

SENATE BILL FOR SURVEY OF THE EVERGLADES.

[S. 7305. Sixty-first Congress, second session, Mar. 22, 1910.]

In the Senate of the United States Mr. Fletcher, on March 22, 1910, introduced the following bill, which was read twice and referred to the Committee on Public Lands:

A BILL Providing for a survey of the unsurveyed lands known as the Everglades of Florida.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior cause to have a survey or surveys made of the lands in Florida known as the Everglades, and to make all necessary plats or maps of such survey or surveys, for which purpose the sum of ten thousand dollars, or so much of said sum as is necessary, is hereby appropriated.

INSTRUCTIONS FOR SURVEYING THE LAND EMBRACED IN UNITED STATES PATENT NO. 137, KNOWN AS THE EVERGLADES.

[Adopted by the Trustees of the Internal Improvement Fund of Florida, Dec. 29, 1910.]

The Trustees having, at their meeting of October 29, 1910, referred the making of a survey of the Everglades, or such portion thereof as was considered practicable, to J. O. Wright, chief drainage engineer, in response to said request Mr. Wright presented the following report on the matter:

TALLAHASSEE, FLA., November 13, 1910.

TRUSTEES OF THE INTERNAL IMPROVEMENT FUND,
Tallahassee, Fla.

GENTLEMEN: On October 31 I received a letter from your secretary, Mr. Luning, transmitting a copy of a portion of the minutes of a meeting of October 29, in which the matter of subdividing the unsurveyed lands in the Everglades is referred to me for consideration and report thereon.

The United States Government has adopted a plan known as the rectangular subdivision of public lands, under which practically all of the public lands of the United States have been surveyed and subdivided by the United States Government.

This law provides, in general, that the public lands of the United States shall be divided by north and south lines run according to the true meridian and by others crossing them at right angles, so as to form townships 6 miles square. Also that the townships shall be divided into 36 sections, each of which shall contain 640 acres, as nearly as may be, by a system of two sets of parallel lines, one governed by the true meridian and the other by parallels of latitude, the latter intersecting the former at right angles and at intervals of 1 mile.

Under this act the survey of the public lands in Florida is founded on a true meridian running north and south through Tallahassee and a base line running east and west at right angles to the meridian through this point. The ranges and townships are numbered from this true meridian and base line.

In the execution of the public surveys under the existing law, it is apparent that the requirements that the lines of the survey shall conform to the true meridian and that the townships shall be 6 miles square, taken together, involves a mathematical impossibility due to the convergence of the meridians.

In order to harmonize the incompatibilities of the requirements of the law with the application of mathematics thereto, the manual of instruction provides for the establishment of standard parallels conforming to the parallels of latitude initiated from the true meridian at intervals of 24 miles and extending east and west of the same. Also the establishment of guide meridians conforming to the true meridian initiated at the

base line and successive standard parallels at intervals of 24 miles running north and south, resulting in tracts of land 24 miles square, as nearly as may be, which are subsequently divided into tracts of land 6 miles square by two sets of lines, one conforming to the true meridians, crossed by others conforming to parallels of latitude at intervals of 6 miles, containing 23,040 acres, as nearly as may be, designated as a township.

Such townships are subdivided into 36 tracts, called sections, each of which shall contain 640 acres, as nearly as may be, by two sets of parallel lines, one set parallel to the true meridian and the other conforming to parallels of latitude, mutually intersecting at intervals of 1 mile and at right angles, as nearly as may be. In subdividing the township into sections, all excess, or deficiency, of the regulation section of 640 acres shall be added to or deducted from the western and northern tiers of sections, of half sections, in such townships.

Practically all of the public lands of Florida, except the Everglades, have been subdivided by the United States Government in accordance with the general provisions above specified. The tract commonly known as the Everglades has not been subdivided, but the greater part of the adjacent lands surrounding this tract has been surveyed by the United States Government and the township and section corners located and marked by suitable monuments.

The only action of the Trustees that is of record affecting the subdivision of this unsurveyed territory is a resolution of the board, adopted January 2, 1905, and published on pages 5, 6, and 7, Volume VI, of the Minutes of the Trustees of the Internal Improvement Fund; a resolution adopted June 10, 1907, and published on page 66, Volume VII, of the Minutes of the Trustees. Accompanying these resolutions was an official map of the United States, patent No. 137, known as the Everglades. The blue print accompanying this report is a copy of said amended map on an enlarged scale. On June 14, 1907, the following resolution was adopted, as appears on pages 70 and 71, of Volume VII, of the published Minutes of the Trustees:

Resolved by the Trustees of the Internal Improvement Fund of the State of Florida, That the townships, ranges, and sections of the official map of the Everglades, adopted by the Trustees under date of January 2, 1905, and as amended by the resolution of said Trustees, June 10, 1907, embracing the lands in the United States patent No. 137, be, and the same are hereby, adopted and ratified as the townships, sections, and ranges of said map, which townships, ranges, and sections, as the same appear to be designated upon said official map of the Everglades, were so designated and determined by projecting on said map the township, range, and section lines of the original United States survey as the same appears on said map, and that the sections indicated on said official map of the Everglades, as adopted by the trustees of the internal improvement fund of the State of Florida, as aforesaid, be numbered similarly and under the same plan and systems as sections are numbered under the township, range, and section system adopted by the United States and of the same force and effect, beginning with section 1 and continuing to section 36, inclusive; fractional townships to be numbered under the same system, being designated by such numbers as will make them uniform with the system of the United States."

J. W. Newman, a surveyor employed by the Trustees, made a subdivision of that part of township 50 south, range 41 east, that lies south of the North New River Canal, and also the east half of township 51 south, range 41 east. These surveys and plats have been officially adopted by your honorable body, are placed of record, and land has been sold in accordance with such surveys.

These acts of the Trustees, the adoption of the official map, and the resolutions accompanying the same, and the plats of the Newman survey, can not be modified or materially changed in the survey and subdivision of the Everglades. Any work done must be in accordance with the intent and meaning of the resolutions above cited. In order to carry out this intent in an actual survey, and run the lines and establish corners, as provided on the official map, some definite instructions should be adopted, setting forth the manner in which the work shall be done.

In order to carry out a survey, it is necessary to have some fixed point, or points, the location of which is undisputed, from which to initiate and carry forward the work. It is a well-established fact that a line, or corner, located by the United States Government under an official survey, can not be changed, even if it is afterwards proved to have been wrongly placed. The same law, I think, would hold in reference to the survey made by Mr. Newman.

In the plan I here recommend to you I have selected the southwest corner of township 50 south, range 41 east, as established by the Newman survey, above mentioned, as the initial point, marked "O" on the map, from which the survey of that part of the territory lying east of the range line between ranges 36 and 37 east shall be made. From the point O a parallel shall be run due west 24 miles to the point M on the map. On this line township corners shall be established at intervals of 6

miles, marked "O," "O'", and "O'''." Through the point M a meridian shall be established, extending north to the south shore of Lake Okeechobee and south to the line of the United States survey dividing townships 59 and 60, or the prolongation of said line. This meridian shall be run due north and south and become the range line between ranges 36 and 37 east. From the point O, the west line of township 51 south, range 41 east, shall be run to close with the northwest corner of township 52 south, range 41 east. From the point O, a guide meridian shall be run due north to the township line between townships 46 and 47, or this line produced, marked "P" on the map. From the point P, a guide parallel shall be run due west to intercept the meridian between ranges 36 and 37 at the point S. From the northwest corners of townships 55 south, range 40 east; 55 south, range 39 east; 57 south, range 38 east; meridians shall be run due north to intercept the guide parallel OM.

From the township corners, marked "O," "O'", and "O''' on the map, located on the parallel OM, meridians shall be run due north to intercept the guide parallel PS. From the southwest corners of townships 44 south, range 41 east; 43 south, range 40 east; 42 south, range 39 east; and 40 south, range 38 east, meridians shall be run due south to intercept the guide parallel PS.

From the southwest corner of townships 41 south, range 39 east; 42 south, range 39 east; 43 south, range 40 east; 44 south, range 41 east; and from the southwest corner of section 36, township 45 south, range 41 east, parallels shall be run due west to intercept the range line between ranges 36 and 37, or the east shore of Lake Okeechobee.

From the northwest corner of townships 52 south, range 41 east; 53 south, range 41 east; from the northwest corner of section 2, township 54 south, range 40 east; from the northwest corner of township 55 south, range 39 east; northwest corner section 5, township 56 south, range 38 east; northwest corner of townships 57 south, range 38 east; 58 south, range 38 east, and 59 south, range 38 east, lines shall be run due west to intercept the range line between ranges 36 and 37.

The townships thus established shall be subdivided into sections of 640 acres, as nearly as may be, according to the rules and methods employed by the United States General Land Office in the survey and subdivision of public lands.

In subdividing the territory west of the range line between ranges 36 and 37 the following method shall be followed:

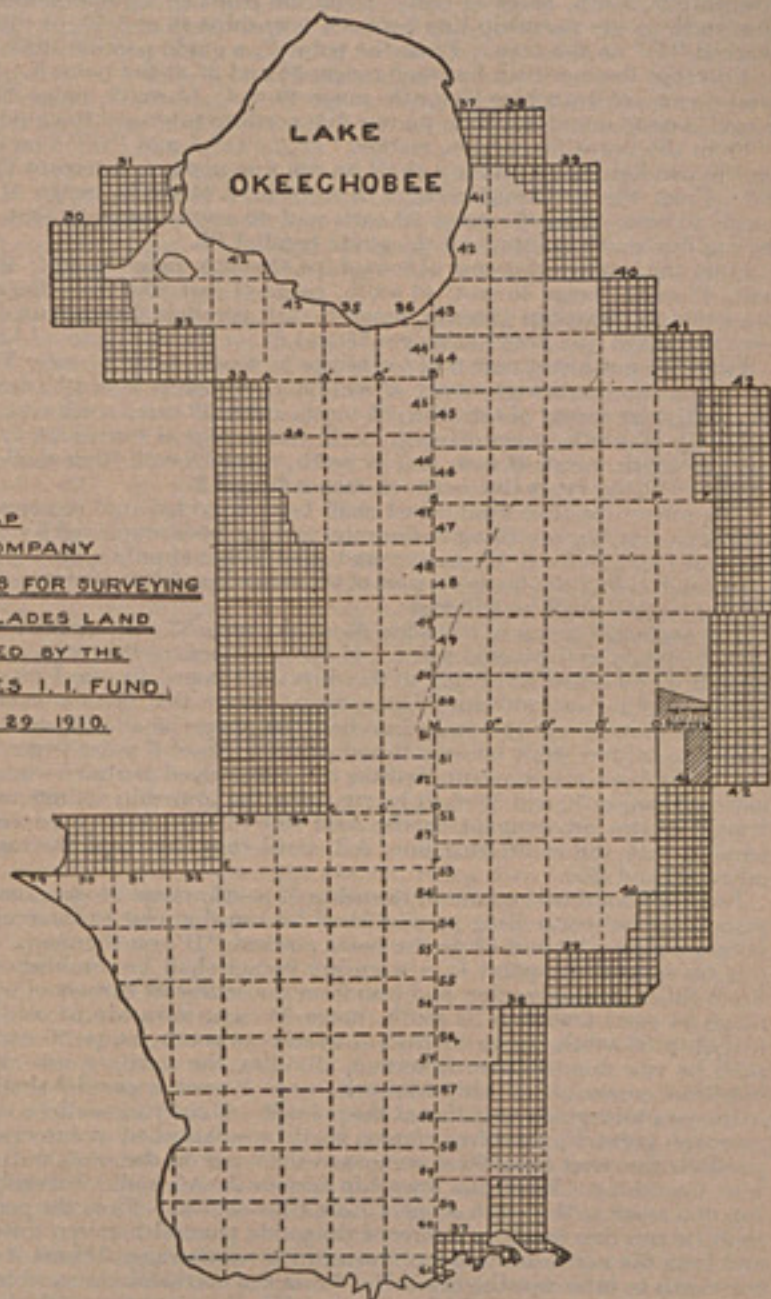
The northeast corner of township 45 south, range 33 east, marked "A" on the map, shall be taken as the initial point. If the monument at this corner can not be found, it shall be relocated according to the directions issued by the United States General Land Office for reestablishing lost corners. From this point a parallel shall be run due east to intercept the range line between ranges 36 and 37, at B. On this township line corners shall be established at intervals of 6 miles from A at A' and A''. The other township lines subdividing the unsurveyed territory west of the range line between ranges 36 and 37 shall be run from the township corners established by the United States Government on the west side of this unsurveyed territory due east, parallel with the controlling line, AB, until they intercept the range line between ranges 36 and 37.

From the southeast corner of township 52 south, range 34 east, marked "C" on the map, a second controlling parallel shall be run due east to intercept the range line between ranges 36 and 37 at the point marked "D" on the map. On this parallel, 6 miles east of the point C, a township corner shall be established, marked "C'." From this township corner, and also from the southeast corners of township 52 south, range 34 east; township 52 south, range 33 east; township 53 south, range 32 east; township 53 south, range 31 east; township 53 south, range 30 east, meridian lines shall be run due south to tidewater, dividing the territory into ranges. From the southeast corner of township 53 south, range 32 east, a parallel shall be run due east to intercept the guide meridian at the point F. Measuring south on the guide meridian from the point F, township corners shall be established at intervals of 6 miles and parallels run west from these corners to the coast on the west to divide the territory into townships. From the township corners A, A', and A'' meridian lines shall be run due north to the south shore of Lake Okeechobee. From the point A'' a meridian shall be run due south to intercept the guide parallel between townships 52 and 53, and from the northeast corner of township 48 south, range 34 east, a meridian shall be run north to intercept the line AB. From the northeast corner of township 44 south, range 32 east, a meridian shall be run north to intercept the south shore of Lake Okeechobee. The remainder of townships 42 south and 43 south, range 3 east, shall be completed in accordance with the work previously done by the United States Land Office.

All of the townships thus formed shall be subdivided into sections one mile square, as nearly as may be, according to the rules and practice of the General Land Office for subdividing townships.

In order that there may be no conflict in the surveys made by different surveyors in this territory, it is necessary that there be established and permanently marked one or more standard meridians. These should be located at some convenient point, preferably in the vicinity of Fort Lauderdale or Miami for surveys on the east side and at some place on the south shore of Lake Okeechobee for surveys on the west side of the standard meridian.

MAP
TO ACCOMPANY
INSTRUCTIONS FOR SURVEYING
EVERGLADES LAND
ADOPTED BY THE
TRUSTEES I. I. FUND,
DEC. 29 1910.



In a book of instructions issued by the General Land Office, June 1, 1909, it is stated that the General Land Office prohibits its employees and contracting surveyors from depending to any extent upon courses derived from the needle. It also declines to advise other surveyors what variations to use in their own regions. The difference in the variations used, and careless and inaccurate measurements, are the chief causes of conflicting surveys. To avoid this, I recommend that a standard meridian be

established in the vicinity of Fort Lauderdale by taking numerous observations on Polaris and taking the mean or the average of these observations; that this line be permanently marked by suitable stone or concrete monuments, with copper plugs embedded in the same, marked with a cross to indicate the exact position of the line; that a similar line be established at some place on the south shore of Lake Okeechobee; that engineers or surveyors making a survey east of the guide meridian, between ranges 36 and 37, be required to test their instruments with this standard line and use such variation as this line may indicate at the time the survey is made, and that persons making surveys west of the guide meridian shall compare their instruments with the standard meridian near the south shore of Lake Okeechobee and use the variation as shown by this line when making such surveys; that complete copies of all field notes and plats of surveys made in this territory be filed with the Trustees of the Internal Improvement Fund.

Respectfully submitted.

J. O. WRIGHT,
Chief Drainage Engineer.

The Trustees adopted the above recommendations of Mr. Wright respecting a survey of the Everglades lands, and authorized him to have such a number of copies of the report printed as he deemed necessary.

TALLAHASSEE, FLA., *January 31, 1911.*

I hereby certify that the above and foregoing is a true and correct copy of a portion of the minutes of the Trustees of the Internal Improvement Fund of the State of Florida of December 29, 1910.

[SEAL.]

J. C. LUNING, *Secretary.*

Mr. J. O. Wright, chief drainage engineer, requesting more definite instructions relative to the matter of a survey of the Everglades lands, the Trustees adopted the following resolution appertaining to said survey:

Whereas at a meeting of the Trustees of the Internal Improvement Fund held on the 29th day of December, 1910, a plan for surveying the lands embraced in United States patent No. 137, known as the Everglades, was presented by the chief drainage engineer and approved by the board: Now, therefore,

Be it resolved, That the chief drainage engineer is hereby authorized and directed to proceed with the survey of the said land by running the township and range lines and establishing the township corners and the section corners on the township and range lines, in accordance with plan adopted, as rapidly as the condition of the land will permit, the work to be done economically.

TALLAHASSEE, FLA., *January 31, 1911.*

I hereby certify that the above and foregoing is a true and correct copy of a portion of the minutes of the Trustees of the Internal Improvement Fund of the State of Florida of January 27, 1911.

[SEAL.]

J. C. LUNING, *Secretary.*

GENERAL CLASSIFICATION OF FLORIDA SOILS.

[Quarterly Bulletin of the Florida State Agricultural Department, April 1, 1911.]

SWAMP LANDS.

The swamp lands are unquestionably the most durable rich lands in the State. They are the most recently formed lands and are still annually receiving additions to their surface. They are intrinsically the most valuable lands, because they are as fertile as the hammocks and more durable. They are alluvial in character and occupy

natural depressions or basins which have gradually filled up by deposits of vegetable débris, etc., washed in from the adjacent and higher lands. Drainage is indispensable to all of them in their preparation for successful cultivation. Properly prepared, however, their inexhaustible fertility sustains a succession of the most exhausting crops with astonishing vigor. These lands have been known to produce as much as 600 gallons of sirup, or about 5,000 pounds of sugar, per acre without fertilizer. We mention sugar cane in this connection as showing the fertility of the soil, because it is known to be one of the most exhausting crops. It is not, however, quite fair to make this the measure of fertility of similar lands situated in different climates and countries, for we find on the richest lands in the State of Louisiana the product of sugar is little more than about half what it is in Florida.

But this great disparity in the product of these countries is accounted for not by any inferiority in the lands of Louisiana or Texas, but by the fact that the early visitations of frosts in both these States render it necessary to cut the cane in October, which is long before it has reached maturity, while in Florida it is permitted to stand, without fear of frost, till the last of November or December or till such time as it is fully matured. It is well known that it "tassels" in south Florida, and it never does so in either Louisiana or Texas. When cane "tassels," it is evidence of its having reached full maturity. In consequence of the considerable outlay of capital required in the preparation of this description of land for cultivation and from the facility formerly existing for obtaining hammock land, which requires no ditching or draining, swamp land has been but little sought after by persons engaged in planting in Florida until in recent years; now, however, there is a great and ever-increasing demand for these lands by individuals and incorporated companies, thus suddenly recognizing their immense productive value.

The greater part of what are known as swamp lands proper are mostly located in east and south Florida, although there are numerous and quite extensive bodies in north, middle, and west Florida.

THE EVERGLADES.

While the soils of this region differ little in their general characteristics from the swamp lands above considered, still, owing to their prominence as such and as the greatest reclamation undertaking in recent times, also their unique geographical position, we submit a brief description under their own heading. These lands are being rapidly and successfully drained by the State, as well as by private and corporate owners.

The Everglades of Florida cover an area of about 4,000 square miles, embracing more than half of the portion of the State south of Lake Okeechobee. The subsoil of this vast region is a coralline limestone. * * * Upon this surface lies an immense accumulation of sand, alluvial deposits, and decayed vegetable matter, forming a mass of sand and mud from 2 feet to 10 feet or more in depth that over-spreads all but a few points of the first strata.

Upon the mud rests a sheet of water, the depth varying with the conformation of the bottom, but seldom at dry seasons greater than 3 feet. The whole is filled with rank growth of coarse grass, 8 or 10 feet high, having a serrated edge like a saw, from which it obtains its name of "saw grass."

In many portions of the Everglades the saw grass is so thick as to be almost impenetrable; but it is intersected by numerous and tortuous channels that form a kind of labyrinth, where outlets present themselves in every direction, however, terminating at long or short distances in apparently impenetrable barriers of grass. The surface of water is quickly affected by rain, the alternate rising and falling during the wet seasons being rapid. The difference of level between highest and lowest stages of water is from 2 to 3 feet. The general surface of the Everglades was thus subject to great changes prior to the inauguration of the system of drainage now so successfully under way. Small keys or, in reality, hammocks, are here and there met with which are dry at all seasons; upon them the soil is very rich. There are many such. Undoubtedly they were often made the site of Indian gardens.

Large areas, covering many square miles, which but a few years ago were marshes covered with saw grass and rushes, are now open meadows, dry all seasons excepting the rainy months, affording pasture for many thousand heads of cattle. The fall or rapids at the heads of all streams running from the Glades have receded toward the center of the Glades and Lake Okeechobee several miles.

The Florida Everglades at present may be described as a wet prairie, being a strip of land about 150 miles long by 55 miles wide, and lying between the pine and swamp lands which have grown over two reefs of rock running parallel with each other from north to south. No rivers penetrate into the Glades beyond these rock reefs on either side and the land is very level, being composed chiefly of muck and sand lying in a basin with a rock bottom. The annual rainfall over this territory averages nearly 60 inches. It has for this reason, and because this rainfall has no other outlet over these reefs, been and is too wet for cultivation. The muck which overlies the sand and rock varies from about 2 feet on the edge of the Glades to a depth of 20 feet in the middle, and would average over the whole territory a depth of between 6 and 8 feet. The land is free from trees and stumps and almost free from bushes, the item of clearing being of no consideration whatever, simply requiring mowing down the grass and burning it, when the soil is ready to be tilled as soon as the excess water is run off by the drainage canals.

The soil, as compared with other portions of the country, taking into consideration its natural richness, location, and climate, is more valuable for agricultural purposes than any that is known, being particularly adapted to the growth of cane, cotton, Irish potatoes, celery, tomatoes, cabbage, turnips, beets, onions, and, in fact, any crop will grow well on these lands except such as require a colder climate.

The composition of the soil being almost entirely decomposed vegetable matter, is rich in nitrogen, but lacking to a great extent in the mineral constituents necessary to make a perfect soil; consequently, phosphoric acid and potash will have to be supplied in varying quantities for a majority of crops in some of these muck soils, especially where rock or clay is absent or too far below the surface to exert any appreciable influence. With these additions, when necessary, however, these soils will without doubt be the most productive in this country and the equal of any in the world. Without the addition of the chemical fertilizers mentioned, these soils will not equal in productiveness the first grade of swamp lands.

* * * * *