CHAPTER 6 DRAINAGE

Generally speaking, it has always been assumed that the results of drainage are beneficial and that all properties affected by any drainage scheme are benefited in a greater or smaller degree. Throughout the period of settlement in Southern Ontario this was true to a certain extent as drainage enabled more land to be brought under cultivation, which meant more crops and greater prosperity to the community; also, in many instances, it enabled farmers to work the land earlier in the spring than they would have been able to do otherwise. All drainage legislation to date has been based on this assumption and has resulted in many drainage schemes being extended, not only beyond the bounds of economic feasibility, but even beyond the limits of physical practicability.

The result is that, in many cases, drains have been pushed into areas where they not only do not serve the purpose for which they were intended but actually are a detriment to the welfare of the community by draining water out of natural water storage areas such as swamps and bogs without creating soil conditions dry enough for cultivation or even the maintenance of worth while pasture.

This draining of swamps and bogs means that the water is not available to maintain adequate summer flow in the streams and has also lowered the water table to such a point that wells have gone dry as a direct result of draining. For example, farmers, whose properties border on the Ellice Swamp, were hauling water for cattle in the summer of 1948 for the first time in living memory.

On the South Nation River attempts have been made to drain areas where the rock surrounding them makes drainage impossible or, at best, prohibitively expensive.

Some drainage schemes are necessary and beneficial, others are ill-considered and unwise, therefore, no drainage

scheme should be undertaken without due consideration of all the physiographic and economic features, indeed the Kennedy Report¹ makes the following recommendations:

- (a) That no drainage project be undertaken until its probable effect upon the community as a whole has been considered by a board of referees, composed of judicial and engineering personnel, as well as practical farmers, and the approval of such board obtained.
- (b) That no single landowner or small group of owners may be enabled to force an unwanted and even detrimental drainage scheme on neighbouring owners without their consultation and consent.
- (c) That the cost of the work will be equitably distributed among the landowners actually benefited.
- (d) That provision be made for payment of compensation to those injuriously affected, and
- (e) That Municipalities have power to expropriate areas which it is proposed to drain, when the welfare of the community requires that the area in question should be maintained in its existing state.

The accompanying table shows that a total of at least 850 miles of drains have been constructed on the Upper Thames Watershed and that at least \$1,431,793 has been spent on the work. This figure does not give the whole story as records of the costs of the early drains were not available. In addition, many Municipal Drains were originally Award Ditches which have been converted to drains in recent years, so that the original cost of construction and maintenance in early years is not included.

^{1.} Ontario Royal Commission on Forestry. 1947.

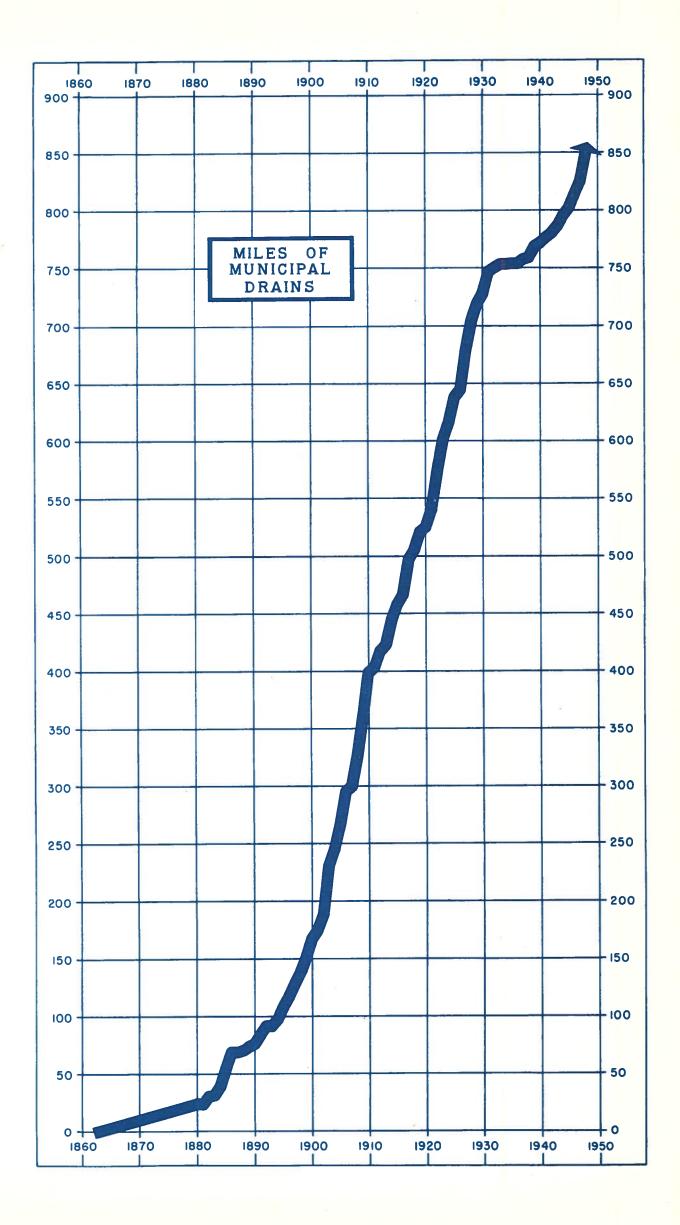
Another point worth noting is that the cost of maintenance work is continually rising; for example, in one particular case, a drain 5 miles long cost \$3,502 to construct in 1910; twenty years later, in 1930, it cost \$6,539 to clean out; and fourteen years later cost another \$4,732.

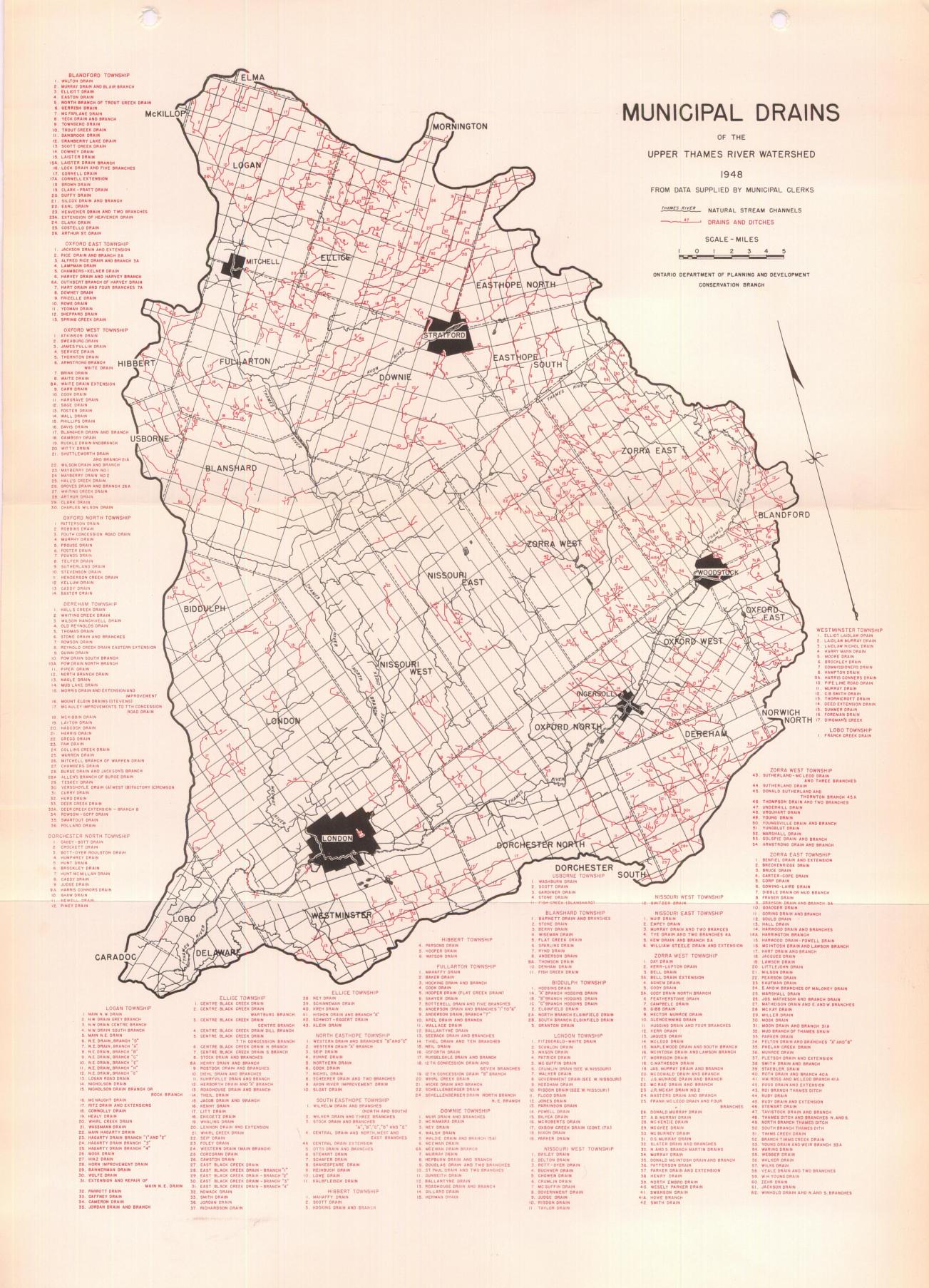
The average cost of drains on the watershed has been over \$1,500 per mile. When sums as large as this are involved, it would be advisable to have a very careful study made beforehand by a land use expert who could decide whether the land to be drained would repay the money expended in increased crop returns.

Every Conservation Authority should investigate any drainage scheme which is proposed within its boundaries, and have a representative present at the presentation of the engineer's report as provided by The Municipal Drainage Act RS.0.1950, c.246 s.8(13).

MUNICIPAL DRAINS - UPPER THAMES WATERSHED

Township	Number of Drains	Length in Miles	Cost \$
Biddulph	3	13.24	9,676
Blandford	26	38,33	46,566
Blanshard	. 12	18.82	40,138
Dereham	37	67.02	100,020
Dorchester North	11	27.92	23,859
Dorchester South	1	1.32	705
Downie	17	45.85	71,929
Easthope North	9	28.09	57,176
Easthope South	14	19.71	48,039
Ellice	38	118.14	245,760
Fullarton	22	52,86	53,613
Hibbert	9	16.56	17,246
Lobo	1	1.25	2,224
Logan	22	89,36	147,370
London	17	33,69	78,888
Nissouri East	7	10.97	17,397
Nissouri West	12	30.35	46,244
Oxford East	15	21.35	30,176
Oxford North	14	21.47	29,268
Oxford West	30	38.49	50,757
Usborne	7	11.53	28,094
Westminster	16	41.40	82,497
Zorra East	59	85,72	104,063
Zorra West	53	66.05	97,104
Total	452	899.51	1,428,809





CHAPTER 7

COMMUNITY PONDS

An important phase of the conservation program in any watershed is to preserve existing ponds and if possible to supplement these with new ones wherever the topography is suitable and the cost is within the scope of the purposes to be served. Such additional ponds in some cases can be made by rebuilding small mill dams which have been abandoned; by repairing existing dams; and by building new ones on suitable sites.

With the above purposes in mind, an inventory was made under the heading of community ponds on the Thames Watershed, in which the following information was assembled:

First, the location and condition, present and possible future use of small natural lakes or ponds;

Second, existing mill ponds which might be improved or used more extensively for community purposes;

Third, locations on streams where small ponds might be built by using old mill damsites or other places on small tributaries.

With the first two groups above, the report and the map which accompanies it give the location and condition, and in some cases recommendations regarding these; but the third group must be considered as a suggested program which can be acted upon at the present and enlarged in the future when funds are available.

There are hundreds of suitable sites for small ponds on the tributaries of the Thames, but keeping in mind that this report in only intended as a start in this work, a limited number of sites have been chosen. The object in making the selection is to distribute a pond-building program over the whole area.

Ponds have been classified as natural ponds (N), existing mill ponds (E) and possible ponds (P), which include former damsites capable of reconstruction. They are listed under townships.

Logan Township

- 1 (E) In Logan, the mill pond at Mitchell is still in, and is used to some extent for recreation. A new swimming pool and park supply most of the recreational need of the community.
- 2 (P) A possible site lies in Lot 15, Con. VII, at the hamlet of Willow Grove, but lack of trees and clayey banks make it not very suitable. It would require a dam approximately 300 feet long and 12 feet high to provide a pond of about 10 acres.

Ellice Township

3 (P) Ellice Township is almost completely drained artificially. A small pond might be possible on the upper part of Whirl Creek in Lot 30, Con. IX, with the orchard of an abandoned farm providing picnic grounds. The dam 250 feet long and 10 feet high would give a pond of 3-4 acres.

Easthope North Township

- 4 (E) The artificial lakes in the City of Stratford, covering about 20 acres, are used for boating and a limited amount of fishing.
- 5 (N) Lot 37, Con. I. Three kettle ponds about three miles east of Stratford. These have extents of 9, 5 and 3 acres respectively and have the usual marshy shorelines. They are, however, very conveniently located from Stratford and nearby sand pits might make the construction of small beaches practicable. The shores are well treed for shade.

Easthope South Township

- 6 (N) Lot 39, Con. I. Kettle pond of 13 acres, half a mile south of above. Same description applies.
- 7 (P) Lot 43, Con. VII. A small pond might be constructed here on Trout Creek, a dam 10 feet high and 200 feet long at the townline road making a pond of 3-4 acres. Better sites are available down stream in Downie Township.
- 33 (P) Lot 18, Con. IV, Sebastopol. No trace of former dam, but one could be built along the road between Cons. IV and V. The stream channel above the road has been dredged and straightened.

Downie Township

8 (P) Lot 19, Con. XII, Avon River. Pond of from 15-20 acres possible with dam 400 feet long, 20 feet high, on the road between Cons. XII and XIII. Good trees along bank and gravel bottom in stream.

- 9 (P)

 Lot 8, Con XIV, Otter Creek. Smaller pond
 possible here, with dam 300 feet long, 10 feet
 high. Banks are pasture with hawthorn and scattered trees.
 Bed of stream clean gravel.
- Ja (P) Lot 13, Con. VI, Avon River, Avonton. No trace of old dam but good site about $\frac{1}{4}$ mile above road for dam about 400 feet long and 12 feet high, to make a pond about $\frac{1}{2}$ mile long.

Fullarton Township

- 10 (E) Lot 5, Con. VII. 15-acre mill pond at Carlingford.
 Good pond but little shade except near head of
 pond. Centrally located from Mitchell, St. Marys and Stratford.
- Ict 20, Con. I, Whirl Creek. Possible site in the property of the road between Lots 20 and 21.

 Dam about 400 feet long. Valley widens above through open bush. Channel has been "improved". Also in Fullarton Township there had been dams and mills on the main stream of the North Branch of the Thames at Fullarton, Motherwell and Glengowan (Blanshard Township).

Blanshard Township

- ll (P)

 Lot 31, Con.XII, Fish Creek, at confluence with

 North Branch of Thames. Good picnic spot in

 pasture with scattered trees, convenient to St. Marys. Removable
 dam on permanent sill across stream channel would give good

 small swimming pool.
- 12 (E) Quarry in St. Marys. Small abandoned quarry in south end of town, used as swimming pool.
- 36 (P) Lot 13, Con. II, Flat Creek. Anderson. The old dam has disappeared but a possible site lies 1,000 feet above the road.
- 52 (E) Con. XVII, Town of St. Marys. Large mill pond on North Branch of Thames at confluence of Trout Creek. Used for limited boating and fishing.

Zorra East Township

- Lot 8, Con. XVII. Quarry at Innerkip. The quarry has a water area of 14 acres up to 20-25 feet deep, spring-fed with clear cool water, and provides excellent swimming facilities convenient to Woodstock. Intermittent working is done but the north and west sides are not used for quarrying and would provide picnic sites.
- 14 (N) Lot 33, Con. XIV. 2 miles east of Tavistock.
 4-acre kettle pond behind farmhouse. Small
 treed area with access to north shore of pond.
- 37 (P) Lot 18, Con. XI, Strathallan. No trace of old mill, but good site exists 100 yards above No. 19 Highway, with good access to Stratford and Woodstock.
- 38 (P) Lot 4, Con. XI. 5-acre pond. Central 100 feet and spillway of dam washed out. On property of Ontario Epileptic Hospital.

Zorra West Township

- Lot 30, Con. II. Duncan Pond, Harrington West.

 Spillway of the dam was blasted out after undermining by floods in 1948. The pond was about 20 acres and the
 clear cold spring water produced good trout, and maintained
 constant flow throughout the summer.
- 16 (P) Lot 28, Con. I. Branch of Trout Creek. A dam is being constructed (fall, 1951) to form a 14-acre private trout pond.
- 17 (P) Lot 31, Con. III. Branch of Trout Creek. The new owner of this property plans to re-establish the pond for his own use.
- Lot 13, Con. V. North Branch Creek. Upper Embro millpond. About 20 acres. Best access to pond by south side, pasture with scattered trees. Shore somewhat muddy.
- 39 (P) Lot 25, Con. V, Brooksdale. The old mill has disappeared. A possible site exists \(\frac{1}{4} \) mile downstream from the sideroad for a shallow pond of 4-5 acres.
- 50 (P) Lot 12, Con. V.
- 51 (P) Lot 9, Con. V. Two mill ponds in the Village of Embro. Both dams require complete reconstruction to re-establish the 20-acre ponds.

Nissouri East Township

Lot 24, Cons. XII and XIII. Mud Lake. Approximately 65 acres. Good access and shade along south shore for picnics. Shores are muddy, but rafts could be used for swimming.

A smaller pond, $\frac{1}{2}$ mile east, is too marshy and difficult of access to be suitable.

- 20 (E) Lots 1, 2, 3, Con. X. Thamesford Mill pond.

 Extent 25 acres. Convenient access from Lordon and Woodstock. Fair picnic facilities, but shores marshy.

 Mill in operation.
- 40 (P) Lot 19, Con. VIII, Waubuno Creek. No trace of old mill or dam. Possible site for low (10-foot) dam 300 feet long, 1,500 feet above Townline Road. Valley well treed above this point.
- 43 (P) Lot 16, Con. X, Kintore. 20-acre pond 1,000 feet above village. 150 feet of centre portion of dam, including spillway, require rebuilding.

Nissouri West Township

- 21 (P) Few pond sites exist, but the recreational needs of the township should be met by the facilities provided in the Thames Valley Park above the Fanshawe Dam.
- 41 (P) Lot 16, Con. III, Wye Creek, Thorndale. Possible site at cheese factory 1,000 feet above sideroad. Good pond of 15-20 acres from dam 400 feet long, 15 feet high.

42 (P) Lot II, Con. II, Wye Creek, Wyton. This old mill site will be drowned by the lake above Fanshawe Dam.

London Township

- 21 (P) Thames Valley Park also serves London Township.
- 22 (E) Lot 16, Con. VII. Arva Mill Pond: Large mill pond, 30 acres, on No. 7 Highway from London. Good picnic facilities. Shore muddy. South side best for development.

Dereham Township

23 (N) Lot 26, Con. III. Kettle pond. All stream drainage in this township is improved, and the only pond is this 5-acre kettle pond. It is difficult of access and the shores are very marshy.

Oxford East Township

- Lot 20, Con. IV, Cedar Creek. Large, 18-acre mill pond 4 miles south of Woodstock. Good access from Woodstock, and west side gives good picnic facilities. Dam is in good condition and mill operating.
- Small ornamental lake in park in Woodstock.
 Could be used for pleasure boating on a limited scale.

Oxford West Township

- 26 (P) Lot 13, Con. II. 3 miles east of Ingersoll.
 Old pond site requiring reconstruction of about
 50 feet of dam 15 feet high, to provide a pond of some 10 acres.
 Good picnic site below dam.
- 27 (E) Lot 15, B.F. Con. 2 miles east of Ingersoll. Small, 3-acre pond having very well shaded shores. Good access from road on east side and convenient to Ingersoll. Good water for swimming.
- 44 (E) Lot 15, Con. I. Very small, 2-acre pond. Upper and marshy, but good banks at dam. Possible picnic sites below dam.
- 45 (P) Lot 5, Con. IV, Sweaburg. The original dam has disappeared and the stream channel completely dredged.

Oxford North Township

46 (P) Lot 20-21, Con. II, Middle Thames. Good damsite at road for 20-acre pond, with dam 400 feet long and 12 feet high. Large spring run-off.

Dorchester North Township

Mill pond across Thames from Dorchester Station.

Excellent recreational pond with good access by road along west side. The pond has an extent of about 30 acres and is 3/4 of a mile long. Banks and surroundings are well treed, and the whole pond area is suitable for recreational development.

- 29 (N) Lot 23, Con. II. Foster Pond. Two kettle ponds of approximately 11 and 5 acres. Shores are partly marshy but the north sides of each would provide suitable facilities.
- 47 (P) Lot 4, Thames Con., Putman. Washed-out millsite.

 Two short dams along road would restore former

 pond of about 15 acres.

Westminster Township

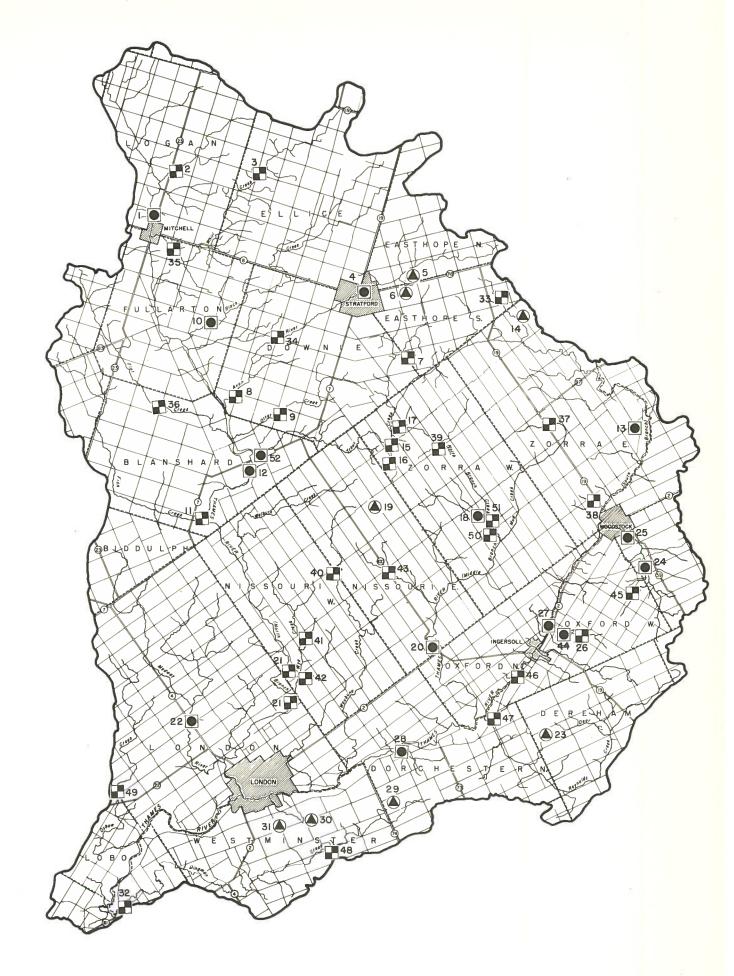
- 30 (N) Lots 18-19, Cons. I-II. 3 miles south of London. Two kettle ponds conveniently located from London, level controlled by dam at outlet. The larger has the shore fairly completely developed but the south and east sides of the smaller are suitable for recreation sites and have a clean shore, well treed.
- 31 (N) Lots 20-24, Con. I. Walker Ponds. These are three kettle ponds 2 miles south of London, similar to the above but located on Federal property.
- 48 (P) Lot 15, Con. III, Dingman Creek, Wilton Grove.
 The old dam here has disappeared and the stream channel has been dredged. There is a small kettle pond with marshy wooded shores in Lot 12, Con. IV.

Delaware Township

32 (P) W. of Lot 3, Con. I. Dingman Creek at Thames River. Old dam washed out, needs complete reconstruction, but would provide good pond and excellent recreational area in well-shaded surroundings. At village of Delaware, with good access from London.

Lobo Township

49 (P) Lot 14, Con. III, Oxbon Creek, Melrose. The original mill dam has disappeared but there are several places along about a mile of the stream where small dams 300 - 350 feet long would form good small ponds.



COMMUNITY PONDS

NATURAL PONDS (N)

EXISTING PONDS (E)

POSSIBLE PONDS (P)

