

# MYTHBUSTERS #8

## Public Power Council Fish and Wildlife Committee *Revealing Fish and Wildlife Myths*

**MYTH:** *Harvest does not affect the recovery of ESA-listed salmon in the Columbia River.*

### **THE FACTS:**

- Scientists have identified over-harvesting of salmon as one of the four primary factors in the decline of Columbia River basin salmon species. The other factors are hatcheries, hydroelectric dams and loss of habitat – these factors are commonly referred to as the “Four H’s”.
- Harvest rates continue to depress salmon and steelhead stocks in the Columbia River Basin.
  - ⇒ Salmon and steelhead from the Columbia River are harvested in many commercial and sport fisheries from Alaska to the Columbia River.
  - ⇒ Some Endangered Species Act listed (ESA-listed) stocks of salmon are subject to very high harvest rates, which severely limit the number of adult fish returning to the spawning grounds.
- Relying on estimates of returning adults does not adequately protect depressed ESA-listed fish stocks.
  - ⇒ Harvest rates are developed based on estimates of the number of adult fish returning to the Columbia River. If the number of returning fish is overestimated, the resulting harvest rate will be too high, thereby allowing the harvest of too many fish.
- Current harvest methods do not adequately protect depressed ESA-listed fish stocks.
  - ⇒ Current commercial harvest methods do not adequately protect wild fish. Even though weak stocks and wild fish are not the target, many ESA-listed fish are caught or killed along with abundant hatchery fish.

### **What arguments are used to support this myth?**

- **Harvest is carefully managed and does not affect recovery.**
  - ⇒ **Counter:** Current fish run forecast methods are inaccurately relay on estimates, which often lead to over-harvest of wild stocks. By the time an overestimated run is identified it is often too late and over-harvesting of fish may have already occurred.
- **Harvesters already use selective fishing methods to protect wild fish stocks.**
  - ⇒ **Counter:** The gear used to harvest fish, primarily gill nets, does not allow selective harvest of hatchery fish. Wild fish caught in gill nets are severely injured and often die before removal from the water or after being released. Other methods that mitigate these problems are available.

### **What this means:**

- Harvest impacts need to be better addressed in the effort to recover weak runs of salmon and steelhead in the Columbia River Basin.
- The way in which harvest levels are set – especially in the short-term – needs to be reconsidered to allow listed stocks more time to recovery.
- It is difficult to properly address harvest and find balance when the same state and federal fish and wildlife agencies that set fishing limits to protect the resource are also assigned to provide fishing opportunities.
- Technologies such as beach seines and fish wheels currently exist and should be used more often to selectively harvest hatchery fish while safely releasing wild salmon and steelhead.
- Protection of wild fish during harvest is important, as harvest takes place at a critical point in a salmon’s life. Returning adults of ESA-listed stocks are “lottery winners” as they have overcome numerous mortality obstacles and are near their home waters where they populate the next generation.

## What are the supporting arguments for these facts?

- 1. Harvest rates continue to depress salmon and steelhead stocks in the Columbia River.** While harvest rates have decreased from their historical highs, a large number of fish from depressed ESA-listed stocks are still caught. Recent reductions in harvest rates have not gone far enough to ensure the health of ESA-listed salmon stocks in the Columbia River Basin. Figure 1 illustrates the historic and current harvest rates of select stocks of ESA-listed chinook from the Columbia and Snake Rivers (HSRG 2009).

| <b>Fish Stock</b>        | <b>Historic Harvest Rates</b> | <b>Current Harvest Rates</b> |
|--------------------------|-------------------------------|------------------------------|
| Spring Chinook Salmon    | 50%                           | 27%                          |
| Fall Chinook Salmon      | 69%                           | 49%                          |
| Late Fall Chinook Salmon | 56%                           | 38%                          |

Source HSRG (2009)

- 2. Relying on estimates of returning adults can result in over-harvesting of wild fish.** Harvest rates are developed based on an estimated number of adult fish returning to the Columbia River. Because fish populations are affected by a variety of factors in rivers and in the ocean, it is difficult to accurately estimate these adult fish returns. When an estimate is higher than actual returns, it can lead to over-harvesting of fish.

For instance in 2009, the states of Oregon and Washington estimated that about 300,000 spring chinook would pass Bonneville Dam on their way to the Upper Columbia and Snake Rivers (CRC 2009, 2008). In reality, less than one-half of the estimated number of fish passed Bonneville Dam in 2009. Harvest was cut short for tribes and sports fishers above Bonneville Dam to avoid overharvesting ESA-listed stocks.

- 3. Current harvest methods do not adequately protect depressed ESA-listed fish stocks.**

Current commercial harvest techniques do not allow for exclusive removal of non-ESA listed fish. Commercial fishers currently use monofilament gillnets that catch both wild and hatchery salmon in the Columbia River. Because these gillnets catch both hatchery and wild fish, ESA impact limits on wild fish are reached before the targeted numbers of hatchery fish are removed from the river.

Sport angling is more selective than commercial harvest, as these fishers can release caught wild fish. However, as sport angling does not allow for exclusive removal of non-ESA listed fish, it too is a mortality factor. Using more selective harvest methods would allow hatchery fish to be removed from the river while protecting wild fish.

Fish wheels and beach or purse seines allow fishers to capture fish then safely release wild fish back to the rivers. Additionally, moving to more selective fisheries is important in reducing the number of listed fish that are caught. Through regional power rates, the Bonneville Power Administration is currently funding evaluation of these selective fishery methods and techniques.

**References:**

Columbia River Compact (CRC) 2009. 2009 Joint Staff Report Stock Status and Fisheries for Spring Chinook, Summer Chinook, sockeye, Steelhead, and other Species and Miscellaneous Regulations. Oregon Department of Fish & Wildlife. Washington Department of Fish & Wildlife. Joint Columbia River Management Staff. January 26, 2009

CRC 2008. 2008 Joint Staff Report: Stock Status and Fisheries for Fall Chinook Salmon, Coho Salmon, Chum Salmon, Summer Steelhead, and White Sturgeon. Oregon Department of Fish & Wildlife. Washington Department of Fish & Wildlife. Joint Columbia River Management Staff. July 14, 2008.

Hatchery Science Review Group (HSRG) 2009. Columbia River Hatchery Reform System-Wide Report. February 2009. [http://hatcheryreform.us/mfs/reports/system/welcome\\_show.action](http://hatcheryreform.us/mfs/reports/system/welcome_show.action)