

NOAA 2012 Protected Species  
Studies of Green Sturgeon along the West Coast of the  
U.S. to Guide the Design and to Implement a Monitoring  
Program to Track Coast-Wide Status and Trends for  
Future Population Viability Assessments

**PROGRESS REPORT**

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Project accomplishments by objective are:

**A) Database Development**

This objective has been curtailed due to budget reductions during Year 2 of project implementation. An in-house database has been developed to house historic data from WDFW and ODFW, and data associated with the current project. Efforts to make tagging data available through existing online data systems such as PTAGIS and Hydra will continue.

A green sturgeon collaboration site was established on the NWFSC Oracle Beehive-based system. The test users did not have time to explore the usefulness of this tool for data exchange and coordination between projects before the scheduled switch by NWFSC to the Google-based system. Further evaluation of collaborative website usefulness will be limited, and likely eliminated due to time and manpower constraints.

1. *Solicit and select a contractor to oversee the development of the database by August 31, 2010.*

(See past progress reports for periods of July 1 through December 31, 2010 and January 1 through June 30, 2011.)

2. *Convene a conference to define needs and standards by November 30, 2010.*  
(See past progress reports for periods of January 1 through June 30, 2011 and January 1 through June 30, 2012.)

WDFW project staff participated in the August 10, 2012 kickoff meeting for the Improving Access to Animal Acoustic Telemetry Observations Project (IAAATO). Core participants are NOAA Integrated Ocean Observing System, Northwest Association of Networked Ocean Observing Systems and Pacific Ocean Shelf Tracking Program. This project will be delivering: a customer requirements document; an architecture and design document incorporating the user requirements and technical recommendations; a standard representation/descriptions for observations from acoustic tracking data; development and implementation of web services to expose animal acoustic telemetry; and, as resources allow, create regional, accessible online products for browsing and visualizing of tracking data. The system would take the file formats of the various regional databases, and convert them into useful formats (ASCII, Excel, etc.) that import directly into tools managers that researchers typically use to analyze tracking data (such as ArcGIS, and Google Maps). This eliminates the need for one universal acoustic tracking database.

3. *Build a beta-version of the database system by March 31, 2011.*  
(See past progress report for January 1 through June 30, 2012 and IAAATO Project comment under Objective 2 above.)
4. *Incorporate feedback from researchers by April 30, 2011.*  
(See past progress report for January 1 through June 30, 2012 and IAAATO Project comment under Objective 2 above.)
5. *Complete the database with sample/historical data by August 31, 2011.*  
(See past progress report for January 1 through June 30, 2012.)

6. *Input tagging information until web application is completed.*

All tagging and biological information gathered during this Project has been put into the ODFW/WDFW database, as of December 31, 2012. The agencies will be verifying and checking the database over the course of the next few months, as we move into the analysis and final report writing phase. We have only been able to get a small amount of the Project's acoustic tag detection or receiver deployment data into the HYDRA system. We are working with the HYDRA managers to get all of our information entered into the new HYDRA 3.0 system during January 2013. We will be storing 2003-2012 PIT tag data into PTAGIS during the first half of 2013.

7. *Roll out green sturgeon tagging data website for accessing coast-wide data by February 29, 2012.*

This task has been curtailed due to budget reductions.

8. *Roll out enhanced green sturgeon tagging data website for input and access to coast-wide data (including interface to other databases) by October 31, 2012.*

This task has been curtailed due to budget reductions.

9. *Develop a maintenance plan for the website by October 31, 2012.*

This task has been curtailed due to budget reductions.

10. *Maintain the website, and make improvements November 1, 2012 – June 30, 2013.*

This task has been curtailed due to budget reductions.

## **B) Critical Habitat**

This objective has been eliminated to address reduced federal funding. Biotelemetry elements that were in common with objectives 1 and 3 are described below.

1. *Deploy acoustic receivers at the entrance to the main estuaries (in concert with Abundance/Survival objective) by July 15.*

Two additional receivers were deployed in Willapa Bay and one additional receiver deployed in the Columbia River than what was previously reported (see report for period of January through June 2012).

2. *Complete download of all gateway receivers yearly in November-December.*

The four Grays Harbor receivers were removed and downloaded by December 31, 2012. All but a handful of the 10 Willapa Bay receivers were removed and downloaded by December 31, 2012. The receivers remaining in the southern half of Willapa Bay will be removed and downloaded during January 2013, weather permitting. The 9 receivers in the Columbia River were removed and downloaded by November 8, 2012. The Tillamook Bay receiver was downloaded on December 5, 2012. The four receivers in the Umpqua River were last downloaded on August 27, 2012, and another downloading event is planned for January 17, 2013. Given that we have had no losses of the Tillamook and Umpqua receivers, we are planning to leave these receivers in place through the winter and will reassess removal during the final months of project implementation, i.e., before June 30, 2013. Due to the pending termination of the project, we will not redeploy receivers in Grays Harbor, Willapa Bay, or the Columbia River next spring. This could change if it is apparent that we will be receiving a new Section 6 grant or funds from another source to maintain acoustic arrays in the Pacific Northwest estuaries.

3. *Complete year one acoustic tagging of fish (in concert with Abundance/Survival objective) by mid-September 2010.*  
(See previous progress report for period of July through December 2010)
4. *Deploy and monitor non-gateway receivers in the Columbia River July 16 – November 30.*  
(See previous progress report for period of January through June 2012.)
5. *Complete year two acoustic tagging of fish September 2011.*  
(See previous progress report for period of July through December 2011.)
6. *Deploy and monitor non-gateway receivers in Willapa Bay May 1-November 30.*  
(See previous progress report for period of January through June 2012.)
7. *Complete year three acoustic tagging of fish (in concert with Abundance/Survival objective) by mid-September 2012.*

Tagging operations occurred in the Columbia River, Willapa Bay, and Grays Harbor during 2012. The effort in the Columbia River commenced in July and amounted to 11 days through September 12. Prior to this effort, green sturgeon were opportunistically tagged during white sturgeon tagging operations that ran from May 15 through June 30. Operations occurred 9 days in Willapa Bay (starting July 1, ending August 18), and on 11 days in Grays Harbor (starting July 7, ending September 19). During these periods, 108 fish were implanted with acoustic tags (see Table 1). In total, 339 acoustic tags have been implanted by the project between 2010 and 2012; tags implanted before 2010 are deemed to be 'inactive.' Three (1 in Grays Harbor and 2 in Willapa Bay; Table 1) of the 39 fish recaptured during 2012 (Table 2) were previously implanted with acoustic tags.

**Table1.** Acoustic tags implanted in green sturgeon caught during 2012.

<b>Location, Month</b>	<b># Acoustic Tag Applied</b>	<b># Acoustic Recap</b>	<b>Total GS Caught</b>	<b>% Acoustic Tagged*</b>
<b>Columbia River,</b>				
May	2	0	4	50
June	4	0	10	40
July	26	0	45	58
August	2	0	9	22
September	3	0	26	12
<b>Total</b>	<b>37</b>	<b>0</b>	<b>94</b>	<b>39</b>
<b>Willapa Bay,</b>				
July	30	2	217	14
August	6	0	66	9
<b>Total</b>	<b>36</b>	<b>2</b>	<b>283</b>	<b>13</b>
<b>Grays Harbor,</b>				
July	25	1	105	24
August	7	0	42	17
September	3	0	194	2
<b>Total</b>	<b>35</b>	<b>1</b>	<b>341</b>	<b>10</b>
<b>Combined</b>	<b>108</b>	<b>3</b>	<b>718</b>	<b>15</b>
*: % tagged out of possible to tag (acoustic recaps not included)				
(# Acoustic tag applied/(Total GS Caught-# Acoustic Recap) ) * 100				

8. *Deploy and monitor non-gateway receivers in Grays Harbor May 2-November 30.*

This task has been curtailed due to budget reductions.

9. *Complete assessment of fine scale critical habitat use in the three estuaries by January 2013.*

This task has been curtailed due to budget reductions.

### **C) Abundance/Survival**

1. *Complete year one tagging of fish (in concert with Critical Habitat objective) by mid-September 2010.*

(See previous progress report for period of July through December 2010)

2. *Present a stratified sampling approach for the mark-recapture study to the green sturgeon steering committee for their critical review by January 2011. (This will be informed by year one acoustic tagging and other distribution information).*

(See previous progress report for period of January through June 2012.)

3. *Complete year two tagging and recovery of fish by mid-September 2011.*

(See previous progress report for period of July through December 2011.)

4. *Complete initial (year two) abundance estimates by January 2012.*

(See previous progress report for period of January through June 2012.)

5. *Complete year three tagging and recovery of fish by mid-September 2012.*

Tagging operations occurred in the Columbia River, Willapa Bay, and Grays Harbor during 2012. The effort in the Columbia River commenced in July and amounted to 11 days through September 12. Prior to this effort, green sturgeon were opportunistically tagged during white sturgeon tagging operations that ran from May 15 through June 30. Operations occurred 9 days in Willapa Bay (starting July 1, ending August 18), and on 11 days in Grays Harbor (starting July 7, ending September 19). Of the 718 green sturgeon handled, 39 were recaptures. All new fish received PIT tags, except one was missed unintentionally (Table 2). There are 2,102 green sturgeon at large with PIT tags applied by WDFW/ODFW during 2003-2012. The tag recovery rate was approximately 4%.

6. *Complete assessment of alternative survival and abundance estimates by January 2013.*

(Task is not scheduled for completion during this reporting period. Assessment will not be completed until June 2013.)

**Table 2.** Green sturgeon PIT tagged or recaptured during 2012.

<b>Location, Month</b>	<b># PIT Tag Applied</b>	<b># Recaptured</b>	<b># No PIT Tag Applied</b>	<b>Total GS Caught</b>
<b>Columbia River,</b>				
May	4	0	0	<b>4</b>
June	10	0	0	<b>10</b>
July	45	0	0	<b>45</b>
August	9	0	0	<b>9</b>
September	26	0	0	<b>26</b>
<b>Total</b>	<b>94</b>	<b>0</b>	<b>0</b>	<b>94</b>
<b>Willapa Bay,</b>				
July	205	12	0	<b>217</b>
August	65	1	0	<b>66</b>
<b>Total</b>	<b>270</b>	<b>13</b>	<b>0</b>	<b>283</b>
<b>Grays Harbor,</b>				
July	97	8	0	<b>105</b>
August	39	3	0	<b>42</b>
September	178	15	1	<b>194</b>
<b>Total</b>	<b>314</b>	<b>26</b>	<b>1</b>	<b>341</b>
<b>Combined</b>	<b>678</b>	<b>39</b>	<b>1</b>	<b>718</b>

**D) FMEP**

1. *Complete a review of what Washington fisheries would benefit from having an FMEP.*  
(See previous progress report for period from July through December 2010)
2. *Determine how WDFW can meet the essential elements of the FMEP.*  
(See previous progress report for period from July through December 2010)
3. *Gather or generate supporting documentation.*  
(See previous progress report for period from July through December 2010)
4. *Complete and circulate a draft of the FMEP.*  
(See previous progress report for period from July through December 2010)

5. *Complete revisions and submit a final FMEP to NMFS by the 120-day deadline.*

The final Twin Harbors Region FMEP was submitted by WDFW on January 7, 2011, thereby meeting the 120-day deadline.

As of December 2012, the ODFW continues to develop a complimentary draft FMEP that will address those Oregon coastal and estuary fisheries that are not authorized by either, (1) federal permit or regulation and managed according to Pacific Fishery Management Council (PFMC) fishery management plans and are subject to future Section 7 consultations between PFMC and NMFS or, (2) fisheries in the Columbia River or its estuary, that are subject to an existing Biological Opinion.

6. *Complete the review of what Oregon fisheries would benefit from having an FMEP and determine how ODFW can meet the essential elements of the FMEP. Planning and reviewing activities associated with this task are ongoing.*

7. *Gather and generate supporting documentation to complete and circulate a draft FMEP by 30 June 2012.*

*Some progress toward the completion of this task was made during the reporting period. Oregon Department of Fish and Wildlife staff will continue to work on this task using contributed state funds. The completion of a draft FMEP has been re-scheduled to a later date.*

8. *Complete revisions and submit a final FMEP to NMFS by 30 June 2013 (Task not scheduled to be completed during this reporting time period.)*

## **E) Reporting and coordination**

1. *Form, and convene at least semiannually, the green sturgeon steering committee, July 2010, January & June 2011, January & June 2012, and January & June 2013.*

The steering committee was formed and has met via teleconference on two occasions since July 2011. Due to severe reductions in project funding during years 2 and 3 of project implementation, subsequent re-prioritization of objectives and tasks and a lack of designated funds to prepare for and conduct meetings, the steering committee has not been convened during the reporting period.

2. *Complete annual progress report for each objective by June 2011-2013.*

This is the fifth semi-annual progress report.

3. *Complete a comprehensive report of the three-year study by December 2013.*

(Task is not scheduled for completion during this reporting period.)

4. *Document and distribute datasets from the study by December 2013.*

(Task is not scheduled for completion during this reporting period.)

Project biologists share raw biological sample and tag information with staff from NMFS-NWFSC and USGS-WRL. The acoustic receiver and tag information is currently being entered into a temporary regional acoustic database.

5. *Complete submission of articles to peer-reviewed journals by December 2013.*

No journal articles have been submitted; however, the following report was produced during this performance period:

Joint Columbia River Research Staff. 2012. Information Relative to the Status Review of Green Sturgeon. Report submitted as attachment to December 21, 2012 letters submitted by WDFW and ODFW in response to the request for information to be used in the 5-year review of the status of the Southern Distinct Population Segment of North American Green Sturgeon. 29p.

**F) Expenditures (Estimated)**

ODFW:	July 1 to December 31, 2012	\$	752
Subcontract to WDFW:	July 1 to December 31, 2012	\$	<u>153,951</u>
Total expenditures	July 1 to December 30, 2012:	\$	<b>154,703</b>