Nai Bulibuli Monthly
TLTB GEOSPATIAL NEWSLETTER
FEBRUARY 2021

iTaukei Land Trust Board
iTaukei Land. Our Heritage. Our Future

1st Geospatial Committee Zoom Meeting Held at HQ

Pictured are the Geospatial Information Committee Members at the 1st meeting for 2021

THE TLTB Geospatial Information Committee held its first meeting of the year on Tuesday, February 2 where they discussed the way forward with regards to the Geospatial services of the Board. This is the first time also that the GIC met using Zoom Video Conferencing platform and it connected all Regional and Sub-Regional Offices to the existing Committee at headoffice. What transpired was very good discussions led by the Chairman and Deputy General Manager Research & Development, Mr Solomoni Nata.

Knowing that GIS is an important tool for the Board, the committee has agreed to have meetings more frequently this year. This includes Zoom video conferencing and face to face meeting. Added to this is the fact that GIS is currently considered a risk for TLTB and the committee must try to find solutions that will help mitigate these risks.

One new aspiration of the committee this year is for the GIS team to have a drone because they believe that drones is one tool that will make their work easier and faster especially now that the iTaukei Lands Commission (TLC) has completed correcting the TLC boundaries. However, the GIS team will submit a paper at the next ITDMC meeting regarding issues highlighted from the TLC correction.

It was also discussed for GIC to draft a TOR for the new Geospatial committee members which includes the Regional managers, senior estate officers, geospatial information officers and geospatial information assistants.

The Chairman desires that the GIS Team investigate remote sensing technology to map deforestation from satellite imagery and integrate it into the TLTB systems to add value and can also be used in the CSR activities, CBUL and other projects that the Board is a part of.

TLTB is paying it's annual ESRI licence for the ArcGIS Suite of Apps and has 7 years worth of Credits remaining in its Arc GIS Online account and this is used to acquire uploaded data for reporting as well as Web App development and utilising Advanced features on the Suite. GIC has been requested to provide the list of ArcGIS Online users together with their respective user levels; to the committee chairman. It has also been requested for a paper to be submitted on ArcGIS applications, its usage and how it can add value to the TLTB processes.

A concern was raised from the regions stating that their officers are unable to use the new GNSS in the field. MIT then clarified that spare batteries need to be purchased in order to solve this problem. But at the moment the regions are quite tight with their budgets, hence the deferral.

Additionally, some regional officers still have difficulty in using the new GNSS machines as they are not quite familiar with handling the new sets. Refresher trainings on this will be conducted on the 2nd week of March. On the same note, all regional GIS teams will be visited to identify their individual problems including software installation, hardware needs and methodology training to assist them and minimise any errors. The Chairman stressed that was target in 2021 is to have zero double leasing.

Geospatial Information and Information Technology: Securing the Link

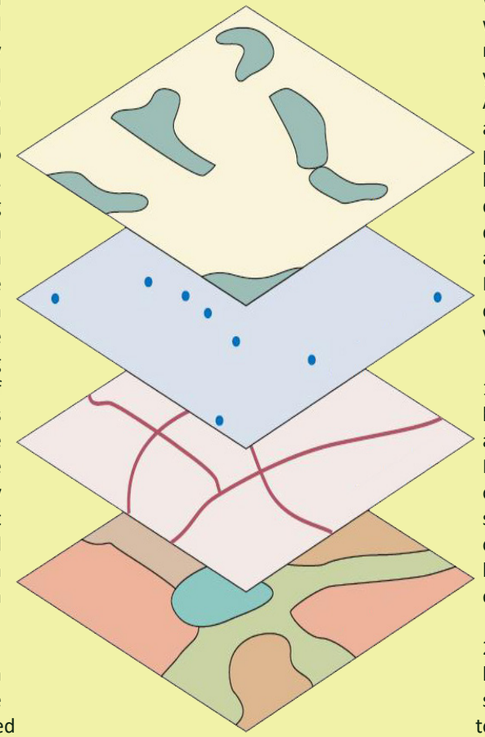
by GA Rusiate Turuva & GPO Moria Gaunavou

Information Technology evolution is inevitable. The 21st century is all about technology, in concurrence with increasing need for modernization in our day to day lives, new technologies are open to acceptance and with innovative technological advancement, and organizations can meet the challenges of rapid urbanization and the pattern change in digital interfaces from a technological focused to people centered approach. Developing nations such as ours, there is no denying the current digital transition that is being applied.

Recent technological advancements have changed this state of affairs. GIS uses modern software and hardware to store, access, visualize, map, analyze and disseminate geographic data. Geospatial data can now be referenced to a globally defined coordinate system. Global Navigation Satellite Systems (GNSSs) such as the Global Positioning System (GPS) use satellites to allow users to determine their exact location, velocity, and time in any conditions, making traditional positioning instruments such as tapes and theodolites obsolete which is currently being utilized by the estate officers therefore, minimizing efforts in using theodolites which takes more time and labor therefore creating a producing results more efficiently. The products of these new digital geospatial technologies include digital maps, satellite image maps, topographic maps, and land use change statistics. With GIS, it is easy to combine and share these different geospatial data sets. An integrated analysis of these combined data can provide new insights into the interaction of geographic phenomena.

Geospatial Science and Information Technology can be considered the tools and methodologies that are used to collect, manage and analyze geospatial data related to earth. Examples include topographic data, land property records, spatial plans, soil and forest survey inventories, and a variety of geographically referenced social and economic data such as population characteristics. Geospatial data are spatially referenced in a consistent manner, for example by means of latitude and longitude, a national coordinate grid or postal codes or some other reference system. This can be seen in the ArcGIS online application Survey 123 where the surveys are linked to the cloud and real time data can be uploaded and can be visible to other users that are permitted to access the relevant information.

Geospatial Information Technology as a field has undergone significant transformation in recent years. In the past, the process of collecting geospatial data was laborious and performed with ground-based methods. The updating cycles often spanned several years, and the outcomes (such as paper maps) could not be easily shared across government agencies. The potential for integration and multiple applications, a key characteristic of geospatial data and which could not be exploited.



Land administration systems support social development in a number of ways. For individuals and citizens they secure land tenures; enable access to credit; facilitate cheaper and faster land dealings; and reduce land disputes for e.g. LDVC. Another instance is the Linking of the GIS servers with Landsoft which allows the organization to reduce costs in terms of paper prints therefore foreword towards the significance of the safekeeping of this information, as this information are vulnerable from online threats and malware that can contaminate the information.

With the paradigm shift in the technological age, the global cyber threat continues to evolve at also a rapid pace and the safekeeping of information within the organization from cyberattacks is a major issue that needs 100% monitoring. Cyber Security is the practice of defending computers, servers, mobile devices, electronic systems, networks and data from malicious attacks. It's also known as information technology security or electronic information security. That is why GIC emphasizes the need to always backup live data into your personal database particularly after every working day as a safety net.

The chairman of the GIS committee welcomed the committee on having a way forward and the need for frequent meetings as we progress through this year. In terms of land management ArcGIS is an important tool, it poses as a potential risk area when not carefully processed with due diligence. GIC will have to vet Land Available again before due process as to prevent the risk of double leasing. Geospatial Officers are advised to double cross check LeaseMaster layer when editing and charting of Leases as highlighted by GA Vika in the previous newsletter.

1. Each new application case should be charted on a new polygon, do not amend or delete existing lease chartings. If a lease has already been deactivated on Landsoft due to expiry/re-entry/ surrender, you can transfer the lease charting to GIS.GISAMIN.OLDLEASES layer before charting new case. This ensures historical data is maintained.

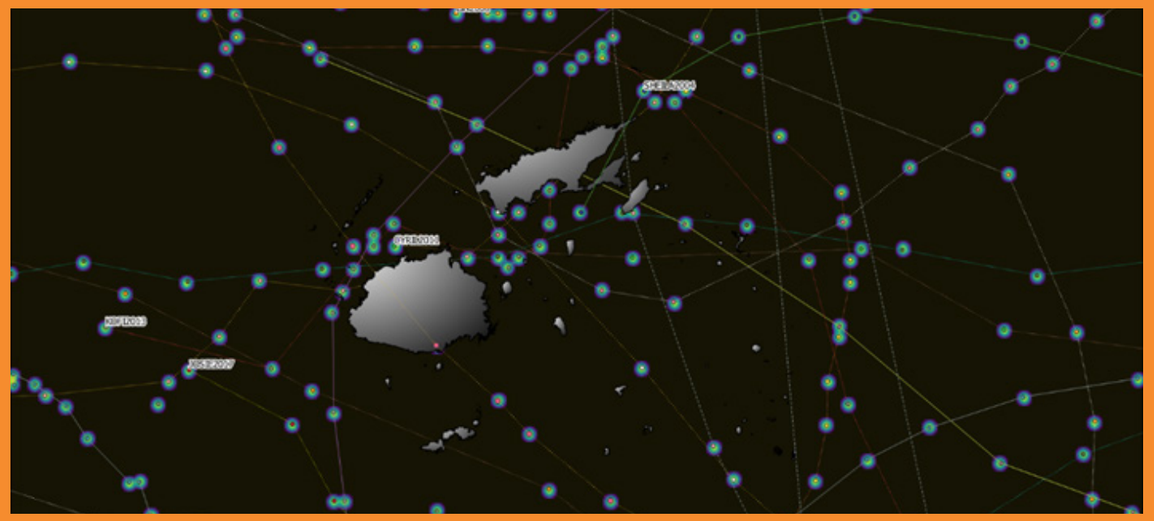
2. Do not process if the existing lease is still Active on Landsoft, even if surrender/expiry in process. Return case to Estates to complete process first.

3. Ensure that you are charting directly onto GIS.GISADMIN.LEASEMASTER, do not use your own copies for charting new cases or vetting for Land Available.

4. Do not process any applications for land within any Active development leases like Ministry of Local Government Leases as this constitutes double leasing.

Exploring QGIS to map Cyclone Paths in Fiji

by GT Joana Momolevu



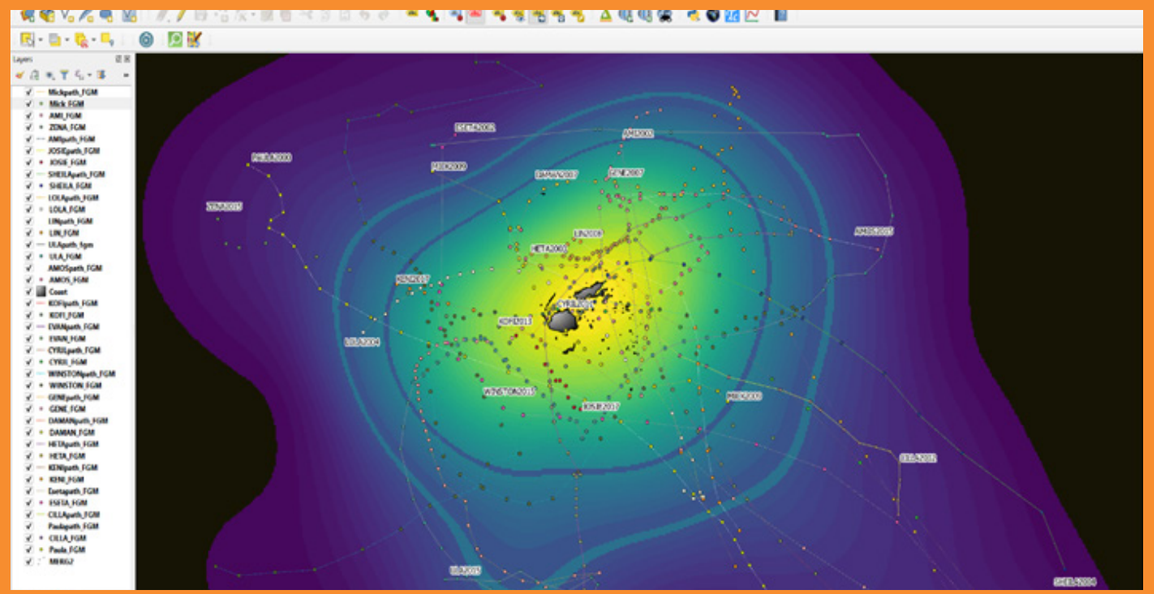
I've never learned to use QGIS. I've only ever been familiar with ArcGIS. Nevertheless, that did not alter my enthusiasm to learn more, given the task that has been assigned to me by GIC. Not that I'm complaining, I've always been interested in GIS and to be able to have the opportunity to learn more into the software, whilst my GT programme with IT department, has been fulfilling. It has been 2 months since I've been with IT and while I've involved myself in other fields that has contributed to my skills and knowledge development, QGIS has been one I've taken interest to.

So what's QGIS?

Basically it's a free and open source Geographic Information System. In addition to composing and exporting graphical maps, it also allows its users to analyse and edit spatial information. So it's more or less the same as ArcGIS, but more user friendly.

Inserted is just snippets of the results of using QGIS to visualize the Cyclone tracks that have crossed paths within 300km of Fiji from the years 2000-2018. Data for this can be easily accessed from the Australian Government Bureau of Meteorology-Tropical Cyclone Knowledge Centre, as CSV files. Between these seasons there has been a total of 20 cyclones recorded- out of which the highest recorded cyclones was recorded in 2015 (Amos, Ula, Zena and Winston). Cyclone Winston having the longest track recorded while Cyclone Josie recorded the shortest.

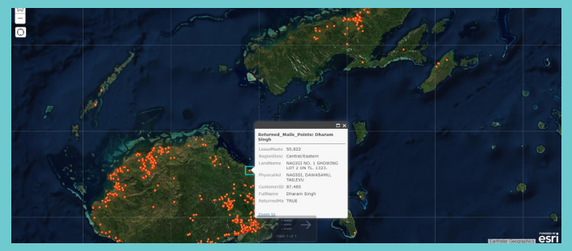
I admit there is a lot more that can be done to better visualize the cyclone tracks in Fiji, considering the powerful spatial analysis tool of QGIS and I encourage other users to have a go at it and find the time to explore its possibilities.



NEW ARCGIS ONLINE LAYERS & APPS

ArcGIS Online was utilised at 40% since it was first acquired in 2014. The ITDMC discussed this in January 2020 and EM directed that the geospatial teams increase usage and explorer all that the platform has to offer. Outlined below are some of the recent layers and apps (with their link) developed within the past year.

1. Returned Mails Layer

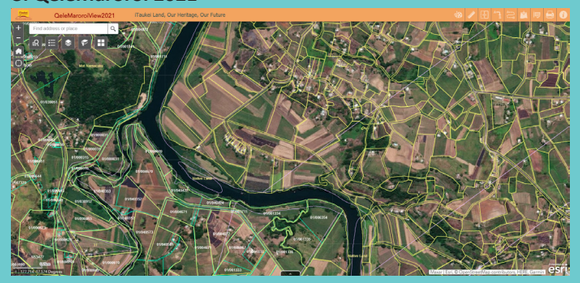


Link: https://tltb.maps.arcgis.com/apps/presentation/index.html?webmap=1a8648ca0c59400d9d33b8e404f70130

2. CBUL App

Link: https://tltb.maps.arcgis.com/apps/presentation/index.html?webmap=1a8648ca0c59400d9d33b8e404f70130

3. QeleMaroroi 2021

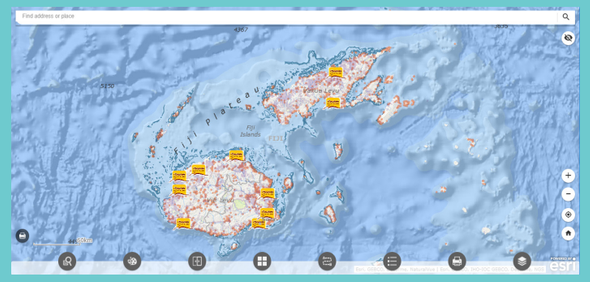


Link: tltb.maps.arcgis.com/apps/webappviewer/index.html?id=8a73011e2958478686619e643c30ed38

4. Sales Analysis Layer – Lautoka

Link: ttps://tltb.maps.arcgis.com/apps/presentation/index.html?webmap=b92b55589ae04d5390b6dfb3627c23f2

5. CEO Webmap Viewer App

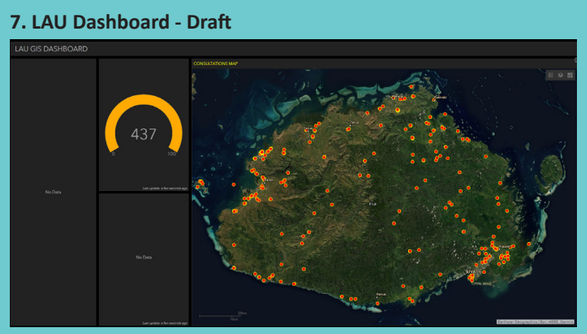


Link: https://tltb.maps.arcgis.com/apps/webappviewer/index.html?id=105e6ae94a5d42148c0825b740f2692d

6. CMS Dashboard - Draft

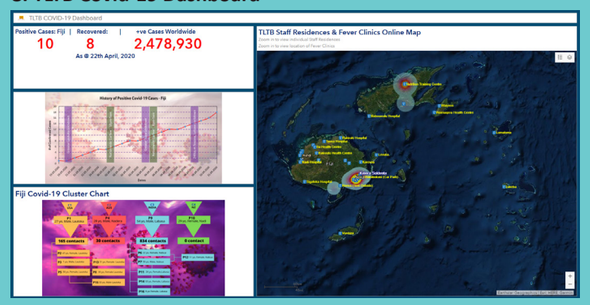
Link: https://tltb.maps.arcgis.com/apps/dashboards/525505f4d15b4828ba03b298d1143582

7. LAU Dashboard - Draft



Link: https://tltb.maps.arcgis.com/apps/opsdashboard/index.html#/d11ad3b0d1464712aa0933f1cea8ca35

8. TLTB Covid-19 Dashboard



Link: https://tltb.maps.arcgis.com/apps/opsdashboard/index.html#/5f63e396ed8d45bd8a8737d01c0e9473

There are other Apps that we haven't used which the Geospatial Team will investigate and use to make work processess easy. These include Workforce, Solutions, Living Atlas and ArcGIS for Power BI.

By GPO Moria Gaunavou

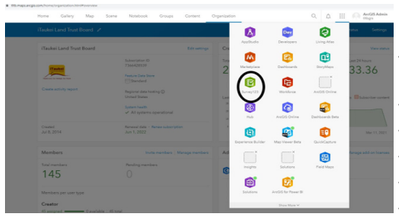
HOW TO EXTRACT SURVEY 123 REPORTS

Not all user types can extract Survey 123 Reports, let alone extract multiple copies and that of other officers. You need at least a 'Creator' access level to do so. Officers can ask 'Creators' in their offices to download for them or request anyone from IT Geospatial Team.

STEPS

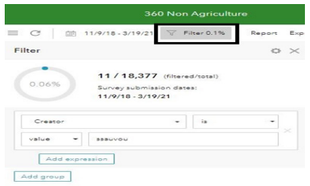
1. Sign in on ArcGIS Online Access ArcGIS Online with the link: https://tltb.maps.arcgis.com/home/index.html

2. Select Survey 123 from the 9 dots on the top right.



3. Select your Survey - Eg. 360 Non Agriculture
4. Select the Data option. Note that the other options allows the user to see usage details, Edit the Survey, Collaborate, Analyse and general settings.

5. Select the Filter tab

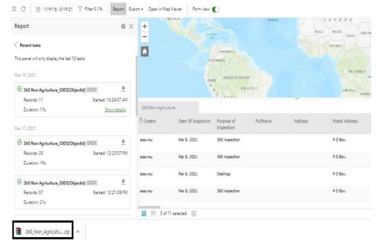


- Search the name of the officer on the **Creator** field
- Click on **Add expression**
- Search for the **Date** of inspection
- Click **Apply**
- Select **Report**
- Select All records in table
- Select **Generate**

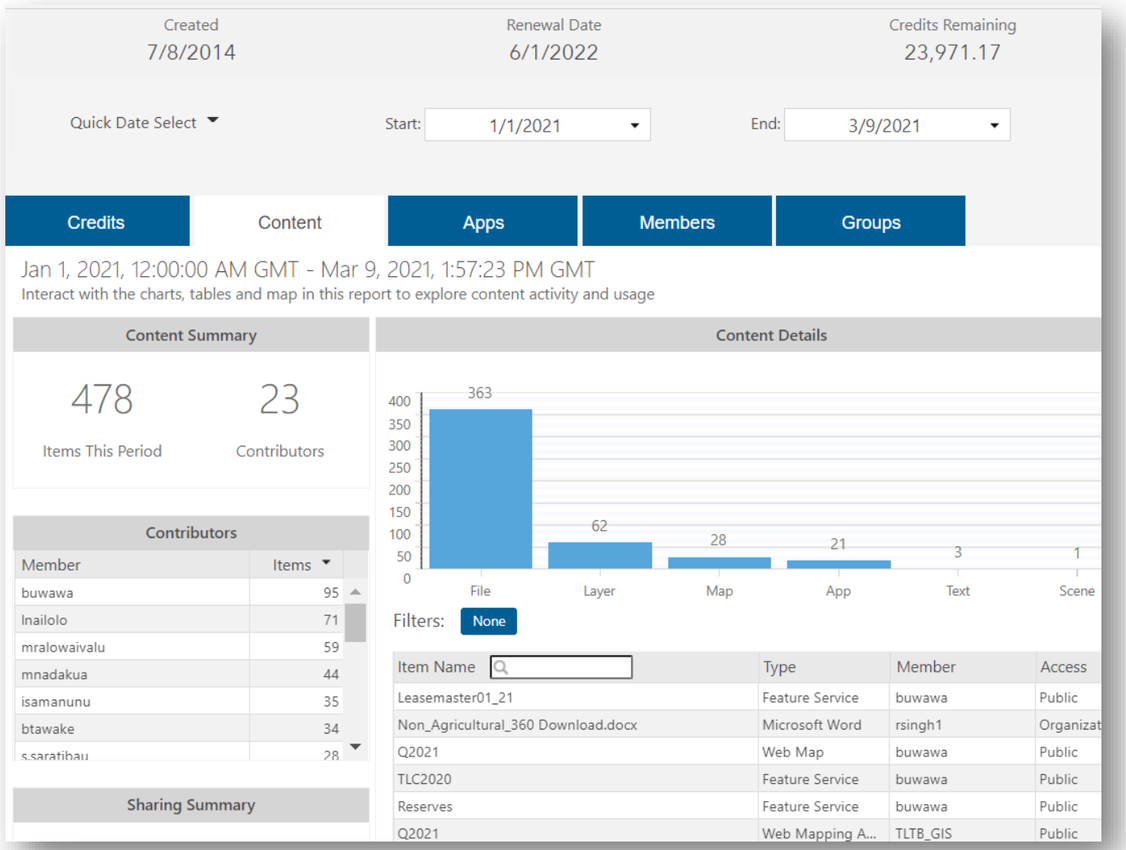
Survey 123 Report will be downloaded a s a zip file

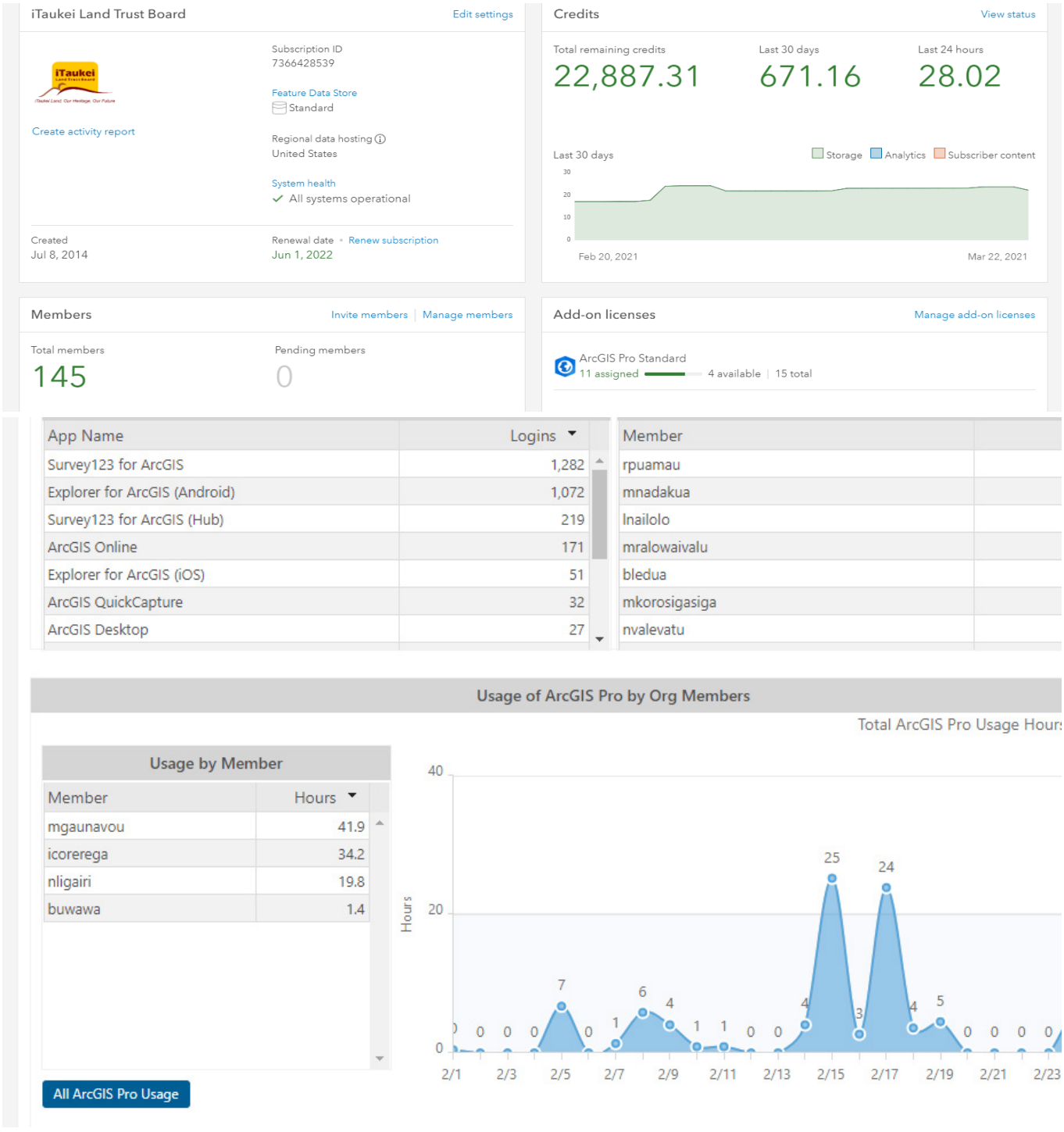
'Creators' can also edit Surveys before it is downloaded.

* Please note that it is important to correctly mark the location as it's used to analyse trends and distribution of surveys. Wrong locations can be edited using the web map at the bottom of the survey - simply click zoom and click you survey location.
* The full manual is uploaded on the Intranet under Portal--GIS Team--Manual



ArcGIS Online Usage Statistics





MEET THE GEOSPATIAL TEAM - CE REGION