**Fish Ecology Notes**

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|  | | **Anadromous**   * Freshwater 🡺 Estuary 🡺 Marine 🡺 Estuary 🡺 Freshwater * **Q: Why do they have to stop in estuarine habitat on the way out to sea and the way back?** |
|  | | **Habitat**   * Freshwater 🡺 Estuary 🡺 Marine 🡺 Estuary 🡺 Freshwater   **Riparian Fresh & Salt Fresh & Raparian**  **Creek Salt Mixed Salt Mixed Creek** |
| **5 Native Species of Salmon:**  *Chinook*, *Chum*, *Pink*, *Coho*, *Sockeye*   |  |  |  |  | | --- | --- | --- | --- | | **Chinook** | **Coho** | **Steelhead TROUT** | **Rainbow trout** | | * *[Chinook Salmon Ocean and Spawning Stage]Chinook are the largest of the 5 native Pacific Salmon species. They are also called “King” Salmon.* * *Winter-run: Federally and State listed* ***Endangered*** * *cohomaleSpring-run: Federally and State listed* ***Threatened*** | * *Coho salmon are no longer present in the Central Valley Rivers (****extirpated****).* * *Federally Threatened* * *State Endangered* | * *Steelhead and Rainbow trout are the same species of fish. If they become* ***anadromous****, they are steelhead, if food is abundant in their river, they will remain resident and are* * *Federally threatened*   stlhmale | If the fish **stay** in it’s freshwater home river and leads a **non-anadromous** life, it is a Rainbow trout.  If the fish travels to the ocean and becomes anadromous, it becomes a Steelhead  ***Steelhead will convert to rainbow trout if:***   * ***It’s a drought year*** * ***Their river becomes blocked*** * ***There is* ample food *in the stream***   **WHAT IS THE BENEFIT:** *This allows for this species to be more* ***adaptable*** *to* ***changing*** *environmental* | | | |
|  | **Migration**  ***What is it****:*  *Best described by a series of traits:*  1.*Persistent prolonged* ***movement***  2.***Undistracted*** *by usual stimuli (e.g. food, mates)*  3.*Distinct* ***departure*** *and* ***arrival*** *behavior*  4.*Reallocation of* ***energy*** *in advance of migration*  ***Energy - How do Salmon Power their Migration?***   * *ocean_estuary_stations.jpgEarly in migration: use mostly* ***fat*** * *Later in migration: fat is depleted, use protein from breaking down (****catabolizing****) their gut, then white* ***muscle****. Protect red muscle and heart.*   salmon migration chart.jpg  ***Why don’t all the salmon migrate to the same place?***  ***What 2 factors help them know where to go? (***http://www.youtube.com/watch?v=5DqjsWsY8-g***)***  *1)*  *2)*  ***Debbie Downer:*** *Salmon are more imperiled in California than any other western state. Salmon are vital to California’s ecology and economy, including a $1.5 billion commercial and recreational fishing industry. One of the key threats is a lack of information on the number of spawning salmon in California coastal waters. (*[*Ref*](http://blog.nature.org/science/2013/10/14/salmon-fish-trout-shasta-cam/)*)* | |