

State of California
Fish and Game Commission
Finding of Emergency and Statement of Proposed Emergency Regulatory Action

Emergency Action to Amend Sections 5.79, 5.80, 27.90, and 27.92
Title 14, California Code of Regulations
Re: White Sturgeon Catch and Release

Date of Revised Statement: October 27, 2023

Throughout this document, Department or CDFW refer to the California Department of Fish and Wildlife and Commission refers to the California Fish and Game Commission. Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

I. Statement of Facts Constituting the Need for Emergency Regulatory Action

Background

White Sturgeon Sport Fishing

White Sturgeon (*Acipenser transmontanus*) are an anadromous species of fish that reside primarily in the San Francisco Bay Delta (SF Bay) and migrate as adults into the major rivers of the Central Valley to spawn. Most spawning occurs in the Sacramento River between Verona and Colusa (Schaffter 1997), with a lesser amount of spawning on the lower San Joaquin River (Jackson et al. 2015). Some additional spawning may occur in tributaries such as the Feather, Bear, and Yuba rivers. White Sturgeon are long lived, potentially in excess of 100 years, with most reaching maturity by approximately 19 years, spawning every two to five years once mature (Chapman et al. 1996; Hildebrand et al. 2016). Successful recruitment to the adult population is uncommon, occurring approximately every six to seven years, highly correlated with above normal water years as measured by high mean daily Delta outflow (CDFW 2023; Fish 2010). The abundance of legal-sized White Sturgeon has declined considerably since the 1980s, when abundance was estimated to be approximately 175,000 fish (CDFW 2023; Danos et al. 2019). In 2015, the Department estimated abundance at about 48,000 fish (Danos et al. 2019), and the most recent estimate was about 33,000 fish (CDFW 2023).

At present, recreational anglers can keep one White Sturgeon per day, and a combined total of three per year, between 40 and 60 inches (in.) fork length, meaning the measurement of the fish from the front of its head to the fork in its tail. The season is open year-round, with some limited regional and/or seasonal closures. Fishing pressure for White Sturgeon has remained stable at roughly 40,000 to 45,000 anglers per year since 2013 when fees were first charged for the Sturgeon Fishing Report Card (Card). Based on Card returns, the number of fish harvested by anglers has remained relatively stable. The number of fish caught and released, however, has declined precipitously, indicating that fewer fish overall are being caught. According to Card data, in 2021, anglers kept 46% of landed fish (Hause et al. 2021). The majority of anglers that harvest

fish keep only one a year (75%), with only about 5% of anglers that harvest (1% of Card-holders) keeping the full three-fish limit. Exploitation rate of White Sturgeon is estimated to be very high, ranging from 8 to 29.6% between 2007 and 2015 (Blackburn et al. 2019). It is suggested that the highest exploitation rate that a White Sturgeon population can sustain is approximately 5 to 10% (Beamesderfer and Farr 1997). For comparison, Washington and Oregon use less than 4% as a target for management in areas that permit harvest.

During July and August 2022, the San Francisco Bay region experienced a major Harmful Algal Bloom (HAB) of *Heterosigma akashiwo* that resulted in significant mortality of fishes, including sturgeon. The Department recorded over 850 sturgeon carcasses, the majority legal-sized or larger and within the age range of the core spawning population (CDFW 2023). The number of carcasses observed during the HAB was 62% of the number harvested by anglers in 2022. Based on carcass studies and fish kills of other species of sturgeon, it is thought that only a small percentage of the fish killed floated long enough to be detected (Fox et al. 2020). While the absolute magnitude of the HAB's impact on the White Sturgeon population is unknown, it is thought to be quite significant. In addition, in July and August of 2023, a HAB of the same species was detected in San Francisco Bay and at least 15 White Sturgeon carcasses were reported, though the total impacts are unknown.

The fish kill resulting from the HAB has exacerbated what the Department believes to be an already unsustainable level of fishery exploitation of White Sturgeon into a crisis situation. To protect the surviving population of White Sturgeon and maintain a recreational fishery into the future, immediate steps are necessary to reduce angler associated harvest of adult White Sturgeon and to minimize harassment and handling on the spawning grounds so that these adults can spawn successfully, and new individuals can recruit to the population. The Department is recommending harvest of White Sturgeon within the recreational fishery be sharply reduced until new regulations can be developed that will limit exploitation to sustainable rates based on monitoring. Because the overall impacts of the HAB on the population is unknown, but considered to be significant to the adult spawning population, the reduction in harvest will increase the ability for adult survival and spawning opportunity. The Department believes this is a necessary interim change to the regulation while updated management measures that will allow future populations to persist are being developed.

Under the proposed regulation, take will still be permitted to anglers that purchase a Sturgeon Report Card but harvest will be limited by 1) reduction of the legal slot limit, 2) reduction of the annual bag limit, 3) adding a vessel limit of two fish per day, and 4) protecting critical migrating and spawning behavior via a seasonal and geographic closure of river habitat. Take via catch and release angling will be permitted after anglers reach their annual harvest limit to promote recreational angling opportunities. White Sturgeon are known to handle catch and release fishing with minimal adverse impacts except during spawning season when additional stress of catch can cause fish to abort spawning activities.

Sturgeon Report Cards will continue to be required. Report Cards are an important tool for the Department to gather data on the existing sturgeon population. Length information on all sturgeon caught provides the Department with data on the size structure of the population. It also provides

information on the number of legal-sized fish that are voluntarily released (during a harvest fishery), which helps us better understand angler attitudes/behavior. The Department will use these data to track cohorts as they grow, which can inform future harvest regulations. This demographic information is integral to a management strategy for White Sturgeon in California.

Proposed Emergency Regulations

In response to this emergency situation, this proposed regulatory action amends sections 5.79, 5.80, 27.90, and 29.72, Title 14, CCR, which describe report card and tagging requirements, and seasons and bag limits for White Sturgeon sport fishing in inland waters.

Subsection 5.79, White Sturgeon Report Card and Tagging Requirements for Inland Waters

The emergency regulations will amend White Sturgeon report card and tagging requirements for inland waters in the following subsections:

- All subsections: White Sturgeon has been capitalized for consistency throughout the regulation.
- Subsection (b): Edit text to reflect that report cards will come with only one tag rather than three. Add subsections (7) and (8) to clarify when anglers can continue to fish catch and release after harvesting a fish. Anglers will not be permitted to fish catch and release the same day they harvest a fish in order to prevent 1) take over the daily possession limit and 2) “high grading” (holding a fish in captivity while continuing to fish in the hopes of catching a larger individual).
- Subsection (c)(1): Add a requirement for anglers to report length of caught fish. This is necessary to provide more data availability on the nature of size to inform future management options related to age.
- Subsection (c)(2): Remove the current language that tells anglers if all lines on the card are filled, any additional sturgeon caught and released do not need to be recorded, and replace with language guiding anglers to report additional sturgeon caught and released on the back of the card. This is necessary in order to track fishing pressure and success. It is valuable to track all fish caught by anglers and this should not be restricted simply by the size of the printed card. This type of data allows the Department to form a better understanding of the fishery as we plan long-term regulations for the fishery.

Section 5.80, White Sturgeon

The emergency regulations will amend the White Sturgeon open season and daily and annual bag limit in the following subsections:

- All subsections: White Sturgeon has been capitalized for consistency throughout the regulation.
- Subsection (a); from the west Carquinez Bridge east to the Hwy 50 bridge on the Sacramento River and the I-5 bridge on the San Joaquin River the fishing season will remain open all year. Above the Hwy 50 bridge on the Sacramento River and the I-5 bridge on the San Joaquin River, including all tributaries of both rivers, fishing will be allowed from

June 1 through December 31 and all fishing for sturgeon will be unlawful from January 1 to May 31. This is necessary to maintain recreational fishing, which has economic and cultural benefits, while preventing additional mortality of the impacted White Sturgeon population and minimizing harassment and handling of migrating and spawning individuals. White Sturgeon are known to handle catch and release fishing with minimal adverse impacts except during migration and spawning season when additional stress of catch can cause fish to abort spawning activities.

- Subsection (b), now (b) and (c); Divide this subsection so there are individual sections for daily and annual limits. This will allow unambiguous clarification of when catch and release angling is permitted. Change the annual bag limit of “three fish per year statewide” to “one fish per calendar year statewide”. This is necessary to reduce harvest of White Sturgeon in inland waters to ensure protection of the population impacted by the HAB-induced fish kill and provide protection during migration and spawning.
- Add subsection (d); add vessel daily limit of two fish per day per vessel, regardless of how many sturgeon report card holders are on board. This will help reduce the daily amount of harvest associated with multi-angler vessels, both private and professional, and should contribute to less overall harvest of the adult population.
- Subsection (c), now (e): change the minimum legal size from 40 to 42 in. fork length and the maximum size from 60 to 48 in. fork length. Reducing the slot limit to target a lower size range of adults is expected to reduce overall harvest and provide more protection of the larger, most reproductively valuable fish in the population.
- Subsections (e) through (l) will need to be re-lettered to account for the splitting of subsection (b) and the addition of subsection (d) daily vessel maximum harvest.

Section 27.90, White Sturgeon

These regulations refer to areas west of the Carquinez Bridge, which fall under the jurisdiction of marine fisheries. The emergency regulations will amend the White Sturgeon open season and daily and annual bag limit in the following subsections:

- All subsections: White Sturgeon has been capitalized for consistency throughout the regulation.
- Subsection (a): west of the Carquinez Bridge, angling will be allowed all year, except as described in Section 27.95. This note has been added to explicitly draw attention the existing seasonal closure in San Francisco Bay.
- Subsection (b), now (b) and (c); Divide this subsection so there are individual sections for daily and annual limits. This will allow unambiguous clarification of when catch and release angling is permitted. Change the annual bag limit of “three fish per year statewide” to “one fish per calendar year statewide”. This is necessary to reduce harvest of White Sturgeon in marine waters to ensure protection of the population impacted by the HAB-induced fish kill and provide protection during migration and spawning.
- Add subsection (d); add vessel daily limit of two fish per day per vessel, regardless of how many sturgeon report card holders are on board. This will help reduce the daily amount of harvest associated with multi-angler vessels, both private and professional, and should contribute to less overall harvest of the adult population.

- Subsection (c), now (e): change the minimum legal size from 40 to 42 in. fork length and the maximum size from 60 to 48 in. fork length. Reducing the slot limit to target a lower size range of adults is expected to reduce overall harvest and provide more protection of the larger, most reproductively valuable fish in the population.
- Subsections (c) through (h) will need to be re-lettered to account for the splitting of subsection (b) and the addition of subsection (d) daily vessel maximum harvest .

Subsection 27.92, White Sturgeon Report Card and Tagging Requirements for Ocean Waters

The emergency regulations will amend White Sturgeon report card and tagging requirements for ocean waters in the following subsections:

- All subsections: White Sturgeon has been capitalized for consistency throughout the regulation.
- Subsection (b): Edit text to reflect that report cards will come with only one tag rather than three. Add subsections (7) and (8) to clarify when anglers can continue to fish catch and release after harvesting a fish. Anglers will not be permitted to fish catch and release the same day they harvest a fish in order to prevent 1) take over the daily possession limit and 2) “high grading” (holding a fish in captivity while continuing to fish in the hopes of catching a larger individual).
- Subsection (c)(1), now subsection (b)(1); add a requirement for anglers to report length of caught fish to provide more data availability to inform future management options. Subsection (c)(2), now subsection (b)(2); remove the current language that tells anglers if all lines on the card are filled any additional sturgeon caught and released do not need to be recorded and replace with language guiding anglers to report additional sturgeon caught and released on the back of the card. This is necessary in order to track fishing pressure and success. It is valuable to track all fish caught by anglers and this should not be restricted simply by the size of the printed card. This type of data allows the Department to form a better understanding of the fishery as we plan long-term regulations for the fishery.

II. Findings for the Existence of an Emergency

The Commission considered the following factors in determining that an emergency does exist at this time:

The magnitude of potential harm:

During July and August 2022, the SF Bay region experienced a major HAB of *Heterosigma akashiwo* that resulted in significant mortality of fishes, including both White and Green Sturgeon. The unprecedented fish kill resulting from the 2022 HAB killed at least 850 sturgeon, primarily White Sturgeon (CDFW 2023). Of these carcasses, 86% were legal-sized or greater, representing mature, spawning broodstock (CDFW 2023). This estimate represents the minimum mortality experienced, which may have been an order of magnitude greater based on data from other sturgeon populations. This added mortality from the HAB was equivalent to 62% of the mortality due to harvest in 2022. The abundance of legal-sized White Sturgeon has already declined

considerably in the past forty years, and the HAB fish kill has exacerbated the situation considerably. Abundance was estimated to be approximately 175,000 legal-sized fish in the 1980s (Danos et al. 2019). The Department's most recent population estimate of White Sturgeon was around 33,000 fish. Without knowledge of the true size of the population reduction resulting from the HAB fish kill, it could be a considerable portion of the population.

The existence of a crisis situation:

As stated above, following the 2022 HAB, the Department recorded over 850 sturgeon carcasses, 86% of which were at least legal-sized while 30% were over-sized fish (CDFW 2023). Based on carcass studies and fish kills of other species of sturgeon, it is thought that only a small percentage of the fish killed floated long enough to be detected (Fox et al. 2020). The absolute magnitude of this impact on the White Sturgeon population is unknown, but is thought to be quite significant. Based on fishery data, the White Sturgeon population was already overexploited under current regulations and revised regulations were needed and were being considered. The mortality from the 2022 fish kill elevated an unsustainable situation into a crisis.

The immediacy of the need:

Immediate steps are necessary to reduce harvest of White Sturgeon and allow the remaining population to spawn after the die-off. Take of White Sturgeon peaks in the fall and winter, so individuals are at risk if action is not taken quickly. The Department is also concerned about increased take of fish due to anticipatory harvest occurring while emergency regulations are formalized and permanent regulations are developed. Harassment and handling must be minimized on White Sturgeon spawning grounds to ensure new individuals are recruiting to the population in order to maintain a recreational fishery in the future. These steps will protect the population while long term fishery changes are implemented, reducing fishery mortality and protecting spawning. Furthermore, In July and August 2023, a new HAB of the same species formed in the Northern San Francisco Bay. As of mid-August, 15 White Sturgeon carcasses and one Green Sturgeon carcass have been reported. It is imperative that we act to mitigate anthropogenic sturgeon mortality during this or future HAB events. These steps will protect the population while long term fishery changes are implemented, reducing fishery mortality and protecting spawning.

Whether the anticipation of harm has a basis firmer than simple speculation:

The Department has monitored the White Sturgeon population since the 1950s, focusing primarily on abundance of legal-sized fish that are targeted in the fishery. Records indicate that the population has declined substantially from ~175,000 legal sized in the 1980s to ~33,000 in the most recent estimate. The historic SF Bay fish kill in 2022 is also known to have killed a large number of mature, spawning-age sturgeon though the absolute magnitude of that impact is unknown. Harvest of the adult population is known to be high, routinely exceeding exploitation rates recommended in the scientific literature and used by other natural resource agencies of management. Recruitment in the population is known to be poor, infrequent, and closely associated with above normal water years, making it difficult for the species to recover from overharvest. Under current environmental and management conditions, the White Sturgeon

population cannot handle the current rate of exploitation and is not sustainable. Long-term permanent regulation changes are needed to limit harvest to sustainable levels. Until new regulations are in place, the changes presented here will limit the harvest of White Sturgeon and reduce fishery related impacts to the population, while still offering recreational fishing opportunities to anglers.

III. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State

None. No costs or savings to state agencies or costs/savings in federal funding to the state are anticipated. The Department's existing level of monitoring and enforcement activities is expected to be unchanged by this emergency action. However, the Department anticipates a reduction in White Sturgeon Report Cards sales revenue estimated to be (-\$23,633) over the 180-day emergency period in fiscal year 2023-2024.

(b) Nondiscretionary Costs/Savings to Local Agencies

None.

(c) Programs Mandated on Local Agencies or School Districts

None.

(d) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code

None.

(e) Effect on Housing Costs

None.

IV. Technical, Theoretical, and/or Empirical Studies, Reports, or Documents Relied Upon:

The Department relied on the following documents in proposing this emergency rulemaking action:

California Department of Fish and Wildlife (CDFW). 2023. White Sturgeon 2023 Emergency Regulation Change: Supporting Material. California Department of Fish and Wildlife, Fisheries Branch, West Sacramento, California.

Danos, A., J. DuBois, R. Baxter, J. T. Kelly, and M. L. Gingras. 2019. White Sturgeon, *Acipenser transmontanus*, Enhanced Status Report. California Department of Fish and Wildlife. <https://marinespecies.wildlife.ca.gov/white-sturgeon/>

Hause, C. L., C. Parker, D. Kratville, D. Stompe, J. A. Hobbs, and J. T. Kelly. 2023. Sturgeon Fishing Report Card: 2022 Summary Data Report. California Department of Fish and Wildlife, West Sacramento, California. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=213586>

Hause, C. L., C. Parker, D. Kratville, D. Stompe, J. A. Hobbs, and J. T. Kelly. 2022. Sturgeon Fishing Report Card: 2021 Summary Data Report. California Department of Fish and Wildlife, West Sacramento, California. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=202750>

V. Documents Providing Background Information

Beamesderfer, R. C. P., and R. A. Farr. 1997. Alternatives for the protection and restoration of sturgeons and their habitat. *Environmental Biology of Fishes* 48:407–417.

Blackburn, S. E., M. L. Gingras, J. DuBois, Z. J. Jackson, and M. C. Quist. 2019. Population Dynamics and Evaluation of Management Scenarios for White Sturgeon in the Sacramento–San Joaquin River Basin. *North American Journal of Fisheries Management* 39(5):896–912.

Chapman, F. A., J. P. Van Eenennaam, and S. I. Doroshov. 1996. The reproductive condition of white sturgeon, *Acipenser transmontanus*, in San Francisco Bay, California. *Fishery Bulletin* 94:628–634.

Fish, M. A. 2010. White Sturgeon Year-Class Index for the San Francisco Estuary and its Relation to Delta Outflow. *IEP Newsletter* 23(2):80–84.

Fox, D. A., E. A. Hale, and J. A. Sweka. 2020. Examination of Atlantic Sturgeon Vessel Strikes in the Delaware River Estuary: Final Report. NOAA-NMFS Award No. NA16NMF4720357.

Halvorson, L. J., B. J. Cady, K. M. Kappenman, B. W. James, and M. A. H. Webb. 2018. Observations of handling trauma of Columbia River adult white sturgeon, *Acipenser transmontanus* Richardson, 1836, to assess spawning sanctuary success. *Journal of Applied Ichthyology* 34(2):390–397.

Hildebrand, L. R., A. Drauch Schreier, K. Lepla, S. O. McAdam, J. McLellan, M. J. Parsley, V. L. Paragamian, and S. P. Young. 2016. Status of White Sturgeon (*Acipenser transmontanus* Richardson, 1863) throughout the species range, threats to survival, and prognosis for the future. *Journal of Applied Ichthyology* 32:261–312.

Jackson, Z. J., J. J. Gruber, and J. P. Van Eenennaam. 2015. White Sturgeon Spawning in the San Joaquin River, California, and Effects of Water Management. *Journal of Fish and Wildlife Management* 7(1):171–180.

Lamansky, J. A., K. A. Meyer, J. M. DuPont, B. J. Bowersox, B. Bentz, and K. B. Lepla. 2018. Deep hooking, landing success and gear loss using inline and offset circle and J hooks when bait fishing for white sturgeon. *Fisheries Management and Ecology* 25(2):100–106.

Schaffter, R. G. 1997. White sturgeon spawning migrations and location of spawning habitat in the Sacramento River, California. *California Fish and Game* 83(1):1–20.

VI. Authority and Reference

Authority cited: Sections 200, 205, 265, 270, 315, 316.5, 399 and 2084, Fish and Game Code.
Reference: Sections 200, 205, 265, 270, 316.5 and 2084, Fish and Game Code.

VII. Fish and Game Code Section 399 Finding

In accordance with subdivision (a) of section 399 of the Fish and Game code, the Commission finds that adopting this regulation is necessary for the immediate conservation, preservation, or protection of adult White Sturgeon during the State of Emergency proclaimed to exist in California and directs state officials to take immediate action to prepare for and mitigate the effects of HAB-induced White Sturgeon mortality.

Informative Digest/Policy Statement Overview

White Sturgeon (*Acipenser transmontanus*) are a species of fish native to California which live primarily in the San Francisco Bay Delta and migrate to the rivers of the Central Valley to spawn. White Sturgeon live potentially more than 100 years. Most reach sexual maturity by approximately 14-15 years of age and spawn every 2-5 years once mature. It is rare for larval sturgeon to survive to adulthood; successful broods occur every 6-7 years and are associated with above-average water flow in the Delta. The population of White Sturgeon has declined considerably in the last forty years. In the 1980s, the abundance of adult White Sturgeon was estimated to be 175,000 fish. The Department's most recent estimate is about 33,000 fish.

Currently, recreational anglers can keep one White Sturgeon 40-60 inches long per day and a total of three per year. The season is year-round, with some limited exceptions. Since the Department established its Sturgeon Fishing Report Card (Card) in 2013, about 40-45,000 recreational anglers have purchased cards every year. Based on data gathered from Cards, the number of fish kept by anglers has remained steady, but the number of fish caught and released has declined significantly, which indicates that fewer fish overall are being caught. The exploitation rate of White Sturgeon is estimated to be very high in California, between 8 and 30% since 2007. The sustainable exploitation rate of White Sturgeon is likely 5-10%. The Department believes that the current exploitation rate of sturgeon is unsustainable, and has been investigating ways to better manage the population.

The unsustainable exploitation rate of White Sturgeon was exacerbated to a crisis in 2022, when the San Francisco Bay experienced a major Harmful Algal Bloom that resulted in significant mortality of many fishes, including White Sturgeon. The Department recorded over 850 sturgeon carcasses, the majority legal-sized or larger. Based on carcass studies and fish kills of other species of sturgeon, it is thought that only a small percentage of the fish killed floated long enough to be detected. The absolute magnitude of this impact on the White Sturgeon population is unknown, but is thought to be quite significant.

Immediate steps are necessary to sharply reduce harvest of White Sturgeon to protect the surviving population in the aftermath of this unprecedented fish kill. Harassment and handling of fish must be reduced on their spawning grounds to allow current adults to spawn successfully, ensuring a recreational fishery into the future. Harvest of White Sturgeon within the recreational fishery should be reduced effective immediately via restrictions on bag limit, legal size, and fish that can be landed per boat, until new regulations can be developed that will limit exploitation to sustainable rates based on monitoring. Catch-and-release fishing would also still be permitted to anglers that have harvested a fish that year.

Benefits of the Regulation:

This harvest reduction will protect the remaining broodstock while new permanent regulations are developed, providing opportunity for surviving fish to spawn unmolested. A limited harvest fishery and ongoing opportunities to catch-and-release fish for White Sturgeon will provide recreational opportunities to anglers, though with seasonal spawning sanctuaries in the rivers to protect this

critical behavior. Evidence from successful recreational fisheries on the Columbia, Snake, and Fraser rivers indicate that the species tolerates catch-and-release angling well.

Consistency and Compatibility with Existing Regulations

Article IV, Section 20 of the State Constitution specifies that the Legislature may delegate to Commission such powers relating to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated to the Commission the power to regulate sport fishing in waters of the state (Fish and Game Code sections 200, 205, 315 and 316.5). The Commission has reviewed its own regulations and finds that the proposed regulations are consistent with other recreational fishing regulations in Title 14, CCR, and therefore finds that the proposed regulations are neither inconsistent nor incompatible with existing state regulations. The Commission has searched the California Code of Regulations and finds no other state agency regulations pertaining to temporarily prohibiting harvest of White Sturgeon due to population decline.