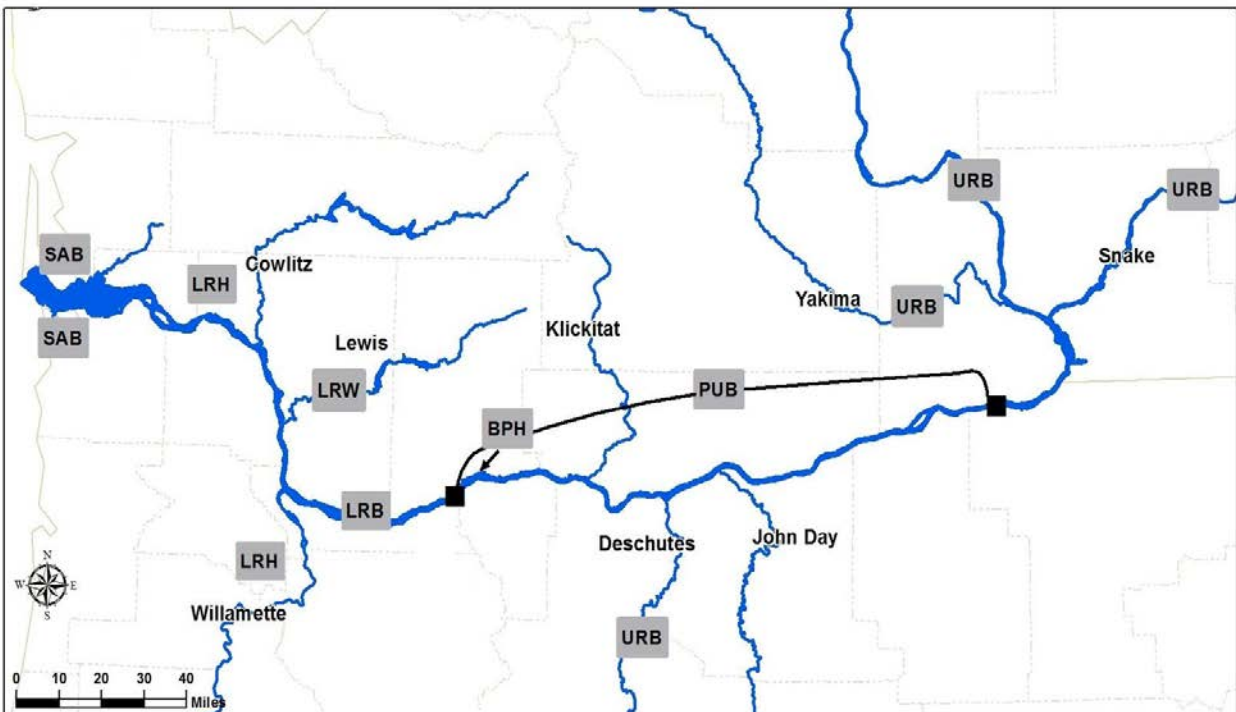


## Fall Chinook in the Columbia River

- Fall Chinook generally enter the Columbia River from late July through October with abundance peaking in the lower river from mid-August to mid-September and passage at Bonneville Dam peaking in early September.
- Columbia River fall Chinook are comprised of six major management components:
  - Lower River Hatchery (**LRH**) – tule stock
  - Lower River Wild (**LRW**) – bright stock
  - Select Area Bright (**SAB**) – bright stock
  - Bonneville Pool Hatchery (**BPH**) – tule stock
  - Upriver Bright (**URB**) – bright stock
  - Mid-Columbia Bright (**MCB**) – bright stocks
    - Pool Upriver Bright (**PUB**)
    - Lower River Bright (**LRB**)
- The upriver run is comprised of stocks produced upstream of Bonneville Dam, and includes URB, BPH, and a portion of MCB stocks.
  - Most of the **URB** Chinook are destined for the Hanford Reach area of the Columbia River, Priest Rapids Hatchery, and the Snake River.
  - Smaller URB components are destined for the Deschutes and Yakima rivers. Snake River wild (**SRW**) fall Chinook are a sub-component of the URB stock.
  - PUBs represent the upriver component within the MCB management stock.
    - **PUBs** are a bright stock reared at Little White Salmon, Umatilla, and Klickitat hatcheries and released in areas between Bonneville and McNary dams.
    - Natural production of fish derived from PUB stock is also believed to occur in the mainstem Columbia River below John Day Dam, and in the Wind, White Salmon, Klickitat, and Umatilla rivers.
  - The **BPH** stock is produced primarily at the Spring Creek Hatchery in the Bonneville Pool, although natural production of tules also occurs in the Wind, White Salmon, and Klickitat rivers.
- The lower river run is comprised of stocks produced downstream of Bonneville Dam, and include LRH, LRW, SAB and a portion of MCB (BUB and LRB) stocks.
  - The **LRH** stock is currently produced from hatchery facilities (four in Washington and two in Oregon).
    - Natural production of LRH stock occurs in most tributaries below Bonneville Dam.

- The **LRW** stock is naturally-produced primarily in the Lewis River system, with smaller components also present in the Cowlitz and Sandy rivers.
- The **LRBs** are a self-sustaining natural stock that spawns in the mainstem Columbia approximately three miles downstream from Bonneville Dam. The LRB stock is closely related to URBs and is thought to have originated from MCB or URB stock.
- **SABs** are a hatchery stock that originated from Rogue River fall Chinook stock egg transfers during 1982-1986. SABs are released from hatcheries and net pens located in Youngs Bay, OR.

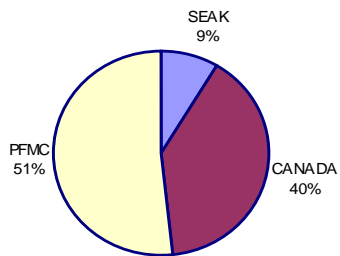


Major Columbia River Fall Chinook Stock Components and General Destination

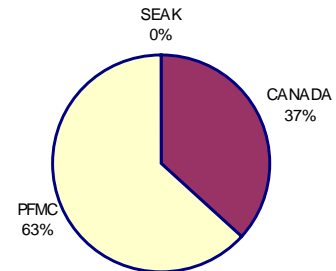
## Historical Fishery Contribution and Ocean Migration

- Tule stock migration occurs primarily off the Washington coast
- LRH and BPH are primary Chinook stocks that contribute to ocean fisheries
  - PFMC – Oregon and Washington coast
  - SEAK – Southeast Alaska

Washington Tules

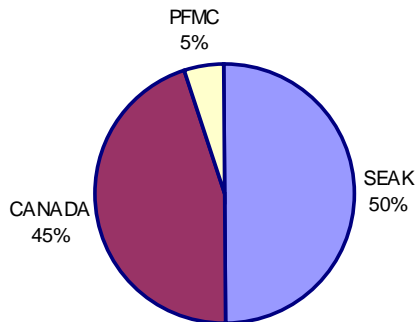


Bonneville Pool Tules

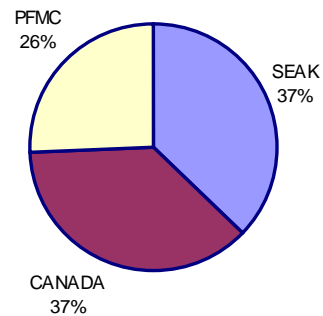


- Bright stock migration occurs much further north
- URB Chinook are major contributors to Alaska and Canadian fisheries
  - PFMC – Oregon and Washington coast
  - SEAK – Southeast Alaska

Upriver Bright



Lewis River Bright



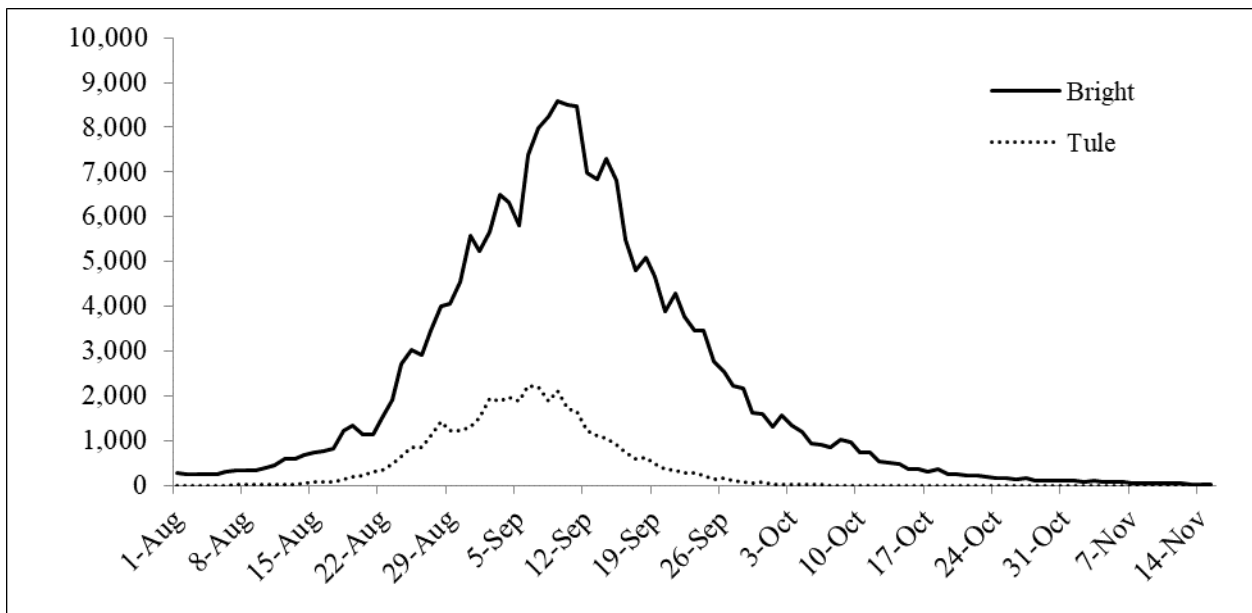
## Run Timing Differences

### Bright stock fall Chinook

- Have a broader migration timing than tule fall Chinook
- Peak spawn time is in November
- Less mature – more “ocean-like”

### Tule stock fall Chinook

- Shorter migration timeframe than the bright Chinook
- Peak spawn time is late September to early October
- More mature when they enter freshwater



Ten-year Average Run Timing of Fall Chinook over Bonneville Dam (2009-2018).