Invasive Species Council of BC
Clean Drain Dry Program
Summary Report
2013

Invasive Species Council of British Columbia

Acknowledgements

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- The Ministry of Forests, Lands and Natural Resource Operations
- Beyond Attitude Consulting Inc.
- Participating regional invasive species committees
- ISCBC Clean, Drain, Dry program staff

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Executive Summary

Clean Drain Dry (CDD) is a leading edge behaviour change program developed by the Invasive Species Council of British Columbia. Its main goal is to prevent the introduction and spread of aquatic invasive species (AIS) through recreational pathways, specifically boater activity. The program is designed to change the behavior of boaters so that they clean, drain and dry their boats before entering a water body. This is achieved by using targeted messaging and resources across the province that are consistent with messaging in Alberta and our neighbouring states.

2013 marks the second year of the Clean Drain Dry program. The focus regions included Central Kootenay, South Okanagan, North Okanagan, Shuswap and Fraser Valley. One Aquatic Liaison Worker was hired in each region to implement the program. In 3 of the 5 regions, the Liaison Worker was supported by a seasonal summer student. The workers attended select boat launches and community events to interact directly with boaters, and connected with youth and stewardship groups to expand the reach of the program. Boaters received general information on AIS and were asked to participate in a boater survey, which assessed their current knowledge of AIS and best practices, such as cleaning, draining and drying their boats. Boaters were also asked to make a commitment to Clean, Drain, Dry their boats.

CDD team members secured a total of 2835 commitments from May to mid September. About half of these were obtained at boat launches and the other half obtained through education and outreach events. There were some regional differences regarding the number of commitments received, where the Fraser Valley and Shuswap regions obtained the most commitments. There are many variables that could influence these results, including the high volume of boater activity in these tourist destinations and the quality of the interactions that occurred between staff and boaters.

A total of 1346 boater surveys were completed from May to mid September. The boater survey results indicate that the CDD program has been successful at educating boaters about AIS and influencing boaters to change their behaviour and clean drain dry their boats. The results of the survey also indicate that boating remains a key pathway for the introduction and spread of AIS and that continued programming is required to ensure the adoption of responsible behaviours.

Overall, the 2013 Clean Drain Dry program was well received by boaters and members of the public in all regions, and has provided valuable insights to inform program delivery in 2014. The 2014 Clean Drain Dry program will focus on building and supporting partnerships with stewardship groups provincially and regionally to build a network of aquatic ambassadors across the province. Interactions will continue in high priority regions and at relevant provincial and regional events.

1.0. Introduction

The Invasive Species Council of British Columbia (ISCBC) undertakes research, education and outreach to minimize the negative impacts caused by the introduction, establishment, and spread of invasive species. The threat of invasive species to British Columbia's natural ecosystems has heightened as of recent. The provincial government has recognized this issue and has taken steps to prevent the introduction and spread of invasive species by amending the Controlled Alien Species Regulation in the Wildlife Act. These changes included the addition of several aquatic invasive species, including fish and mussels that pose a significant risk to BC's native species, environment and infrastructure.

> The ***Wildlife Act*'s** Controlled Alien Species Regulation is a regulation that controls the possession, breeding, shipping and releasing of alien animals that pose a risk to the health or safety of people or the environment. On December 18th, 2012, a number of amendments to the Controlled Alien Species Regulation became law, including the addition of a number of aquatic invasive species that pose a significant risk to BC. For more information visit: www.env.gov.bc.ca.

Invasive species are typically introduced and spread by human action, including recreational activities such as boating. The ISCBC is working in partnership with the provincial government to reduce the introduction and spread of aquatic invasive species by delivering a multi-year program focused on encouraging boaters to commit to clean, drain and dry their boats before entering a water body. Through this initiative, the Council is working towards protecting BC's environmental, social and economic interests.

In 2011, baseline data was collected on the primary pathways of invasive species invasion in British Columbia. The results indicated boating as a key vector of aquatic invasive species introduction and spread. The program evolved around this pathway and in 2012 a pilot program was launched with the goal of promoting positive behavior change in boaters. Further details regarding the 2012 CDD program can be found in the CDD 2012 Final Report (www.bcinvasives.ca/special-events/clean-drain-dry).

The 2013 CDD program goals were similar to those in 2012, with a key goal of securing commitments from boaters and members of the public to clean, drain, dry their boats. An additional goal in 2013 was to expand the Clean Drain Dry message to stewardship and youth groups and relevant community events. This program expansion proved to be very successful.

2.0. Approach and Methods

CDD program regions were determined based on several criteria, including the success of the 2012 CDD pilot, risk of AIS introduction and spread, level of boater activity, boating traffic patterns, and proximity to national and provincial borders. In 2013, the CDD program was delivered in five regions: Central Kootenay, South Okanagan, North Okanagan, Shuswap and Fraser Valley.

The ISCBC contracted regional invasive species committees as program advisors in each region. Contracted committees were responsible for developing a list of priority boat launches, relevant community events, and applicable regional youth and stewardship groups. In addition, regional committees provided regional orientation and advice over the course of program delivery.

CDD teams, consisting of one full time facilitator and one seasonal support staff, were established in 3 of the 5 regions from May to September. In the South Okanagan and Central Kootenay there was one full time facilitator (no seasonal assistant) from May to September.

The role of each team was to approach boaters at boat launches and community events and provide the necessary tools and information to assist them in taking responsible action to clean, drain and dry their boats before entering a water body. Teams educated boaters by talking to them directly and used a variety of targeted program resources (Appendix 1) to spread the CDD message and encourage responsible behavior. These resources included boat launch signage, information (rack) cards, AIS mini-brochures (wallet cards), floating key chains, water proof boat licence pouches, and species fact sheets. In many cases teams also created interactive games and activities targeted towards event audiences and youth. Teams also asked boaters to participate in an onsite aquatic invasive species/boater survey. Where possible, team members secured a verbal or written commitment from boaters at the end of each interaction.

A **commitment** is a promise to carry out an act. Based on the principles of Community-Based Social Marketing, securing commitment to an action has proven to be a strong driver of behaviour change. Once someone has committed to perform a specific behavior, there is strong internal pressure to behave consistently and be viewed as honest and having integrity. This pressure is enhanced if the commitment is in writing and made public. Verbal commitments are sought first, and where possible a written commitment is also sought to reinforce the change in behaviour.

Teams also spent a portion of their time building relationships with key stewardship groups, organizations and member of the public by delivering program related presentations, leading group discussions and sharing related materials. Again, at the end of each interaction, boaters were asked to commit to clean drain dry their boats.

3.0. Results

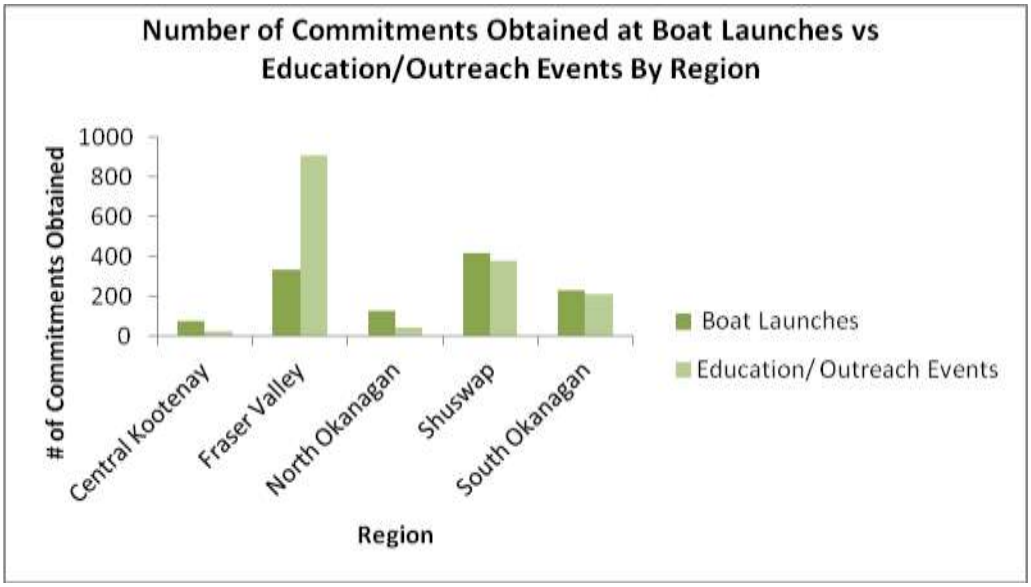
Overall, the 2013 Clean Drain Dry Program was successful. The response from the public was very positive and boaters were enthusiastic to learn about aquatic invasive species in their region.

3.1. Commitments: Boat Launches vs. Education/Outreach Events

Staff interacted with boaters at boat launches as well as community events and presentations. Ideally, the end result of each interaction would be a commitment from that boater to clean, drain, dry their boat. As noted above, written commitments are stronger than verbal commitments, though each function to reinforce a positive change in behaviour.

Teams completed a total of 1346 boater interactions by making 74 visits to 42 target boat launches within the program regions. Teams also attended a total of 83 education and outreach events, and connected with 16 stewardship groups and 4 youth groups. As a result of these efforts, CDD teams secured a total of 2739 commitments from May to mid September. Overall, 43% of all commitments were obtained at boat launches and 57% were obtained through education and outreach initiatives. The following chart shows regional

information pertaining to the number of commitments received from interactions at boat launches versus education and outreach events.



3.2. Commitments: Success at Regional Boat Launches

The region that secured the most clean drain dry commitments through interactions at boat launches was the Shuswap, followed by the Fraser Valley, South Okanagan, North Okanagan and Central Kootenay. The region that had the greatest success at obtaining commitments from their interactions was Fraser Valley, followed by South Okanagan, North Okanagan, and Central Kootenay and Shuswap. All teams achieved a minimum of 87% success rate, with multiple regions achieving over 90% success. These results are very encouraging and speak to a very high degree of success at boat launches in all program regions.

The table below shows regional data for number of interactions at boat launches and the number and proportion of those interactions that successfully led to commitments.

Region	# Boat Launch Interactions	# Commitments Obtained from Boat Launch Visits	Success Rate
Central Kootenay	82	71	87%
Fraser valley	333	328	98%
North Okanagan	128	120	94%
Shuswap	474	412	87%
South Okanagan	234	222	95%

There are several factors that may explain the difference in number of boater interactions and commitments among regions. First, the Shuswap, Fraser Valley, and South Okanagan regions are popular tourist

destinations with high levels of boater activity, consequently offering more opportunities to interact with boaters. That said, this also presents a challenge due to busy launches and less time to interact with each boater. Second, when weather data (Appendix 2) was compared for each region, the Central Kootenay had more precipitation during the months of May, June and July than the other regions. The wet weather conditions, and consequential flooding of several lakes and boat launches in this region, could have impacted the number of boaters on the lake and adversely affected the number of boater interactions. The regional variation in the number of interactions resulting in commitments (success rate) may also be reflective of the quality of the interaction.

3.3. Commitments: Success at Education and Outreach Events

Staff spent a portion of their time delivering the CDD message by attending regional events, such as fishing derbies, farmers markets and boat shows and by delivering program related presentations to local stewardship groups. The region that attended the most education and outreach events was the North Okanagan followed by the South Okanagan, Fraser Valley, Shuswap and Central Kootenay. However, the region that received the most commitments through delivering the clean drain dry messaging at these events was Fraser Valley, Shuswap, South Okanagan, North Okanagan and Central Kootenay.

There are several factors that may be responsible for the difference in commitments received at events among regions. First, teams attended different types and numbers of events, some of which drew in a high volume of the target boater audience. For example, teams in the Fraser Valley attended popular boating events, such as the Cultus Lake Pikeminnow Derby and the Harrison Dragon Boat Festival. Each of these events brings in hundreds of people that participate in boating in one form or another. This would allow team members greater opportunity to interact with more boaters and obtain more commitments. On the other hand, teams in the North Okanagan attended many smaller events.

Second, the type of CDD presentation delivered at outreach/education events could also impact the number of commitments obtained. Some teams spent the majority of their time educating boaters on aquatic invasive species and the CDD program in a booth situation at public events, while others spent the majority of their time delivering program information through verbal presentations to stewardship groups. Booth situations limit staff to interacting with one or two people at a time whereas several or more people receive the program messaging in a single attempt at a presentation. Further, stewardship presentations are more intimate and may offer greater opportunity for the audience to learn about and commit to the desired behavior.

It is recommended that all education/outreach events attended focus on the target boater audience. Further, teams should be spending a significant proportion of their time delivering presentations to select stewardship

groups whose mandates are water related. This will ensure that efforts to deliver the CDD message are reaching the correct audience and having the most impact.

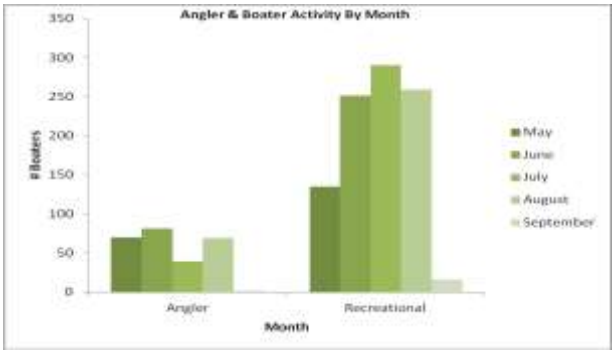
The following table shows regional information pertaining to the number of commitments received through delivering the CDD message at education and outreach events:

Region	Events	# of Commitments
Central Kootenay	10	25
Fraser Valley	14	912
North Okanagan	33	44
Shuswap	10	375
South Okanagan	16	209

3.4. Boater Demographics

Data collected on boater demographics have provided some key information that will help maximize effectiveness and efficiencies for future CDD program roll out:

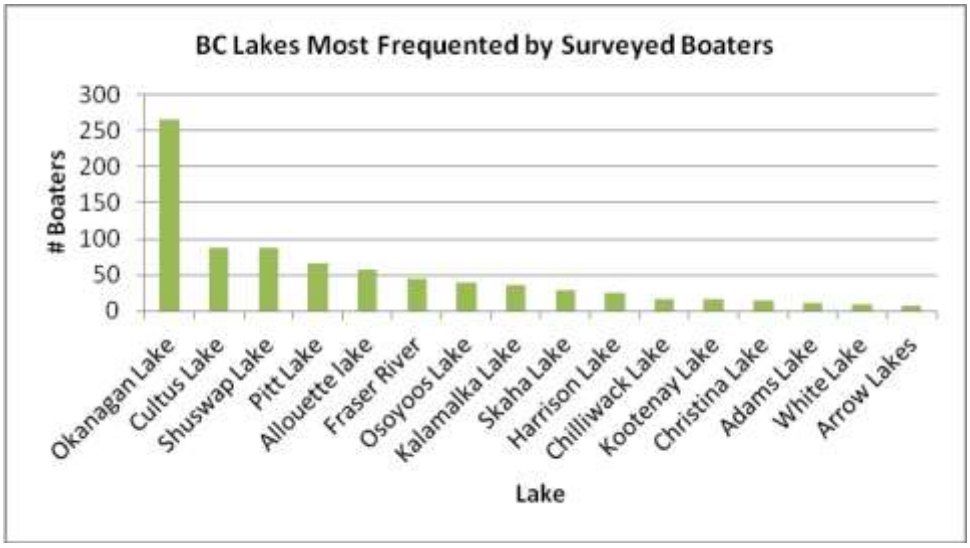
1. **Activity timing windows**- angler activity was highest during the months of May and June while recreational boater activity was highest during the months of July and August. This information is important for future planning. For example, to maximize the number of boaters reached, teams may consider focusing their efforts at popular fishing lakes from May to mid June and focus their efforts at larger lakes used mostly for recreational purposes from mid June through the end of August.



2. **Boater Group** - approximatley 78% of the boaters interacted with were recreational boater while the remaining 22% were anglers. The data collected shows that anglers have their boats in the water for longer periods of time and that they frequent more lakes than recreational boaters. The constant movement of fishing boats from one water body to another without adequate drying time between to kill any AIS attached to boats, trailers and gear is a cause for concern regarding the introduction and spread of AIS. Going forward, continued effort is required to reach and educate anglers about AIS and the importance of CDD.

3. **Boater Residency**- approximatley 86% of the boaters interacted with were BC residents, while 12% were from Alberta. The remaining 2% of boaters were visitors from other provinces and states, such as Saskatchewan, Ontario, Washington and California. This information highlights the fact that BC lakes are being used by citizens from out of province. This is cause for concern that out of province boats used in BC lakes could potentially lead to the introduction of AIS that are not yet present in British Columbia. The CDD program needs to be expanded and implemented in neighboring provinces and states so that citizens do their due diligence to protect not only their lakes, but BC lakes as well.

4. **Popular BC Lakes**: The top three lakes frequented by boaters surveyed include Okanagan Lake, Cultus Lake and Shuswap Lake. Program efforts should continue to focus around these waterbodies as they are high use areas by boaters and are high risk for the introduction and spread of aquatic invasive species. The chart below summarizes the lakes that boaters frequented most – this data is based on feedback provided by 810 boaters:



It is recommended that future CDD planning take into consideration boater activity timing windows, boater type and the lakes visited. For example, teams should focus their efforts at popular fishing lakes in May-June when angler activity is highest and then focus their efforts at popular recreational lakes in July-August when recreational boater activity is highest. This will enable teams to put forth equal effort to reach both anglers and recreational boaters.

3.5. Boater Behaviour

The 2013 boater survey, titled Data Collection Checklist for Boater Interactions (Appendix 3) was a condensed version of the 2012 program survey. This year, the survey focused on educating boaters about AIS and the importance of cleaning, draining and drying their boats versus analyzing specific boater behaviour. The results of the 2013 boater survey indicate that:

1. Boater awareness of AIS remains high quite high: 88% of the people that participated in the boater survey were aware of some aspect of aquatic invasive species. This shows that AIS related messaging delivered through various stakeholder groups, including the ISCBC and the CDD program, are effectively reaching the general public.

2. Boating activity remains a key pathway of AIS introduction and spread: 47% of boaters frequent several different water bodies over the boating season and 42% of boaters have their boats out of the water for less than a week. Aquatic invasive species typically require one week out of the water until they are no longer viable.

3. The reach of the CDD program was extended significantly: 86% of the boaters surveyed had not been approached by CDD teams in the past. As most of the target boat launches between 2012 and 2013 remained consistent, this may be explained by the emphasis placed on delivering the program message through education and outreach events. These events may have allowed teams to reach boaters that they would otherwise not at the boat launches they visited.

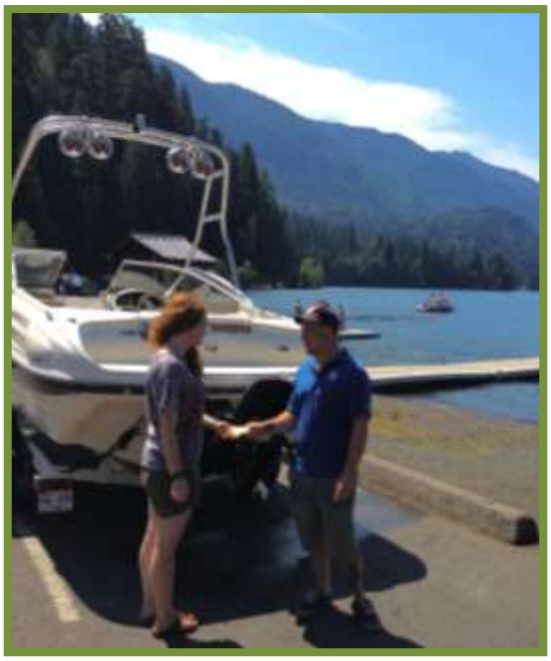
4. The 2012 program had a lasting impact: 14% of the boaters surveyed had interacted with CDD teams in the past. Of those, 67% stated that they changed their behaviour and continue to clean, drain, dry their boat prior to entering a water body. Conversely, 33% of boaters that were spoken to previously by CDD teams, have not changed their behaviour. This indicates that there are still barriers present that are preventing boaters from following through with cleaning, draining and drying their boats.

It is recommended that future boater surveys continue to focus on AIS awareness and the CDD messaging; however, the survey should be expanded to gather information on perceived barriers that are keeping boaters from cleaning, draining and drying their boats. It should also include a monitoring section that allows the ISCBC to monitor the success of the program to date.

3.6. Resources

Several resources (Appendix 1) were developed to assist teams at boat launches and events to spread the CDD message and reinforce/remind responsible behaviour. Each of these resources referenced the CDD program and acted as visual prompts to remind boaters to clean, drain and dry their boats. The most popular items identified were:

1. **Waterproof pouches**: designed for boaters to store valuable items (keys, wallet etc) while out boating. These were designed as visual reminders and given to boaters who committed to clean, drain and dry.
2. **Information (rack) cards**: these cards contain pictures and detailed information on aquatic invasive species. Several rack cards were made available: Protect BC Waters From Zebra and Quagga Mussels, Protect BC Waters from Aquatic Invasive Species.
3. **Folding wallet card**: these wallet size mini brochures contain pictures and information on aquatic invasive species and how to report them if seen.



The impact and success these tools have on preventing the introduction and spread of AIS through boating activities has not been measured to date. However, feedback from boaters was positive on each of these resources. Going forward, the effectiveness of these resources should be tracked. Options include measuring

the number of people requesting additional aquatic invasive species resources and materials, the increase in the number of people using the invasive species hotline, the number of general inquiries regarding AIS, and the number of people reporting AIS.

4.0. Future Recommendations

The information collected in this report will help guide and improve the Clean Drain Dry program in the future. Below is a list of recommendations to consider for future program design, planning and delivery. These tasks and recommendations will be addressed by the ISCBC based on available funding in 2014:

1. Focus on developing partnerships with local stewardship groups and explore effective and efficient ways to expand the delivery of the program across the province. This could include building an ambassador network with interested groups and providing them with the tools to deliver the program or CDD message regionally.

2. Continue to focus on delivering the CDD message through interactions with boaters at both boat launches and education/outreach events, or empower ambassadors to do so. Where funds or capacity is limited, priority should be given to attending events and presentations with high boater audiences.

3. Consider boater activity timing windows, target boater groups (angler vs recreational) and the lakes visited to maximize the number of boaters reached. For example, teams should focus their efforts at popular fishing lakes in May-June when angler activity is highest and then focus their efforts at popular recreational lakes in July-August when recreational boater activity is highest.

4. Expand the boater survey to gather information around current barriers keeping boaters from cleaning, draining and drying their boats.

5.0. Going Forward

In 2014, the Council will develop an Aquatic Action Plan to guide the Council's aquatic programming. The clean drain dry program will focus on the recommendations noted in section 4, and aquatic programming will be expanded to include an action plan and resources targeting the pet and aquarium trade. The Council is currently seeking resources for 2014 program delivery.

Appendix 1- Clean Drain Dry Program Resources

Information (Rack) Cards

Boat Launch Sign

Floating Key Chain

AIS Wallet Cards

Aquatic Carabineers

Water Proof Pouch

Appendix 2: Data Collection Checklist For Boater Interactions

Boat launch Name/ Site Name: _____
Evaluator: _____
Date: _____ Time _____
Is there a boat wash station on site? YES NO
Boat Direction: entering/ leaving
Home Province or State: _____
Type of Boater: recreational / angler
Is this boat always used in the same water body? YES NO
Has your boat been of the water for: ____< one week ____ > one week
What are the 3 bodies of water used most often, and how frequently are they used?
1 _____ 2_____ 3 _____
Comments/ Observations:

Boater Behaviour

1. Have you heard about aquatic invasive species (AIS) before today? YES/NO
2. Has a TA team member ever spoken to you about AIS? YES/NO
3. (if yes) Did you change your boating behavior due to this interaction? A LOT/SOME/NOT AT ALL
4. Do you think boater activities contribute to the spread of AIS? UNLIKELY/ LIKELY/HIGH RISK
5. How well do you know and understand the motto CLEAN DRAIN and DRY for boaters? A LITTLE/ SOME/LOTS
6. Did you have the opportunity to CDD your boat before arriving at this lake? YES/NO
7. Are you interested in trying out our boat wash station? YES/NO
8. Do you believe that one person's actions can affect spread of AIS in BC? YES/NO
9. Do you think if we all work together we can prevent the spread of mussels? YES/NO
10. Now that you know how easy it is, are you willing to commit to always CDD? YES/NO

Comments/ Observations:

Optional Boat Inspection for "high risk" boats

Once you have completed your Data Collection Checklist you may determine that the boat poses a 'high risk' to introduce aquatic invasive species. Indicators of high risk may include:

1. Aquatic Invasive Species are visible on the boat or boat trailer.
2. The boat is coming from a lake or region with high populations of AIS

You may also choose to complete an inspection if the boater is willing and time allows. Please use your discretion to determine the frequency and need for full boat inspections. **If a boat inspection is completed, please provide reference information below, complete a separate *Take Action Boat Inspection Form*, and append the completed form to this checklist.**

Inspection Form Ref No:
Comments: