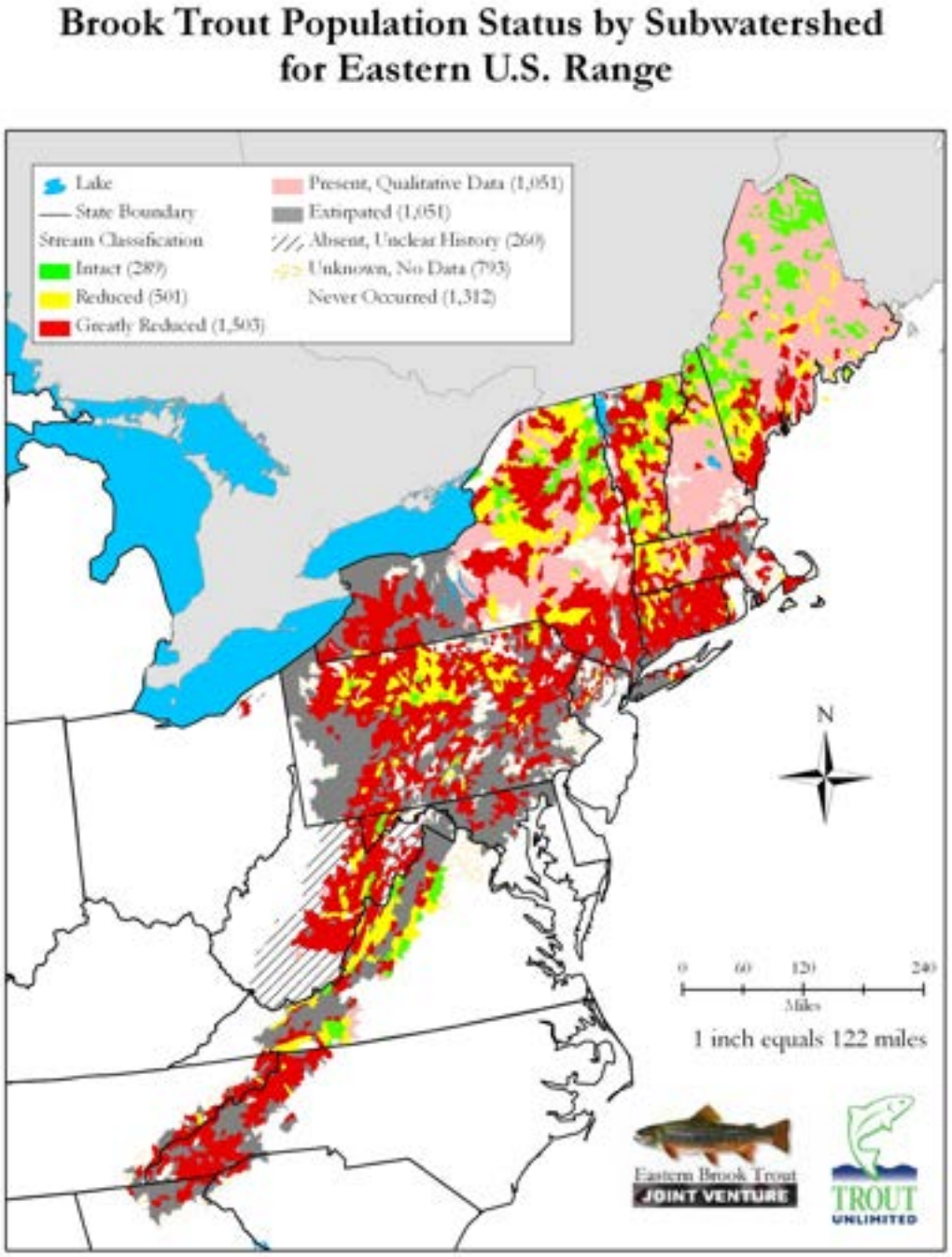
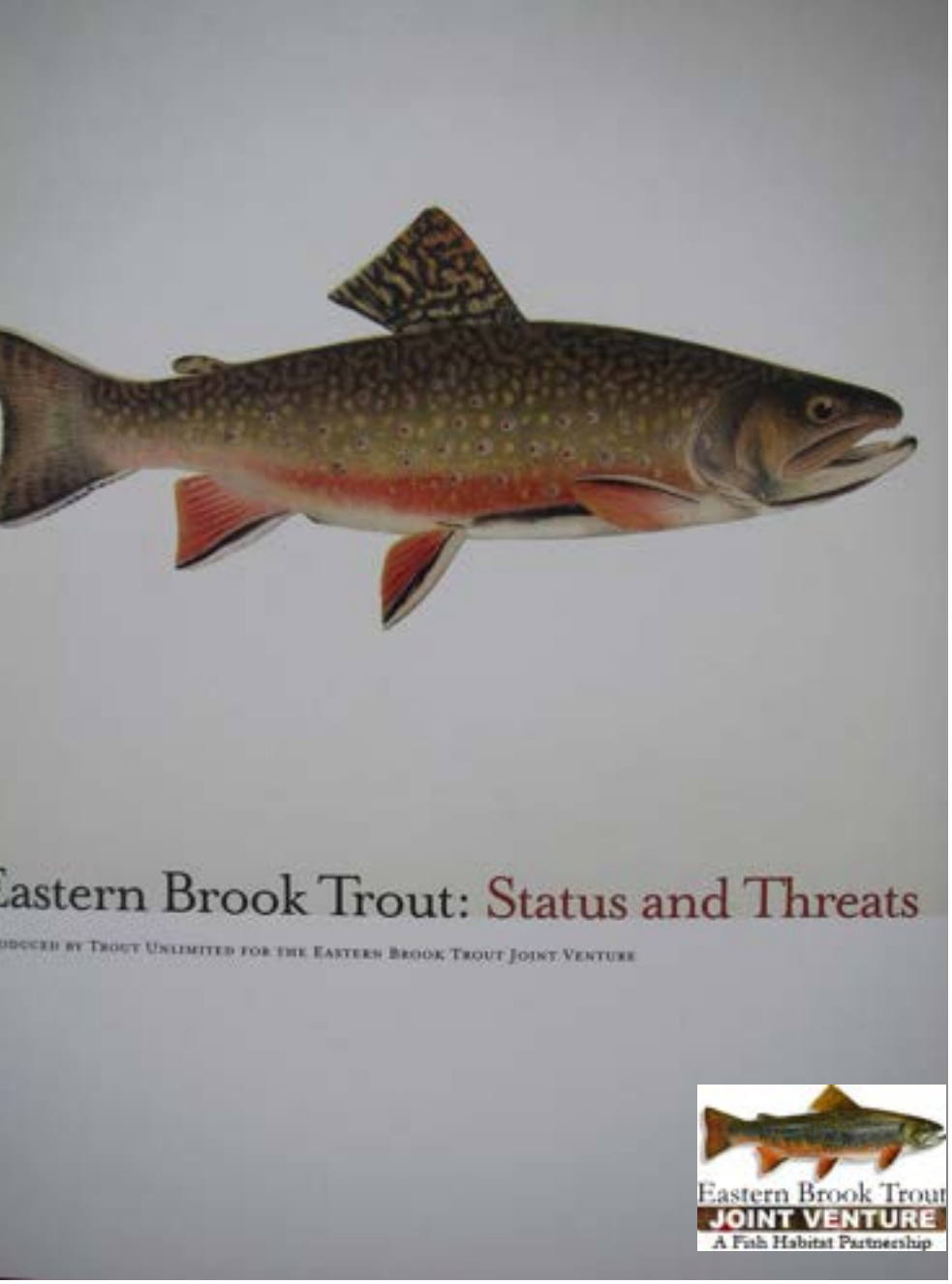
Maine's Remote Pond Survey Project:
A cooperative effort among MDIFW, Maine Audubon and Trout Unlimited

Merry Gallagher, *Research Fishery Biologist*, MDIFW
Jeff Reardon, *Maine Brook Trout Project Director*, Trout Unlimited
Amanda Moeser, *Project Coordinator,* Maine Audubon
Sally Stockwell, *Director of Conservation*, Maine Audubon
Kevin Gallant, *Research Fishery Specialist*, MDIFW
Tyler Grant, *Contractor*, MDIFW



- Rangewide (ME to GA) assessment based on best available data
- Assessed each “subwatershed” (~size of USGS quad)
- Better stream data now
  - extensive MDIFW survey since 2007



Eastern Brook Trout Joint Venture 2006

"Maine is the last true stronghold for brook trout in the eastern U.S."

"As many intact subwatersheds as all other states combined."

"Ninety seven percent of the remaining wild and native lake and pond BKT populations in the U.S. are in Maine."

State Heritage Fish Waters

"……lakes and ponds that contain state heritage fish, as defined in Title 1, section 212-A. This list must include waters identified as eastern brook trout waters and arctic charr waters that have never been stocked according to any reliable records……..waters identified as eastern brook trout waters and arctic charr waters that according to reliable records have not been stocked for at least 25 years. The list of state heritage fish waters may be amended by rule…..based on criteria established by the commissioner….."

Essentially, these are the old 'A and B lists' with a few modifications.

Maine ~~Brook Trout~~ ***Heritage Fish*** Pond Survey

Experience managing successful citizen science programs

Fishery biologists charged with managing the resource

Strong ties to the angling community

Project Goal

To identify and appropriately manage remote, previously un-documented wild brook trout ponds

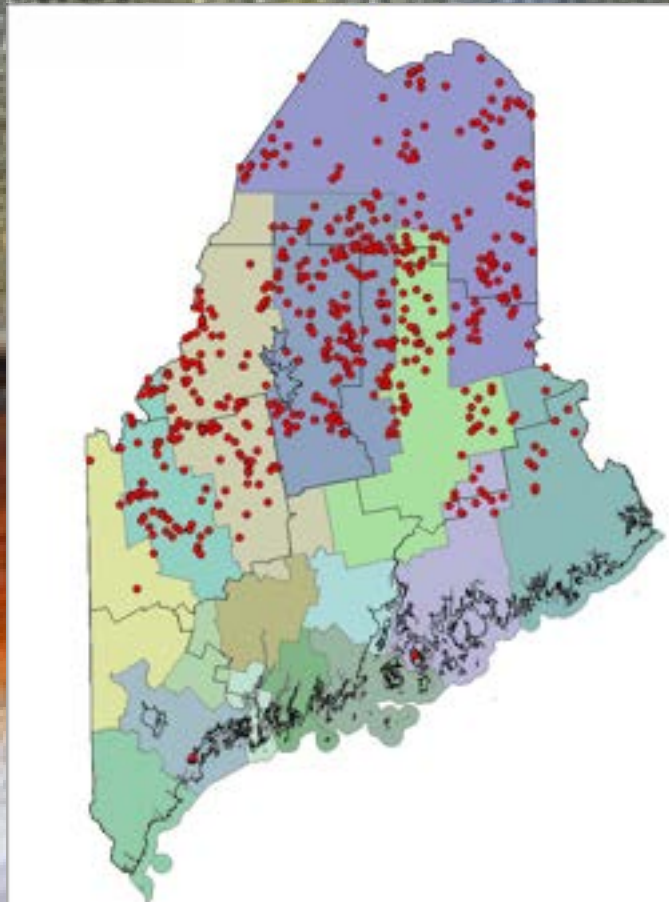
3-step process:

- Use existing knowledge from anglers, MDIFW biologists and wardens to identify priority waters to survey;
- Recruit volunteer anglers to visit each water body and document where they observe or catch brook trout or detect signs of active angling; and
- Use information from the volunteer surveys to prioritize a list of waters for conducting standard New Pond Surveys by MDIFW biologists in subsequent years.

This project seeks to focus survey efforts on those ponds that are most likely to contain wild populations of brook trout.

Hence, there are no records of past stocking or past surveys in any of these ponds.

- Small (<20 acres)
- Remote
- Difficult to access
- Maine has a lot of ponds!



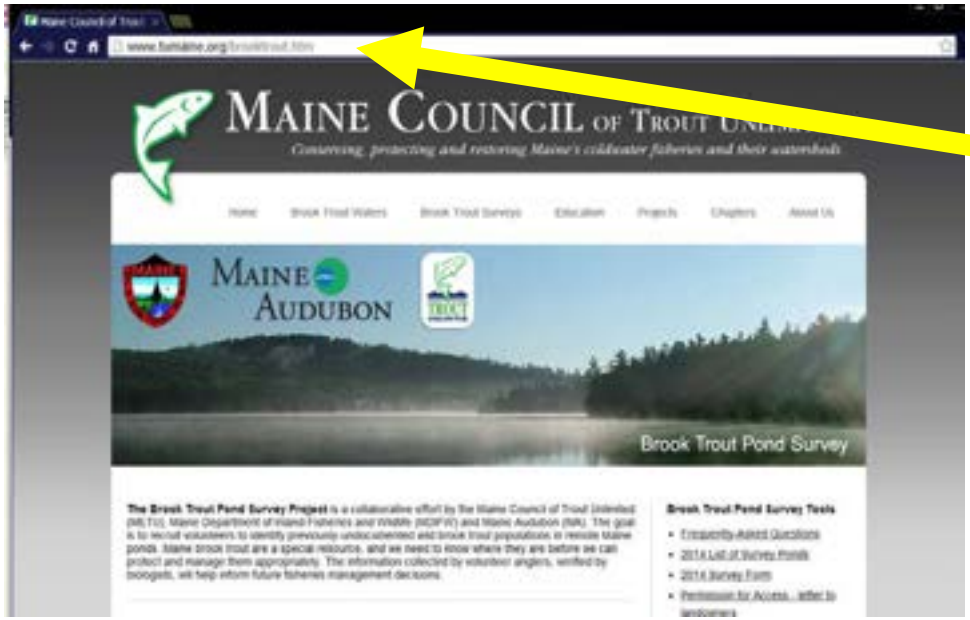
How the project works…

<u>PHASE 1:</u>

Volunteer Angler Surveys

What an angler needs

Surveys can be done any time before September 30.



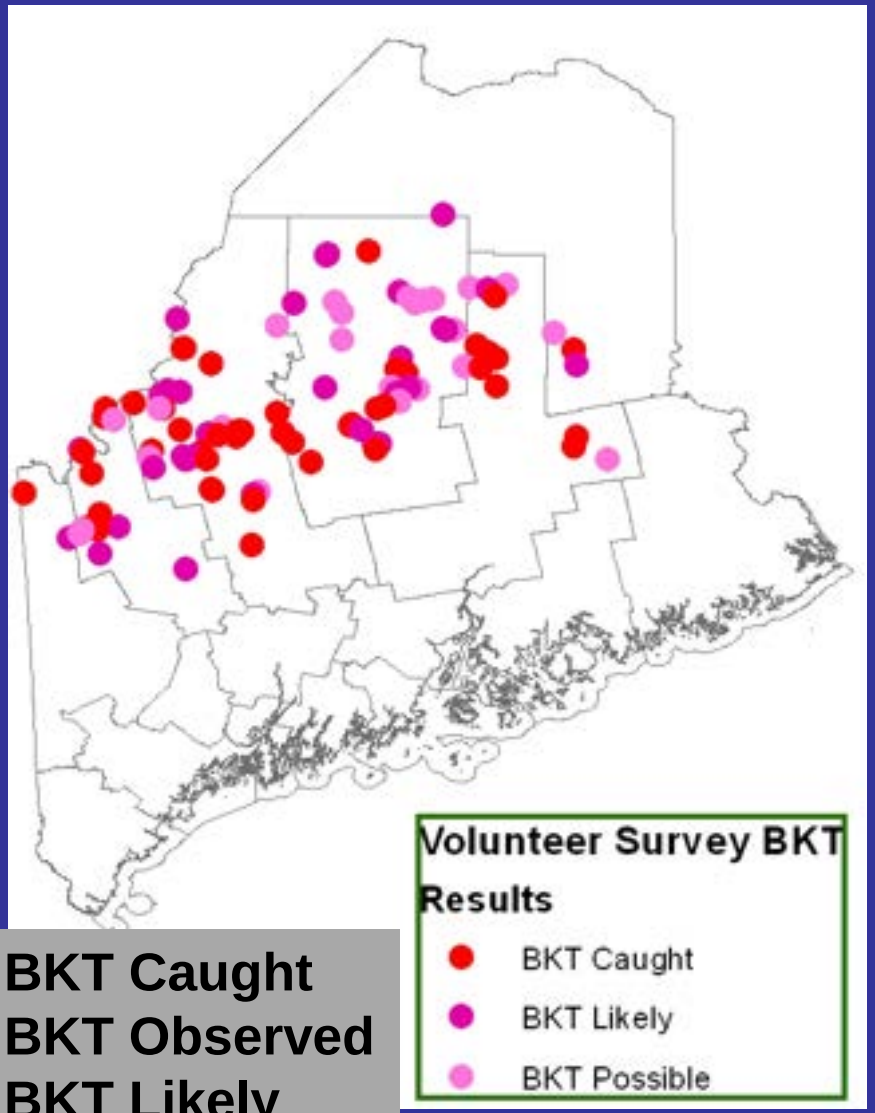
Sign up and info here!
www.tumaine.org/brooktrout.htm

Anglers should be enthusiastic about fishing for brook trout, comfortable in remote settings, and have a sense of adventure.

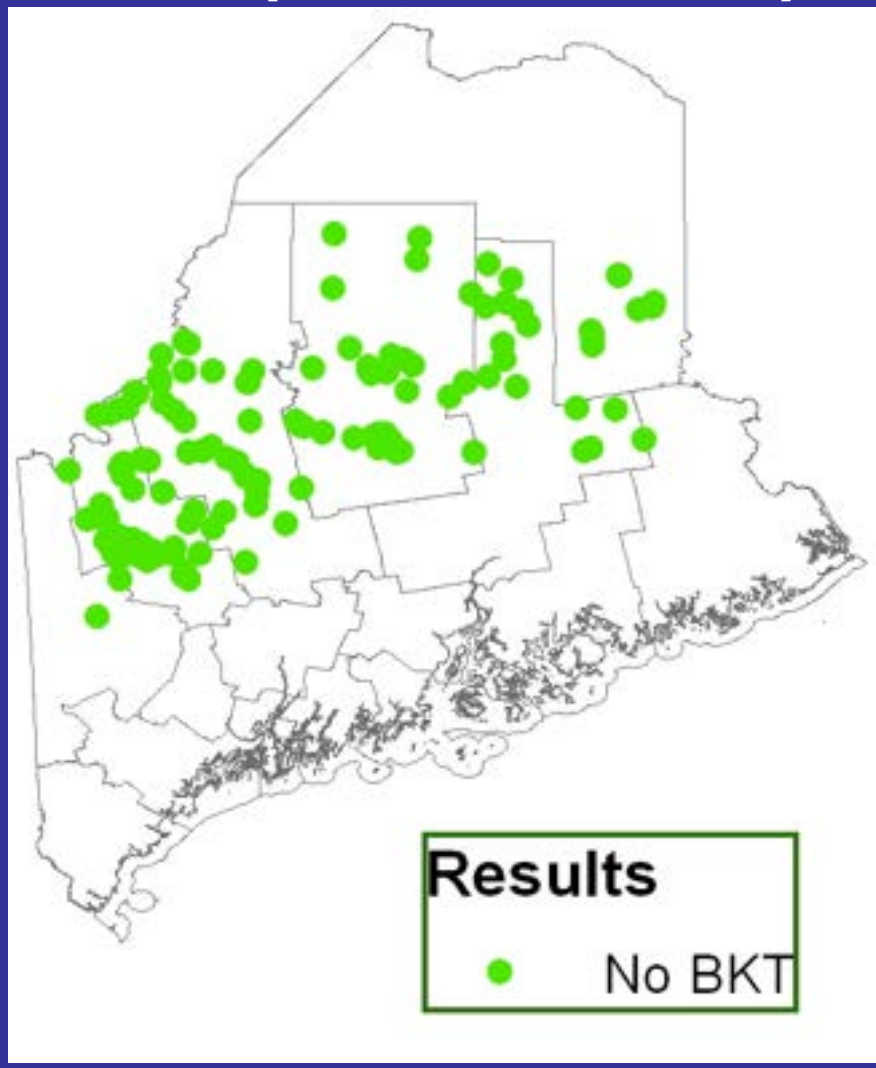
Why is this information important?

- Recommendations for priority surveys to MDIFW
- Documenting access increases efficiency of standardized survey crews that follow
- Fisheries biologists need accurate information in order to make management decisions.

Volunteer Survey Results (2011-2013)



- **53 BKT Caught**
- **21 BKT Observed**
- **17 BKT Likely**
- **27 BKT Possible**



- **135 No BKT**

POND DATA

253 ponds surveyed by volunteers

- 21% = Brook trout caught
- 8% = Brook Trout Observed
- 17% = Brook Trout “Likely” or “Possible”

112 ponds recommended to IFW for biological survey

Phase 2: MDIFW Standard Assessment

Detailed Biological Survey & Standard Assessment

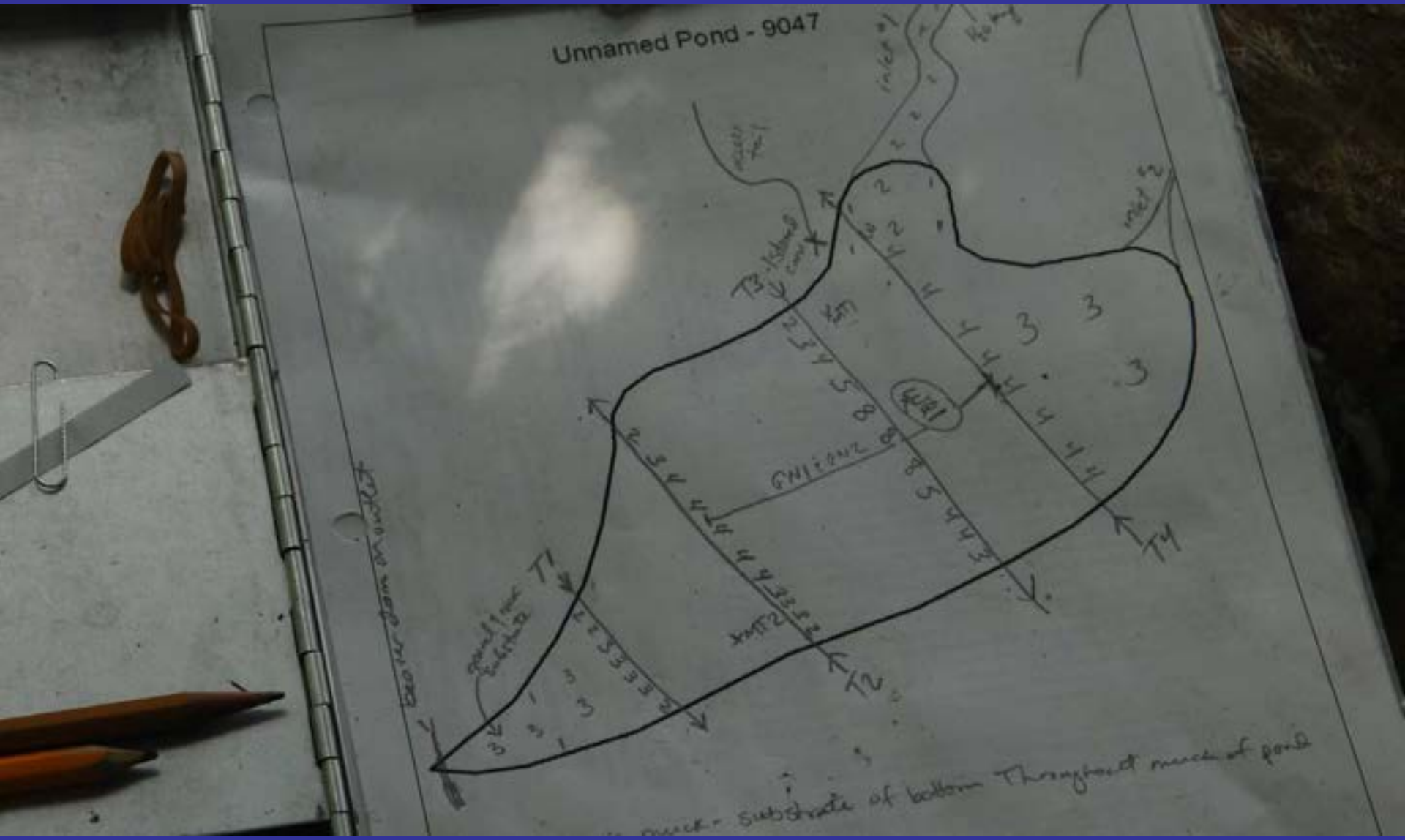
- Observation and Description:
  - Narrative, sketch, photos
- Inspection of inlets and outlets:
  - Is salmonid spawning habitat present and accessible to fish? Passage constraints?
- Water analysis:
  - Bathymetry
  - Basic water quality, dissolved oxygen profile
- Fish collections – Gillnetting and minnow traps

Photo: Bill Hanson

Water Quality Analysis

- Pond water level
  - Above or below high water mark?
- Turbidity
- Secchi disk
- Measurements at depths:
  - Water temperature
  - Dissolved oxygen
  - Depth/O2 Profile
  - pH
  - Alkalinity

Bathymetric Survey



Fish Collections

- Minnow traps and gill nets
  - Set time is variable, determined by biologists
  - Record time, depth, mesh size, net length, color
- Measurements of Brook Trout caught
  - Species
  - Length/weight
  - Scale sample
  - Gut contents
  - Parasites

Dead fish are returned to the water

http://www.easternbrooktrout.org/images.aspx

Length and Weight

Scale Sample for Aging

Genetic Samples (Fin Clip) from subsample of brook trout

Sex, Gut Contents, Internal and External Parasites

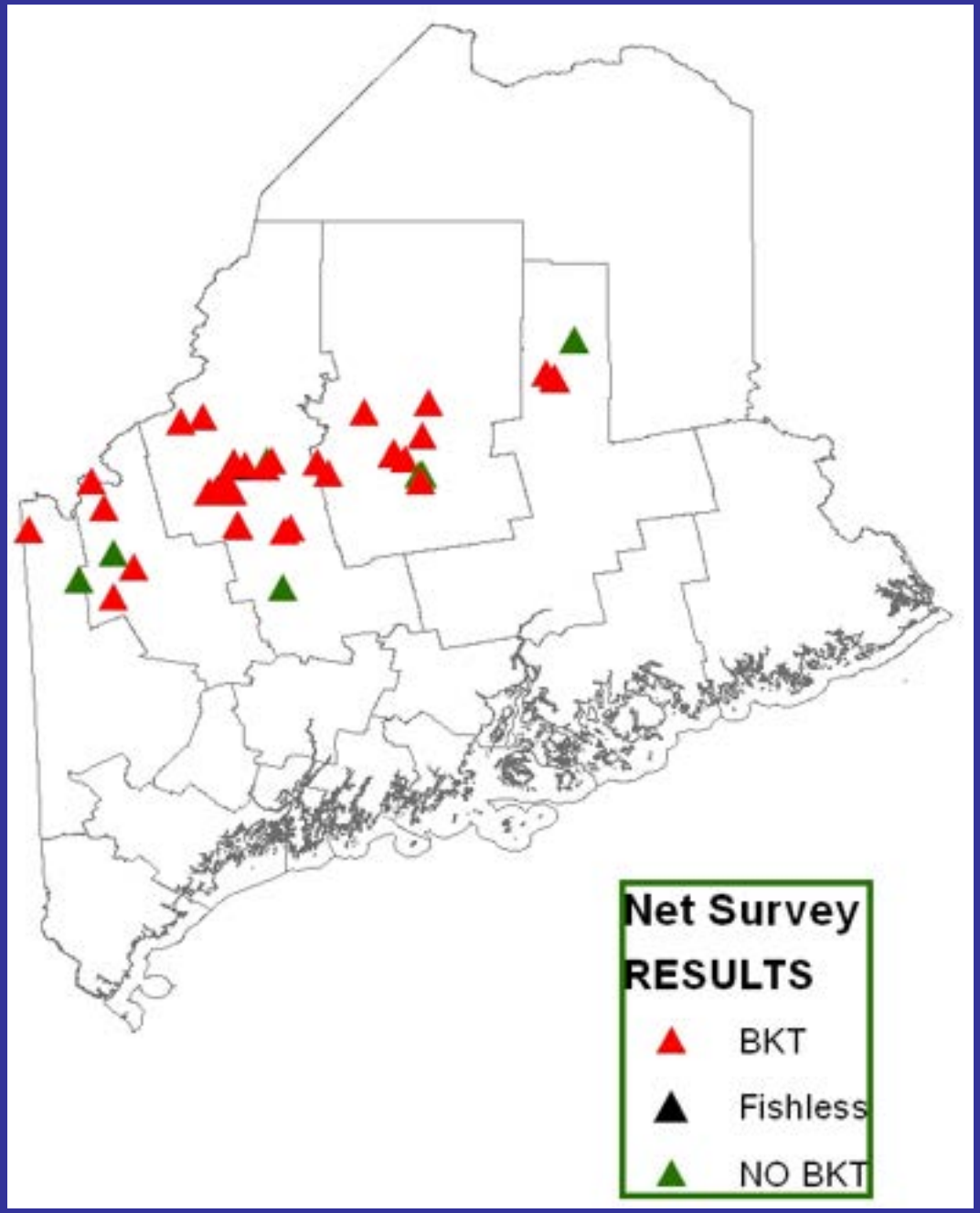
Gut Contents

MDIFW Standard Assessment Results

45 ponds surveyed (2012 – 2013)

BKT presence confirmed in 34 ponds

- BKT confirmed in every pond BKT **caught by volunteers**
- BKT confirmed in most ponds where BKT observed or likely



Net Survey Results

- 34 BKT
- 1 Fishless
- 8 No BKT

25 ponds surveyed in 2014. BKT confirmed in 13

Newly Identified BKT Populations

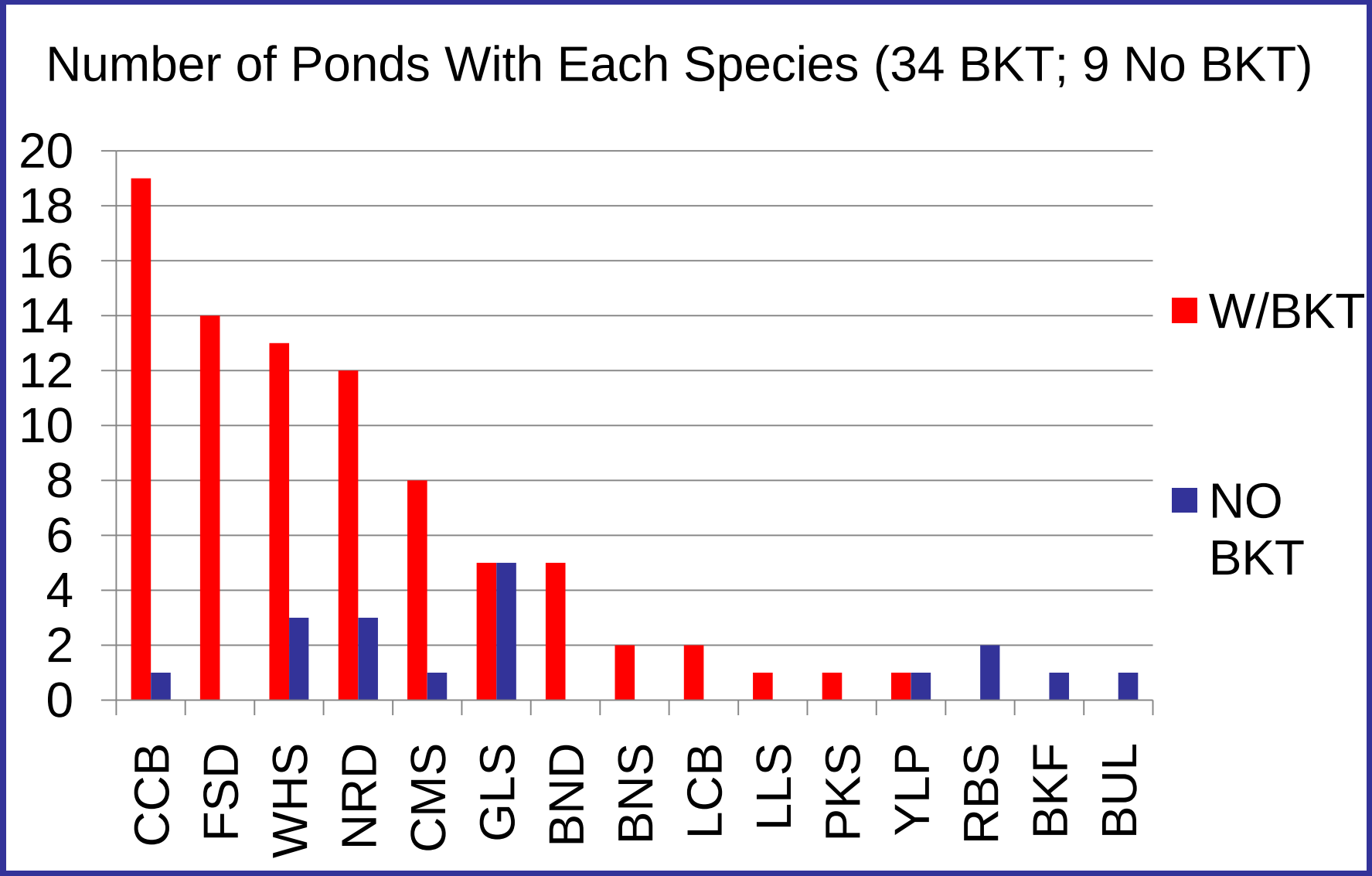
2012

- 9 Ponds—only BKT
- 4 Ponds—BKT and 1 sp.
- 12 ponds—BKT and 3-5 spp.
- 7 Ponds No BKT (1 Fishless; 6 2-6 spp.)

2013

- 1 Pond—only BKT
- 1 Pond—BKT and 2 spp.
- 7 Ponds—BKT and 3-6 spp.
- 1 Pond—No BKT and 1 spp.

Other Species Collected



Take Home Points

- Vol. survey results fairly reliable—but not perfect.
- Vol. access documentation and site specific information reduces IFW survey time.

- High success rate for both volunteers and standard survey in documenting BKT populations in Maine.
- The effort continues and is expanding to include coastal streams for preliminary angling surveys for a similar prioritization process.

More Information: http://tumaine.org/brooktrout.htm

Acknowledgements

- Quimby Family Foundation
- Horizon Foundation
- Elliotsville Plantation Inc.
- Anonymous Donor
- Maine Outdoor Heritage Fund
- State Wildlife Grants Program
- North Maine Woods, Inc.
- Appalachian Mountain Club
- Rangeley Lakes Heritage Trust
- The Nature Conservancy
- Hardscrabble Camps
- MWS and BPL camps