

**An Evaluation of Electro-Anesthesia Techniques using  
Adult Spring Chinook Salmon at Carson National Fish Hatchery**

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During hatchery spawning activities, carbon dioxide and MS-222 have a long history of use as anesthetics. However, both have drawbacks. Carbon dioxide can cause spasms injuring fish, and MS-222 requires a 21-day waiting period before any treated fish can be released to the wild (because of carcinogenic concerns). The objective of this study was to evaluate the use of electro-anesthesia as an alternative to MS-222. Spring chinook salmon spawners at Carson National Fish Hatchery (Carson, WA) were exposed to either electro-anesthesia or MS-222 and monitored for visible injuries, viable egg size, fertilization rate, gamete quality, survival to hatching, and growth effects on juveniles. The effects of multiple exposures were also examined. No significant effects of electro-anesthesia treatment were detected on either spawning fish or their progeny. Electro-anesthesia appears to be a viable and efficient means of sorting and spawning adult spring chinook salmon.