



## Northern Inland Lakes Citizens Fishery Advisory Committee

Established by the Michigan Department of Natural Resources, to improve and maintain fishery resources through better communication and partnership.

### Northern Inland Lakes Citizens Fishery Advisory Committee Minutes

**Approved**

**Monday October 12, 2015**

**Tuscarora Township Hall**

**3546 S Straits Hwy, Indian River MI**

**12:00 pm – 4:30 pm**

#### **Attendees:**

Mike Beuerle, Paul Borg, Dave Borgeson, Jim Burke, Gina Burke, Kevin Cronk, Tim Cwalinski, Irvin Dedow, Ron Dulak, Dennis Fauver, Maxwell Field, Rick Fowler, Neal Godby, Patrick Hanchin, Todd Hayden, Lindsey Henski, Marty Holtgren, Nickolas Johnson, Rick Johnson, Frank Krist, Theresa Krist, Bill Parsons, Kevin Prediger, Anne Pynnonen, Mac Richardson, Roger Selvig, Boyd Smith, Virgil Smith, Roy Tassava, Terry Weber.

#### **Welcome and Introductions:**

Frank Krist called the meeting to order. Introductions were made. Frank advised the committee that Tuscarora Township Hall has started charging \$40 to use the meeting room. Burt Lake Preservation Association paid the fee for this meeting. It was noted that the Township lowered the fee to \$25.

#### **Update on recent sea lamprey control efforts and studies in the waterway (Nick Johnson, Research Ecologist, Hammond Bay Biological Station).**

Sea lamprey have a similar life cycle to salmon in that they migrate up rivers to spawn and then die. The hatched larvae burrow into the sediment, eat plankton for 3 years or more, undergo a metamorphosis acquiring their sucker-like mouth, leave the stream bottom, and drift to the lake to feed on fish. While growing to a mature adult, a sea lamprey can consume up to 40 lbs. of fish. The first attempt to control sea lampreys was to block spawning grounds with dams and electrical barriers, which are still used today on many streams. Another method that was developed via research was to use a lampricide to kill the larvae in the stream bottom; treatment of a given stream had to be repeated every 3-4 years. The US Fish and Wildlife Service conducts the lamprey assessments and applies the lampricide while the USGS Hammond Bay Biological Station conducts research relevant to these treatments.

Anecdotal reports during the last decade indicated that sea lampreys were preying on fish in the Inland Waterway. An effort was then begun in Mullett and Burt Lakes to determine how abundant sea lamprey feeding scars were present on fish caught by anglers. An observation program was initiated in 2013 and in that year 22 reports of fish with lamprey scars were received, which provided evidence that a population of sea lampreys existed in the Inland Waterway. The question was raised as to the source of these lampreys.

It was originally thought that the adult lampreys were traveling up from the Cheboygan River from Lake Huron and passing through the Cheboygan lock. However, in 2011 as part of a telemetry study, 148 lampreys were tagged and released below the Cheboygan lock. None of the tagged lampreys were detected in the river above the lock, indicating that few if any lampreys are passing through the lock to gain entrance to the upstream Inland Waterway. This result supported the view that a self-sustaining population of sea lamprey exists in the Inland Waterway.

The overall goal currently of the USFWS is to delay or eliminate the need to apply lampricide to the streams above the Cheboygan Lock in the Inland Waterway where the sea lamprey spawn. Applying lampricide is difficult and costs about \$400,000 per treatment. The rivers needing treatment include the Maple, Sturgeon, and Pigeon and the lower Cheboygan. Significant challenges for treatment are the 48 dams in the watershed and the possible presence of an endangered species, the Hungerford's Crawling Water Beetle. Working around these challenges will require time and effort.

The next step was to follow-up and confirm the existence of a sea lamprey population in the Inland Waterway above the Cheboygan Lock. Survey netting began in 2013 before the Cheboygan lock opened in the spring. Adult sea lampreys were captured upstream in the Waterway which showed that indeed a population of adult sea lamprey was living in the Inland Lake system. In addition, land locked sea lamprey have a different bone microchemistry and are smaller than Great Lakes sea lampreys. Netting will continue during 2016 to obtain additional information. The survey results to date suggest that the abundance of adult sea lamprey above the Cheboygan lock in the Inland Waterway is very low with an estimate of less than 200 adult lampreys. However, a low number of adults can produce large numbers of progeny.

Control options for sea lamprey include continued costly lampricide treatments, removing adult lamprey with nets (nets only catch about 10%), refurbish the Cheboygan Lock, or use of the sterile male release technique which potentially reduces the spawning success of the adult lamprey. The sterile male release technique may be a viable alternative to lampricide. Modifying the lock would prevent lamprey from moving upstream but it would ignore the land locked population. Sterile male release technique has the advantage of controlling both the land locked adult lamprey and those that migrate through the lock.

Since the projected adult sea lamprey population is estimated to be relatively low at less than 200 adults, the sterile male release technique has the potential of being an effective control method. Previous research on other rivers has shown that for this technique to be successful a low number of adult lamprey must be present. This allows the fertile females to be overwhelmed with sterile spawning males resulting in few fertile eggs. If the program is successful, it is estimated that only two females would be successfully fertilized each year. Obtaining a desirable ratio of 40 sterile spawning males to each spawning female is possible since it is estimated that only about 100 adult females spawn in the upper river. Sterile males are obtained by trapping the returning males below the Cheboygan Dam and treating them. The sterile males would then be released in the upper river and would spawn with the fertile females.

If the sterile male release technique is successful, regular expensive lampricide treatments would no longer be needed, and if the Cheboygan Lock is upgraded it might be possible to exterminate all the sea lamprey above the Cheboygan Dam. The information obtained with this project could be applied to other similar watersheds around the Great Lakes to reduce the cost of sea lamprey control treatments.

Proposed timeline for the sterile male release technique project if it proceeds:

- Lampricide treatment expected 2016
- Continued adult sea lamprey assessment 2016
- Sterile male release technique would occur 2017-2019
- Next expected lampricide treatment 2020
- Post sterile male release technique assessment 2020-2023

***Please continue to take photos of any fish caught in the Inland Waterway above the Cheboygan Dam that may have a sea lamprey wound. Also, be sure to save any sea lamprey that you may obtain from the Waterway since the information obtained will be very valuable. As discussed, adult sea lamprey are very rare above the Cheboygan Dam. Attached is an information kit on how to provide the samples to the Hammond Bay Biological Station.\****

**Migration patterns of walleye in Lake Huron. We have learned much about movement of walleye in the Inland Waterway and this discussion will allow us to expand on that information. (Todd Hayden, Associate Scientist, Hammond Bay Biological Station).**

Saginaw Bay is a 13.6 million dollar walleye fishery. As angling interest and fish populations expanded there was a need to learn more about walleye migration and movement patterns. Historically, the department tracked walleye movement using jaw tags. Walleye would be tagged in the Tittabawassee River, with recaptures coming from Saginaw Bay, south to Lake Erie, and north to the Straits. Knowledge from jaw tags is limited to where fish are tagged, and where they are recaptured. With acoustic telemetry many data points are obtained between those two points and throughout the life of individual fish. Acoustic telemetry is done by implanting a digital transmitter in the walleye, and deploying acoustic hydrophone receivers at key points in Lake Huron and connecting streams near where the fish might pass. The range of transmission and reception is near a half mile. Besides recording the movement patterns of walleye within Saginaw Bay and Lake Huron, these studies will determine if walleye return to the same spawning site each year (spawning site fidelity).

The Great Lakes acoustic telemetry observation system can be accessed at <http://data.glos.us/glatos>. Some of the other species being tracked by this system in the Great Lakes and elsewhere are lake trout, sturgeon, sea lamprey and Asian Carp.

An animation presented during the meeting showed individual walleyes moving from river spawning locations around Saginaw Bay in the spring and then traveling into the bay and out into Lake Huron as far as the Straits to the north and Lake Erie to the south. The dates and year were noted as the fish moved in the video. Telemetry showed 59% of the transmitter equipped walleye were detected at the mouth of the Bay, 18% at Oscoda, 16% at Thunder Bay, 6% at Presque Isle, 4% at the Straits, 22% along the Thumb and 5% detected in the Port Huron/Erie corridor. The walleye start returning to Saginaw Bay in August and 90% are in the Bay by December. Dispersal patterns from the bay are thought to be linked to water temperatures.

Walleye can travel long distances in short periods with speeds up to 7.2 miles per day. One walleye travelled 217 miles in 30 days from the Tittabawassee River to Bois Blanc Island in the Straits. Most individual walleye consistently reach the same summer destinations each year. In addition, walleye have a tendency to spawn in the same area each year with 95% percent returning to the same spawning site each spring.

This information supports the results of the newly completed inland Waterway walleye study that showed walleyes often travel long distances to feed but the vast majority return to the same spawning sites each year. It also supports that walleye in the Waterway should be viewed as a Waterway population, and not just populations within an individual lake. Past jaw tagging in the Inland Waterway also supported this hypothesis. These studies provide important information for better managing walleye fisheries.

**Discussion on quagga mussels appearing in the Inland Waterway and the importance of invasive species monitoring. Updated limnological parameters for the lakes will be provided (Kevin Cronk, Tip of Mitt Watershed Council; Tim Cwalinski, DNR Fisheries Biologist).**

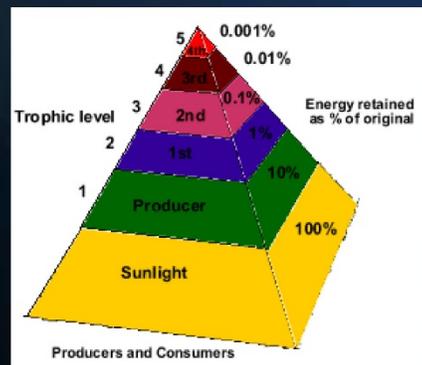
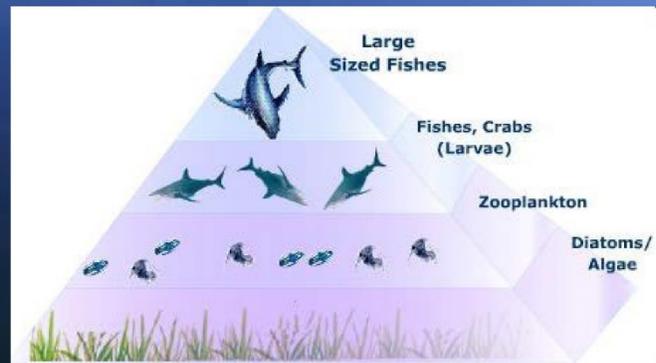
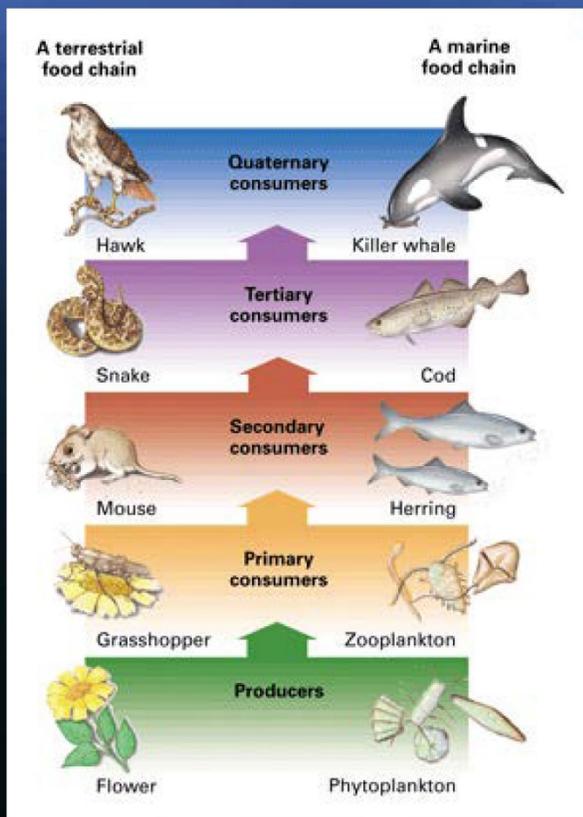
Since mussels have entered the Inland Waterway, there have been changes in the food web and trophic states. The food web is comprised of complex feeding relationships. The trophic level of an organism is the position it occupies in the food chain. Primary producers like algae obtain their energy for growth from the sun and occupy the lowest trophic levels. Animals like zooplankton that eat the algae are at a higher trophic level. Fish that eat zooplankton are at even higher trophic levels with top predators that eat other fish like walleye and lake trout being at the highest trophic levels, see the chart below.

Generally, lakes with more **Phosphorus** produce more algae resulting in more food for fish. Several measurements are used to determine how rich and productive a lake is. **Phosphorus** is usually the main nutrient limiting the growth of algae in the lakes while **Chlorophyll-a** is a measure of the amount of algae in the water. A disc known as a **Secchi Disc** is lowered into the water until it visually disappears and the depth is recorded. When the disc can be seen at deeper depths the water is obviously clearer and this usually indicates that there is less algae present and the lake is less productive.

These parameters along with others are monitored by staff and volunteers in programs coordinated by Tip of the Mitt Watershed Council. Currently, 60 lakes and streams in northern Michigan are monitored by Watershed Council staff in the Comprehensive Water Quality Monitoring Program, data going back to 1987 for some water bodies and available for download in a spreadsheet at this link: <http://www.watershedcouncil.org/comprehensive-water-quality-monitoring.html>. Volunteers have monitored water quality on 40 lakes in the Volunteer Lake Monitoring Program, with data going back to 1986 for some lakes and available in a spreadsheet at this link, <http://www.watershedcouncil.org/lake-monitoring.html>. The monitoring data spreadsheets have a page for each lake in the program that shows the results over many years of sampling, as well as charts on each page that show the trends of the parameters over time.

## TROPHIC LEVELS

The trophic level of an organism is the position it occupies in the food chain.



The Trophic State Index is a classification system for measuring the biological productivity of a water body as determined by water transparency, algae abundance, and phosphorus levels. Overall, less phosphorus means less algae, which means less zooplankton, which means less forage fish, and

therefore less predator fish like walleye, bass and pike. Of course, too much phosphorus can also be detrimental.

According to the Trophic State Index lakes are graded as,

<b>Oligotrophic</b>	Poor in nutrients with low productivity, high clarity
<b>Mesotrophic</b>	Moderate nutrients with moderate productivity
<b>Eutrophic</b>	Rich in nutrients with high productivity and low clarity

Since the 1980s after the zebra mussels entered the Inland Waterway and efforts were undertaken to reduce the amount of phosphorus entering the water bodies from sewage systems, lawn fertilizing and other sources, the productivity in all the lakes has declined significantly. The more recent trends are listed below:

**Pickerel Lake:** The trophic status for Pickerel Lake is mesotrophic. Secchi depths are climbing slightly, while phosphorus levels have a declining trend.

**Burt Lake:** The trophic status for Burt Lake has been oligotrophic since 1993. Phosphorus continues a declining trend.

**Mullett Lake:** Mullett Lake has historically had an oligotrophic trophic status and algae and phosphorus continue to decrease.

**Black Lake:** Black Lake's trophic status borders on mesotrophic. For the past five years, the lake has been a bit more mesotrophic but it is still very close to being oligotrophic.

The introduction of exotic species into the Waterway has changed the food web extensively. The main reason for the reduction in productivity of the lakes is most likely the establishment of zebra mussels. Zebra mussels are very efficient at filtering the entire water column of the lakes and they reduced the amount of algae in the mid-water column along with concentrating the productivity on the lake bottom. The round goby has also been unintentionally introduced but fortunately they feed on the zebra mussels. The goby is a food for most predators.

Recently the quagga mussel, another exotic similar to the zebra mussel, has appeared in the Waterway. Quagga mussels were identified within Mullett Lake in 2012 and Crooked Lake in 2015. Quagga mussels are also very effective filter feeders and occupy water at almost any depth as long as adequate oxygen is available. In addition, quagga mussels live on both hard and soft bottoms while zebra mussels prefer to live in shallower water with hard bottoms. In Lakes Huron and Michigan, quagga mussels have displaced zebra mussels. Fortunately, quagga mussels are often a favorite food item of goby.

**Cooperative lake sturgeon management between the State and Tribes. Where are we with the Black Lake Sturgeon Management Plan and its implication for Burt and Mullett lakes? (Dave Borgeson, DNR Northern Lake Huron Unit Supervisor; Maxwell Field, Little Traverse Bay Bands of Odawa Indians (LTBB), and Marty Holtgren, DNR Tribal Coordination Unit).**

The 2007 Inland Consent Decree lays the foundation for the Tribes and the State to work together on Lake Sturgeon management, especially identifying harvest levels. Efforts are going well beyond that agreement, with cooperation extending to collecting gametes for both the Tribal and the DNR sturgeon hatcheries in the Waterway. There is also cooperation with surveys targeting sturgeon by sharing techniques and information and often working together on the same survey. Currently, there is a joint effort writing the Black Lake Sturgeon Plan, which will serve as the template for future plans for the other lakes in the Waterway and sturgeon lakes throughout Michigan. The Tribes and State have jointly

worked on a sturgeon plan, and all the goals and objectives have been agreed to and now a few details are being worked out.

**A summary of the fall 2015 Burt Lake juvenile lake sturgeon netting efforts by Little Traverse Bay Bands of Odawa Indians (LTBB) and DNR (Maxwell Field, LTBB, Marty Holtgren, DNR Tribal Coordination Unit).**

LTBB has stocked fall fingerling sturgeon in Burt Lake since 2013. The goal of the survey is to gather data on the survival, growth rates and other information for these stocked fish. The Burt Lake sturgeon assessment was conducted September 14 through October 5 and targeted both juvenile and adult sturgeon. Gill nets were used and checked every 2 to 3 hours so the fish would not be harmed. They were handled very carefully when being removed from the nets and examined in the boat. The fish were checked for tags which showed if the sturgeon were wild (no tags) or stocked. The tags provide a history of when the fish were stocked and when they might have been caught in previous surveys. The wild fish were also tagged so that they can be followed in new surveys or when they are possibly harvested in the future.

Sampling locations were randomly chosen throughout the entire lake in appropriate depths greater than 20 feet. Three boats were used, including two tribal boats, and one DNR boat and crew. There were 63 unique sturgeon captured and 3 of these sturgeon were recaptured during this survey. In addition, 7 of the captured sturgeon were tagged during the 2011 survey. Despite the smaller mesh size, the 2015 survey did not produce many small sturgeon and provided little evidence of strong natural or stocked juvenile recruitment. Very preliminary population projections estimate the sturgeon population of Burt Lake to be between 644 and 1535 sturgeon. Expanded numbers should be interpreted with caution due to the low numbers captured during the survey.

**Future perch assessments in Mullett and Burt Lakes:** Postponed until the spring meeting.

**Mullett Lake/Cheboygan/Black River walleye regulations past, present, and future (Tim Cwalinski, DNR Fisheries Biologist, Dave Borgeson, DNR Northern Lake Huron Unit Supervisor, Patrick Hanchin, DNR Tribal Coordination Unit).**

The Mullett Lake walleye regulations are very protective pending a better understanding of walleye dynamics. The question is, however, looking at the walleye movement study and the increased population of summer walleye in Mullett Lake, are those regulations still pertinent? Should the regulations be adjusted based on what is now known after the completion of the walleye survey in the Inland Waterway.

Tim Cwalinski distributed *The 2009 Mullett Lake walleye agreement*.<sup>\*</sup> This five year agreement lowering angler harvest and fishing period for these areas expires this year (2015). The department has had discussions with the Tribes indicating an interest in returning Mullett Lake to the statewide walleye regulations of a daily harvest of 5 walleye instead of the current 3 fish limit with the opener moving from May 15 back to the last Saturday in April. The more restrictive daily possession limit and spawning closure of 3 fish per day and a May 15 opener would not change for the Cheboygan and Lower Black Rivers. The reasons for not changing the regulations in the Cheboygan and Lower Black Rivers are many of the adult fish from Mullett Lake spawn in these rivers and display site fidelity by returning to the same location to spawn each year. This has been proven through recent and older tagging studies of walleye. In addition, the walleye are more susceptible to early harvest when concentrated at river locations (Alverno Dam, Cheboygan River).

Because a new **License Fishing Guide** will not be published for two more years, potential changes would not be implemented until at least 2018 if it is decided to move forward with the modification. This topic will be explored more in the future.

**A round table discussion including updates, fishing reports, projects, questions, comments and suggestions from the attendees.**

- **Frank– Meeting times for 2016.** Frank asked if meeting twice a year was sufficient. The group agreed that meeting in the spring and fall would be ideal. Frank mentioned there was interest in starting the meeting one hour earlier so that it would be easier for some individuals to make evening commitments. Starting at 11:00 am would still provide enough time before the meeting for driving to Indian River from downstate and allow an extra hour to travel back home. There were no objections to starting the meeting at 11:00 am. The meetings in 2016 will begin at 11:00 am and be completed by 3:30 pm. Terry Weber (Advance Tackle) offered to pay the Tuscarora Township Hall rental fee for our next meeting in April. It was noted that the rental fee has been reduced from \$40 to \$25.
- Frank mentioned that the Hammond Bay Anglers Association strongly supports the purchase of the Black River Marina property for building a DNR boat launching site. The Association feels that a deeper water **boat launching ramp** with better facilities is needed on **Black Lake**.
- **Kevin Cronk** – The report on the Crooked/Pickerel aquatic vegetation survey will be available in the winter/spring. Quagga mussels were discovered in Crooked Lake during the survey. The Burt Lake Watershed Plan includes the establishment of an advisory committee and for more information contact Kevin.
- **Neal Godby** – Neal will be writing the Burt Lake status and trends survey results this winter.
- **Roy Tassava** – Roy reported there was good walleye fishing during early summer in Scott Bay and along the south end of Mullett Lake. Pike fishing was down.
- **Terry Weber** – Many pike were skinny on Mullett Lake. Burt Lake was good in early summer for several year classes of walleye, while Mullett Lake was good during the mid-summer for 17-19 inch walleyes with many year classes present. In Mullett Lake perch fishing was good both deep and shallow at several locations. Many year classes of perch were caught. Steelhead fishing was fair but the fish were larger. Mullett Lake had a good balanced fishery.
- **Irv Dedow** – Irv fished much this year in the Western Upper Peninsula, St. Marys River, Munuscong Bay and did well everywhere! He fished Black Lake much but could not catch a legal walleye. He is displeased with the boat launch improvements at Onaway State Park.
- **Rick Johnson** – Burt Lake was average for walleye this year but the fall fishing did seem slow. Many undersized walleye were caught and several year classes were present including some small fish
- **Dennis Fauver** – Grand Lake was good this year with many legal walleye caught so anglers are happy. Last year a large number of 13 to 14 inch walleye were caught but this year the fishery is more balanced. Anglers around the lake understand that if the walleye population becomes extremely abundant, yellow perch numbers will probably plummet.
- **Paul Borg** – Paul added that Grand Lake was also good for smallmouth bass.
- **Gina Burke** – The walleye fishing in Burt Lake was good this year.
- **Jim Burke** – The Burt Lake Preservation Association meets the second Saturday each month. Information from Frank and the Northern Inland Lakes Citizen Fishery Advisory Committee meetings is disseminated to the group.

- **Virgil Smith** – The Black Lake Association will be planting fall fingerling walleye on Wednesday at 1pm at the State Park (this stocking event was eventually canceled due to shortage of fish from private facility). The Association has significant money in their fish fund that was collected for the purpose of stocking walleye. After this plant, which will exhaust the fund, the Association does not plan to plant for a number of years. About 9,000 walleye will be stocked at a cost of \$1.70 each (canceled). The DNR and Tribes will be monitoring over the next couple of years to determine if the adult walleye in Black Lake are capable of producing a large successful year class or young stocked fish successfully recruit to the fishery. Improvement work at the Onaway State Park boat launch is on hold.
- **Anne Pynnonen** – Anne discussed a survey of the boating usage at the Onaway State Park launch ramp during the 2015 Labor Day weekend. The waiting time to launch a boat was minimal over the weekend. The results of the survey and an overview of the need for upgrading the existing ramp or building a new ramp at another location on the Lake is summarized in the attached overview along with the results of the survey\*. There are a number of residents that feel the existing boat launching facilities on Black Lake are adequate.
- Anne's neighbor is a diver and has multiple DVDs of Black Lake sturgeon and he would be willing to share the videos.
- **Nick Johnson**– Nick fished Lake Huron off of the Biological Station in Hammond Bay and caught many lake trout and some walleye but he will try to fish Burt and Mullett Lakes next year.

**Adjourn:** 4:16 p.m.

**\*The handouts may be obtained by emailing Frank Krist at: [krist@speednetllc.com](mailto:krist@speednetllc.com)**

**Meeting Dates for 2016:**

**Monday April 18, 2016** Tuscarora Township Hall in Indian River

**Monday October 17, 2016** Tuscarora Township Hall in Indian River

**Both meetings begin at 11:00 am and will be completed by 3:30 pm**