

This drying up of the water areas has been going on for the past thirty years, and is partly due to settlement and the cultivation of the soil, and to the deepening and clearing of the stream channels and the gradual increase in farm drains.

It is most marked on traverses of larger lakes made at periods of twenty to thirty years apart. Invariably the late traverse will show more land.

This condition has naturally led to the settlers applying for additional patents as the lakes have dried up. The question arose as to whether the government or the settler, due to riparian rights, owned the dried-up beds of lakes. Opinions differ as to this, the Department of Justice holding that the settler owned the bed, and that the government could not issue a patent for what it did not own. The Registrars in the West will not issue certificates of titles for dried-up beds of lakes without a deed from the government. To overcome this the government issues "Quit Claim Deeds" for these dried-up beds.

Irrigation Act

It was decided in 1912 to patent all fractional quarter-sections bordering on bodies of water which did not have a permanent, well-defined bank by those legal subdivisions and quarters of legal subdivisions which most nearly covered the land not rendered worthless by water.

This has put an end to a settler purchasing a fractional quarter-section shown on the township plan as containing only a few acres, and acquiring by riparian rights lands which were not paid for and to which they have no equitable rights. These lands in many cases are among the most valuable in the country.

By the provisions of the Irrigation Act, passed in 1898, no grant shall be made by the Crown of any exclusive property or right in the land forming the bed or shore of any lake, river, stream or other body of water.

This Act applies to Alberta, Saskatchewan, that portion of Manitoba incorporated within the province in 1912, and the North-West Territories, with the exception of the provisional districts of McKenzie, Franklin and Ungava.

It would appear from this Act that all water areas should be deducted from the quarter-sections, but I can find no record where the Irrigation Branch has claimed the right to the beds of water areas which periodically dry up, although the case may arise where they might claim the use of a dried-up bed of a lake to use as a reservoir.

Stadia Surveys Inaugurated

On account of the continual drying up of the lakes and the changes in the banks of the rivers, frequent requests were made to the government for the resurvey of water areas. These became so numerous that it was decided in 1913 to revise all the water areas in the West. For this purpose stadia surveys were inaugurated. The water areas to be traversed are given in the manual of surveys as follows:—

1. Rivers averaging one chain or more in width.
2. All islands and all bodies of water which do not dry up and which are over five acres in area. In case of doubt as to whether a lake dries up or whether the extent is over five acres, the traverse is made.
3. Alkaline mud flats which do not bear the weight of a man walking on them are treated as water areas.
4. Lakes and ponds under five acres are reported in the field notes.
5. A marsh producing hay is not traversed and no deduction is made for its area.

The water areas most commonly encountered on the prairie, with the exception of rivers, belong to one of the following classes:—

Classes of Water Areas

(a) Permanent lakes which have sandy bottom, gravelly beaches and shore lines well defined. These lakes may be either spring-fed or have creeks running into them. The banks are usually quite steep so that a variation of a few feet in depth has practically no effect on the area.

Unfortunately, both for the settler and the surveyor, there are very few lakes of this class on the prairie, although they are quite common farther north. A surveyor encountering lakes of this kind is not in doubt as to whether they should be traversed or not, and if numerous enough his mileage for the season will be good.

(b) Shallow sloughs with well-defined banks from 5 feet to 20 feet high, with beds of soft alkaline mud. These water areas usually dry up every dry year, but the beds very seldom get hard enough to walk on and very rarely produce any vegetation. These sloughs are very common in southern Saskatchewan and Alberta. The surveyor is instructed to traverse them.

(c) Permanent water areas fairly deep in the centre, but with an indefinite shore line, which vary with the amount of water in depressions. A difference of a foot or two in elevation of water may cause a variation of ten chains in shore line. Along the shore it is usually marshy.

These lakes are traversed and the legal subdivisions and quarters of legal subdivisions which are rendered worthless by water are selected.

This class of lake causes the surveyor much trouble in making a satisfactory traverse, as it has no definite shore line and the edge of the water is the only line which can be readily followed. This is especially true in a wet season, as it is only by taking careful soundings and obtaining reliable information from the settlers that the legal subdivisions can be wisely selected.

(d) Shallow sloughs whose bottoms are either gumbo, hard alkaline mud or sand. They have usually fairly well-defined banks. They fill from surface water, and usually dry up in the fall, but always hold water in the spring and after heavy rains. In the case of a heavy snowfall in a season they will hold water the year round. The beds of these sloughs when dry produce no vegetation of any value, and if gumbo, become very hard and full of cracks.

As water areas, these do not qualify as lakes, but for agricultural purposes they are practically worthless. Whether these should or should not be traversed depends, in my opinion, on whether they usually hold water or are dry for the greater part of the year. Each separate lake has to be considered on its own merits.

(e) The final class of water areas met with are shallow depressions, depending wholly upon surface water for their existence. They have no shore lines, the area covered by water depending altogether on the amount of surface water. In dry years they produce hay, and after several wet years may have from eight to ten feet of water. These sloughs in a dry year would not be noticed as a water area. In wet years, however, they have every appearance of being fairly permanent, and it is only from information received from the settlers that their true nature can be determined.

There are a large number of these areas which, previous to 1915, were valuable hay meadows; that fall they