2014 Sturgeon Fishing Report Card: Preliminary Data Report

Jason DuBois and Michael D. Harris

California Department of Fish and Wildlife Bay Delta Region 2109 Arch-Airport Road, Suite 100 Stockton, CA 95206

10 Feb 2015

Summary

Approximately 49,260 2014 Sturgeon Fishing Report Cards (Cards) were issued. This report was written 5-Feb-2015 using information from the 9,566 Cards that had been received from anglers (5,231 via the Internet and 4,335 via mail) by that date.

Most catch of sturgeon (both species) was in the Sacramento River from Rio Vista to Chipps Island and in Suisun Bay. Anglers reported the release of 154 Green Sturgeon, retention of 1,894 White Sturgeon, and release of 3,768 White Sturgeon. As has been the case since 2007, about 50% of the anglers who fished for sturgeon were not successful and successful anglers retained on average less than half the annual bag limit of three White Sturgeon.

Anglers reported fork length measurements for 50 Green Sturgeon (range 10-84 inches, average 32 inches). Of the White Sturgeon retained, anglers reported fork length measurements for 1,884 fish (range 40-60 inches, average 50 inches). Of the White Sturgeon released, anglers reported a length measurement for 1,482 fish (range 1-108 inches, average 42 inches).

Introduction

This report summarizes data from the 2014 California Sturgeon Fishing Report Card (Card). The Card is part of a suite of sport fishing regulations that are intended to protect California's year-round White Sturgeon fishery while increasing protections for the federally-threatened Green Sturgeon population and adding resiliency to the conservation-dependent White Sturgeon population.

The 2014 Card was distributed to any angler for a fee of \$8.13 exclusively through the Automated License Data System (ALDS) and was required of every angler — including minors, anglers fishing only from piers, and anglers fishing on 'free fishing' days — to fish for or retain a sturgeon in California.

Cards included fields for contact information, retained White Sturgeon, and released White Sturgeon (Appendix 1). To aid the Department's efforts to reduce illegal commercialization of sturgeon and to enforce the daily and annual bag limits on White Sturgeon, the Cards also included detachable single-use serially-numbered Card-specific tags to be placed on White Sturgeon retained by anglers.

Information on catch of sturgeon from 2014 Cards is complementary to on-going research and monitoring conducted by the Department (including application of disk-tags to wild fish) and others and will be used in planned articles and technical reports.

Card Distribution and Return

Approximately 49,260 2014 Cards were issued to anglers. Anglers began returning Cards (on-line or via mail) almost immediately after distribution. Cards returned after preparation of this report began are not described here (cutoff date 05-Feb-2015).

Nine thousand five hundred sixty-six (9,566) Cards were returned. Of the Cards returned, 4,782 had no data (effort but no catch; 2,589 via the Internet and 2,163 via mail), 2,626 indicated no fishing effort (did not fish; 1,614 via the Internet and 1,012 via mail), and 2,158 (1,028 via the Internet and 1,130 via mail) had data on sturgeon catch.

Angler Data

The Card included fields for general, personal, and contact information (Appendix 1), but those data are not summarized here.

Catch Data

The Card contained three sections for reporting sturgeon catch: (1) Sturgeon Retained, (2) Sturgeon Released (no reward disk present), and (3) Sturgeon Released (reward disk present). See Appendix 1.

Recapture of disk-tagged fish — Twenty-seven (27) anglers each caught one disk-tagged White Sturgeon or disk-tagged unidentified sturgeon (Table 1). No disk-tagged Green Sturgeon were reported.

Table 1. Angler-reported tag recaptures from 2014 Cards with corresponding CDFW tagging data; table sorted by date tagged

Angler-reported Tag Recaptures CDFW Tagging Data Fork Days at Fork Date Tag Date large Location Species Retained Length Species Length (2014)Tagged Number (inches) (inches) 12-Apr San Pablo Bay Unknown No 80 ST10785 2-Oct-97 White 45 6.036 20-Mar Sacramento River: Knights Landing to Rio Vista Unknown No NA FF874 29-Oct-02 White 51 4,160 1-Nov Sacramento River: Rio Vista to Chipps Island White Yes 59 HH1007 23-Aug-06 White 58 2,992 2.600 7-Nov San Joaquin River: Stockton to Sherman Lake White Yes 53 FF1550 25-Sep-07 White 48 28-Nov NA 41 2,601 Grizzly Bay Unknown No HH1263 15-Oct-07 White 4-Dec NA 45 1.576 Yolo Bypass Unknown No HH1832 White 11-Aug-10 28-May 42 Suisun Bay No NA HH1900 20-Sep-10 1,346 Unknown White 2-Nov Sacramento River: Rio Vista to Chipps Island Unknown No NA FF1902 20-Sep-10 White 46 1.504 24-Dec 52 Sacramento River: Knights Landing to Rio Vista White Yes HH2001 1-Aug-11 White 51 1,241 47 36 2-Nov Sacramento River: Knights Landing to Rio Vista White Yes FF2127 White 1.526 29-Aug-11 16-Feb Suisun Bay White Yes 55 HH2180 White 52 558 7-Aug-12 18-Apr Montezuma Slough White Yes 50 HH2210 17-Sep-12 White 45 578 56 22-Mar Suisun Bay White Yes ST13213 18-Sep-12 White 53 550 28-Mar Sacramento River: Rio Vista to Chipps Island White Yes 45 FF2112 8-Oct-12 White 44 536 43 37 21-Jun San Joaquin River: HWY 140 bridge to Stockton No HH2218 17-Oct-12 White 612 Unknown 27-Dec Sacramento River: Rio Vista to Chipps Island Unknown No NA ST12954 17-Sep-13 White 49 466 5-Mar San Pablo Bay Unknown No NA FF1958 19-Sep-13 White 39 167 29-Dec Montezuma Slough 40 ST13123 White 37 432 23-Oct-13 5-Dec Suisun Bay NA ST13254 37 66 Unknown No 30-Sep-14 White 22-Oct Suisun Bay White Yes 55 50.00 Suisun Bay 59 1799 27-Apr Suisun Bay Unknown No 50 952052486

Yes

Yes

Yes

No

59

54

59

59

54

1802

2466

2018

952052488

White

White

White

White

Unknown

Sacramento River: Rio Vista to Chipps Island

Sacramento River: Knights Landing to Rio Vista

NA = not available

Suisun Bay

Old River

14-Mar

24-Dec

5-Nov

8-Mar

³⁻May Montezuma Slough
- = Cannot determine with information supplied

Catch — Anglers reported releasing 154 Green Sturgeon, releasing 3,768 White Sturgeon, and retaining 1,894 White Sturgeon (Table 2). Forty-nine (49) released sturgeon were not identified to species.

Table 2. White Sturgeon and Green Sturgeon catch reported on 2014 Cards

		White Sturgeon	Green Sturgeon	Unidentified Sturgeon	Overall Total
	Measured	1,884	NA	0	1,884
Retained	Not Measured	10	NA	0	10
	Total	1,894	NA	0	1,894
	Measured	1,482	50	4	1,536
Released	Not Measured	2,286	104	45	2,435
	Total	3,768	154	49	3,971
	Overall Total	5,662	154	49	5,865

One thousand four hundred forty-eight (1,448) anglers reported retaining White Sturgeon (Table 3; average of 1.3 sturgeon). Sixty-seven (67) anglers retained the limit of three White Sturgeon.

One thousand one hundred seventy-eight (1,178) anglers reported releasing White Sturgeon (Table 3). Of those anglers, 77 each released 10-30 fish and (not included in this report) four each released > 30 fish.

One hundred twenty (120) anglers reported releasing Green Sturgeon (Table 3; average of 1.3 sturgeon). Of those anglers, 20 each released 2-5 fish and one reported releasing seven fish.

Table 3. Summary statistics for per-angler catch from 2014 Cards with catch data

	Number of Anglers	Number of Sturgeon	Maximum Number of Sturgeon per Angler	Average Number of Sturgeon per Angler
Retained White Sturgeon	1,448	1,894	3	1.3
Released White Sturgeon	1,178	3,768	30	3.2
Green Sturgeon	120	154	7	1.3
Unidentified Sturgeon	28	49	6	1.8

Far and away most of the successful White Sturgeon anglers caught 1-2 fish (Figure 1). Two hundred sixteen (216¹) anglers retained and released White Sturgeon on the same day. The number of White Sturgeon voluntarily conserved could not be calculated, because the length of sturgeon released was not a required field on the Card.

Page 4 of 14

¹ Of the 216 anglers, two retained and released White Sturgeon on three separate days, 27 retained and released White Sturgeon on two separate days, and 187 retained and released White Sturgeon on one day.

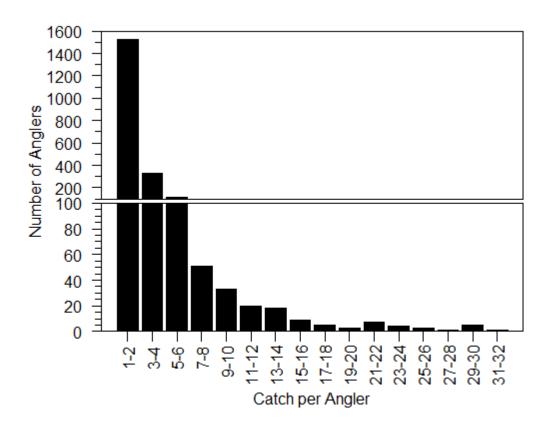


Figure 1. Frequency distribution of White Sturgeon catch per angler as reported on 2014 Cards; not shown here (and not included in this report) are four angler's catch of > 32 fish each; y-axis break at 100 for ease of display

Lengths — Green Sturgeon length ranged 10-84 inches and averaged 32 inches (Figure 2). Retained White Sturgeon length ranged 40-60 inches² and averaged 50 inches (Figure 3). For the released White Sturgeon for which a length measurement was reported³ (Figure 4), length ranged 1-108 inches and averaged 42 inches, 291 were within the slot limit, 913 were below the slot limit, and 278 were above the slot limit.

² For 10 retained White Sturgeon, length was not recorded, illegible, or reported as greater than 60 inches.

³ Length of released fish is not a required field, but many anglers volunteered the information.

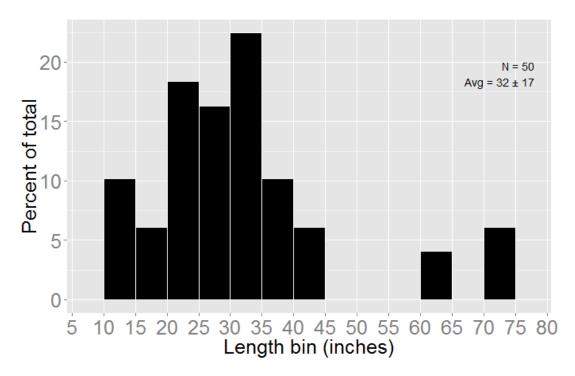


Figure 2. Length frequency distribution of Green Sturgeon released as reported on 2014 Cards; average (Avg) ± SD included in upper-right corner of plot

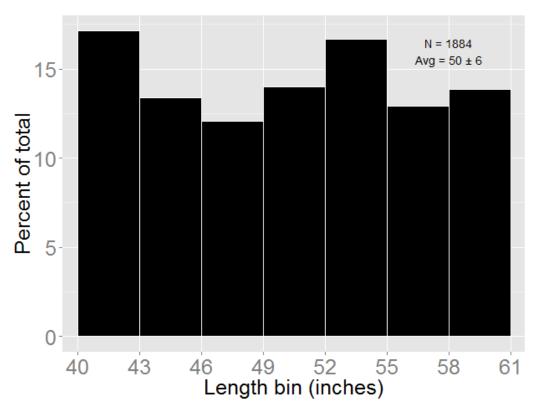


Figure 3. Length frequency distribution of White Sturgeon retained as reported on 2014 Cards; average (Avg) ± SD included in upper-right corner of plot

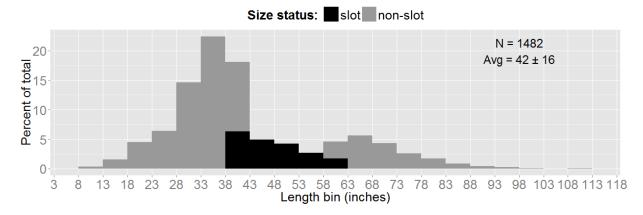


Figure 4. Length frequency distribution of White Sturgeon released as reported on 2014 Cards (dark bars denote slot limit of 40-60 inches FL), average (Avg) \pm SD included in upper-right corner of plot; not shown four fish recorded with length = 1. Because these data are not collected randomly or systematically (e.g., many slot-sized fish are not released) and it is illegal to remove certain oversized White Sturgeon from the water (e.g., for measurement), this is not the population's actual distribution and is likely biased towards relatively small fish.

Seasonality — Catch per month ranged from approximately 1-18%, with the smallest proportions during summer months (Table 4).

Table 4. Green Sturgeon and White Sturgeon catch per month for 2014

Month	White Sturgeon	Green Sturgeon	Unknown Sturgeon	Catch Total	Percent of Total
Not given	0	0	0	0	0.00%
January	641	21	2	664	11.3%
February	994	33	7	1,034	17.6%
March	1,042	30	10	1,082	18.4%
April	608	19	9	636	10.8%
May	274	5	3	282	4.8%
June	112	2	3	117	2.0%
July	82	5	1	88	1.5%
August	52	1	0	53	0.9%
September	88	4	0	92	1.6%
October	281	2	1	284	4.8%
November	597	11	4	612	10.4%
December	891	21	9	921	15.7%
Totals	5,662	154	49	5,865	

Locations — Sturgeon were reported caught in 24 of the 28 locations listed on the Card (Figure 5). For the present purposes, locations where 1-50 sturgeon were collected were grouped as 'All Other Locations' (N = 16). Location were either not specified or were illegible (grouped as 'Unknown') for 10 retained White Sturgeon, 29 released White Sturgeon, one Green Sturgeon, and three unidentified sturgeon.

Catch of Green Sturgeon was greatest in the Sacramento River from Rio Vista to Chipps Island and in Suisun Bay (Table 5). Catch of White Sturgeon was greatest in Suisun Bay and in the Sacramento River from Rio Vista to Chipps Island (Tables 6 and 7).

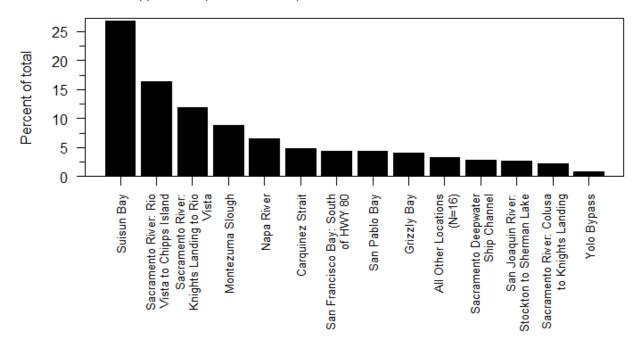


Figure 5. Percent of total catch of all sturgeon by location as reported on 2014 Cards

Table 5. Green Sturgeon catch and length statistics by location and season as provided on 2014 Cards. The five locations where total catch was highest were ranked. Seasons were defined as follows: Winter=December-February, Spring=March-May, Summer=June-August, Fall=September-November.

Location Code	Location Name	Rank of Catch	Number of Anglers	No Date of Capture	Winter Catch	Spring Catch	Summer Catch	Fall Catch	Total Catch	Number Measured	Lenath	Maximum Length (inches)	Average Length (inches)
	Unknown		1	-	-	1	-	-	1	-			
01A	Sacramento River: Upstream of Red Bluff		1	-	-	-	-	1	1	-			
01B	Sacramento River: Red Bluff to Hwy 32 bridge		-	-	-	-	-	-	-	-			
01C	Sacramento River: Hwy 32 bridge to Colusa		4	-	1	3	-	-	4	2	70	84	77.0
2	Sacramento River: Colusa to Knights Landing		1	-	-	1	-	-	1	1	72	72	72.0
3	Sacramento River: Knights Landing to Rio Vista	4	11	-	8	2	-	1	11	6	12	64	35.5
4	Sacramento River: Rio Vista to Chipps Island	1	29	-	17	24	-	3	44	10	12	40	28.4
5	Feather River		-	-	-	-	-	-	-	-			
6	American River		-	-	-	-	-	-	-	-			
7	Sacramento Deepwater Ship Channel		5	-	4	-	1	1	6	1	30	30	30.0
8	Yolo Bypass		-	-	-	-	-	-	-	-			
9	Montezuma Slough		6	-	2	4	1	-	7	2	10	14	12.0
10	Napa River		3	-	1	1	-	1	3	2	25	32	28.5
11	Petaluma River		-	-	-	-	-	-	-	-			
12	San Joaquin River: Upstream of HWY 140 bridge		-	-	-	-	-	-	-	-			
13	San Joaquin River:HWY 140 bridge to Stockton		2	-	1	-	-	1	2	-			
14	San Joaquin River: Stockton to Sherman Lake		7	-	6	2	-	1	9	2	27	74	50.5
15	Old River		1	-	1	-	-	-	1	-			
16	San Pablo Bay	3	15	-	15	3	-	-	18	6	17	40	29.0
17	Carquinez Strait	5	7	-	4	5	-	2	11	7	18	32	25.4
18	Suisun Bay	2	28	-	13	8	6	6	33	11	18	44	29.1
19	Grizzly Bay		2	-	2	-	-	-	2	-			
20	San Francisco Bay: North of HWY 80		-	-	-	-	-	-	-	-			
21	San Francisco Bay: South of HWY 80		-	-	-	-	-	-	-	-			
22	Pacific Ocean: North of Golden Gate Bridge		-	-	-	-	-	-	-	-			
23	Pacific Ocean: Golden Gate Bridge to Point Sur		-	-	-	-	-	-	-	-			
24	Pacific Ocean: Point Sur to San Diego		-	-	-	-	-	-	-	-			
25	Any reservoir or lake		-	-	-	-	-	-	-	-			
26	Klamath River		-	-	-	-	-	-	-	-			
- = no rep	orted angler catch	Totals	123*	-	75	54	8	17	154	50			

^{* = 3} anglers fished and caught a Green Sturgeon at 2 different locations, and 117 anglers fished and caught a Green Sturgeon at 1 location

Table 6. Retained White Sturgeon catch and length statistics by location and season as provided on 2014 Cards. The five locations where total catch was highest were ranked. Seasons were defined as follows: Winter=December-February, Spring=March-May, Summer=June-August, Fall=September-November.

Location Code	Location Name	Rank of Catch	Number of Anglers	No Date of Capture	Winter Catch	Spring Catch	Summer Catch	Fall Catch	Total Catch	Number Measured	Minimum Length (inches)	Maximum Length (inches)	Average Length (inches)
	Unknown		10	-	3	5	-	2	10	8	42	58	48.0
01A	Sacramento River: Upstream of Red Bluff		26	-	15	14	-	-	29	28	41	60	52.2
01B	Sacramento River: Red Bluff to Hwy 32 bridge		-	-	-	-	-	-	-	-			
01C	Sacramento River: Hwy 32 bridge to Colusa		16	-	2	19	-	-	21	21	40	59	50.9
2	Sacramento River: Colusa to Knights Landing		66	-	36	40	-	1	77	77	41	60	52.5
3	Sacramento River: Knights Landing to Rio Vista	2	276	-	154	154	-	29	337	336	40	60	51.2
4	Sacramento River: Rio Vista to Chipps Island	3	231	-	100	71	10	101	282	282	40	60	48.1
5	Feather River		2	-	1	1	-	-	2	2	50	60	55.0
6	American River		1	-	-	1	-	-	1	1	54	54	54.0
7	Sacramento Deepwater Ship Channel		53	-	32	15	2	11	60	59	40	60	47.8
8	Yolo Bypass		4	-	3	1	-	-	4	4	41	57	51.2
9	Montezuma Slough	5	93	-	38	53	6	12	109	109	40	60	49.3
10	Napa River		63	-	32	38	4	4	78	77	40	60	47.9
11	Petaluma River		1	-	1	-	-	-	1	1	43	43	43.0
12	San Joaquin River: Upstream of HWY 140 bridge		8	-	6	2	-	1	9	8	42	59	52.4
13	San Joaquin River:HWY 140 bridge to Stockton		6	-	2	4	-	-	6	6	41	59	45.7
14	San Joaquin River: Stockton to Sherman Lake		35	-	17	12	3	12	44	43	40	59	46.6
15	Old River		4	-	5	1	-	-	6	6	40	58	48.2
16	San Pablo Bay		60	-	49	17	2	5	73	72	41	60	50.1
17	Carquinez Strait		60	-	21	28	10	9	68	68	40	60	51.0
18	Suisun Bay	1	365	-	196	173	24	54	447	446	40	60	49.3
19	Grizzly Bay		50	-	17	23	-	12	52	52	40	60	49.7
20	San Francisco Bay: North of HWY 80		3	-	2	1	-	-	3	3	50	58	54.0
21	San Francisco Bay: South of HWY 80	4	122	-	123	31	-	17	171	171	41	60	51.8
22	Pacific Ocean: North of Golden Gate Bridge		2	-	-	2	-	-	2	2	42	50	46.0
23	Pacific Ocean: Golden Gate Bridge to Point Sur		-	-	-	-	-	-	-	-			
24	Pacific Ocean: Point Sur to San Diego		-	-	-	-	-	-	-	-			
25	Any reservoir or lake		-	-	-	-	-	-	-	-			
26	Klamath River orted angler catch		2	-	-	1	1	-	2	2	40	48	44.0

^{- =} no reported angler catch

Totals

1,559*
- 855

707
62
270
1,894
1,884
* = 3 anglers caught and retained a White Sturgeon at 8 different locations, 95 anglers caught and retained a White Sturgeon at 2 different locations, and

^{1,345} anglers caught and retained White Sturgeon at 1 location

Table 7. Released White Sturgeon catch and length statistics by location and season as provided on 2014 Cards. The five locations where total catch was highest were ranked. Seasons were defined as follows: Winter=December-February, Spring=March-May, Summer=June-August, Fall=September-November

Location Code	Location Name	Rank of Catch	Number of Anglers	No Date of Capture	Winter Catch	Spring Catch	Summer Catch	Fall Catch	Total Catch	Number Measured	Minimum Length (inches)	Maximum Length (inches)	Average Length (inches)
	Unknown		9	-	15	3	3	8	29	8	22	48	32.6
01A	Sacramento River: Upstream of Red Bluff		4	-	4	-	-	-	4	-			
01B	Sacramento River: Red Bluff to Hwy 32 bridge		-	-	-	-	-	-	-	-			
01C	Sacramento River: Hwy 32 bridge to Colusa		9	-	7	16	-	-	23	8	46	82	67.1
2	Sacramento River: Colusa to Knights Landing		36	-	24	31	-	1	56	21	41	85	67.4
3	Sacramento River: Knights Landing to Rio Vista	4	175	-	166	109	2	71	348	142	24	96	50.8
4	Sacramento River: Rio Vista to Chipps Island	2	223	-	209	146	29	245	629	162	16	108	37.5
5	Feather River		-	-	-	-	-	-	-	-			
6	American River		-	-	-	-	-	-	-	-			
7	Sacramento Deepwater Ship Channel		49	-	44	28	1	23	96	28	nv	84	nv
8	Yolo Bypass		9	-	23	7	-	20	50	43	30	96	46.3
9	Montezuma Slough	3	141	-	147	193	30	26	396	188	10	90	50.5
10	Napa River	5	106	-	117	136	21	22	296	105	15	98	41.8
11	Petaluma River		2	-	3	-	-	-	3	1	38	38	38.0
12	San Joaquin River: Upstream of HWY 140 bridge		4	-	1	1	-	3	5	1	20	20	20.0
13	San Joaquin River:HWY 140 bridge to Stockton		3	-	-	10	-	1	11	-			
14	San Joaquin River: Stockton to Sherman Lake		30	-	21	53	3	26	103	21	21	57	32.2
15	Old River		1	-	-	1	-	-	1	1	65	65	65.0
16	San Pablo Bay		68	-	100	49	3	6	158	50	nv	80	nv
17	Carquinez Strait		79	-	79	88	18	20	205	86	14	96	38.9
18	Suisun Bay	1	356	-	552	291	68	168	1,079	477	nv	84	nv
19	Grizzly Bay		88	-	91	43	6	40	180	86	20	90	39.6
20	San Francisco Bay: North of HWY 80		2	-	5	-	-	3	8	2	32	36	34.0
21	San Francisco Bay: South of HWY 80		49	-	63	12	-	13	88	52	17	83	57.0
22	Pacific Ocean: North of Golden Gate Bridge		-	-	-	-	-	-	-	-			
23	Pacific Ocean: Golden Gate Bridge to Point Sur		-	-	-	-	-	-	-	-			
24	Pacific Ocean: Point Sur to San Diego		-	-	-	-	-	-	-	-			
25	Any reservoir or lake		-	-	-	-	-	-	-	-			
26	Klamath River		-	-	-	-	-	-	-	-			
- = no rep	orted angler catch; nv = no value	Totals	1,178*	-	1,671	1,217	184	696	3,768	1,482			

^{* = 11} anglers caught and released a White Sturgeon at 4 different locations, 28 anglers caught and released a White Sturgeon at 3 different locations, 176 anglers caught and released White Sturgeon at 1 locations, 176 anglers caught and released White Sturgeon at 1 location

Discussion

Information from and about 2014 Cards includes the following highlights:

- (1) Approximately 20% of sturgeon anglers submitted their Cards or data, which is about the same rate for the 2013 Card but substantially greater than for 2007-2012 Cards.
- (2) Anglers who caught no sturgeon were more likely to report by way of the Internet than by mail. Given the often-substantial amount of catch data many anglers developed, reporting by mail probably saved successful anglers a meaningful amount of time.
- (3) Some anglers reported single-digit White Sturgeon lengths and some anglers reported harvesting White Sturgeon in a closed reach of the Sacramento River (Location 01A). For those data submitted to us by way of mail, we verified that we entered the data accurately. We may attempt to clarify these reports by contacting the anglers.
- (4) As has been the case since 2007, about 50% of the anglers who fished for sturgeon were not successful and successful anglers retained on average less than half the annual bag limit of three White Sturgeon.
- (5) Information on the reported capture of 19 disk-tagged White Sturgeon will augment the Department's sturgeon population study, and thus is important for the precision and/or accuracy of estimated abundance, harvest rate, and survival rate.
- (6) The White Sturgeon length frequency distributions particularly the strong mode in released fish, but also the left limb of the kept-fish distribution — appears to show that the relatively-strong 2006 cohort continues what should be a several-year recruitment to the slot limit. The left limb of the kept-fish distribution shows a small mode that is most obvious when contrasted with the 2007-2012 time series (see DFW 2014b).
- (7) The length frequency distribution of White Sturgeon smaller than 40 inches suggests that annual production of White Sturgeon was very low during the period 2007-2013. Low levels of White Sturgeon production during those years was also suggested from indices of young-of-the-year White Sturgeon abundance (DFW 2014a) and was expected from the positive relationship between White Sturgeon production and Delta outflow (Fish 2010).

Literature Cited and Relevant References

DFW. 2014a. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentId=69133

DFW. 2014b. Length Frequencies of Harvested White Sturgeon From Card Data https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentId=79483

Fish M. A. 2010. A White Sturgeon year-class index for the San Francisco Estuary and its relation to delta outflow. Interagency Ecological Program for the San Francisco Estuary Newsletter 23(2): 80-84. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentId=26542

Gingras, M. and J. DuBois. 2013. Monitoring Progress Toward a CVPIA Recovery Objective: Estimating White Sturgeon Abundance by Age. Interagency Ecological Program for the San Francisco Estuary Newsletter 26(4): 6-9. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentId=74161

For more, click on additional bibliography.

Acknowledgements

Special thanks to Gary Webb, Ken Flowers, Dave Hull, Ramiro Soto, Mike McCluskey, Alma Griffen, Koun Hak, Paula Higginson, and Christina Cardenas for sorting returned Cards and/or for entering data. Very special thanks to all anglers who returned Cards and provided valuable information on Card format/function.

Appendix 1. Scan of mock ALDS California Sturgeon Fishing Report Card (color = blue-ish grey or green); note: 2014 Card was similar with the following exceptions: (1) Fee = \$8.13 and (2) 30 rows for 'Sturgeon Released – No Reward Disk Present' (3) Slight modification to bottom tags (001 – 003), which included more detail for recording date caught

13 STR	STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME
STATE OF CALIFORNIA	STURGEON FISHING REPORT CARD
DEPARTMENT OF FISH AND GAME INSTRUCTIONS FOR STURGEON FISHING ANGLESS Title 14. Section 1.74, 5.79 and 27.92, of the California Code of Regulations for the charge of released.	Valid 03/14/2012 to 12/31/2012 D-0004009582-8
If you refail a sturgeon, immediately record the following information below under the heading STURGEON RETAINED: 1. Record the morth, day, location code, and the fark length (linches) of the sturgeon. Nate: Fork length is the straight line distance from the tip of the head to the center of the fail fin. 2. Use tags in sequential order. Do not remove sutregeon tags.	GO ID: 1019629503 STATE ID: C333**** CA JOHN DOE 1234 NORTH LANE
from the report card until immediately prior to affixing to a sturgeon. Any tags detached from the report card and not affixed to a sturgeon shall be considered used and therefore.	ROSEVILLE, CA 95678 SEX: M HAIR: Black EYES: Brown
3 Record the month day I	HT: 6-06 WT: 170 DOB: 03/14/1990 Doc No: D-0004009582-8 Outlet No: 310006-001
inches) of the sturgion relation done, and the lork (engith (inches) of the sturgion relation of the tag (located at the bottom of this card. Using sciscors, completely detach the tag from the card and attach it to the sturgion. To affix the tag a *zip set, string, line, or other suitable material shall be passed through the tag at the location specified on the tag and attached through the stag at the location specified on the tag and attached	Trans: 000000002913441 3/14/2012 9:33:34 AM 141791102 Fee* Sturgeon Fishing Report Card \$0.00
to the fish. 4. If the sharpson has a DFG-affixed reward disk, write the reward disk number in the space provided. 5. The sharpson has a DFG-affixed you must stop Shining for sturgeon for the day. Once three sharpson have boan retained, you must stop Shining for sturgeon for the remainder of the calendar year.	Soughour resisting report Card Totals 30,000 'Includes any applicable application fees, agent handing fees and license buyer surcharge. Must have a walf disport fishing license unless under 15 years of age or 6 shing form a public pier in ocean waters.
If you release a sturgeon with no reward disk present	STURGEON FISHING REPORT CARD
immediately record the information below under the heading STURGEON RELEASED. NO REMARD DISK PRESENT. If a reward disk is present record the information below, including the reward disk number, under the heading STURGEON RELEASED REWARD DISK PRESENT.	STURGEON RETAINED (Only white sturgeon 46-66 Inches total length may be retained.)
RELEASED - REWARD DISK PRESENT. 1. Record the month, day and location code. 2. Indicate the species of sturgeon released by marking an 'X' in	MONTH DAY CODE LENGTH REWARD DISK # (If present)
the WHITE or GREEN column. 3. If the sturgeon has a DFG-affixed reward disk, write the reward disk number in the space provided.	
You catch two white sturgeon while fishing the Secrements	
River (Rio Vista to Chipps Island) on Decamber 7th. The one you retained was 52" fork length. The one you released had a DFG-affixed raward disk numbered HH 1001. You would complete one tag and attach it to the sturgeon you retained. You would record information on the Card as follows:	STURGEON RELEASED - NO REWARD DISK PRESENT MONTH DAY LOCATION CODE WHITE GREEN
STURGEON RETAINED (Only white sturgeon may be retained) MONTH DAY LOCATION LENGTH REWARD DISK #(if	1
12 7 4 52"	
STURGEON RELEASED - REWARD DISK PRESENT MONTH DAY LOCATION REWARD DISK MIMBED	
MONTH DAY CODE REWARD DISK NUMBER 12 7 4 HH1001	
HARVEST REPORT SUBMISSION: Title 14, Section 1.74 of the California Code of Regulations, requires you to report this	
data online or return this card to DFG by January 31, 2014 (whether you shield for sturgen or not). ONLINE: www.dfg.ca.gov/licensing/harvestreporting Online reporting is exailable of an 1, 2014 to Jan 31, 2014 Licensees reporting online must write the confirmation number on their card, retain the card until Agril 30, 2014 and submit to	
DFG only if requested. BY MAIL: dv⊳California DFG Fisheries Branch	
Sturgeon Fishing Report Card P.O. Box 944209	STURGEON RELEASED - REWARD DISK PRESENT
Sacramento, CA 94244-2090	MONTH DAY LOCATION CODE REWARD DISK NUMBER
Code Location O1A. Sacramento River: 13. San Joaquin River: HWY	- 6
Upstream of Red Bluff 01B. Sacramento River: Red 14. San Joaquin River: Bluff to Hwy 32 bridge Stockton to Sherman Lake	CHECK HERE IF YOU DID NOT FISH FOR STURGEON
01C. Sacramento River: Hwy 15. Old River 32 bridge to Colusa 16. San Pablo Bay 02. Sacramento River: Colusa 17. Carquinez Strait	REFER TO THE SPORT FISHING REGULATIONS FOR SIZE
to Knights Landing 18. Suisun Bay 03. Sacramento River: Knights 19. Grizzty Bay Landing to Rio Vista 20. San Francisco Bay: North	LIMITS. ONLY ONE STURGEON FISHING REPORT CARD MAY BE ISSUED PER LICENSE YEAR. CARD CAN NOT BE TRANSFERRED TO ANOTHER PERSON.
Vista to Chipps Island 21: San Francisco Bay: South 95. Feather River of HWY 80	12 STR # D-0004009582-8 - Tag003
06. American River 07. Sacramento Deepwater Ship Channel 22. Pacific Ocean: North of Golden Gate Bridge 23. Pacific Ocean: Golden	JOHN DOE. (1019629503)
08. Yolc Bypass Gate Bridge to Point Sur 09. Montezuma Slough 10. Napa River San Diego San Diego	O MONTH DAY LOCATION CODE LENGTH
11. Petaluma River 25. Any reservoir or lake 12. San Joaquin River: 26. Klamath River Upstream of HWY 140 bridge	12 STR # D-0004009582-8 - Tag002
The second secon	JOHN DOE (1019829503) O MONTH DAY LOCATION CODE LENGTH
₩hite Sturgeon 39-48 midlaterat plates barbles closer to tip of snout than to mouth	12 STR # D-0004009582-9 - Tag001 JOHN DOE . (1019629503)
Marie Sammer	O MONTH DAY LOCATION CODE LENGTH
Green Sturgeon 23-30 midlateral plates barbles closer to mouth than to tip of shout green stripe on the belly.	I I I I I
CLIT ALONG LINE TO SERAPATE SOOM REPORT CARD	End of Document D-0004009582-8