



Ausable Bayfield Watershed Report Card

Part B: Introduction to the Watersheds

Bayfield River

The Bayfield River is in the northern part of the Ausable Bayfield jurisdiction. The Bayfield River basin is 497 km², and begins north of Dublin and outlets at the Village of Bayfield (Figure B.1). The Bayfield's main tributary is the Bannockburn River. The headwaters of both of these waterways arise from small glacial spillways towards the north of

the watershed. Trick's Creek is also an important tributary as it contributes cool-cold water that helps maintain good water quality for salmonids living in the main channel of the Bayfield. As well, this tributary contributes to the base-flow in the Bayfield, which is particularly important during periods of low rainfall. The major urbanized areas in the watershed include the north side of Bayfield as well as Clinton, most of Seaforth, and Vanastr.

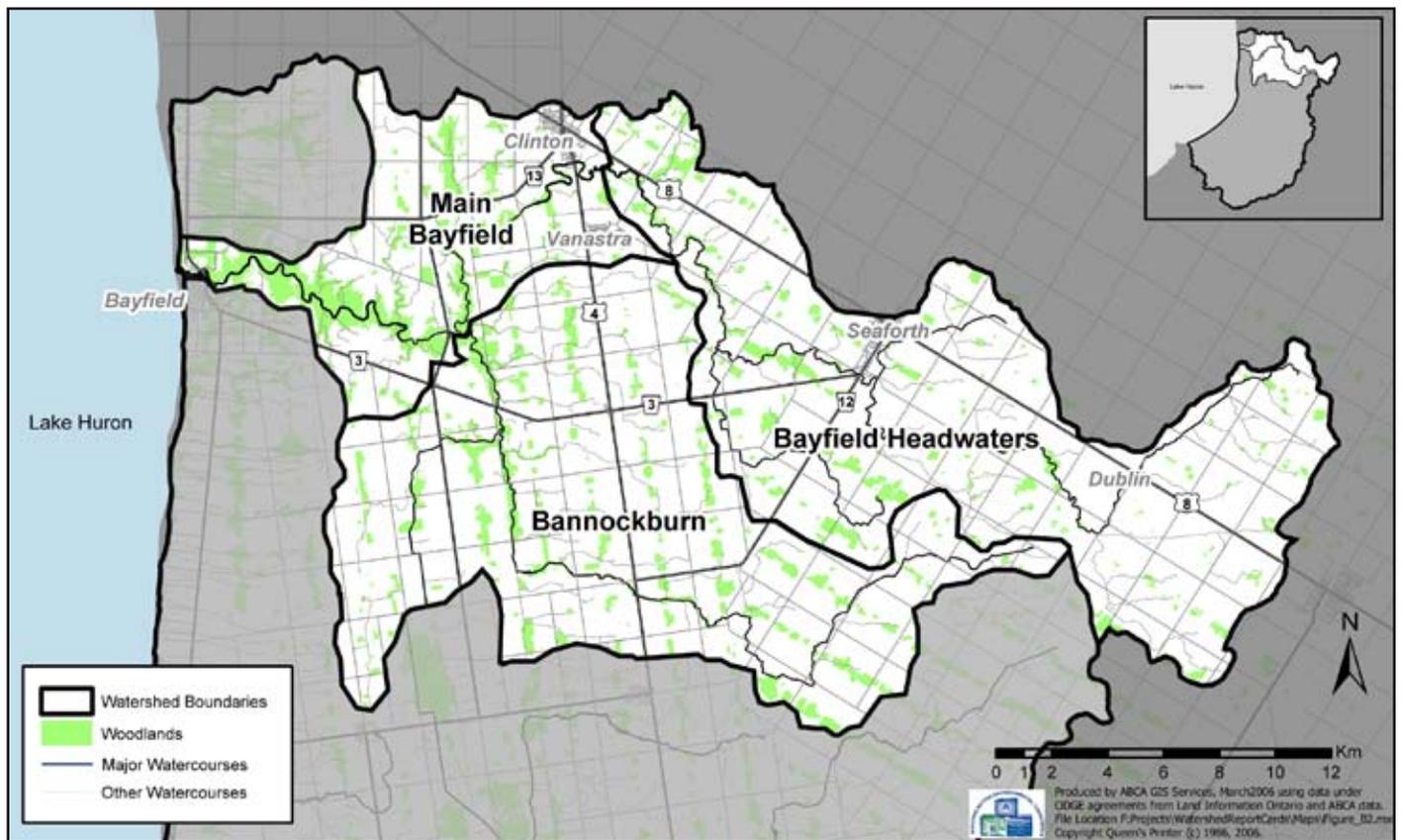


Figure B.1: The Bayfield River Watershed

How to improve your watershed . . .

Local citizen groups, such as Friends of the Bayfield River, are always looking for people who want to improve their local environment. For information on volunteering opportunities contact FOBR or contact the ABCA at (519) 235-2610 or 1-888-286-2610.



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Land use is dominated by agriculture in the Bayfield River Watershed. Approximately 64 per cent is committed to row crops, 18 per cent mixed farming and grains, and five per cent for hay and pasture. Total forest cover in this watershed is low in general (approximately 10 per cent) and very sparse (five per cent) in the upper reaches. Most of the wooded areas generally occur in the river valleys but are most common in the Bayfield River valley below Clinton and the lower reaches of Trick's Creek and the Bannockburn River. Elsewhere the remaining woodlots tend to be broken mid-concession corridors running perpendicular to the

stream systems.

Few natural watercourses remain as most mid and low order streams have been converted to municipal drains. Rainbow trout and salmon flourish in the lower Bayfield River. Trick's Creek has a resident brook and brown trout population.

Other streams such as the Bannockburn River may have potential as cold-water habitat. Approximately 850 hectares in the lower portions of the Bayfield Valley are classified as an Area of Natural and Scientific Interest (ANSI). The watershed contains 1400 hectares of high and 375 hectares of moderate-rated Environmentally Significant Areas (ESAs).



Wavy-rayed Lampmussel is shown in photo at left.

Ausable River

The Ausable River basin is 1142 km² (Figure B.2). The original Ausable River drainage pattern was described as a barbed fishing hook (Department of Planning and Development 1949).

This river arises near Staffa and flows south to Ailsa Craig where it makes a wide arc to the west. Prior to 1873, the river traveled north to Grand Bend. Here the river made a sharp turn (approximately 180 degrees) and flowed southwest to its outlet near Port Franks. Between 1873 and 1875 the course of the river was altered by excavating a channel from the boundary between the wards of McGillivray and West Williams to Port Franks. 'The Cut' now diverts flow from Grand Bend towards the current mouth at Port Franks. The main tributaries of the Ausable River include Black Creek, the Little Ausable River and Nairn Creek.

Row crops are the dominant land use in this watershed. Approximately 54 per cent of the land is used for corn and bean production, 20 per cent mixed farming and grains, and eight per cent hay

and pasture. Livestock numbers are relatively high, particularly in the upper watershed and market vegetables are grown in the Thedford Flats area. There are some gravel pits in operation. The main urban areas include Hensall, Exeter, Huron Park, Crediton, Lucan, Ailsa Craig, Arkona and Thedford. The number of non-farm residences is increasing near towns and in the southern part of the watershed within commuting distance of London

Forest covers about 13 per cent of the Ausable watershed. Hay Swamp, the Ausable Gorge and the valley immediately upstream of the gorge represent the bulk of the extensively forested area. Woodlots are scattered at the back of farms, in small areas of floodplain, and in wetlands. The woodlots at the backs of farms tend to create strips of forest; a pattern common in southwestern Ontario.

Because of its habitat and geological features the Ausable Gorge is an ANSI, a Carolinian Canada site and an important recreational area. Hay Swamp is also an ANSI and an important region for water retention and flood control. The Ausable watershed also includes about 950 hectares of high-rated ESA and 975 hectares of moderate-rated ESA.



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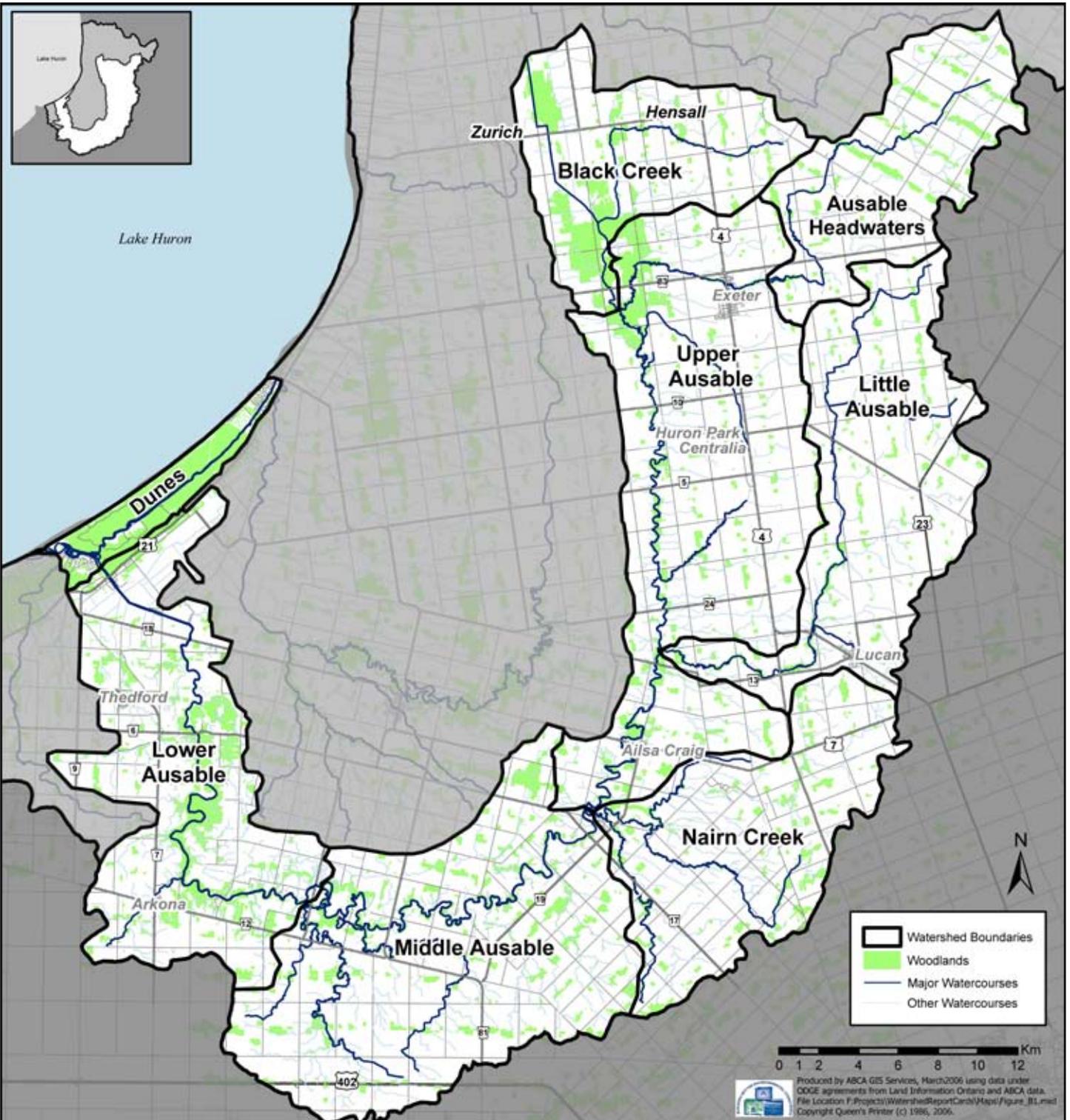


Figure B.2: The Ausable River Watershed



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The Ausable River, located on the northern edge of the Carolinian Zone in southwestern Ontario, supports one of the most diverse and unique aquatic fauna for a watershed of its size in Canada. At least 26 species of mussels, 83 species of fish and 21 reptile species have been found here. Many of these species are rare and 18 species in the Ausable River have been listed nationally by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). These 'species at risk' which include six freshwater mussels, eight fishes, and four reptiles, include (Endangered = END, Threatened = THR, Special Concern = SC): northern riffleshell (E), snuffbox (E), wavy-rayed lampmussel (E), kidneyshell (E), mapleleaf (E), rainbow (T), grass

pickerel (SC), pugnose shiner (E), eastern sand darter (T), lake chubsucker (T), black redhorse (T), river redhorse (SC), greenside darter (SC), bigmouth buffalo (SC), queen snake (T), milksnake (SC), eastern spiny softshell (T) and northern map turtle (SC). A number of these species are globally rare to uncommon (G1-G3) including the pugnose shiner (G3); eastern sand darter (G3); and remnant populations of the endangered snuffbox (G3) and northern riffleshell (G2T2), which represent the only extant occurrences of these mussel species in Canada outside the Sydenham River basin. As such, the Ausable River watershed is of national significance to the survival of these and other species within Canada.



Old Ausable Channel, pictured in photo at left, is a special ecosystem requiring protection and watershed residents are actively involved in a management strategy.

The Dunes

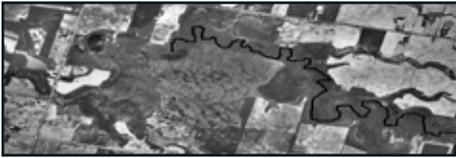
The 'Dunes' are a sand plane with dune ridges totaling about 27 km² (Figure B.2). This area was created by sand deposits derived from lakeshore bluff and near-shore erosional process occurring over thousands of years.

This watershed is an internationally-important example of dune succession and is thus, a very important ecosystem.

There is no agriculture in this watershed. Nearly 88 per cent of the watershed is within the Pinery Provincial Park. The park has intensive campground and beach use and is one of the largest campgrounds in Ontario. Outside of the Pinery, recreational development pressure is high. Urbanized areas include Grand Bend south of the Grand Bend Cut and west of Highway 21 as well as a portion of Port Franks. At Grand Bend beyond the north end of the Pinery, residential development includes Southcott Pines, Huron Woods, Beach O'Pines, Pinedale and Wee Lake.

Watercourses in the Dunes include the remnant of the original Ausable river (referred to as the Old Ausable Channel), and the downstream end of the current Ausable River, referred to as 'The Cut.' The Old Ausable Channel is an ESA and flows very slowly north to south through the dunes along the course of the original Ausable River. This channel is adjacent to the dunes, which is effectively its watershed and is fed largely from groundwater. Due to channel diversions in the latter part of the 20th century, the Dunes watershed is now a tributary of the Ausable River, instead of its main channel.

The Dunes area contains rare oak savannah communities and is an important area for rare plants and populations of breeding birds. The environmentally-important Dunes watershed has two large ANSIs: one within the Pinery, and the Port Franks Forested Dunes and Wetland Complex ANSI. In addition to the ANSIs, and the provincial park, this area contains an ESA with an approximate area of 28 hectares.



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Parkhill Creek

The Parkhill basin covers 456 km² (Figure B.3). Parkhill Creek rises near Dashwood and flows southward then westward towards Parkhill. The creek was a former tributary to the Ausable River but now contributes the bulk of the flow in the old river channel downstream of 'The Cut.' This watercourse empties into Lake Huron at Grand Bend through a short channel constructed in 1892.

This short channel diverts flow that previously progressed south through the dunes, into the lake.

Land use in the Parkhill watershed is predominantly agricultural. About 54 per cent of this watershed is used for row crops, 22 per cent mixed and grain, and six per cent hay and pasture. Market vegetables are grown in the Thedford Flats area. The only towns in this watershed are Parkhill and part of Grand Bend.

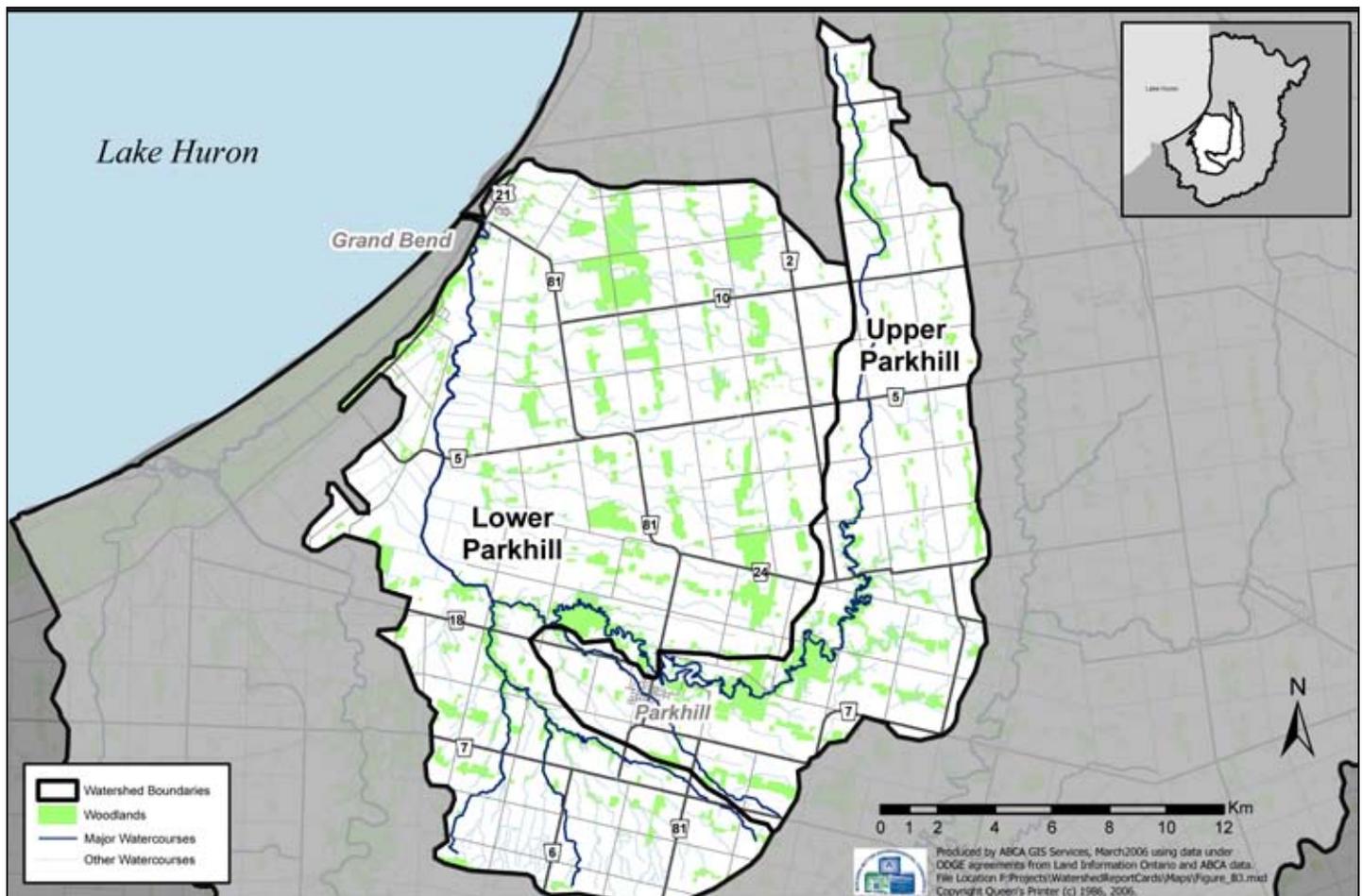


Figure B.3: Parkhill Creek Watershed

How to improve your watershed . . .

Concerned about the beach? Remember that the health of the rivers and lakes is linked to the ecological integrity of smaller streams and drains. Beneficial Management Practices (BMPs) in these areas include protecting existing small wetlands, establishing grasses, shrubs and trees on both sides of municipal drains and other watercourses and enhancing closed drains with grassed waterways.



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Forest covers approximately 14 per cent of the watershed. Most of the wooded area is concentrated in the Parkhill Creek valley particularly where it deepens below West McGillivray, several kilometres on either side of Parkhill Dam and Reservoir, in two parallel north/south broken corridors near the former glacial lake Warren, and in the Ptsebe Creek valley. The remaining woodlots are scattered at the backs of farms.

No significant warm and cold-water fisheries occur in the creek. Few natural watercourses remain as most have been converted to municipal drains.

This watershed contains two small ANSIs of 125 and 17 hectares. High-rated Environmentally Significant Areas (ESAs) cover about 1600 hectares and moderate-rated ESAs cover close to 1000 hectares.



The Parkhill Creek Reservoir is pictured above. This is the site of the only dam in Ontario built primarily to protect agricultural land from flooding.

Photo by Daniel Holm

How to improve your watershed . . .

To prevent the spreading of invasive species, never dump your bait bucket remains in the water if it contains water from another water body.



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Gullies

The small basins that comprise ‘The Gullies’ watersheds have a total area of 241 km². The Gullies are a series of short parallel narrow basins along the west edge of the ABCA’s jurisdiction (Figure B.4). The Gullies watershed is split into two areas: north and south of the Bayfield watershed. The gullies themselves are a series of streams flowing into Lake Huron that extend about six to eight kilometres inland.

Land use is largely intensive agriculture: 52 per cent row crops, 18 per cent mixed farming and grain production and two per cent pasture and hay. The total woodlot area is 30 per cent in Gullies North and only 12 per cent in Gullies South. Individual stream basins vary greatly in forest extent. Woodlots tend to occur in two north/south corridors perpendicular to the streams and parallel to the lakeshore.

These vegetated gullies are important fish and wildlife corridors. In the north portion, one gully stream, Gully Creek, is vegetated for much of its length. It has cold-water fish habitat with runs of migratory salmonids and is classified as an ESA. Many gullies, however, are not as well vegetated.

Two ANSIs occur in the Gullies watershed, Bayfield North and Bayfield South, totaling about 3000 hectares. These watersheds include about 950 hectares of high and 250 hectares of moderate-rated ESAs.

How to improve your watershed . . .

Fix faulty septic systems and establish a septic maintenance plan. Volunteer to have your septic system inspected today.



Figure B.4: Gullies and Mud Creek Watersheds



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Mud Creek

This watershed refers to the Mud Creek flowing through Port Franks, not to the tributaries of the Ausable River and of Parkhill Creek, which have the same name.

The Mud Creek basin is a 64 km² area at the south and western edge of the ABCA's jurisdiction (Figure B.4). Mud Creek itself flows northwards through the basin and empties into Lake Huron near Port Franks. The upstream basin is dominated by intensive row-crop based agriculture as well as some orchards. Port Franks is the largest urbanized area.

Approximately 25 per cent of the watershed is

forested, most of which occurs in the dunes between Highway 21 and Lake Huron. This area is part of the environmentally-important dune ecosystem mentioned above. The scattered upstream woodlots are generally oriented north/south paralleling the stream system in the middle reaches, running perpendicular to it in the upper reaches. Few streambanks are wooded.

The Mud Creek watershed includes approximately 300 hectares of ANSI, which are part of the Port Franks Forested Dunes and Wetlands Complex ANSI, and the Ipperwash Inter-Dunal ANSI. It also contains about 200 hectares of high and 23 hectares of moderate-rated ESAs.



The Mud Creek watershed provides habitat for Species at Risk (inset photo, courtesy Ontario Ministry of Natural Resources, shows the extirpated Karner Blue butterfly).

Photo by Daniel Holm