



# Wagner Natural Area Newsletter

## Acheson Plan fails: Capital Region Board does not approve plan for further development in Acheson industrial area

Parkland County's new Acheson Area Structure Plan has failed to gain the necessary planning approval to go ahead. On February 14, 2013 the County was officially informed that it had been voted down by the Capital Region Board, following vetoes by Edmonton and some smaller municipalities in the Region.

At a public hearing on November 6th, 2012 Pat Clayton and Irl Miller of the Wagner Society made submissions to Parkland County Council regarding the need for protecting Wagner Natural Area in the event of further development in the area. Carl Mendoza, a professor of hydrogeology at the University of Alberta, stated that, despite several years of hydrogeological research by the University, the location and extent of the Natural Area's groundwater recharge

remains uncertain.

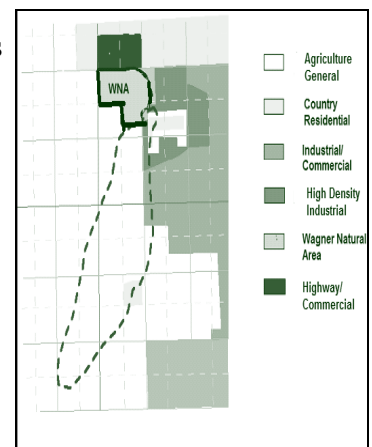
Catherine Mowat, an ecological planner affiliated with the Wagner Society, informed Council that loss of agricultural land use could cut off wildlife corridors that extend as far southeast as the North Saskatchewan River Valley. Pat Collins of the Big Lake Environmental Support Society in St. Albert spoke in support of Wagner's ecological values.

Parkland County proposes to resort to arbitration if necessary. However, given the complex problems with planning in the Capital Region, detailed in the mainstream media, it is unlikely there will be any resolution soon.

Parkland County is proceeding with the special studies according to the Plan. (See story below.)

**“Despite several years of hydrogeological research by the University of Alberta the location and extent of Wagner’s groundwater recharge remains uncertain.”**

Putative location and extent of Wagner's recharge area.



### Inside this issue:

Another Busy Year ...	2
Wagner Society Board	2
My Summer in Wagner Natural Area	3
Errata!	3
Breeding Birds in Wagner	4
New Lichen Species for Wagner	4
Tragedy of the Commons, Part 2	5-6
Upcoming Events	7
Wildflower No. 38	8

### Changes to Access to Wagner Natural Area

Alberta Transportation is proceeding with road construction to close off the junction of Atim Road with Highway 16. In the future the service road to Wagner's parking lot will only be accessible from Atim Road approached from Highway 16A in the south. Watch our website for an announcement of the date of closure.

## Special studies proposed for area south of Wagner

Parkland County has prepared a request for proposal for the special studies required for land south of Wagner Natural Area (WNA) as designated in the Acheson Area Structure Plan (Special Study Area A). The project involves an ecological and hydrogeological assessment of

the area

- to determine an adequate buffer from WNA
- to identify an appropriate transition of land uses away from WNA
- to compile information on the groundwater recharge zone and recommend appropriate land uses and or

types of development (if any) for the recharge zone. The project would use existing data and generate further information with respect to ecological features. Parkland County is seeking to achieve a "scientifically defensible and 'independent' study" which it can defend to local landowners and developers.

## Another Busy Year for Wagner Society and Friends!

(based on the report of the Acting President Pat Clayton presented at Wagner Open House on November 24<sup>th</sup>, 2012)

The Wagner Society management committee members racked up approximately 1,172 volunteer hours in the 12 months up to late November, bringing the running total of volunteer time spent since we first began keeping records to almost 30,000 hours.

### Meetings and Issues

We held eight board meetings in the period November 2011 to November 2012, one Open House and three committee-as-a-whole special meetings as well as several meetings to liaise and negotiate with outside agencies. These latter meetings were in connection with two major issues that occupied our attention. One was the Acheson Area Structure Plan (see the first page of this newsletter). We learned early this year that the Acheson plan did not receive the necessary approval from the Capital Region Board, and so the status quo prevails, with land south of Wagner still zoned for agricultural uses.

The other issue was soil stripping on agricultural land south of Wagner Natural Area. As a board we regretted the soil stripping but were able to intervene in the application and insist that conditions governing such operations should apply. Unfortunately, heavy rains during the summer caused soil erosion in the unplanted fields and some deposition across our boundary.

### Land Management

This year we made some progress towards weed control, with hand pulling and herbiciding of weeds in non-sensitive areas. We recorded the worst infestations in the fields with a GPS preparatory to a more extensive effort at control in 2013. An infestation of pale yellow iris on Morgan Creek was removed.

Dr. Anne Naeth's fourth-year Land Restoration and Revegetation, Renewable Resources 401 class at the Uni-

versity of Alberta presented us with a restoration plan that they had worked on the previous fall and winter, which we have used as the basis for grant applications for restoration. We employed Rangeland Conservation Service Ltd to complete a five-year monitoring of permanent sample plots in Wagner, assisted by Derek Johnson and Ashley Thorsen. Routine monitoring of the site was continued, both by Society members and by Ashley Thorsen.

### Summer Student

We applied for and received a federal Canada Summer Jobs Program grant and were able to employ a summer student for the first time in several years: University of Alberta environmental studies student Ashley Thorsen. Ashley liaised with visitors and guided groups around the Marl Pond Trail, maintained facilities, continued our annual breeding bird survey and assessed tree swallow breeding in the bird boxes set up in Atim and Villeneuve Fields. She also assisted with Rangeland's monitoring of our permanent sample plots, and surveyed weed infestations and researched weed control.

### Outreach and Volunteer Activities

We carried out our annual May Count of Plant Species in Flower at the end of May and our Orchid Walk in mid-June. We were assisted at the fall clean-up event in September once again by the Knights of Columbus, whose barbecuing skills are appreciated almost as much as their ability to marshal volunteers for litter pick-up!

Considerable work was done on renewal of the Marl Pond Trail guide, complete with relocation of posts where necessary. This is expected to be completed by June of 2013, with permanent posts in place and a new guide available in the guide boxes and online.

We took our table-top display to at least three venues and we continued to maintain and upgrade the website.

## Wagner Society Board of Directors, 2013-2014

**President: Irl Miller**    **Vice-President: David Fielder**    **Past President: Pat Clayton**

**Treasurer: Beth Jenkins**    **Secretary: Vacant**

Directors:        Patsy Cotterill (Newsletter Editor)    Alice Hendry    Ben Rostron

Other responsibilities: Carole Dodd (Webmaster)    Jasper Keizer (Fire Marshall)

Wagner Natural Area Society, 26519 Highway 16, Spruce Grove, Alberta T7X 3L4

**Check us out at our  
website:  
[www.wagnerfen.ca](http://www.wagnerfen.ca)**

**or contact us at:  
[info@wagnerfen.ca](mailto:info@wagnerfen.ca)**



## My Summer in Wagner Natural Area

By Ashley Thorsen

Hi! My name is Ashley Thorsen. I'm a 4<sup>th</sup> Year Environmental and Conservation Sciences student at the University of Alberta. I spent the summer of 2012 working with the Wagner Natural Area Society (WNAS) as part of the Canada Summer Jobs program. As a longtime Edmontonian, I was familiar with Wagner Fen, but I didn't know very much about it when I began my summer. Most of my previous field experience had been in the Aspen Parkland, so I knew I had a lot to learn from the boreal landscape of Wagner Natural Area.



Western or Boreal Toad

moths to distract me from the buzzing in my ears. And the "flocks" of dragonflies that glide over Wagner's fields in the evenings were definitely a sight to see.

My favourite sighting in Wagner Natural Area was the Boreal (or Western) Toad. From the wriggly tadpoles in the fens to the shy adults along the Marl Pond Trail, I saw toads on an almost daily basis. Some, like the individual above, were quite large. Amphibians are a good indicator of ecosystem health, so it was great to see big, healthy adult toads in Wagner.

I learned a lot from the collective expertise of the WNAS members. I accompanied them on many activities; these ranged from science-based outings, such as vegetation surveys, to outreach activities like guided group tours and development of a new trail guide. My summer experience with the Wagner Natural Area Society gave me insight into the trials and triumphs of conservation stewardship, and this will surely help me in future conservation endeavours.



Fringed Gentian in bloom

I saw many interesting plant species that I'd never seen before. There were lots of orchids, sedges, rushes, and mosses to learn! My wildflower favourite from the summer was the slender, delicate Fringed Gentian that grows along the fen edges. I also really enjoyed seeing all the carnivorous plants in Wagner. Common Butterwort, and the sundews and bladderworts of Wagner are deceptively pretty.

I understand how insects could be

tempted into their traps!

Insects were another highlight of my summer. Yes, there was the occasional (ha!) pesky mosquito. But there were always new butterflies, caterpillars, beetles and



White Admiral

### Errata!

The following are corrections to errors made in the November 2012 newsletter:

Page 5. Permanent Sample Plots. The reference to entering digital data from the Geowest 1999 survey should have read "Rangeland biophysical survey of 2006."

Page 6. The map with the legend "Rangeland's 18 permanent sample plots..." was too small to

read (unless you had a digital version and could expand it!). Worse than that, it showed vegetation communities rather than permanent sample plots stated!

Page 7. Derek Johnson wishes to give credit to Dorothy Fabijan, assistant curator of the vascular plant herbarium at the University of Alberta, for her role in the identification of creeping meadow foxtail, *Alopecurus arundinaceus*.

**"Most of my previous field experience had been in the Aspen Parkland, so I knew I had a lot to learn from the boreal landscape of Wagner Natural Area."**  
**Ashley Thorsen**

All photos: Ashley Thorsen



## Breeding birds in Wagner... (based on Ashley Thorsen's summer report)

Summer student Ashley Thorsen reports that she kept records of the birds she observed in Wagner Natural Area (WNA) during the summer. This is a considerable challenge since many of the boreal warbler species forage high up in the forest canopy and are not visible; it takes an expert to identify them by their faint, high-pitched calls and songs. As well, the constant traffic noise from Highway 16 tends to drown out bird calls, at least in the northern half of the Natural Area. *(This, by the way, is an extension of the "tragedy of the commons" theme expounded on elsewhere in this newsletter. The use of Highway 16 definitely detracts from the ecological integrity and human enjoyment of WNA; of course, as visitors to WNA we need to use the highway, too! This loss of amenity from the north may provide an argument for land uses south of Wagner that do not involve highways, traffic, and other noise pollution. – Ed.)*

During July Ashley also visited 28 of the Breeding Bird Survey (BBS) sites established and/or revisited by Loney Dickson in his survey of 2011, including 15 of the original sites. She noted the following breeding at the survey points: American Robin, Black-capped Chickadee, Clay-colored Sparrow, Chipping Sparrow, Solitary Sandpiper and Song Sparrow. Eight Blue-winged Teal ducklings, almost full grown by 22 July, along with their parents were observed by Ashley on "Jackfish Lake" in the centre of the Natural Area. Evidence of breeding includes adults showing territorial behavior and carrying food, and young.

Habitual breeders in WNA are of course the Tree Swallows, which make use of the nest boxes located along the fences of Villeneuve and Atim Fields, and whose productivity is monitored annually. Ashley reported that Geoff Holroyd banded some young swallows in the nest boxes at the end of June, but did not disturb some that were close to fledging in case this caused them to leave the nest prematurely. Ashley was not able

to look inside the five high boxes on the west side of Atim Field but believes that at least three had Tree Swallows nesting in them. Of Tree Swallows in the remaining boxes she reports:

83 fledged from nest boxes in Atim Field (an average 6.38 fledged per nest), and

68 from nests in Villeneuve Field (5.23 fledged per nest).

This is probably a conservative estimate, as it is difficult to get an exact count just by looking inside the box; sometimes parents stay in the nest to protect the young, and often the nestlings huddle together.

Ashley found an intriguing situation with respect to one particular nest box (11A) which appeared to be home, sequentially, to two Tree Swallow families during the season. She writes: "After (I assume) the first set of nestlings fledged, a pair of swallows began another nest in that box. I do not know if this was the same pair that parented the first nest in 11A but, in general, Tree Swallows only raise one nest per year, so it is unlikely that it was the same pair. Regardless, to start a nest around the beginning of July, when all of the other swallows had finished nesting and left the area, is quite unusual, especially since Tree Swallows tend to nest communally. But at least half of the eggs in this late nest did hatch, and I saw the adults dutifully feeding their chicks weeks later. These chicks were almost fully grown as they leaned out of the nest box hole to take food from their parents on July 27. I did not go back to check the box to see how many eggs hatched in total, or how many chicks fledged successfully, but it is likely that at least the four hatchlings that I saw on July 12 fledged. I am assuming that they fledged by the end of July – a full month behind the rest of the nests!"

### New Lichen Record for Wagner, Ragbag!

From a collection made by Rangeland Conservation Service Ltd in Plot 8 this past summer, Derek Johnson has identified a new lichen for Wagner Natural Area, Ragbag or *Platismatia glauca* (L.) Culb. & C. Culb. This species is a greenish-grey or blue-greenish-grey, papery, foliose lichen found loosely attached to its substrate which can be coniferous trees, shrubs or rocks. It has upturned lobes with characteristic "ragged" margins. White to brown soredia dot the upper surface. The lower surface is black in the centre and mottled or spotted brown towards the margins, with few rhizines. Ragbag has a circumpolar and circumboreal distribution in the Northern

Hemisphere. Derek noted that our specimen is "blue-grey in colour rather than the usual ash-grey." He has searched branches of conifers in Plot 8 for further specimens but to no avail. The species is ranked S4 on the provincial ACIMS tracking list, which means that it is not rare enough to be tracked. Derek notes that it is quite common on the branches of conifers in the mountains and on rocks in the Canadian Shield. He is surprised to find it this far east in Alberta.

*See picture on page 7.*



## Tragedy of the Commons (Part 2)

### By W.A. (Bill) Fuller

*This is a continuation of a reprint begun in the June 2012, Volume 26, (1) issue of the Wagner newsletter of Dr. Bill Fuller's presentation in 1977 to the National and Provincial Parks Association of Canada (now CPAWS). The late Dr. Fuller was a well-known biologist and long-time supporter of Wagner Society.*

As the starting point for this analysis I take Hardin's model of an Old English Commons with ten herdsmen and 100 cows. This provides four systems of management according to whether the resource is utilized by the individual as an individual, or by the group as a whole, and whether the proceeds go to the group (Figure 1, page 6).

The importance of this first, simple analysis is to reveal the existence of two economic systems in addition to the two that we generally recognize. Of the two usually overlooked systems, one (Case IV) is unimportant, but the other (Case III) goes to the heart of most major environmental problems. A National Park is a resource used by all, but the proceeds, in the form of enjoyment, accrue to the individual. Thus, National Parks area examples of the System of the Commons, and we are justified in looking more closely at the properties of this system vis à vis Private Enterprise and Socialism.

Returning to our model, let us see what happens when the system is stressed by adding more cows than the land can support in perpetuity – in other words by exceeding its carrying capacity. In the Private Enterprise case, the land must first be fenced so that each owner can control his own affairs, whereas in Case III each herdsman identifies his own cows, but all are allowed to run in the common pasture. Under Socialism, both cows and pasture are in common ownership. Whenever the carrying ca-

capacity is exceeded the range deteriorates, so that the system as a whole suffers a loss in each case. But notices what happens to the decision-maker (Figure 2, page 6).

The private entrepreneur perceiving that his decision to add extra cows results in deterioration of the pasture and thus in a delayed loss to himself, as well as to the system, will, if he is rational, correct his mistake, reduce his herd, and allow the range to recover. His economic loss provokes negative feedback and restores the system. Note also that he, and he alone, suffers the consequences of a bad decision or reaps the benefits of a good decision. Clearly, his own best interest is served when the carrying capacity is maximized. In general terms, he benefits from acting responsibly toward the environment.

In our model, a socialistic system would likely have the same outcome (Case a, Figure 2) because the ten herdsmen could take a collective decision and their welfare would be directly tied to the wisdom of that decision. In the real world, however, socialistic enterprises are frequently so large that they are put in the care of a salaried manager, who makes decisions on behalf of the collective owners (Case b, Figure 2). This leads to complexities that cannot be examined in detail here. For the moment, suffice it to say that the decision-maker no longer has "a piece of the action" and he no longer bears direct, or intrinsic, responsibility for his decisions.

Now what of the herdsmen who own their own cows but share the commons? A rational herdsman, seeking to improve his own economic position, might ask himself, "Why should I not add an eleventh cow? If I do so, the commons will be overstocked by one percent and I will share the small resulting loss with the other herdsmen. But my gain will be 10% less my minute share of the loss. Clearly then, I *should* add one more cow and achieve a net personal

gain." If the other herdsmen are also rational they too will add one more cow. Then following the same reasoning, each will be tempted to add another and another, which leads inevitably to Hardin's conclusion "Freedom in a common brings ruin to all." Note also, that under the System of the Commons, the individual is rewarded, at least in the short term, for acting *irresponsibly* toward the environment.

But, you may ask, why would the truly rational herdsman not anticipate that ruin was inevitable in the long run and therefore exercise restraint even though his less altruistic competitors added to their herds? What would such a herdsman gain? In the short run, his relative economic position in the community would deteriorate, and in the long run – and this is important – *he could not prevent the ruin of the commons.*

I want now to introduce a little more complexity into Hardin's model. An observant herdsman might notice that, as the carrying capacity for cows declined, there were unused plants that could support sheep, so ultimate ruin could be postponed by substituting sheep for some of the cows. And as the range continued to deteriorate, some further time might be gained by turning to goats. The final outcome is not altered by these changes; only the timing, and perhaps the completeness, of the ruin is changed. *(continued next page)*



**In economics, the tragedy of the commons is the depletion of a shared resource by individuals, acting independently and rationally according to each one's self-interest, despite their understanding that depleting the common resource is contrary to the group's long-term best interest.**

Wikipedia, 2013



## Tragedy of the Commons, Part 2 (continued from page 5)

We all know that the commons of Hardin’s model disappeared some two centuries ago, so why bother with this analysis? Consider those things that economists call “free goods” or “common property resources” – air, for example. Air is clearly a commons with a definite carrying capacity for pollutants. It is not fenced, but is used by the group for the benefit of the individual (or corporate individual). Rational industrialists will be led to overtax it (act irresponsibly) for their own short-term economic gain. In major cities the tragedy is playing itself out.

Examples could be multiplied – the upper atmosphere and the SST; whales and other resources of the oceans; rivers and lakes as the sewers of the nation. For further insights into the application of the commons model, I urge you to read Hardin’s book, *Exploring New Ethics for Survival*.

How then can we apply the System of the Commons to National Parks? The most striking change I suppose is that people, as visitors, take the place of livestock. They seek enjoyment, rather than food, from the environment that they use in common. In place of the herdsmen are two additional categories of people, administrators and caterers. I submit that the primary gain sought by the caterer is monetary whereas the success of the administrator is commonly measured in the number of “visitor-days” that can be rung up to the credit of “his” park, although I admit that many caterers and administrators probably choose to follow their vocation in parks because they, too, seek pleasure from their surroundings. The concept of carrying capacity also requires examination in the National Park context. For a long time visitor

use of aesthetic resources was considered non-consumptive and non-destructive. That idea suffered revision as soils were compacted, trails became erosion channels, and other delicate features were damaged or destroyed by booted feet. These kinds of damage mean that the physical carrying capacity of the landscape has been exceeded. Before the physical carrying capacity is reached, except in special places, there is usually evidence that the ecological carrying capacity has been reached or exceeded. We see, for example, changes in the vegetation and animals around campgrounds or along alpine trails; or signs warning us that the water in a mountain stream is unfit to drink. There is yet a third component to carrying capacity in National Parks, defined a psychic carrying capac-

near the middle of the spectrum. It is *this* feature of carrying capacity that allows us to analogize visitors to the cattle, sheep and goats of our commons model. Carrying capacity will be smaller for wilderness hikers than for those who flock to the large, serviced camping slums; and may be very large for those who demand roller rinks, bowling alleys and dance halls.

“In a world of constant change, Parks Canada exists to preserve the natural heritage of this country; to help Canadians everywhere enjoy the vast beauty of our land and the great achievements of its founders.”

Judd Buchanan, Minister responsible for Parks Canada (Aug. 1974-Sept. 1976)

**Figure 1. The Four Economic Systems**

Case	Resource Used by:		Proceeds to:		Name of System
	Individual	Group	Individual	Group	
I	X		X		Private Enterprise
II		X		X	Socialism
III		X	X		System of the Commons
IV	X			X	? Philanthropy

ity, which is primarily a function of the visitors themselves, although not totally unrelated to the landscape. One of its essential elements is sensitivity to crowding. This, obviously, is not a constant. Some people, who tolerate crowding in the city, go to parks to escape, and hence carrying capacity for such people is very low; others seem to crave close contact in the wilderness, as in the city; while the majority probably falls somewhere



**Garret Hardin’s original paper “Tragedy of the Commons, was published in *Science*, New Series, Vol. 162 (3859) (Dec. 13, 1968), pp. 1243-1248.**

**Figure 2. Results of Stressing the System**

Name of System	Over-all:	To Decision-maker:
Private Enterprise	Loss	Loss
Socialism Case a	Loss	Loss
Socialism Case b	Loss	0
System of the Commons	Loss	Gain



## Upcoming Events...Summer 2013

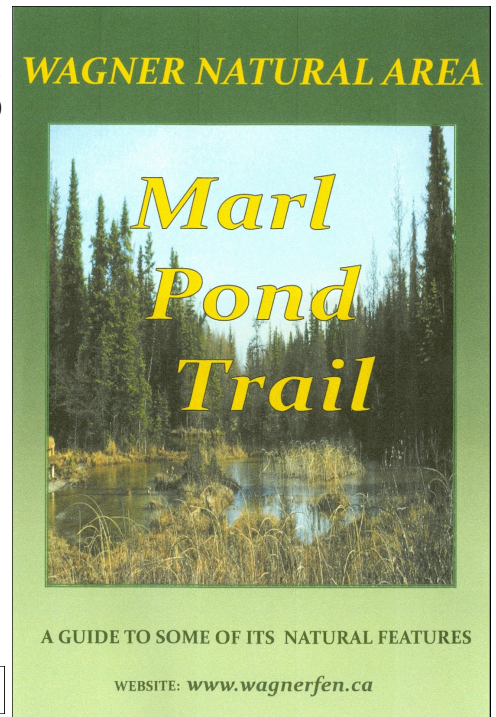
**May 26th—May Count of Plant Species in Flower.** Our annual hike through various parts of Wagner Natural Area to record the number of species of vascular plant that are in flower on this day. We meet at the main gate at 10 a.m. Participants can stay for the whole or part of the day. We'll lunch at the picnic shelter (with facilities). Wear sturdy footwear and bring bug spray if necessary. Coordinator: Patsy Cotterill, 780-481-1525.

**June 2nd. Wagner Fenfest Day!** We will be celebrating Environment Week with a **launch of our new trail guide** and guided walks, 10 a.m. to 2 p.m. Join us and stay for refreshments. We welcome guest groups. Gather at the picnic shelter.

**June 16th. Annual Orchid Walk.** Assemble in the parking lot at 10 a.m. When small groups collect guides will lead tours of the Marl Pond Trail, pointing out the orchids and other flowers in bloom.

There may be opportunities to help with tree planting and other restoration activities. If you would like to volunteer, please check our website: [www.wagnerfen.ca](http://www.wagnerfen.ca)

Our new guide →



### A big thank-you to all our volunteers who took part in Spring Clean-up, May 11th

Alice Hendry	Jeremy Stork
Beth Jenkins	Kim McKinnon
Carolyn Vanderveen	Leslie Treseder
Chris O'Brien	Colin Sanders
Dillon Abma	Pat Clayton
Doug Leffers & three sons	Pat Collins
Ian Brussels	Patsy Cotterill
Irl Miller	Sarah McPike
Jasper Keizer	Starky Williams
	Tony Sneep



Ragbag lichen, *Plasmaticia glauca* (Internet photo)



Good precipitation over the winter meant that parts of the Marl Pond Trail were flooded following the thaw. This bodes well for the health of our groundwater source and our marl ponds.  
Photo: P. Cotterill



## Wildflowers of Wagner No. 38

*Lonicera involucrata* (Richards.) Banks ex. Spreng.

Family Caprifoliaceae

Bracted Honeysuckle is a common shrub of moist woods throughout the forested parts of Alberta, except the far north. The woods of Wagner Natural Area therefore provide excellent habitat, and Bracted Honeysuckle can be readily seen along the Marl Pond Trail.

The plant grows erect, although rather untidily, to 1-3 metres in height. It bears shortly-stalked, simple, broadly lance-shaped leaves, 5-15 cm long, in opposite pairs. The leaves lack teeth and are hairy, with prominent veins.

The flowers, which are evident from the end of May through mid-June, are borne in pairs on slender stalks 2-4 cm long, in the axils of the leaves. The petals (corolla) are joined to form a yellow tube, about 1 cm long, which has 5 short lobes at the tip. Close examination will show that the outside of the tube has fine, gland-tipped hairs. Within the tube are 5 stamens, and a style and stigma with a greenish cap that protrudes beyond the tube.

Immediately below each flower pair is a pair of lobed bracts that give the plant one of its common names. These bracts, also glandular, are usually green and cup-like at flowering time but as the fruit ripens they spread out, saucer-like, or become reflexed, and turn a deep, purplish-red. Each flower ripens one shiny, black, several-seeded berry, about 8 mm across, during July and August. The twin black berries (hence this shrub's alternative common name) sitting atop the maroon bracts are a striking sight, especially in years of high fruit-set. The berries are eaten by wildlife but are unpalatable to humans.

Another common honeysuckle that occurs in Wagner Natural Area but is much less common there because it is a denizen of open, deciduous woods, is twining honeysuckle, *Lonicera dioica* var. *glaucescens*. A climbing vine, it is not likely to be confused with Bracted Honeysuckle. Its smooth, oval, opposite leaves have a bluish-green tinge and its yellow to orange flowers are longer (2-2.5 cm) and trumpet-like, with flaring lobes at the tip. Its clustered red berries, cupped by a pair of large green, joined bracts, contrast with those of Bracted Honeysuckle.

Bracted Honeysuckle, Black Twinberry

Honeysuckle Family



Photos: P. Cotterill