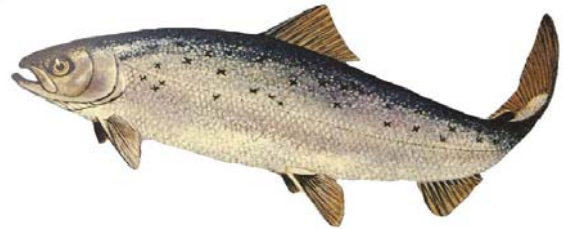




## A PRIMER ON SALMON

The Atlantic salmon (*Salmo salar*), which is the most commonly farmed salmon, is a boned finfish that migrates between fresh and salt water. Salmon parr<sup>a</sup> hatch from eggs laid in river beds and mature in the Atlantic Ocean before returning to their river of origin to spawn.

Consumer demand for seafood, including salmon, is increasing. Salmon meat is prized for its distinct flavor and pink coloration. While some diners prefer wild salmon, farmed salmon is considerably more affordable and better able to meet growing public demand for seafood in a sustainable manner.<sup>1</sup>



*\* U.S. National Oceanic and Atmospheric Administration*

### **Are salmon caught from the wild?**

While recreational fishing of salmon in rivers and streams is still supported, most commercial ocean fishing grounds in America are closely managed (by the North Atlantic Salmon Conservancy Organization) due to low or declining stocks. The majority of Atlantic salmon available in retail outlets is now produced by aquaculture or “fish farming.” The Atlantic salmon is one of the most well established and widely farmed species of fish.<sup>2</sup> Commercial salmon farming where fish are raised from hatch to slaughter began in 1960 and increased dramatically in scale during the 1980s and 90s led by industry developments in Norway. Atlantic salmon are now farmed in many different countries including Chile, the United Kingdom, Canada and the United States.<sup>3</sup> The top three world markets for salmon are Europe, Japan and the United States.<sup>4</sup> The United States is a net importer of Atlantic salmon.

### **How are salmon farmed?**

Farmed salmon grow faster than wild salmon<sup>5</sup> and may exhibit reduced fear and flight behaviors.<sup>6</sup> Their overall development and ecological needs, however, are the same as wild salmon and farming systems must simulate the conditions required for their fresh and saltwater life stages. Eggs and sperm are placed into fresh water. Small fry hatch are raised in freshwater tanks. These fish undergo a process of “smoltification” during which they adapt to live in salt water. The growing “smolt” are typically moved to large floating sea nets or cages,<sup>7</sup> although they can be raised in land-based saltwater tanks. Salmon are slaughtered at around two years of age and usually shipped to market within 24 hours.

### **What animal welfare challenges affect salmon?**

Ensuring animal well being is an important part of the humane and responsible care and use of any animal. Salmon are often farmed and are surface-swimming fish, so they are amenable to lower stress capture and handling methods. However there are challenges affecting salmon management including disease prevention and treatment, determination of optimal stocking densities, and reduction of stress responses to human handling, transportation and stunning.<sup>8,9,10</sup> Because Atlantic

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salmon live near the surface of the water,<sup>11</sup> ruptures of the swim bladder (which can be caused by abruptly changing pressures when deep-sea dwelling fish are caught) are not a welfare concern for this species. As is the case for other livestock and wildlife, there are philosophical disagreements about whether and how salmon should be used for human purposes. For example, some people believe consuming salmon as food is wrong, whereas others disagree about the appropriateness of methods that are used to catch or farm salmon for that purpose.

### **How are salmon slaughtered?**

Because salmon dwell near the surface of the water, they are relatively easy to capture and transport. They may be slaughtered at the farm, or transported in a water-filled tank to a processing plant. Modern facilities typically stun fish prior to slaughter. Stunning may be accomplished by chilling, exposure to CO<sub>2</sub> or electricity, administration of an anesthetic, or by delivering a sharp blow to the head. Salmon and other fish are increasingly handled and regulated in the same way as other livestock, including the development and implementation of welfare standards both within the industry and by external agencies.

a. “Parr” are young salmon during their first two years of life, when they live in fresh water.

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