fishing and eating ones catch was being reduced to just the fishing part of the equation.

#### Doug Jackson: A Long Life on a Mid-Atlantic River

To build my theory I needed to talk to old-time anglers from around the Mid-Atlantic—people who had lived and fished through the period in question. While reading about a rash of fish poaching incidents along the Shenandoah River in the *Clarke Daily News*, a newspaper serving Clarke County, Virginia, just to the west of Washington, D.C., I ran across the name Doug Jackson. I easily tracked down Jackson’s telephone number and gave him a call. I hoped that Jackson’s perspective, formed over 60 years on the river, would add some depth to my thus-far only theoretical and somewhat superficial understanding of how pollution has changed angler’s fishing patterns.

Jackson answered the phone and we quickly fell to talking about fishing, something we immediately had in common. Jackson’s speech was tinged by the wonderful southern lilt found mainly in the bottom half of Virginia. The “R” at the end of “river” was replaced by an “A” and to me the word had never sounded so good; the letters rolling off his tongue sounded as fluid as the thing itself. Like the

protagonist in any number of classic fishing genre books, Jackson was the quintessential American angler as far as I was concerned. He grew up along the river, fished on the river through his long life and imagines himself just slipping away in the current when he dies. The clichéd metaphor of a river flowing through an angler like blood was never more true than with Jackson. Jackson had lived on the river since he was 16 years old. Now 76, Jackson told me, “If there is anyone who has been on the river longer than I have, I would like to meet them.”

But Jackson’s was not an entirely carefree life of fishing on the river. He had seen the river change due to development, pressure from an expanding population, poaching and other factors. Large houses had been steadily springing up on the hills overlooking the river and the river seemed to be teeming with more and more people every summer. More roads crossed the river and more boats plied its waters. Jackson’s childhood haunts were just not what they used to be. But it wasn’t necessarily all the extra people that bothered Jackson, it was what they left in their wake. And what affected Jackson on the Shenandoah also affected me on the Potomac since the former is the largest single tributary of the latter.

While the unsightly refuse left by passersby and weekend visitors clogged the river’s arteries, dangerous waterborne pollutants made their way even into Jackson’s relatively remote stretch of river. “Basically there’s a problem,” said an Earth Korps spokesperson in a 2010 article at 7Bends.com, “not only in chemical pollution destroying the quality of the water, but also hugely in part by physical pollution. The river is absolutely, quite literally, littered with everything from tires, cans, and plastic,

to shopping carts, lawnmowers, and vehicles” (Beaver). Earth Korps hosts the annual Shenandoah River Side Festival each March. In 2010 volunteers collected 27,000 pounds of trash from the river itself (Shenandoah Riverside Festival).

But the most alarming changes were the unseen ones—those of man-made pollution drifting invisibly on the currents and infecting living things within the river, including the fish Jackson ate. Jackson could not see or even taste these changes but science and his nose told him they were real and he fears some future health problem might someday confirm these findings. In 1988 the Friends of the North Fork of the Shenandoah River was formed by two concerned Shenandoah River residents about a specific problem – “the River smelled bad.” (Watson 1). This smell more or less heralded the time when Jackson and others decided that they would no longer eat the fish they caught from the river.

The research since that time has consistently shown their choice to be a wise one. Jeff Kelble of the Shenandoah Riverkeeper said in a 2009 article by Lauren McKay, “The population in the valley has grown to more than 300,000” (up 30% between 1980 and 2000 (Krstolic & Hayes 1)). “It’s putting a strain on the Shenandoah River, in the amount of water and in the amount of pollution in the water” (McKay). In 2005 and 2006 extensive fish kills (up to 80% mortality in small mouth bass) were reported along the Shenandoah River (Ripley et al. 1756). A documentary about the troubled river called *Shenandoah: Voices of the River* calls fish kills “regular occurrences.” A 2008 study by Foster and Cui found elevated levels of both Polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons

(PAHs) in the Shenandoah and Potomac Rivers (1333). PAHs are on the rise in areas like these because they are created through the burning of fossil fuels including vehicles (1333). “The highest concentration of PAHs,” the study said, “was detected in sediments near the Key Bridge (345 km) in Washington, DC” (Foster & Cui 1337). This was a sobering message for me as the Key Bridge is just downriver from where I have fished since I moved here.

A Reason for Concern: Pollution and Toxic Chemicals Land in the Spotlight in the 1960s, 1970s, and 1980s

Although dangerous pollutants such as PCBs, PAHs, atrazine and mercury were not new (pollution had been generated and probably entered waterways in the region in some volume since the early 1900s), knowledge of the contamination *was* new and it changed everything about the way Jackson and many anglers in the area fished and interacted with their beloved river (Clyde 1). “If we could turn back the clock to the 1950s and 1960s,” Jackson told me, “we’d keep a string of fish.” But in the 1970s and 1980s, words like “mercury” and “atrazine” were increasingly common in local newspapers citing the most recent batch of scientific studies about local waterways. Eating fish was an almost daily family tradition in the Jackson household when Doug was growing up. Jackson carried the tradition to his own family but stopped short sometime in the early 1980s when statements like these started to become too common: “It has long been known that fish are storehouses of various kinds of toxic contaminants that run off into oceans, lakes and streams” (Montgomery & Needelman

211); “Contaminated finfish and shellfish are possible routes of human exposure to toxic chemicals” (Moya 1195); and, “contamination of aquatic ecosystems is a global environmental concern” (Flaherty, Sass, and Styles 497). For people living on America’s waterways and deriving some or all of their food from them, these are the scariest of words. While Jackson had always employed his “river sense” to judge which fish to eat based on their appearance, size and species, since the 1980s he had been fishing blind, unsure which to eat and which to throw back. As a result, this decidedly subsistence fisherman rather suddenly became a catch-and-release fisherman.

The water had become polluted and somehow the fact had been missed until the early 1960s, when it was too obvious to ignore and authors and researchers began to share their findings with the public. Just north of Jackson, in Washington D.C., policy makers scrambled to create laws that would protect and possibly help reverse water pollution problems that were spiraling out of control, while at the same time trying not to slow industry. The Federal Water Pollution Control Amendments of 1948 finally began to be updated with an increasing sense of urgency from the 1970s on through today (Digest of Federal Resource Laws). The Federal Water Pollution Control Act Amendments of 1972 “stipulated broad national objectives to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.” In 1977 the Clean Water Act brought the considerable knowledge of the Fish and Wildlife Service to bear on water quality issues in an attempt to institute a broader, more holistic approach to the Nation’s water pollution problems (Digest of Federal

Resource Laws). Most significantly, the 1972 and 1977 pieces of policy mandated the Environmental Protection Agency (EPA) to set water quality standards and maintain them (Easter & Konishi 529). However, according to a 2006 study, the EPA has health-related data on only 15 percent of the 20,000 new chemicals released since the mid-1970s and has water quality criteria for just 120 of those (Easter & Konishi 529).

Living in the Washington D.C. area, it is sometimes hard to reconcile the disparity between the sensory and informational streams I am bombarded with almost daily. While the media seems overly pessimistic, the government agencies seem overly optimistic. At the same time, anglers tell me stories of toxic fish even while my own dull human senses tell me that, for the most part, the Potomac River is clean. I spoke to one expert who pointed out that our perception of water pollution should be kept in perspective. “It is not the case that our waters are more polluted than ever,” Virginia Department of Game and Fish fisheries biologist Steve Owens told me during a telephone interview. Instead, he said, pollution level tolerances are getting more stringent so more rivers are listed than ever before. According to Owens, this makes the public believe that pollution levels are rising and Mid-Atlantic waters are more toxic than ever, and this is not the case. Of the country’s 50 most polluted rivers, six lie within the Mid-Atlantic region, according to an Environmental Working Group report (Environmental Working Group).

Whether or not Owens’s assertion is true and whether or not the fact that our small region is home to 12 percent of the country’s most polluted rivers is alarming, may not matter much when it comes to the rise of catch-and-release fishing in the

Mid-Atlantic. As many studies and my own experiences show, it is the perceptions of anglers that drive their actions.

Regardless of whether Mid-Atlantic waters are or are not harboring dangerous levels of pollution and passing those toxins on to us through fish, anglers (and the general public too, I suspect) desire a clean environment. According to a 1995 Responsive Management study on U.S. fishing participation, “pollution and litter” were the most significant contributor to any dissatisfaction they may have had with their fishing experience (Duda, Bissell, and Young 26). A 2005 study comparing the stated and actual behaviors of anglers by Ready, Epp and DeLavan found that most anglers did not cite the number of fish caught as the most significant determiner in the quality of their experience. Instead, they stated that the quality of the environment was among the most important factors in their fishing experience along with convenience (closeness to home or work) and peace and quiet (41-42). The body of literature consistently shows that anglers prefer a non-polluted environment for health and aesthetic reasons.

For an old timer’s perspective, I headed down the street from my house to our neighborhood fly-fishing shop. David “Grizzly” Lambert works at the Urban Angler, a small North Arlington fly-fishing shop. He is an immense man with hands like mitts and a grey and white beard that covers most of his face and chest. He says everything like they are the last words of a dying actor in a dramatic silver screen picture. Those present tend to listen—whether from respect or fear it is not always clear. Grizzly has lived in the Arlington area most of his life and has watched the Potomac River

transform from being “so polluted that signs warned us not to touch the water in the 1960s to its current state with fish stocks returning almost across the board.”

A 2009 study by Limburg and Waldman shows similar improvements across the Mid-Atlantic region, noting that the Delaware River has “shown dramatic improvements as a result of new laws and management actions” (962). According to the same study, shortnose sturgeon have made a substantial recovery in the Hudson River due, in part, to measures controlling raw human sewage discharge—measures stemming from the Clean Water Act of 1972 (962). But with all things relative, words like “improvements” can be just another way of saying “slightly less damaged.” The same study’s thesis is in fact that of the 24 species of diadromous fishes (migratory between saltwater and freshwater) studied, “all species had suffered population extirpation, and many species are now classified as threatened or endangered” (955). In New Jersey, just to the north of D.C., shellfish harvest along the lower Passaic River was prohibited due to pathogenic contamination from sewage in 1970 and remains closed today (Finley et al. 832). In other parts of the country, fishermen have regrettably grown accustomed to fish laden with toxins. Along the Manistee River in the Lake Michigan area, Jim Harrison reports having to scrape the belly fat from coho salmon “because of the concentrated DDT found there” (Harrison 213).

Grizzly was excited to see his local river coming back from the brink, but at the same time, he was horrified to learn that I had caught and eaten fish from its waters, even though I had remained under the limit set by the Health Department. When Grizzly fishes these days, it is almost always for native trout in the tiny cold-

water creeks of the region's last remote mountain strongholds. These rare native fish, small and near the brink of extinction though they may be, are Grizzly's only connection to a wild and pristine world that ceased to exist in the Mid-Atlantic long before his birth. With strong roots in the region and a singular dedication to the conservation of local resources, Grizzly pines not for the pristine waters of my own home of Alaska but simply for the cold and clear wild waters that were once the norm across his home here in the Mid-Atlantic. While Grizzly was certainly not born in the wrong place, he may have been born in the wrong time.

Although there are a range of opinions on the extent of water pollution and its effects on fish and people, no one is arguing the fact that water pollution does indeed exist and that it does affect fish and people. United States Geological Survey Fisheries Biologist Vicki Blazer confirms that many Mid-Atlantic game fish do indeed carry certain toxins but adds, "the lowest levels have been in the muscle—which is good news for people eating them." But even low levels of a toxic substance are nothing for fish eaters like myself to get excited about. With toxins concentrating in the brain and gonads, according to Blazer, male fish are producing eggs and are manifesting other reproductive problems that biologists are just now beginning to understand.

Some of the toxicity problems Blazer is finding in fish may be attributed to the agricultural herbicide, atrazine, which is dumped on farmland at a rate of 75 million pounds a year (Raloff 18). The toxin has been found in surface water throughout the U.S., but particularly in the Midwest, and even in tap water at a

concentration of over 3 parts per billion—the EPA's legal limit (Raloff 18). Articles about the negative effects of atrazine describe how the chemical can “emasculate—if not deform—amphibians and fish,” “boost estrogen concentrations in male animals,” reassign gender and produce “sexually ambiguous gonad tissue” (Raloff 18-19). Although atrazine's negative effects have been well documented on lab animals, its effects on people remain unknown. The reason why is downright frightening; during the spring in agricultural areas, surface water is so contaminated with other chemicals that the annual spring-time rise in human health problems cannot be specifically correlated to atrazine (Raloff 22). Indiana University neurologist, Paul Winchester conducted a study finding that birth defects in humans increased three percent in the spring as agricultural runoff—chiefly nitrate fertilizers and atrazine—peaked (Raloff 20). A study by Blazer, Ripley, Iwanowicz and Foran found that “contaminants” may be responsible for “extensive fish kills since 2004” along the Shenandoah River (Ripley et al. 1756). The study admits its major limitation in naming one source for fish die offs is that there are so many contaminants in the river (including atrazine and arsenic) and when combined with other stressors such as abnormally warm water, answers are in shorter supply than questions (Ripley et al. 1766).

Other frightening toxins appearing in fish are polybrominated diphenyl ethers (PBDEs) and polychlorinated biphenyls (PCBs), both virtually undetectable to the naked eye. Since the 1970s, when PBDEs were first used as a flame retardant in foam and plastics, the chemical has been measured in New York fresh water fish in high levels, nearly 3 times the average level in meats and 10 times the level found in dairy

(Spliethoff et al. 340-341). These dangerous chemicals can cause endocrine disruption, developmental defects and neurotoxicity and showed up in studies of women's breast milk in Sweden between 1972 and 1997 (Spliethoff et al. 340). However, levels of PBDEs are consistently the highest in North America (Spliethoff et al. 340; Fitzgerald et al. 183). Although PBDEs were not significant in Hudson River angler serum levels, according to a 2010 study by Fitzgerald et al., the authors did collect data showing that 56 percent of anglers reported consuming fish during the 1980s and 1990s but that number steadily decreased between then and the study date; anglers were eating less fish presumably as a result of water pollution (187). Since PBDEs were not used until the 1970s, this group of anglers ate fewer fish (or none at all) as PBDEs were coming into wide use, probably because of publicly posted health advisory signs (Fitzgerald et al. 185-189). This could explain their low load of this chemical. However, PCBs *were* in use prior to the 1980s when this group was readily eating sport-caught fish and the study by Fitzgerald et al. found "an association between cumulative lifetime Hudson River fish consumption and serum PCB concentrations in this population" (189). These anglers did eat fish prior to the 1980s probably because their knowledge of water pollution and resulting dangerous chemicals in fish was limited or non-existent. Anglers' awareness of toxins limited their intake of PBDEs but not of PCBs.

A study by Birnbaum and Staskal highlights the widespread and harmful use of brominated flame retardants (BFRs) (the chemical family that PBDEs belong to): "strong evidence of increasing contamination of the environment, wildlife, and

people; and limited knowledge of potential effects heighten the importance of identifying emerging issues associated with the use of BFRs" (Birnbaum and Staskal 9). Of the 175 types of flame retardants in use in America, some, such as polybrominated biphenyls (PBBs) and tris(2,3-dibromopropyl) phosphate (Tris BP), have already been banned due to poisoning and cancer in people (Birnbaum and Staskal 9). In addition to endocrine disruption, BFRs can cause thyroid hormone effects, neurotoxicity, morphological problems in the liver and kidney as well as effects on sex hormones causing early puberty onset and other problems (Darnerud 157).

Every year fire causes more than \$11 billion in property damage and causes 3,000 deaths and 20,000 injuries in America (Birnbaum and Staskal 9). To combat these incidences, the worldwide production of bromine has climbed to 5 million metric tons per year since 1975, worth some \$2 billion (Birnbaum and Staskal 9). The widespread demand and persistent, potentially dangerous nature of these chemicals in the environment will have to be reconciled by our culture as whole.

Mercury is another dangerous toxin found in fish. Currently, thousands of lakes and rivers across the U.S. are contaminated with mercury and public advisories are in effect (Easter and Konishi 535). These public advisories take the form of signs posted in fishing areas, newspaper features and as sections in state fishing regulation guides. Predatory fish, according to a 2001-2002 interview-based study of Wisconsin ice fishermen, have 100 times the mercury load of other foods (Flaherty, Sass, and Styles 498). Furthermore, of the 138 participants involved, 64 percent ate caught fish

5 times or more per year and 60 percent were well aware of pollution concerns but continued fishing and eating their catch anyway (Flaherty, Sass, and Styles 498-499). In a 2009 study of California's Central Valley, the authors found that "rates of mercury intake by subsistence anglers were well above the EPA reference dose" (Shilling et al. 334). Frighteningly, the authors added, "The majority of anglers reported catching fish in order to feed to their families, including children and women of child-bearing age" (Shilling et al. 334). Mercury is a neurotoxin that severely damages the central nervous system and can lead to death even in adults (Flaherty, Sass, and Styles 497). It is often advised that pregnant women in particular avoid food potentially contaminated with mercury, but Flaherty, Sass, and Styles point out that the omega-3 fatty acids found in abundance in fish are ironically exactly what pregnant women need to encourage healthy neurological development in their babies (497).

Although mercury contamination is unacceptably high in the U.S., developing countries such as India, China, Brazil and Indonesia face the greatest exposure (Easter & Konishi 535). Along a 22-kilometer stretch between Palla and Okhla, India, mercury contamination has been measured at 460 parts per billion (ppb); India's established "safe" level is just 1ppb (Easter & Konishi 535). These high levels of mercury have been attributed to the presence of coal-fired power plants. Worldwide, approximately 1,500 tons of mercury is released into the air primarily from waste incinerators and coal-fired power plants; 860 tons comes from Asia alone (Easter & Konishi 535). Because fish are so commonly affected by mercury and fish

consumption is such an important source of food in many developing countries, the developing world is at great risk from the effects of mercury (Easter & Konishi 535). Of the 2,252 people who have officially been recognized as having mercury poisoning, 1,043 have died (Easter & Konishi 535).

### The Victory of Pollution Over Subsistence Fishing

Pollution drives many formerly subsistence anglers to catch-and-release for a variety of reasons. These days, “you’re not going to have a guy come down from Arlington and bring home a handful of catfish,” Jackson told me matter-of-factly referring to how anglers in his area have changed from mostly subsistence to mostly catch-and-release fishermen. “When the game fish people [urban weekend anglers] came in it turned into a 90-95% catch-and-release crowd,” Jackson said. Jackson described a culture of fishing and eating fish that had been turned upside down by pollution. As time went on a new ethic of catch-and-release fishing caught up to and eventually overtook the older tradition of subsistence fishing. “Sport” had replaced subsistence. With the new ethic came a new understanding of what fishing meant to people and what the purpose of the activity was to the individual and to the broader culture. Within the short span of a decade or so around the 1970s, scientific discoveries of water pollution were being broadcast around the region by journalists, and relatively suddenly many anglers believed fish were too toxic to eat. Whether or not fish did indeed carry toxins in enough quantity to harm anglers proved to matter very little as

many fishermen switched from subsistence to catch-and-release. “Most of us that fish from the river today do not rely on the fish for food,” Jackson said.

Some angling communities have made the change seemingly easily. A 2004-2005 study analyzing anglers’ understanding of public fish consumption advisory warnings discovered a fishing location called Deer Lake, a 906-acre body of water in Michigan’s Marquette County (Habron, Barbier, and Kinnunen 294). In 1981, it was discovered that the lake was contaminated with unusually high levels of mercury and in 1985 was designated an “Area of Concern” (AOC) by the International Joint Commission (Habron, Barbier, and Kinnunen 294). But because the fishing was so good, most anglers kept fishing. Instead of eating their catch as they had always done, they made a relatively seamless transition to an almost entirely catch-and-release fishery (Habron, Barbier, and Kinnunen 294).

Although some anglers can make the switch from subsistence to catch-and-release, research shows that many anglers are very sensitive to the quality of their environment in regard to visible or invisible pollution. A New York-based study called “The Welfare Effects of Toxic Contamination in Freshwater Fish” found that pollution significantly affects an angler’s choice to fish in a given location or at all—meaning an angler might actually choose to quit fishing entirely if he believes available fishing sites are unreasonably polluted (Montgomery and Needelman 211). In a study of angler activity along the heavily industrialized lower Passaic River in New Jersey, the authors found that since the 1970s, angler activity had sharply declined due specifically to pollution (Finley et al. 832).

The loss of anglers can, in some cases, make a significant dent in a state's income. Research has shown that the cost to a state of preventing pollution in the first place can be less than the amount lost due to decreased angler activity. According to the Alabama Department of Natural Resources, "If fishing were ranked as a corporation, it would be number 47 on the 2007 Fortune 500 list of America's largest companies based on total sales" ("The Economics of Alabama Anglers"). Top fishing states, Florida and Texas generate \$4,412,241,741 and \$3,366,961,760 respectively per year in fishing-related retail sales ("The Economics of Alabama Anglers"). Pennsylvania is a top Mid-Atlantic state with \$1,794,966,426 of revenue generated ("The Economics of Alabama Anglers"). As it turns out, the damage caused by water pollution to fish and people is often quantified economically. The authors of the above New York-based study calculate a value of \$63 (in license and equipment sales and other fishing related economic stimuli) per person per year if the state of New York were to entirely eliminate all environmental pollutants within the state (Montgomery and Needelman 211). A 2005 study focused on the cost (in terms of mercury contamination) to the state of Minnesota resulting from a 2005 EPA ruling that lowered the nation's coal-fired emission standards (a major source of environmental mercury) (Easter & Konishi 535). The study shows the risks (heart attack and impaired neurological development) to mothers and their unborn children and estimated the health care cost to the state to be \$190 million—"two or three times more than the cost of preventing the pollution" (Easter & Konishi 536). A 2009 study by Shilling et al. in California's Central Valley identified certain Asian groups that

were particularly susceptible to mercury in caught fish (334). The authors identified their biggest challenge in reducing human exposure to toxic substances was in balancing the cultural and economic needs of the anglers with the economic considerations of industry (334).

While some subsistence anglers can quite easily transition to catch-and-release, others vehemently cling to their traditions and their food source. In one study of urban Chicago anglers, the authors found that “when assessing pollution, anglers relied mainly on their senses, personal experiences, judgment, and/or information from friends, family, and other anglers rather than on written fishing guides, local officials, or the media” (Westphal et al. 46). This study was conducted in Chicago, one of the world’s most heavily industrialized cities. As a framework for understanding anglers’ choices where to fish and which fish to keep, the authors use a 1999 study by N.D. Weinstein in which he explores the rationale for personal risk in relation to smoking. The authors of both studies found that participants (whether smokers or urban anglers) readily denied to themselves the risks involved in activities they enjoy (Westphal et al. 47). Although some areas can appear polluted by the presence of trash etc., it is often difficult to tell, using human senses alone, if a fish is harboring toxins in its flesh. In a report on the history of Raritan Bay, New York, fisheries, the author states, “in areas heavily contaminated with PAMs [polyacrylamide], adult fish had a variety of maladies, including liver disease and lesion formation, and biological formation was suppressed” (4). In this particular case, fish did manifest their maladies visibly, but in many other cases, perhaps the

majority of cases, fish do not visibly show signs of the toxins they carry. The above studies suggest that although some subsistence anglers will become catch-and-release fishermen due to toxins affecting fish, many subsistence anglers do not become catch-and-release fishermen for some or all of the following reasons:

- Anglers do not know fish are contaminated (the existence of mercury, PCBs, DDT and other dangerous toxins within a fish may not be visually obvious) (Habron, Barbier, and Kinnunen 283).
- Anglers believe they can detect pollution with their senses—the appearance of no pollution indicating a true lack of pollution in the environment and in the fish they want to eat (Westphal et al. 58).
- Anglers rely on unreliable information sources, such as other anglers, family and friends, to determine if fish are safe to eat or not (Habron, Barbier, and Kinnunen 275; Westphal et al. 46). Many of these anglers do not use government warnings (public signs and free informational brochures) because they find the information hard to understand, hard to obtain or dry (Westphal et al. 47).
- The culture of the angler has deep roots in catching and eating caught fish.
- Anglers may be able to know and believe that dangerous toxins exist in game fish but, through denial, remain unwilling to act on that knowledge (Westphal et al. 48).

- Although research on the subject is limited, some anglers may continue fishing for food because of economic disadvantage (Westphal et al. 48).

### Neighborhoods in Transition

“Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher ‘standard of living’ is worth its cost in things natural, wild, and free.”

— Aldo Leopold, *A Sand County Almanac*

The cultural freight train of urbanization could play a significant role in the future of fishing, and for some people could preclude the possibility of fishing altogether. As the Mid-Atlantic and much of the U.S. is converted from forests and rivers to houses and shopping malls, the loss includes more than the land itself. The ability to appreciate it and interact with it and use it is also lost. It is unfortunate that this complex force of culture can destroy the livelihood of anglers, but it is a travesty that subsequent generations are robbed of even the notion of fishing.

While walking to the post office the other day, I passed a black man standing in front of a charred shape that was once a suburban home. The debris had been meticulously swept up into little piles of charcoal, nails and roofing shingles on the

driveway. Singed shrubs skirted the small plot of land. A recent rain had run ash from the piles in rivulets that formed a grungy blush on the sidewalk below. After passing, I doubled back and approached him. “They were smoking crack in the back,” the man said. “That’s how the house burned down... I’m John.” John stood a full head above me and his silver-speckled hair was the only indication of his 54 years. He had lived in the neighborhood for each of those years, he told me, and he had seen a lot change. The loss of the crack house itself didn’t seem to matter much to him. His loss was the neighborhood of his childhood. The burned-out building was just a reminder.

While the memories John described to me over the two hours I spent squatting on the sidewalk with him that mid-August day were as diverse as most, the *first* memories he chose to share were telling. “We used to catch crawdads in a stream that ran beside George Mason Drive,” he said pointing between the houses to the four-lane thoroughfare I drove or walked every day. John described himself and his friends wading, pants rolled up, shirts off, through the clear water in a ravine that ran beside the much smaller two-lane George Mason Drive of the late 1960s. They caught crawdads and John’s mother cooked them. The crawdads were good, especially with butter, but the pride in the hunt, the capture and the time spent with friends in their own urban nature overwhelmed the flavor—it was the flavor.

Neighborhoods like this one and the stories contained within are common around the Mid-Atlantic and the country. Nearly anywhere you can go today there is *more* rather than *less* development. Houses are being built, roads put in, rivers diverted, culverted or moved entirely. John could not say where the tiny creek of his

childhood had gone. It was simply not there anymore. At some point the flow of water turned into the flow of traffic. The families that moved in were richer but the families that were already there were finding themselves poorer.

In the past 30 to 40 years the formerly timeless activity of fishing for food has changed radically. Although pollution is not exclusively to blame for the rise of catch-and-release fishing, it has played an under-acknowledged role. Catch-and-release fishing is also not necessarily a negative direction for fishing to take, it is simply different and new; and in a world as fast-changing as ours, it is worth considering the emotional, social, economic and environmental ramifications of our choices. For instance, what does it say about our culture that we so easily invent a new way of fishing to accommodate our poor environmental stewardship? Instead of heeding the wakeup call that resounds in catch-and-release fishing, we simply adapt to the lowest common denominator. But of course the issue is not so simple. There is also the fact that many of us no longer need the food that subsistence fishing provides. Our diets have changed and while we may still eat fish and other meats procured in neat packages at the grocery store, many of us have lost the stomach (or knowledge and ability) for procuring our own food from the land in any form. There is also the issue of too many people and too few fish in the world to maintain historic levels of consumption. Because of our overpopulation, we have developed the need for regulations that require catch-and-release.

As a result of dangerous water pollution, our lack of need for wild food, human overpopulation, legal regulations and other factors, many anglers have taken

up catch-and-release as a means to satisfy their archetypal need to fish but to forego the associated negative attributes. In losing our archetypal activities one by one, we are also losing our collective unconscious—the very thing that spiritually and emotionally unifies our species. Fishing for food is but one of many human actions that define us as both an individual and as a species. In *A Sand County Almanac*, Aldo Leopold writes, “That the land yields a cultural harvest is a fact long known, but latterly often forgotten” (IX). Eating from the land is not only our heritage but also the glue that binds our culture together.

#### Other Factors Contributing to the Rise of Catch-an-Release Fishing in the Mid-Atlantic

The reasons for the rise of catch-and-release fishing in the Mid-Atlantic are by no means clear cut, and if weeks spent fishing in this new environment have taught me anything it's that no one fishes for the same reason. While pollution has undoubtedly driven many anglers away from subsistence and toward catch-and-release, other factors, often in combination with pollution, have also participated in motivating Mid-Atlantic anglers to release more and eat less. These factors can include race and gender but also more ephemeral motivations such as childhood experiences and socio-economic position.

Regardless of whether anglers are keeping or releasing their catch, statistics show that fishing is becoming less popular in the United States. Like the number of hunters, the number of anglers has dropped slowly since the 1950s. In 1991 about

16.3 percent of residents 16 and older fished, while in 2006 that number had dropped to 13 percent (“Reasons Anglers Go Fishing”) with some states such as Hawaii (34% decline), Connecticut (22% decline), Massachusetts (27% decline) and Vermont (38% decline) experiencing much more significant declines (“The Future of Fishing in the United States” 9).

A multitude of social, economic, cultural and biological factors have been compounding over the last few decades to make fishing either less popular or harder for anglers to justify (“Reasons Anglers Go Fishing”). The reasons for the reduced number of U.S. anglers are varied: Americans are less rural than they were; urbanization has blocked access to fishing areas; and many anglers report that their work or family obligations prevent them from fishing very often or at all (“Reasons Anglers Go Fishing”).

Even while the total number of U.S. anglers is shrinking there are somewhat dramatic motivational shifts taking place within their ranks. According to Responsive Management director Mark Duda in his article “Compelled to Fish,” “It seems psychological benefits of fishing have surpassed utilitarian values for most anglers” (24). According to his article, which is based on Responsive Management research, between the period 1980 to 2000 fishing for food declined from 28 percent to just 5 percent; and going for the trophy fish fell slightly from 9 percent to 3 percent (24). Conversely, during the same period the numbers show an increase in fishing for companionship from 19 percent to 33 percent; an 8 percent to 13 percent increase for experience of nature; and a 14 percent to 35 percent increase for relaxation (24).

Toward the end of his article, Duda ads, “This shift makes sense. As life becomes busier and faster paced, fishing provides a way for people to get away from the hustle and bustle” (24).

Although there are fewer people engaged in fishing today than a few decades ago, those who are fishing are fishing more often, spending more money on fishing (about \$1,046 per person per year), and releasing most of their catch (“Cause and Effect” Duda 24). This is consistent with the findings of both “Understanding Catch-and-Release Behaviors Among U.S. Atlantic Bluefin Tuna Anglers” by Sutton and Ditton (51) and “Personal and Situational Determinants of Catch-and-Release Choice of Freshwater Anglers” by Sutton (111). The latter study found that there was not necessarily a connection between a given angler’s number of years fishing (experience) and their interest in catch-and-release (111). Instead, the author found that “centrality to lifestyle”—meaning the angler’s overall commitment to fishing as a sport and way of life—was the most significant factor in predicting an angler’s involvement in catch-and-release fishing (110). Other factors influencing an angler’s choice to keep or release fish are number of fish already in possession (Sutton and Ditton 49), size (either legal and too small or not legal (Sutton 112)), species, and to a very small degree, need.

#### Fishing the Potomac: My New Home River

It takes me almost 45 minutes to drive to my favorite fishing spot downstream from Great Falls on the Potomac River. My Subaru is not as sturdy as it once was and I

question how many more times it will make this trip before leaving me stranded in an affluent neighborhood where the hitchhiking is less than wonderful. The gas alone is appreciable; since I started fishing this fall I have been filling up once a week or more, much more than usual. I often grab lunch on the way, another expense, and I had to buy a fishing license, a rod and reel and some tackle. All this for fishing that, while immensely enjoyable for me is not tremendously productive.

Someone smart about saving money might ask why. Someone who wants to be productive with time might also ask why. Someone who is hungry and needs to feed himself, or his family, would also likely ask why. Why fish, indeed? For most modern Americans, particularly those of us living in the heavily urbanized Mid-Atlantic, fishing has become an expensive pursuit. Perhaps it is just as well that many of us have migrated to catch-and-release because if we were eating our catch we would continually be confronted with the depressing cost-benefit ratio of the endeavor. Perhaps we can justify much more expense in an activity when it is seen as a “sport,” a luxury activity engaged in by people with the economic wherewithal to spend great deals of time and money on something that has no tangible return. José Ortega y Gasset called hunting “one of the most characteristic privileges of the powerful” (40). Ortega y Gasset also observed that since “almost all men wanted to hunt and saw possible happiness in doing do” hunting has traditionally been tightly controlled by those in power to keep the masses subdued and to keep game abundant (40). Activities with no point beyond pleasure are almost exclusively the realm of the economically advantaged, and now it seems that fishing in many parts of the country

has joined that privileged company.

Epitomizing the occasionally admirable and often extravagant catch-and-release ethic, former president Jimmy Carter estimated that he cast more than 11,000 times over three and a half years before finally landing an Atlantic salmon. Most of that time was spent “balanced perilously on large slick boulders in a rushing torrent or shivering in a boat during extended cold and steady rains.” Despite the effort with just a single catch, Carter recalls, “I don’t remember a dull or unenjoyable moment!” (Clifton 144).

On my last trip to the river a few days ago, the wispy tongues of air that lapped the leaves and stroked the trunks had some spice in them. Summer was long gone and the fall was about to become a memory. The wind pricked my skin with cold and I delighted in the sensation. The sound of Great Falls wafted to me on the breeze, coming and going like an orchestra pushing for a crescendo then backing off to leave me wanting. I thought the falls were another highway when I first heard them. Now they are my favorite place to be. The leaves cracked and broke apart underfoot as I walked the trail that leads the mile or so to the bend in the river, my river bend. I walked with a white and red fiberglass fishing rod from the 1970s in my left hand and a 12-foot shaft of rough bamboo that I cut from a neighborhood patch in my right. I held both near the butt’s balance point with the rod tips pointing back as almost all fishermen do.

I don’t think the fishing is any better at that bend, but the distance from the parking area keeps the crowds away and I like to get excited about fishing, like I did

when I was a boy, without feeling self-conscious. Fishing with anyone around feels too much like a performance for my taste. I don't appreciate what I imagine is the disgust of some and the admiration of others. I don't go fishing to endure the public's ridicule or even praise. I go fishing to feel hopeful that there is something for me to react to or interact with in the mysterious expanse of whatever water lies before me. I fish so that I can run from rock to rock with the wild abandon and single-mindedness of a young boy caught up in the moment. Then, sometimes quite suddenly, I want to stop on a vantage point overlooking the water, usually with a line confidently cast out, and soak up the wind, rain, sun, stillness—whatever is there for me in that moment. And of course I also fish for a tangible thing to validate my effort, an artifact of my experience and a meal for my belly. This reward is like no other because like firewood, which benefits one in the chopping and in the burning, catching and eating a fish nourishes one spiritually in the catching and nutritionally in the eating.

I fished this fall because I love to fish but also because I wanted to find out how useful fishing can be as a means to feed oneself. I had a vision of D.C.'s economically disenfranchised heading to the river, pail and rod in hand like modern day Huck Finns, to catch the dinner they could not buy at the grocery store. After fishing all day they would sit down at home with steaming plates of fish and maybe some wild greens gathered from the park and enjoy a hardy meal compliments of the land. And perhaps the youngest among them would say something like "God bless us, every one," before digging in. After heading to the river every week for a few months I still had not encountered those quaint people from my vision, and a few fish barely

bigger than minnows were all I had to show for my effort. Fishing, at least here, was not proving to be the great economic leveler I thought it would be. “People who are starving aren’t fishing,” Grizzly told me while the glassy eyes of mounted fish watched us from the walls of the Urban Angler. “They’re down the street at the shelter waiting for a meal.”

Back on the river the sky was clear, but for a high layer of scaly clouds making their way expeditiously from east to west. The wind coming down the river smelled cold, a smell many rivergoers understand but few can articulate. It is the smell of water somehow infused into very dry air, I suppose, with perhaps a touch of leaf mold. The complexities of the scent are lost to me there but I would not be surprised if science one day reveals its mystery.

When the cold evening air had driven away the last of the hikers/onlookers, I made my way from rock to rock along the river’s edge looking for the telltale flash of fish moving gracefully across the face of the water as they feed. Having thus far landed only the smallest of fish, which I either released or used as bait, I was hungry for something more substantial to both bend my pole and fill my belly. Hours passed, and just a few smallmouth bass rose from the grey/green depths to inspect my colorful lure. But whether they were doing so to take in its aesthetic charm like a painting on a wall or if I had actually momentarily fooled them with its baitfish likeness, I cannot say. I must confess that when fishing is poor, it is very easy for me to imagine fish mocking me. As the scaly clouds thickened into a cold grey mass above me and the wind stepped up its efforts to penetrate my inadequate clothing, the

fish mysteriously started to show themselves at the surface. I was immediately warm and ready to extend my fishing trip past dark.

A fish of some kind leapt near the far bank, then moments later the surface boiled not far from my feed as a fish struck at something on the surface. I set my lure adrift with one vigorous cast and reeled slowly, popping the rod-tip to mimic the imagined movements of the nonspecific species of baitfish my lure was meant to imitate. An entire day of fruitless casting was swiftly validated as the lure stopped, the rod tip bent, the line tightened then sang through the water toward the far bank.

I could not deny that I was enjoying myself, but I needed to quantify the experience economically in order to answer the question: could an urban angler substantially offset his food expenses with caught fish? Below I have cataloged my expenses from three days of fishing along the Potomac River in Virginia.

<b>Expenses From One Fish Meal from the Potomac River.</b>		
<b>Expense</b>	<b>Notes</b>	<b>Cost</b>
<b>&gt;Transportation</b>		
Subaru Outback Legacy 2001	Original price \$10,000. 5-year ownership assuming no value after 5 years.	\$5.48/day
Insurance	\$256.96/year.	\$00.70/day
Gasoline	21mpg calculated average mileage.	\$2.84/round trip (21.8 miles)
<b>&gt;Licenses and Fees</b>		

Virginia out-of-state freshwater fishing license	Fishing 30 days of the year assumed.	\$36/year (\$1.20/day)
Great Falls National Park day use fee		\$5.00
<b>&gt;Fishing Equipment</b>		
Fishing rod	Used. Fishing 30 days of the year assumed.	\$35 (\$1.16/day)
Tackle	Used and new. Fishing 30 days of the year assumed.	\$48 (\$1.60/day)
<b>&gt;Food</b>		
Rice	1/2 cup (92g) serving.	\$00.29
Fish sauce	1.5oz serving.	\$00.84
Olive oil	1 tablespoon serving.	\$00.18
Garlic	3 cloves (20g) serving.	\$00.32
Thai basil, Mint, Salad	From farmers market (18g).	\$4.48
Small mouth bass	Free from Potomac River (16oz whole, gutted, head-on weight).	\$00.00
<b>&gt;Total cost</b>	One fish meal with side dishes.	<b>\$60.05</b>

The cost-to-catch ratio in my experiment clearly did not favor subsistence fishing as a viable means to procure food. Although various factors could have swung the numbers against me (I am new to the area and am unfamiliar with local fishing methods and hot spots; I am paying for an out of state license (\$36) when locals are paying in state (\$18); I may have been fishing during a period or season of low

productivity, etc.), I am reasonably confident, after many conversations with local fishermen, that my experience was not atypical.

If I had simply bought fish from the store to replace the fish I sought to catch, the numbers change dramatically. I could have walked to a nearby supermarket from my house, negating all transportation expenses. I obviously also would not have needed a fishing license, tackle or a rod. At my local supermarket, tilapia (similar to bass) imported frozen from China is about \$2/lb. Domestic farm raised tilapia is \$8-10/lb. Without an unlimited checkbook, I buy 10oz of the Chinese tilapia (minus the head, skin and bones (my bass would likely have weighted about 10oz sans skin, head, bones and intestines) and my meal totals just \$7.41 including the same side dishes I enjoyed with my wild-caught meal. By purchasing Chinese fish instead of catching my own, I would have saved \$52.64 for a single meal. Virginia Department of Game and Fish law enforcement officer Don Cobb told me he calculated his fish cost at about \$100/lb. Later, when I talked to Doug Jackson of Clarke County, Virginia, with his boat and high-end equipment, he calculated the fish he caught at \$182.10/lb. After three days of fishing, my catch seemed like a bargain at \$53.94/lb!

Since I had not personally witnessed or spoken to anyone fishing out of necessity, and since I had proven to myself that urban fishing could indeed be expensive, I wanted to talk to someone who spent a lot of time in the field and who might be able to shed a little light on this issue. Virginia Department of Game and Fish law enforcement officer Don Cobb explained that although people do not appear to fish out of pure economic necessity, of those who do fish for food, the poorest of

that group do often keep even the undesirable fish such as gizzard shad. But there is a growing body of research showing that there are indeed some groups of anglers who are at increased risk from toxins because they are eating so many fish. A 2004 study analyzing fish consumption rates in the U.S. found that “subsistence fishermen or other highly exposed individuals who for socioeconomic or cultural reasons consume more fish than the general population are among the populations of concern from the ingestion of contaminated fish” (Moya 1195).

A study on public fisheries advisory warning signs by Flaherty, Sass, and Styles found that “socioeconomic variable such as age, ethnicity, education level, and income level may be important factors influencing risk associated with consumption of contaminated fish” (498). Another study covering a similar topic but taking place in Chicago found that although only 20% of White anglers reported eating their catch, Whites compulsively underreported unemployment and financial hardship and fish consumption (Westphal et al. 51). The study goes on to say, “We also have evidence of White anglers aligning themselves with a conservation norm of catch-and-release and minimizing the extent to which they kept their catch” (Westphal et al. 51). In this study, it seems that White anglers in particular believe that keeping fish for food does not aid in advancing their climb up the socioeconomic ladder. Robert Jones describes the shift in the American angling population as follows: “...no-kill fishing has altered the public image of the angler—from that of a leering, beer-guzzling, knock-‘em-on-the-head trout killer to a gentle, Walton-esque, nature-loving yuppie wearing lots of neat gear” (127-28). These studies and the latter article suggest that some American

anglers may perceive eating one's catch is "low-brow" and beneath their socioeconomic class, whether they are actually in that elevated class or not.

Running parallel to this demographic shift in fishing but out of plain sight has been a persistent sub-culture of people who never gave up eating locally caught fish. "Rednecks," said Doug Jackson with all the love and respect of a father, "will always push the limit in terms of what they can eat. They know about the toxins but it's their culture." According to VAG&F Department fisheries biologist Steve Owens, who engages in catch-and-release and who eats their catch can be divided down not only economic and social lines, but also by the species of fish they pursue. Bass fishermen tend to be middle- and upper-class catch-and-release fishermen, Owens told me, while someone right down river from a lower socio-economic class might be catching cats [catfish] and eating them. "Urban areas are more connected to catch-and-release," Owens told me, "while rural areas are more consumptive." A study by Westphal et al. confirmed Owen's assertions, but with an ethnic twist, stating that most Black anglers would eat carp but that most White anglers expressed "disgust" at the thought (54). The same was true for catfish (Westphal et al. 54).

In addition to economic factors associated with angling preference, race can be an important determiner. A 2010 study by Schantz et al. pointed out that during "the past two decades, immigration to the U.S. has been at an all-time high." The study goes on to state, "Many of these new immigrants are from developing countries in Asia and Latin America and are at higher than average risk of exposure to environmental chemicals due to economic, lifestyle and cultural factors" (33).

According to the U.S. Census Bureau, U.S. population growth among all racial minorities is fastest with an estimated 45% of all American children under age 5 belonging to a racial minority. Specifically, almost half of all growth in the U.S. between July 1, 2005, and July 1, 2006 (2.9 million) was from Hispanic and Latino Americans (“US Census”). According to a study in Chicago by Westphal et al., 50 percent of Latino anglers reported usually fishing for food (51). If the findings of Westphal et al. were applied to the Latino population of the entire U.S., there are approximately 23.9 million subsistence-oriented Latino anglers today and there will be approximately 51.3 million by 2050 (“U.S. Census”). Although the same Chicago study reports 68 percent of Black anglers eat their catch (Westphal et al. 51), a study on Black anglers by Hunt et al. found that Blacks in general are half as likely to engage in fishing in the first place as Whites (227). But it is not insignificant that such a large percentage of Blacks are subsistence anglers (93 percent reported occasionally eating their catch (Westphal et al. 51). The authors of this study reasoned that eating one’s catch was deeply ingrained in certain Black communities and that the economic benefits of fishing were only slightly less important than the social benefits (many anglers reported holding neighborhood fish fries and sharing their catch with friends and family) (Westphal et al. 52). Although Hunt, Floyd, and Ditton reported that Black anglers fish for both food and recreation and White anglers fish primarily for recreation, the authors found that both groups express a strong desire to catch *something* (228).

Anglers of Asian descent are also a common sight in many fishing areas

across America. A study of 142 Hmong (an Asian ethnic group from China, Vietnam, Laos, and Thailand) anglers living in Green Bay, Wisconsin, found, “Recent immigrants to the U.S. from Southeast Asia may be at higher risk of exposure to fish-borne contaminants including polychlorinated biphenyls (PCBs), p,p’-dichlorodiphenyldichloroethene (DDE) and methyl mercury (MeHg) because of their propensity to engage in subsistence fishing” (Schantz et al. 33). Prior to the Vietnam War, the Hmong were entirely self sufficient and lived a mostly subsistence lifestyle that included fishing (Schantz et al. 33). After the Vietnam War, some 1.5 million refugees fled their homes in countries surrounding Vietnam and arrived in the United States (Schantz et al. 33). “In the U.S. most Hmong families continue to be as self-sufficient as possible,” the study says, “both because this lifestyle is an important part of their cultural identity and because economic resources for many families are limited due to a lack of education and job skills” (Schantz et al. 33). The findings of this study are confirmed by a 2009 study of anglers in California’s Central Valley. “Of the ethnic sub-groups,” the study found, “the Lao respondents had the highest mean total fish consumption rate (65.2 g/day) and locally caught fish consumption rate (57.6 g/day). Their rate of local fish consumption was significantly higher than the mean rate for all non-Lao anglers” (Shilling et al. 338).

On a number of occasions in locations around the Mid-Atlantic, I overheard and talked to non-Asian anglers who spoke with annoyance at what they perceived as an Asian tendency to keep everything (species not traditionally eaten by White Americans) and that they kept fish of all sizes with little regard for state size

regulations or for the well being of the fishery. I encountered similar stereotypes about Hispanic anglers and I grew to expect disparaging remarks about either Asian or Hispanic anglers from White anglers. A common lament about both Asian and Hispanic anglers was that they keep everything they catch regardless of size, species or applicable laws and that they use heavy tackle (which eliminates any “sport” aspect to angling).

While it seems to be true that racial minorities are less likely to be catch-and-release fisherman, it also seems true that racial minorities are at a significantly greater risk for ingesting fish-borne toxins. A study by Shilling et al. found that African-American and Southeast Asian anglers were ingesting more than 10 times the EPA limit for mercury (340). With the racial makeup of America changing rapidly, understanding the role of race in this conversation might be a key to effectively managing fisheries and protecting anglers from water pollution in the future.

Gender is also an important factor in who fishes, how, and why. Having read much of the research on fishing, I was surprised to find that David James Duncan seemed to have precisely captured the role of the two genders in angling in his book *The River Why*. The fictional story is about a deeply dysfunctional and always hilarious fishing family divided by their individual commitment to different fishing ethics. “In those rarified circles of purist anglers among whom Henning Hale-Orviston is considered the last word, Ma Orviston is considered the last laugh” (5). Why? “Lower than Low Church, lower than pariah, lower than poacher, predator or polluter, Ma is a Flyfisherman’s Antipode: she is a bait fisherman” (Duncan 5). By

‘bait fisherman,’ the author means that she eats her catch. And throughout the story she consistently does just that to the horror of her fly-fishing family.

The body of research on the subject of gender in fishing seems to more or less back up this story. As a distinct segment of the U.S. angling population, women are often likened to angling racial minorities because they tend to be more focused on the utilitarian aspects of fishing (food) (“The Future of Fishing in the United States” 39), they are in the minority of the angling population as a whole and because they are marginalized by a fishing industry that tailors its advertising and television toward White men (“The Future of Fishing in the United States” 33-34). Women are also less likely to be anglers, but not because they are not exposed to it as children. “Fishing is a ubiquitous activity for women as children just as it is for men” (“The Future of Fishing in the United States” 39). Some women become distanced from fishing as adults due to “an interruption in their leisure activities when their children are born that continues until the children leave home” (Kuehn, Dawson, and Hoffman 116). When women do remain connected with fishing through childhood and into adulthood, they tend to focus on the social aspects of fishing much more than men (Kuehn, Dawson, and Hoffman 115; “The Future of Fishing in the United States” 39). Again consistent with Ma Orviston in *The River Why*, a 2000-2001 study of Minnesota anglers by Schroeder et al. found that men were more supportive of catch-and-release fishing as well as regulations mandating lower bag limits, fees and catch-and-release (1087). According to this study, “Women more frequently kept all the legal fish that they caught and kept larger fish over smaller fish. Men more frequently

released all the fish that they caught and kept smaller fish over larger fish” (Schroeder et al. 1087).

While some groups of women may be less likely to be anglers than men, this does not necessarily mean they eat less fish. In a study by Shilling et al. in California, women ate significantly more fish than did men and were also not as involved in fishing (338). As a result, these women tested higher for mercury (Shilling et al. 338). Although women ate more fish in this study, they were less aware than men of environmental mercury contamination around fishing areas (Shilling et al. 341).

Although women are less likely to be anglers in the first place, they are more likely to be subsistence anglers. Additionally, non-fishing women, according to some studies, tend to eat more caught fish than do men. The fact that some women eat more caught fish than men and are more likely to be subsistence anglers than men makes this group particularly susceptible to fish-borne toxins.

Happiness, Humanness and Reason: The Conversation Between Paul Shepard and José Ortega y Gasset

Although research has much to teach us about people’s motivations in regard to their fishing preferences, there is another, less often heard conversation running in parallel that deals with infamously elusive concepts like happiness, reason and what it means to be human—all ideas directly tied to the activity of fishing. To bring these ideas into the fray, we must turn to those hunting authors and philosophers who have spent their lives thinking about such things. Paul Shepard famously asked, “Can we face the

possibility that [Paleolithic] hunters were more fully human than their descendants?” (36). In this question, Shepard suggests that humans might have been more rather than less “human” prior to 10,000 years ago, before the domestication of animals and the widespread use of agriculture. Taking quite the opposite stance in his book *Meditations on Hunting*, José Ortega y Gasset stated that man is midway on his path from a primitive time when he was all instinct with just a hint of reason to some future time when we will be all reason and perhaps no instinct (123).

But what does it mean to be “human?” Here we have two opposing definitions: the first is Shepard’s assertion that we are becoming less human because we are straying from what we have done for most of our collective life as a species—hunting and gathering our own food. According to Shepard, Paleolithic man was the most human our species has ever been, having the exact genetic makeup of modern man but none of the polluting factors of civilization. Ortega y Gasset, on the other hand, seems to be saying quite the opposite. Ortega y Gasset implies that the height of humanness will occur sometime in the future when the last shred of animal instinct is shed in a city gutter and humans exist in absolute reason. But make no mistake, Ortega y Gasset is not suggesting that this is the preferred outcome for our species or that reason is even a positive attribute. According to John Zerzan, Freud predicts a similar outcome: “the fullness of civilization would bring, concomitantly, the zenith of universal neurosis” (1). Although Ortega y Gasset is not necessarily using reason as a positive, Shepard *is* using Paleolithic man’s “humanness” as a positive. Writing in the second half of the 18th century, Friedrich Schiller asked a question as relevant

now as ever: must humankind “fall away from Nature by the abuse of Reason before they can return to her by the use of Reason?” (105). It seems that reason, whether a positive or negative force in the lives of people, is here to stay. It may in fact be the confusing relationship we have with reason that compels many of us to engage in pleasantly simple archetypal activities like fishing. This is certainly the case for myself, and it is also likely the case for anglers who report on surveys that getting away from the hustle and bustle of modern life is chief among their reasons for fishing (“Compelled to Fish” Duda 24). If we assume that existing in pure reason is negative and that moving away from reason and toward a primitive state of increased “humanness” (fishing) makes us happy then it begs the question: how to quantify happiness?

Although the pleasure derived from an activity such as fishing was probably known to primitive man mainly through the filling nature of a wild-caught meal, today’s anglers are searching for a similar sense of fulfillment or happiness but without the meal at the end. If our collective unconscious maintains a desire to fish for the purpose of food then it stands to reason that our personal unconscious will look for a similar sense of fulfillment—happiness—in the activity even though there is no food produced. The problem is how to quantify happiness. One author who has attempted to answer this very question, while taking into account both animal welfare and the food needs of people, is author Michael Pollan in his book *The Omnivore’s Dilemma*. Pollan states that an animal such as a chicken or a pig is “happy” when it can “express its physiological distinctiveness” (132). An animal is happy when it gets

to do what evolution supremely equipped it to do (Pollan 219). If we acknowledge that we are human animals little changed from 10,000 years ago and apply Pollan's framework to ourselves, then it stands to reason that our happiness is tied to Shepard's notion of humanness. When we act out ancient rituals such as fishing, we are expressing our human distinctiveness by engaging in activities that we were supremely crafted by evolution to do. Whether anglers keep their catch or not, then, may be of little importance to the sense of happiness we derive from fishing.

#### The Collective Subconscious, the Personal Unconscious and the Philosophy of Hunting

But some questions persist, such as how can something as basal, as primal and instinctual as fishing for food remain firmly rooted in our recreational repertoire but simultaneously be stripped of its original purpose. In short, how can we have fished primarily for food for 99 percent of human existence then suddenly switch to catch-and-release fishing (Zerzan 9)? To attempt to answer this question, I turned to Carl Jung's book *The Archetypes and the Collective Unconscious*. In this book, Jung identifies two aspects, or "levels," of the human consciousness: the "personal unconscious" or "personal psyche" and the "collective unconscious" (4). The first and shallower layer is the "personal unconscious" (Jung 4). This shallower layer is where personal choices are made and individuality is expressed. For this reason, Sigmund Freud placed the heart of humanity in this level (Jung 4). "The personal unconscious are chiefly the feeling-toned complexes," says Jung (4).

The second and deeper layer is the “collective unconscious” or “collective subconscious,” which, according to Jung, “does not derive from personal experience and is not a personal acquisition but is inborn” (5). In order to describe the universal rather than individual nature of this layer, Jung uses the word “collective” (5). The collective subconscious “has the modes and behavior that are more or less the same everywhere and in all individuals. It is, in other words, identical in all men [sic] and thus constitutes a common psychic substrate of a suprapersonal nature which is present in every one of us” (Jung 5). Jung describes the collective unconscious as “archaic” and “primordial” with “universal images that have existed since the remotest times” (5). The contents of the collective unconscious are archetypes (5). These archetypes are of such importance to understanding the force of the collective unconscious that Jung describes an archetype as “a prototype or primordial image of the mother that is pre-existent and supraordinate to all phenomena in which the ‘material,’ in the broadest sense of the term, is manifest” (75).

The *Hermetica*, an early Greek and Latin Christian text from the third century, describes God as archetypal light, the lens through which believers saw everything and the spiritual “substrate” of their worldview (Scott 141). In other words, all human minds are unified by their shared collective unconscious, which is made up of powerful archetypal images and notions. These archetypal images, which could be called vestigial instincts, were what José Ortega y Gasset was referring to when he said, “[man] retains only instinctual stumps and residual elements incapable of imposing on him a plan of behavior” (35). This existential conundrum inherent in

man is contrasted by the seemingly blissful instinct-driven lives of animals, which exist entirely within the collective subconscious. The crisis that all humans face, of what to do with their lives is perhaps the reason many people return to archetypal activities such as fishing. Together with other similarly archetypal activities such as hunting, gathering, finding a mate, reproduction, and so on, fishing is a way to act comfortably within the collective subconscious rather than facing the myriad vexing choices of the personal unconscious.

Using Jung's framework for thinking about the human psyche is very useful in revealing how something like fishing can remain a constant activity in culture yet undergo a radical shift in meaning. The collective unconscious harbors our simple desire to fish (as part of a broader group of hunter-gatherer skills) and is no less important or ingrained than the will to engage in other similarly archetypal activities such as reproduction. As humans, to varying degrees, we share these needs and ways of going about satisfying them. Of course, I am speaking generally. Not everyone wants to go fishing just as not everyone wants to have children. But all people do need to feed themselves and fishing exists in our collective subconscious (at a level that defies personal choice) whether an individual chooses to use it or not.

While the indisputable will to fish exists in our collective human unconscious whether we know it or not, the ability to manipulate that activity is the domain of our personal unconscious. At this level we are able to channel the force of our unconscious (the will to fish) into a specific form (to keep our catch or to release it). Factors influencing an angler's personal unconscious and choice to keep or release

their catch include the species caught, the need of the angler, the angler's experience and commitment to fishing as a lifestyle, gender, socioeconomic background, age of exposure to fishing and the presence of pollution. ("Personal and Situational Determinants" Sutton 109).

#### As Catch-and-Release Gains Momentum, Some Groups Buck the Tide

Early on in my research, it became clear that in most urban environments, subsistence angling is rapidly being lost as a way of life. But, with a mixture of delight and horror, I ran across a story in the *Clarke Daily News* about the illegal taking of fish with nets along the Shenandoah River; this is how I had met Doug Jackson (Edward). "Poaching," as it is otherwise known, piqued my interest since such practices, while illegal, are presumably always motivated by a need (or at least want) for food rather than sport. This was a group of people who had somehow evaded the cultural wave of catch-and-release that had swept over most other Mid-Atlantic anglers. These were hunter-gatherers, and their motivation was as simple as food. According to Paul Shepard's line of reasoning, these folks were pushing the envelope backward toward a more "human" place. Maybe they were happier too; it's hard to say. José Ortega y Gasset spoke specifically about the qualities of poachers. "The sporting hunter, when he sees a poacher at work in the field, discovers that he himself is not a hunter, that in spite of all his efforts and enthusiasm he cannot penetrate the solid profundity of venatory knowledge and skill that the poacher possesses" (115). Ortega y Gasset

likens poachers to professionals and acting in the spirit of Paleolithic man, while hunters are mere enthusiasts (115).

The *Clarke Daily News* story described Jackson and a concerned group of people all living along the Shenandoah River who witnessed a rising tide of what appeared to be Hispanic men using throw nets to catch fish (Edward). While many fishermen legally use throw nets to catch bait-fish, the taking of game fish (such as bass, pan fish, musky, etc) by this method is strictly illegal. “Anything with a fin is being taken,” said Jeff Kelble in the *Clarke Daily News* article (Edward). Although the story focused on the illegal aspects of the practice and the following law enforcement “sting” operation that resulted in 17 citations, the fact that these men were seeking wild food from the land intrigued me (Edward).

The *Clarke Daily News* reported that 60 percent of the summertime patrons to Watermelon Park along the Shenandoah River, where much of this activity has been focused, are from the Central American country of El Salvador (Edward). “There are hundreds of them on the weekends,” said Jackson. Like the subsistence “Rednecks” that Jackson described, these people were coming from a culture of pure subsistence. After confronting and talking to many of them, Jackson described the prevailing attitude not as one of defiance but of total shock when they learned how upset he was. Jackson described one group’s choice to fish as simply as “There’s the river. There’s the fish in the river. I’m going to go get them.” The law, water pollution or local ecology were simply not factors. “You’re not going to change 1,000 years of culture

and get them to cast lures for one fish at a time when they can cast a net over an entire school,” said Jackson.

When considered in the context of an increasingly catch-and-release-focused culture, poaching becomes an act of social subversion. The hunting of fish and game has long been a pursuit of privilege and controlled by the elite classes, according to José Ortega y Gasset (40). Regardless of legal and ecological issues, these anglers are exercising what some might consider a human right—the ability to feed oneself. They are also expressing their human distinctiveness, to borrow a term from Michael Pollan, by engaging in one of humankind’s most archetypal activities. Under the banner of conservation our government and popular culture have limited the ability of its citizens to express themselves as humans. These forces have instead asked people to accept, presumably for the greater good, a second-rate form of fishing and therefore a second rate form of life. This issue is perhaps analogous to China’s One Child Policy, under which humans must ignore one of their natural human impulses for the greater good. These issues lie at the very heart of an important cultural conversation about how more people in the world (overpopulation) is ironically robbing us of our humanity.

Although a subsistence revolution may not be brewing in Clarke County, the cast netters have inadvertently jump-started a heated and timely conversation about the meaning of fishing, food and the distribution of rights and resources in our culture. Unfortunately, since this particular episode involved those of Hispanic

descent, some have narrowed rather than broadened their outlook and are missing an opportunity to engage in a fascinating cultural conversation.

While chatting with Grizzly in the Urban Angler recently, he recounted an episode a few years back. “There’s no enforcement around here so people poach stripers [type of fish] in the spring under the Chain Bridge when they’re spawning,” he told me. “We got Game and Fish to crack down one day. They had guys camoed-out in the woods with binoculars!” A few days later an op-ed appeared in the *Washington Post* attacking the enforcement and defending people desperate for a meal. “These people have money,” Grizzly said. I imagine a sneer was etched across his lips somewhere under his billowing mustache. “They drive to the river—gas, car, fishing tackle, rods, et cetera; it adds up.” Stretched thin on a student’s budget I was all too aware of these expenses. Grizzly went on to describe the people he has watched poaching at the Chain Bridge as mostly of Asian or Hispanic descent. He attempted to tread lightly on such potentially racist terrain, but his anger for what he saw was palpable.

I had heard this story before. Many of the white fishermen I had talked to from the Delaware coast to the Potomac River had at least one comment about one ethnic group or another. Sometimes the accusations hinged on the law: the party in question was poaching. In other cases the accusation was simply that their ethics, while legal, were disagreeable: they kept *everything* they caught. Seeking an “official” point of view on the matter, I called the Virginia Department of Game and Fish in Richmond, Virginia. “There are lots of these personal prejudices out there,”

said Captain Joe Pajic, a Game and Fish law enforcement officer. “In my experience no particular group poach more than others.” Officer Don Cobb at the Department of Game and Fish in Fredericksburg, Virginia, agreed, adding, “in areas that are more Hispanic, you get more Hispanic poachers. In areas that are more Asian, you get more Asian poachers. In white areas you get white poachers. I don’t think there are any patterns to who and who does not poach fish.” Cobb went on to tell me that the vast majority of citations are not written for overharvesting fish. “We did a special-op this spring with the Police Department and Fish and Wildlife at Chain Bridge,” he told me. “We wrote 70-plus citations and all of them were for littering or fishing without a license.”

In a world of people, everything we see *does not* belong to us. In nature, ownership is either irrelevant or anything can potentially become ours, if we are willing and able to go get it. Poaching is the ritual-less form of fishing humans used to regularly partake in. It is fascinating to see this unabashed hunting-gathering, however illegal, rising to the surface of culture.

As human animals little changed from ancient man, we desperately crave to do the things that our species has done for 99 percent of its existence—namely, to engage meaningfully with the natural world for the purpose of feeding ourselves, among other things (Zerzan 9). Although angling has been relegated to the status of “sport” or “hobby” in our culture, fishing in any form is a powerful expression of that longing. The fact that fishing and other hunting-gathering activities have persisted in

a culture of cheap and easy-to-come-by food says a great deal about the value of these activities to our individual and collective mental and physical health. "Men [sic] can choose to hunt even if they do not need to," says Howard Wescott in his preface to Ortega y Gasset's *Meditations on Hunting*, "and can need to hunt even if they do not choose to" (12). In short, all people *need* to engage in some form of hunting, fishing or gathering in order to express the full extent of their human distinctiveness; in order to express their humanness; in order to be happy.

Whether or not catch-and-release fishing can satisfy this need is a conversation eclipsed by the fact that water pollution and other human-caused factors have, in many areas, effectively removed our ability to choose whether to keep or release our catch. Doug Jackson was one such angler robbed of this choice. As a result, he, like so many other anglers, turned to catch-and-release fishing in an attempt to remain connected to the natural food systems of his youth. But the purpose was lost for Jackson, and the purpose was everything.

As an outsider my heart does not drift on the currents of the Potomac or the Shenandoah, but my fear of the unseen toxins lurking in some fish run just as deep as they do for Jackson. For us and many other anglers in the Mid-Atlantic, reconnecting with our archetypal selves through fishing has become difficult at best and dangerous at worst. Although many of us have taken up catch-and-release fishing to save fish stocks, avoid toxins or just because that's what everyone is doing, whether or not we can find what we are seeking in catch-and-release is still not clear.

Fishing along the Potomac River near my house, I found the results of the studies I was reading were often confirmed when great drifts of trash and dirty foam that smelled of bleach were pushed up the riverbank during floods. On other occasions, I felt like I was fishing the clear, clean waters back home and could hardly bring myself *not* to keep the vibrant, healthy fish I pulled wriggling to the shore. The reality was probably somewhere in the middle and myself and *everyone* (yes, every single one of about 25 to 30 anglers) I met had put their lot in with the catch-and-release crowd, just to be on the safe side. But despite our lurking fear that the river was less than pure, we were all still there, fishing poles in hand, grins plastered across our expectant faces, hiking up and down the river for hours on end, day after day, year after year, casting, reeling and hoping for a strike.

But within that hope, there is a sadness. Virtually every angler affected by water pollution has one thing in common, no matter how deep in the murky recesses of the mind it might be: a profoundly sorrowful distrust of water and fish. Therein lies the crux and the tragedy of living out an ancient ritual in a modern world. In all but the most remote corners of our planet, fishermen can no longer trust the vehicle of their happiness—water—or express themselves in the most satisfyingly primitive way a human can—by eating the hard-won prize of their effort.

As for Jackson, he remains a fisherman, both subsistence and catch-and-release, but the only fish he keeps today come from the open ocean—the only water he trusts. I, on the other hand, practice only catch-and-release here in the Mid-Atlantic, whether the fish come from the ocean or the rivers (save the one small bass I

ate in the name of research). When I do eat fish, it is wild salmon I caught in Alaska and keep in my freezer. But freezer-to-oven somehow doesn't capture my imagination quite like river-to-fire. There is a disconnect in eating something long dead, frozen in plastic and eaten far from its home. To me, catching is scarcely catching without eating shortly thereafter. I think back on any number of dolly varden I have outwitted with rod and reel along remote rivers back home. Until I am hungry, I honor the fish by releasing them back into the current. When my stomach starts grumbling, I honor one with a clean death and a place on my small fire with butter, onions and garlic wrapped like a gift in bright foil.

“I ate trout twice a day and grew no more tired of it than an anteater grows tired of ants, he with his long snout and sticky tongue, me with my Rodney and flies.”

— David James Duncan, *The River Why*

### Conclusion

Through research, interviews and observation I have learned that since the 1950s, the fear of fish-borne toxins caused by water pollution has motivated some anglers in the Mid-Atlantic and throughout the United States to stop eating their catch and to become catch-and-release fishermen. Those who did not become catch-and-release anglers during this period proved to be, for the most part, those of economic disadvantage, immigrants or racial minorities with strong cultural roots in subsistence fishing, those who are aware of the dangers but continue fishing anyway, and those

who are blessed with clean waters and fish. Although existing studies describe a host of angler motivations in regard to their catch preferences, none, until now, examine the role of water pollution.

In regard to the academic and journalistic challenges of researching and reporting this story, I found, in general, that anglers tended to be very insular and protective of their information and reserved with opinions. Being an angler myself, I was somewhat prepared for this. I had developed questions that I thought would draw anglers out and encourage them to talk at length about their motivations for engaging in a given type of fishing. After the first few weeks of research, I threw out most of my carefully prepared interview materials and took a different approach entirely. This technique involved encountering anglers in fishing shops or along waterways (in neutral and comfortable environments for them) and striking up conversations with them as naturally as I had a hundred times before—angler to angler. As a conversation progressed, the details of my research would emerge and generally would not impede the conversation if a rapport had already been established.

Because informal and unstructured interviews constituted much of the field research I collected, I relied heavily on the related body of literature to discover patterns in the field. Because I did not find any literature speaking directly to my thesis question, I was forced to follow multiple seemingly disparate lines of research, then use still more research to stitch the concepts together. For example, I delved into research in water pollution, then followed other research trails to motivations for engaging in catch-and-release fishing, human risk aversion tendencies, angling

history of Europe and America, patterns of subsistence in modernizing regions, etc. I then used my own extensive experience in angling in both rural and urban environments as well as Carl Jung's concepts of the collective subconscious and the personal unconscious as glue to bind the research together.

Although this approach helped shed significant light on the question of whether Mid-Atlantic anglers are increasingly abandoning subsistence fishing in favor of catch-and-release and what might be motivating them, further research by social scientists will be required to assess precisely how many anglers are affected. Additionally, this thesis uses Carl Jung's notions of the collective unconscious and personal subconscious to form a previously unused framework within which to understand this question.

As the archetypal activity of fishing is being modernized, we must ask ourselves if catch-and-release fishing can satisfy the same physical and emotional needs as subsistence fishing. I believe the answer is no and that it is of the utmost importance that we take seriously the issue of water pollution and other factors robbing us of food, exercise, time outside and even our humanity. This thesis argues vehemently that water pollution is negative not only because of its effects on human and environmental health, but also because it is driving a wedge between humanity and its subsistence heritage.

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