CONNECTICUT'S BASS ACTION PLAN

Connecticut's Bass Action Plan
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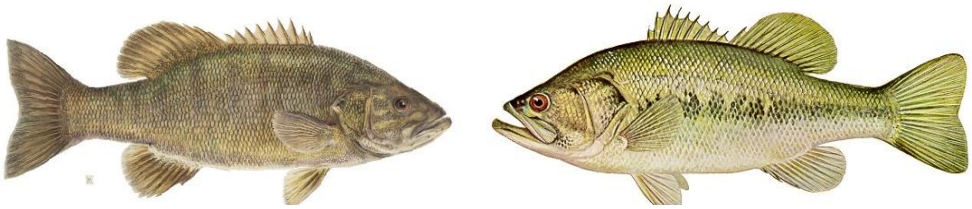
2022 – 2027



Contents:

Purpose:

The primary purpose of this action plan is to improve fishing opportunities for black bass (Largemouth Bass, *Micropterus salmoides* and Smallmouth Bass, *Micropterus dolomieu*, referred to collectively herein as "bass") throughout Connecticut's publicly accessed waterbodies. This action plan dovetails with Connecticut's Warmwater Action Plan and together they provide a solid framework to implement actions and improve management for all warmwater sportfish species in Connecticut. Specifically, this plan aims to meet the changing desires and preferences of Connecticut's anglers while conserving bass populations statewide to provide quality fishing well into the future. Creation of this plan was guided by the relevant scientific literature, extensive public input, and an open-minded approach to new ideas to produce and/or maintain high quality fisheries for bass. This plan focuses on the following four themes:

1) **Enhance existing fisheries**
2) **Create new fishing opportunities**
3) **Monitor bass fisheries and habitat management**
4) **Public engagement**

Introduction:

The Connecticut Department of Energy and Environmental Protection (DEEP), Fisheries Division recognizes that bass are a tremendous natural resource that provides outstanding ecological, social, and economic benefit to the state of Connecticut. In 2011, 342,000 anglers spent 4.7 million days fishing in Connecticut, which generated an estimated $4.3 million dollars in revenue. Bass fishing accounted for 47% (2.1 million days) of that total (U.S. Dept. of the Interior, 2011).

Bass are a high priority management species within the Fisheries Division because of their popularity among anglers, resilience to climate change, and widespread distribution in publicly accessible waters in Connecticut where they play a vital role as primary predators (Jacobs et al., 1999). Management of bass fisheries is challenging because of human population growth and land development, technological advances available to fishermen, changing angler behaviors, water quality and habitat changes, and a host of environmental stressors associated with climate change. This plan identifies specific management challenges and measurable action items to help guide the future of bass management in Connecticut. This plan is a "living" document that will be refined in response to new scientific evidence, public opinion, shifting environmental conditions, levels of success achieved, and other factors.

Connecticut Aquatic Resources Education (CARE) student (center) and volunteer instructor (left) with a hefty Largemouth Bass caught in Killingworth, Connecticut.

The development of this plan was aided by stakeholder input (i.e., anglers). During the fall of 2019 through early 2020, stakeholder input was solicited using both in person meetings and electronic surveys. Unfortunately, additional in person meetings had to be curtailed due to COVID-19, but electronic surveys provided an additional 4,618 responses that were used in the development of this plan (see Appendix A). During the public input process, a wide range of concerns were identified (see Bass Angler Survey side bar), but overall, stakeholders indicated general satisfaction with current bass management. The main issues identified through public input dealt with how the Fisheries Division handles what are perceived as the increasingly negative impacts of fishing on bass populations.

Bass Angler Survey

A recent survey sent to 114,000 licensed freshwater fishermen in Connecticut was designed to gather data specifically on bass fishing in Connecticut. One of the questions within the survey was crafted to give respondents an opportunity to expand on the following question – "using your experience and knowledge gained through bass fishing various waters in Connecticut, what would you list as the top threat to black bass fisheries in Connecticut at this time?"

A total of 4,618 people responded to the survey (4% response rate) and of that total 2,416 provided answers to the open-ended question.

Threat Category	Number of responses
Fishing Pressure	317
Unknown	311
Poaching	253
Tournament Fishing	220
Weed Treatments	215
Over Harvest	197
Poor Fish Handling	181
Pollution/Water Quality	155
Other Fish Species	97
Invasive Weeds	96
Poor Regulations	84
People	64
Runoff from Lake Properties	61
Fishing During Spawn	35
Enforcement	34
Climate Change	33
Predation	25
Out-of-State Fishermen	20
Access Issues	16

Historical Background:

Bass management in Connecticut has a long history, with the first recorded bass stocking occurring in 1870. Sporadic reports of regulations for bass exist in the 1930's and 1940's, but statewide length and creel limits for lakes, ponds and the Connecticut River (6 fish/day; 12" minimum length limit) were not instituted until 1953 and are still in effect today. Currently, there is no closed season for either Smallmouth or Largemouth Bass in Connecticut. The statewide minimum length regulation does not cover riverine bass fisheries, unless special regulations have been enacted (e.g., Housatonic River). Even with the popularity of bass as a gamefish, Connecticut did not begin assessing individual bass fisheries until 1980-1984 when Connecticut's first statewide Largemouth Bass research project was initiated (Jacobs et al., 1986). This five-year study concluded that growth and mortality rates varied widely among Connecticut lakes and based on those parameters, some lakes may have the potential for producing high quality bass fisheries.

To assess the potential of specific lakes, a study conducted between 1986 – 1993 evaluated the effects of alternative length limits (two different slot length limits and one minimum length limit) on three different lakes (Moodus Reservoir, East Haddam; Pickerel Lake, Colchester/East Haddam; and Lake Saltonstall, Branford/East Haven; Jacobs et al., 1995). Results from this study were generally successful in improving bass population structure and bass anglers, once accustomed to the regulations, were in favor of the alternative length limits.

Following the results of the study on alternative length limits along with an intensive statewide electrofishing survey, "A Management Plan for Bass in Connecticut Waters" was developed, which identified twenty-nine lakes as having the most potential for improved bass size structure via alternative slot and minimum length regulation changes. In 2002, 29 lakes were designated Bass Management Lakes and the new bass regulations took effect and are presently still in place.

Bass fishing in Connecticut has grown tremendously in popularity from the early 1990's to the present (1.3 million fishing trips/year 1993) and now holds the top spot along with trout fishing as the most popular recreational freshwater fish in Connecticut. The most recent survey by the United States Fish and Wildlife Service (USFWS) in 2011 shows fishing for bass in Connecticut generates 2.1 million fishing trips annually and contributes an estimated $26 million to the state's overall economy (U.S. Dept. of the Interior, 2011).

While other states around the country, including four northeast states, utilize state or private hatcheries to supplement existing bass fisheries (public and private waters), all of Connecticut's bass fisheries rely entirely on natural reproduction. In contrast, most trout fisheries in Connecticut are unable to sustain directed fishing pressure with natural reproduction alone. The fact that bass continue to

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support such a high level of fishing pressure despite having no hatchery-based stocking program is a testament to the fish's adaptability and resiliency. However, the level of bass fishing on many Connecticut waterbodies is likely having impacts on bass growth, population structure and angler catch rates.

One way that fishing pressure can negatively influence bass is called Fisheries Induced Evolution (FIE), which is defined as a genetic change over generations in one or more characteristics of a population (e.g., life history, behavior, physiology and morphology) in response to selection imparted on individuals in that population via fishing (Phillip et al., 2009; Phillip et al., 2015). A series of experiments were conducted cooperatively between the University of Connecticut and the DEEP Fisheries Division between 2011 – 2015 (Hessenauer, 2015) to evaluate the influence of FIE on Connecticut's bass populations. These experiments were designed to address the following questions.

1) Do bass hatched in unfished reservoirs have significantly higher metabolic rates than bass hatched in public lakes (metabolic rate is positively correlated with angling vulnerability, such that high vulnerability bass also tend to have higher metabolic rates)?
2) Are bass hatched in unfished reservoirs significantly more vulnerable to angling than bass hatched in public lakes?
3) Can adult bass transplanted from an unfished reservoir to a public lake successfully reproduce and produce offspring (that presumably might carry beneficial genes)?
4) Can transplanting adult bass from unfished reservoirs to public lakes provide a substantial augmentation of public lake bass fisheries?

This body of work provided valuable insights on the status of Connecticut's bass fisheries. Most significant was the finding that bass found in public lakes have a significantly lower metabolic rate (Hessenauer et al., 2014; Hessenauer et al., 2015) than bass from unfished waters. This is important because bass with slower metabolisms are less active overall resulting in lower angler catch rates and reduced growth. This evolution occurred because high metabolism is heritable and leads to increased catchability. As a result, aggressive individuals were removed more readily than individuals with a lower metabolic rate, leading to reductions in catch rate and slowed growth. In addition, bass are typically the predominant predator in our lakes so if the populations are primarily individuals with lower metabolic rates, they feed less, potentially resulting in reduced predatory control over a lake's forage fish population(s). Lastly, bass from both fished and unfished populations rapidly learned lure avoidance during standardized angling experiments, suggesting that catch rates can decrease due to fishing pressure even without changes to the underlying fish population (Hessenauer et al., 2016).

Another bass management challenge is the dramatic increase in the number of bass tournaments permitted annually in Connecticut (124 in 1986 to 810 in 2021, Figure 1). Of interest, the top 5 lakes most targeted by tournament anglers account for nearly 50% of all bass tournaments statewide annually. In fact, Candlewood Lake and the Connecticut River combined make up over 30% (~258) of all annual bass tournaments. Investments in youth fishing programs at both the high school and collegiate level by bass fishing organizations is fueling this increase and will

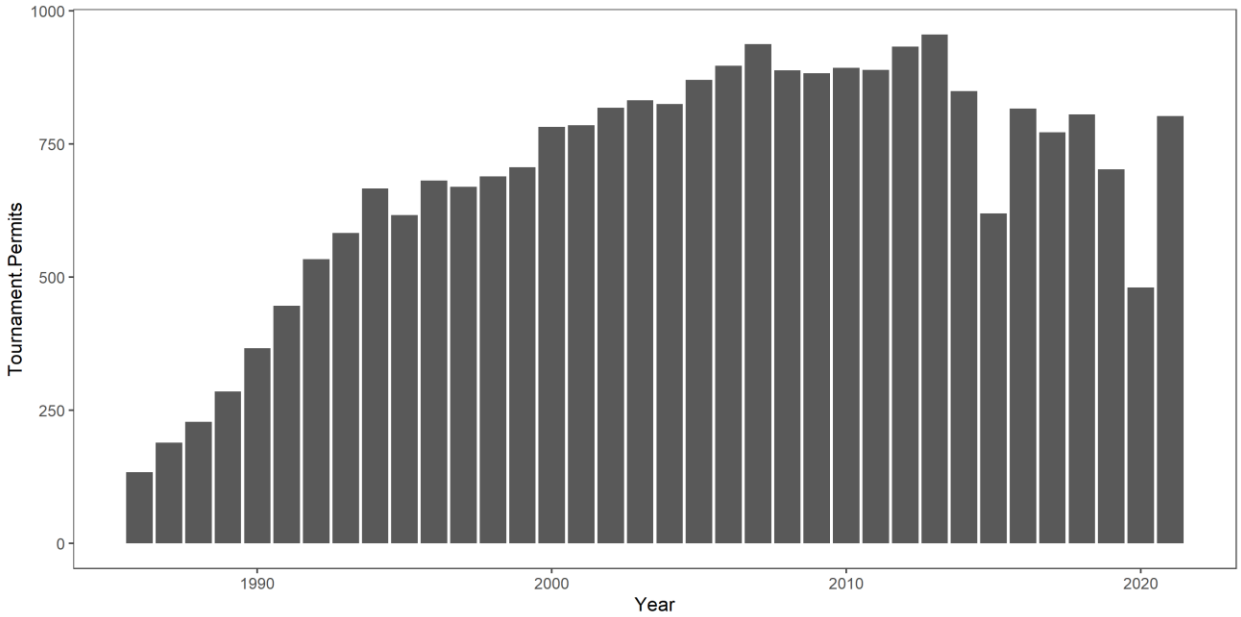

Figure 1. *Change in number of annual bass fishing tournaments permitted in Connecticut from 1986 through 2021. Tournament numbers are low in 2015 due to roll out of new permitting system so many tournaments could not be accounted for, and in 2020 due to the Covid-19 pandemic. The number of bass tournaments before 2015 is overestimated as it includes permits issued for ice fishing derbies and tournaments for other inland species.*

ensure the popularity of tournament bass fishing for years to come. The observed seven-fold increase in tournament related angling is not unique to Connecticut, but rather a shift in bass fishing popularity nationwide generated in part by professional bass fishing tours. This has led to improved gear and technology, and a shift in attitude and preference of many bass anglers from harvest-based desires to almost entirely catch and release fishing (Myers et al., 2008; Davis et al., 2016a; Davis et al., 2016b). See Figure 2 for voluntary release rates of bass in Connecticut.

Changes in angler behavior and technology have resulted in 1) previously effective creel and length regulations being rendered obsolete because they require some level of harvest to be successful (Hessenauer et al., 2018), and 2) anglers locating and targeting bass faster and with more precision than at any time in the past. Bass anglers armed with knowledge of a specific fishery and the latest sonar can not only find fish, but identify specific species of fish and watch, in real time, how those fish react to lure presentations. Even without sophisticated equipment, bass, especially Largemouth Bass, are very susceptible to angling during the spawning period (April – mid-June in Connecticut) when males can often be targeted by sight while they are guarding nests. While harvest rates for bass have declined, the mortality rates previously related to harvest have been offset by higher levels of discard mortality attributed to cumulative hooking events in both tournament and non-tournament catch and release fisheries (i.e., anglers catching the same fish multiple times; Edwards et al., 2003).

While the management plan adopted in 2002 set a solid foundation for bass management, the continued shift in angler attitudes and behaviors, along with other challenges over the last twenty years, requires new approaches to management. Four different fishing regulations were adopted for the bass management lakes (BMLs) in 2002 (see Appendix B for a description of these four

regulations). Evaluation of these regulations by routine boat electrofishing shows little evidence that bass populations have improved in most of the 29 BMLs since regulations were adopted. When the catch/effort data is combined for all four regulations, the improvement to bass population structure is negligible. However, two of the four regulations (12”-18” protected slot length limit and the 18” minimum length limit) show some improvement in bass population structure (Appendix B, 1 – 5). The overall trend of bass management regulations “flatlining” over the past 20 years is not isolated to Connecticut – many states are currently re-evaluating their bass management strategies due to similar changes in angler behavior and attitudes.

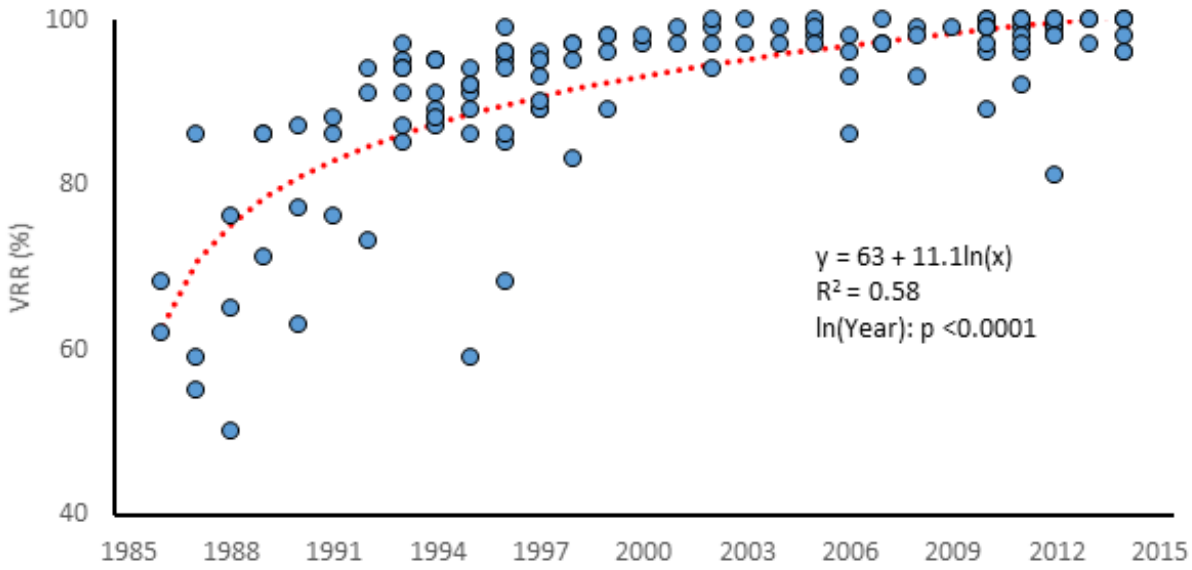

Figure 2*. Voluntary release rate (VRR), which is the rate at which anglers release fish that could have been kept under pertinent regulations, of bass (Largemouth and Smallmouth Bass in aggregate) during open water fishing at lakes surveyed during 1986-2014. Figure reproduced from Davis et al., 2016b.*

Bass Biology and Distribution:

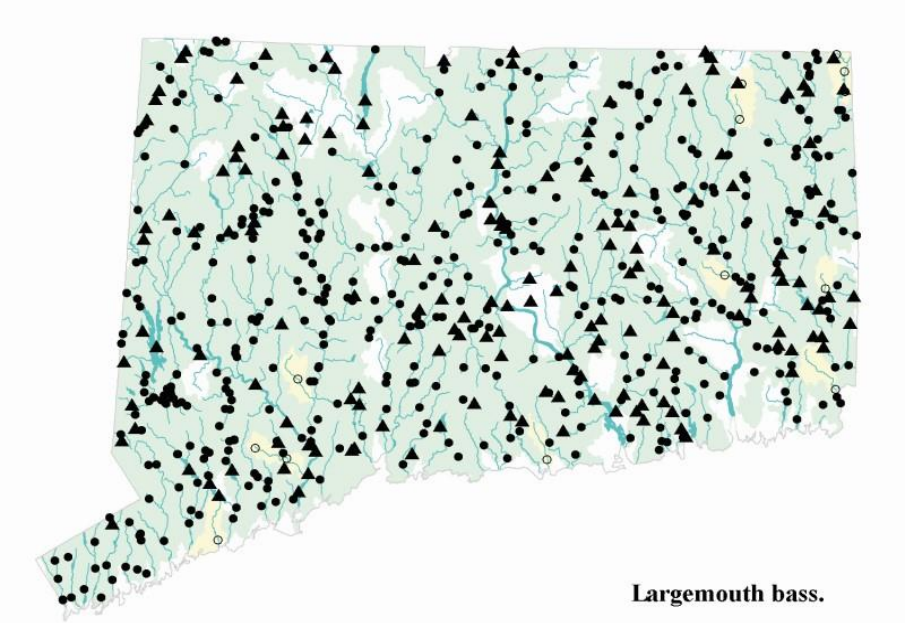

Figure 3*. Distribution of Largemouth Bass sampled during either lake and pond electrofishing surveys (triangles) or stream surveys (circles). Empty shapes indicate that the sample is from the 1960s or earlier and has not been resampled.*

Largemouth Bass

Throughout the USA Largemouth Bass occur as two distinct strains (Northern Strain Largemouth Bass and Florida Strain Largemouth Bass). Visually there is little difference between the two strains, but they differ genetically (Kleinsasser et al., 1990) To the angler, the differences that matter are growth rates, catchability and survivability. Florida strain Largemouth Bass commonly exceed 10 pounds and can approach 20 pounds given the right habitat and food, but do not tolerate cold weather and consequently survive poorly in northern climates. Northern strain Largemouth Bass rarely exceed 10 pounds, but they survive well and are often active during cold weather conditions.

Largemouth Bass are not native to Connecticut and were first stocked during the 1800s but are now the most widely distributed gamefish species in the state. Of the two distinct species (Largemouth and Smallmouth Bass) in Connecticut, the Largemouth Bass is the most widely distributed, dictated by habitat preferences for shallower, vegetated habitat to feed, grow and complete its life cycle. Largemouth Bass can be found in every publicly accessible water in Connecticut, and while not known as a species common to river habitats, there is a substantial population and dedicated fishery for Largemouth Bass in the Connecticut River. While Largemouth Bass can be found in open water and sometimes at great depth, they prefer the near-shore vegetated areas of a lake, referred to as the littoral zone. The Largemouth Bass is native to North America with a range encompassing the St. Lawrence-Great Lakes, Hudson Bay (Red River), and Mississippi River basins from southern Quebec to Minnesota and south to the Gulf of Mexico; in the Atlantic Slope drainages from Florida north into Virginia; and Gulf Slope drainages from southern Florida into northern Mexico (Page and Burr, 1991). The species has been introduced widely beyond its native range and naturalized populations now exist in all states, except Alaska (Fuller et al., 1999).

Largemouth Bass prey on a variety of food items and rely on two basic modes of feeding behavior, hunger and aggression. Both modes of feeding are of benefit to the angler but feeding

out of aggression or instinct, regardless of whether the bass is hungry or not, is a more "reflex-like" behavioral response that anglers benefit from most while fishing.

Both Largemouth and Smallmouth Bass are members of the sunfish family (i.e., Centrarchidae), which are typically very adaptable and successful spawners. Largemouth Bass spawn in most years in Connecticut from mid-April through mid-June with the exact timing of the spawn dictated by water temperature and day length. Males select an area in shallow water (2-8 feet) to build a nest. After spawning is complete, the males remain at the nest, sometimes for several weeks, to guard eggs and newly hatched fry from predation. The more aggressive males have the most successful nests, and removing males during this period, even for a short duration, can have detrimental effects on nest success (Suski and Phillip, 2004; Diana et al., 2012). Many states have specific fishing closures during the bass spawning period to protect fish guarding nests.

Largemouth Bass in Connecticut are relatively slow growing, taking on average 3.6 years to reach 12 inches in length. Largemouth Bass commonly grow to 4 to 5 pounds and 18 to 20 inches in length, living for 15 years or more in Connecticut lakes. The state record Largemouth Bass weighed 12 pounds 14 ounces and was caught in Mashapaug Lake, Union in 1961. A more recent 25.25-inch length record was caught in 2008 in Lake Pocotopaug, East Hampton.

A typical, 14-inch adult Largemouth Bass (top) and a 2.7 inch juvenile (bottom). Note that markings tend to be bolder on younger Largemouth Bass. Photo credit: Robert Jacobs.

Smallmouth Bass

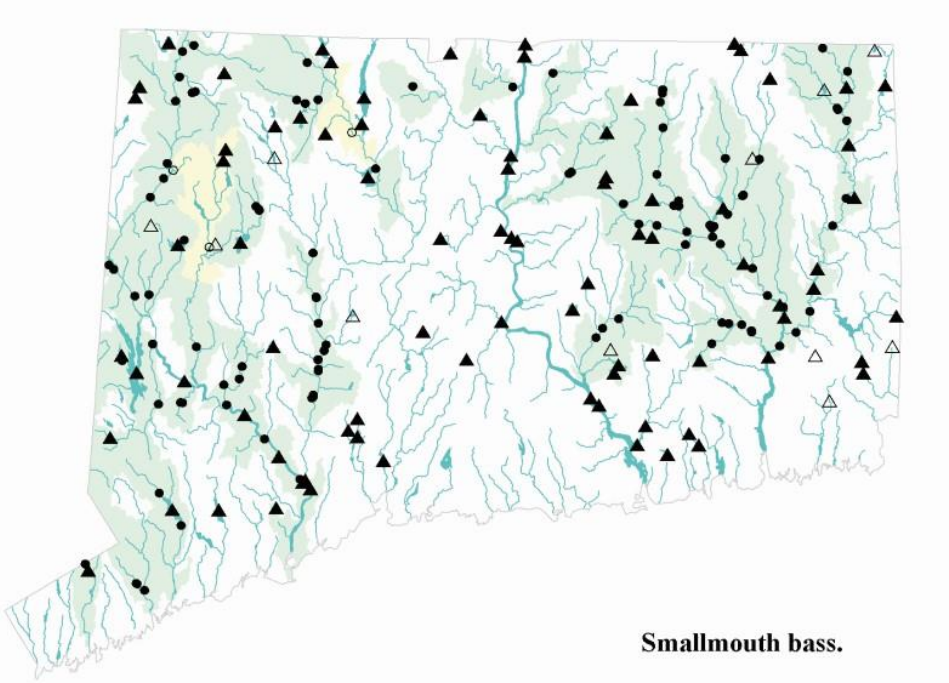

Figure 4*. Distribution of Smallmouth Bass sampled during either lake and pond electrofishing surveys (triangles) or stream surveys (circles). Empty shapes indicate that the sample is from the 1960s or earlier and has not been resampled.*

In Connecticut, Smallmouth Bass are not as widely distributed as Largemouth Bass, occurring in approximately 50% of public lakes, but they are also found in numerous riverine systems. Smallmouth Bass are not native to the state and were first stocked during the 1800's. The fact that Smallmouth Bass occur in far fewer waterbodies than Largemouth Bass is dictated by habitat preferences. Smallmouth Bass prefer cooler water temperatures and deeper lakes with rocky substrate and less vegetative cover, relative to Largemouth Bass. Unlike Largemouth Bass, Smallmouth Bass are unique in their ability to survive well in riverine environments. Connecticut has 13 streams identified during the Statewide Stream Survey project (1988 – 1996; Hagstrom et al., 1996) as having Smallmouth Bass populations with multiple age classes and an overall density of >10 fish/km (Table 1). Information used to generate this list of Smallmouth Bass streams includes the Statewide Stream Survey data along with subsequent sampling data through 2002. More recent stream Smallmouth Bass data exist and will be evaluated prior to making any final recommendations on management of these important stream fisheries. This list of streams does not include the Connecticut River, which has substantial fisheries for both Smallmouth (primarily upstream of Hartford) and Largemouth Bass and is treated as a separate bass resource of its own. The other Smallmouth Bass fishery not included in the list above is the Farmington River, primarily the stretch from Unionville downstream to Rainbow Reservoir. This section of river has a reproducing population of Smallmouth Bass, but the Fisheries Division has limited data on this area of the river making quantitative assessment difficult. However, angler reports indicate a fishable population exists and the current catch-and-release State record (24.25-inch) comes from this section of the Farmington River.

Of those streams with fishable populations, only one, the Housatonic River, is currently managed for Smallmouth Bass. Two sections of the river are designated as Bass Management Areas – The Stanley Tract Bass Management Area is approximately 6 miles in length and is managed by

***Table 1**. Thirteen streams with Smallmouth Bass populations having individuals ≥ 9.1in (230mm) and/or multiple age classes, evidence of natural reproduction (fish ≤ 3.9in [100mm]) and with an overall density of > 8 total Smallmouth Bass/mile (10/km). Note that sample length for streams is the combined lengths of all sampling sites that were sampled numerous times over multiple years.*

Stream Name	Town	Total Number	Percent ≤ 3.9in	Percent ≥ 9.1in	Percent ≥ 11.8in	PSD	Sample Length (miles)	Number per Mile
Housatonic River	Cornwall/Sherman	12,779	15%	13%	2%	31	14.7	869
Tenmile River	Sherman/Kent	1,425	17%	15%	5%	23	4.3	331
Salmon River	East Haddam/East Hampton	877	70%	16%	3%	12	3.8	231
Shetucket River	Sprague	143	62%	12%	1%	12	0.7	204
Natchaug River	Chaplin	373	19%	9%	0%	10	1.9	196
Quinebaug River	Plainfield/Scotland	735	32%	10%	1%	14	3.8	193
Hop River	Columbia/Coventry	110	3%	18%	0%	15	0.6	183
Yantic River	Norwich	158	33%	14%	2%	9	1.2	132
Naugatuck River	Waterbury	751	53%	14%	4%	9	6.0	125
Pomperaug River	Southbury	116	50%	9%	2%	16	1.2	97
Willimantic River	Willington	655	29%	12%	0%	14	8.6	76
Mt. Hope River	Mansfield	104	25%	23%	7%	13	1.4	74
Hockanum River	Vernon	152	28%	31%	9%	18	8.3	18.3

statewide bass regulations of 6 fish per day/no minimum length limit; the second is the Bull's Bridge Trout and Bass Management Area, which is open year-round and is catch-and-release only for bass. A full management plan for riverine Smallmouth Bass in Connecticut was written in 2011 (Machowski et al., 2011).

Smallmouth Bass are faster swimmers than Largemouth Bass, making them efficient predators and strong fighting fish when caught by rod and reel. Smallmouth Bass growth in Connecticut lakes is slow, taking on average 4.4 years to reach 12 inches in length. Growth is even slower in Connecticut's riverine Smallmouth Bass populations, taking as many as 7 years to reach the same 12-inch mark (Barry and Machowski, 1994). The current state record Smallmouth Bass weighed 7 pounds 12 ounces and was caught in Shenipsit Lake, Tolland in 1980.

The spawning period for Smallmouth Bass in Connecticut overlaps with Largemouth Bass, occurring between mid-April through mid-June, and is largely dependent on water temperature. Smallmouth Bass begin exhibiting spawning behavior when temperatures are near 60^{o}F. Similar to Largemouth Bass, male Smallmouth Bass fan out a saucer-shaped nest in suitable gravel

substrate near cover in depths of 2 – 10 feet (Bozek et al., 2002) and then will actively guard both eggs and newly hatched fry for a period of up to a month. Smallmouth Bass will spawn a second time if adverse weather conditions or river flow conditions cause nest failures. This behavior is more typical of riverine Smallmouth Bass populations where spring rains can often result in nest abandonment due to high, cold flows.

Data gathered during the Lake and Pond Survey along with angler surveys and bass tournament monitoring has shown a decline or complete disappearance of Smallmouth Bass in seven Connecticut lakes. The reason(s) for the dramatic decline are unknown at this time and requires further data evaluation to determine if other state lakes have experienced similar declines, and what could be the root factor(s) responsible.

A typical, 10-inch adult Smallmouth Bass (top) and a 2.5-inch juvenile (bottom). When in an aggressive mood, the Smallmouth's markings can become highly contrasting. Photo credit: Robert Jacobs.

Lake Size Matters

For such a small state, Connecticut has approximately 425 lakes, ponds, reservoirs and impoundments totaling more than 56,000 acres, of which 242 (30,846 acres) have public access with an average size of 128 acres (Connecticut River not included).

For comparison, the average size for the top ten public lakes in Connecticut is roughly 37 times smaller (1,272 acres) than the top ten public lakes in Tennessee (47,200 acres).

Bass Action Plan Details

The following sections contain the action items being proposed to manage bass fisheries in Connecticut. The four themes: Enhance Existing Fisheries, Create New Fishing Opportunities, Monitor Bass Fisheries and Habitat Management, and Public Engagement were derived largely from public input, as described previously, along with input from staff biologists. Each plan goal, objective and all associated action items are listed under the four major themes.

It is our intent to engage with our partners and stakeholders as we work through this plan by incorporating specific action items into our Division's warmwater jobs.

Theme 1: Enhance existing fisheries

Bass populations occur in every publicly accessible lake in Connecticut and each lake has its own characteristics. Overfishing of both Largemouth and Smallmouth Bass in Connecticut is a real concern. Connecticut's waterbodies are generally small (see sidebar 'Lake Size Matters') and thus more easily impacted by fishing pressure. In fact, anglers who completed the online bass survey (see Bass Angler Survey sidebar on page 4) indicated that fishing pressure was the number one threat to bass populations in Connecticut at this time.

Developing strategies to enhance current fisheries while using the best available management techniques possible is critical to the success of this action plan and more so, critical to the conservation of bass in Connecticut waters. The following goals, objectives and action items will require considerable "buy-in" from anglers for our fisheries to remain sustainable. Some of the actions below suggest new regulations, however, this plan is not a formal regulations proposal, and any new regulations would go through additional public comment as well as legal and legislative review. Other potential management actions seek to improve bass fisheries through a variety of non-regulatory means, including habitat management and fish stocking.

One of the primary goals of this plan is to increase the number of Largemouth Bass greater than 15" and Smallmouth Bass greater than 14" in Connecticut Lakes. These are the "preferred" lengths described by Gablehouse (1984), and dividing bass into bins of more or less desirable size classes helps us quantitatively assess the size structure of bass fisheries. Herein, goals that reference "preferred sizes" refer to 15 inches for Largemouth Bass and 14 inches for Smallmouth Bass. Smallmouth Bass management goals for rivers and streams will differ from the lengths used for lakes due to slower growth rates. Again, using size categories determined by Gablehouse (1984), management goals for "quality size" riverine Smallmouth Bass refer to fish that are 12 inches in length.

Goal 1.1 Improve understanding of bass populations in Connecticut.

Objective 1.1.a: Assess historical and contemporary population characteristics for bass statewide.	
Actions	○ Compile all electrofishing data from the lake and pond survey. ○ Adapt historical sampling data to our current database. ○ Compile age estimates from scale readings and relate back to sampling data. ○ Develop a suite of metrics to assess bass abundance, growth, size-structure, and recruitment. ○ Catch per unit effort (CPUE), age-at-length (an indicator of growth rate), proportional stock density (PSD; an indicator of size-structure), mortality, and young of year densities (an indicator of spawning success). ○ Develop one or more functions that input fish community data from the lake and pond survey and output the aforementioned metrics using modern database structures and open-source software. ○ Analyze bass population characteristics to determine changes through time both statewide and for individual waterbodies with adequate sampling data. ○ Use these baseline bass population characteristics to evaluate the proposed management actions in this plan.
People	Warmwater Fish Management Staff

Goal 1.2: Increase numbers of preferred size bass statewide.

Objective 1.2.a: Reduce sources of fishing mortality to help improve survival of bass to preferred size in Connecticut lakes and ponds.	
Actions	○ Based on results from objective 1.1.a, modify current bass regulations as necessary. ○ Consider implementing new statewide regulations for bass in Connecticut lakes and ponds and evaluate based on objective 1.1.a. Potential options include: ▪ 4 fish/day, 12”-21” protected slot length limit, only one fish may be over 21”. ▪ 4 fish/day, only one of which can be over 15”. ▪ 4 fish/day, 18” maximum length limit (i.e., no bass can be retained over 18”). ○ Consider regulations to reduce the mortality caused by bait fishing for bass (e.g., require the use of circle

	hooks while fishing with bait in certain inland waters). o Support efforts by bass fishing organizations to implement the latest improvements for livewell use during tournaments. o Support best practices for handling of bass (e.g., fizzing, reduced livewell holding times, reduced bag limits, etc.). o Develop resources to support and encourage catch and immediate release tournament formats.
People	Warmwater Fish Management Staff; Bass Anglers; Bass Tournament Organizations

Goal 1.3: Maintain or improve recruitment of young bass in all bass lakes statewide.

Objective 1.3.a: Modify bass fishing regulations to maximize successful recruitment.	
Actions	o Assess feasibility of developing "spawning sanctuaries" in select lakes. These areas would be completely closed to all fishing during the period from April 15th – June 15th. o Consider restrictions on live bait during the bass spawning season (i.e., require artificial lures or flies only between April 15 and June 15).
People	Warmwater Fish Management Staff; Anglers; Lake Associations

Goal 1.4: Increase bass catch opportunities in Community Fishing Waters (CFWs) and other urban fishing locations.

Objective 1.4.a: Improve year-round fishing in CFWs statewide by increasing numbers of bass available for anglers to catch.	

Actions	o Develop a list of potential CFW areas that could benefit from improved bass fishing opportunities based on results from Objective #1 in the Connecticut Angler R3 Plan.
	o Identify sources of bass that can be used for supplemental stocking.
	  o Explore options to secure bass from private hatcheries.
	  o Discuss potential of raising bass in Connecticut's hatchery system that, in part, could be used for supplemental stocking in CFWs.
	  o Utilize bass from lakes or ponds where fish salvage is necessary due to permitted dam removals or repair in state, public, town or privately owned ponds.
	o Improve habitat where necessary in CFWs for bass and other fish species.

	○ Discuss appropriate bass regulations, if different from proposed statewide regulations, for CFWs based on findings from the Connecticut Angler R3 plan Objective #1. ○ Promote bass fishing clinics for youth anglers given by youth tournament anglers.
People	Warmwater Fish Management Staff; Hatchery Staff; CARE Staff; Habitat Conservation and Enhancement (HCE) Staff; Bass Tournament Organizations

Goal 1.5: Reduce impacts of Fisheries Induced Evolution (FIE) in heavily fished bass lakes.

Objective 1.5.a: Maintain or improve genetic structure of bass populations, especially in lakes experiencing heavy fishing pressure (exploited populations).	
Actions	○ Investigate the potential of introducing bass from unfished populations. ○ Assess the feasibility of developing a hatchery-based bass stocking program with bass from drinking supply reservoirs to be used as broodstock. ○ Consider directly stocking bass captured from unfished reservoirs. ○ Increase education and awareness of FIE in Connecticut lakes and how it may be impacting bass fisheries under current rules and regulations.
People	Warmwater Fish Management Staff; Hatchery Staff

Goal 1.6: Determine extent and reason(s) for decline/disappearance of Smallmouth Bass in certain Connecticut lakes and rivers.

Objective 1.6.a: Evaluate lakes and rivers where Smallmouth Bass have either declined or disappeared.	
Actions	○ Use angler surveys, electrofishing, water quality, long-term water temperatures, and tournament catch data to: ○ Identify timing of decline. ○ Identify potential reasons for decline. ○ Develop citizen-science approaches to sample Smallmouth Bass where current sampling methodologies are inadequate. ○ Review drawdown history in each selected lake. ○ Review changes in aquatic macrophyte assemblages along with water quality parameters to determine if lake trophic status has changed. ○ Test for Largemouth Bass Virus (LMBV) and other centrarchid pathogens.
People	Warmwater Fish Management Staff; Bass Anglers; HCE Staff; Hatchery Staff

Objective 1.6.b: Where feasible, restore Smallmouth Bass populations in lakes and rivers where they have either declined or disappeared.	
Actions	○ Consider feasibility of developing a hatchery-based Smallmouth Bass rearing program within Connecticut's hatchery system. ○ Consider feasibility of direct transportation of Smallmouth Bass from source populations in Connecticut to waterbodies where they have been extirpated. ○ Assess potential stocking locations to determine if adequate Smallmouth Bass habitat is available.
People	Warmwater Fish Management Staff; Hatchery Staff; Drinking Water Supply Companies; HCE Staff; Lake Associations

Goal 1.7: Enhance existing access for bass fishing in public waters in Connecticut.

Objective 1.7.a: Improve physical and informational access to Connecticut's bass fisheries statewide.	

Actions	○ Work with the DEEP Boating Division to influence prioritization of state launch and access area improvements statewide.
	○ Work to improve shoreline fishing access in lakes/ponds owned by the state and municipalities by:
	  ○ Creating new access opportunities for persons with disabilities in suitable locations.
	  ○ Creating shoreline casting "platforms" to provide shore-based anglers access to high quality fishing locations.
	  ○ Work in conjunction with efforts developed in the Connecticut Angler R3 Plan (Objective #2) to implement litter mitigation measures at state-owned access areas and CFWs.
	  ○ Assist partners throughout Connecticut by providing consulting and technical assistance on local access improvement projects.
	○ Provide up-to-date electrofishing and angler survey data and other pertinent fishing information on bass and bass fishing on the Fisheries Division website.

People	Warmwater Fish Management Staff; Boating Division Staff; State Parks Staff; Municipalities

Goal 1.8: Increase number of Smallmouth Bass ≥ 12 inches in Connecticut rivers/streams.

Objective 1.8.a: Reduce fishing mortality for riverine Smallmouth Bass to allow more bass to reach 12 inches.	
Actions	○ Consider implementing new statewide regulations for bass in all Connecticut rivers, including the Connecticut River. Potential options include: ○ 3 fish/day, only one of which may be greater than 12" in rivers and streams. ○ 2 fish/day with a 12" minimum length limit. ○ Terminal tackle restrictions (e.g., artificial lures only in certain locations) ○ Consider implementing catch-and-release regulations for Smallmouth Bass on the Housatonic River from the upper boundary of the current Bull's Bridge Trout and Bass Management Area upstream to the Massachusetts border. ○ Maintain catch and release regulations for Smallmouth Bass within the Bulls Bridge Bass Management Area of the Housatonic River. ○ Continue to monitor this population to assess effectiveness of regulations. ○ Increase fishing regulation awareness through adequate enforcement, outreach, and various educational tools to help protect Smallmouth Bass in the Housatonic River.
People	Warmwater Fish Management Staff; Environmental Conservation Police (EnCon); Bass Anglers

The Fisheries Division has been collecting standardized night boat electrofishing data since the 1980s. These monitoring efforts are essential to informed management.

Theme 2. Create New Fishing Opportunities

With bass fishing gaining popularity, creating new fishing opportunities is exciting for anglers and fish managers alike.

New bass fishing opportunities could result from opening waters that may be currently closed to fishing or by finding creative ways to offer fishing opportunities that currently do not exist. The potential for new opportunities, such as gaining the ability to fish in previously unfished reservoirs or obtaining access to fish for bass during time periods formerly regulated as closed, offers excitement for anglers and fish managers alike. Current regulations limit tournament fishing to catch-and-release only tournaments on Bass Management Lakes (BMLs) during July and August, creating heavier tournament usage on other state lakes during that time. Opening these waters to tournament fishing with additional safeguards could alleviate congestion at boat ramps and reduce overall fishing pressure on highly popular bass fisheries.

In Connecticut, there are approximately 166 drinking water supply reservoirs, several of which are currently open to regulated/permitted fishing. Specifically, we are grateful for fishing opportunities on water company properties such as those offered at Saugatuck Reservoir, Far Mill Reservoir, West Pequonnock Reservoir, Lake Chamberlain, Lake Saltonstall, the Maltby Lakes, Shenipsit Lake, and Lake McDonough. These public water sources have Department of Public Health (DPH) permitted recreational fishing programs overseen and operated by the water company who owns and operates the public drinking water source.

The potential exists for opening additional waters, but this must include the support of the water companies that have custody of, and responsibility for, the public drinking water supply sources and surrounding water company owned land. The water companies serve as gatekeepers for any recreational programs on their sources of public drinking water and are responsible for maintaining their land, pursuant to state law, to protect drinking water quality.

State laws protect the drinking water source and surrounding water company owned land to provide safe drinking water. Further, extra costs incurred by the water companies associated with increased security and monitoring have been one concern related to increasing fishing access on waters owned by public water supply utilities to date. Moreover, it is also necessary for the water utility to receive a permit from the DPH for this type of activity pursuant to Connecticut General Statutes Section 25-43c, and possibly a water company owned land permit pursuant to 25-32.

The DPH is charged with ensuring the protection of safe drinking water sources and a recreational program must be conducted in a way that is not a risk to water supply sources.

Efforts to secure public fishing access on some of the water supply reservoirs currently closed to fishing and to improve fishing access to select stream resources located on water supply company properties will likely require a collaborative effort involving the water companies, DPH and the DEEP Fisheries Division to address the above noted law and concerns. The outcome will largely depend on the specific waterbody, the support of the water utility and communities served by that public drinking water source, a recreational activity and water company land permit from the DPH, and meeting the water supply management goals of the water supply entity.

There is always shared benefit and shared responsibility for this type of activity, with an ultimate goal of balancing the recreational and public health drinking water source protection goals of Connecticut. The following goals strive to open discussions, make the necessary connections, and determine the potential for additional fishing opportunities.

Goal 2.1: Pursue fishing access in select drinking water supply reservoirs currently closed to fishing.

Objective 2.1.a: Engage with drinking water supply companies and Connecticut Department of Public Health (DPH).	
Actions	○ Develop connections with water supply companies interested in providing public fishing opportunities. ○ Generate a list of potential waters based on level of interest measured via first action item within this objective. ○ Engage with water supply companies, CT DPH and possibly others to explore options to expand shore based recreational fishing access to specific water supply reservoirs. ○ Evaluate existing electrofishing survey data or sample reservoirs prior to opening for fishing to establish baseline bass population data to inform appropriate regulations. ○ Establish waterbody specific regulations on fishing, including bass fishing, to address management interests of the water supply entity while striving to provide the best fishing opportunities over time. ○ Monitor bass populations periodically to determine if further regulatory adjustments are warranted. ○ Employ angler surveys (electronic reporting) on newly opened reservoirs to track changes in bass catch rates and average size over time.
People	Warmwater Fish Management Staff; Drinking Water Supply Companies; DPH; ENCON; Bass Anglers

Goal 2.2: Allow certain tournament exemptions to statewide bass regulations, including on Bass Management Lakes.

Objective 2.2.a: Modify current regulations/policies to facilitate tournament bass fishing year-round.	
Actions	○ Work with bass tournament directors to develop tournament operating procedures and policies that will expand fishing opportunities while reducing potential impacts to the fishery (e.g., catch-and-immediate-release during the spawn). ○ Determine allowable tournament exemptions to current BML regulations. ○ Select experimental BMLs to try a three (3) fish bag limit and/or reduced tournament fishing duration during the period from July 1 through August 31 to reduce fish stress in livewells during the summer. ○ Consider removing or altering summer tournament restrictions at BMLs.
People	Warmwater Fish Management Staff; Bass Tournament Organizations

Research suggests that some of the water supply reservoirs that are currently closed to fishing contain healthy populations of several fish species, including both Largemouth and Smallmouth Bass.

Theme 3: Monitor Bass Fisheries and Habitat Management.

The goals and actions mentioned in themes 1 and 2 will require monitoring to determine effectiveness (e.g., are new statewide regulations having any beneficial effect on existing bass fisheries). The intent of implementing new bass fishing regulations and/or enhancing habitat is to impart beneficial impacts to a lake's bass population. Not every lake or fishery is the same so while impacts may be beneficial in one location, they may be less so elsewhere.

Each lake has its own hydrological, thermal, chemical, and biological characteristics and it is these characteristics that create diverse habitats that support fish populations. Habitat diversity strongly affects a lakes trophic structure, water quality and the health of its fish populations. Invasive and nuisance aquatic species, lake winter drawdowns, shoreline development, lakeside septic systems and unauthorized herbicide usage can all have deleterious effects on a lake's ecosystem and in-lake habitat.

Aquatic vegetation can only grow where plants receive adequate sunlight, and in lakes, this area is referred to as the "littoral zone" (see "Lake Littoral Zone" sidebar). Adequate vegetation allows for fish nursery and feeding areas, macro-invertebrate habitat and a host of lake ecosystem benefits. Accordingly, the CT DEEP Fisheries Division has recommended maintaining at least 20-40% of a lakes littoral zone as vegetated area in recent decades. This level of vegetation provides adequate fish habitat (Fisheries Division 2001). Habitat monitoring and enhancement are a necessary component to successful sport fish and non-game fish population management.

Lake Littoral Zone

The littoral zone is defined as the area of a lake from the shoreline down to a water depth where light penetrates all the way to the lake bottom allowing rooted aquatic plants (macrophytes) to grow.

This is one of the most important zones within a lake's ecosystem allowing for oxygen production through photosynthesis, critical feeding and nursery habitats for fish and other aquatic organisms, nutrient absorption and control of water movement.

Maintaining vegetated areas within this zone is critical to maintaining a lake's water quality by nutrient absorption and recycling which greatly reduces the potential for algal blooms.

Goal 3.1: Monitor BMLs and other important bass fisheries (e.g., Candlewood Lake and Connecticut River).

Objective 3.1.a: Determine bass population responses to changes in management, angler use, and introductions of various aquatic species.	
Actions	○ Monitor at least five BMLs annually via electrofishing, angler survey or both. ○ Rotate monitoring through all BMLs approximately every 6 years to maintain an up-to-date data set. ○ Gather and assess growth data on bass where and when appropriate. ○ Monitor private waters and drinking water supply reservoirs periodically to compare bass population data with exploited public waters. ○ Monitor effects of zebra mussels and triploid (i.e. sterile) Grass Carp on bass populations in Candlewood Lake and other waters as appropriate. ○ Improve our understanding of interactions among bass and other introduced species (e.g., Walleye, Northern Pike).
People	Warmwater Fish Management Staff; Drinking Water Supply Companies; Lake Associations; Municipalities

Goal 3.2: Protect habitat in all BMLs and other important bass fisheries.

Objective 3.2.a: Influence active management of aquatic vegetation to preserve fisheries habitat value.	

Actions	○ Support HCE staff in providing comments on all aquatic vegetation herbicide applications in BMLs and other important bass lakes as needed.
	○ Evaluate effects of vegetation management on bass/fish populations where necessary (e.g., Candlewood Lake, Ball Pond and Squantz Pond where triploid Grass Carp have been used for vegetation control).
	  ○ Use side scan sonar to map aquatic vegetation in waters affected by Grass Carp foraging or herbicide treatments.
	  ○ Direct electrofishing effort to assess changes in fish community where necessary.
	○ Provide education to municipalities, lake users, lake associations and property owners on the importance of habitat and water quality.

People	Warmwater and Coldwater Fish Management Staff; HCE Staff; Pesticides Staff; Lake Associations, Municipalities; U.S. Army Corps of Engineers

Objective 3.2.b: Ensure appropriate implementation of lake drawdowns.	
Actions	○ Support HCE staff in providing comments on all lake drawdown applications in BMLs and other important bass lakes as needed. ○ Evaluate effects of drawdowns on bass/fish populations where necessary. ○ Provide education to municipalities, lake users, lake associations and property owners on the importance of aquatic habitat and water quality.
People	Warmwater Fish Management Staff; HCE Staff; Lake Associations; U.S. Army Corps of Engineers

Objective 3.2.c: Monitor lake and pond habitat conditions statewide.	
Actions	○ Develop publicly accessible habitat maps of Connecticut lakes and ponds using side scan sonar. ○ Pair mapping data with other relevant variables such as water temperature and dissolved oxygen profiles, thermocline depth, total dissolved solids, pH, etc. ○ Use the above habitat assessments to guide potential lake and pond habitat enhancement efforts. ○ Reassess lake and pond habitats on a rotational basis to identify habitat changes and how they may influence fisheries.
People	Warmwater and Coldwater Fish Management Staff; HCE Staff

Goal 3.3: Protect Largemouth Bass in Connecticut's public waters.

Objective 3.3.a: Maintain up to date information on source of all bass being stocked into public or private waters in Connecticut.	
Actions	○ Poll other states in the region to determine their policies on allowing bass stocking by private entities. ○ Develop a standard operation procedure (SOP) for bass introductions and stocking in Connecticut waters.
People	Warmwater Fish Management Staff; Hatchery Staff; Northeast Fisheries Managers

Goal 3.4: Determine if artificial habitat structures are effective in providing habitat for bass and other resident fish species in the Housatonic River impoundments.

Objective 3.4.a: Evaluate existing structures for fish usage.	
Actions	○ Evaluate fish usage of the Mossback habitat structures installed by the Connecticut Bass Nation (CBN). ○ Use boat electrofishing, side scan sonar and angler usage and catch rates to assess habitat structures. ○ Develop public maps indicating structure locations. ○ Determine applicability for use in other Connecticut waters where structural habitat is lacking or has degraded over time.
	Warmwater Fish Management Staff; HCE Staff, CBN; University Partners

Candlewood Lake is one of the premier bass fishing lakes in the world, particularly for Smallmouth Bass. It is a popular destination for springtime tournaments in the tri-state area.

Theme 4: Public Engagement

Resource managers have often failed to acknowledge or accept public views and opinions on resource management issues, but state fish and wildlife agencies across the country have learned that management of resources is more successful if stakeholders are involved in the process from the beginning. This can be accomplished in a variety of ways from online surveys to traditional public meetings. Public meetings (either open or by invitation) involving stakeholders, researchers, and managers at the beginning of the process have great potential to help build stakeholder relationships, and ensure the DEEP is effectively managing public trust resources for the maximum benefit of the public and the resources, while using the best available science.

There has been a growing sense of collaboration in the Northeast region as state/federal agency personnel, along with other scientists, property owners, resource users, lake associations, university professors and students, and concerned citizens are pulling together in partnership to better understand decades of anthropogenic effects on our lakes, ponds, rivers, and streams. All interested stakeholders can come to the same table to express their views and opinions on lake management. In a similar vein, this action plan, as stated earlier, is based partly on the views of Connecticut anglers garnered from recent surveys. Increasing awareness and relevancy of Connecticut's warmwater fisheries, specifically bass fisheries, to both traditional and non-traditional users, is an important step toward successful management.

The reasons or motivations for fishing vary amongst anglers. In the recent bass survey (see Appendix A), we asked respondents to list their

Improving communication and collaboration between managers and bass anglers is a key component to making sure fishing improves for each generation.

reasons for bass fishing. In order of importance, responses were “relaxation”, “connecting with nature”, “challenge of fishing”, “excitement”, “comradery”, “competition” and “food”. Regardless of your motivation to fish, the physical and mental health benefits of being outdoors are undeniably important as we saw firsthand during the COVID-19 pandemic, when many people discovered or rediscovered the natural world. Similarly, the Fisheries Division has invested considerable resources on efforts to **R**ecruit new anglers, **R**eactivate lapsed anglers and **R**etain existing anglers. This R3 effort is critical to increasing awareness and participation in bass fishing opportunities in Connecticut.

Goal 4.1 – Increase the relevancy of bass and bass fishing to both users and non-resource users in Connecticut.

Objective 4.1.a: Increase relevancy of bass fisheries with existing anglers (Retention).	
Actions	○ Engage with constituents on a regular basis. ○ Maintain a strong presence on a variety of social media platforms and the DEEP web site. ○ Create and distribute relevant bass fishing related videos on the web page and via social media (especially Facebook and YouTube). ○ Conduct Facebook Live sessions during bass fishing events, population sampling efforts and stocking. ○ Strive to reduce user conflicts at popular boat launch facilities. ○ Meet annually with bass fishing organizations. ○ Increase outreach to bass anglers not associated with bass fishing organizations. ○ Involve stakeholders early in the process when contemplating major, resource-specific management actions such as new regulations and major habitat renovations. ○ Give presentations and talks at stakeholder meetings, banquets, and conferences. ○ Support local bass fishing organizations to sponsor/host regional youth bass fishing tournaments. ○ Work with the bass tournament industry and citizens to effectively manage bass tournaments. ○ Engage with bass tournament youth organizations routinely to ensure the next generation understands and embraces resource conservation.
People	Warmwater Fish Management Staff; R3 Staff; CARE; DEEP Communications Staff; Bass Anglers; Bass Tournament Organizations

Objective 4.1.b: Increase awareness and relevancy of bass fisheries in underserved communities, with people who have not fished, or with people who have not fished in a very long time (Recruitment and Reactivation).	
Actions	○ Implement Fisheries Division based R3 strategies. ○ Collaborate with DEEP's Office of Environmental Equity. ○ Leverage Recreational Boating and Fishing Foundation (RBFF) resources to better connect with underserved communities. ○ Identify segments of underserved populations where focused efforts would be most beneficial. ○ Utilize results from Fisheries Division's Connecticut Angler R3 Plan to develop an understanding of the preferences and behaviors of non-traditional audiences as related to bass fishing. ○ Develop collaborative connections with community-based organizations. ○ Increase awareness of classes with the Connecticut Aquatic Resources Education (CARE) program. ○ Support recommended action items as described within "Casting to the Future" (Connecticut's draft plan to increase the number of people participating in fishing) and the Fisheries Division R3 Action Plan. ○ Continue to promote the health benefits of fishing and eating fish.
People	Warmwater Program Staff; R3 Staff; DEEP Office of Environmental Justice Staff; Community-Based Groups; Faith-Based Groups; Municipalities; School Districts; RBFF; CARE

Objective 4.1.c: Communicate how fish and fishing managed by the Fisheries Division relate to and improve daily life for all.	
Actions	○ Use various social media platforms and other means of public outreach to inform the public (fishermen and non-fishermen) on the importance of: ○ How fishing supports ecological and ecosystem integrity, water quality, and habitat conservation and enhancement. ○ Fish consumption as local, sustainable, and healthy food. ○ Health benefits of fishing. ○ Family memories and togetherness.
People	Warmwater Fish Management Staff; CARE; DEEP Communications Staff

Objective 4.1.d: Systematically engage stakeholders to improve bass management.	
Actions	○ Develop a Bass Advisory Board. ○ A group of bass anglers, fisheries managers, academics, and other stakeholders to consult on management approaches and make recommendations. ○ Improve transparency by sharing relevant fisheries data or summaries thereof when appropriate. ○ Electrofishing data ○ Angler surveys ○ Tournament reports ○ Habitat assessments ○ Report on bass management accomplishments and challenges annually.
People	Bass Anglers; University Partners; Regional Fisheries Managers; Warmwater Fish Management Staff

Conclusion:

For such a small state, Connecticut has outstanding natural resources and our bass populations play a vital role ecologically, recreationally and economically. With responsible conservation management plans and an engaged citizenry, we can ensure Connecticut's bass fisheries remain viable for many years into the future. Public input and innovative thinking will continually enhance our ability to reach our management goals and adapt to new technological, environmental, political, and social challenges.

Meeting these challenges will require changes for both the Fisheries Division and our constituents. While change is always difficult, it is also inevitable as our fisheries and the people targeting them continue to evolve. We believe that continued collaboration between the Fisheries Division and the anglers of Connecticut will be crucial in realizing our shared goal of improved bass fishing opportunities for everyone in the years to come. Accordingly, this plan will foster ongoing efforts to reach out and connect with our anglers, fishing-related businesses, and non-traditional stakeholders.

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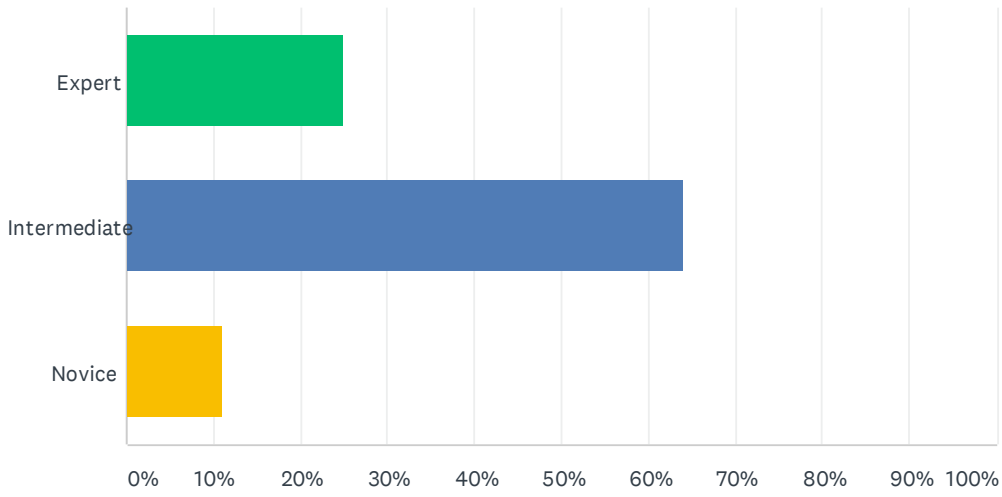
Q1 How would you rate your fishing skills?

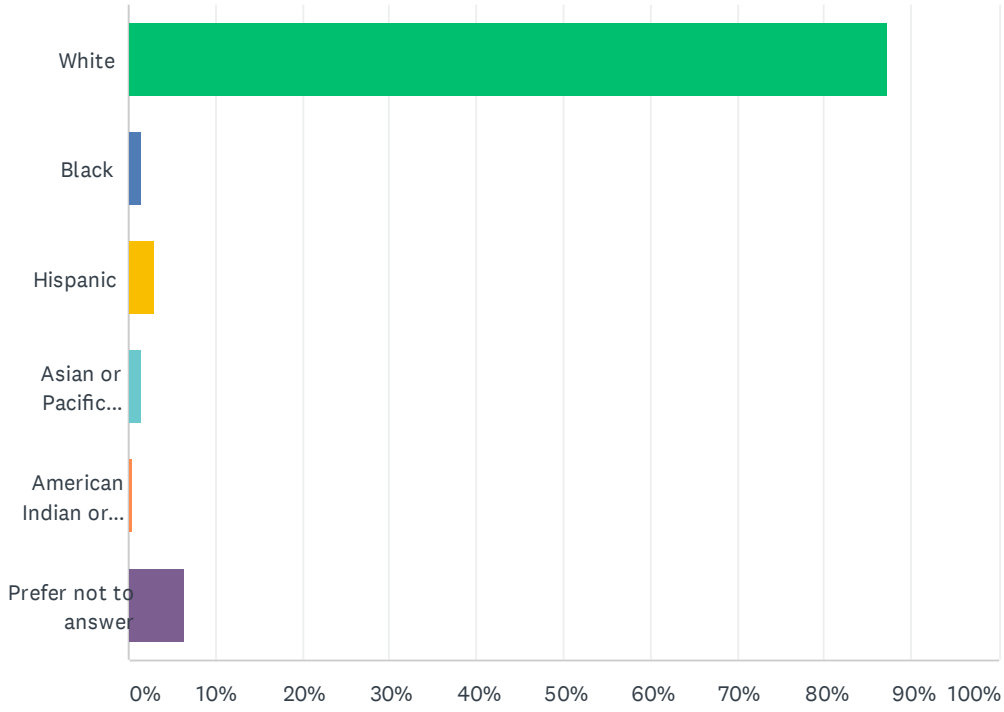
Answered: 4,607 Skipped: 11



ANSWER CHOICES	RESPONSES	
Expert	24.83%	1,144
Intermediate	64.01%	2,949
Novice	11.16%	514
TOTAL		4,607

Q2 What is your ethnicity?

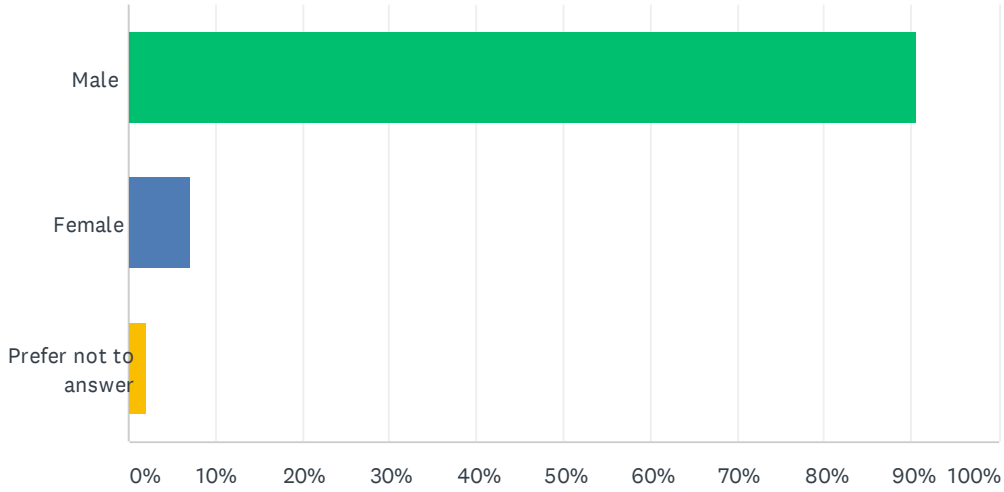
Answered: 4,553 Skipped: 65



ANSWER CHOICES	RESPONSES	
White	87.31%	3,975
Black	1.43%	65
Hispanic	2.92%	133
Asian or Pacific Islander	1.49%	68
American Indian or Alaska Native	0.37%	17
Prefer not to answer	6.48%	295
TOTAL		4,553

Q3 Which gender do you identify as?

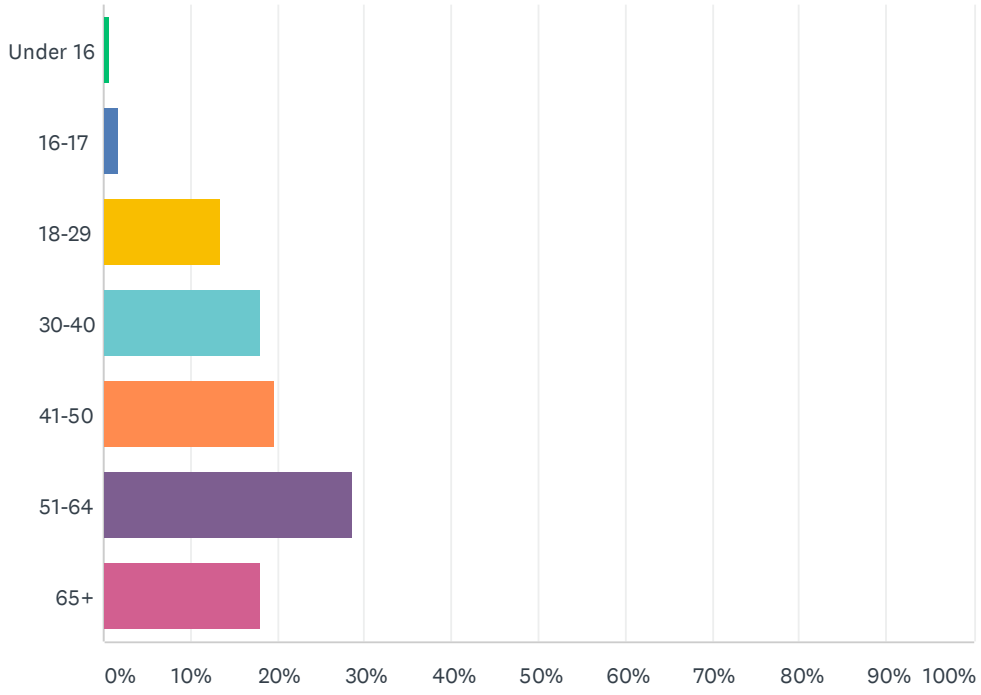
Answered: 4,580 Skipped: 38



ANSWER CHOICES	RESPONSES	
Male	90.68%	4,153
Female	7.18%	329
Prefer not to answer	2.14%	98
TOTAL		4,580

Q4 What is your age bracket?

Answered: 4,597 Skipped: 21



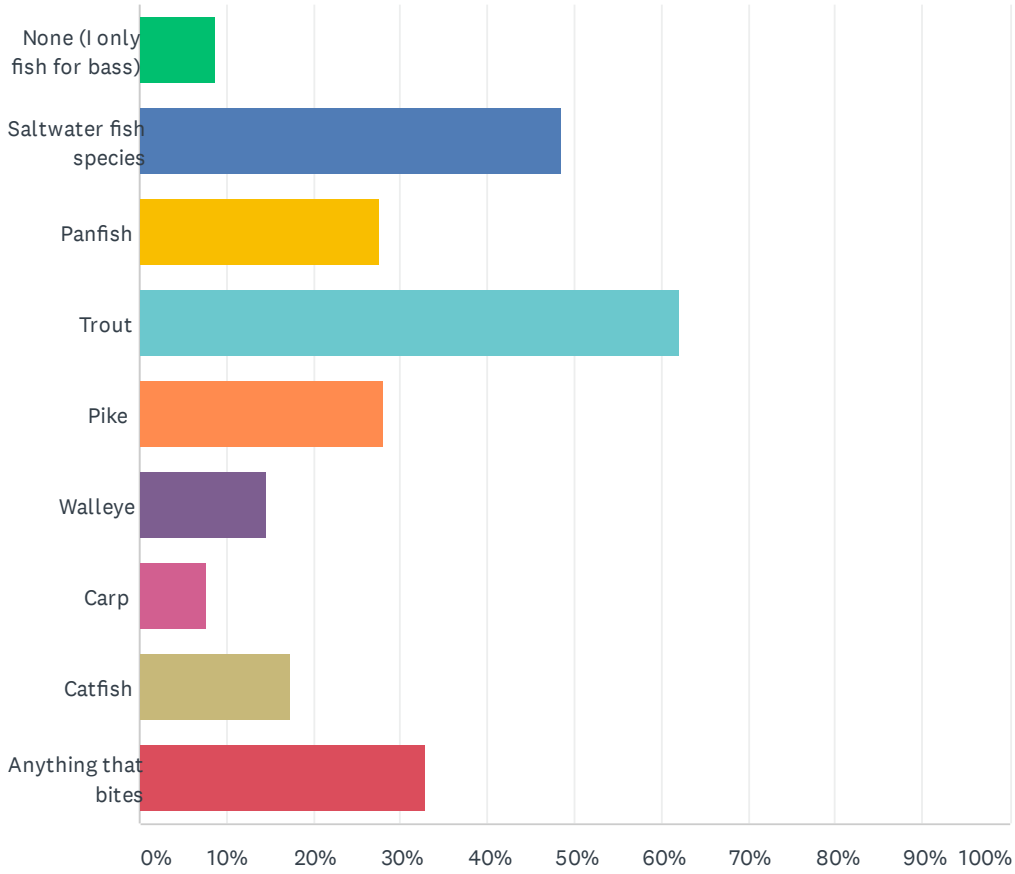
ANSWER CHOICES	RESPONSES	
Under 16	0.65%	30
16-17	1.74%	80
18-29	13.47%	619
30-40	17.99%	827
41-50	19.58%	900
51-64	28.65%	1,317
65+	17.92%	824
TOTAL		4,597

Q5 What is your 5 digit home zip code?

Answered: 4,469 Skipped: 149

Q6 Which other species do you fish for besides bass (select all that apply):

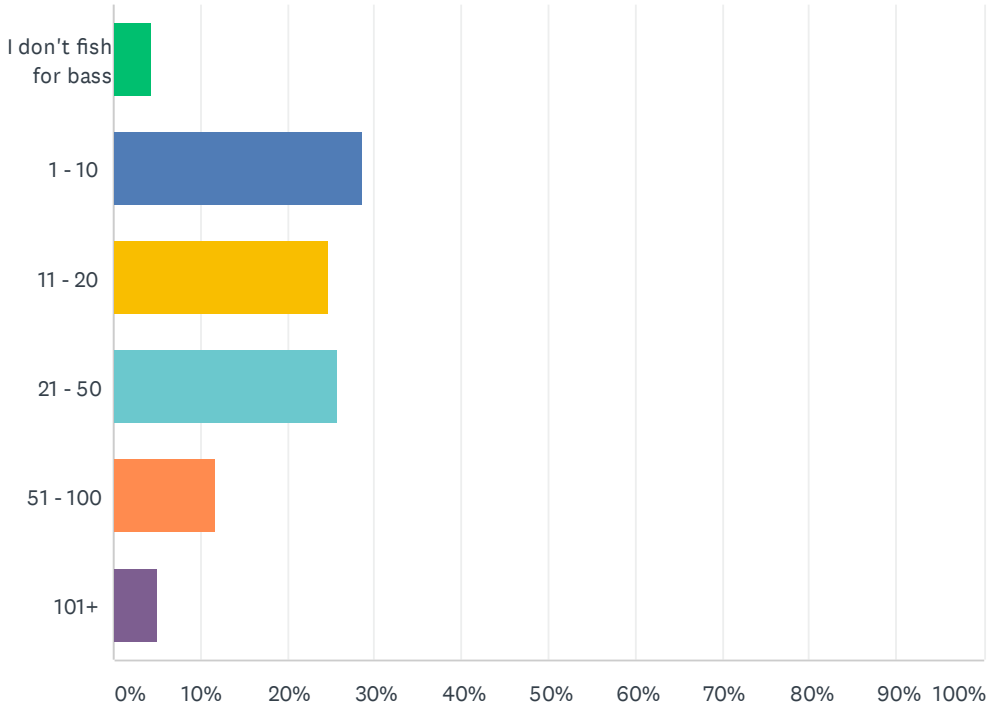
Answered: 4,562 Skipped: 56



ANSWER CHOICES	RESPONSES	
None (I only fish for bass)	8.77%	400
Saltwater fish species	48.58%	2,216
Panfish	27.66%	1,262
Trout	62.23%	2,839
Pike	27.95%	1,275
Walleye	14.64%	668
Carp	7.69%	351
Catfish	17.27%	788
Anything that bites	32.95%	1,503
Total Respondents: 4,562		

Q7 How many days a year do you fish for bass in Connecticut?

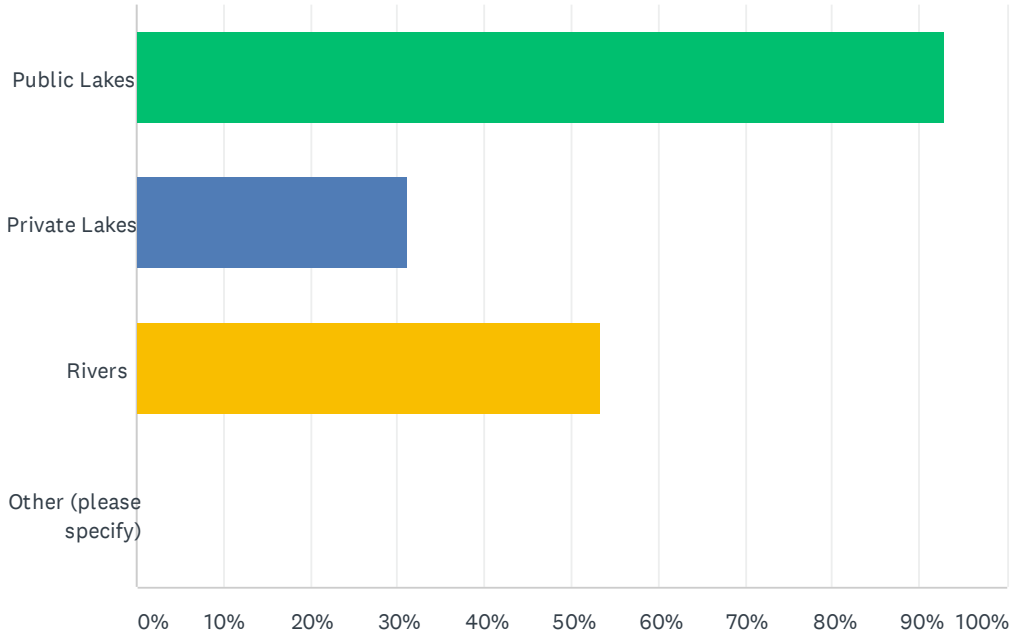
Answered: 4,618 Skipped: 0



ANSWER CHOICES	RESPONSES	
I don't fish for bass	4.40%	203
1 - 10	28.61%	1,321
11 - 20	24.60%	1,136
21 - 50	25.64%	1,184
51 - 100	11.72%	541
101+	5.05%	233
TOTAL		4,618

Q8 In Connecticut, do you fish for bass in (select all that apply):

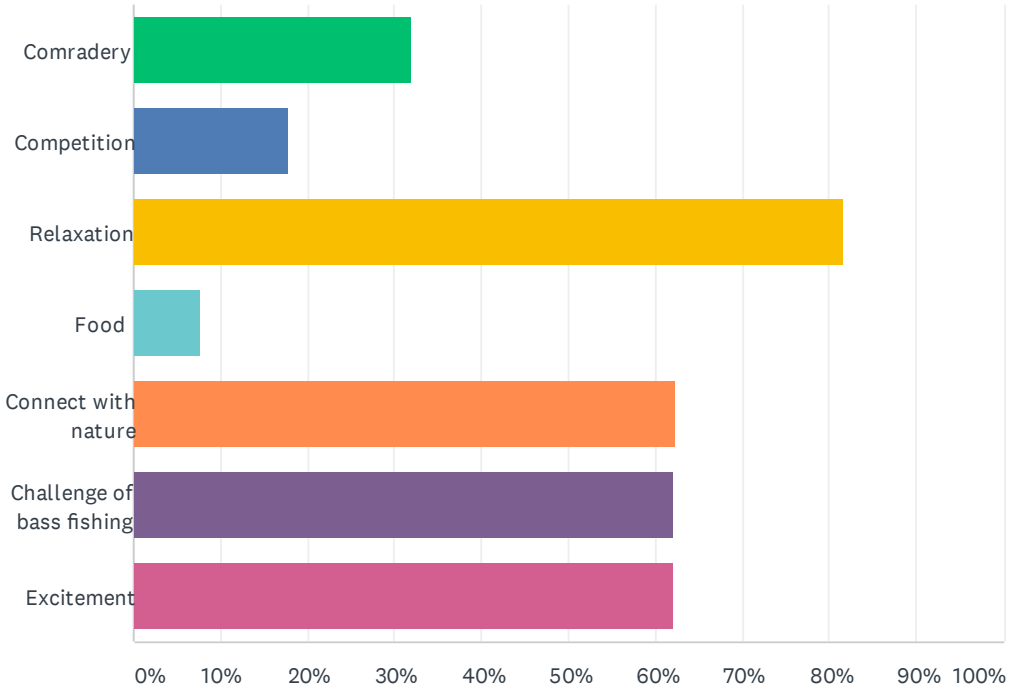
Answered: 3,901 Skipped: 717



ANSWER CHOICES	RESPONSES	
Public Lakes	92.80%	3,620
Private Lakes	31.22%	1,218
Rivers	53.45%	2,085
Other (please specify)	0.00%	0
Total Respondents: 3,901		

Q9 What is your primary motivation to fish for bass? (select all that apply)

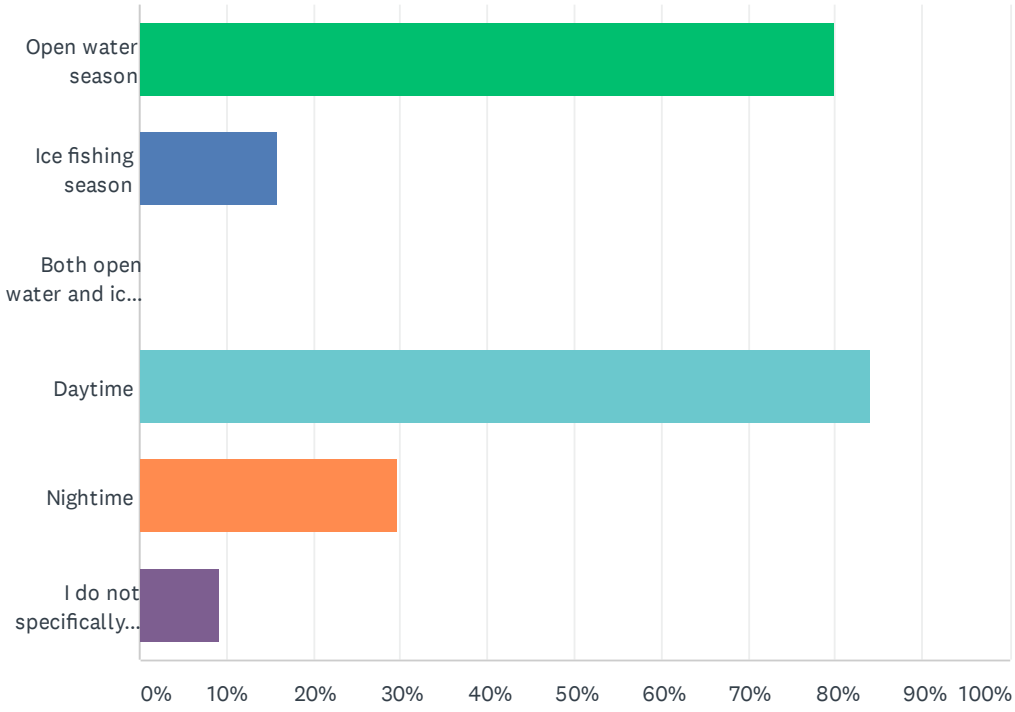
Answered: 3,905 Skipped: 713



ANSWER CHOICES	RESPONSES	
Comradery	31.98%	1,249
Competition	17.80%	695
Relaxation	81.54%	3,184
Food	7.81%	305
Connect with nature	62.30%	2,433
Challenge of bass fishing	62.15%	2,427
Excitement	62.05%	2,423
Total Respondents: 3,905		

Q10 I fish for Bass during? (Select all that apply)

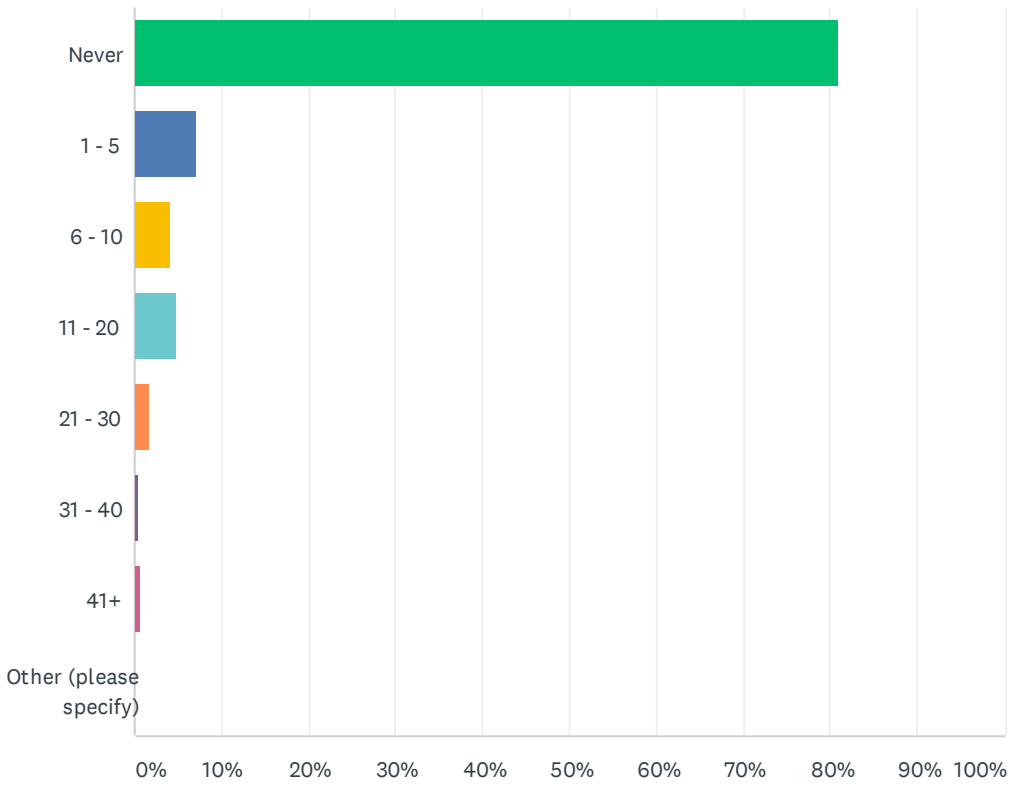
Answered: 3,908 Skipped: 710



ANSWER CHOICES	RESPONSES	
Open water season	79.91%	3,123
Ice fishing season	15.92%	622
Both open water and ice season	0.00%	0
Daytime	84.14%	3,288
Nightime	29.68%	1,160
I do not specifically fish for Bass	9.29%	363
Total Respondents: 3,908		

Q11 How often do you participate in competitive bass fishing tournaments?

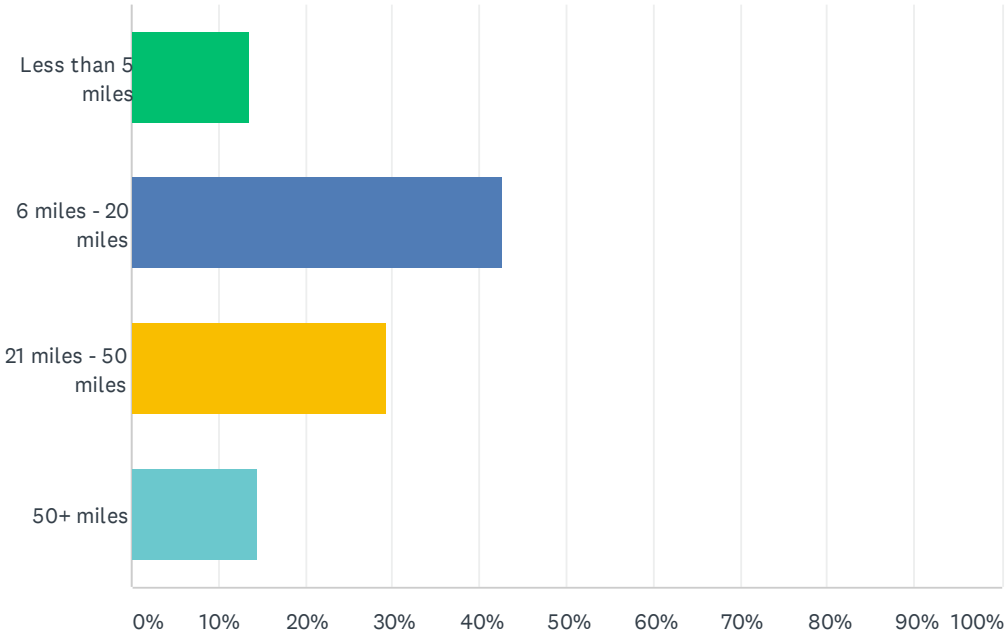
Answered: 3,904 Skipped: 714



ANSWER CHOICES	RESPONSES	
Never	80.97%	3,161
1 - 5	7.17%	280
6 - 10	4.23%	165
11 - 20	4.82%	188
21 - 30	1.59%	62
31 - 40	0.51%	20
41+	0.72%	28
Other (please specify)	0.00%	0
TOTAL		3,904

Q12 How far do you travel to fish your favorite bass water in Connecticut?

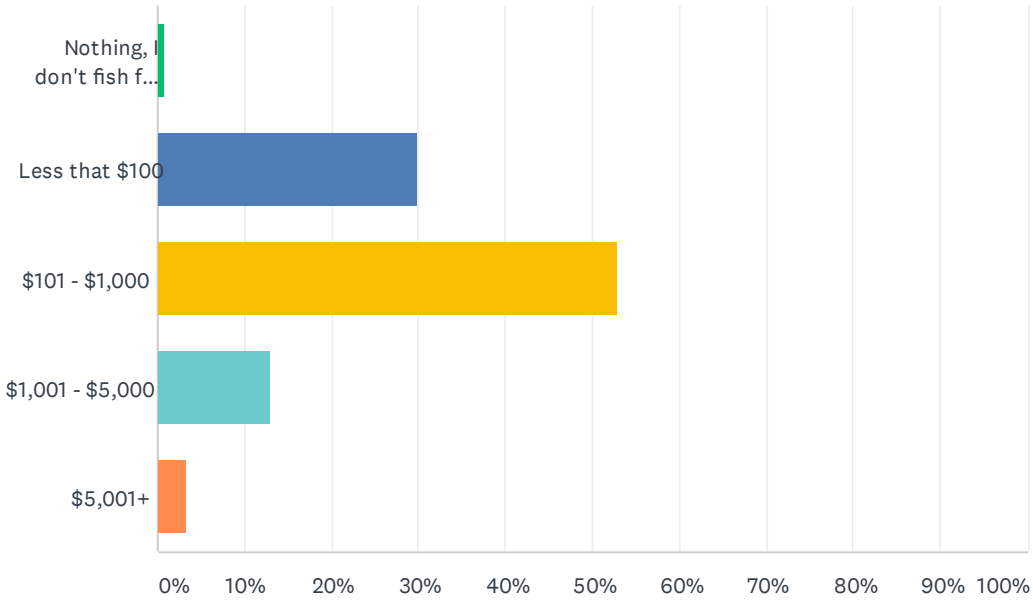
Answered: 3,899 Skipped: 719



ANSWER CHOICES	RESPONSES	
Less than 5 miles	13.62%	531
6 miles - 20 miles	42.68%	1,664
21 miles - 50 miles	29.34%	1,144
50+ miles	14.36%	560
TOTAL		3,899

Q13 How much do you spend annually to fish for bass (e.g., gas, tackle, registration fees, etc.)?

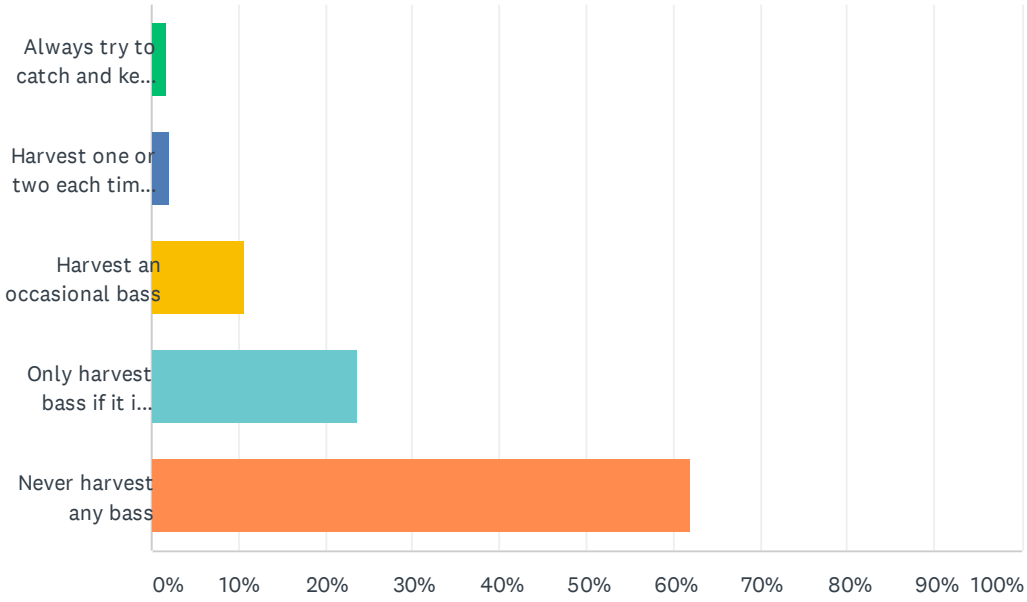
Answered: 3,908 Skipped: 710



ANSWER CHOICES	RESPONSES	
Nothing, I don't fish for bass	0.92%	36
Less that $100	29.99%	1,172
$101 - $1,000	52.84%	2,065
$1,001 - $5,000	12.97%	507
$5,001+	3.28%	128
TOTAL		3,908

Q14 Which of the following best describes your bass harvest practices?

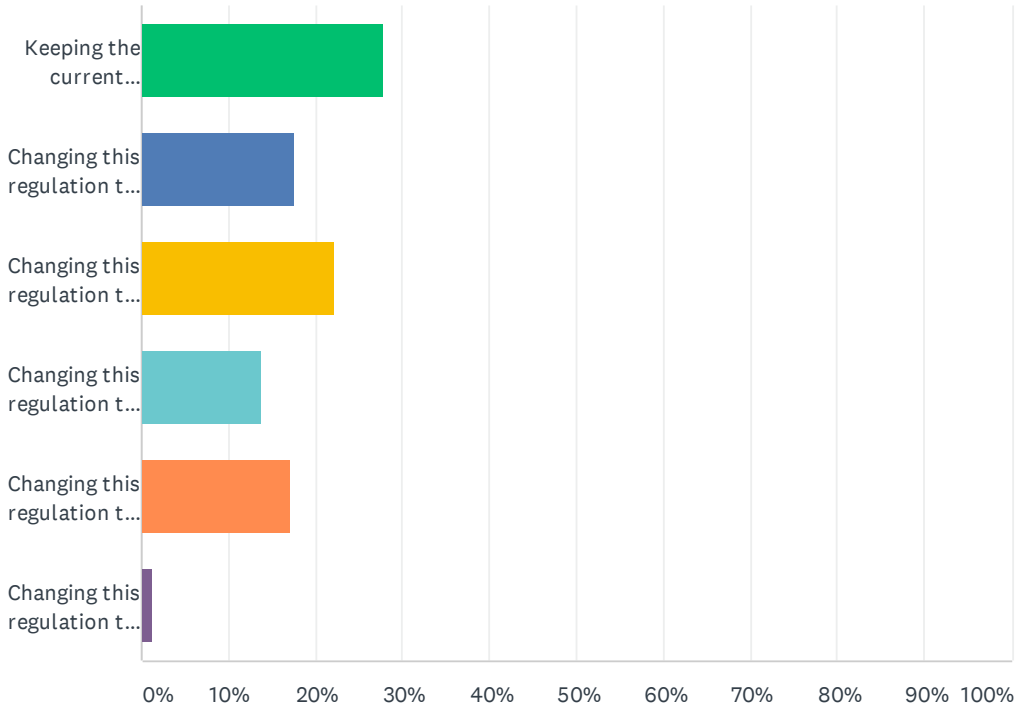
Answered: 3,900 Skipped: 718



ANSWER CHOICES	RESPONSES	
Always try to catch and keep the limit	1.62%	63
Harvest one or two each time I bass fish	2.08%	81
Harvest an occasional bass	10.67%	416
Only harvest bass if it is injured and not going to live after release	23.67%	923
Never harvest any bass	61.97%	2,417
TOTAL		3,900

Q15 The statewide bass regulation (6 fish per day/12-inch minimum length) has been in effect since 1953. Which of the following hypothetical statewide bass regulations would you most strongly support if regulations were changed?

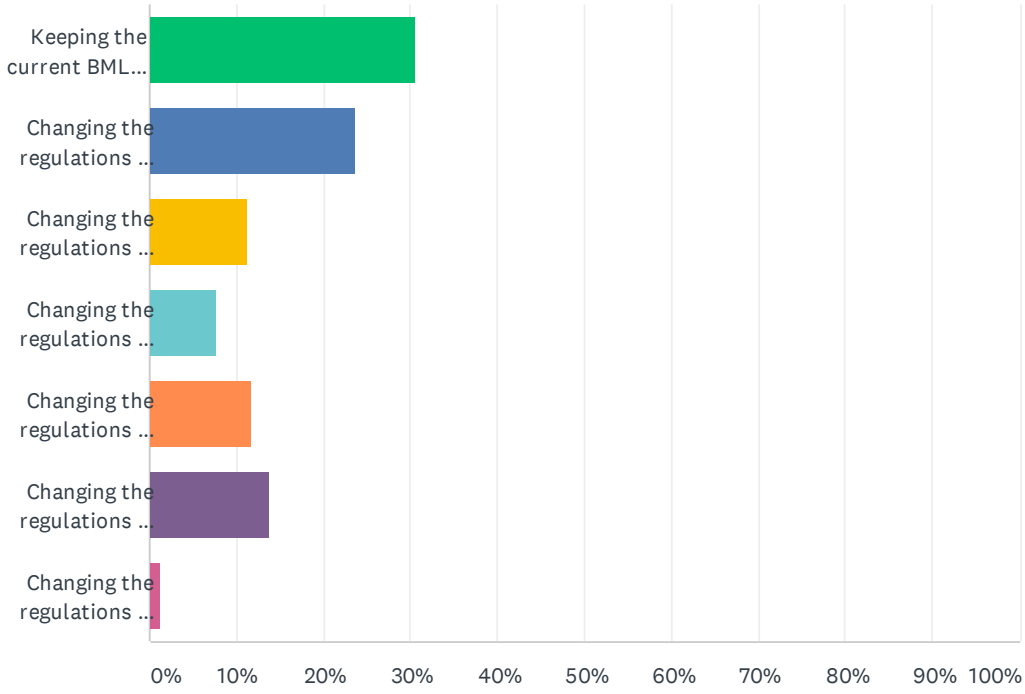
Answered: 3,687 Skipped: 931



ANSWER CHOICES	RESPONSES	
Keeping the current statewide bass regulation (6 fish per day/12-inch minimum length limit)	27.85%	1,027
Changing this regulation to catch-and-release only (i.e., no harvest at all)	17.63%	650
Changing this regulation to 3 fish per day/12-inch minimum length limit	22.24%	820
Changing this regulation to 3 fish per day/18-inch maximum length limit (i.e., no fish may be kept over 18")	13.78%	508
Changing this regulation to a 3 fish per day/14 - 20-inch protected slot length limit with only one fish able to be harvested over 20" (i.e., no bass may be kept between 14" - 20")	17.20%	634
Changing this regulation to no regulation for bass at all (i.e., no size restriction and no creel limit)	1.30%	48
TOTAL		3,687

Q16 There are 29 Bass Management Lakes (BMLs) covered by four different regulations in Connecticut. These regulations were designed to improve the size of bass but increased catch-and-release practices may have reduced their effectiveness. Which of the following hypothetical BML regulations would you most strongly support if regulations were changed?

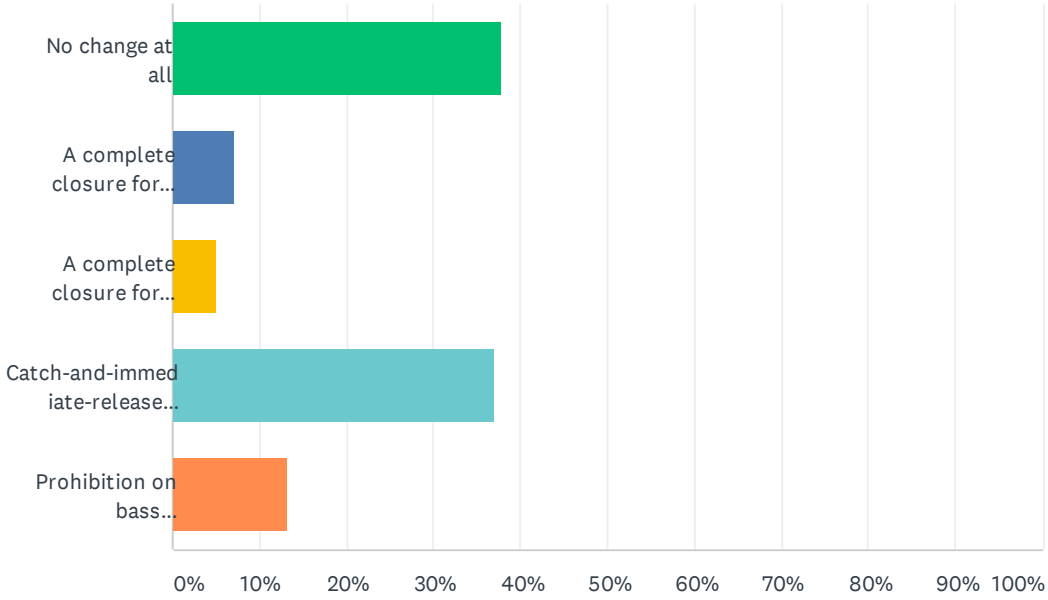
Answered: 3,626 Skipped: 992



ANSWER CHOICES	RESPONSES	
Keeping the current BML regulations	30.56%	1,108
Changing the regulations on all BMLs to catch-and-release only	23.58%	855
Changing the regulations on all BMLs to 2 fish per day/16-inch minimum length limit	11.39%	413
Changing the regulations on all BMLs to 1 fish per day/18-inch minimum length limit	7.69%	279
Changing the regulations on all BMLs to 3 fish per day/16-inch maximum length limit (i.e., 3 fish per day/ no fish can be over 16")	11.67%	423
Changing the regulations on all BMLs to 3 fish per day/14 - 20-inch protected slot length limit with only one fish able to be harvested over 20" (i.e., no bass may be kept between 14" - 20")	13.79%	500
Changing the regulations on all BMLs to no regulation for bass at all (i.e., no size restriction and no creel limit)	1.32%	48
TOTAL		3,626

Q17 Currently, Connecticut does not restrict bass fishing during the spawning period. Which of the following options would you most strongly support?

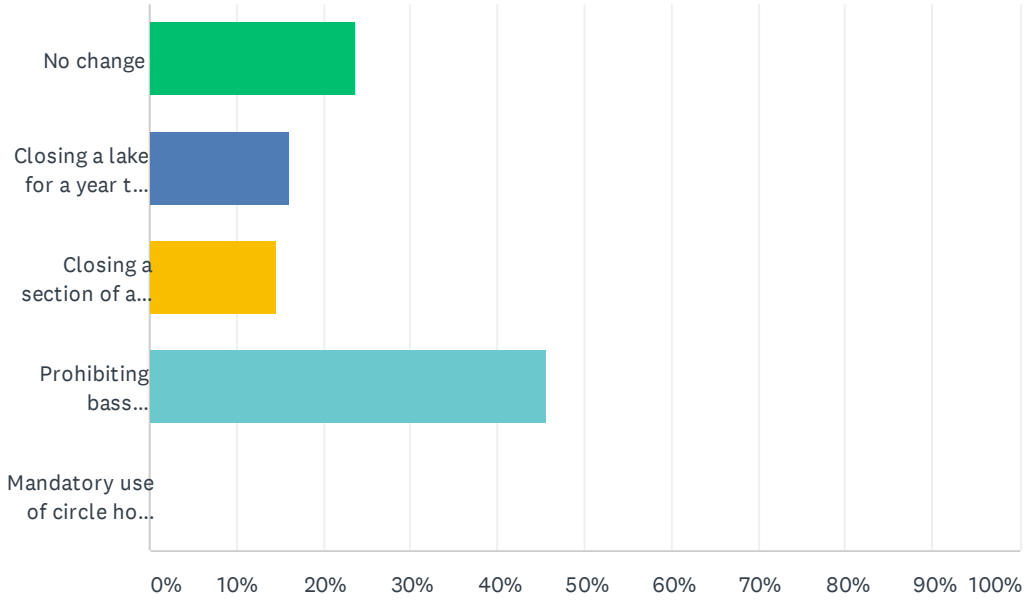
Answered: 3,801 Skipped: 817



ANSWER CHOICES	RESPONSES	
No change at all	37.78%	1,436
A complete closure for bass fishing during the spawning season (May through mid-June)	7.08%	269
A complete closure for bass fishing during the spawning season (May through mid-June) on ONLY the current Bass Management Lakes	5.00%	190
Catch-and-immediate-release (no holding in live wells) only for bass during the spawning season (May through mid-June). Tournaments would still be allowed, but must practice catch-and-immediate-release	37.02%	1,407
Prohibition on bass tournaments during the spawning season (May through mid-June).	13.13%	499
TOTAL		3,801

Q18 Studies conducted by the DEEP and UCONN have shown that bass mortality from catch-and-release fishing is higher than mortality from harvest in some Connecticut lakes. To help reduce catch-and-release mortality in lakes where this is occurring, which of the following would you most strongly support?

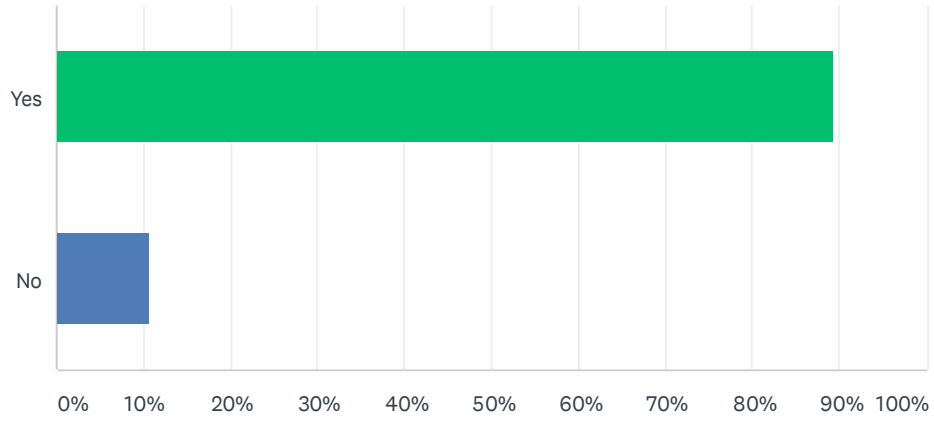
Answered: 3,709 Skipped: 909



ANSWER CHOICES	RESPONSES	
No change	23.65%	877
Closing a lake for a year to allow the bass population a chance to rebound	16.15%	599
Closing a section of a lake to bass fishing to provide a sanctuary to help a population recover	14.59%	541
Prohibiting bass tournaments on a lake for one year to help the population recover	45.62%	1,692
Mandatory use of circle hooks when bait fishing for bass	0.00%	0
TOTAL		3,709

Q19 In lakes where recruitment (i.e., young bass surviving until they are big enough to be caught by fishermen) is low, would you support supplemental stocking?

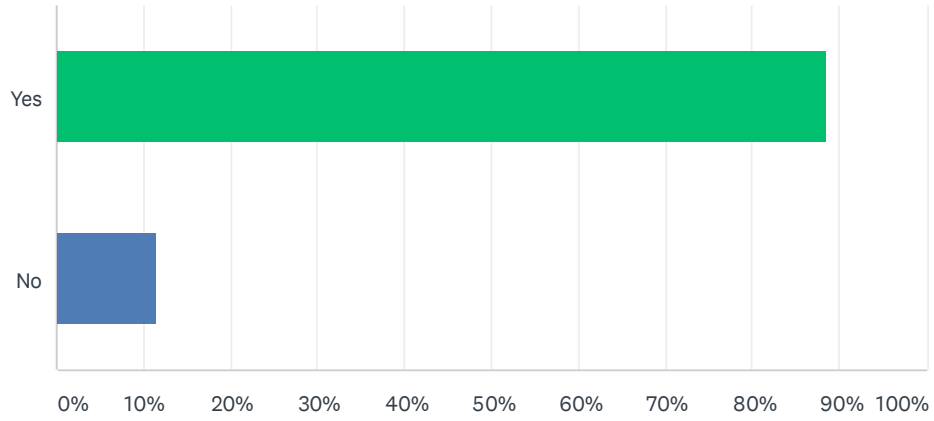
Answered: 3,856 Skipped: 762



ANSWER CHOICES	RESPONSES	
Yes	89.34%	3,445
No	10.66%	411
TOTAL		3,856

Q20 Would you support a hatchery-based program where select adult bass are collected from Connecticut lakes and spawned within our hatchery system to provide juvenile bass for stocking?

Answered: 3,867 Skipped: 751



ANSWER CHOICES	RESPONSES	
Yes	88.41%	3,419
No	11.59%	448
TOTAL		3,867

Q21 Using your experience and knowledge gained through bass fishing various waters in Connecticut, what would you list as the top threat to black bass fisheries in Connecticut lakes at this time?

Answered: 2,418 Skipped: 2,200

Q21: Using your experience and knowledge gained through bass fishing various waters in Connecticut, what would you list as the top threat to black bass fisheries in Connecticut lakes at this time?

All Respondents

Fishing Pressure	317
Unknown	311
Poaching	253
Tournament Fishing	220
Weed Treatments	215
Over Harvest	197
Poor Fish Handling	181
Pollution/Water Quality	155
Other Fish Species	97
Invasive Weeds	96
Poor Regulations	84
People	64
Runoff from lake properties	61
Fishing during spawn	35
Enforcement	34
Climate Change	33
Predation	25
Out-of-state fishermen	20
Access Issues	16
Social Media/Electronics	2

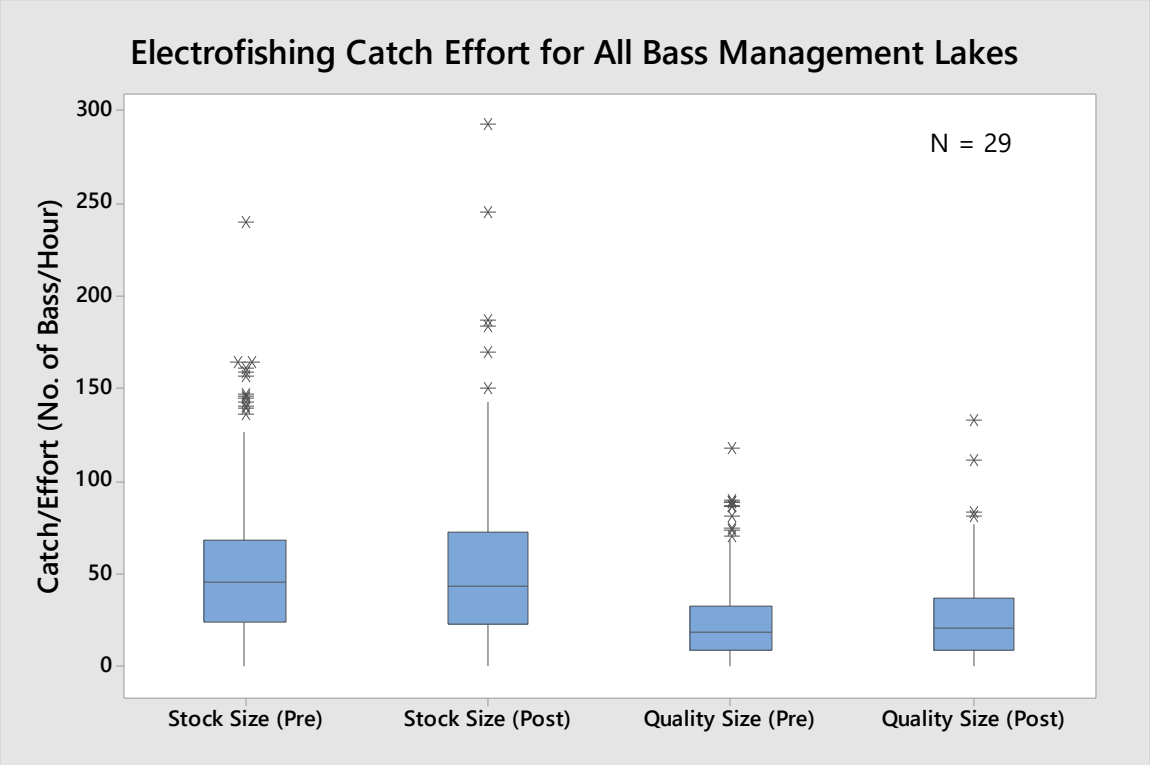
Only Tournament Angler Responses

Weed Treatments	145
Tournament Fishing	65
Poaching	55
Over Harvest	54
Poor Fish Handling	44
Unknown	42
Fishing Pressure	34
Other Fish Species	34
Pollution/Water Quality	25
Invasive Weeds	18
Out-of-state fishermen	14
Poor Regulations	13
Enforcement	12
People	12
Runoff from lake properties	11
Fishing during spawn	9
Predation	5
Access Issues	4
Climate Change	2

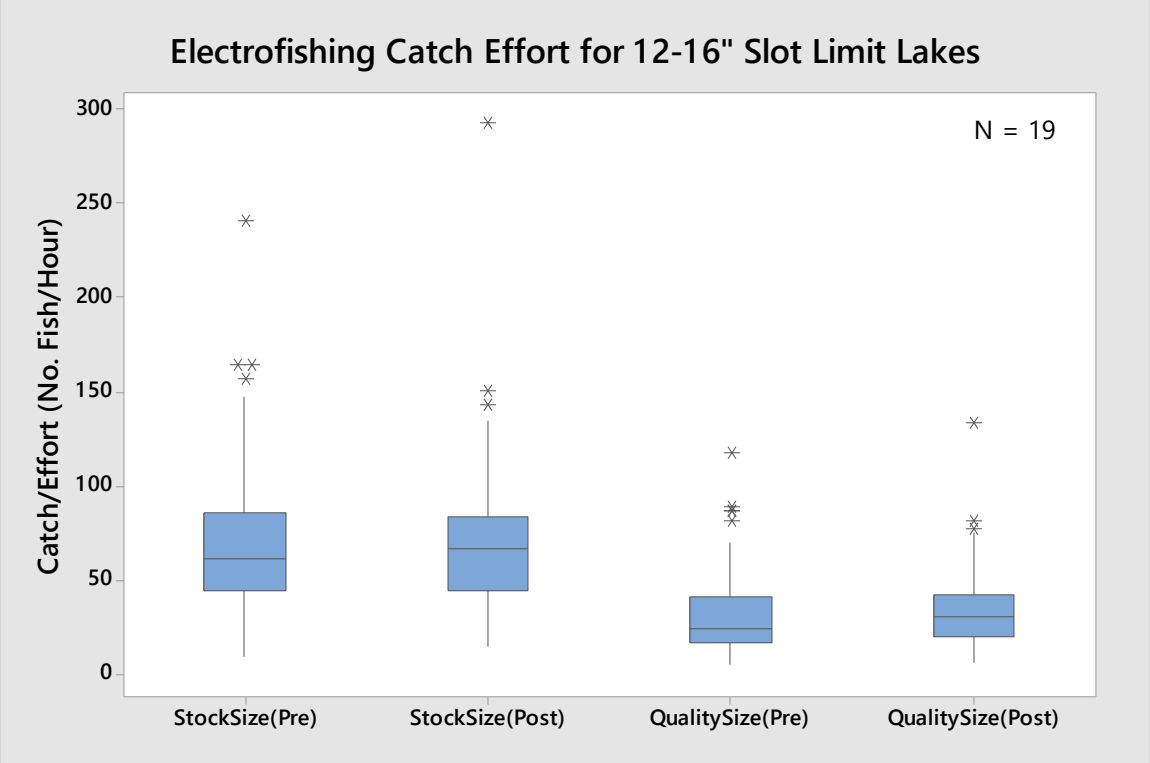
Appendix B:

Four separate fishing regulations (12”-16” protected slot length limit, 12”-18” protected slot length limit, 16” minimum length limit and 18” minimum length limit) were adopted in 2002 for the suite of 29 Bass Management Lakes. To assess regulation effectiveness in improving bass population size structure, the FD used electrofishing catch/effort data for bass before and after regulations took in effect. Data was assessed for all bass stock size (8”) and greater and also for all bass quality size (12”) and greater. Box and whisker plots were used to give a graphic representation of the data for all regulations combined and for each separate regulation.

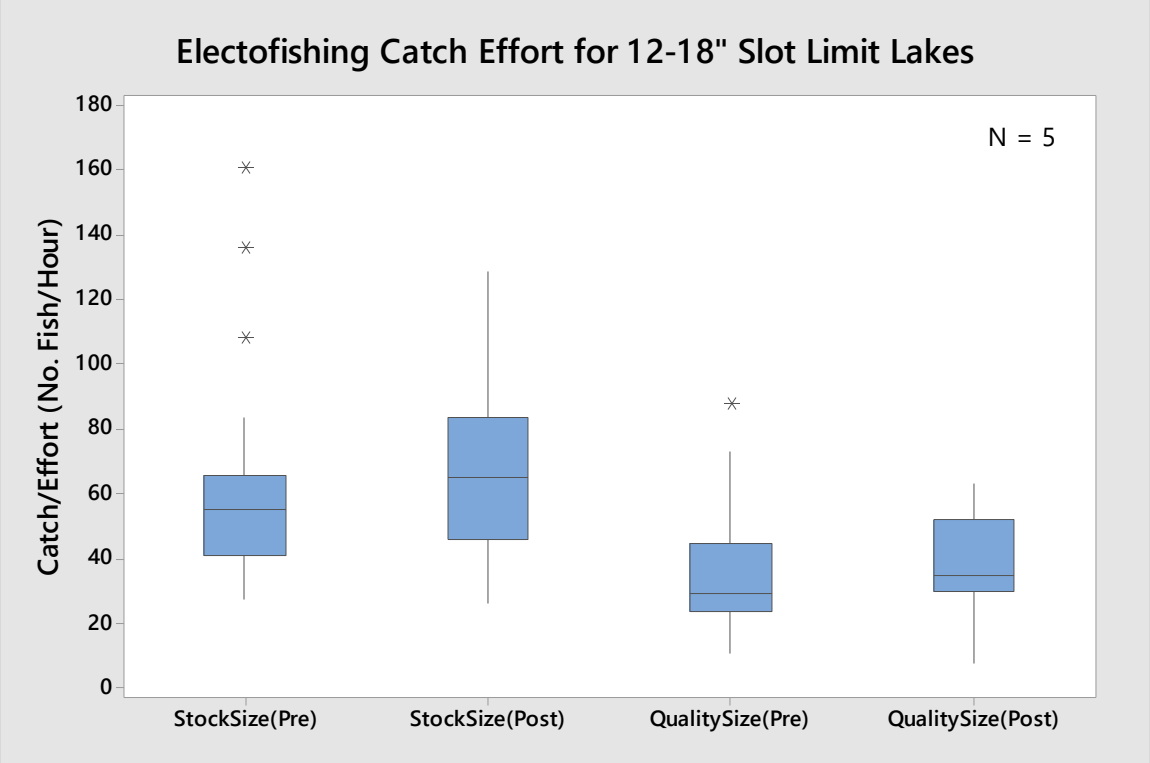
Appendix B1. Four regulations combined for all 29 BMLs.



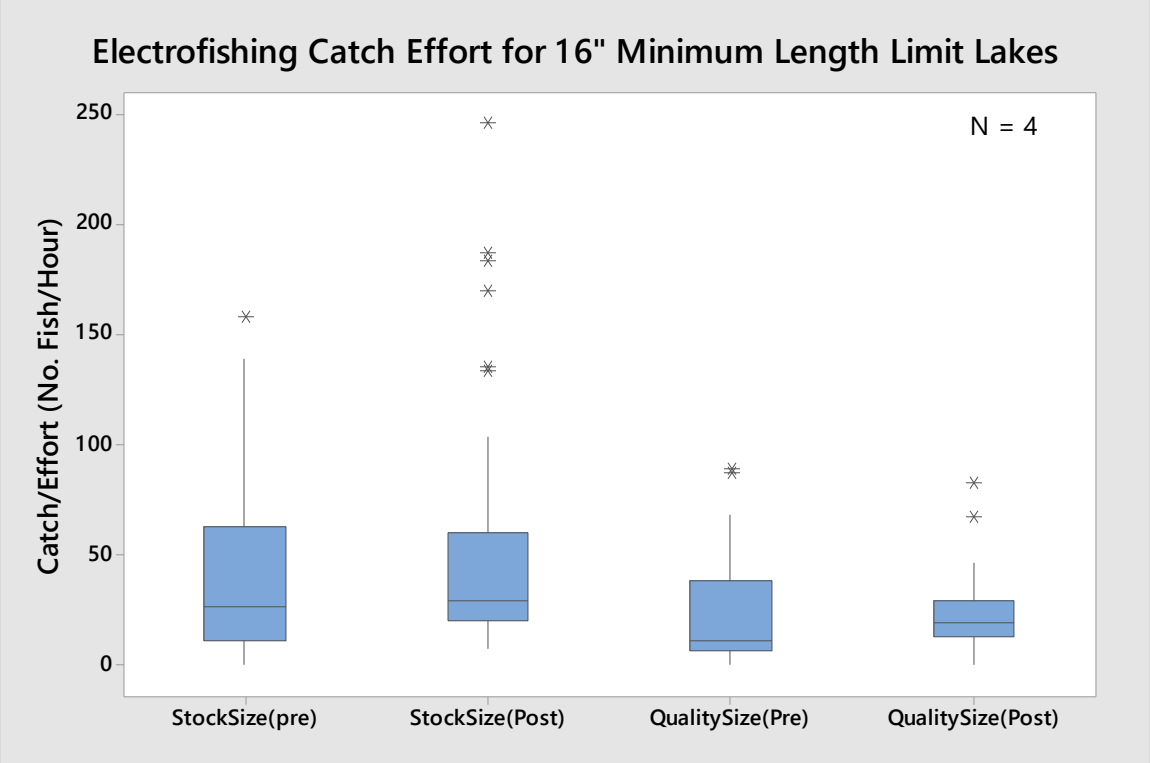
Appendix B2. 12”-16” slot length limit regulation for 19 BMLs.



Appendix B3. 12”-18” slot length limit regulation for five BMLs.



Appendix B4. 16” minimum length limit regulation for 4 BMLs.



Appendix B5. 18” minimum length limit regulation for one BML.