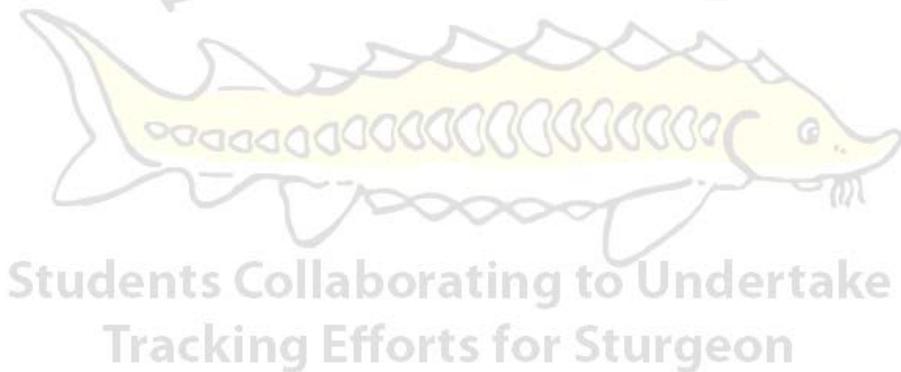
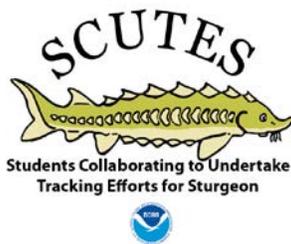


<b>Topic/Lesson:</b>	<b>Sturgeon Litter Tag</b>
<b>Subjects:</b>	Environmental Science, Social Studies
<b>Author:</b>	Edited by Edith Carson Adapted from “Litter Tag” lesson plan by: Alliance for the Great Lakes and Great Lakes in My World <a href="http://www.greatlakes.org">www.greatlakes.org</a>
<b>Time Duration:</b>	30 minutes
<b>Overview:</b>	Students play a game of tag to help understand the harmful effects litter has on marine organisms, such as the sturgeon.
<b>Objectives:</b>	Students will be able to: <ul style="list-style-type: none"> <li>• Discuss how garbage harms wildlife including sturgeon.</li> <li>• List ways that humans can help solve this problem.</li> </ul>
<b>Background Knowledge:</b>	<p>When litter is put in the environment, either intentionally or by accident, it can have negative effects. In lakes, rivers and oceans, litter can decrease tourism, diminish community pride, and cause harm to plants, animals, and people. Some of the most frequently found items are listed below, along with some of the problems associated with them.</p> <p><b>Cigarette Butts:</b> Cigarette filters are the most numerous item found during almost all beach cleanups. Filters are made of a plastic, cellulose acetate, which can take up to five years to break down into small pieces and even longer to completely decompose. Children at play on the beach may put cigarette filters in their mouths. A study has also been done showing that the chemicals in cigarettes can be harmful to microorganisms that support other wildlife.</p> <p><b>Balloons:</b> Balloons and their ribbons can entangle animals and are sometimes ingested when mistaken for food, causing injury or death. Balloons can also pose a problem for boaters if their propellers get tangled up in the string.</p> <p><b>Food Packaging:</b> Food packaging such as plastic bags can entangle animals or be confused for food and ingested, causing injury or death.</p> <p><b>Beverage bottles (glass, aluminum, plastic):</b> Broken glass bottles and sharp edges of aluminum cans may injure people as well as wildlife. Also, the plastic ring packaging from 6-packs of cans and bottles can suffocate wildlife or cause injury through entanglement. This litter could indicate the need for recycling containers on the beach.</p> <p><b>Fishing line:</b> Fishing line can entangle animals, which can cause injury to</p>

	<p>wildlife.</p> <p>Micro-plastics: Micro-plastics are pieces of plastic that are small, and can be mistaken for food by fish and wildlife. These microplastics have been found floating in the water column and embedded in the sediments.</p>
<b>Materials:</b>	<ul style="list-style-type: none"> <li>• Six-pack plastic ring</li> <li>• Balloon with string</li> <li>• Fishing line</li> <li>• Plastic bag</li> </ul>
<b>Vocabulary:</b>	<p><b>Litter:</b> Trash (such as paper, cans, and bottles) that is left in an open or public place</p>
<b>Procedures:</b>	<ol style="list-style-type: none"> <li>1. Ask students what they like best about going to the beach. Ask them what kind of problems they see at the beach (eventually highlighting litter at the beach). Ask students what kind of problems litter might cause. Use background information to help them get a complete picture.</li> <li>2. Ask students to think of ways to help solve this problem (pick up the garbage or to not leave it in the first place). Emphasize that humans are both the problem and the solution.</li> <li>3. In an outdoor area or a gym, divide the students into three groups representing litter, sturgeon, and humans. For a class of 26, there should be seven humans, seven litter items, and twelve sturgeons. Have the students decide which type of litter (cans, bottles, paper, etc.) or sturgeon (Atlantic or shortnose) they will be. If you have enough supplies, give each member of the litter team a piece of litter to hold onto during the game. Explain that the litter will be chasing the sturgeon, trying to tag them. Once a sturgeon is tagged, they are frozen.</li> <li>4. After one minute, the humans will come into the game to “rescue” the tagged sturgeon. When rescuing a sturgeon, two humans must hold hands with the animal in the middle and yell, “One, two, three sturgeon free!” And then, after several minutes, choose one or two humans to be Beach Captains. The Beach Captains can still free the animals with the other humans, but now they can chase the litter, too. If the litter is tagged, they must sit out. The game ends when the Beach Captains tag all the litter, or sooner, if students are tired. If time allows, switch roles and play again.</li> </ol>
<b>Conclusions:</b>	<ol style="list-style-type: none"> <li>1. Bring the group back together and ask students to talk about what they learned or what the game made them think about with regards to litter and sturgeon.</li> </ol>

	<p>2. Discuss the following questions:</p> <ul style="list-style-type: none"> <li>• Do animals, including sturgeon, really get caught in litter? Yes, plastic bags, string, and netting cause many problems for wildlife. Sturgeon have been spotted with plastic and rubber rings around their necks.</li> <li>• How realistic is it to say that litter “chases” animals? Animals do not generally suspect that litter will hurt them. It can take animals by surprise when litter entangles them.</li> <li>• How can humans help solve this problem? By picking up after themselves, and telling others the harm that litter can do.</li> </ul>
<p><b>Education Standards:</b></p>	<p><u>Next Generation Science</u></p> <ul style="list-style-type: none"> <li>• Human Impacts <ul style="list-style-type: none"> <li>○ Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.</li> </ul> </li> </ul>





Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Sturgeon Litter Tag Rubric

ELEMENTS	4	3	2	1
<p><b>DISCUSSION:</b> Student lists the types of litter found at the beach and hypothesizes about the problems it can cause. Student uses active listening skills (eye-contact, confirming or referencing others' comments, affirmative gestures or comments).</p>	Addresses all of the components	Missing one component	Missing two components	Missing three or more components
<p><b>GAME:</b> Student participates in the game, takes on roles, and acts according to the directions.</p>	Addresses all of the components	Missing one component	Missing two components	Missing three or more components
<p><b>WRAP-UP:</b> After the game, student is able to re-focus and reflect on how the game made him/her think about litter and sturgeon. Student brainstorms ideas for class action, as appropriate.</p>	Addresses all of the components	Missing one component	Missing two components	Missing three or more components