Northern Michigan FruitNet 2013
Northwest Michigan Horticultural Research Center

Weekly Update

January 28, 2014

CALENDAR OF EVENTS

2014

2/1	**Small Farm Conference** Grand Traverse Resort www.smallfarmconference.com
2/5	**"The Agricultural Migrant Worker in Leelanau County: Issues and Challenges, 2013-14"** Leelanau County Governmental Center
2/5-6	**SW Michigan Horticulture Days** Lake Michigan College's Mendel Center Near Benton Harbor
2/18-19	**IPM Academy**
2/22-26	**IFTA Conference** Kelowna, British Columbia http://www.ifruittree.org/
2/26-28	**Michigan Grape & Wine Conference** Grand Traverse Resort, Acme, MI http://www.michiganwines.com/conference
2/27-3/1	**IFTA Post Conference Tours**
2/27-3/1	**25th Moses Organic Farming Conference** LaCrosse, WI www.mosesorganic.org
2/28-3/8	**ANR Week (Formerly Farmers' Week)** MSU
3/1	**2014 Growing Michigan Agriculture Conference** Kellogg Center, MSU
3/11	**Michigan Spring Peach Update Meeting** SW Michigan Research & Extension Center
3/12	**Irrigation Workshop** NWMHRC

PLEASE TAKE A MOMENT TO FILL OUT A POLLINATION SURVEY

As many of you know, MSU is the lead institution in a large, multi-state pollination project. To help gain a better understanding of pollination management practices in Michigan, we hope that you will take some time to fill out the survey on "Integrated Crop Pollination."

Please note that the survey will target growers of apple, cherries, blueberries, raspberries and pumpkins, squash and cucurbits - if you do not grow one of these crops, you can hit delete now. If you do grow one of these crops, I hope that you would take a little time to answer the survey--I think it will only take 10 or 15 minutes, but your information is important to our pollination project.

Please click on the following link to start the survey:

https://www.surveymonkey.com/s/MI_growers

We value your participation! Thank you for your help and support of our project.

WIND CHILL DOESN'T REALLY MATTER TO A PLANT

It's the temperature of the air that matters to a plant, not the wind chill. Calm air can get much colder.

Posted on **January 21, 2014, MSUE News,** by **Mark Longstroth**, Michigan State University Extension

We have had some cold winter weather this year with wind chills down to -20 or -30 degrees Fahrenheit and some school closings because of the snowy conditions and extreme cold. Meteorologists like to emphasis the precautions we should take in cold, windy weather and cite the wind chill to tell us to bundle up and protect exposed flesh.

Wind chill is a measure of what the combination of wind and temperature feels like. In calm conditions, there is a fine layer of air called the boundary layer that insulates us from the cold. As the wind blows, it blows away this boundary layer and the cold wind can carry away heat from our bodies faster because there is no air insulating us. The faster the wind blows the more heat it can carry away. Think of a cooling breeze on a hot summer day.

When people call and ask if it was cold enough to injure their plants, they often tell me what the wind chill was. I am more interested in the actual cold temperature. Wind chill really only matters if you are trying to stay warmer than the air temperature. Warm blooded animals like ourselves, our pets or livestock are trying to keep our bodies warm because if we get too cold we stop working.

Plants are usually close to air temperature. On a cold winter day, they are close to the temperature of the air. If the wind blows hard it cannot cool down the plant any colder than the air temperature. If the plant gets colder than the air temperature, the warmer air will warm the plant. On a sunny day, if the plant warms in the sun it may get much warmer than the air if the conditions are calm. If conditions are windy, then the plant will only get a little warmer than the air as heat is carried away more quickly.

Under real cold conditions when much of the water in a plant is frozen, a strong, dry wind will carry away moisture and dehydrate the plant. Desiccation is a bigger problem when temperatures are above freezing and it is windy for plants that retain their leaves or needles in the winter.

Under calm conditions it can get much colder after the sun goes down. Without the wind to stir up the air, cold air collects close to the surface and flows into cold areas. When we have snow cover, the snow reflects a lot of the sun's heat back to the sky. After the sun goes down, the cold snow chills the air above it and without a wind to stir it up and mix with the warmer air above, a very cold layer develops just above the snow. Often we see the worst winter injury close to the ground just above the insulating snow. Generally I am happy when the wind is blowing in the winter because it prevents cold layers from forming close to the ground.

Many of the plants we grow here in Michigan can handle the cold conditions of a Michigan winter. People are always planting new varieties to see how they will do. With our frequent drops to zero and below in 2014, this will be a good test winter to determine what varieties should not be planted here in Michigan.

For more information, see the related Michigan State University Extension articles

- How cold is too cold for Michigan fruit crops?
- Extent of cold injury to landscape plants from the "Polar Vortex"
- Winter cold hardiness in Michigan fruit crops
- Forcing cuttings to determine the end of dormancy in fruits and other plants
- Winter dormancy and chilling in woody plants
- Fall color show and winter dormancy in woody plants
- Freeze damage depends on tree fruit stage of development
- With a backward spring, Mother Nature pitches a change-up after a fastball

This article was published by **Michigan State University Extension**. For more information, visit http://www.msue.msu.edu. To contact an expert in your area, visit http://expert.msue.msu.edu, or call 888-MSUE4MI (888-678-3464).

SOUTHWEST MICHIGAN HORTICULTURE DAYS

Date: February 5, 2014 - February 6, 2014
Time: 8 a.m. - 4 p.m.
Location: Mendel Center at Lake Michigan College, 2755 E. Napier Ave, Benton Harbor, MI

Contact: Mark Longstroth, longstr7@msu.edu or Allan Zelmar, 269-870-5265, info@fruitfulvinetours.com

This two-day trade and educational show is sponsored by the Michigan Grape Society and Michigan State Horticulture Society and coordinated by the Michigan Grape Society and Michigan State University Extension. Educational programs are focused on grapes, tree fruit, blueberries and vegetable growers in Southwest Michigan.

Starts Wednesday morning with a general education session. On Wednesday afternoon there will be concurrent Vegetable, Grape and Tree Fruit sessions. Thursday's concurrent sessions will be Tree Fruit, Blueberry and Grape. Another part of this event is the Southwest Michigan Wine Educational Showcase on Wednesday afternoon after the educational sessions at the SW Michigan Research and Extension Center (SWMREC), about 3 miles from the conference site.

Registration will open at 8 a.m. both days (Feb. 5-6) and programs begin at 9 a.m. A trade show with vendors and door prizes is open each day and is included in the registration cost. The education program covers a wide range of topics covered by local and state experts and out-of-state speakers.

MARK YOU CALENDARS FOR WEDNESDAY FEBRUARY 5

The League of Women Voters Leelanau County Farm Labor Task Force will host a panel program on **"The Agricultural Migrant Worker in Leelanau County: Issues and Challenges, 2013-14"** on Wednesday, February 5, 2014 at noon in the lower level meeting room of the Leelanau County Government Center.

Securing reliable, skilled seasonal farm and processing labor continues to challenge our local agricultural employers. The panelists include a long time county farm employer, representatives from migrant housing and education, and a seasonal worker and current NMC student. This LWVLC presentation follows a new study by its Farm Labor Task Force on this vital aspect of our area's economy. Proposed Federal immigration law reform may provide a more efficient farm labor visa; however, given growing uncertainty over weather conditions, crop size, and the lack of willing, skilled domestic workers, the question remains as to how our local agricultural employers will attract skilled, reliable workers to northern Michigan, the end of the migrant worker stream.

The public is invited. Many people bring a sack lunch. LWVLC business meeting will follow presentation.

For more information: Call 231-386-5106, visit LWVLeelanau.org or follow LWVLC on Facebook at League of Women Voters Leelanau County.

2014 GROWING MICHIGAN AGRICULTURE CONFERENCE

Emerging important issues will prompt valuable discussion at the 2014 Growing Michigan Agriculture Conference during Agriculture and Natural Resources (ANR) Week.

Posted on **January 17, 2014, MSUE News,** by **Stan Moore**, and Bruce MacKellar, Michigan State University Extension

There's no doubt that agriculture plays a vital role in Michigan's economy. In April 2012, Michigan State University (MSU) researchers announced that through the food and agriculture supply chain, the industry contributes an estimated $91.4 billion to Michigan's economy – an increase of nearly 50 percent from 2004 to 2010.

New and evolving issues such as changes in technology, weather and public expectations continue to challenge Michigan farmers. Michigan State University Extension has brought together farmers and agricultural professionals who work within Michigan's wide-ranging agricultural commodities to assist the state's farmers in learning more about potential changes on the horizon.

The third annual Growing Michigan Agriculture Conference will take place Wednesday, March 5, 2014, at the Kellogg Center on the MSU campus during Agriculture and Natural Resources (ANR) Week.

The one-day conference is packed with timely information from MSU experts and nationally renowned speakers that will help Michigan producers maximize their farms' potential.

The 2014 conference also offers concurrent breakout sessions that focus on specific areas of agriculture including animal production, field crops and specialty crops.

At last year's Growing Michigan Agriculture Conference, more than 70 participants learned about labor management, precision agriculture, food safety, risk management, soil management and the Farm Bill. Participants at the conference included farmers, farm employees, agribusiness professionals, consultants, Extension personnel and government representatives.

Attendees came from farms of all sizes and reported that attending the program was valuable to their farm operations. When asked what they gained, respondents indicated that they would be able to apply what they learned to their businesses, and they also reported an increase in management skills. Participants appreciated the global perspective that they received.

In 2014, the Growing Michigan Agriculture Conference takes place in conjunction with Michigan Farm Bureau's Statewide Commodity and Marketing Conference. The new partnership promises to provide excellent educational sessions for Commodity and Marketing Conference farmer attendees, and it will allow the Growing Michigan Agriculture Conference to continue to build on its reach to Michigan farmers.

The Growing Michigan Agriculture Conference will run from 8:30 a.m. to 4:30 p.m. on March 5, followed by the Michigan Farm Bureau Statewide Commodity and Marketing Conference beginning at 5:30 p.m. on March 5 and continuing on March 6.

"We are looking forward to having knowledgeable speakers presenting to such a diverse agricultural audience," said Dale Rozeboom, MSU professor and Extension specialist. "So often we have great speakers at our individual winter commodity meetings. This conference allows people from all agriculture sectors to come together in one setting, hear the very best speakers and get the latest information on a variety of important topics."

This year's topics and speakers include:

- Global economic outlook and impacts on agriculture – Bryan Dierlam, Director, Government Affairs, Cargill
- Antibiotic use and resistance: How do we keep Michigan agriculture resilient so it continues to grow in the future? – Jim Tiedje, MSU University Distinguished Professor, Center for Microbial Ecology at MSU
- Regional water availability resources and future challenges – David Hyndman, MSU Department of Geological Sciences
- Farmland ownership – Dennis Stein, Michigan State University Extension
- Michigan Department of Agriculture and Natural Resources update
- State and National Legislative Update – Ryan Findlay and Matt Smego, Michigan Farm Bureau
- Breakout sessions for animal production, field crops and specialty crops
    - Animal production – USDA's project to reduce mastitis and antimicrobial use on dairy farms.
    - Field crop – Using a Drone for crop management decisions
    - Specialty crop (two parts) – Food safety modernization act and you; and Where is our labor coming from?
    - Modeling farming systems strategies to optimize water, carbon and nitrogen cycling – Bruno Basso, MSU Department of Geological Sciences

Registration information is available at http://bit.ly/GrowingMichigan. The cost for the conference is $75 by Jan. 28, 2014; $85 by March 3, 2014; and $95 at the door. To find out more information or to learn how to become a sponsor, contact ANR Event Services at events@anr.msu.edu or 517-353-3175.

This article was published by **Michigan State University Extension**. For more information, visit http://www.msue.msu.edu. To contact an expert in your area, visit http://expert.msue.msu.edu, or call 888-MSUE4MI (888-678-3464).

MICHIGAN STATE UNIVERSITY SET TO HOST 99TH ANNUAL ANR WEEK

Gardeners, farmers, foresters and families interested in animals, plants, land and water are invited to Agriculture and Natural Resources (ANR) Week, **Feb. 28-March 8, 2014.** The annual event, formerly known as Farmers' Week, is hosted by the Michigan State University (MSU) College of Agriculture and Natural Resources, MSU Extension and MSU AgBioResearch.

This year's events include educational programs on topics ranging from conservation stewardship to artisan cheesemaking.

Programs this year include:

- Birding 101: A Beginner's Guide to Birding (March 1) – This workshop is sponsored by Michigan Audubon and the Quiet Water Symposium. It will explore the use of binoculars and field guides, and cover bird identification and habitat.
- Forage Technology Conference (March 6) – This conference, sponsored by MSU Extension, the Michigan Forage Council and the Grazing Lands Conservation Initiative, will feature innovative researchers, industry representatives and cutting-edge farmers. They will speak on topics such as grazing management, use of cover crops as forage, hay and haylage production, and corn silage production.

In addition, ANR Week is the setting for several annual meetings and conferences, including the following:

- Michigan State Rabbit Breeders (Feb. 28-March 2), which includes exhibition and judging of more than 3,000 rabbits and cavies.
- Michigan Wildflower Conference (March 2-3), which will focus on preserving and restoring biodiversity in generally urban and suburban yards.
- 82nd Michigan FFA Convention (March 5-7), which is themed, "Envision the Goal, Embrace Your Journey."
- Michigan Barn Preservation Network Conference (March 7-8), which offers barn enthusiasts and barn owners an opportunity to learn more about Michigan's agricultural heritage and historic farm buildings.
- Michigan Beekeepers' Association Spring Conference: The Wonder of Honeybees (March 7-8), will offer breakout sessions for participants to learn about the many aspects of beekeeping.

Other events include the Michigan Farmers Market Conference (March 4-5), Horticultural Therapy: Connecting People and Plants (March 7), Horse Expo 2014 (March 7-9) and the Quiet Water Symposium (March 1).

In addition, the third annual Growing Michigan Agriculture Conference will take place Wednesday, March 5, 2014, at the Kellogg Center on the MSU campus during ANR Week. For more information or to register, visit http://bit.ly/GrowingMichigan.

Free ANR Week program guides with dates, times, locations, costs and event descriptions are available from any county MSU Extension office or the MSU Bulletin Office, 117 Central Services, MSU, East Lansing, MI 48824-1001; 517-353-6740.

For a complete list of programs, conferences and educational opportunities, visit www.anrweek.canr.msu.edu, or contact program coordinator Megghan Honke at 517-353-3175, ext. 229, or e-mail honkemeg@msu.edu.

MICHIGAN SPRING PEACH UPDATE MEETING

Date: March 11, 2014
Time: 8 a.m.-4 p.m.
Location: 1791 Hillandale Road, Benton Harbor, MI 49022
Contact: Dr. Bill Shane, 269-944-1477 ext. 205; cell: 269-208-1652; shane@msu.edu

Peach growers are always looking for ways to improve their profitability. The Michigan Spring Peach Update is the best annual meeting in Michigan to learn about this crop.

The meeting will focus on fresh market peaches including new peach varieties, insect management strategies, disease control, marketing strategies, rootstocks, farm marketing, and mechanical peach thinning.

Attendees will be eligible for credits toward recertification of their Michigan pesticide applicators license.

Deadline for early registration is Monday, March 3, 2014. Registration is $30 per person or $25 for current Michigan Peach Sponsor members, with catered lunch included. Registrations mailed after March 3 or at the door are $5 more per person.

The meeting will take place at the Southwest Michigan Research and Extension Center, 1791 Hillandale Road, Benton Harbor, Mich, which is 2.5 miles east of I-94 exit 30 to Hillandale Road. Registration begins at 8 a.m. with programs starting at 9 a.m.

To pay in advance by check or money order, a registration form can be downloaded from the website Michiganpeach.org and mailed with payment by March 3. After this time, register at the door with check, money order, or cash. Credit cards will not be accepted. For additional meeting information, registration forms, or assistance, contact the conference coordinator Dr. Bill Shane at 269-944-1477 ext. 205, 269-208-1652 cell.

IRRIGATION WORKSHOP - Traverse City

Date: March 12, 2014
Time: 9 a.m. - 3:30 p.m.
Location: NW Michigan Horticulture Research Center, 6686 S. Center Hwy, Traverse City, MI
Contact: ANR Event Services, events@anr.msu.edu , 517-353-3175

Irrigation use has greatly increased in the past 10 years and growers have found it to be an important aspect in risk management. The ability to apply water during times of inadequate rainfall helps growers maintain quality and yields, keeping them economically viable in the current agricultural economy. To assist current and future irrigators, Michigan State University Extension is hosting several irrigation workshops across the state and Northern Indiana in 2014. To learn more about these workshops, including the dates and locations, please visit the 2014 Irrigation Workshops registration page.

Starts Wednesday morning with a general education session. On Wednesday afternoon there will be concurrent Vegetable, Grape and Tree Fruit sessions. Thursday's concurrent sessions will be Tree Fruit, Blueberry and Grape. Another part of this event is the Southwest Michigan Wine Educational Showcase on Wednesday afternoon after the educational sessions at the SW Michigan Research and Extension Center (SWMREC), about 3 miles from the conference site.

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INTEGRATED PEST MANAGEMENT CAN SAVE MONEY

Looking for ways to save money on pest management? Review the integrated pest management (IPM) program on your farm to see that it is being utilized to the fullest.

Posted on **January 22, 2014, MSUE News,** by **Marilyn Thelen**, Michigan State University Extension

Integrated pest management (IPM) involves more than just pesticides. When an IPM program is fully functional, farmers take a balanced approach to managing pests. This approach can save money, maintain a healthy agro-ecosystem and keep pests at bay.

There are just five basic steps recommended by Michigan State University Extension to implementing an IPM program:

1. Identify the pest and understand its biology.

2. Monitor the pest to be managed.
3. Develop the pest management goal.
4. Apply control measures at the appropriate time.
5. Record and evaluate the results.

While all of this seems easy enough, let's think about what an IPM program looks like on the farm.

Identify the pest

This is the all-important first step. To properly identify a pest you must be in the field and have access to identification resources. Not everyone is proficient at identifying all kinds of pests that may be present in their field. For that reason, professional pest identification is readily available through MSU Diagnostic Services. Pest samples can be submitted by completing a form available on their website or submitting digital pictures to pestid@msu.edu . Having an accurate identification and knowing that the organism you have found is indeed a pest is key to successful control.

Set up a monitoring program

As mentioned earlier, gathering information about a pest is necessary before considering control. Walking the fields yourself, hiring to have it done or sending the kids out can all be effective methods of monitoring. The important thing is to catch the problem early to increase your options for control.

Know the pest level that triggers control

Knowing a farm's history of weeds, insects and diseases will help managers develop plans to reduce the risk of pest populations causing economic damage. These may include growing varieties that are resistant to disease or insects, utilizing tools to gauge the risk of a disease developing or using thresholds to determine when it is economical to chemically control a pest.

Know what control methods are available

Although chemical sprays are often thought of as the first line of defense against pests, there are many tools in the IPM toolbox. Some examples that can be part of an IPM plan include crop rotation, seed selection, biological controls and more. While no one pest management tool will be the best solution for all cases, a combination of these tactics is often very effective in the long-run.

Evaluate the benefits and risks of each method

There are many IPM tactics that can be used to control pests. Pesticides are one method; non-chemical methods may also provide good control and should always be considered. Each case is different and each potential control should be considered for the associated costs, benefits

and potential liabilities. Once a control measure is selected and applied, the results should also be evaluated and recorded for future reference.

IPM Academy

To brush-up on pest management skills, improve IPM practices and learn about MSU's resources, consider attending the 2014 IPM Academy, Feb. 18-19, at the Okemos Conference Center in Okemos, Mich.

This two-day workshop includes presentations and sessions from a number of MSU's research and Extension faculty, offering a rare opportunity to hear from experts working in a variety of disciplines and cropping systems at a single event.

The academy costs $225 and offers Michigan pesticide recertification credits. For more information on the program, a full agenda or registration, visit http://bit.ly/ipm-academy14. To register by phone, contact Betsy Braid at braidbet@msu.edu or 517- 884-7081.

This article was published by **Michigan State University Extension**. For more information, visit http://www.msue.msu.edu. To contact an expert in your area, visit http://expert.msue.msu.edu, or call 888-MSUE4MI (888-678-3464).

WEBSITES OF INTEREST

Insect and disease predictive information is available at:

http://enviroweather.msu.edu/homeMap.php

This issue and past issues of the weekly FruitNet report are posted on our website

http://agbioresearch.msu.edu/nwmihort/faxnet.htm

60 Hour Forecast

http://www.agweather.geo.msu.edu/agwx/forecasts/fcst.asp?fileid=fous46ktvc

Information on cherries is available at the new cherry website:

http://www.cherries.msu.edu/

Fruit CAT Alert Reports has moved to MSU News

http://news.msue.msu.edu

MICHIGAN STATE UNIVERSITY | Extension

OIL & GAS NEWSLETTER

Issue Date: December, 2013
Editor: Curtis Talley Jr., MSU Extension Farm Management Educator, Hart, MI 231-873-2129; talleycu@anr.msu.edu.

This newsletter is intended for landowners and other members of the public with interest in the oil and gas industry. If you would like to be added to the e-mail list to receive this newsletter, please contact the editor. You can also contact your local county MSU Extension Office to obtain copies of the newsletter and other free oil and gas leasing information.

MSU Extension has a web page that contains information for mineral and landowners regarding oil and gas leasing and other related informational topics at http://msue.anr.msu.edu/program/info/oil_and_gas

Information in this Issue

NORTHERN MICHIGAN MINERAL OWNERS COALITION CONTACT INFORMATION

Curtis Talley Jr. Farm Management Educator Michigan State University

The September issue of this newsletter announced that a coalition of mineral rights owners have formed and adopted the name Northern Michigan Mineral Owners Coalition (NMMOC). That article incorrectly listed their contact information. The correct contact information is: Fred Miller at fwmiller46@charter.net or call him at 636-209-4404. In the three months since forming, NMMOC has added over 100 owner groups representing over 10,000 acres located in nine counties. At the current time, membership is open to any mineral owner with property located in the northern half of the Lower Peninsula.

Mineral Management Section of the Department of Natural Resources Answers Questions Regarding State of Michigan Mineral Rights Management

Curtis Talley Jr. Farm Management Educator Michigan State University

The Michigan Department of Oil, Gas and Minerals, a section of the Department of Environmental Quality is tasked with regulating the oil and gas industry in Michigan. They are not involved with managing and leasing state owned mineral rights. That task is handled by the Department of Natural Resources Lease Management Section.

The supervisor of the Lease Management Section, Julie Manson provided the author with answers to questions we frequently receive regarding State of Michigan minerals management. Below are a series of questions posed to Julie and her responses. CT is the author and JM is Julie Manson. Lessee refers to the oil and gas company and Lessor refers to the State of Michigan.

CT: What, if any rights does the surface owner have related to oil and gas production if the minerals are owned by the state? Does the State of Michigan oil and gas lease contain provisions that require the company to contact the surface owner to try and work out an agreement for the use of the surface? What happens if that agreement cannot be reached? How often is an agreement not reached?

JM: *The mineral estate is considered the "dominant estate". What that basically means is that a surface owner must allow the mineral owner "reasonable use" of the surface in order to pursue development of those rights.*

Our current oil and gas lease contains the following language:

1. *The Lessee shall pay or agree upon payment to the surface owner, or any person holding under the owner, for all damages or losses (including any loss of the use of all or part of the surface), caused directly or indirectly by operations hereunder, whether to growing crops or buildings, to any person or property, or to other operations.*
2. *Before a drilling permit application is submitted to the Supervisor of Wells relating to land in which the State of Michigan owns mineral rights only, and as described in this Lease, proof shall be submitted to the Lessor, in writing, that notification to enter the land has been provided to the surface owner and that either voluntary agreement or stipulated settlement relative to surface use and damages has been reached between the Lessee, or the Lessee's authorized agent, and the surface owner or G(3) is invoked.*
3. *When a mutually satisfactory agreement relative to surface use and damages cannot be reached, either party can inform the Lessor, in writing, that a dispute exists and the Lessor will grant a negotiation period of thirty (30) calendar days in which no drilling or development operations may be conducted by the Lessee. This time period is to allow for the resolution of the dispute.*

4. *If, at the end of this period, proof of the agreement is not submitted in writing to the Lessor, drilling and development operations will not be prohibited by the Lessor and resolution of the dispute rests solely with the Lessee and the surface owner independent of the Lessor. It is the sole responsibility of the Lessee to ensure that said thirty (30) day negotiation period is completed thirty (30) days prior to the expiration of the primary term or any extensions of this Lease.*

It is not common for us to receive a request for a "30-day cooling off" period from either the Lessee or the surface owner. Based on our records, we have received 5 such requests (all from the Lessee) in the last 5 years. The granting of the "30-day cooling off" period dictates that no drilling or development work can occur until after the time period has passed. This gives both the Lessee and the surface owner the incentive to get an agreement worked out. At the end of the 30 days, the surface owner cannot prevent the Lessee from pursuing development.

CT: Is there a law that dictates the mineral estate is dominant? If not, how did the mineral estate become dominant?

JM: *I am not an attorney, and cannot give legal advice. However, my understanding is that it is generally considered common law that the mineral estate is the dominant estate. Here are a couple of links to some very good information on the subject:*

http://www.topplaw.com/pdf/SeveredMinerals.pdf

http://www.nedstratton.com/media/Surface%20Owner%20v%20Mineral%20Owner.pdf

CT: Does a split estate surface owner (one owner of the surface and another owner of the minerals) have the potential to lease the state owned mineral rights under their property? If so, how does that person become qualified to bid at a DNR auction?

JM: *In order to bid at a State of Michigan oil and gas lease auction, the bidder must be on our authorized bidder list, or must provide a $5,000 security deposit. Please see the details regarding registering to bid at:*

http://www.michigan.gov/documents/dnr/ProposedPubNotice_429506_7.pdf

If the bidder is successful, they must pay the full amount of the bonus bid the day of the auction, as well as at least the first year's rental. In addition, the successful bidder must provide an oil and gas lease bond. The amount of the bond depends upon the total acreage under lease, but the minimum bond amount is $10,000.

The primary term of the oil and gas lease is 5 years, and the auction leases contain two one-year extension options (Lessor's option to extend upon request). At the end of five years the lease will expire if it is not included in a producing unit, or if an extension of the primary term has not been granted.

Once the lease expires, the oil and gas rights can be nominated for auction again. Unless the surface owner plans to pursue development of the oil and gas rights, it can be a rather costly endeavor.

Additionally, we do have a program in which the surface owner can pursue purchasing the severed mineral rights from the State of Michigan. However, the ability to sell those rights is impacted by the estimated value. Any nomination or leasing of the mineral rights will increase the estimated value of those rights.

CT: If the State of Michigan does not record their leases at a county recorder of deeds office, how can a person determine if the state owned minerals under their property are leased?

JM: *Our leasing information is available on-line at the following link:*

http://www.michigan.gov/dnr/1,1607,7-153-10371_14793-30992--,00.html

Our mapping software depicts ownership/leasing on a 40-acre or larger basis, so a property owner may wish to call our office to confirm the information displayed on the maps. The general number for our section is 517-373-7663 and any of our staff would be happy to answer questions. We ask that the caller have the legal description of their property (found on their tax bill or deed) available when they call.

CT: If the state owned minerals are leased, can the surface owner obtain and copy of the lease? If so, how do they do this?

Sure! Simply call our office at 517-373-7663 or e-mail me (mansonj@michigan.gov) and include their legal description (found on their tax bill or deed) and we would be happy to send or e-mail them a copy of the lease.

CT: How can a person determine if the state owns the minerals under their surface? Is there a map or registry available?

JM: *Our ownership information is available on-line at the following link:*

http://www.michigan.gov/dnr/1,1607,7-153-10371_14793-30698--,00.html

Our mapping software depicts ownership/leasing on a 40-acre or larger basis, so a property owner may wish to call our office to confirm the information displayed on the maps. The general number for our section is 517-373-7663 and any of our staff would be happy to answer questions. We ask that the caller have the legal description of their property (found on their tax bill or deed) available when they call.

Julie Manson
Property Manager
Oil and Gas Lease Management Unit Supervisor
Minerals Management Section
Department of Natural Resources
mansonj@michigan.gov (e-mail)

Survey of Oil and Gas Attorneys Indicates Significant Positive Financial Results from Lease Bonus and Royalty Negotiations

Curtis Talley Jr. Farm Management Educator Michigan State University

For the past three years, property owners in many areas of the state have been approached by oil and gas company land men with an offer to lease their oil and gas mineral rights. For many mineral owners, this may be their first exposure to an oil and gas lease contract. Landowners who have never dealt with leasing their mineral rights for oil and gas production, upon reading a lease, may have found that they had difficulty understanding the lease language.

In areas of potential mineral extraction activity, a group of Michigan State University Extension educators, led by Curtis Talley Jr., Michigan State University Extension farm business management educator initiated an educational program that provided public educational meetings, fact sheets, webinars, news articles and a quarterly landowner newsletter. A special web page http://msue.anr.msu.edu/program/info/oil_and_gas was created to display those resource materials. These resources provided information that would assist mineral owners in learning how the terms of the standard lease affect their businesses and their options in negotiating changes to the lease that put the agreement in line with their financial and environmental goals.

Because of the complexities of the oil and gas lease contract and its potential long-term life, MSU Extension recommended that a knowledgeable oil and gas attorney with experience working for private landowners be consulted to assist in negotiation of the oil and gas lease. "Oil and Gas Expert Resources for Private Landowners", which included a list of oil and gas attorneys was available on the web page.

To begin the process of evaluating the financial impacts of this education, during the summer of 2013 a survey was mailed to oil and gas attorneys. The survey measured oil and gas lease terms "before negotiations" and "after negotiations" to determine what, if any financial or environmentally related lease terms were negotiated to benefit their clients.

Oil and Gas Lease Bonus Payment: The survey results indicated that each attorney represented an average of 8,018 acres of cropland each year. The first survey question dealt with the lease bonus. The bonus is a cash payment, usually in dollars per acre that is paid to the mineral owner after the lease is signed. The survey compared "the average initial bonus payment per acre offered" to the "bonus paid due to lease negotiations." The average initial bonus offer was $42 per acre. Lease negotiations increased the average bonus paid to $124 per acre, an increase of $82 per acre, or 195%. These nine attorneys, representing 8,018 acres each per year represented a total of 72,166 acres per year. At an increase of $82/acre, they earned $5,917,612 per year in additional gross income for their combined landowner clients. Determining fees charged to the

client were not within the scope of this study. Kevin McDugle indicates that the average lease should cost no more than $1,000 in attorney fees.[1]

Oil and gas lease royalty

Each oil and gas lease contains a royalty clause that allocates to the landowner a portion of the income produced as a result of the extraction of hydrocarbons. Economically, it is the most important term of the lease. Royalties can vary greatly from lease to lease, so it should receive close attention by landowners.

100% of the attorneys reported the initial royalty offer was 1/8 (.125). The survey found that in addition to the average bonus increase, as a result of negotiations, the average royalty increased to 1/6 (.167), an increase of 33.6%. All attorneys, except one, reported that on some leases, the royalty was increased to 3/16 (.188), an increase of 50% depending on the location of the land and the demand in the lease market for the mineral rights in that area.

To demonstrate the financial impact of the royalty, we can use an example oil well. For this example, we will assume the landowner is the sole owner of 40 acres and a successful well is drilled that produces 25 barrels/day. It operates for 200 days during the year and the oil sells for $90/barrel. This well will produce $450,000 in gross income (25 barrels/day x 200 days x $90/barrel = $450,000) in the first year.

Alt 1: .125 (1/8) royalty produces $56,250 ($450,000 x .125 = $56,250) for the landowner.
Alt 2: .167 (1/6) royalty produces $75,150/yr. ($450,000 x .167 = $75,150) for the landowner.
By negotiating a royalty increase to .167, in this example, the income is increased $18,800 in the first year, or 33.4%. It is important to note that this increase lasts the entire term of the lease, so there is a compounding effect.

This article is one of a series to discuss the results of this survey.
Future articles will include:

1. Post Production Costs Negotiation Results
2. When Negotiations Were Not Successful, What did the Landowner do?
3. Environmental and Land Use Negotiation Results.

[1] Kevin McDugle, *How Much Will it cost to Hire an Attorney to Negotiate an Oil and Gas Lease*?
http://www.youtube.com/watch?v=f0VISrrFkUI
(March 2, 2012)

Landowner Informational Meetings

MSU Extension personnel, private attorneys specializing in assisting landowners with oil and gas leasing, personnel from the Department of Environmental Quality and representatives of the Michigan oil and gas industry offer public meetings to educate landowners about the oil and gas industry in Michigan, which includes understanding and negotiating oil and gas leases. If you would like a meeting in your area, please contact Curtis Talley.

Please Share Your Oil and Gas Experiences

The editor is very interested in hearing both your positive and negative experiences dealing with oil and gas leasing or production. All information is kept confidential and is combined with data from other landowners to analyze the effectiveness of the educational effort. Report your experiences to the editor by phone at 231-873-2129 or talleycu@anr.msu.edu e-mail.

Project ICP News

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Main Articles

Project ICP is a Coordinated Agricultural Project, funded by the Specialty Crops Research Initiative of the USDA.

United States Department of Agriculture
National Institute of Food and Agriculture

Project ICP is a collaboration between:
AgPollen LLC
Franklin & Marshall College
Loyola University
Michigan State University
Oregon State University
Pennsylvania State University
Rutgers University
St. Mary-of-the-Woods Coll.
Simon Fraser University
The Xerces Society
UC Davis
UC Berkeley
University of Florida
University of Vermont
USDA Pollinating Insects Lab
Wenatchee Valley College

Project ICP Update

Funded by the USDA's Specialty Crops Research Initiative in 2012, the Integrated Crop Pollination project (www.projecticp.org) is a coordinated effort of fifteen organizations. Working in almond, apple, blueberry, cherry, raspberry, pumpkin, and watermelon farms, this team of almost 50 scientists and extension-outreach specialists are comparing different approaches to crop pollination.

The 2013 field season was the first year for this effort, and the teams have gathered data on bees and other insects visiting flowers at over 100 farms across the nation. At each farm the bee collections were combined with sampling for the level of pollination and the crop yield at increasing distances into the crop plantings. This information will be used to assess the relative importance of honey bees and wild bees for production of these crops.

The team is also interested in examining how the addition of wildflower plantings to attract and support pollinators may influence pollination. It can take several growing seasons for habitat plantings to be prepared, planted, and established. Sites were prepared for planting during the summer of 2013 and were seeded in the fall in many regions. The plantings will start to bloom in the next few years. "This highlights why long-term funding programs such as the SCRI program are so important", said Dr. Rufus Isaacs, director for the project.

Another objective of the project focuses on the role of alternative pollinators. In 2013, blue orchard bees were evaluated in almonds. Currently, the project team is preparing for bumble bee and *Osmia* bee evaluations in tree fruit and berries starting in 2014. The team is also coordinating information on how to best manage these alternative bees for crop pollination, and will be able to build on their own experiences in this project to develop useful guides to aid growers considering these approaches to pollination.

This project has been affected by the budget uncertainty in Washington DC, because our Year 2 plans require a new Farm Bill to be passed before they will receive any funding. The team remains hopeful that these budget issues can be resolved to allow this project to build on the momentum created during 2013.

Despite the impasse, the team has been adapting and will be conducting grower surveys online this winter to gather the information that was planned to be done through USDA-NASS. Look for a future announcement of the pollination survey, coming up later this winter.

Outreach events highlighting the work of the ICP team are also planned for 2014 across the country.

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Year 1 Progress at a glance

- In almond, the extremely early bloom time resulted in only honey bees and Blue Orchard Bees being observed visiting blossoms at the twenty commercial sites in California.
- In apple, thirteen orchards in Michigan and Pennsylvania were sampled for pollinators and yield across a range of landscape types.
- In cherry (sweet and tart), over 2,500 bee visitations were recorded during sampling in the thirteen orchards in this study.
- In blueberry, over 8,800 bee visits were recorded from blossoms across 58 fields sampled in Florida, Michigan, Oregon and British Columbia. Approximately 4,000 flower clusters were included in the pollinator exclusion experiments to measure the effect of pollination on yield.
- In raspberries, ten raspberry fields in Oregon were sampled and over 850 bee visitations were recorded.
- In pumpkin and watermelon, thirty-five sites have been sampled in measure pollination effects on yield California, Florida, and Pennsylvania.
- Wildflower enhancements have been planted in Pennsylvania apple, Michigan blueberry and cherry and in California almond and watermelon. Sites for additional plantings are being prepared in the other regions and crops.

A bumble bee visits blueberry blossoms in Michigan. Photo by Dr. Rufus Isaacs.

Project ICP Objectives

1. Identify economically-valuable pollinators and the factors affecting their abundance.

2. Develop habitat management practices to improve crop pollination.

3. Determine performance of alternative managed bees as specialty crop pollinators.

4. Demonstrate and deliver ICP practices for specialty crops.

5. Determine optimal methods for ICP information delivery and measure ICP adoption.

6. Economics and modeling of pollination ecosystem services.

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Advisory Committee Partner Spotlight

A wetland restoration (above) at the Cardno JF New Nursery and rain garden (below) highlight the value of native plants to visitors. Photos by Jennifer Hopwood.

Cardno JFNew is an experienced ecological services firm that has been providing innovative and sustainable solutions to challenging environmental issues since 1989. Our multidisciplinary teams of professionals provide a full range of ecological consulting and restoration services, with expertise in the management of natural resources, water resources, and cultural resources, as well as streamlined regulatory permitting and compliance. The Cardno JFNew Native Plant Nursery provides more than 350 species of native plants and seed as well as bioengineering materials and the staff expertise to create customized restoration, mitigation, and native landscape projects.

Cardno JFNew has offices in Illinois, Wisconsin, Michigan, Ohio, Indiana and Kentucky. Among our key service areas are watershed planning, stream and ecosystem restoration, mitigation design, full wetland services, endangered species consulting, natural systems for stormwater/wastewater, archaeology, and green infrastructure. As part of the Cardno family, we also provide clients with access to the full resources of Cardno's extensive US and global service capabilities with professional staff and offices in more than 290 US locations.

www.cardnojfnew.com
cardnojfnew.info@cardno.com

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Visit our project website: www.projecticp.org

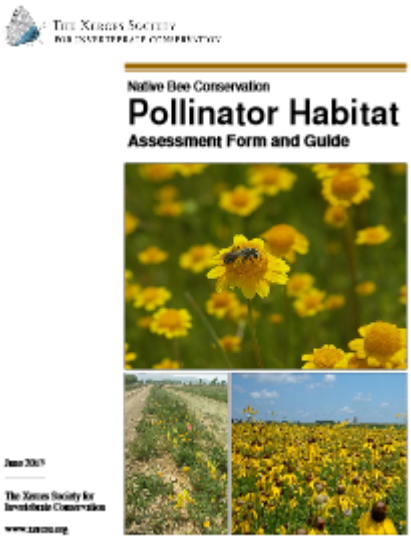
Through our website, you'll find detailed information about the project, as well as links to project partners, updates on project outcomes, and resources on pollination, pollinator management, and habitat for pollinators.

You can also learn more about our project on Facebook: www.facebook.com/IntegratedCropPollinationProject

You'll find photos, videos, links to news articles, and more!

New Resources from the Xerces Society: Pollinator Habitat Assessment Form and Guide

This assessment form and guide can be used to help farmers to assess specific pollinator habitat features before and after undertaking habitat enhancement projects in orchards or field crop settings. The Pollinator Habitat Guide can be found at: http://www.xerces.org/wp-content/uploads/2009/11/PollinatorHabitatAssessment.pdf



Pollinator habitat enhancement on a MI blueberry farm. Photo by Dr. Brett Blaauw.

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Meet the Project ICP Post Doctoral Researchers....

Project ICP relies on the hard work and dedication of some excellent young scientists who are leading the project's research in California, Utah, Michigan, Vermont, Florida, Pennsylvania, and Oregon. We thought this newsletter would be a good way to introduce them and show how they each fit into the team.

Derek Artz

USDA-ARS Pollinating Insect Unit

I have been a Postdoctoral Associate with the USDA-ARS Pollinating Insect Research Unit in Logan, Utah since November 2010 working mainly on the development of the blue orchard bee, *Osmia lignaria*, for commercial use, particularly as almond pollinators. My field and lab studies are directed at enhancing the efficacy of blue orchard bees by varying the stocking density of bees as well as the density and distribution of nesting boxes within commercial orchards. My research also involves conducting field trials to evaluate fungicides and surfactants for lethal and sublethal effects on blue orchard bees and alfalfa leafcutter bees, *Megachile rotundata*. My role in Project Integrated Crop Pollination (ICP) is to determine the abundance and visitation rates of blue orchard bees, honey bees, and other pollinators to almond flowers in large commercial orchards in California. Prior to joining USDA-ARS, I worked as a Postdoctoral Associate at Cornell University studying native bee pollinators of pumpkin in New York and hawkmoth pollination of evening primrose in western North America.

Claire Brittain

University of California - Davis

In the ICP project, I am compiling spatial data for all sampling sites to analyze the landscape composition at different scales. In addition, I am helping to monitor wildflower plots adjacent to almond orchards, looking at flower phenology and their use by bees. One of the aspects of the ICP project that most appeals to me is its ability to test the effectiveness of habitat enhancements at supporting pollinators and crop pollination across multiple systems in different regions of the US.
I received my PhD from the University of Reading, U.K. where I worked with Simon Potts on the impact of insecticides on pollinating insects at multiple spatial scales. Afterwards, I joined Alexandra-Maria Klein's Ecosystem Functions group at Leuphana University, Germany as a postdoc. Whilst there I worked on local and landscape drivers of pollinator diversity in California almond orchards and the benefits of diversity for almond pollination.

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....Meet the Project ICP Post Doctoral Researchers....

Jason Gibbs

Michigan State University

I am very keen on bees. My father is a commercial beekeeper in Canada so I have been around bees my entire life. I am fascinated by the biological diversity of bees and its evolutionary origins. As a PhD student in Toronto and then a post-doctoral researcher at Cornell, I focused my attention on understanding the taxonomic diversity and evolutionary history of sweat bees. I became involved in Project ICP to learn more about the role bees play in agricultural systems. My position in the project is to lead the Objective 1 team in learning about economically important pollinator species of specialty crops. I am also the lead for the blueberry team and run the Michigan portion of the blueberry studies. I've enjoyed collecting bees in Michigan, particularly the two blueberry specialist bees *Andrena bradleyi* and *Andrena carolina*, which have evolved unusually long heads for reaching the nectaries of blueberry flowers. I look forward to learning more about the wild bee fauna of Michigan and how landscape and management factors affect their diversity in farms.

Insu Koh

University of Vermont

I am currently a postdoctoral associate advised by Dr. Taylor Ricketts at the Gund Institute for Ecological Economics and co-advised by Dr. Eric Lonsdorf, Research Scientist at the Chicago Botanic Garden. My research goal in the ICP project is to develop a spatially-explicit statistical model of pollination services and apply this model to several agricultural landscapes and crops within the US. I am particularly interested in: (1) understanding how habitat management and surrounding landscape influence the abundance and diversity of bees in crops, (2) developing a spatially-explicit statistical model of pollination service prediction in different crops, and (3) predicting impacts of habitat enhancements on pollinator communities and crop productivity.

To address these issues, my current research uses ArcGIS and R to conduct spatial and statistical analyses that will be used to develop a pollination model. I'm broadly interested in how landscape structure and composition influence biodiversity, organism dispersal and ecosystem services. This interest began when I considered the role of traditional Korean landscape configuration in mitigating environmental conditions. After that, my interests moved towards how landscape connectivity influences organism dispersal as related to ecosystem services such as seed dispersal, biological pest control, and pollination. Currently, I'm focusing on modeling crop pollination services provided by bees across agricultural landscapes within the

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Mark Otieno

Pennsylvania State University

I am involved with implementing ICP project objectives in Pennsylvania by conducting studies that define the community composition and abundance of bees in pumpkin and apple crops. My overall role is to determine the value of wild bees for providing pollination service to these crops. I am also involved with activities aimed at evaluating the effects of landscape, habitat manipulation and supplementation with managed bees on bee abundance and pollination services.

ICP has a great potential for supporting long-term sustainability of specialty crop production in the U.S. Using multidisciplinary approaches to determine and quantify various farm and landscape contexts in which managed bees and wild bees can be utilized, it will help growers achieve efficient and economic crop pollination service. It is also important in increasing the ability of growers to better manage pollinators to improve their crop yield and in increasing awareness of the importance of native bees among the public.

Cory Stanley

University of Florida

As a postdoctoral researcher in UF's Honey Bee Research and Extension Laboratory, I am overseeing all aspects of UF's contribution to Project ICP's efforts to incorporate habitat enhancement for wild bees, farm management practices to support bees, and the use of diverse managed bee species for pollination in blueberries and watermelons, I recently came to UF from Utah State University Extension, where I worked for 3 years in a dual role as coordinator of the Cooperative Agricultural Pests Survey and as the Extension Bee Specialist. Prior to that, I received my PhD from Utah State University in 2010 as a result of research conducted at the USDA ARS Pollinating Insect Research Unit. That research focused on learning abilities of solitary bees and factors influencing nest establishment in commercial populations of managed solitary bees. Additionally, I collaborated with a national research team working to determine effective trapping methods for spotted wing drosophila.

I love working with growers, learning about what is important to them, and working together with them to help them be more successful. I love the positive impact that I can have on our environment and our food supply by working with bees and working on this project. I also love the opportunity to live in Florida. This is a wonderful new adventure for my family, and I get so excited every time I encounter a new plant or animal while I'm out in the field!

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Questions or comments on the newsletter?

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To get on our **mailing list** for this newsletter, just email a request to Jennifer Verba at **verbajen@cns.msu.edu**

United States Department of Agriculture
National Institute of Food and Agriculture

Recent Project ICP Presentations

Team members gave over 45 presentations involving aspects of Project ICP in 2013. If you weren't able to attend, keep an eye on our project website (www.projecticp.org) or on Project ICP's Facebook page: there are plenty of events planned for 2014! Some slideshows from the recent Great Lakes Fruit, Vegetable, and Farm Market Expo in Grand Rapids, MI in December of 2013 are also available on our Facebook page.

Participating Institutions and Organizations

Michigan State University (Lead Institution)
- Rufus Isaacs, Jason Gibbs, Larry Gut, Nikki Rothwell, and Julianna Wilson

AgPollen, LLC
- Steve Peterson

Franklin and Marshall College
- Eric Lonsdorf

Loyola University, Chicago
- Kelly Garbach

Oregon State University
- Sujaya Rao

Pennsylvania State University
- Shelby Fleischer and David Biddinger

Rutgers University
- Rachael Winfree

Simon Fraser University
- Elizabeth Elle

University of California, Berkeley
- Claire Kremen

University of California, Davis
- Neal Williams, Karen Klonsky, and Mark Lubell

University of Florida
- Jamie Ellis and Jaret Daniels

University of Vermont
- Taylor Ricketts

USDA-ARS Pollinating Insects Lab
-Theresa Pitts-Singer, Jim Cane, and Jamie Strange

Wenatchee Valley College
- Bob Gillespie

The Xerces Society
- Mace Vaughn and Jennifer Hopwood

In the Next Issue...

Depending on the progress with the Farm Bill, our next issue of Project ICP News is scheduled for January 2015. Look for research updates, and links to new extension products from the team. Project ICP summer extension meetings and pollinator workshops will be moving forward in 2014 and we will feature these in the next newsletter.