**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?**
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|  | **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*

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| **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* |

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|  | **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/)*)* |