

The TREE URCHIN

Newsletter of the

Maine Chapter of the American Chestnut Foundation

Volume 9 Number 1

Fall 2006

The mission of the Maine Chapter of The American Chestnut Foundation:

- A. To protect, conserve, preserve and propagate trees from all-important remaining native Maine American chestnut populations in the state. B. To restore American chestnuts to a place of ecological and economic importance and self-sustainability throughout their original forest range in Maine. C. To make blight-resistant American chestnuts available to the people of Maine as soon as possible.

Notes from the president,

After serving as your vice- president for two years, I wish to thank you for electing me as president at last year's annual meeting. Eric Evans and the other members of the Board of Directors have done an excellent job of developing a thriving organization. The dedication to returning the American chestnut to the forests of Maine is very evident and a lot of hard work has been done, with a lot of hard work remaining.

The good news from the TACF Research Farm in Meadowview is that the backcross breeding techniques we are using really works. We can see the light at the end of the tunnel, but in the mean time we have much work to do. To help us accomplish the goal of breeding a blight resistant from Maine trees, last December the Board approved a slight change in our organization. We have established four standing committees: Science (breeding), Growers (Orchard managers), Membership-Publicity-Education, and Finance. The chairman of each of these committees must be a member of the Board of Directors, but anyone can serve on one or more of the committees.

Eric Evans agreed to chair. the Science Committee and some of the responsibilities of this committee is to keep records of our breeding efforts, work with Dr.Fred Hebard at Meadowview to stay abreast of the latest techniques that TACF is recommending, supervise the annual pollination program, and stratify the harvested hybrids. The Growers Committee will select the sites for the orchards, receive the nuts from the Science Committee for planting, and then supervise and work on the 10 orchards that are already established and plan for future orchards. The Membership-Publicity-Education Committee is rather self explanatory and the primary responsibility is to reach out to the general public and tell our story. The Finance Committee is to see that we have adequate funding to accomplish our goals and to see that our reporting is in accordance with generally accepted accounting principals. There is a report from each of these committees in this Urchin.

Glen Rea, Chapter President

**The Maine Chapter
The American Chestnut Foundation
Board of Directors**

Officers:

Glen Rea, Bangor (President)
Eric Evans, Camden (Vice President)
Henry Leigh, Searsport (Treasurer)
Charlie Hudson, Liberty (Secretary)

Directors:

Joseph Conwill, Rangeley
Dalene Dutton, Morrill
Jay Lindsey, Winthrop
Austin Jones, Union
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Welles Thurber, Belfast

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Websites

The American Chestnut Foundation:

www.acf.org

The Maine Chapter:

www.me-acf.org

Send correspondence regarding *The Tree Urchin* to
Dalene Dutton, 49 South Main Street, Morrill, ME
ddutton@fairpoint.net



Thank you, Amy!

Amy Campbell of Rockport composed and edited our Maine chapter newsletter *The Tree Urchin*, nearly from its beginning in 1998 -- a total of 17 issues. Amy's fine photography and artistic touch made the URCHIN a pleasure to read as well as providing the important communication link between the board and our members and the public. Thank you Amy for the jobs well-done! Our new Urchin editor is Dalene Dutton, who also is a breeding orchard manager and board member.

.....Eric Evans, V.P.

Finance Committee Report by Henry Leigh

The good news is that the chapter has sufficient funds to continue its programs through the near future and we appreciate the good support we have received.

Over the winter months the Spellesey Foundation donated \$5,000 in unrestricted funds and this is greatly appreciated. Thank you very much.

Another source of funding comes through our seedling sales, and this year we had several schools grow the seedling for us and we reimbursed these schools for their expenses. The students received valuable experience in growing chestnut seedlings. We are selling these trees at various functions such as the Common Ground Fair.

An Audit Committee was appointed – consisting of Board members Joseph Conwill, Charlie Hudson, and Dalene Dutton. This committee conducted an audit of the financial books of the organization and this will be done on an annual basis. The report of the committee is that the financial transactions and books of the Maine chapter are in good order and represent good financial reporting.

Expenses this year have been less than normal since we have completed most of the pollination work on “old growth” mother trees, and the pollination program is expensive with the renting of lifts to do the pollination and then to harvest the chestnuts. On average it costs about \$500 to get chestnuts from a single tree if hydraulic lifts/bucket trucks are used. This year's pollination program involved the use of only one bucket truck with the other trees being pollinated with the use of scaffolding and the expert climbing abilities of Didier Bonner-Ganter.

Chestnuts in the NEWS!

The following editorial appeared in the Bangor Daily News in the Saturday/Sunday, July 1-2, 2006 edition:

Chestnut Trees Returning

Everyone knows at least the first line of Longfellow's poem about the village blacksmith: "Under the spreading chestnut tree, the village smithy stands." But many may not be aware that the chestnut tree has gone the way of the elm, wiped out by blight.

The mighty chestnut trees, close to 100 feet tall, once flourished from Maine down to Alabama. They shaded the streets of cities and towns. They produced more lumber than any other species in the Appalachian forest. Their nuts provided food for deer and other animals and, toasted, offered a treat for humans.

No more. Starting in the early 1900s, a fungus brought in from the Far East and first noticed in New York City in 1904, spread gradually through the country. Within 50 years, most chestnut trees in the country had been killed by cankers or sores that blocked the flow of water and nutrients up the trunks.

But cheer up. After years of trial and error scientists have hit upon a cross-breeding method that will eventually produce trees that combine the blight resistance of Chinese chestnut trees, which resist the fungus but are short and less attractive, with the strength and beauty of the American variety.

A second approach also shows some promise. Italian and French scientists have developed a new class of viruses, called "hypoviruses," which attack the fungus, in a case of one disease killing another disease. Still another method being tried employs a bacterium that can attack the fungus.

A few old-growth chestnut trees, including about 200 in Maine, remain standing, in isolated areas where they have escaped the blight.

The breeding effort is being led by the American Chestnut Foundation, a privately funded nonprofit organization devoted to restoration of the American chestnut. It is growing and cross breeding chestnut trees on a 130-acre tract in southwestern Virginia.

Here in Maine, Glen Rea, a forester turned stockbroker, heads a chapter of the foundation. It operates 10 orchards in the Camden-Augusta area, where 2,000 trees are in the fourth generation of cross breeding, as well as a forest in Veazie. It takes six generations to achieve successful resistance. The University of Maine and the U.S. Forest Service have just permitted the foundation to grow trees on a plot in the Penobscot Experimental Forest at Bradley.

Authorities agree that it will be 10 to 15 years before enough blight-resistant chestnut trees are produced to permit widespread replanting.

When that happy time arrives, cities, towns and individuals can start bringing back the beautiful towering trees that Longfellow made famous in an earlier day.



Left to right: Glen Rea, President, ME-TACF; Dr. Laura Kenefic, Research Forester, USFS; Leila Pinchot, New England Regional Science Coordinator, TACF; Timothy Stone, I.T. Specialist, USFS.

(Photo provided by Glen Rea)

Breeding Program Update by Eric Evans

Pollination -- In the third week of July members of the Maine Chapter brought five more native Maine American chestnut trees into our back-cross breeding program by pollinating them with pollen from selected second back-cross trees in the Foundation's Meadowview Virginia Research Farms. Welles Thurber, Didier Bonner-Ganter, Austin Jones, Glen Rea, and Eric

Evans led teams to pollinate trees in Albion, Mariaville, South Bristol, Orono, and Camden. We got very valuable assistance from Charlie Hudson, Gary Allen of Lucas Tree Service, Dalene Dutton, David Ridley, Harold Mosher, and Dimitri Stancioff. Didier used his skills as a licensed arborist to climb into the 80-foot-tall Mariaville tree to pollinate it with Welles shouting encouragement from the ground. That tree is the eastern-most native chestnut in North America known to us, and is one of the biggest in the state. This year's work is the second attempt for the trees in Camden,



The view from the top of the Mariaville tree!
(Photo by Didier Bonner -Ganter)

Bristol, and Albion, as our timing was "off" in last year's pollination of those trees. The Orono tree – currently the state "champion" has been off limits to us until a change of ownership in the last year. Glen got some good publicity out of his pollination there (see page 2).

If we are not foiled by squirrels, jays, or hurricanes, and get good harvests from these five trees, then

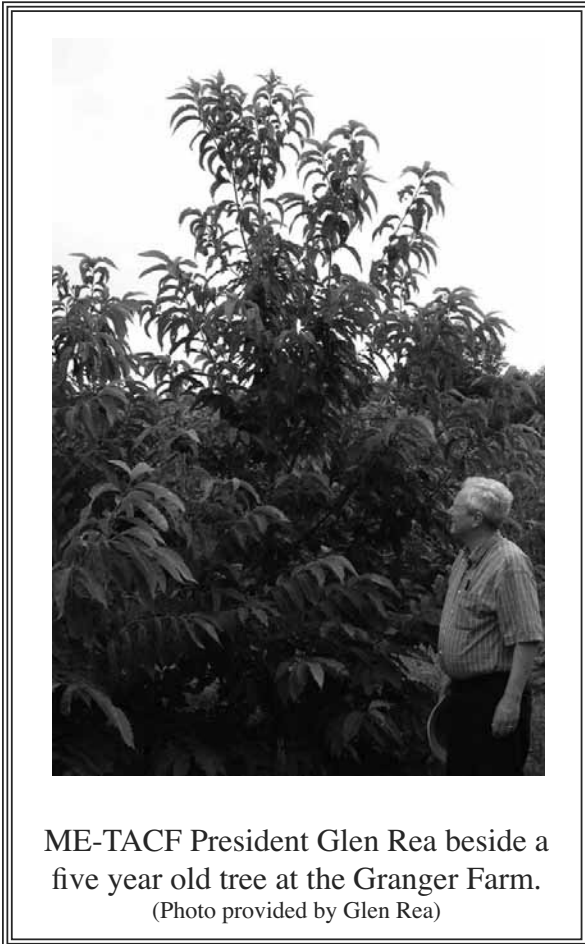


Evidence of blight in the crown of the Mariaville tree.
(Photo by Didier Bonner-Ganter)



Looking down from the top of the Mariaville tree.
Can you see Welles Thurber down at the bottom of the tree?
(Photo by Didier Bonner-Ganter)

we will be only one or two “lines” short of our goal of 20 lines (each pollinated Maine tree gives us one “line” of hybrid trees for our breeding program) from each of the two sources of blight resistance – named Clapper and Graves. We currently have 1962 third back-cross chestnut trees representing 36 lines growing in our 10 breeding orchards.



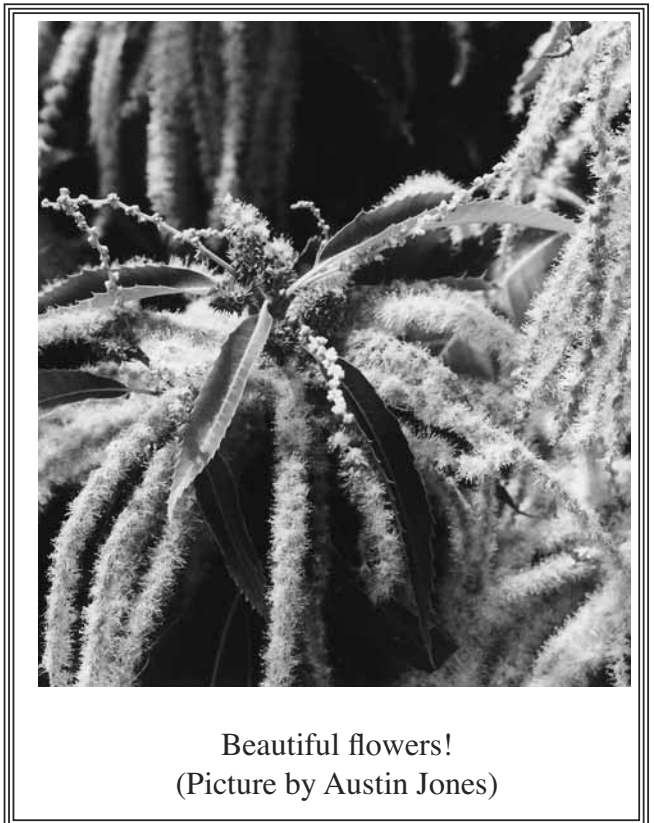
ME-TACF President Glen Rea beside a five year old tree at the Granger Farm.
(Photo provided by Glen Rea)

Recovery at Highmoor ! -- We thought the high mortality rates in our 16 lines in our orchard at Highmoor Farms in Monmouth three years ago meant we would need to replace many of those lines. But with excellent care by orchard manager and Board member Jay Lindsey, the surviving trees have flourished. And in May this year we beefed-up most of those lines by transplanting nearly 100 trees from those same lines that had been kept in nursery beds since the original plantings in 2002 and 2003. Thanks to all the volunteers who helped in several work parties!

Merryspring orchard is almost ready for inoculation – We had been thinking that this would be the year of our first inoculation – “trial by blight” in which live blight fungus is injected into the bark of all the trees in an orchard to see which of them have the right genetic make-up to proceed to the next generation of the breeding program. But TACF Pathologist Fred Hebard in his visit to Merryspring in May, advised us to wait one more year to ensure that

the trees will be big enough to survive the ordeal. Inoculation at Merryspring next June will be followed in the next several years by inoculation at our other orchards. Here is my best guess for timetable of progress toward blight-resistant Maine-adapted American chestnuts:

- * Make third-back-cross seed – 1997-2007
- * Plant third-back-cross trees in breeding orchards – 1999-2008
- * Inoculate trees to test for blight-resistance – 2007-2015
- * Select trees from test for blight-resistance – 2008-2016
- * Cross selected trees with each other to make first-intercross generation – 2009-2020.
- * Plant first-intercross seeds in “seed orchard” – 2010-2021
- * Inoculate intercross seedlings, then select for full blight-resistance – 2012-2023
- * With open pollination, begin seed production from seed orchards, expected to breed true for full blight-resistance – 2017-2020.



Beautiful flowers!
(Picture by Austin Jones)



While planting seedlings in the new breeding orchard in the Penobscot Experimental Forest in Bradley, Glen Rea discovered a native chestnut growing in the clearing!

You never know where you might find a survivor!

(Photo by Glen Rea)

Seedlings Galore !

This spring four high school classes grew about 2000 pure American chestnut seedlings from seeds collected by Chapter members last October from native Maine chestnut trees in Atkinson, Cornville, Montville, Rockport, and Winthrop. The classes sold many of these for their own fundraising projects, and donated over 1000 to the Maine Chapter for our fundraising. Many thanks to the following teachers and their students:

Jay Lindsey, Winthrop HS
Harold Mosher, Mount View HS
Rene Albison, Capital Tech Center
Patrice Jansen, Waldo County Tech Center
Scott Olsen, Maine Conservation School



Sadly, this tree in Mariaville is showing signs of blight.
(Photo by Didier Bonner-Ganter)

Grower's Committee (Orchard Managers) by Glen Rea

The Maine chapter has 10 breeding orchards currently growing at various stages of development. The past winter (2005-06) was a difficult one for our orchards because of the warmer than normal temperatures. In the past we have had severe damage from the very cold temperatures, but in this past winter we experienced heavy rain on two weekends in January and this caused more than usual frost heave in the orchards, especially the newer orchards such as Veazie which was planted in 2005. At Veazie we experienced approximately 33% mortality over the winter in spite of the use of mulch and landscape cloth. In June of this year we had two weekends where we received over 3 in. of rain on each weekend. This caused problems where the drainage was not too good and is one of the reasons we look at drainage as major criteria for selecting a site.

At Merryspring in Camden, managed by Austin Jones, we thought that we might conduct the first of our inoculations, but after Fred Hebard examined it in June, he suggested that we wait until next year.

Jay Lindsey, who manages the Highmoor orchards, has done an exceptional job. This is our biggest orchard and the largest depository of the Clapper line of hybrid chestnuts. In mid-April he supervised the transplanting of approx. 100 three year old trees. The transplanting of chestnuts is not an easy task, but the survival rate to date has been good.

Clark Granger continues to show his expertise in growing trees and on page 5 you will see a picture of trees in his orchard which were planted in 2002. Many of the trees are over 15' tall and are 2-3 inches at the root collar. These trees could be ready for inoculation next summer.

At Veazie we have had Jamie Weaver, a graduate student at UMaine-Orono, supervise the trees as the orchard manager for this past summer. His dedication and hard work is certainly appreciated, and we will visit this orchard during the annual meeting on Oct. 28.

We established two new orchards this year and these were established on forest lands that were cleared just prior to planting. The first of these was in Hope and is managed by Harold Mosher. The second of these was at the Penobscot Experimental Forest and is managed by Glen Rea. This is the first time that we have not planted in "open fields" and the initial results are very encouraging. The problems associated with heavy sod and a lack of mycorrhiza in green fields are well documented. These new breeding orchards have their own set of problems such as competition from stump sprouts, seedlings of other trees, a greater probability of deer/moose/snowshoe hare browse; so these orchards will be monitored very carefully.

Here is a list of our orchards and the year of the first planting: Merryspring (1999) at Camden, Groce (2000) at Union, Highmoor (2002) at Monmouth, Granger Farm (2002) at Weeks Mills, Korth (2004) at Central Lovell, Reed (2004) at Unity, Dutton (2005) at Morrill, Veazie (2005) at Town of Veazie, Mosher (2006) at Hope, and Penobscot Experimental Forest (2006) at Bradley. The excellent managers of these orchards are: Austin Jones, Philip Groce, Jay Lindsey, Clark Granger, Steve and Lynn Korth, Andy Reed, Dalene Dutton, Jamie Weaver and Harold Mosher.

2006 Annual Meeting
Maine Chapter of The American Chestnut Foundation

WHEN: Saturday, October 28, 2006
9:00AM to 12:00PM

WHERE: Memorial Union Building, Coe Room
University of Maine, Orono

Agenda:

| | |
|-------------|--|
| 9:00-9:30AM | Introduction, Election of Directors and Officers, Treasurer's Report |
| 9:30-10:30 | Discussion of the Maine Chapter, TACF: Past, Present, and Future |
| 10:30-10:40 | Report by Leila Pinchot |
| 10:40-11:15 | Visit Veazie Orchard (planted in 2005) |
| 11:15-12:00 | Visit Penobscot Experimental Forest, Bradley (planted in 2006) |

If you would like to make a nomination to the Board of Directors, please contact:
Glen Rea---Bangor, 945-6945, glenrea42@msn.com or
Eric Evans---Camden, 236-9635, belevans@adephia.net

See pages 10 and 11 for directions to UMO and the Memorial Union Building

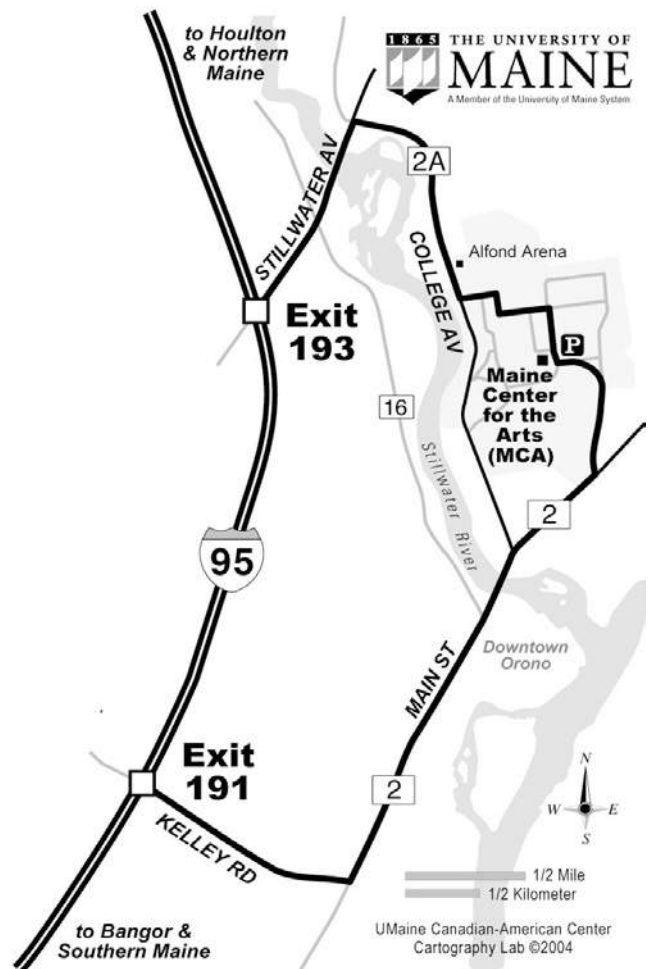
DIRECTIONS TO MEMORIAL UNION BUILDING UNIVERSITY OF MAINE - ORONO

TO CAMPUS FROM THE NORTH:

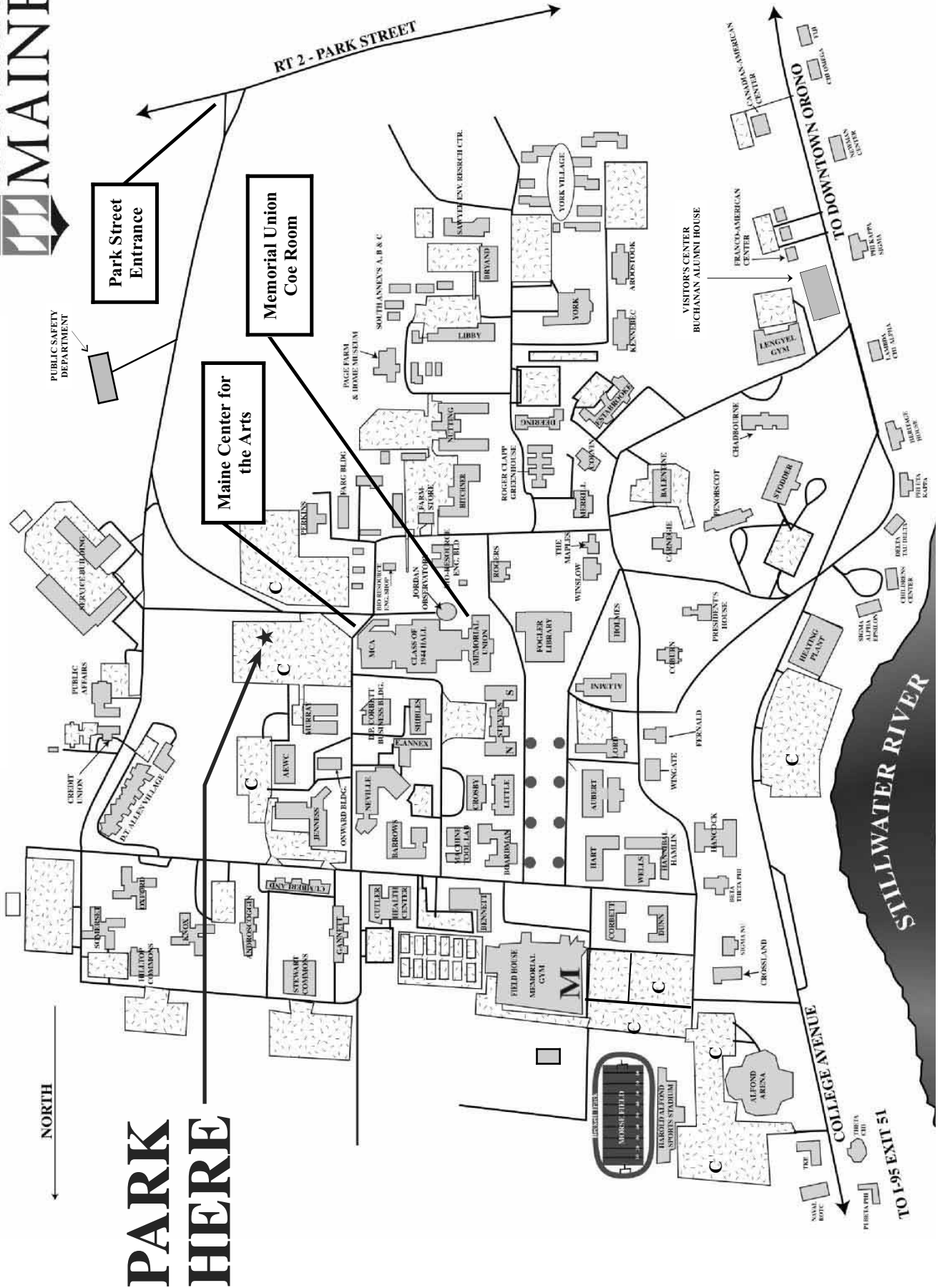
I-95 south to Exit 193 (formerly Exit 51) - Stillwater Avenue. At end of ramp, turn left onto Stillwater Avenue. At the fourth traffic light, turn right onto College Avenue. Kentucky Fried Chicken is on the right at that intersection. McDonald's is on the left just after the intersection. Follow College Avenue approximately 1 mile to the Alford Arena on your left. Turn left just after the Alford Arena to enter campus. A large campus map/directory is located on your right just after entering the campus. You can refer to that map or the map provided in your materials, or follow the brown campus signs to the Memorial Union. Please park in the Commuter (C) lots near the Maine Center for the Arts (MCA). The Memorial Union is just behind the Maine Center for the Arts.

TO CAMPUS FROM THE SOUTH:

I-95 north to Exit 191 (formerly Exit 50) - Kelley Road. At the end of the ramp, turn right and continue to U.S. Route 2 (this road is also Main Street, Orono). Turn left onto U.S. Route 2 – Main Street. Follow this street straight through the town of Orono for approximately 2 miles. You will pass a fire station and a convenience store on the left near the center of town, and cross a bridge shortly after that. At the first traffic light after the bridge, bear right onto Park Street (a continuation of U.S. Route 2). The Park Street entrance to the University of Maine is located on the left about one half mile after the traffic light. Turn left into campus and bear left at the first fork in the road. You will see the Maine Center for the Arts just ahead. Please park in the Commuter (C) lots near the Maine Center for the Arts (MCA). The Memorial Union is just behind the MCA.



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