

# **2013 Sturgeon Fishing Report Card: Preliminary Data Report**

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## **Summary**

The 2013 Sturgeon Fishing Report Card (Card) was issued to anglers for a fee of \$8.13 through the Automated License Data System (ALDS), whereas Cards for the years 2007-2012 were issued free of charge. Approximately 50,990 Cards were issued for 2013. As of 2-May-2014, 10,242 Cards were submitted to the Department (3,792 via the Internet and 6,450 via mail) and 2,257 of those Cards had data on sturgeon catch.

Anglers reported the release of 168 green sturgeon, retention of 2,008 white sturgeon, and release of 4,394 white sturgeon. Anglers reported fork length measurements for 54 green sturgeon (range 8-74 inches, average 32 inches). Of the white sturgeon retained, anglers reported fork length measurements for 1,993<sup>1</sup> (range 40-60 inches, average 50 inches). Of the white sturgeon released, anglers reported a length measurement for 1,442 fish (range 3-117 inches, average 41 inches).

Catch of green sturgeon was greatest in the Sacramento River from Rio Vista to Chipps Island and in Suisun Bay. Catch of white sturgeon was greatest in Suisun Bay and in the Sacramento River from Rio Vista to Chipps Island.

## **Introduction**

This report summarizes data from the 2013 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 2013 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. Because Cards for the years 2007-2012 were issued free of charge, we anticipated issuing fewer Cards than in recent years.

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 2013 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 50,990 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 were not described here (cutoff date 2-May-2014). Ten thousand two hundred forty-two (10,242) Cards were returned of which 4,963 had no data (effort but no catch), 3,022 indicated no fishing effort (did not fish), and 2,257 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.

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<sup>1</sup> See note 1 in 'Length Data' section

Because ALDS has been completely implemented for two years, it is feasible for the first time to calculate and report the following statistics about submission of Cards across years:

- (1) Thirty-three thousand eight (33,008) anglers had Cards in both 2012 and 2013. Twenty-two thousand six hundred forty-two (22,642) of those 33,008 anglers did not return their 2012 Card and did not return their 2013 Card.
- (2) Two thousand one hundred ninety (2,190) anglers returned their 2012 Card but not their 2013 Card.
- (3) Three thousand eight hundred three (3,803) anglers returned their 2013 Card but not their 2012 Card.
- (4) Four thousand three hundred seventy-three (4,373) anglers returned their 2012 Card and their 2013 Card.

### **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). These sections included fields to report month, day, location, and reward disk number. The 'Sturgeon Retained' section also contained a field for reporting length and reminded anglers that only white sturgeon 40–60 inches fork length may be retained. The 'Sturgeon Released (no reward disk present)' section also contained check boxes for species identification that some anglers used to report fish length.

*Recaptures* — Twenty-six (26) anglers each caught one disk-tagged white sturgeon or unidentified sturgeon, one angler caught two disk-tagged white sturgeon, and one angler caught three disk-tagged white sturgeon (Table 1). No disk-tagged green sturgeon were reported.

**Table 1. Angler-reported tag recaptures from 2013 Card with corresponding CDFW tagging data; table sorted by date tagged**

| Date (2013) | Angler-reported Tag Recaptures                 |         |          |                      |            | CDFW Tagging Data |         |                      | Days at large |
|-------------|--|---------|----------|----------------------|------------|-------------------|---------|----------------------|---------------|
|             | Location                                       | Species | Retained | Fork Length (inches) | Tag Number | Date Tagged       | Species | Fork Length (inches) |               |
| 7-Dec       | Sacramento River: Knights Landing to Rio Vista | Unknown | No       | NA                   | FF370      | 28-Oct-98         | White   | 46                   | 5,519         |
| 27-Apr      | Sacramento River: Hwy 32 bridge to Colusa      | White   | Yes      | 59                   | ST11836    | 11-Oct-02         | White   | 54                   | 3,851         |
| 15-Jun      | Carquinez Strait                               | Unknown | No       | NA                   | ST11989    | 8-Aug-06          | White   | 31                   | 2,503         |
| 19-Feb      | Sacramento River: Knights Landing to Rio Vista | White   | Yes      | 57                   | ST11998    | 14-Aug-06         | White   | 39                   | 2,381         |
| 5-Oct       | San Francisco Bay: North of HWY 80             | White   | Yes      | 51                   | HH1001     | 15-Aug-06         | White   | 44                   | 2,608         |
| 10-May      | Sacramento River: Rio Vista to Chipps Island   | Unknown | No       | NA                   | ST12153    | 21-Sep-06         | White   | 43                   | 2,423         |
| 25-Jan      | Suisun Bay                                     | White   | Yes      | 52                   | ST12540    | 18-Sep-07         | White   | 45                   | 1,956         |
| 2-Feb       | San Pablo Bay                                  | White   | Yes      | 60                   | HH1577     | 17-Oct-07         | White   | 52                   | 1,935         |
| 10-Feb      | Suisun Bay                                     | White   | Yes      | 50                   | ST12681    | 18-Sep-08         | White   | 37                   | 1,606         |
| 2-Feb       | San Pablo Bay                                  | Unknown | No       | NA                   | FF1289     | 27-Aug-09         | White   | 41                   | 1,255         |
| 6-Apr       | Montezuma Slough                               | White   | Yes      | 50                   | ST12294    | 1-Sep-09          | White   | 41                   | 1,313         |
| 7-Apr       | Napa River                                     | White   | Yes      | 50                   | FF1740     | 8-Sep-09          | White   | 40                   | 1,307         |
| 17-Mar      | Sacramento River: Knights Landing to Rio Vista | Unknown | No       | NA                   | FF1793     | 6-Oct-09          | White   | 50                   | 1,258         |
| 18-Jan      | Sacramento River: Rio Vista to Chipps Island   | White   | Yes      | 59                   | HH1791     | 6-Oct-09          | White   | 49                   | 1,200         |
| 4-Feb       | Sacramento River: Rio Vista to Chipps Island   | White   | Yes      | 44                   | FF1906     | 21-Sep-10         | White   | 36                   | 867           |
| 19-Apr      | Suisun Bay                                     | White   | Yes      | 44                   | FF2014     | 16-Aug-11         | White   | 41                   | 612           |
| 2-Jan       | Sacramento River: Rio Vista to Chipps Island   | White   | Yes      | 55                   | FF2026     | 25-Aug-11         | White   | 42                   | 496           |
| 17-Mar      | Napa River                                     | White   | Yes      | 54                   | ST13056    | 12-Sep-11         | White   | 53                   | 552           |
| 13-Aug      | Sacramento River: Rio Vista to Chipps Island   | Unknown | No       | NA                   | ST13156    | 27-Sep-11         | White   | 41                   | 686           |
| 30-Jan      | Grizzly Bay                                    | White   | Yes      | 51                   | HH2073     | 27-Sep-11         | White   | 52                   | 491           |
| 9-Nov       | Sacramento River: Rio Vista to Chipps Island   | White   | Yes      | 41                   | HH2183     | 9-Aug-12          | White   | 38                   | 457           |
| 7-Mar       | Carquinez Strait                               | Unknown | No       | NA                   | HH2187     | 15-Aug-12         | White   | 53                   | 204           |
| 30-Dec      | Suisun Bay                                     | White   | Yes      | 40                   | FF2203     | 29-Aug-12         | White   | 37                   | 488           |
| 10-Feb      | Sacramento River: Rio Vista to Chipps Island   | White   | Yes      | 50                   | HH2209     | 12-Sep-12         | White   | 52                   | 151           |
| 16-Nov      | Sacramento River: Rio Vista to Chipps Island   | White   | Yes      | 51                   | FF1943     | 9-Sep-13          | White   | 49                   | 68            |
| 30-Mar      | Suisun Bay                                     | White   | Yes      | 45                   | 001        | -                 | -       | -                    | -             |
| 16-Feb      | Suisun Bay                                     | Unknown | No       | NA                   | 1926       | -                 | -       | -                    | -             |
| 31-Dec      | Sacramento River: Knights Landing to Rio Vista | Unknown | No       | NA                   | 00224      | -                 | -       | -                    | -             |
| 30-Dec      | Sacramento River: Knights Landing to Rio Vista | Unknown | No       | NA                   | 1937       | -                 | -       | -                    | -             |
| 8-Sep       | Montezuma Slough                               | White   | Yes      | 56                   | 1860       | -                 | -       | -                    | -             |
| 6-Apr       | Montezuma Slough                               | White   | Yes      | 52                   | 2042       | -                 | -       | -                    | -             |

- = Cannot determine with partial tag number supplied

NA = not available

*Catch* — Anglers reported releasing 168 green sturgeon, releasing 4,394 white sturgeon, and keeping 2,008 white sturgeon (Table 2). Twenty-three (23) sturgeon were not identified to species.

**Table 2. White sturgeon and green sturgeon catch reported on 2013 Cards**

|                      |              | White Sturgeon | Green Sturgeon | Unidentified Sturgeon | Overall Total |
|----------------------|--------------|----------------|----------------|-----------------------|---------------|
| <b>Retained</b>      | Measured     | 1,993          | NA             | 0                     | 1,993         |
|                      | Not Measured | 15             | NA             | 0                     | 15            |
|                      | Total        | 2,008          | NA             | 0                     | 2,008         |
| <b>Released</b>      | Measured     | 1,442          | 54             | 1                     | 1,497         |
|                      | Not Measured | 2,952          | 114            | 22                    | 3,088         |
|                      | Total        | 4,394          | 168            | 23                    | 4,585         |
| <b>Overall Total</b> |              | 6,402          | 168            | 23                    | 6,593         |

One thousand four hundred ninety-four (1,494) anglers reported retaining white sturgeon (Table 3; average of 1.3 sturgeon). Ninety-five (95) anglers retained the limit of three white sturgeon.

One thousand two hundred sixty-four (1,264) anglers reported releasing white sturgeon (Table 3). Of these anglers, 98 each released 10-50 fish, and one released 84 fish.

One hundred twenty (120) anglers reported releasing green sturgeon (Table 3; average of 1.4 sturgeon). Of these anglers, 21 each released 2-5 fish, and one angler reported releasing seven fish.

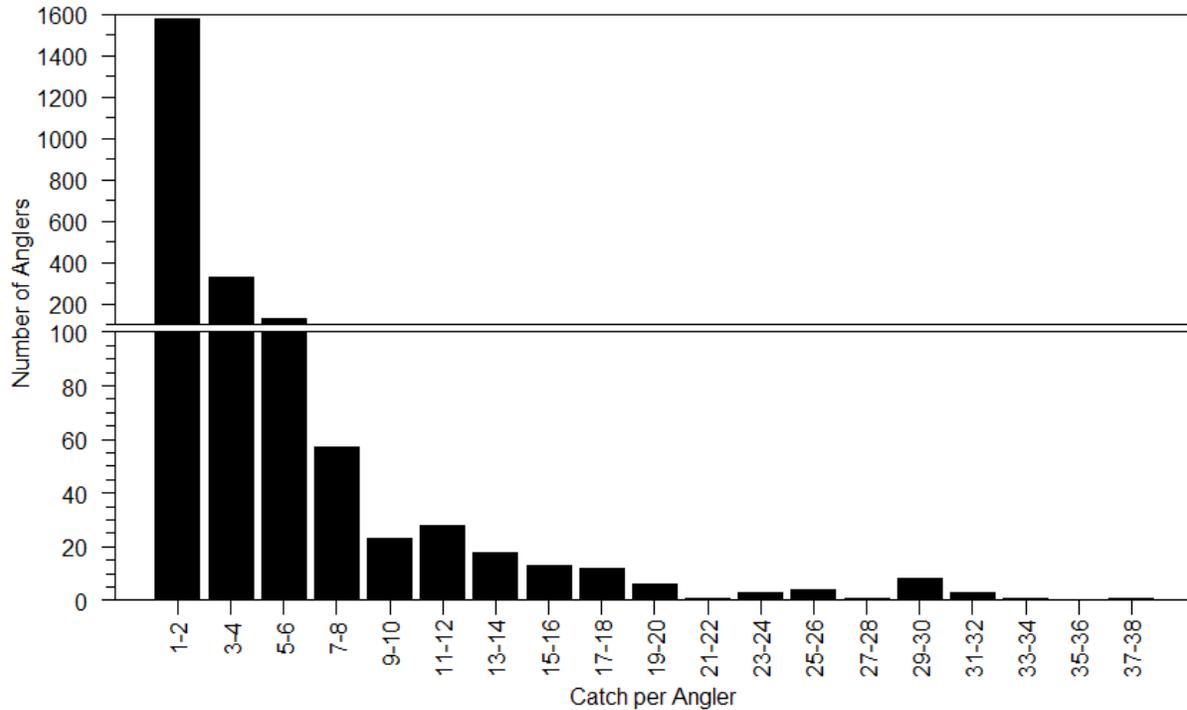
**Table 3. Summary statistics for per-angler catch from 2013 Cards with catch data**

|                         | Number of Anglers | Number of Sturgeon | Maximum Number of Sturgeon per Angler | Average Number of Sturgeon per Angler |
|-------------------------|-------------------|--------------------|---------------------------------------|---------------------------------------|
| Retained White Sturgeon | 1,494             | 2,008              | 3                                     | 1.3                                   |
| Released White Sturgeon | 1,264             | 4,394              | 84                                    | 3.5                                   |
| Green Sturgeon          | 120               | 168                | 7                                     | 1.4                                   |
| Unidentified Sturgeon   | 16                | 23                 | 3                                     | 1.4                                   |

Of the 2,219 anglers who caught white sturgeon, 252<sup>2</sup> anglers retained and released white sturgeon on the same day. Of those 252 anglers, one released 13 on the same day. Because the length of sturgeon released was not a required field on the Card, the number of white sturgeon voluntarily conserved could not be calculated.

Seventy-one (71) percent of anglers who reported catching white sturgeon (N = 1,574), caught 1-2 fish each (Figure 1).

<sup>2</sup> Seven individual anglers retained and released white sturgeon on three separate days, 33 individual anglers retained and released white sturgeon on two separate days, and 212 individual anglers retained and released white sturgeon on one day.



**Figure 1. Frequency distribution of white sturgeon catch per angler as reported on 2013 Cards; not shown are 1 angler’s catch of 51 fish, 1 angler’s catch of 53 fish, and 1 angler’s catch of 84 fish; y-axis break at 100 for ease of display**

*Lengths* — Green sturgeon length ranged 8-74 inches and averaged 32 inches (Figure 2). Retained white sturgeon length ranged 40-60 inches (see Note 1 below) and averaged 50 inches (Figure 3). Released white sturgeon length<sup>3</sup> ranged 3-117 inches and averaged 41 inches (Figure 4).

Lengths of most retained white sturgeon were towards the upper end of the slot limit (40-60 inches fork length; Figure 3). Of the released white sturgeon for which a length measurement was reported, 296 were within the slot limit (Figure 4), the majority was below the slot limit (N = 904), and 242 were above the slot limit.

Note 1: For 15 retained white sturgeon, length was not recorded, illegible, or reported as greater than 60 inches.

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

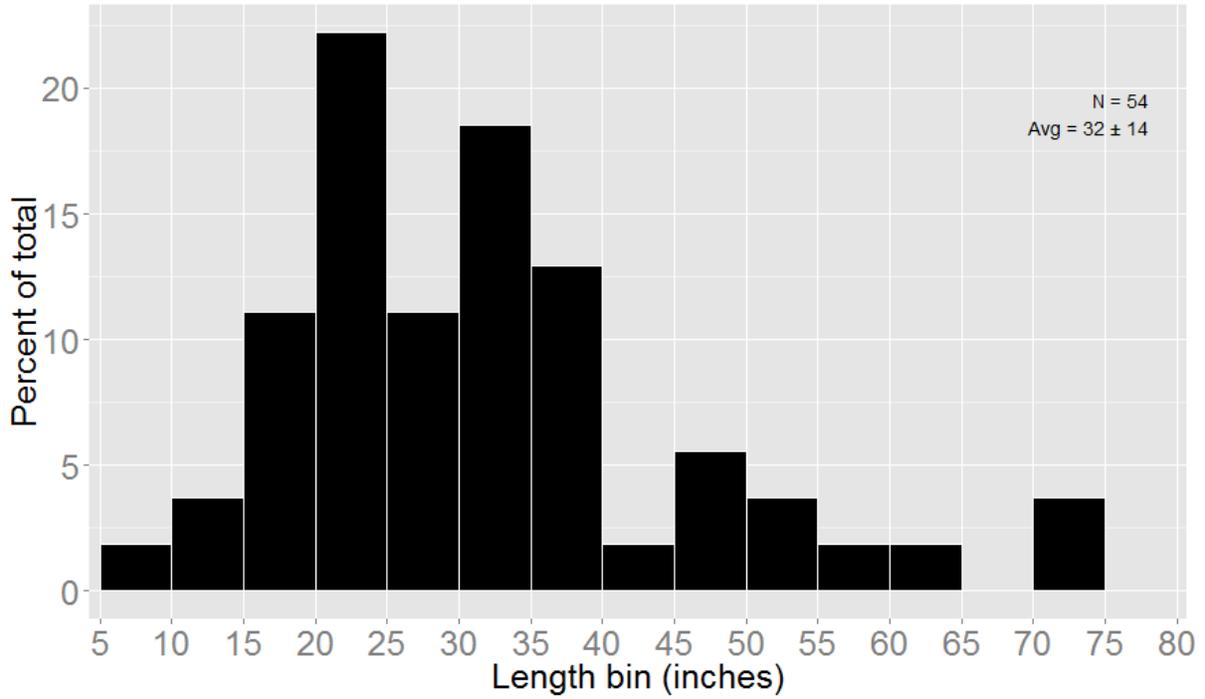


Figure 2. Length frequency distribution of green sturgeon released as reported on 2013 Cards

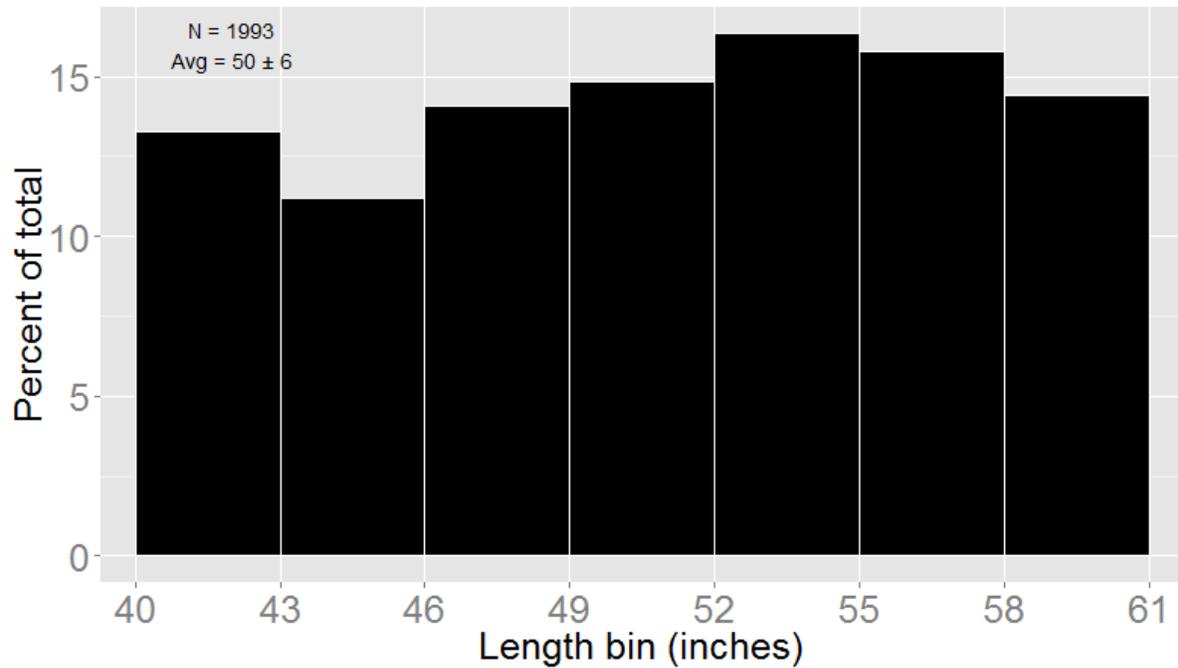
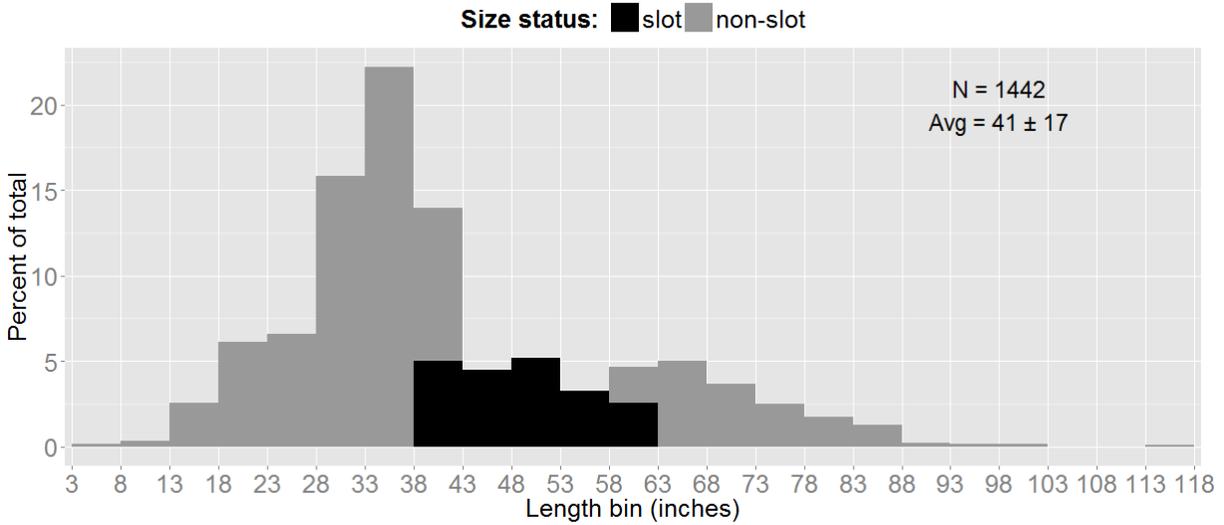


Figure 3. Length frequency distribution of white sturgeon retained as reported on 2013 Cards



**Figure 4. Length frequency distribution of white sturgeon released as reported on 2013 Cards (dark bars denote slot limit of 40–60 inches FL). Because these data are not collected randomly or systematically (e.g., many slot-sized fish are not released), this is not the population’s actual distribution and is likely biased towards relatively small fish.**

*Seasonality* — Catch per month ranged from approximately 10-18% of the total sturgeon catch (N = 6,593) for each of the following months: January; February; March; April; November; and December (Table 4). For all other months, catch was ≤ 7.6% of total.

**Table 4. Green sturgeon and white sturgeon catch per month for 2013**

| Month            | White Sturgeon | Green Sturgeon | Unknown Sturgeon | Catch Total | Percent of Total |
|------------------|----------------|----------------|------------------|-------------|------------------|
| <i>Not given</i> | 5              | 0              | 0                | 5           | 0.08%            |
| January          | 651            | 3              | 8                | 662         | 10.0%            |
| February         | 957            | 3              | 13               | 973         | 14.8%            |
| March            | 1,141          | 4              | 21               | 1,166       | 17.7%            |
| April            | 707            | 3              | 21               | 731         | 11.1%            |
| May              | 306            | 3              | 7                | 316         | 4.8%             |
| June             | 210            | 1              | 5                | 216         | 3.3%             |
| July             | 98             | 0              | 1                | 99          | 1.5%             |
| August           | 83             | 1              | 6                | 90          | 1.4%             |
| September        | 113            | 0              | 3                | 116         | 1.8%             |
| October          | 478            | 1              | 24               | 503         | 7.6%             |
| November         | 807            | 0              | 30               | 837         | 12.7%            |
| December         | 846            | 4              | 29               | 879         | 13.3%            |
| Totals           | 6,402          | 23             | 168              | 6,593       |                  |

*Locations* — Sturgeon were caught in 24 of the 28 locations listed on the Card (Figure 5; see note below). For the present purposes, locations where 1-50 sturgeon were collected were grouped as ‘All Other Locations’ (N = 15). Location codes were either not specified or were illegible (grouped as ‘Unknown’) for

19 retained white sturgeon, 18 released white sturgeon, two green sturgeon, and one unidentified sturgeon.

Note: For 40 entries (by 21 anglers), Location was not reported. Of the 21 anglers not recording location, only five reported fishing in another location (three reported Carquinez Strait, one reported Suisun Bay, and one reported Grizzly Bay and Montezuma Slough).

Catch of green sturgeon was greatest in Suisun Bay and in the Sacramento River from Rio Vista to Chipps Island (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).

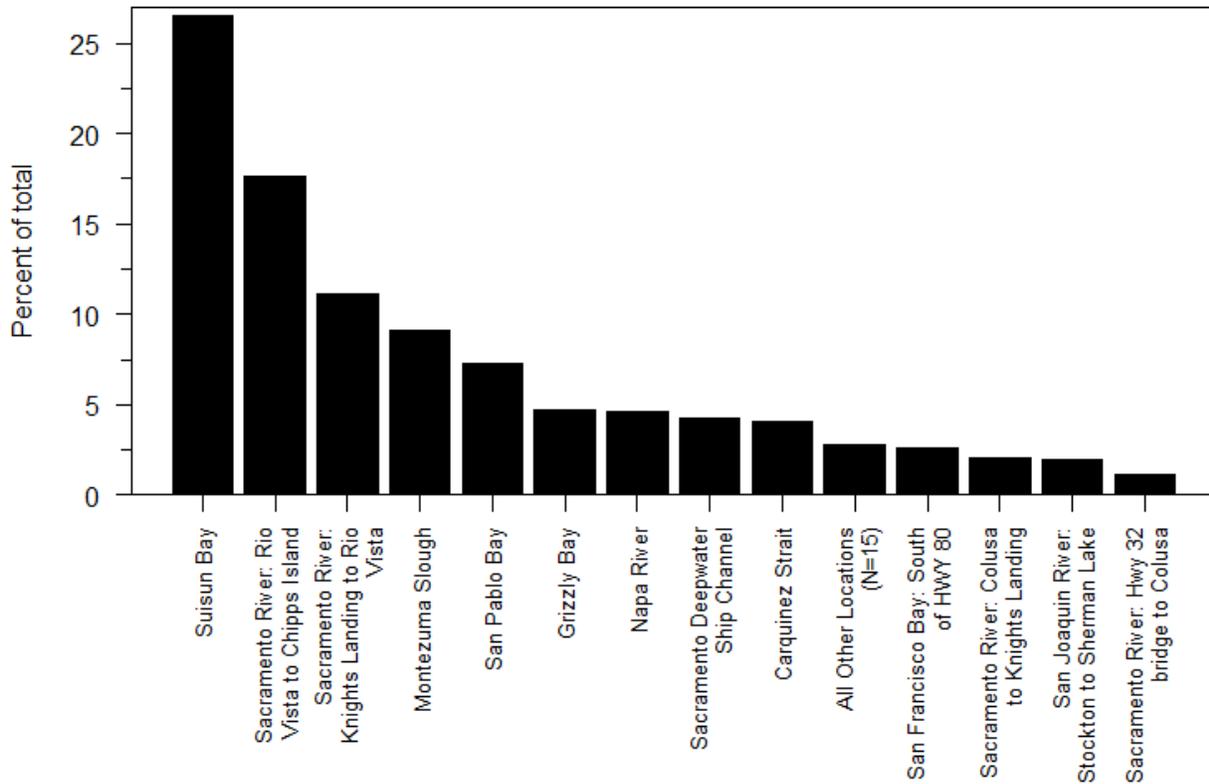


Figure 5. Percent of total catch of all sturgeon by location as reported on 2013 Cards

**Table 5. Green sturgeon catch and length statistics by location and season as provided on 2013 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  |               | 2                 | 0                  | 0            | 1            | 0            | 1          | 2           | 0               | NA                      | NA                      | NA                      |
| 01A           | Sacramento River: Upstream of Red Bluff        |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| 01B           | Sacramento River: Red Bluff to Hwy 32 bridge   |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| 01C           | Sacramento River: Hwy 32 bridge to Colusa      |               | 3                 | 0                  | 0            | 4            | 0            | 0          | 4           | 0               | NA                      | NA                      | NA                      |
| 2             | Sacramento River: Colusa to Knights Landing    |               | 3                 | 0                  | 1            | 2            | 0            | 0          | 3           | 0               | NA                      | NA                      | NA                      |
| 3             | Sacramento River: Knights Landing to Rio Vista | 3             | 12                | 0                  | 7            | 5            | 0            | 7          | 19          | 12              | 14                      | 74                      | 32.7                    |
| 4             | Sacramento River: Rio Vista to Chipps Island   | 1             | 28                | 0                  | 10           | 4            | 5            | 25         | 44          | 18              | 12                      | 57                      | 31.2                    |
| 5             | Feather River                                  |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| 6             | American River                                 |               | 1                 | 0                  | 0            | 0            | 0            | 1          | 1           | 0               | NA                      | NA                      | NA                      |
| 7             | Sacramento Deepwater Ship Channel              |               | 8                 | 0                  | 1            | 2            | 1            | 4          | 8           | 1               | 46                      | 46                      | 46.0                    |
| 8             | Yolo Bypass                                    |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| 9             | Montezuma Slough                               |               | 6                 | 0                  | 1            | 4            | 0            | 2          | 7           | 3               | 24                      | 28                      | 25.3                    |
| 10            | Napa River                                     |               | 1                 | 0                  | 0            | 3            | 0            | 0          | 3           | 0               | NA                      | NA                      | NA                      |
| 11            | Petaluma River                                 |               | 1                 | 0                  | 1            | 0            | 0            | 0          | 1           | 1               | 60                      | 60                      | 60.0                    |
| 12            | San Joaquin River: Upstream of HWY 140 bridge  |               | 1                 | 0                  | 0            | 0            | 0            | 1          | 1           | 0               | -                       | -                       | -                       |
| 13            | San Joaquin River: HWY 140 bridge to Stockton  |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| 14            | San Joaquin River: Stockton to Sherman Lake    |               | 3                 | 0                  | 0            | 1            | 1            | 1          | 3           | 2               | 22                      | 50                      | 36.0                    |
| 15            | Old River                                      |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| 16            | San Pablo Bay                                  | 4             | 10                | 0                  | 11           | 2            | 0            | 2          | 15          | 5               | 19                      | 36                      | 28.6                    |
| 17            | Carquinez Strait                               | 5             | 9                 | 0                  | 9            | 1            | 2            | 1          | 13          | 1               | 30                      | 30                      | 30.0                    |
| 18            | Suisun Bay                                     | 2             | 31                | 0                  | 8            | 17           | 2            | 11         | 38          | 11              | 8                       | 48                      | 29.5                    |
| 19            | Grizzly Bay                                    |               | 6                 | 0                  | 1            | 3            | 1            | 1          | 6           | 0               | NA                      | NA                      | NA                      |
| 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                                  |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| <b>Totals</b> |  |               | <b>125*</b>       | <b>0</b>           | <b>50</b>    | <b>49</b>    | <b>12</b>    | <b>57</b>  | <b>168</b>  | <b>54</b>       |                         |                         |                         |

- = no reported angler catch

\* = 1 angler fished and caught a green sturgeon at 3 different locations, 3 anglers fished and caught a green sturgeon at 2 different locations, and 116 anglers fished and caught green sturgeon at 1 location

**Table 6. Retained white sturgeon catch and length statistics by location and season as provided on 2013 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  |               | 15                | 0                  | 4            | 8            | 1            | 6          | 19           | 18              | 40                      | 59                      | 50.5                    |
| 01A           | Sacramento River: Upstream of Red Bluff        |               | 10                | 0                  | 0            | 8            | 0            | 2          | 10           | 10              | 43                      | 59                      | 51.2                    |
| 01B           | Sacramento River: Red Bluff to Hwy 32 bridge   |               | 2                 | 0                  | 0            | 3            | 0            | 0          | 3            | 3               | 49                      | 57                      | 52.0                    |
| 01C           | Sacramento River: Hwy 32 bridge to Colusa      |               | 23                | 0                  | 4            | 28           | 0            | 0          | 32           | 32              | 45                      | 59                      | 52.3                    |
| 2             | Sacramento River: Colusa to Knights Landing    |               | 64                | 0                  | 26           | 56           | 0            | 0          | 82           | 82              | 43                      | 60                      | 53.6                    |
| 3             | Sacramento River: Knights Landing to Rio Vista | 2             | 277               | 0                  | 118          | 191          | 3            | 42         | 354          | 353             | 40                      | 60                      | 51.7                    |
| 4             | Sacramento River: Rio Vista to Chipps Island   | 3             | 280               | 0                  | 108          | 87           | 10           | 147        | 352          | 349             | 40                      | 60                      | 49.8                    |
| 5             | Feather River                                  |               | 4                 | 0                  | 3            | 1            | 0            | 0          | 4            | 4               | 42                      | 58                      | 47.5                    |
| 6             | American River                                 |               | -                 | -                  | -            | -            | -            | -          | -            | -               | -                       | -                       | -                       |
| 7             | Sacramento Deepwater Ship Channel              | 5             | 78                | 0                  | 33           | 38           | 0            | 28         | 99           | 99              | 40                      | 60                      | 50.0                    |
| 8             | Yolo Bypass                                    |               | 9                 | 0                  | 2            | 4            | 0            | 3          | 9            | 9               | 43                      | 58                      | 51.3                    |
| 9             | Montezuma Slough                               | 4             | 122               | 0                  | 39           | 67           | 18           | 22         | 146          | 146             | 40                      | 60                      | 50.0                    |
| 10            | Napa River                                     |               | 59                | 0                  | 16           | 42           | 8            | 4          | 70           | 70              | 40                      | 60                      | 50.7                    |
| 11            | Petaluma River                                 |               | 6                 | 0                  | 2            | 3            | 0            | 1          | 6            | 5               | 44                      | 53                      | 48.4                    |
| 12            | San Joaquin River: Upstream of HWY 140 bridge  |               | 3                 | 0                  | 3            | 0            | 0            | 1          | 4            | 4               | 40                      | 59                      | 45.5                    |
| 13            | San Joaquin River: HWY 140 bridge to Stockton  |               | 4                 | 0                  | 2            | 1            | 0            | 1          | 4            | 4               | 40                      | 49                      | 45.0                    |
| 14            | San Joaquin River: Stockton to Sherman Lake    |               | 42                | 0                  | 19           | 17           | 1            | 13         | 50           | 50              | 40                      | 60                      | 48.8                    |
| 15            | Old River                                      |               | 3                 | 0                  | 1            | 0            | 0            | 3          | 4            | 3               | 40                      | 53                      | 44.7                    |
| 16            | San Pablo Bay                                  |               | 67                | 0                  | 39           | 37           | 2            | 6          | 84           | 83              | 41                      | 60                      | 50.1                    |
| 17            | Carquinez Strait                               |               | 46                | 0                  | 17           | 23           | 13           | 3          | 56           | 52              | 40                      | 60                      | 48.7                    |
| 18            | Suisun Bay                                     | 1             | 343               | 1                  | 133          | 138          | 46           | 126        | 444          | 441             | 40                      | 60                      | 49.7                    |
| 19            | Grizzly Bay                                    |               | 58                | 0                  | 24           | 23           | 7            | 14         | 68           | 68              | 40                      | 60                      | 50.4                    |
| 20            | San Francisco Bay: North of HWY 80             |               | 6                 | 0                  | 6            | 0            | 0            | 1          | 7            | 7               | 40                      | 56                      | 49.1                    |
| 21            | San Francisco Bay: South of HWY 80             |               | 73                | 0                  | 82           | 7            | 0            | 10         | 99           | 99              | 41                      | 60                      | 51.9                    |
| 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                          |               | 2                 | 0                  | 0            | 0            | 2            | 0          | 2            | 2               | 58                      | 58                      | 58.0                    |
| 26            | Klamath River                                  |               | -                 | -                  | -            | -            | -            | -          | -            | -               | -                       | -                       | -                       |
| <b>Totals</b> |  |               | <b>1,596*</b>     | <b>1</b>           | <b>681</b>   | <b>782</b>   | <b>111</b>   | <b>433</b> | <b>2,008</b> | <b>1,993</b>    |                         |                         |                         |

- = no reported angler catch

\* = 3 anglers caught and retained a white sturgeon at 3 different locations, 96 anglers caught and retained a white sturgeon at 2 different locations, and 1,395 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 2013 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  |               | 7                 | 3                  | 4            | 0            | 0            | 11         | 18          | 5               | 31                      | 87                      | 57.2                    |
| 01A           | Sacramento River: Upstream of Red Bluff        |               | 2                 | 0                  | 1            | 4            | 0            | 1          | 6           | 0               | NA                      | NA                      | NA                      |
| 01B           | Sacramento River: Red Bluff to Hwy 32 bridge   |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| 01C           | Sacramento River: Hwy 32 bridge to Colusa      |               | 12                | 0                  | 9            | 29           | 0            | 0          | 38          | 11              | 36                      | 88                      | 65.9                    |
| 2             | Sacramento River: Colusa to Knights Landing    |               | 31                | 1                  | 13           | 37           | 0            | 1          | 52          | 17              | 31                      | 85                      | 60.6                    |
| 3             | Sacramento River: Knights Landing to Rio Vista | 5             | 166               | 0                  | 137          | 153          | 0            | 62         | 352         | 85              | 15                      | 84                      | 42.6                    |
| 4             | Sacramento River: Rio Vista to Chipps Island   | 2             | 257               | 0                  | 263          | 126          | 43           | 326        | 758         | 240             | 15                      | 89                      | 37.9                    |
| 5             | Feather River                                  |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| 6             | American River                                 |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
| 7             | Sacramento Deepwater Ship Channel              |               | 73                | 0                  | 68           | 57           | 2            | 50         | 177         | 37              | 17                      | 74                      | 39.3                    |
| 8             | Yolo Bypass                                    |               | 5                 | 0                  | 13           | 7            | 0            | 11         | 31          | 28              | 30                      | 70                      | 50.0                    |
| 9             | Montezuma Slough                               | 3             | 131               | 0                  | 122          | 227          | 45           | 54         | 448         | 223             | 12                      | 117                     | 46.2                    |
| 10            | Napa River                                     |               | 96                | 0                  | 71           | 130          | 11           | 21         | 233         | 85              | 15                      | 98                      | 41.1                    |
| 11            | Petaluma River                                 |               | 12                | 0                  | 5            | 10           | 1            | 2          | 18          | 11              | 24                      | 80                      | 48.0                    |
| 12            | San Joaquin River: Upstream of HWY 140 bridge  |               | 5                 | 0                  | 5            | 3            | 0            | 2          | 10          | 3               | 22                      | 35                      | 28.0                    |
| 13            | San Joaquin River: HWY 140 bridge to Stockton  |               | 4                 | 0                  | 1            | 2            | 0            | 3          | 6           | 1               | 32                      | 32                      | 32.0                    |
| 14            | San Joaquin River: Stockton to Sherman Lake    |               | 33                | 0                  | 39           | 17           | 5            | 21         | 82          | 31              | 12                      | 84                      | 39.4                    |
| 15            | Old River                                      |               | 5                 | 0                  | 1            | 0            | 0            | 4          | 5           | 3               | 32                      | 36                      | 33.7                    |
| 16            | San Pablo Bay                                  | 4             | 111               | 0                  | 254          | 75           | 11           | 34         | 374         | 82              | 22                      | 85                      | 45.8                    |
| 17            | Carquinez Strait                               |               | 87                | 0                  | 85           | 76           | 19           | 21         | 201         | 48              | 15                      | 77                      | 36.8                    |
| 18            | Suisun Bay                                     | 1             | 348               | 0                  | 557          | 309          | 128          | 271        | 1265        | 422             | 3                       | 89                      | 37.0                    |
| 19            | Grizzly Bay                                    |               | 96                | 0                  | 68           | 98           | 12           | 60         | 238         | 72              | 21                      | 96                      | 42.2                    |
| 20            | San Francisco Bay: North of HWY 80             |               | 3                 | 0                  | 8            | 0            | 0            | 3          | 11          | 3               | 24                      | 70                      | 43.3                    |
| 21            | San Francisco Bay: South of HWY 80             |               | 45                | 0                  | 49           | 12           | 1            | 7          | 69          | 34              | 29                      | 73                      | 50.7                    |
| 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                          |               | 2                 | 0                  | 0            | 0            | 2            | 0          | 2           | 1               | 63                      | 63                      | 63.0                    |
| 26            | Klamath River                                  |               | -                 | -                  | -            | -            | -            | -          | -           | -               | -                       | -                       | -                       |
|               | Totals   |               | 1,531*            | 4                  | 1,773        | 1,372        | 280          | 965        | 4,394       | 1,442           |                         |                         |                         |

- = no reported angler catch

\* = 1 angler caught and released a white sturgeon at 8 different locations, 2 anglers caught and released a white sturgeon at 5 different locations, 9 anglers caught and released white sturgeon at 4 different locations, 27 anglers caught and released white sturgeon at 3 different locations, 171 anglers caught and released white sturgeon at 2 different locations, and 1,054 anglers caught and released white sturgeon at 1 location

## Discussion

Information from 2013 Cards includes the following highlights:

- (1) About 45% 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.
- (2) We received 2013 Cards (or data) from approximately 20% of sturgeon anglers, which is approximately double the rate from 2012 Card holders. The increase is likely attributable mostly to issuance of roughly half as many 2013 Cards as 2012 Cards, which was in turn likely attributable to charging a fee for issuance of Cards rather than issuing Cards free as had been the case since 2007. Although the return rates were very different, the number of 2013 Cards with catch data (2,257) was similar to the number of 2012 Cards with catch data (2,041).
- (3) Fourteen white sturgeon and one green sturgeon were reported caught from Location 12 (San Joaquin River, upstream of Highway 140 Bridge). Because occurrence of sturgeon in this reach of the San Joaquin River is rare, we will attempt to contact each of those anglers in an effort to verify the catches.
- (4) Recapture data (25 identified disk-tagged fish reported) will augment mark-recapture data used by the Department's sturgeon population study, and thus are important for the precision and/or accuracy of estimated abundance, harvest rate, and survival rate.
- (5) The length frequency distributions of white sturgeon — 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 has begun 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 2014).
- (6) The length frequency distribution of white sturgeon smaller than 40 inches suggests that annual production of white sturgeon was very low during the period 2007-2012. Low levels of white sturgeon production during those years was also suggested from indices of young-of-the-year white sturgeon abundance (DFW 2013) and was expected from the positive relationship between white sturgeon production and Delta outflow (Fish 2010).

## Literature Cited and Relevant References

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For more, click on [additional bibliography](#).

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