

# Brook Trout Angling in Maine

## 2009 Survey Results

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**A Cooperative Project between the University of Maine Cooperative Extension and Maine Department of Inland Fisheries and Wildlife**



## **Background**

In a meeting at University of Maine Cooperative Extension's Franklin County Office on January 8, 2009, John Boland (Director of Operations, Fisheries Division) and Forrest Bonney (Regional Fisheries Biologist - retired) presented Maine Department of Inland Fisheries and Wildlife's Wild Brook Trout Initiative for five fishing guides from the greater Franklin County area. Following the presentation the discussion focused on the initiative and how awareness of Maine's unique wild brook trout fishery could more effectively be promoted to attract anglers seeking to land a wild brook trout in Maine.

Forrest Bonney writes of Maine's wild brook trout fishery:

*Maine is the only state with extensive intact populations of wild, self-reproducing brook trout in lakes and ponds, including some lakes over 5,000 acres in size. Maine's lake and pond brook trout resources are the 'jewel of the eastern range'.*

One of the major themes to emerge from the discussion was: How to effectively market this fishery.

In response to this, the group identified a need for current research to identify the brook trout angler market. In partnership with the Maine Department of Inland Fisheries and Wildlife, the University of Maine Cooperative Extension developed an on-line survey of resident and non-resident anglers who purchased a fishing license through the Department's web site.

The University of Maine Cooperative Extension will make this report available to the public and interested stakeholders. Cooperative Extension shall present the results and implications the data may have for IF&W, guiding businesses, and other stakeholders, as supported by this research. This information is intended to provide research based information for stakeholders to make informed decisions.

### **Survey method**

The survey was designed to gather information on brook trout anglers' preferences for brook trout fishing experiences and regulations to help IF&W better manage the fisheries for these experiences and preferences. The information gathered will also aid fishing guides, sporting camps, and outfitters in Maine in providing quality fishing experiences, therefore sustaining their livelihoods.

To distinguish what we call 'hard core' brook trout anglers, only those respondents who indicated brook trout as the species most targeted were directed to brook trout specific questions.

Thirty one percent of non-resident respondents were identified as 'hard core' brook trout anglers as were 43% of Maine resident respondents.

Invitation emails were sent to 14,825 non-resident anglers (representing 100% of non-resident licenses purchased on-line) and 24,141 resident anglers (a random sample of 50% of all resident licenses purchased on-line) who purchase fishing licenses on-line during the 2008 calendar year. An incentive was offered to enter into a drawing to win a complete fly fishing outfit from L.L. Bean. The response rates were 31% and 25% for non-residents and residents respectively.

### **Limitations**

This research was limited to anglers who purchased fishing licenses during the 2008 calendar year through IF&W's on-line system. This represents about 25% of all fishing licenses purchased. Also, there was no method to determine if there was a non-response bias. Given these limitations, this research provides a representative snapshot of brook trout anglers' preferences for, and perceptions of Maine's brook trout fishery.

### **Summary**

Maine resident and non-resident 'hard core' brook trout anglers appear to be seeking similar angling experiences. Both groups show a strong preference for fishing self-reproducing brook trout populations which have never been stocked, or have not been stocked in more than 25 years. While there was some interest in high catch rates, these anglers have the highest interest in catching brook trout in the 12in. to 16in. range. The two most important factors in choosing to fish for brook trout in Maine are the availability of wild and native brook trout populations and the availability of remote waters to fish.

These two factors (wild and native populations and remote waters) reflect what Maine has to offer anglers. The Maine Department of Inland Fisheries and Wildlife offers the following characteristics of Maine's brook trout fishery resources:

- Brook trout occur in 1,135 lakes and ponds
- 627 of them are supported by natural reproduction (wild)
- 295 have been stocked in the past but not within the last 25 years (B waters)
- 127 (11%) have never been stocked and therefore support pure genetic strains (A waters)
- 170 zoned as LURC remote trout ponds
- For streams, 22,250 miles support brook trout, virtually all are wild.

With this research indicating a clear preference by both groups of anglers for fishing brook trout in moving waters (rivers and streams) over flat water fishing, there may be an opportunity to promote flat water angling experiences (lakes and ponds). Promoting flat water fishing can offer opportunities for economic development through increased in-state and out of state tourism.

While resident and non-resident brook trout anglers seek similar fishing experiences, preferences for fishing waters with regulations differ significantly between these two groups. Non-resident anglers are much more likely than residents to fish waters regulated for catch and release and fly fishing only. This may represent a policy issue for the Maine

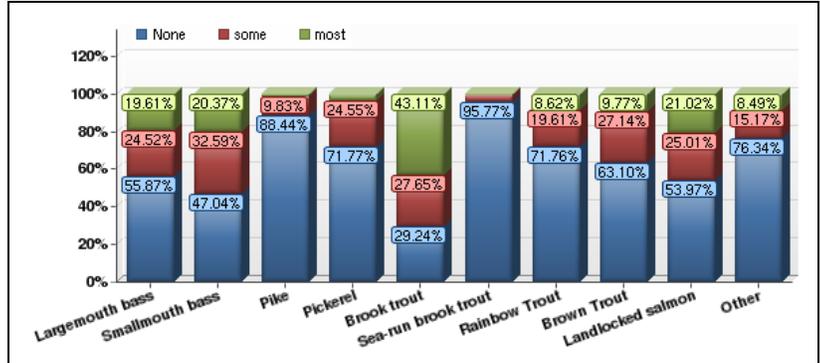
Department of Inland Fisheries and wildlife with respect to promoting this fishery to non-resident anglers.

**Descriptive results**

Thirty one percent of non-resident respondents were identified as ‘hard core’ brook trout anglers as were 43% of Maine resident respondents.

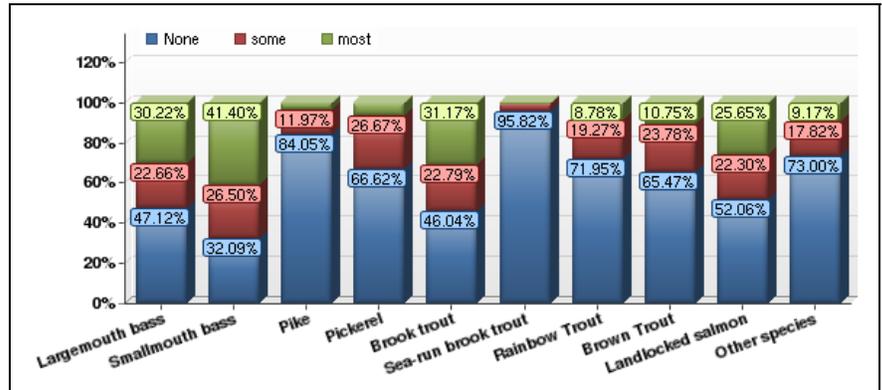
Maine Residents

Question	most
Brook trout	43.11%
Landlocked salmon	21.02%
Smallmouth bass	20.37%
Largemouth bass	19.61%
Brown Trout	9.77%
Rainbow Trout	8.62%
Other	8.49%
Pickereel	3.68%
Pike	1.73%
Sea-run brook trout	0.82%



Non-residents

Question	most
Smallmouth bass	41.40%
Brook trout	31.17%
Largemouth bass	30.22%
Landlocked salmon	25.65%
Brown Trout	10.75%
Other species	9.17%
Rainbow Trout	8.78%
Pickereel	6.71%
Pike	3.98%
Sea-run brook trout	1.02%



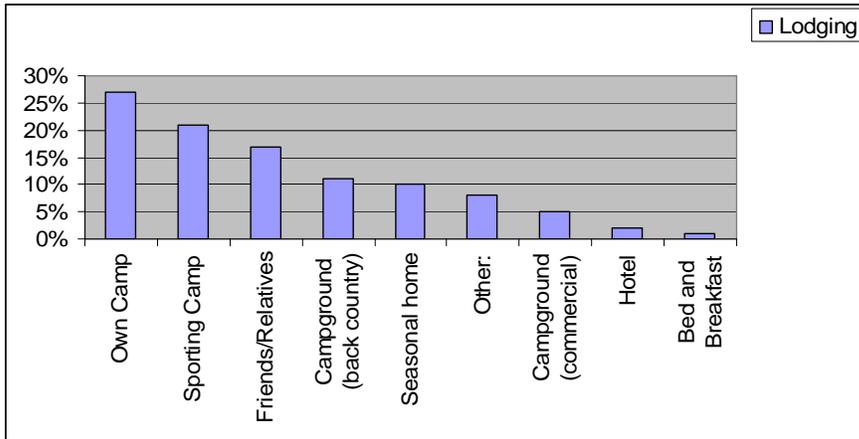
The vast majority of non-residents (90%) are repeat visitors to Maine, having visited five or more times in the past 5 years. Nearly three quarters of these visits were planned specifically to fish Maine waters.

*Fishing trip characteristics*

- The high rate of repeat visitation to fish Maine waters is not surprising as 54% of non-residents have their own camp, seasonal home, or stay with family and friends during fishing trips to Maine (see Table 1). Hotels and bed and breakfasts are clearly not a lodging preference for these anglers.

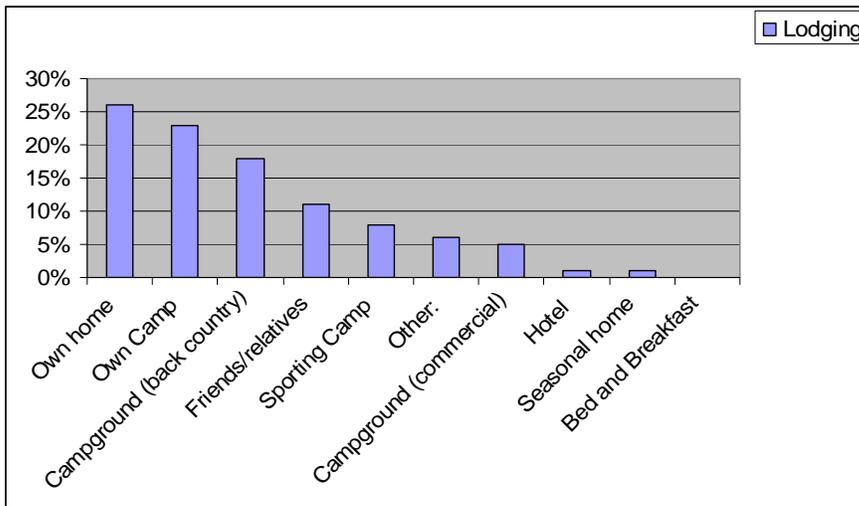
Resident anglers have very similar lodging preferences with 60% of resident anglers either staying at their own home, own camp, or with family and friends, though the distribution is somewhat different (see Table 2).

**Table 1**



Non-resident Lodging

**Table 2**



Resident Lodging

- It is not surprising that the length of an average fishing trip for residents is the inverse of that of non-residents. Residents largely take day trips (41%) and 2-day trips (19%) while sixty three percent of non-residents stay for 5 or more days and a mere 6% take day trips and 2-day trips.

- The largest percentage of non-resident anglers is from Massachusetts (36%) and New Hampshire (21%). The remaining non-resident anglers are widely dispersed throughout the remaining 48 states and Canada.

Resident brook trout anglers, not surprisingly, live largely in the top three most populated counties of Cumberland (18%), York (13%), and Penobscot (15%). The distribution of the remaining 54% of anglers for the most part follows the population ranking of the other 13 counties.

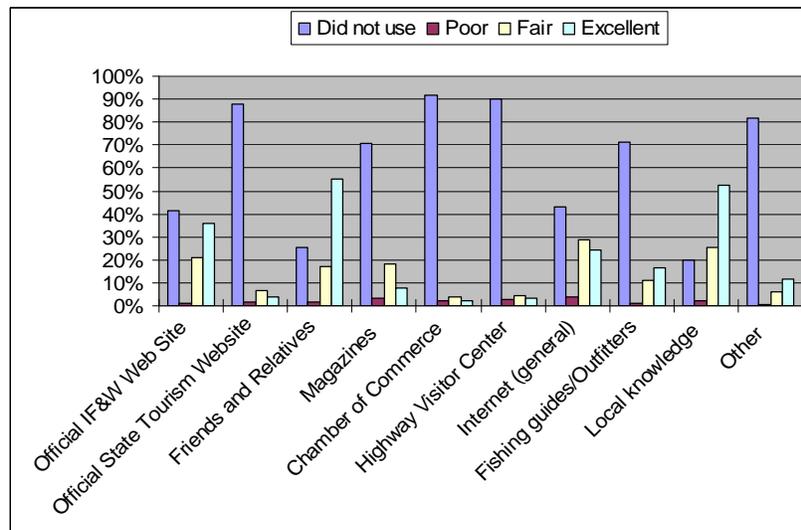
- In planning fishing trips to Maine, fifty nine percent (59%) of non-resident anglers used the official Maine Department of Inland Fisheries and Wildlife web site, rating it fair and excellent. Forty one percent (41%) did not use the site (see Table 3).

The top two rated sources used by non-resident anglers are local knowledge (78%) and friends and relatives (72%). Other internet sites used rated just below the IF&W web site (53%).

Following general tourism trends, non-resident ‘hard core’ brook trout anglers are not accessing what we may call traditional tourism information sources. Nearly 88% did not use the official Maine Office of Tourism web site, seventy percent did not use magazines, ninety two percent did not use a chamber of commerce, and nearly ninety percent did not use a highway information center to access information.

This finding may be due to the very high rate of repeat visits by non-resident anglers who are seeking information on a specific experience.

**Table 3**

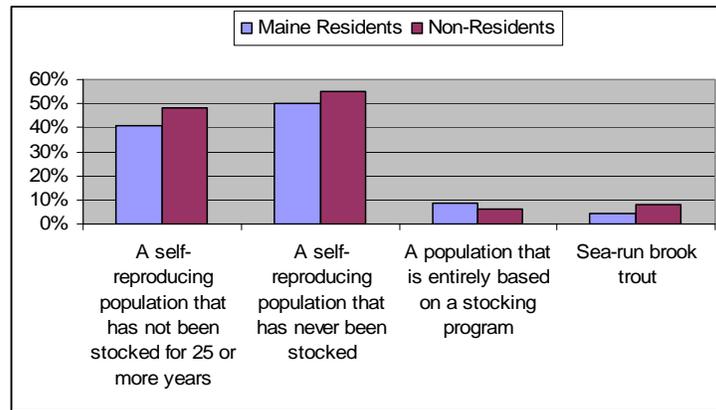


Sources of information used by non-resident anglers to plan fishing trips

*Preferences*

- Maine resident and non-resident ‘hard core’ brook trout anglers share similar preferences and interests in fishing experiences. However, there are differences in preferred methods of fishing and distinct differences in their preference for fishing waters with fly fishing only and catch and release regulations. Interest in adopting slot limit regulations is another area of regulation favored differently by Maine resident and non-resident anglers.
- For both resident and non-resident anglers there is a clear preference for fishing waters with self-reproducing populations that have not been stocked or have not been stocked for more than twenty five years (see Table 4). Stocked brook trout waters are clearly least preferred.

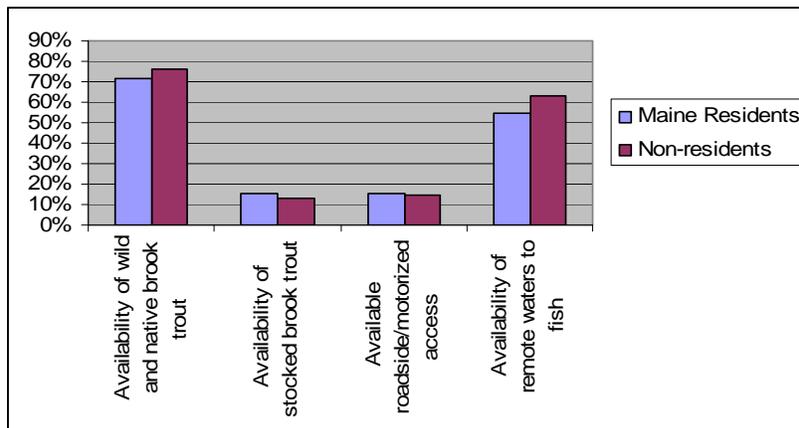
**Table 4**



Anglers' most preferred brook trout populations to fish

The preference for fishing these populations is also demonstrated in factors noted as very important for anglers in choosing to fish for brook trout in Maine waters (see Table 5). There are modest differences between resident and non-resident anglers.

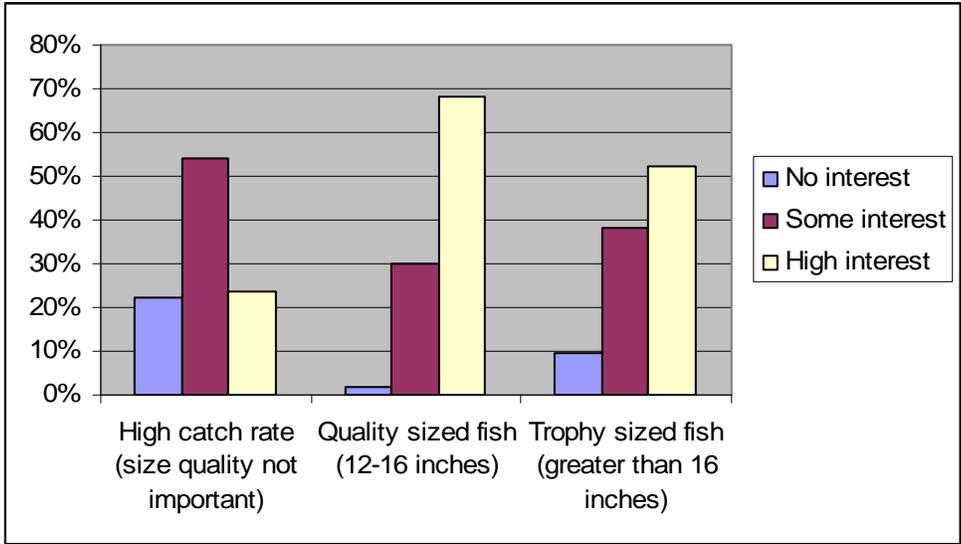
**Table 5**



Factors very important in choosing to fish for brook trout in Maine

- While catch rates are of some interest to these anglers, the highest interest by far is in catching quality sized fish. Catching trophy size fish is also of high interest. This holds true for both Maine resident and non-resident brook trout anglers. Table 6 below shows responses from non-residents. There is no notable difference in the interests of Maine residents.

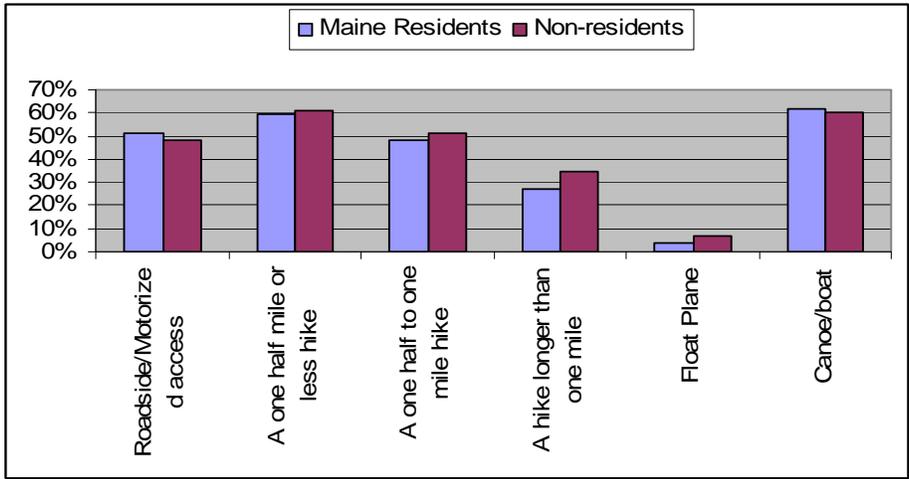
**Table 6**



Non-resident anglers' interest in brook trout fishing opportunities

- Resident and non-resident anglers are likely to use similar methods of access to fish for brook trout, with non-residents noticeably more likely to hike more than one mile for access. The top two methods of access likely to be used are by canoe or boat and a hike of a half mile or less. Roadside/motorized access and a hike of one half to one mile in length (see Table 7).

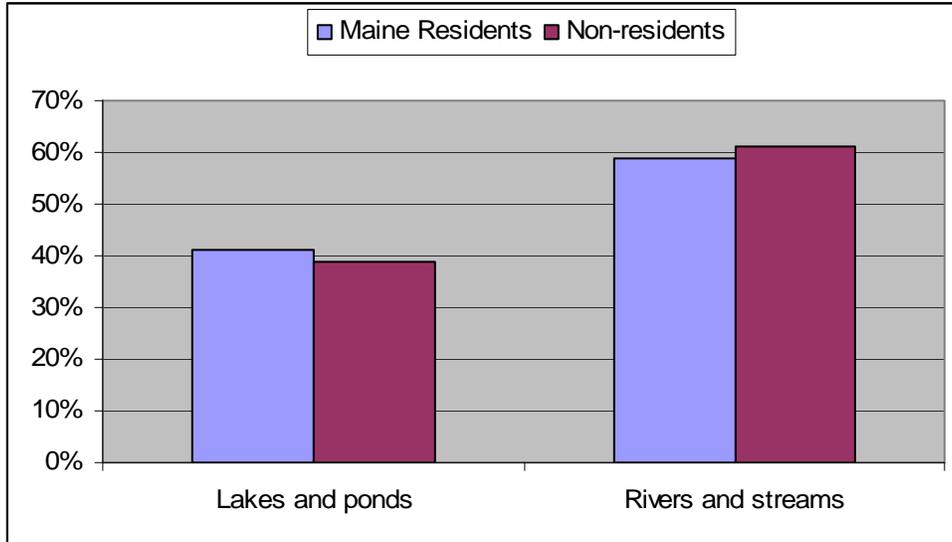
**Table 7**



Types of access anglers are definitely likely to use to fish for brook trout

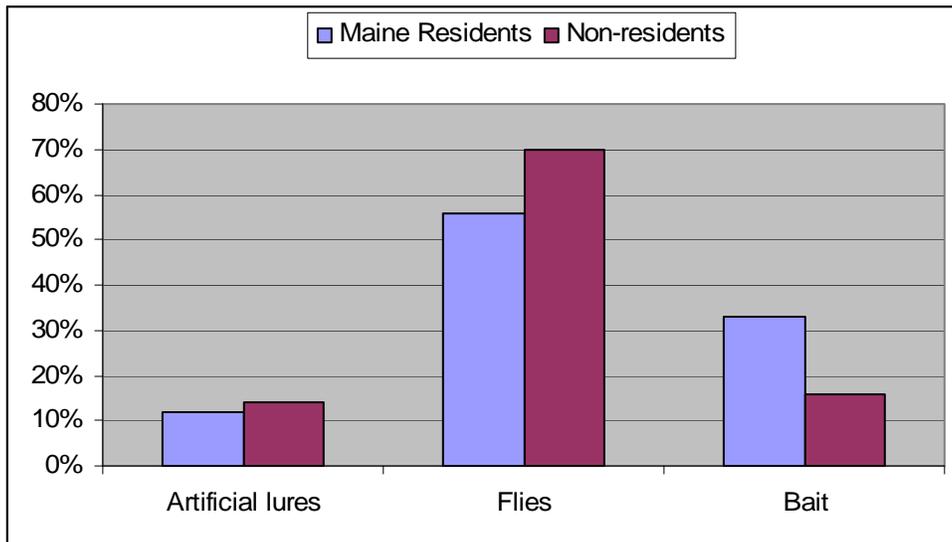
- Resident and non-resident anglers have a clear preference for fishing rivers and streams as opposed to lakes and ponds (see Table 8). The preferred method of fishing for brook trout is using flies, with non-residents having a higher preference than residents for this method. Also, residents have a far greater preference for using bait than non-residents (see Table 9).

**Table 8**



Anglers' preference for fishing types of waters for brook trout

**Table 9**

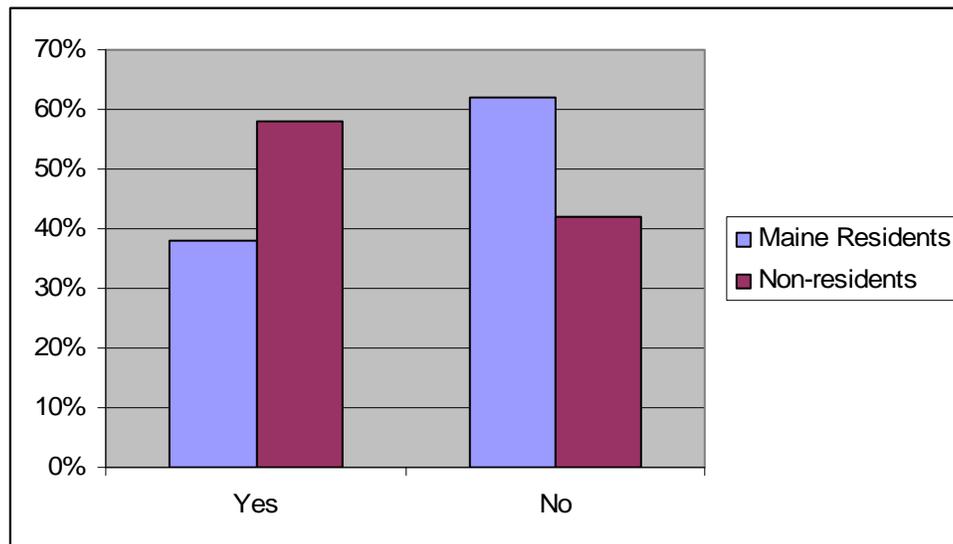


Most preferred methods of fishing for brook trout

- Maine resident brook trout anglers and non-resident brook trout anglers differed sharply on regulated waters on which they are most likely to fish. Nearly sixty percent of non-resident anglers are more likely to fish waters with catch and release regulations as opposed to only 38% of resident anglers (see Table 10).

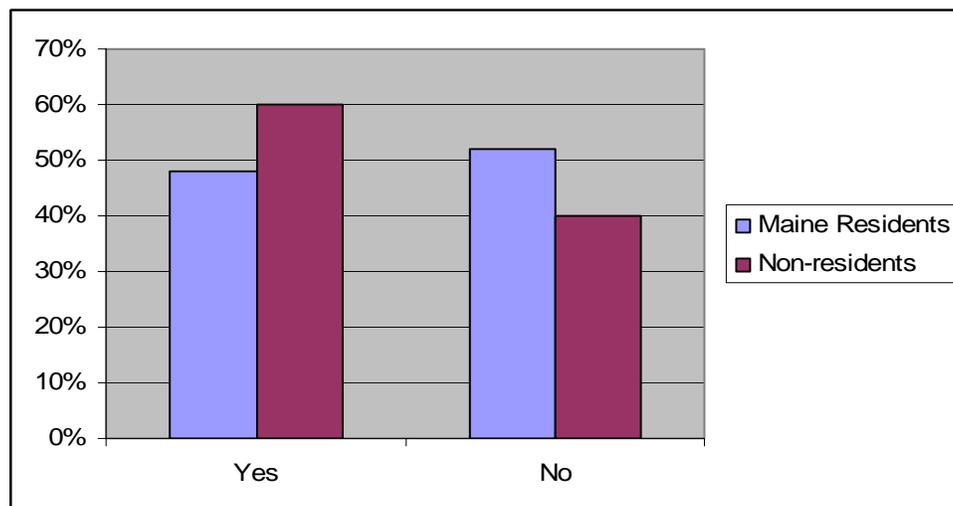
The same holds true for non-residents' preference for fishing waters regulated for fly fishing only. Residents were almost split evenly on preference for designated fly fishing only waters, though clearly favored these regulated waters over catch and release waters (see Table 11).

**Table 10**



Anglers more likely to fish waters with catch and release regulations

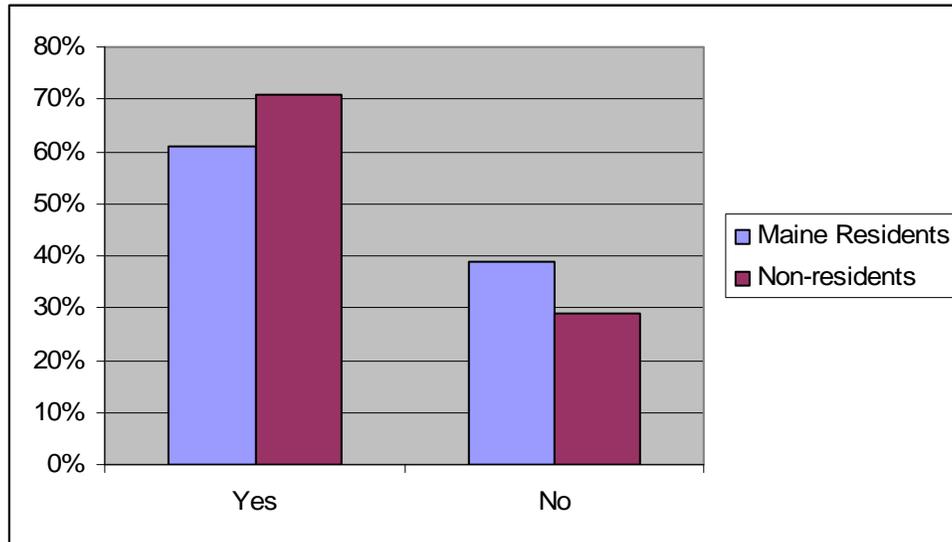
**Table 11**



Anglers more likely to fish for brook trout in waters regulated for fly fishing only

Interest in fishing waters with slot limit regulations was higher among non-resident anglers (71%) than among resident anglers. Slot limit regulations allow anglers to keep a limited number of fish between 6 and 12 inches and requiring the release of all fish over 12 inches (see Table 12).

**Table 12**



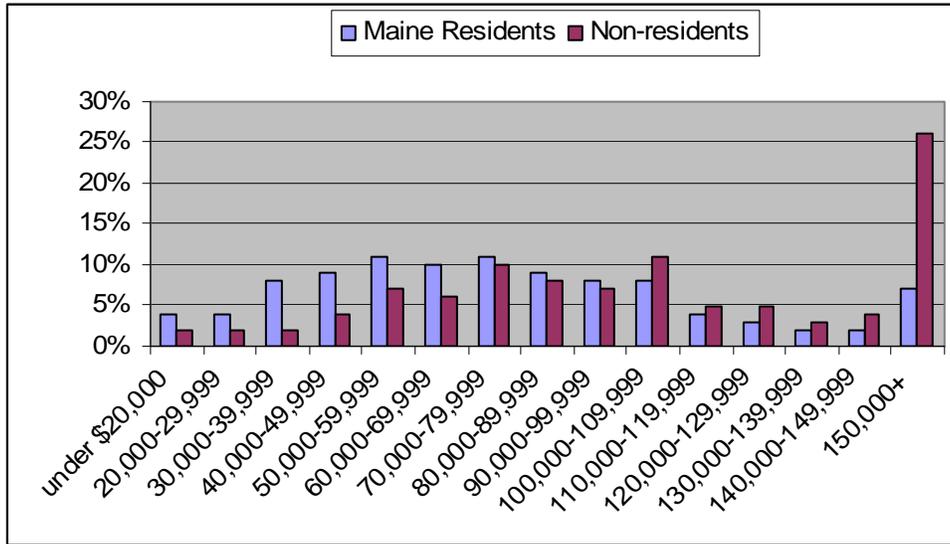
Anglers interest in fishing waters with slot limit regulations

#### *Age and Income*

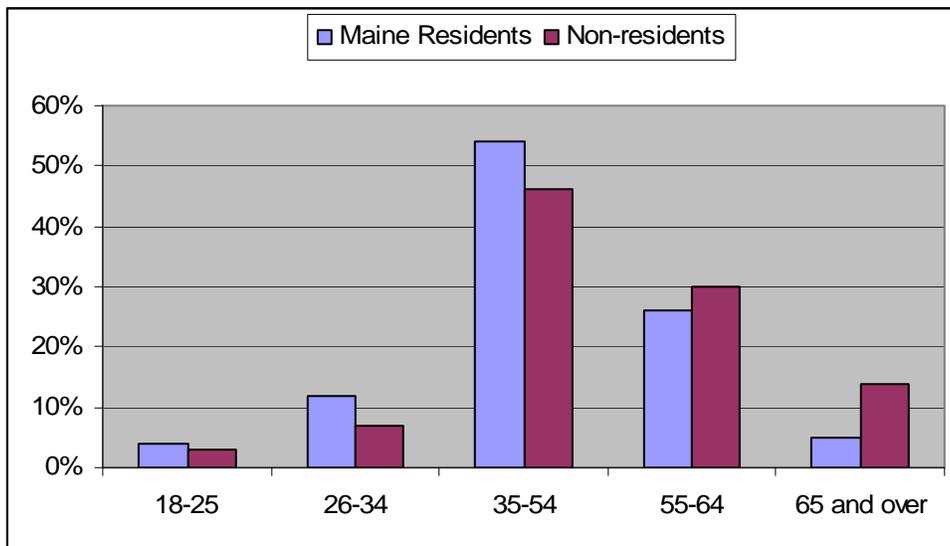
Non-resident anglers tend to have higher combined annual household incomes than Maine resident anglers. This difference is most noticeable in the higher income categories (see table 13).

- Just over half (54%) of non-resident ‘hard core’ brook trout anglers have a combined annual household income of \$100,000 or more compared to just over a quarter (26%) of residents. It should be noted that almost half of the non-residents with incomes of \$100,000 have incomes greater than \$150,000.
- Non-resident brook trout anglers tend to be slightly older than resident anglers, though the 35-54 age category dominates both groups (see Table 14).
- Non-resident ‘hard core’ brook trout anglers are generally older and have a higher household income than ‘general’ overnight visitors to Maine.

**Table 13**



**Table 14**



**Conclusion**

The descriptive results of the 2009 Brook Trout Survey in this report are intended to provide useful, research-based information for the Maine Department of Inland Fisheries and tourism businesses directly or indirectly providing goods and services to this niche market.

The survey design was not intended for a thorough academic analysis, though the results provide valid and reliable descriptive information on the preferences of ‘hard core’ brook trout anglers for their fishing experience in Maine.

This research identifies key experiences that brook trout anglers are seeking. By focusing on and providing unique opportunities for these experiences, tourism businesses may increase their share of this unique market. To capture this market more effectively, businesses could provide opportunities for, and market the following experiences:

- Accessing remote waters
- Opportunities to land quality sized fish (catch rate not as important)
- Fishing waters with populations of brook trout that are self reproducing and have never been stocked or have not been stocked in more than 25 years
- For non-resident anglers:
  - Fishing waters with catch and release regulations
  - Fishing waters regulated for fly fishing only

While both resident and non-resident anglers have a preference for and are more likely to fish rivers and streams for brook trout, there is an opportunity to promote Maine's lakes and ponds as a unique brook trout fishing experience. This is supported by the following statistics provided by Maine IF&W:

- Brook trout occur in 1,135 lakes and ponds
- 627 of them are supported by natural reproduction (wild)
- 295 have been stocked in the past but not within the last 25 years (B waters)
- 127 (11%) have never been stocked and therefore support pure genetic strains (A waters)
- 170 are zoned as LURC remote trout ponds

This research provides an underlying rationale for Maine IF&W and fishing guide businesses to work together to provide unique brook trout fishing opportunities in Maine by aligning resource management policy and marketing with preferred fishing experiences sought after by 'hard core' brook trout anglers. This alignment could yield economic benefit to tourism businesses offering direct and indirect products and services for anglers.

Only a small number of 'hard core' brook trout anglers hire Registered Maine Guides. This is most likely due to the high repeat visitation of non-resident anglers, many of whom own their own camp, leading to increased local knowledge. Resident anglers have also acquired significant local knowledge, and many themselves are Registered Maine Guides.

This study presents an opportunity for Registered Maine Guides to market themselves not only for the fishing experiences they can provide, but also for the 'value added' aspect of their services:

- The tradition and heritage of Maine Guides
- The knowledge of local cultural heritage

- Interpreting the local natural and cultural history, creating an ‘*emotional and intellectual connection between the visitor and the resource*’ (National Association for Interpretation).’

Opportunities exist for further in-depth analysis and future research as needs are identified.

This research is the result of a year-long collaboration among the Maine Department of Inland Fisheries and Wildlife, the University of Maine Cooperative Extension, and concerned fishing guides.