NextGIS Mobile documentation

Release 2.5

NextGIS team

03-07-2025

Оглавление

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INTRODUCTION

1.1 About NextGIS Mobile

NextGIS Mobile is a mobile GIS (Geographic Information System) for Android OS.

NextGIS Mobile allows to:

- create and display a multi-layered map;
- perform map navigation (panning, zooming in and out);
- add vector data in GeoJSON format;
- add raster data as a tile cache;
- add online tile sources (XYZ and TMS);
- add raster and vector layers from nextgis.com[1] and NextGIS Web[2];
- create and modify vector geodata (geometries and attributes);
- browse the attributes of selected geometry through identify dialog;
- modify vector layer attributes with customizable input forms;
- share vector geodata using standard Android tools;
- record the tracks and manage their display parameters, remove selected or all tracks;
- display device coordinates, velocity, altitude on the map, as well as a source of geographical coordinates and amount of satellites used for georeferencing (when GPS is in use);
- collect geodata and transmit it to nextgis.com[3] or NextGIS Web[4] in background mode (when internet connection is on).

NextGIS Mobile is open source (license *GPL v3* (c. 146)).

Some icons used in NextGIS Mobile are from:

[1] https://my.nextgis.com/signup/?next=/webgis/
[2] http://nextgis.com/nextgis-web/
[3] https://my.nextgis.com/signup/?next=/webgis/
[4] http://nextgis.com/nextgis-web/

- Icons8.com[5] distributed on CC BY-ND 3.0[6];
- romannurik.github.io[7] - CC BY 3.0[8].

This documentation describes NextGIS Mobile 2.5.

1.2 Hardware and software requirements

To launch NextGIS Mobile you need a device (smartphone, tablet, etc.) with Android **8.0** or higher.

To be able to use all NextGIS Mobile features the device should have the following hardware:

- GPS and/or GLONASS sensor;
- digital compass;
- cellular module;
- rear camera.

Note: If any of these items are missing from the device, the related functions will not be available.

NextGIS Mobile does not impose specific system requirements. However, the amount of system memory and storage space can limit the size of uploaded geodata.

[5] http://icons8.com/android-icons
[6] http://creativecommons.org/licenses/by-nd/3.0/
[7] http://romannurik.github.io/AndroidAssetStudio/icons-launcher.html
[8] http://creativecommons.org/licenses/by/3.0/

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INSTALLATION

NextGIS Mobile can be installed:

- using an APK file nextgismobile.apk[9];
- from Google Play[10].

To install “NextGIS Mobile” from the APK file first allow installation of apps from unknown sources (“Settings” -> “Privacy” -> “Unknown sources”). After installation you can deactivate this option.

To install application from Google Play launch Google Play app, enter “NextGIS Mobile” in the search bar and install the application.

To launch NextGIS Mobile use a shortcut created automatically during its setup (see Fig. 2.1).

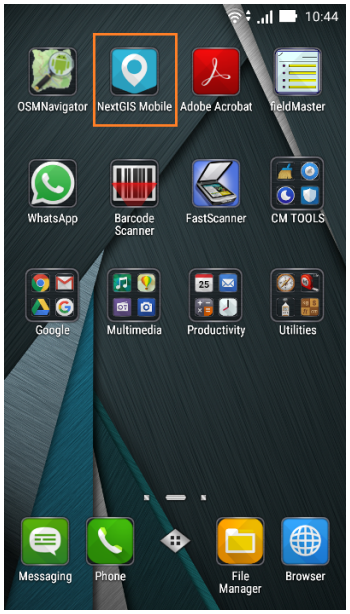

Рис.2.1: Application shortcuts.
NextGIS Mobile shortcut is highlighted by the orange rectangle.

[9] http://nextgis.com/nextgis-mobile/
[10] https://play.google.com/store/apps/details?id=com.nextgis.mobile

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AUTHORIZATION

3.1 Via my.nextgis.com

If you are a “regular” user, here’s what you do to sign in:

1. Create an account at https://my.nextgis.com, confirm it.
2. In the app enter your e-mail or username and password set during registration.

3.2 Via on-premise (NGIDOP)

If your company has NextGIS Web and NextGIS ID deployed on-premise, you need to change authorization server in the settings.

For authorization in NextGIS Mobile via on-premise, enter the appropriate NextGIS ID address in the authorization settings (Menu -> Settings -> Account -> Sign in -> Change authorization server) (Fig. 3.2). Select “NextGIS ID from custom server” and enter the address.

If you’re already logged in with my.nextgis.com - log out first, select the correct server, then log in again.

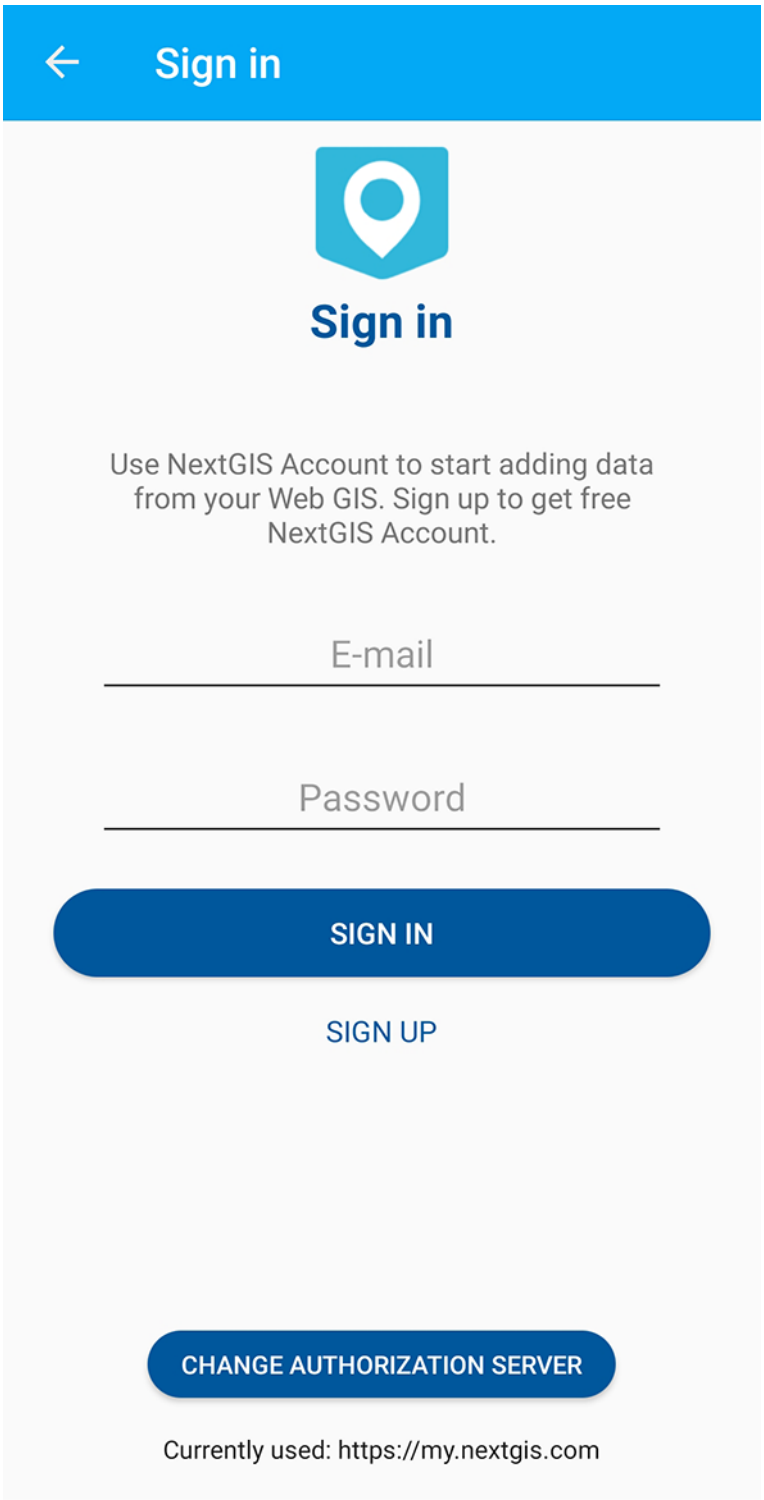

Рис.3.1: Authorization

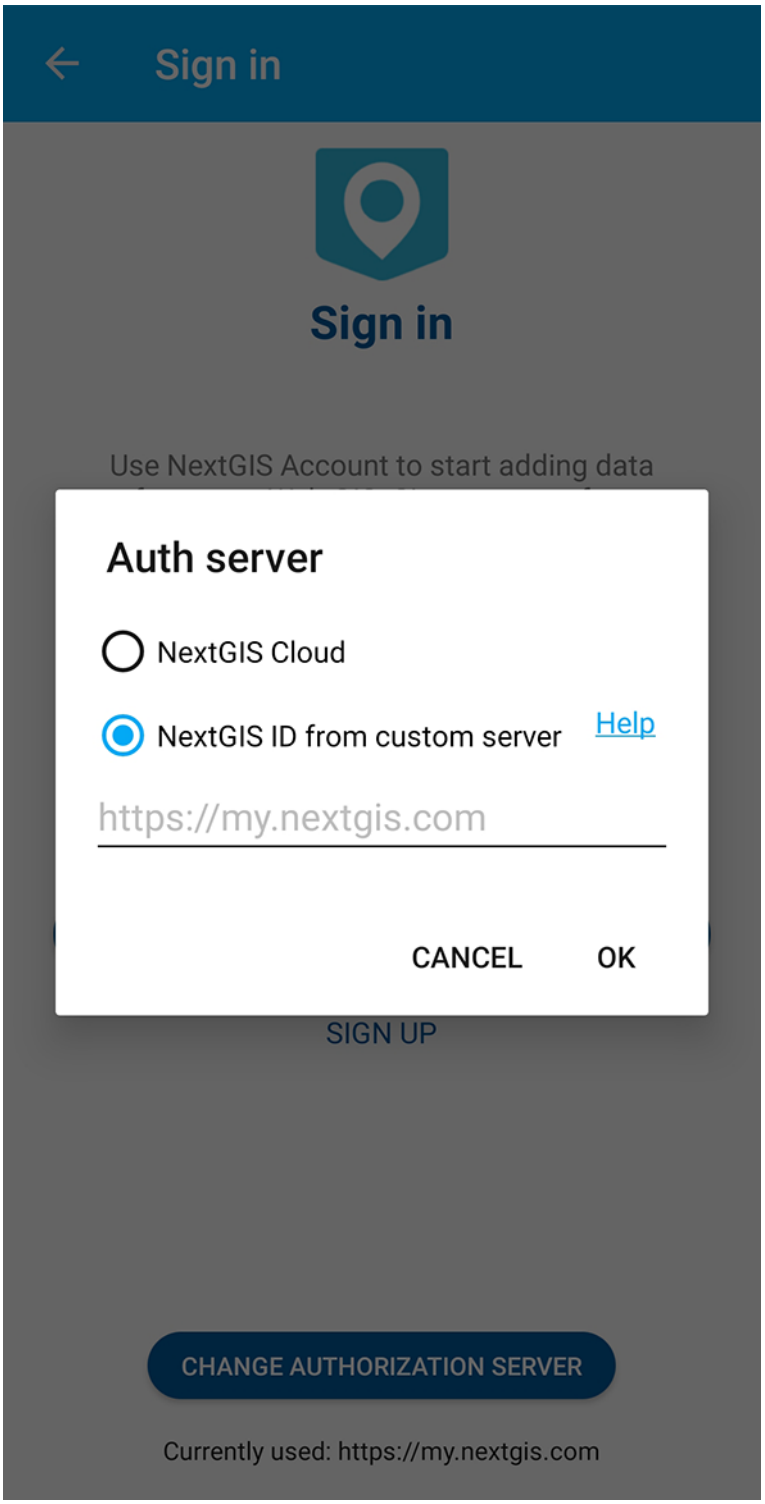

Рис.3.2: Adding your own authorization server in NextGIS Mobile

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USER INTERFACE (UI)

There are 4 major elements of NextGIS Mobile UI:

- Main screen
- Layers tree panel
- Features table
- Settings dialogue

UI is designed in accordance with Google Material design[11] guidelines.

4.1 Main screen

Main screen is shown on Fig. 4.1.

The number of buttons in top toolbar depends on your device screen size. If the buttons don't fit into the toolbar they are moved to the contextual menu (item 5 in Fig. 4.1).

Top toolbar contains the following buttons:

- Show my location
- Load or refresh geodata
- Start new track
- Settings
- Help

Status info panel (item 9 in Fig. 4.1) can be shown at the bottom of the Main screen (if it is activated in the Settings - Map - Show status info panel). Status info panel shows (if there is the fixed location):

- Device coordinates (latitude and longitude);
- Positioning signal source (mobile networks/Wi-Fi or satellite) and number of captured satellites (if positioning is carried out with help of GPS/GLONASS);
- Device altitude (meters);
- Device speed (kmph)

[11] http://www.google.com/design/spec/material-design/introduction.html

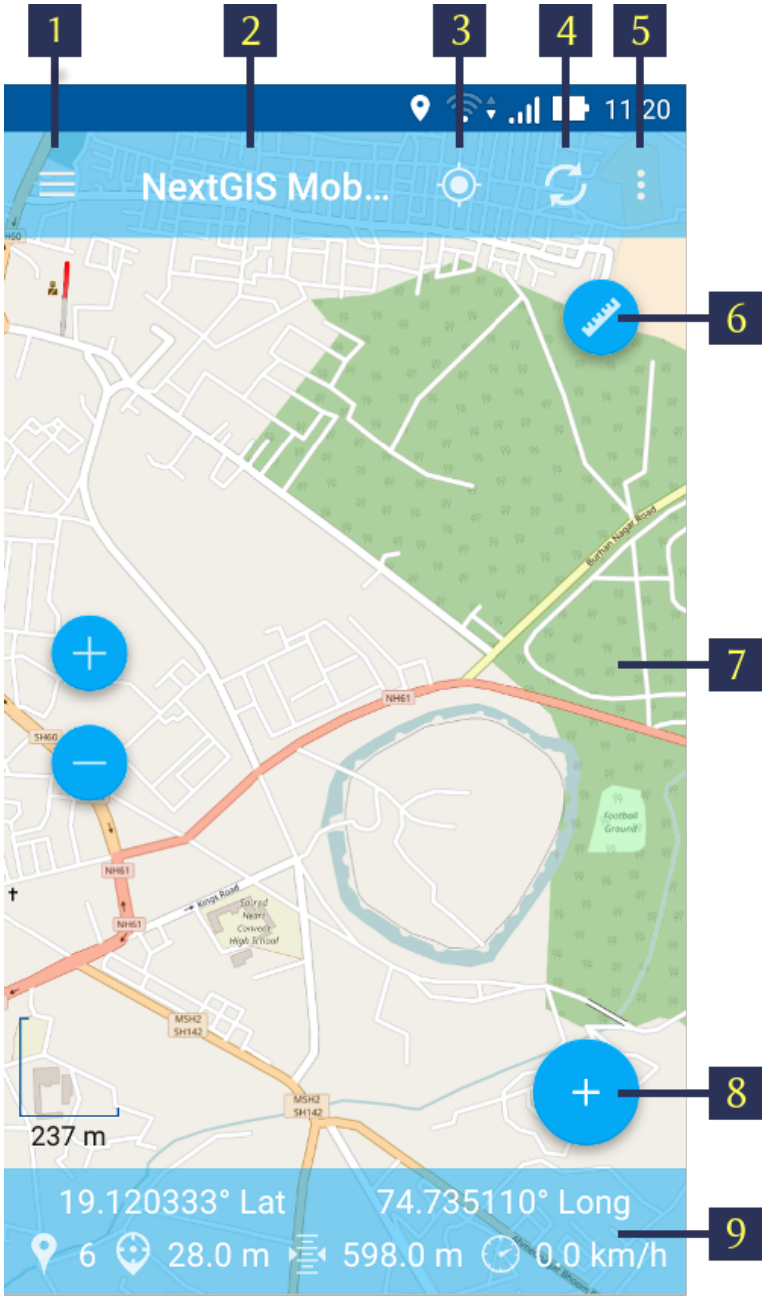


Рис.4.1: Main screen

The numbers indicate: 1 - Layers tree panel icon; 2 - Application title; 3 – “Show my location” button; 4 - “Load/Refresh geodata” button; 5 - Contextual menu icon; 6 - Measuring button; 7 - Map screen; 8 - Main actions button; 9 - Status info panel.

Depending on the size of the screen Status info panel can occupy one or two rows.

A map (item 7 in Fig. 4.1) is a set of raster and vector layers. The order and the visibility of layers are under control of layers tree (*Layers tree* (c. 9)).

After a long hold of your finger on the vector layer's geometry the map window turns to the select mode.

4.2 Layers tree

Layers tree panel is designed to display the content of a map and to control visibility and hierarchy of map layers. Additional operations with layers are available from a separate layer contextual menu. Layers tree panel is shown on Fig. 4.2.

To change the hierarchy of map layers long-press the layer which is to be moved up or down. Layers tree panel will switch to Edit mode. Keep pressing and move the selected layer to its new position.

For turning layer visibility on/off tap on Layer visibility button (item 3 in Fig. 4.2).

"Add geodata" button (item 4 in Fig. 4.2) allows you to create vector layers and import vector and raster layers from Android local storage, QuickMapServices catalog[12], nextgis.com[13] or NextGIS Web[14]. This button contains the next menu (Fig. 4.3):

- Create layer;
- Open local;
- Add geoservice;
- Add from NextGIS.

By using "Open local" menu item you can upload geodata from local storage in one of the following formats:

- GeoJSON file;
- ZIP file with cached tiles;
- *.ngrc file
- *.ngfp file.

More information about geodata upload can be found in "*Adding layers* (c. 24)" section.

Layer contextual menu depends on layer's type (whether it is vector or raster layer). When you tap the Contextual menu button (item 5 in Fig. 4.2) contextual menu items pop up as shown by item 6 in Fig. 4.2

- Zoom to extent
- Features table

[12] https://qms.nextgis.com/
[13] https://my.nextgis.com/signup/?next=/webgis/
[14] http://nextgis.com/nextgis-web/

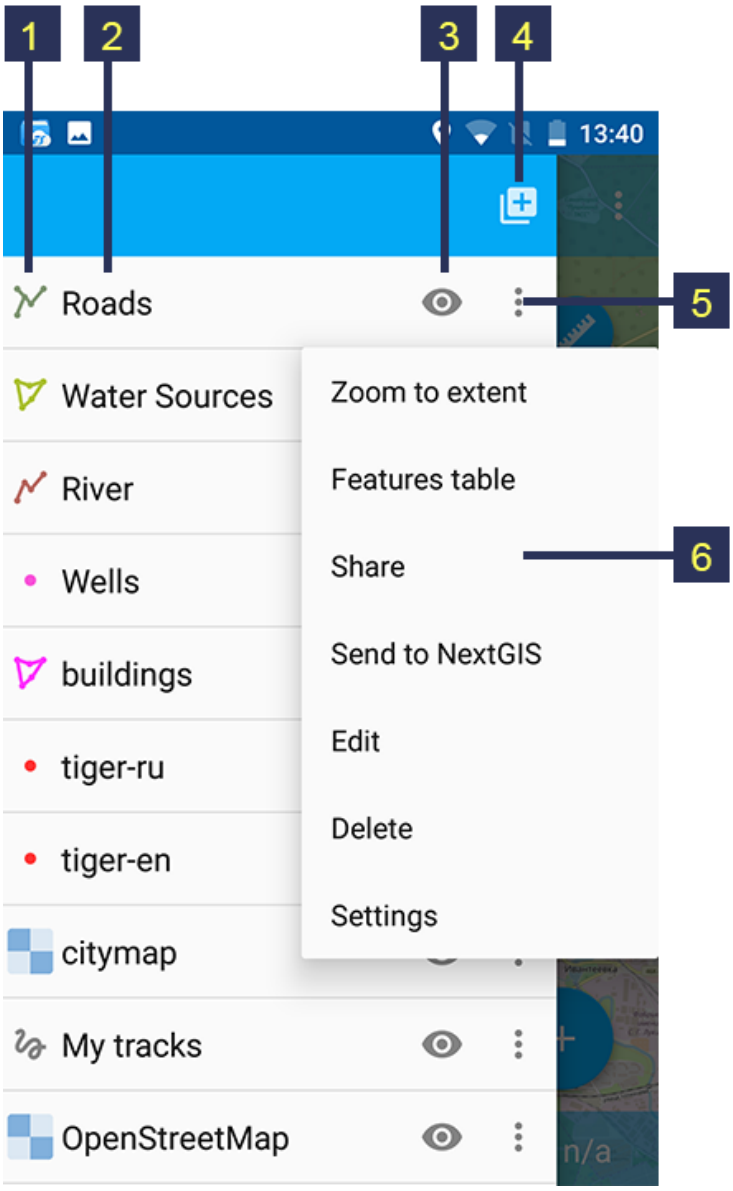


Рис.4.2: Layers tree panel
The numbers indicate: 1 - Layer type; 2 - Layer name; 3 - Layer visibility button; 4 - Add geodata; 5 - Layer contextual menu icon; 6 - Layer contextual menu items.

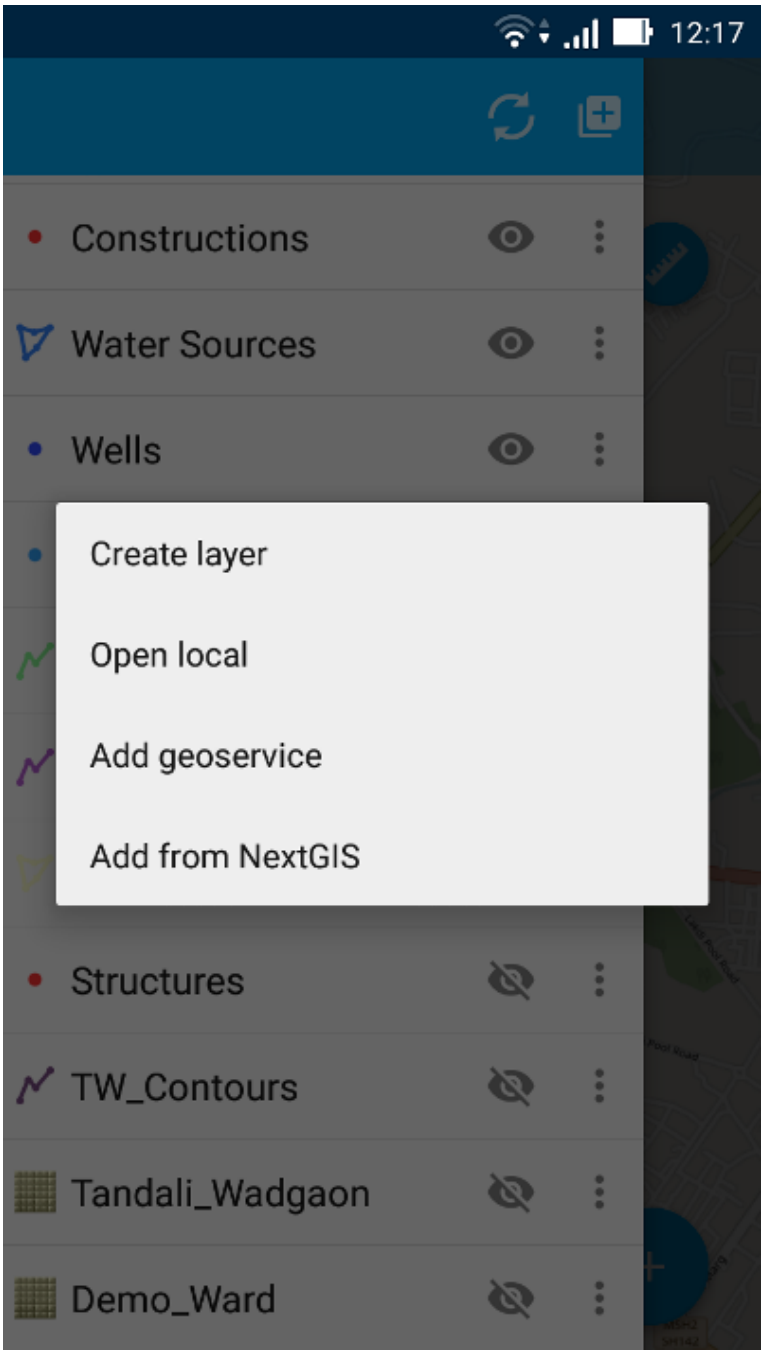


Рис.4.3: Add geodata dialogue

- Share
- Send to NextGIS
- Edit
- Delete
- Settings

Warning: By pressing “Delete” you not only remove layer from the map but also erase all its data from the local storage.

4.3 Features table

Features table is designed to show and manage the contents of each vector layer in table format.

To open Features table activate Layers tree panel and tap on the Contextual menu button next to the vector layer name (item 5 in Fig. 4.2). This will pop up the contextual menu items as shown by item 6 in Fig. 4.2. There you need to select “Features table”. Depending on the screen size the panel could occupy the whole screen or just the right side (in this case there is a map with a highlighted geometry of the current attributes on the left side).

Features table opens as shown in Fig. 4.4 below.

If you tap any record (row) in the table, the Features table toolbar appears at the bottom of the screen. This toolbar allows to manage features as shown below in Fig. 4.5.

You can open the standard Features table editing form as shown in Fig. 7.7 by selecting “Open Features table editing form” (see item 8 in Fig. 4.5)

Warning: If you tap on “Delete” button (see item 7 in Fig. 4.5), the system will delete the selected feature immediately. You will be able to undo the removal, but if undo action is not applied in 5 seconds after removal, the feature gets deleted permanently.

You can search by attribute values. See how it works in a video:

Watch on youtube[15].

[15] https://youtu.be/9zKwvKlQWyg?si=DVXos2s3V1Jn4-Oe

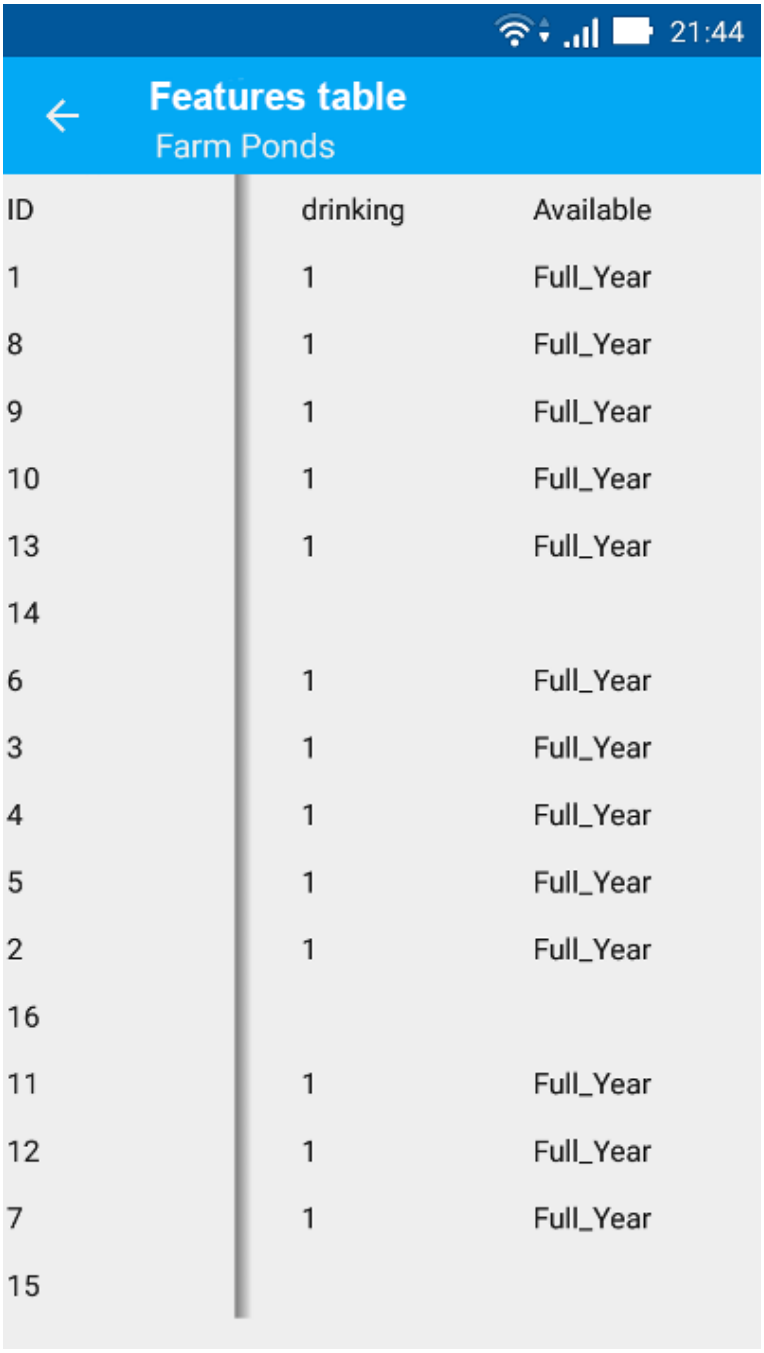


Рис.4.4: Features Table

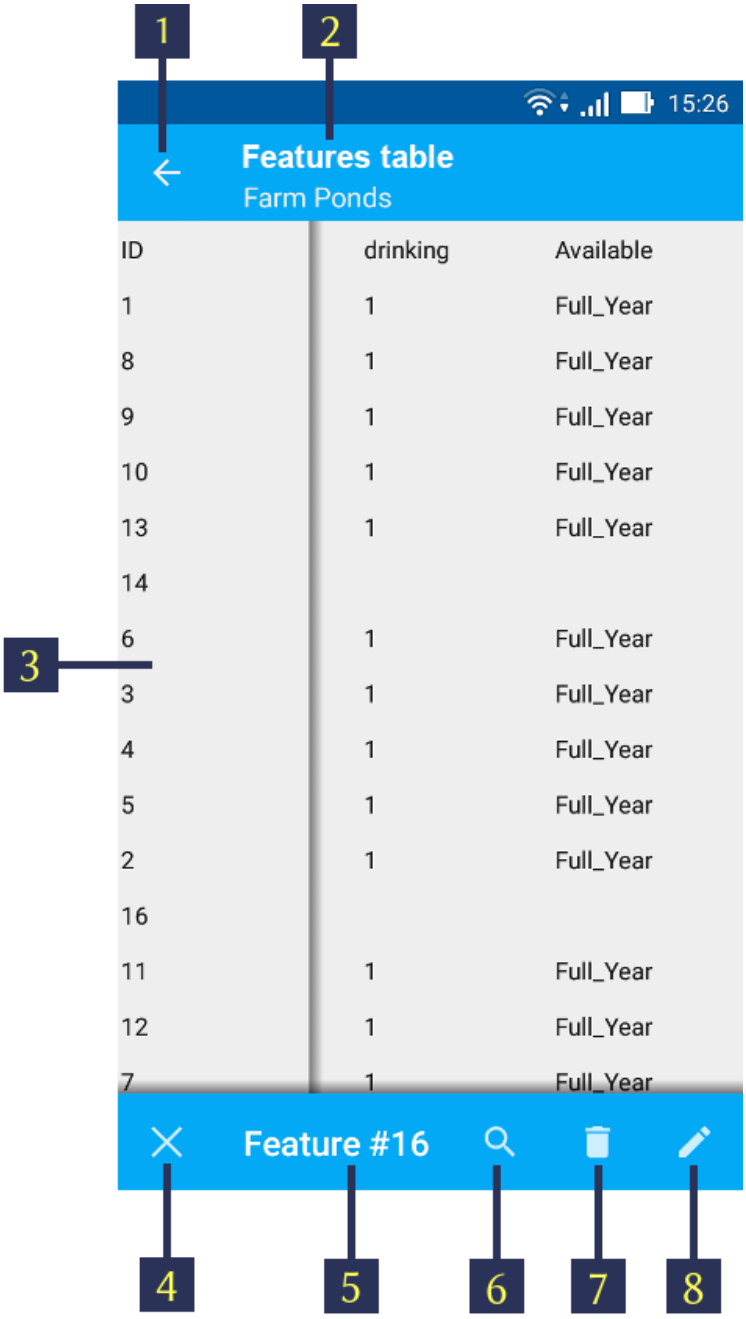


Рис.4.5: Features table toolbar

The numbers indicate: 1 - Close Features table; 2 - Layer name; 3 - Features attributes; 4 - Close toolbar; 5 - Selected feature ID; 6 - Show selected feature on the map; 7 - Delete selected feature; 8 - Open Features table editing form.

4.4 Useful features

From the Main screen itself you can access a couple of features useful in the field.

4.4.1 Show my location

To know your current location, just tap on the “Show my location” button (see item 3 in Fig. 4.1 above). This will show your current location on the map screen with a marker. If your Status info panel (see item 9 in Fig. 4.1 above) is switched on via appropriate Map settings (see Fig. 5.3) you’ll also be able to view the relevant information there.

Note: Your “Location” settings must be switched ON in your Android mobile settings.

4.4.2 Measure distance and area

It is possible to measure the distance between two points directly on the map screen. Just tap on the Measuring button on Map screen (see item 6 in Fig. 4.1 above). Tap on your starting point (a new point in Edit mode will appear on the screen). Then tap on your finishing point (a second point in Edit mode and line between the points will appear on the screen). The distance between two points will be shown in Top toolbar. See Fig. 4.6 below for illustration.

Position of any point may be edited by tapping on it and dragging it to the correct location.

You can add additional points to measure distance of angled lines and smooth curves, as well as measure areas of the formed polygons.

To exit Measure mode tap the blue tick button in the corner of the screen (see item 7 in Fig. 4.6).

Note: To use this feature “Show measuring button” checkbox must be switched ON in Map settings (see Fig. 5.3).

4.4.3 View feature information

Make a short tap on a feature and a tool bar will appear at the bottom on the screen. The only active option will be “info” (i in a circle). Press it to view the attributes and attachments of the feature. You can download and view photos previously attached to the feature and stored in the cloud.

If there are several features at the point you tapped, a list to choose from will appear.

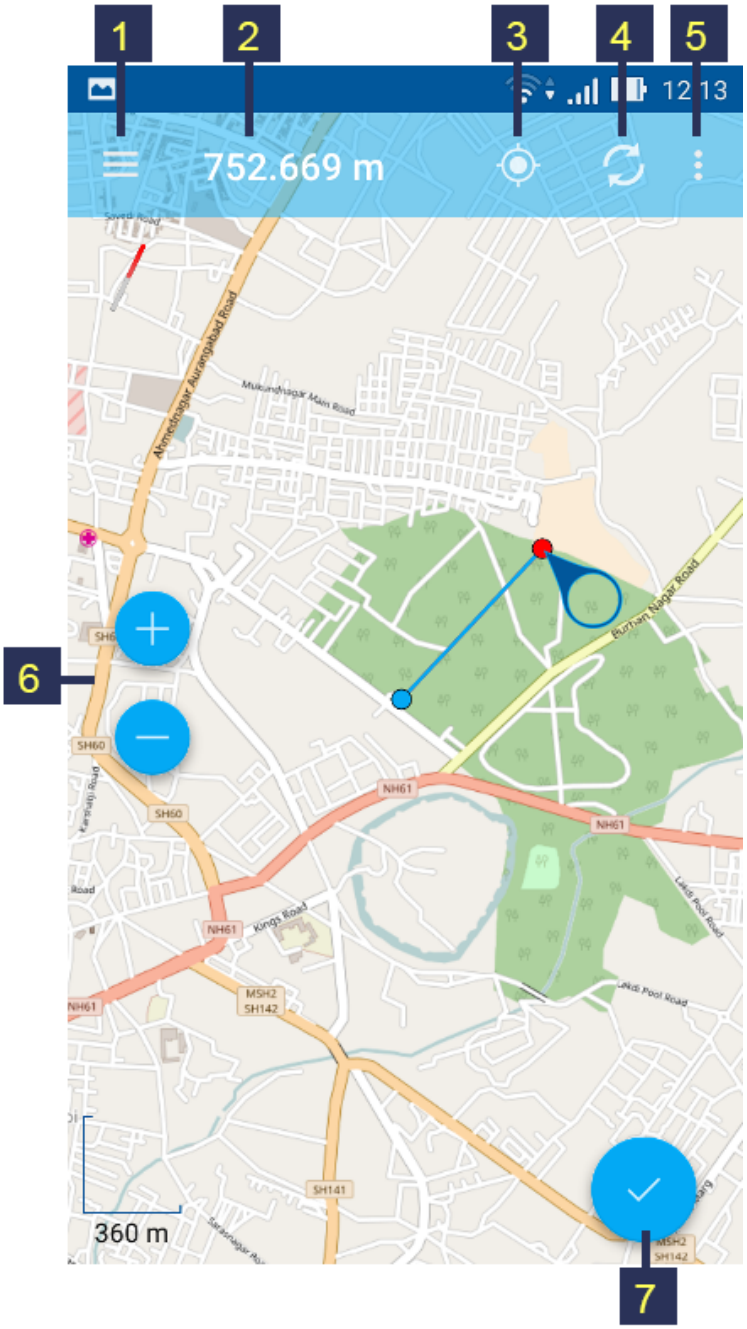
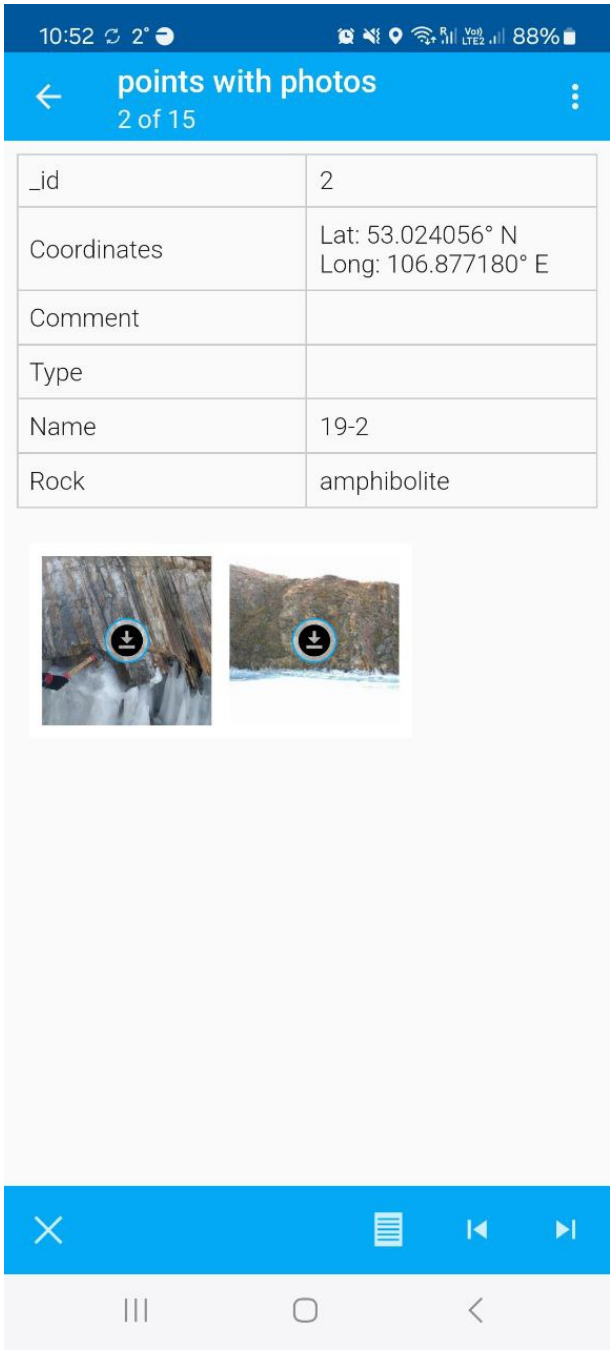


Рис.4.6: Measure distance
The numbers indicate: 1 - Layers tree panel icon; 2 - Measured distance; 3 - “Show my location” button; 4 - “Load/Refresh geodata” button; 5 - Contextual menu icon; 6 - Zoom controls; 7 - Exit Measuring mode.


10:52
88%
points with photos
2 of 15
_id
2
Coordinates
Lat: 53.024056° N
Long: 106.877180° E
Comment
Type
Name
19-2
Rock
amphibolite

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SETTINGS DIALOGUE

Depending on the screen size Settings dialogue can fit into one or two panels. Settings dialogue is shown on Fig. 5.1 (one panel mode).

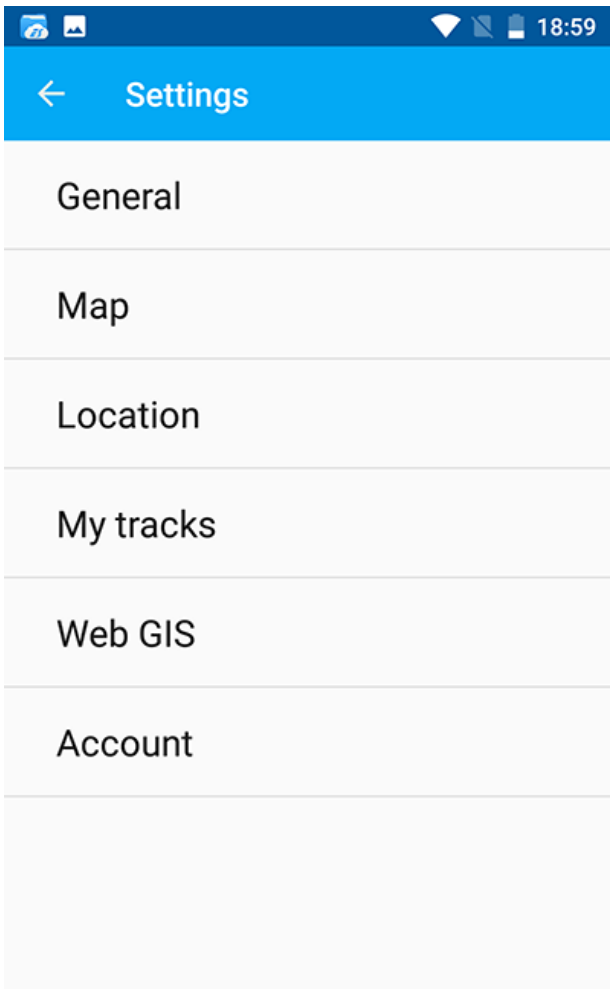

Рис.5.1: Settings

There are following Settings on the main panel:

- General[16]
- Map[17]

[16] https://docs.nextgis.com/docs_ngmobile/source/settings.html#general
[17] https://docs.nextgis.com/docs_ngmobile/source/settings.html#map

- Location[18]
- My tracks[19]
- Web GIS
- Account

5.1 General

“General” settings allow to change basic settings of the map (see Fig. 5.2).

Here you can select the theme (Light or Dark) and tune up compass settings.

5.2 Map

“Map” settings allow to change basic settings of the map (see Fig. 5.3).

Map settings include:

- Show/hide Status info panel
- The way current location displays (show current location, show marker, how marker & accuracy radius)
- Show mini compass
- Do not turn off the screen when map displays - works only on the map screen
- Show/hide zoom control buttons
- Show scale ruler
- Show measuring button
- Coordinates format (for coordinates in Status bar and other dialogs and screens)
- Decimal places
- Map background (light, dark, neutral)
- Map path (here you can specify a path where map and layers data will be stored)

Note: For devices with several SD cards and Android 4.4 and higher, map path not on the main SD card can only be specified in the application home directory and its subdirectories (for example: Android/data/com.nextgis.mobile). This is also true for some devices without root access. Read-only folders won’t show up in path selection dialog.

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[18] https://docs.nextgis.com/docs_ngmobile/source/settings.html#location
[19] https://docs.nextgis.com/docs_ngmobile/source/settings.html#my-tracks

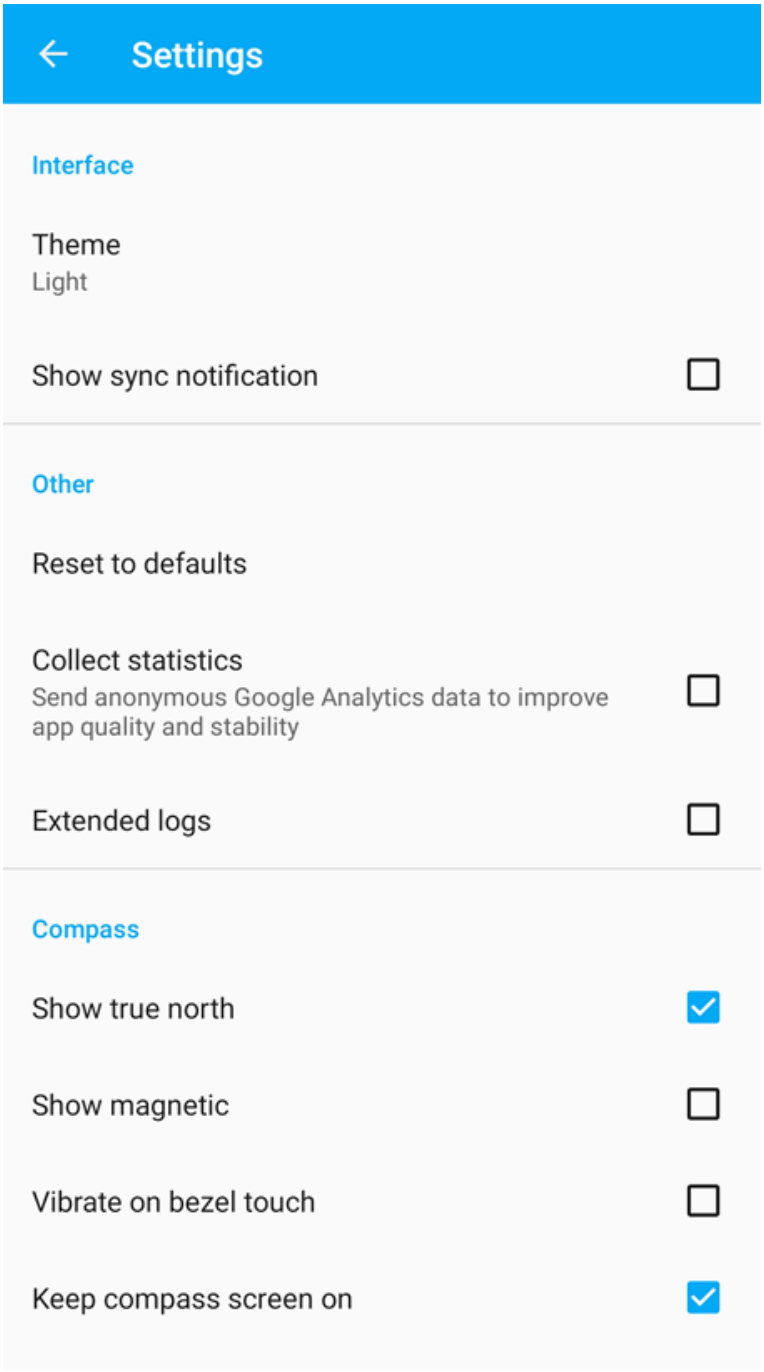

Рис.5.2: General settings

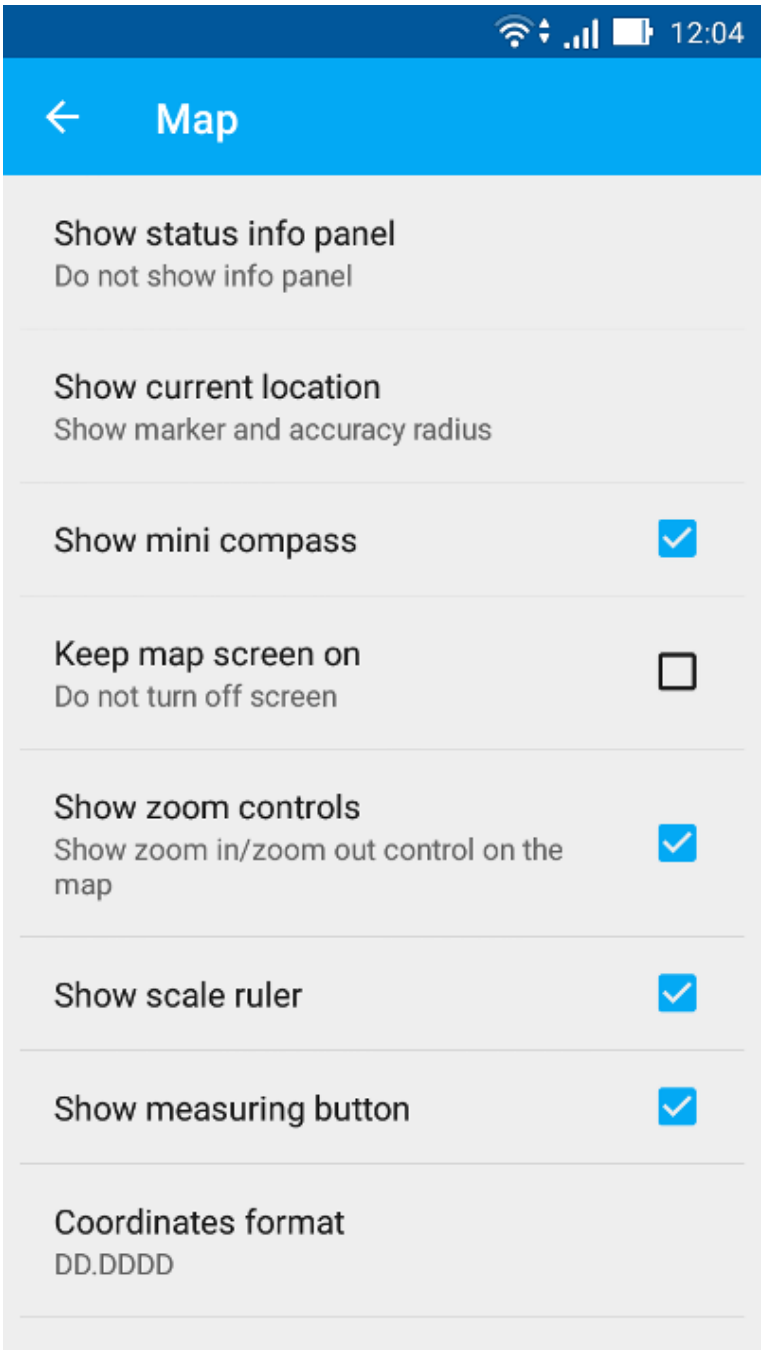

Рис.5.3: Map settings

5.3 Location

“Location” settings offer a few location specific settings (see Fig. 5.4).

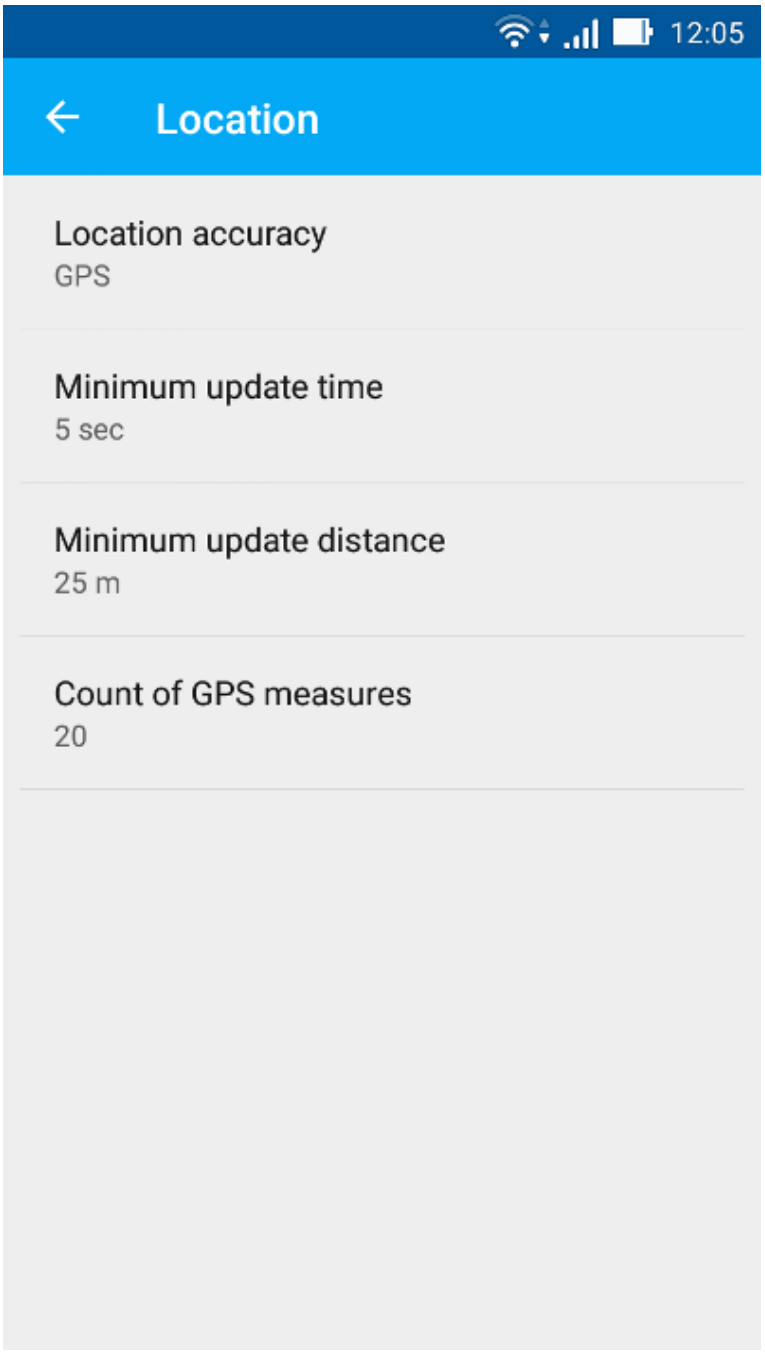

Рис.5.4: Location settings

Location settings include:

- Coordinate source (mobile networks/Wi-Fi + GPS, Other networks or only GPS)
- Minimum update time
- Minimum update distance

- Count of GPS fixes

5.4 My tracks

“Tracks” settings are similar to the location settings, but they are applied only for track recording.

Check “Send location to server” if you want to view tracks on a Web Map or save them to a vector layer. In this settings page you can also check your UID (you’ll need it to create a tracker in Web GIS). More about tracking[20].

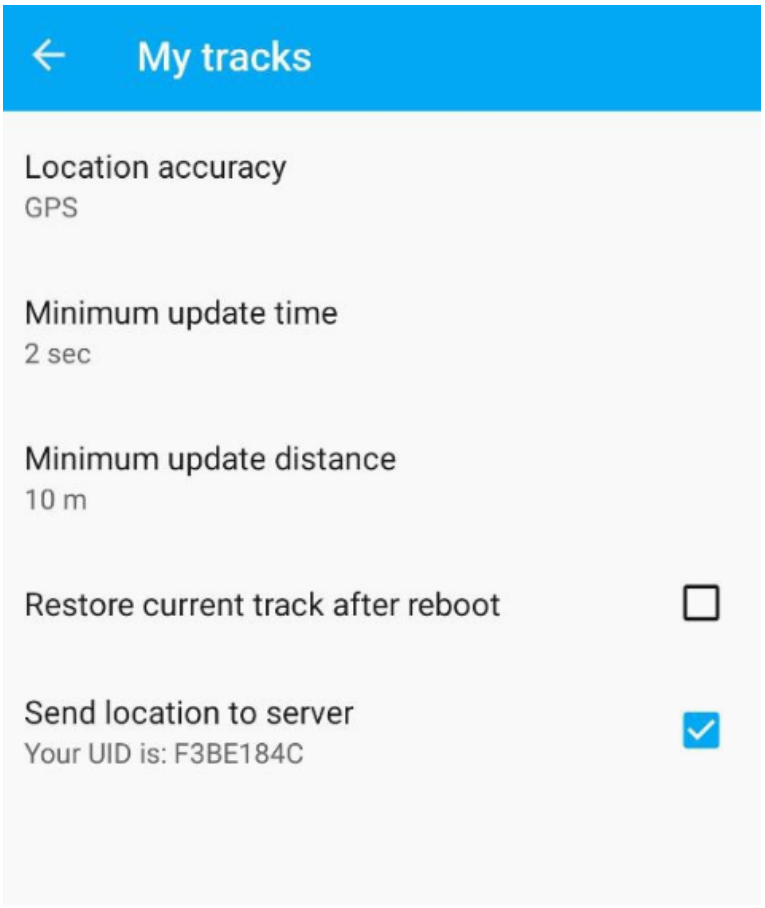

Рис.5.5: My tracks settings

Note: If you set value of the minimum update distance at more than 5 m, the operating system will start to smooth the track (remove outliers).

[20] https://docs.nextgis.com/docs_ngcom/source/tracking.html

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ADDING LAYERS

NextGIS Mobile allows to create new empty vector layers or import vector and raster layers from Android local storage, QuickMapServices catalog[21], nextgis.com[22] or NextGIS Web[23]. The supported data types are:

- GeoJSON;
- XYZ/TMS tile cache in ZIP-archive;
- tile cache in *.ngrc format;
- custom forms in *.ngfp format.

To add a basemap use a service as described below[24].

6.1 Creating new vector layer

Here are the steps to create an empty vector layer:

1. Open Layers tree panel (item 1 in Fig. 4.1). Then tap on “Add geodata” button (item 4 in Fig. 4.2). The dialogue will open as shown in Fig. 6.1. Select “Create layer”.
2. In the opened dialogue enter the parameters of new vector layer (see Fig. 6.2)

The standard form for the creation of new vector layer contains the following parameters:

1. Layer name - enter the name of layer which will be displayed in the layers tree.
2. Geometry type - select layer geometry type (point, linestring, polygon, multipoint, multilinestring, multipolygon).
3. Fields - list of fields which can be added, edited or deleted. These are attribute values of the layer.

You can add as many attributes for a new vector layer as you like. To add a new attribute tap on “+” button next to “Fields”. This will open a new dialogue for creation of each new field (see Fig. 6.3).

[21] https://qms.nextgis.com/
[22] https://my.nextgis.com/signup/?next=/webgis/
[23] http://nextgis.com/nextgis-web/
[24] https://docs.nextgis.com/docs_ngmobile/source/load_geodata.html#ngmobile-add-geoservice

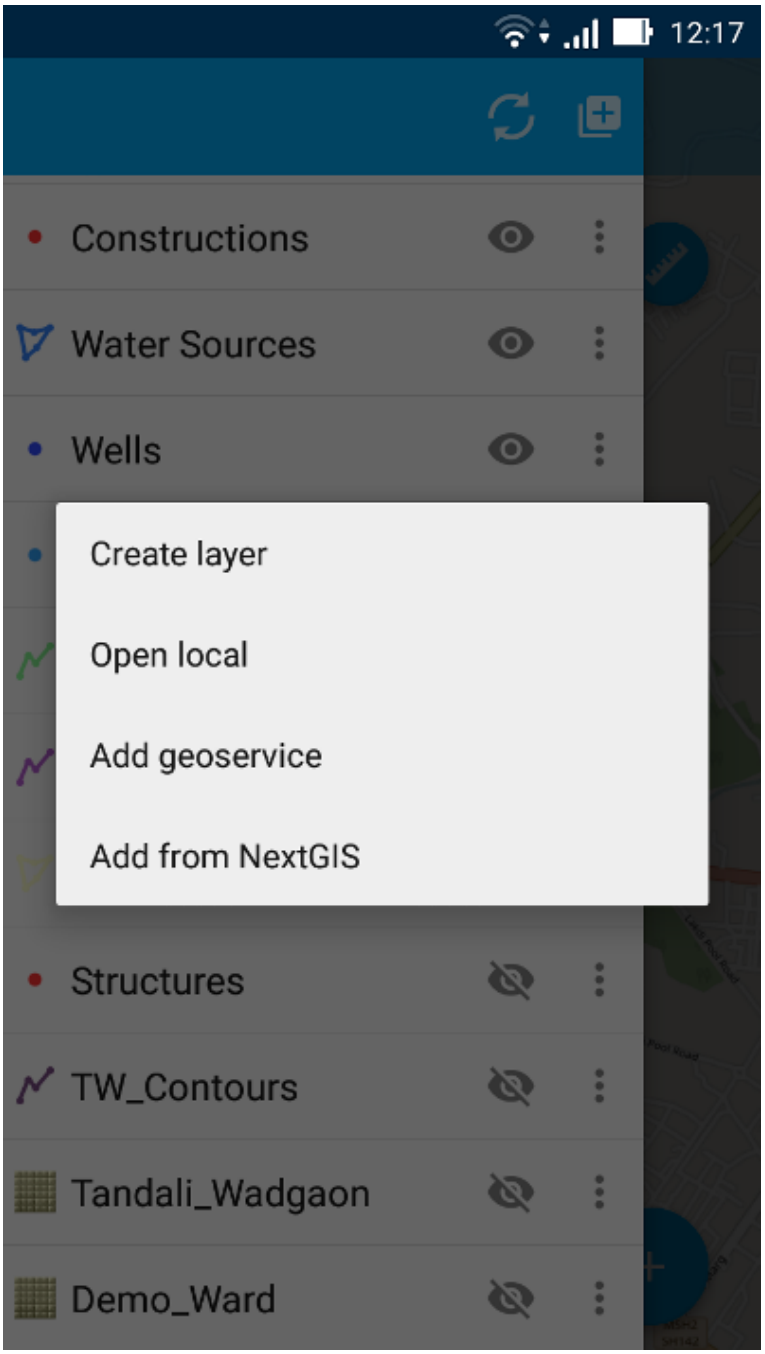

Рис.6.1: Add geodata dialogue

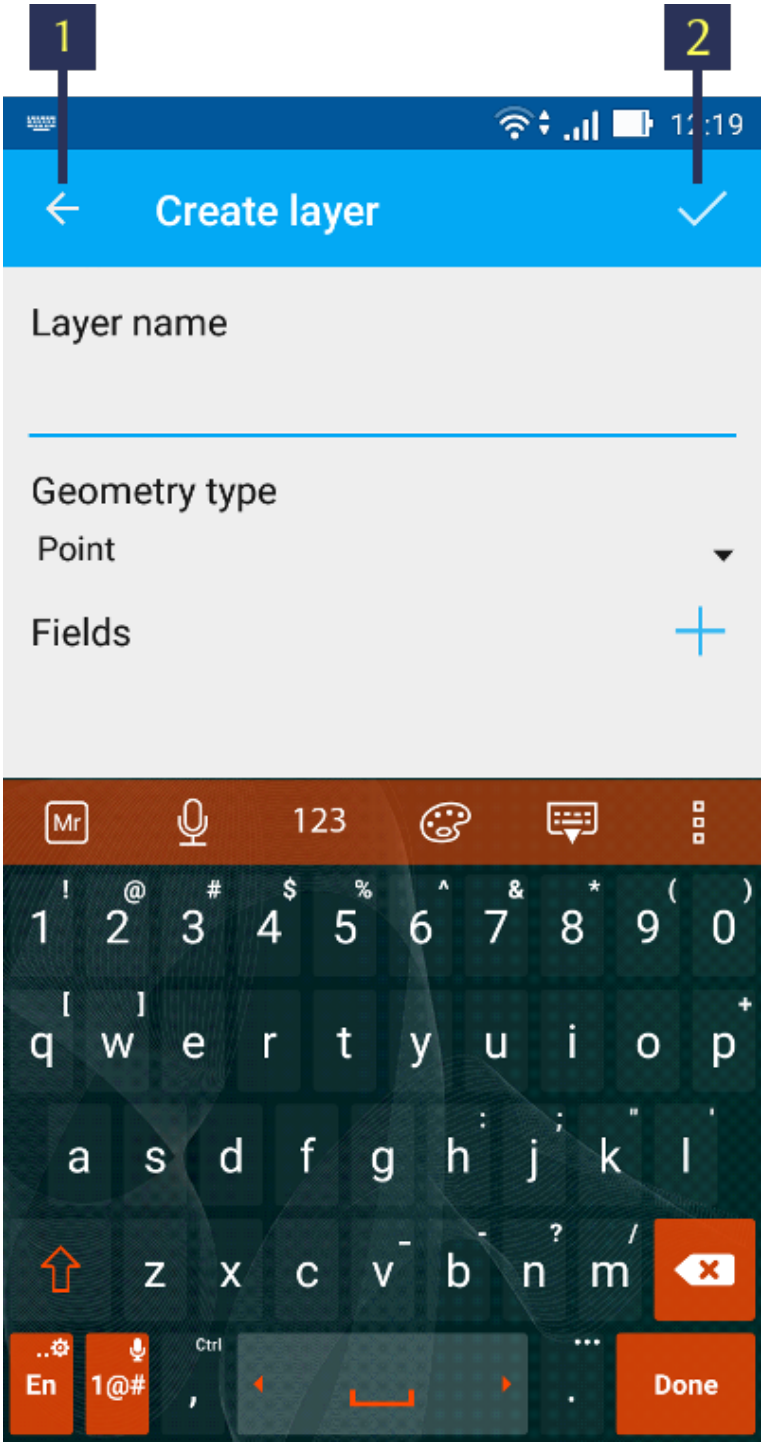

Рис.6.2: Parameters of the new vector layer

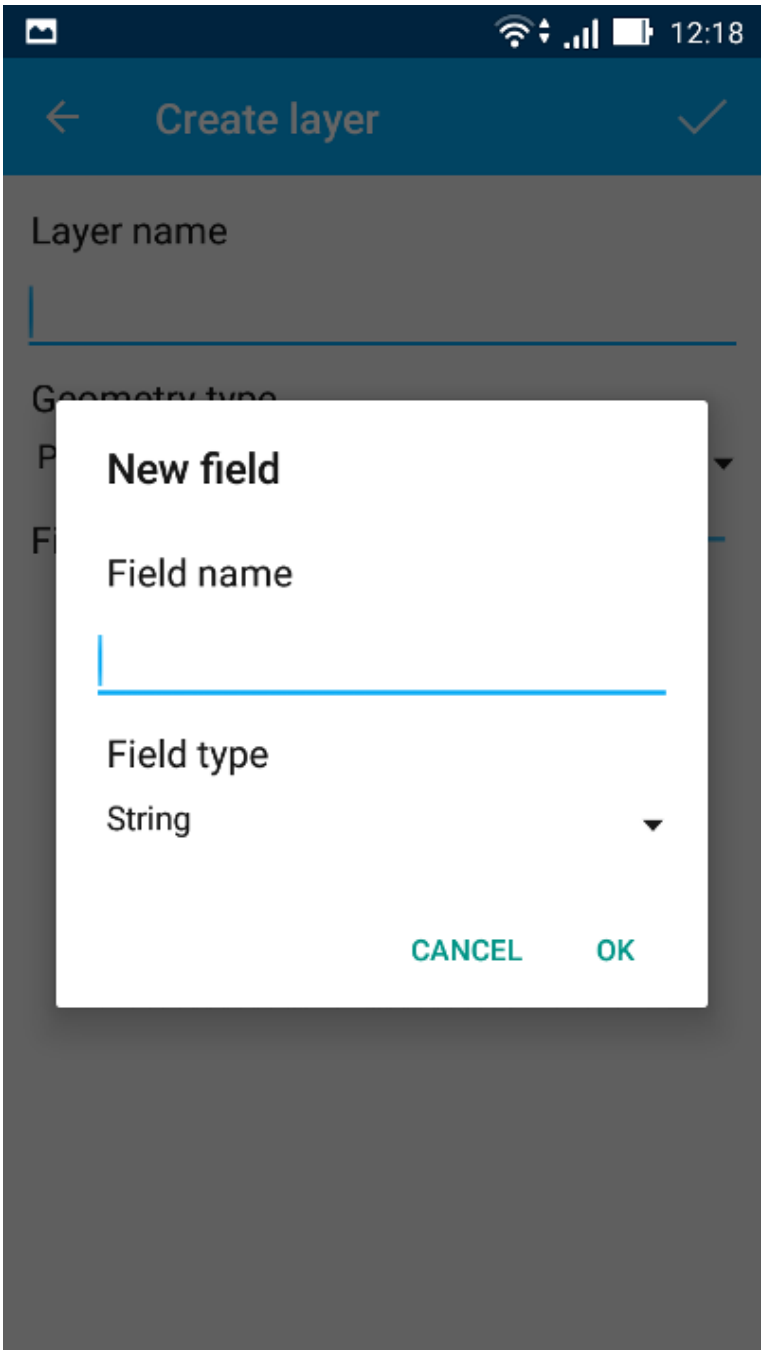

Рис.6.3: Dialog for creation of a new field

Dialog for creation of a new field contains the following parameters:

1. Field name – enter the name of the field.

Note: The field name can only be entered in Latin characters (letters and numbers!) without spaces. It should also differ from SQL reserved keywords.

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2. Field type - select field type from one of the following types: string, integer, biginteger, real, date&time, date, time.

6.2 Creating vector layer from GeoJSON data

NextGIS Mobile allows to create a vector layer by importing an existing GeoJSON file. To open data in GeoJSON format:

1. Open Layers tree panel (item 1 in Fig. 4.1). Then tap on “Add geodata” button (item 4 in Fig. 4.2). The dialogue will open as shown in Fig. 6.1. Select “Open local”.
2. Select GeoJSON file from your mobile device storage (see Fig. 6.4). For example, tap on the file “Roads.geojson” to import the “Roads” vector data file.
3. When the file is selected Layer settings dialogue opens. Here you can specify a new vector layer name or keep the name as it is, e.g. “Roads” (see Fig. 6.5).
4. Pressing “Create” button starts data processing for creation of a new layer.

Note: In case of GeoJSON file importing the new layer will always be a vector layer!

You can check if the new layer was created successfully in the layers tree panel. The newly created layer will be shown up in the layers tree (see Fig. 6.6). The “Roads” layer is marked in orange rectangle.

GeoJSON: format requirements

- Coordinate system of input geometries can be WGS 84 (EPSG:4326) or Web Mercator (EPSG:3857) only. If input file has different coordinate system you will see a warning message about unsupported coordinate system.
- All geometries in the file must be of the same type. If input file contains varying types of geometry in the output you will have a file with geometries type that coincides with the type of first record, i.e. geometry of first entry will determine the type of layer geometry.
- Text strings must be encoded in UTF-8 format.

Note: You can read more about GeoJSON format in its specification[25]. GeoJSON

[25] http://geojson.org/

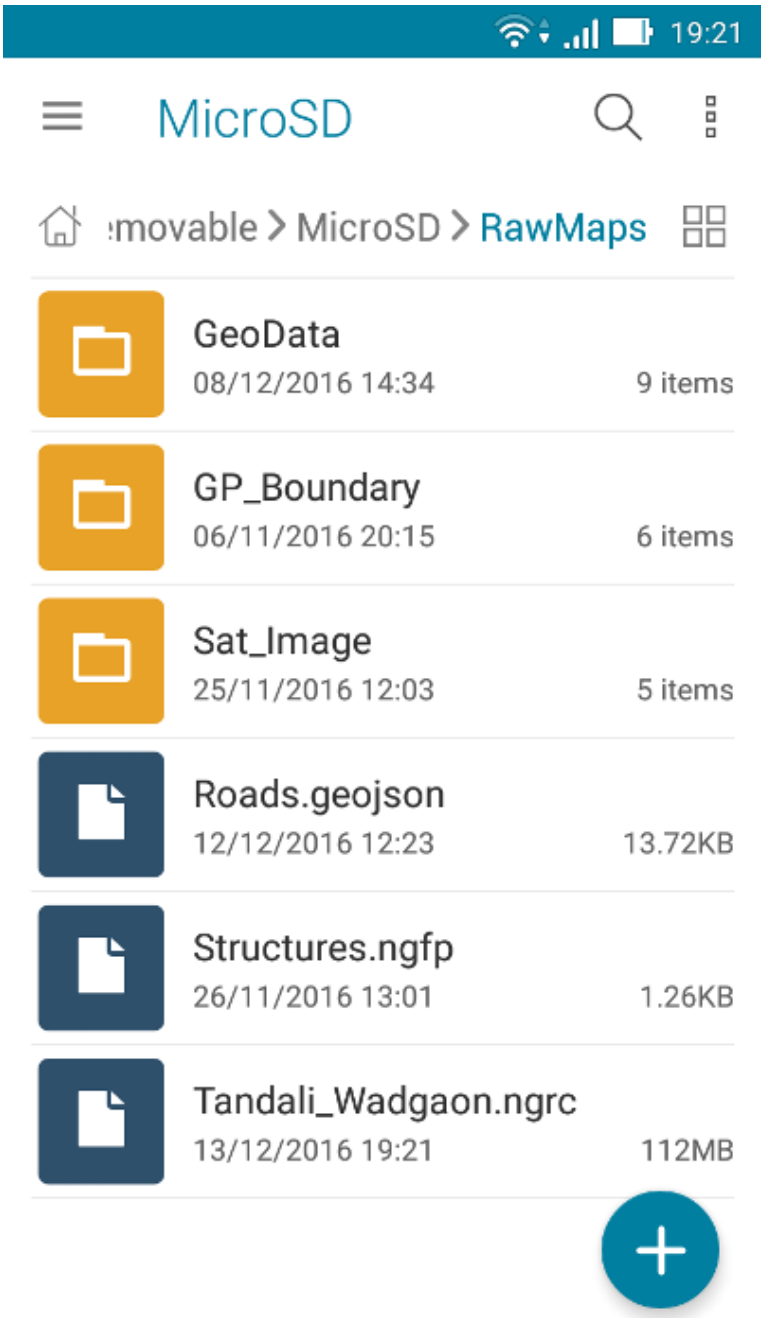

Рис.6.4: Android local storage

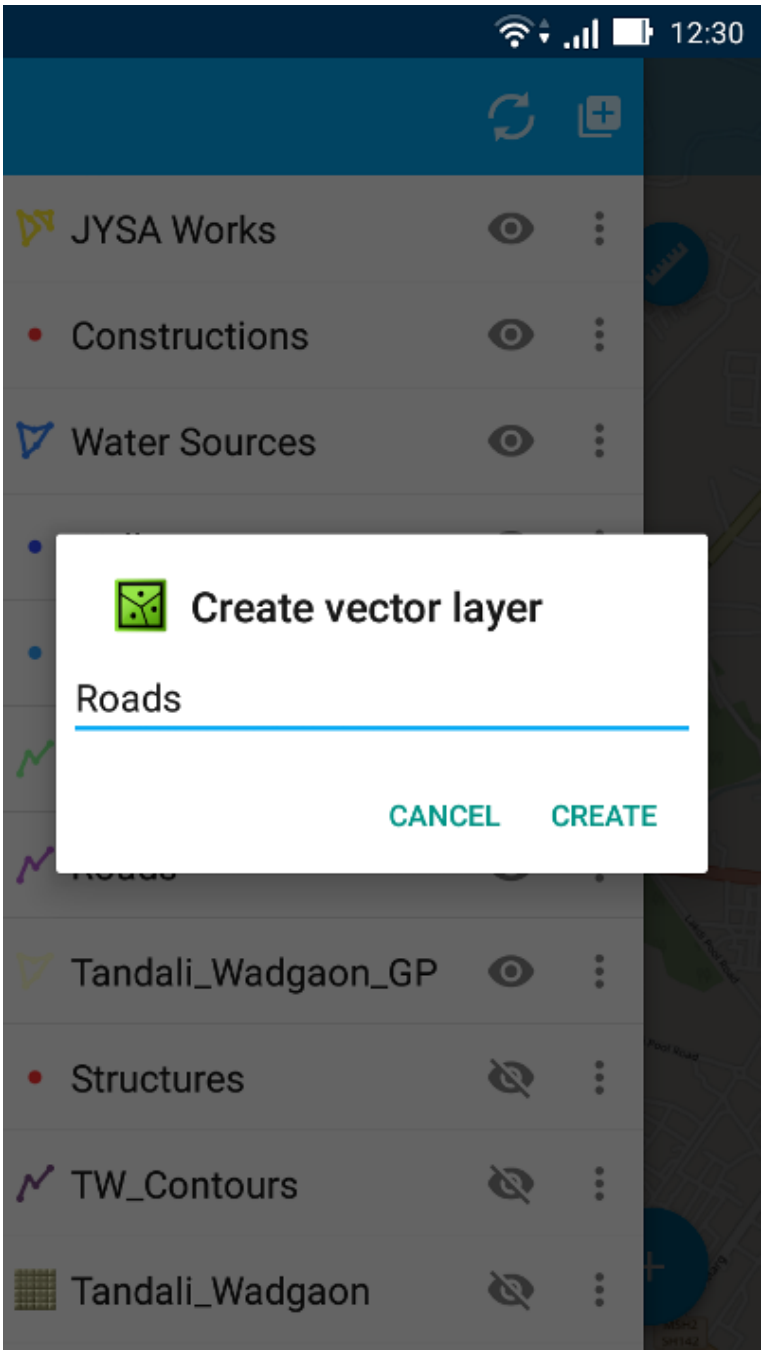

Рис.6.5: Layer settings dialogue

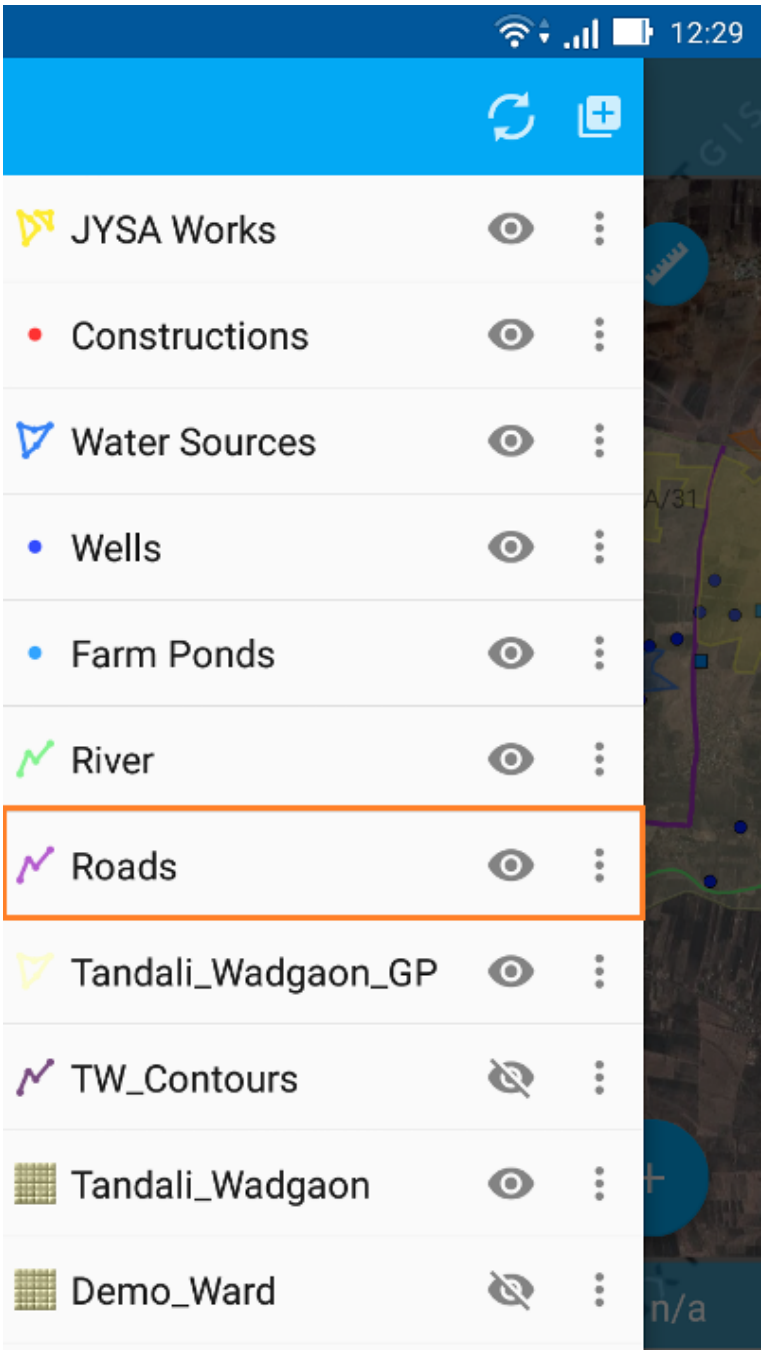

Рис.6.6: Layers tree panel

is based on JSON format (see RFC 4627[26]).

You can only use standard attributes form (not custom *.ngfp form) for editing GeoJSON layer.

The standard attributes form contains only following three fields:

1. Text field for entering characters or digits.
2. Dialogue for entering date & time.
3. “Add pictures” button.

A sample standard attributes form is shown below in Fig. 6.7.

You can further perform standard edit operations like Add, Modify or Delete operations for this layer. For more information about GeoJSON layer editing see *Editing a geometry* (c. 75).

6.3 Creating vector layer from Custom forms (NGFP)

NextGIS Mobile allows to create a vector layer by importing an existing NGFP file.

NGFP files can be generated using NextGIS FormBuilder[27]. NGFP is a GeoJSON file with additional information (JSON) which is packaged in zip archive and has .ngfp extension.

NGFP file allows to use custom (not standard) attributes forms optimized for attributes viewing and editing. Custom form may contain special controls for editing, such as dropdown lists, radio buttons or linked lists.

Follow these steps to open NGFP file in NextGIS Mobile:

1. Open Layers tree panel (item 1 in Fig. 4.1). Then tap on “Add geodata” button (item 4 in Fig. 4.2). The dialogue will open as shown in Fig. 6.1. Select “Open local”.
2. Select NGFP file from your mobile device storage (see Fig. 6.9). For example, tap on the file “Structures.ngfp” to import the “Structures” form.
3. When the file is selected Layer settings dialogue opens. Here you can specify a new vector layer name or keep the name as it is, e.g. “Structures” (see Fig. 6.10):
4. Pressing “Create” button starts data processing for creation of a new vector layer.

You can check if the new layer was created successfully in the layers tree panel. The newly created layer will be shown up in the layers tree in the layers tree (see Fig. 6.6). The “Structures” layer is shown in orange rectangle.

You can further perform standard edit operations like Add, Modify or Delete operations for this vector layer. For more information about NGFP layer editing see *Editing a geometry* (c. 75).

[26] https://www.ietf.org/rfc/rfc4627.txt
[27] http://nextgis.com/nextgis-formbuilder/

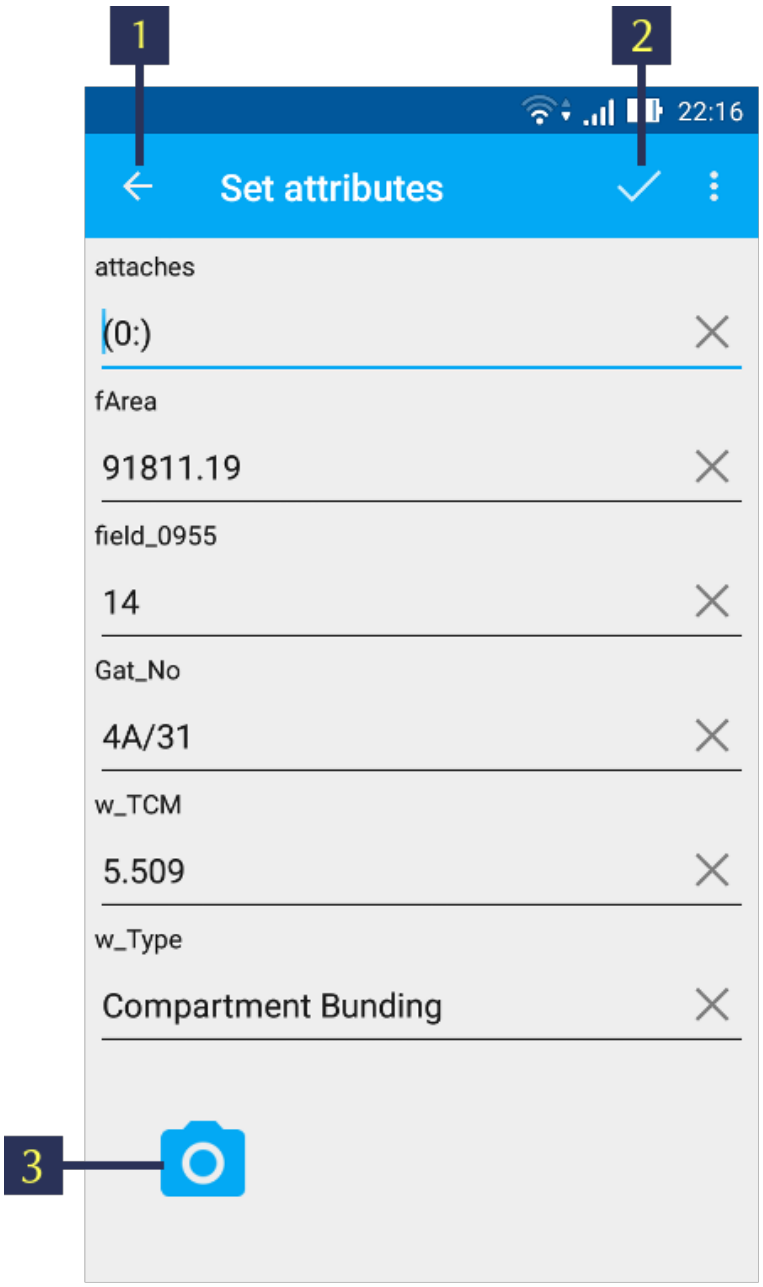

Рис.6.7: Standard attributes form
The numbers indicate: 1 - Back to previous screen; 2 - Apply changes; 3 - Add pictures.

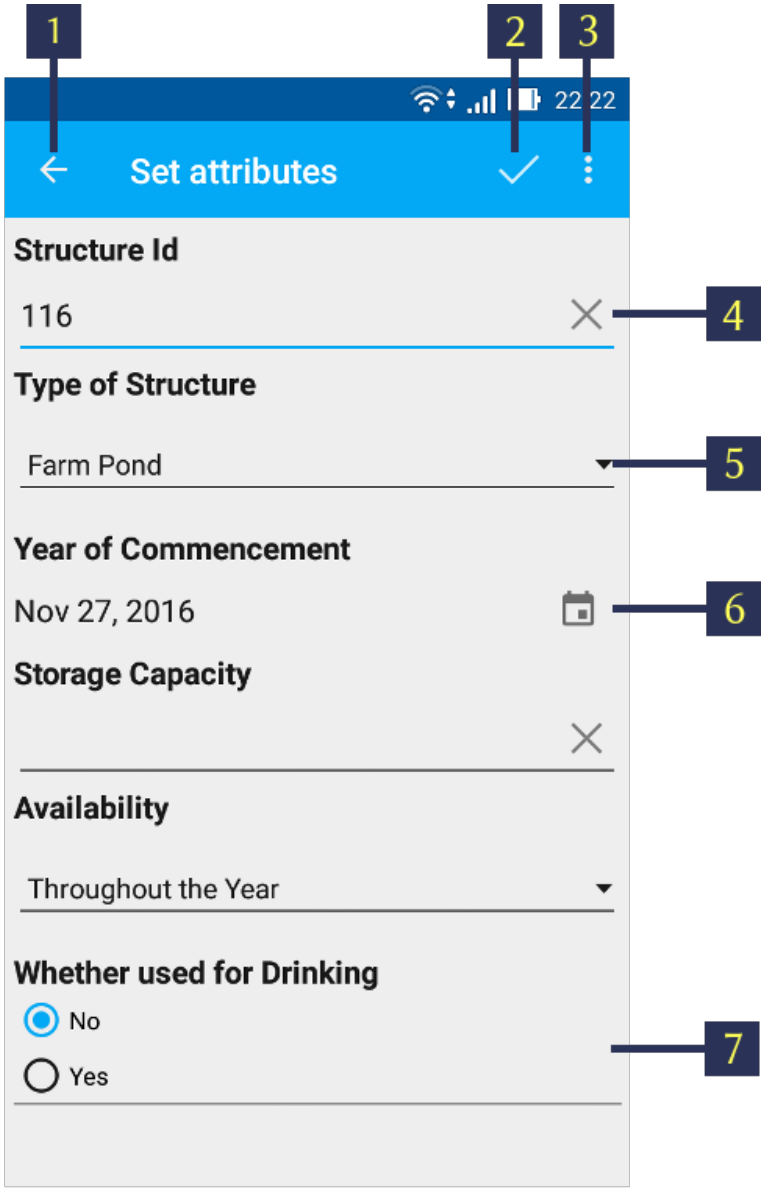

Рис.6.8: Custom attributes form
The numbers indicate: 1 - Back to previous screen; 2 - Apply changes; 3 - Settings; 4 - Text or Integer; 5 - Dropdown list; 6 - Date & Time; 7 - Radio buttons.

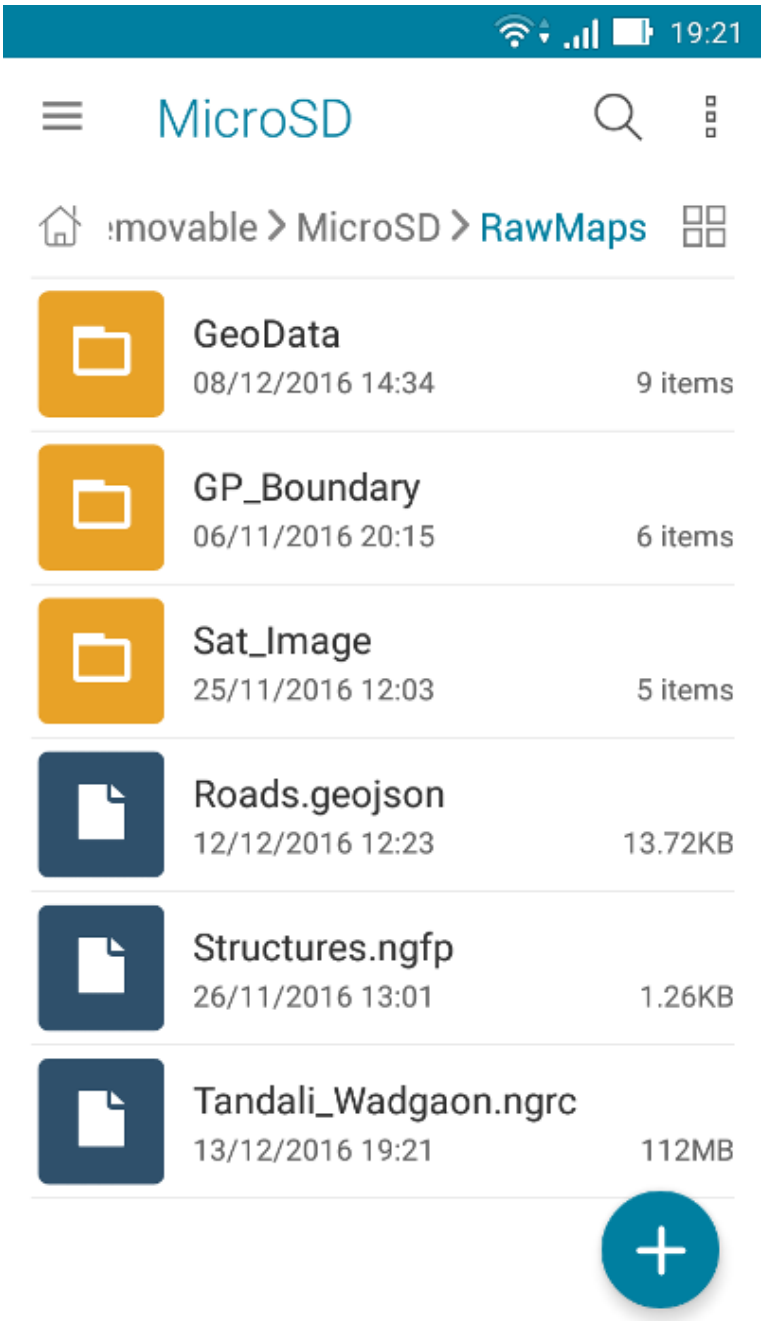

Рис.6.9: Android local storage

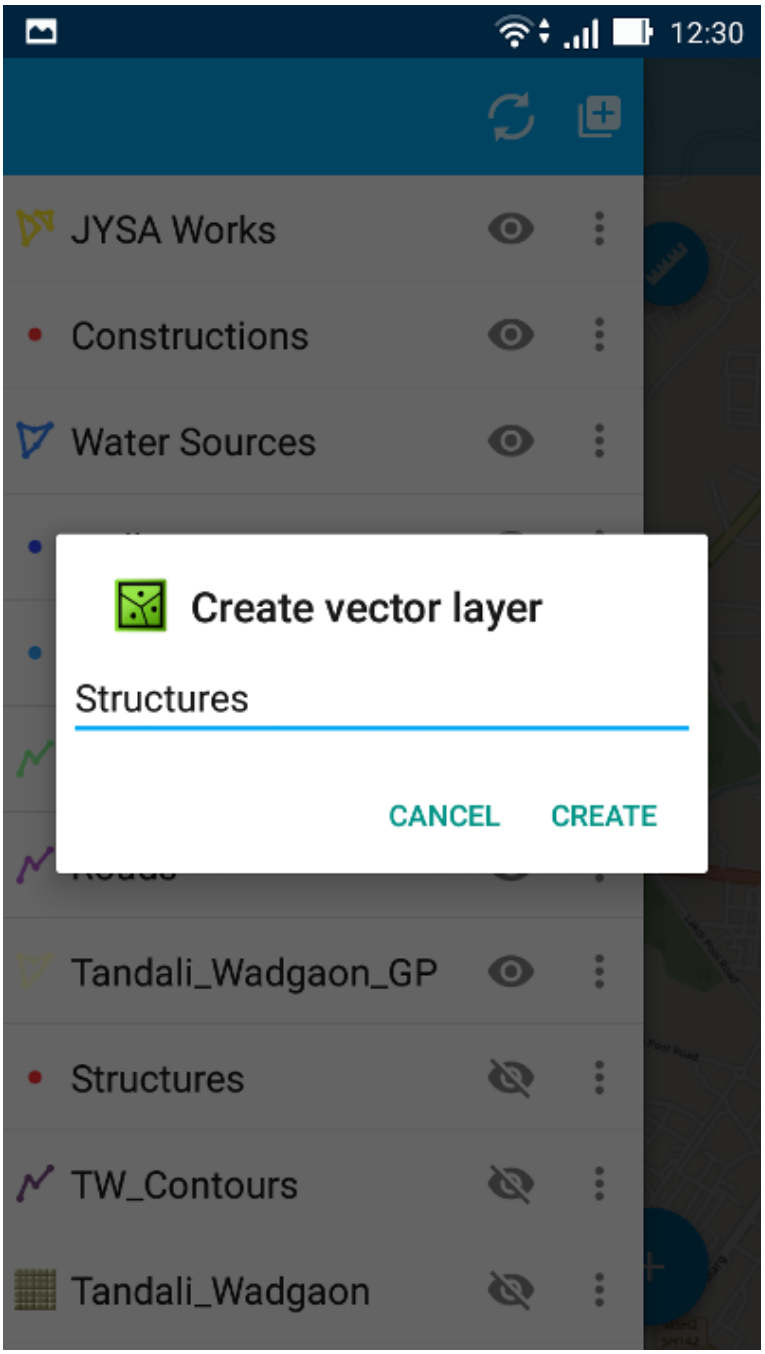

Рис.6.10: Layer settings dialogue

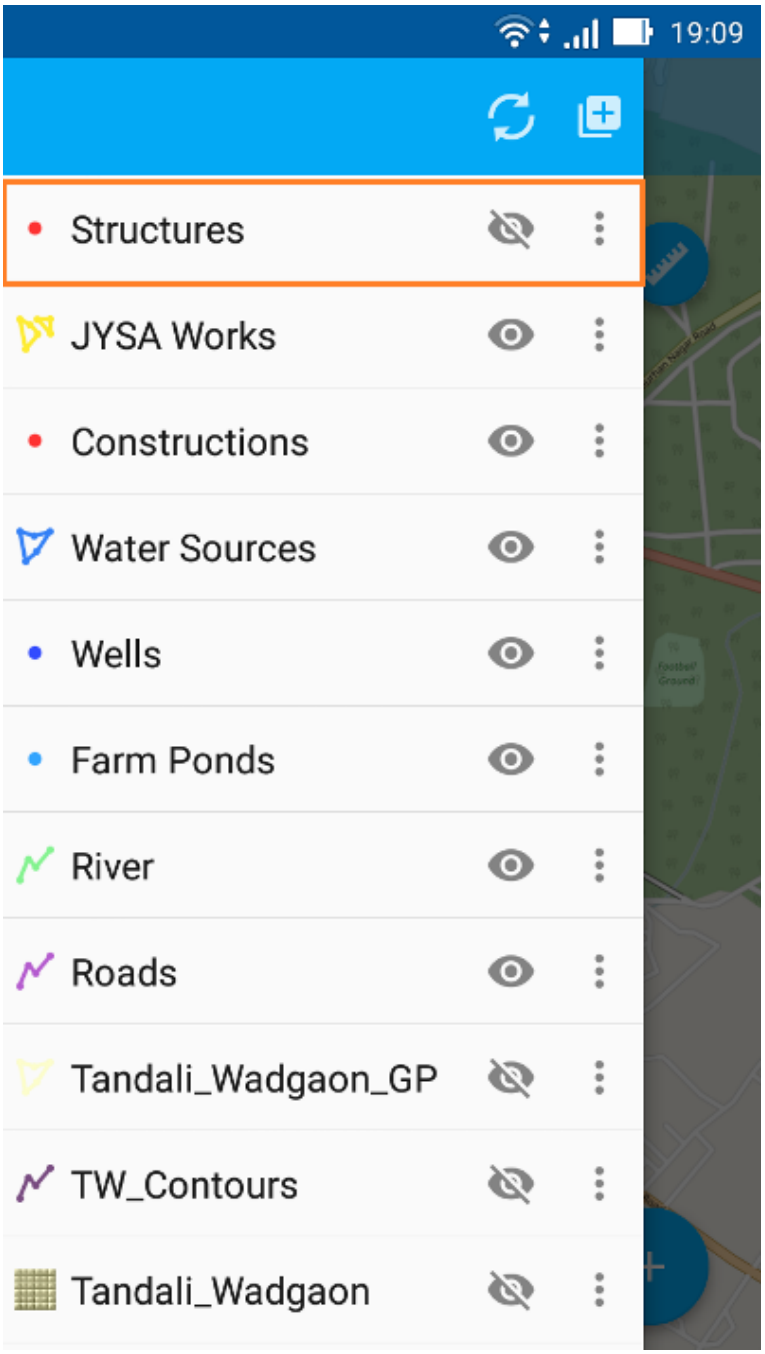

Рис.6.11: Layers tree panel

6.4 Creating raster layer from Tile cache (XYZ/TMS)

NextGIS Mobile allows to create a raster layer by importing tile cache.

Tile cache is a zip-archive with folders and tiles stored in accordance with a tiling scheme (for example, folder_z/folder_x/y.png). Folders of level Z can be located in the root or in a folder in the root folder (name of the folder doesn't matter, but there have to be only one folder). Deeper nesting of level Z folders is not allowed.

Tile cache can be created with the extension module NextGIS QGIS - QTiles[28]. Resulted archive can be uploaded to any available folder in your mobile device storage.

Follow these steps to open zip-archive with tile cache:

1. Open Layers tree panel (item 1 in Fig. 4.1). Then tap on "Add geodata" button (item 4 in Fig. 4.2). The dialogue will open as shown in Fig. 6.1. Select "Open local".
2. Select zip-archive from your mobile device storage (see Fig. 6.12). For example, tap on the file "mapnik.zip" to import the tile cache:
3. When zip-archive is selected a layer settings dialog opens (see Fig. 6.13):

Here you can select tile layer type (tile structure system) - XYZ (OSM) or TMS (OSGeo) (see Fig. 6.14) and in-memory cache size (see Fig. 6.15):

4. Pressing "Create" button starts data processing for creation of a new raster layer (see Fig. 6.16).

You can check if the new raster layer was created successfully in the Layers tree panel. The newly created raster layer will be shown up in the layers tree first in the Layers tree (see Fig. 6.17).

6.5 Creating raster layer from Tile cache (NGRC)

NextGIS Mobile also allows to create a raster layer by importing tile cache in *.ngrc format. NGRC files can be created from virtually any geodata in QGIS using our QTiles plugin.

Follow these steps to import tile cache in *.ngrc format :

1. Open Layers tree panel (item 1 in Fig. 4.1). Then tap on "Add geodata" button (item 4 in Fig. 4.2). The dialogue will open as shown in Fig. 6.1. Select "Open local".
2. Select *.ngrc file from your mobile device storage (see Fig. 6.18). For example, tap on the file "Tandali_Wadgaon.ngrc" to import the "Tandali Wadgaon" tile cache prepared using satellite raster image.
3. NextGIS Mobile will start data processing for creation of a new raster layer. You can check if the new layer was created successfully in the Layers tree panel. The newly created layer will be shown up in the layers tree in the

[28] http://plugins.qgis.org/plugins/qtiles/

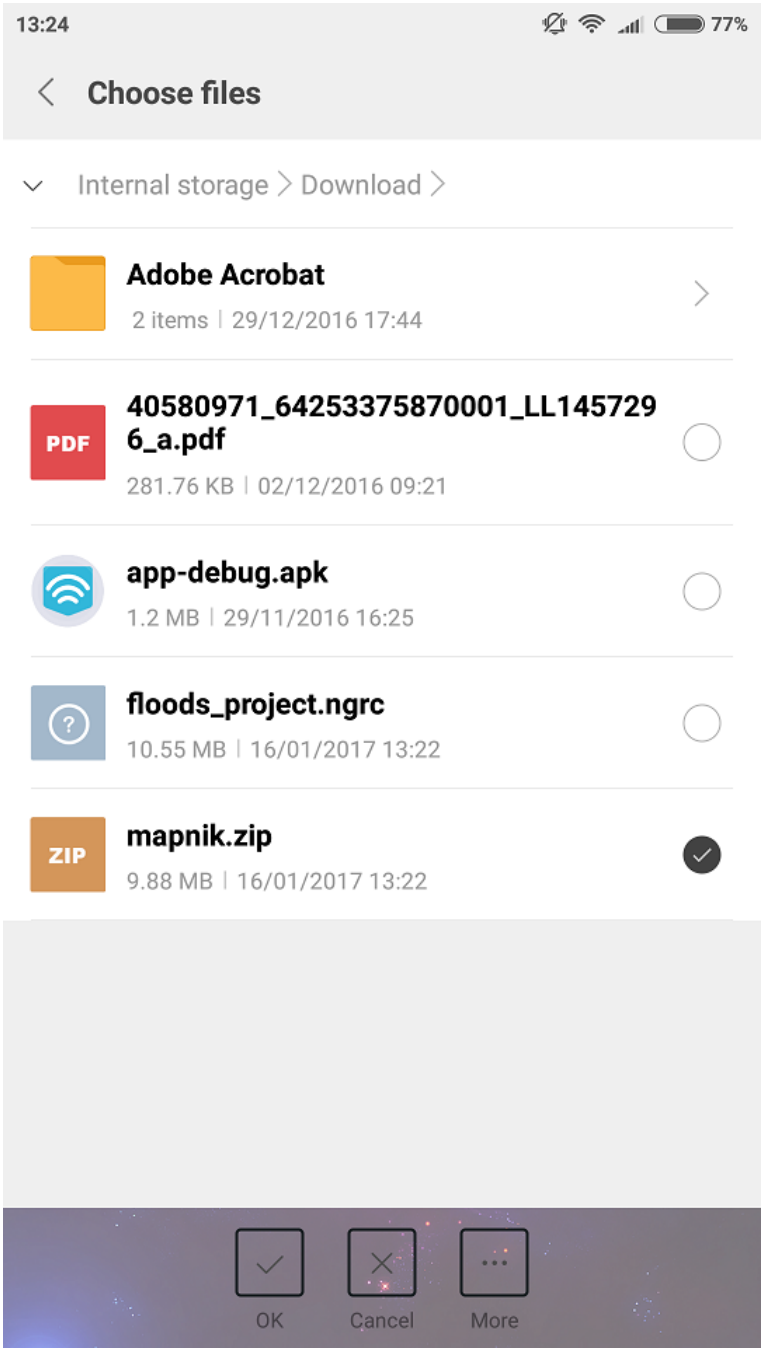

Рис.6.12: Android local storage

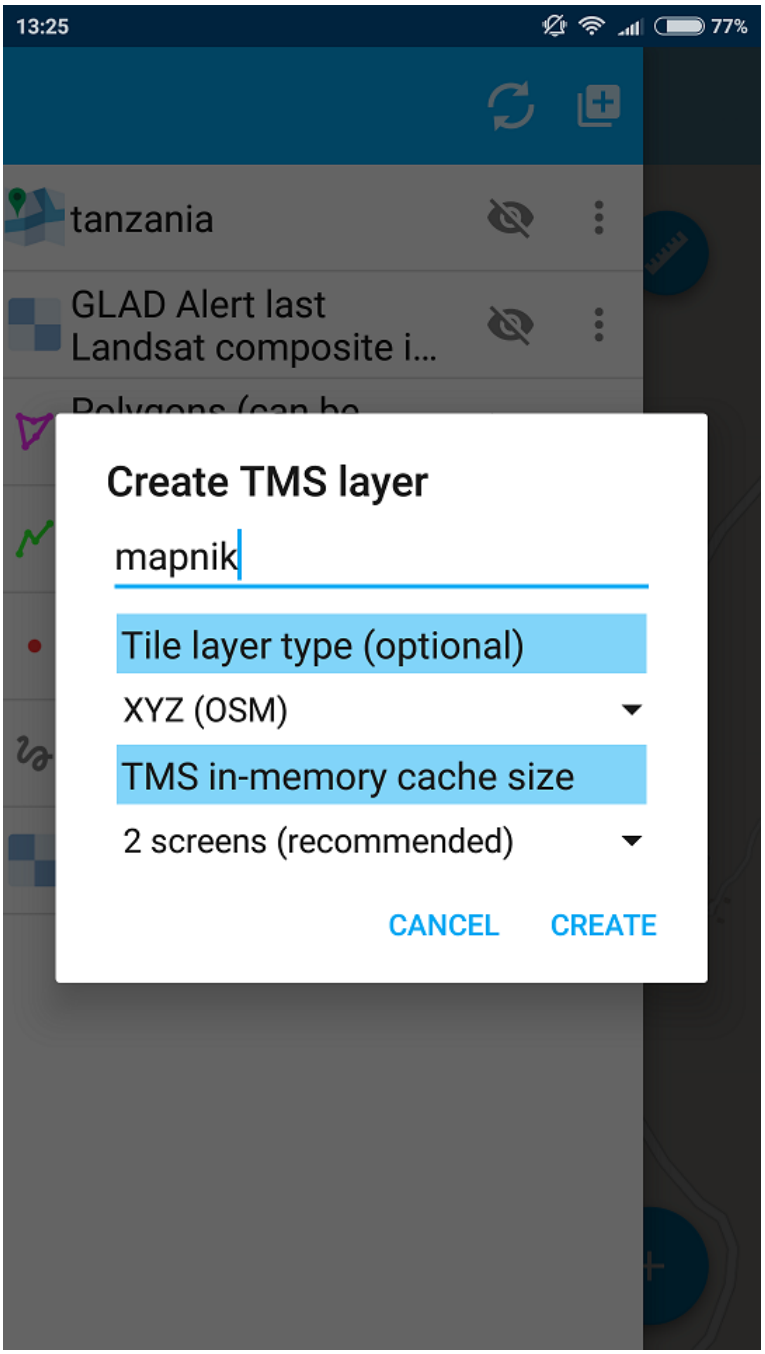

Рис.6.13: Tile layer settings dialog

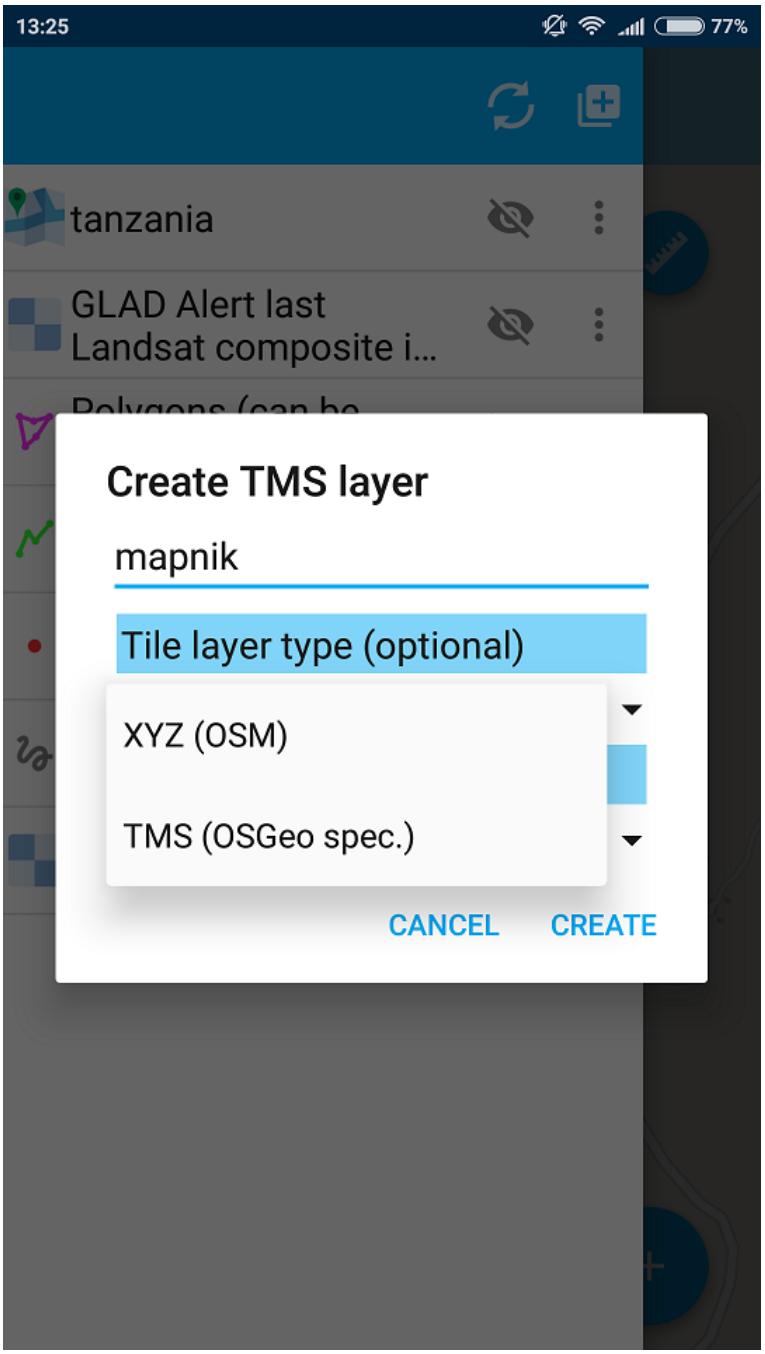

Рис.6.14: Tile structure settings dialog

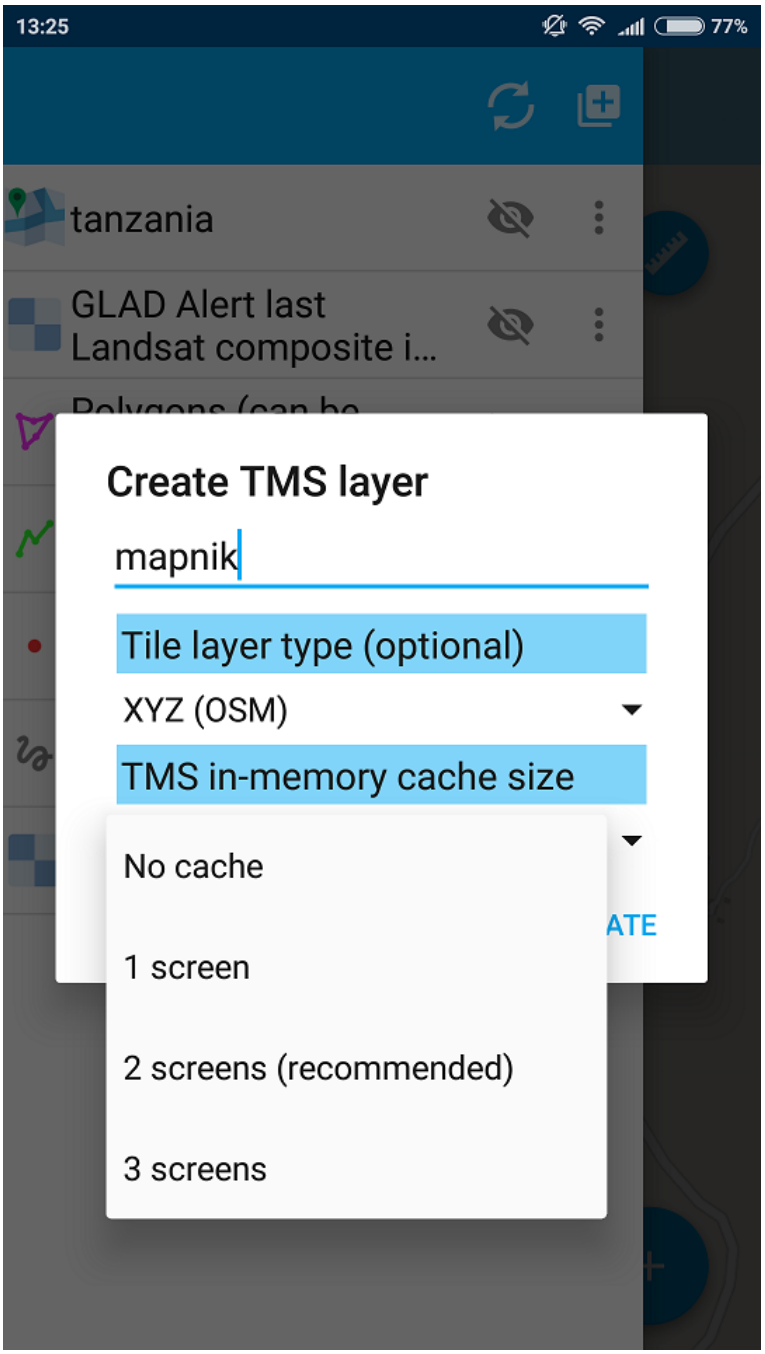

Рис.6.15: Cache size settings dialog

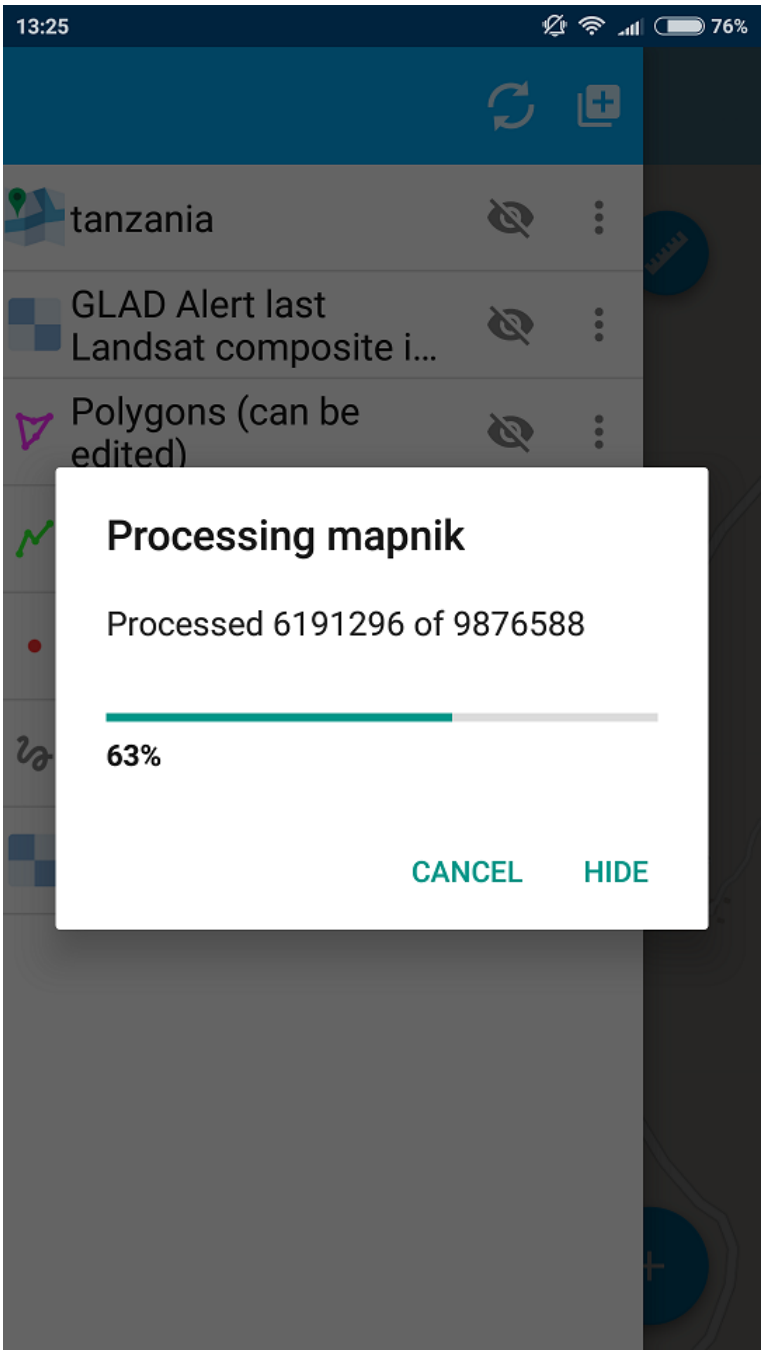

Рис.6.16: Data processing for creation of a new layer from tiles

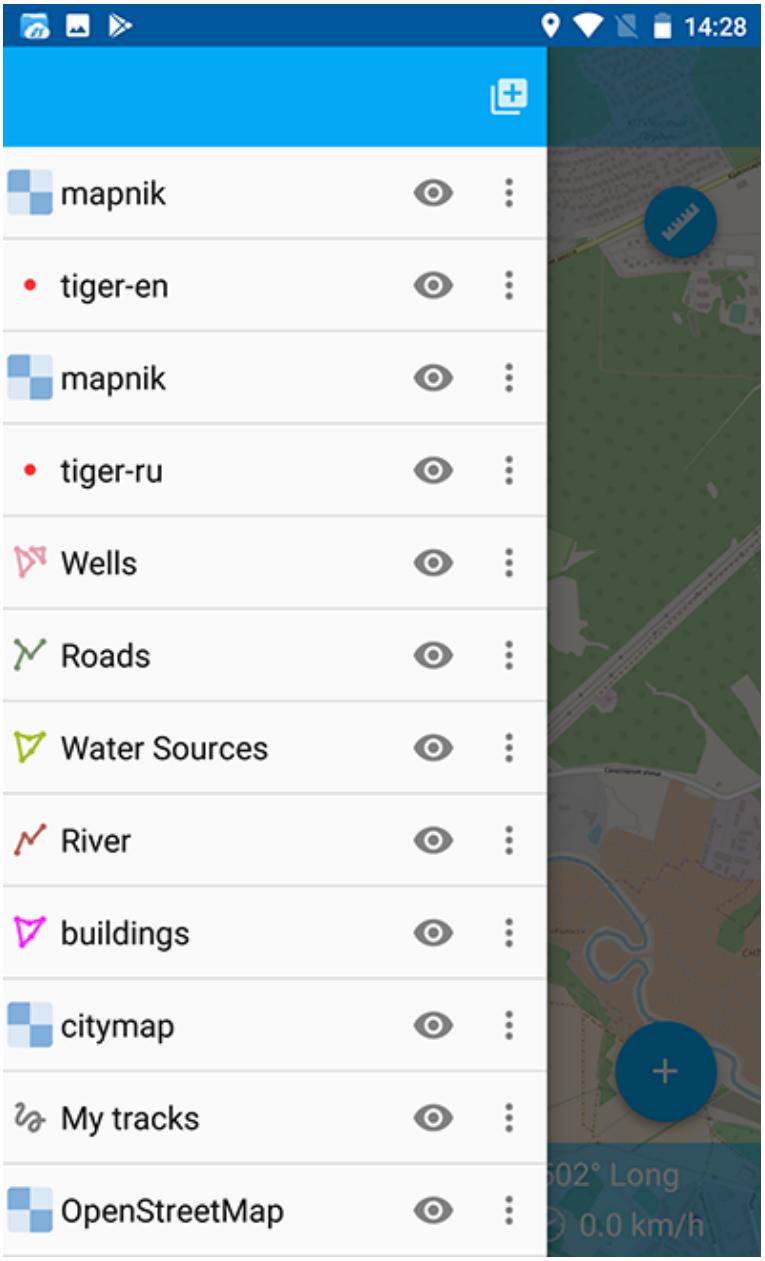

Рис.6.17: Layers tree panel

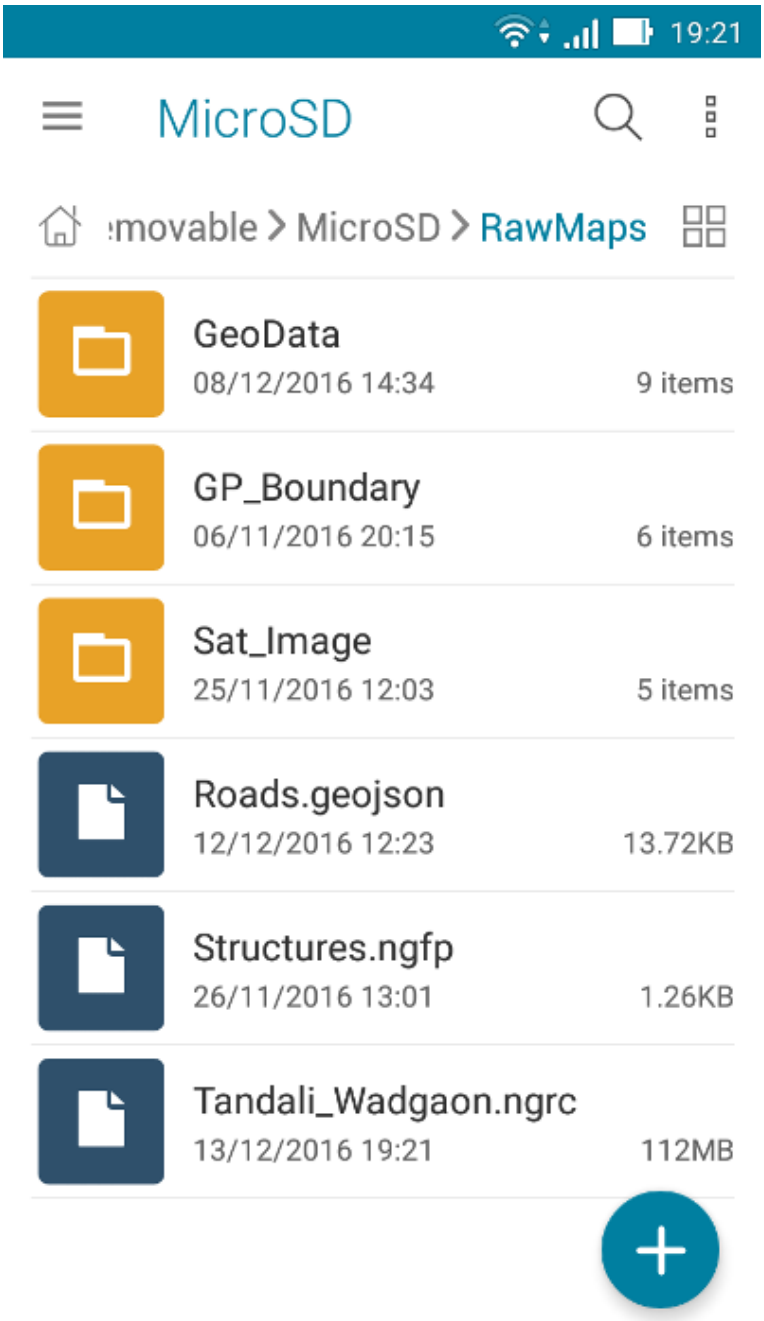

Рис.6.18: Android local storage

layers tree as shown in (see Fig. 6.19). The “Tandali_Wadgaon” layer is shown in orange rectangle.

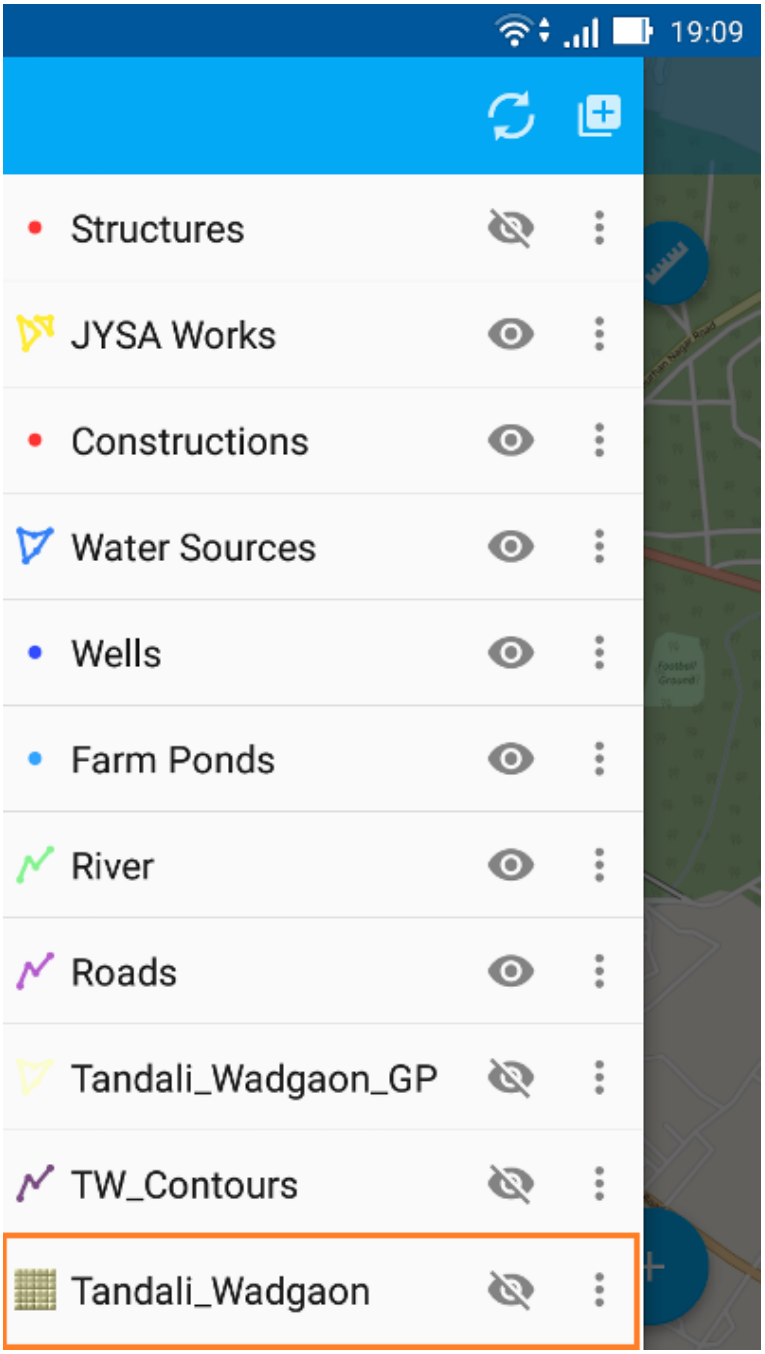

Рис.6.19: Layers tree panel

6.6 Creating raster layer from external geoservice

NextGIS Mobile also supports creation of raster layers from external geoservices. For example, you can use them to add basemaps.

Warning: You need to be **Online** while creating layer from external geoservice. It will consume your data pack & apply standard Internet charges from your Internet service provider.

6.6.1 Creating raster layer from QuickMapServices tile service

Follow these steps to add raster layer from TMS services listed in QuickMapServices catalog[29]:

1. Open Layers tree panel (item 1 in Fig. 4.1). Then tap on “Add geodata” button (item 4 in Fig. 4.2). The dialogue will open as shown in Fig. 6.1. Select “Add geoservice” and the dialogue will open as shown in Fig. 6.20 below.
2. Select a geoservice you want to add and tap “Add” to create raster layer from that service. The newly created layer will be shown up in the layers tree in Layers tree.

6.6.2 Creating raster layer from private tile service

If you want to add tile service not listed in QuickMapServices catalog[30] you can do it by following these steps:

1. Tap “New” in above Fig. 6.20. It will open up “Create” dialogue for a new TMS service as shown in Fig. 6.21 below.
2. Specify Layer name & Layer URL. Layer URL should specify location of X value (number of tile by horizontal), Y (number of tile by vertical) and Z (zoom level). These values are specified using wildcard code for X - **{x}**, for Y - **{y}**, for Z - **{z}**. Additionally you can specify subdomains (e.g. for subdomains a.tileopenstreetmap.org, b.tileopenstreetmap.org, c.tileopenstreetmap.org the address will look like this: **{a,b,c}.tile.openstreetmap.org**).

Note: NextGIS Mobile requests tiles from each URL (subdomain) in 2 streams. So from URL like {a,b,c}.tile.openstreetmap.org tiles will be downloaded in 6 streams.

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3. You can also specify Tile layer type (XYZ (OSM) and TMS (OSGeo) standards are supported), TMS in-memory cache size (none, 1, 2 or 3 screens) and credentials (Login & Password) if authentication is required for accessing tiles.

[29] https://qms.nextgis.com/
[30] https://qms.nextgis.com/

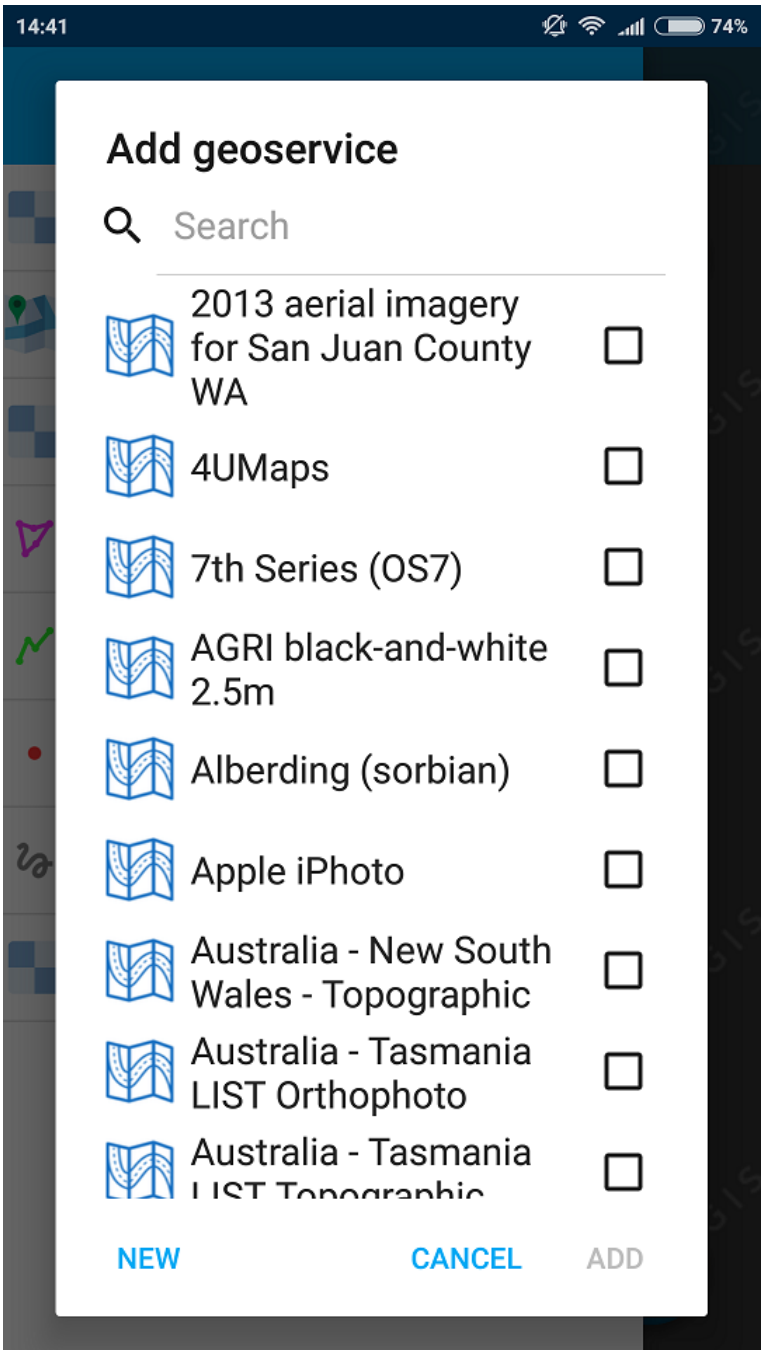

Рис.6.20: Add Geoservice dialogue

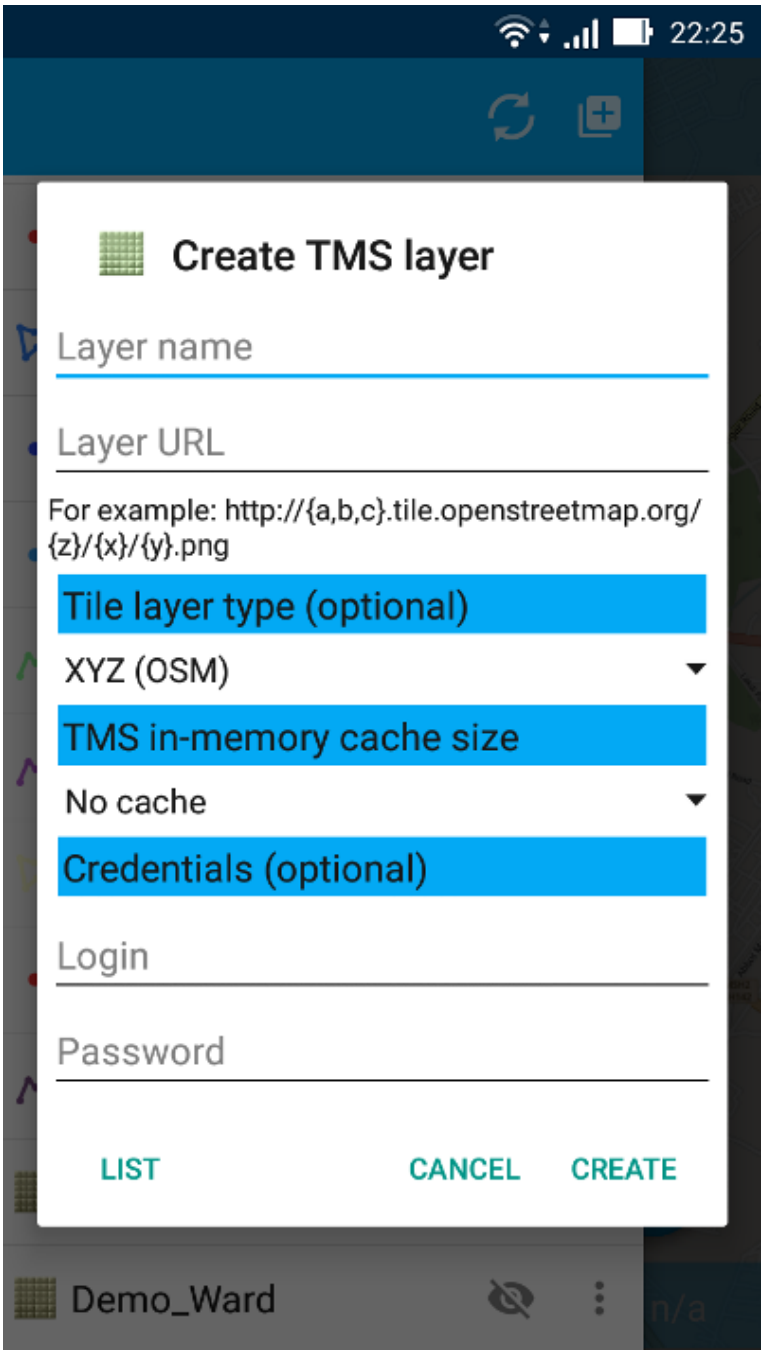

Рис.6.21: Create TMS service dialogue

Note: Only Basic access authentication[31] is currently supported.

4. Tap “Create” to create new raster layer from that TMS service. The newly created layer will be shown up in the layers tree in Layers tree.

6.6.3 Caching of tile service data

You can work **Offline** with raster layers created from external geoservices. In order to do it you need to download tiles for your area of interest to your device before going into the field:

1. Make sure raster layer you need in the field is added to Map screen and is visible. Then open the map extent you want to download tiles for.
2. Open Layers tree panel (item 1 in Fig. 4.1). Then find raster layer in Layers tree and tap Layer contextual menu icon (item 5 in Fig. 4.2).
3. Tap “Download tiles” button in Layer contextual menu as shown in Fig. 6.22 below.
4. A new dialogue will open as shown in Fig. 6.23. Select zoom levels you need and tap “Start” button.

Note: The lower selected zoom levels, the smaller number of tiles for an area of interest will have to be downloaded and the faster they will be downloaded. You can track downloading progress in Android Status Bar. Notifications for NextGIS Mobile app should be switched ON in System Settings.

Warning: If number of tiles to download for selected zoom levels is more than 6000 tiles for each zoom level, only first 6000 tiles for each zoom level will be downloaded. The rest will not be downloaded due to danger of memory overflow.

6.7 Adding geodata from Web GIS

NextGIS Mobile supports uploading of geodata from Web GIS created at nextgis.com cloud service or on-premise.

You can learn more about uploading geodata to Web GIS in the following sections: Raster layer and Vector layer.

To add files/geodata from Web GIS to NextGIS Mobile:

1. Open Layers tree panel (item 1 in Fig. 4.1). Then tap on **Add geodata** button (item 4 in Fig. 4.2). The dialogue will open as shown in Fig. 6.24. Select “Add from Web GIS”.
2. In opened dialogue select “Add Web GIS” and tap **Add** button (see Fig. 6.25):

[31] http://en.wikipedia.org/wiki/Basic_access_authentication

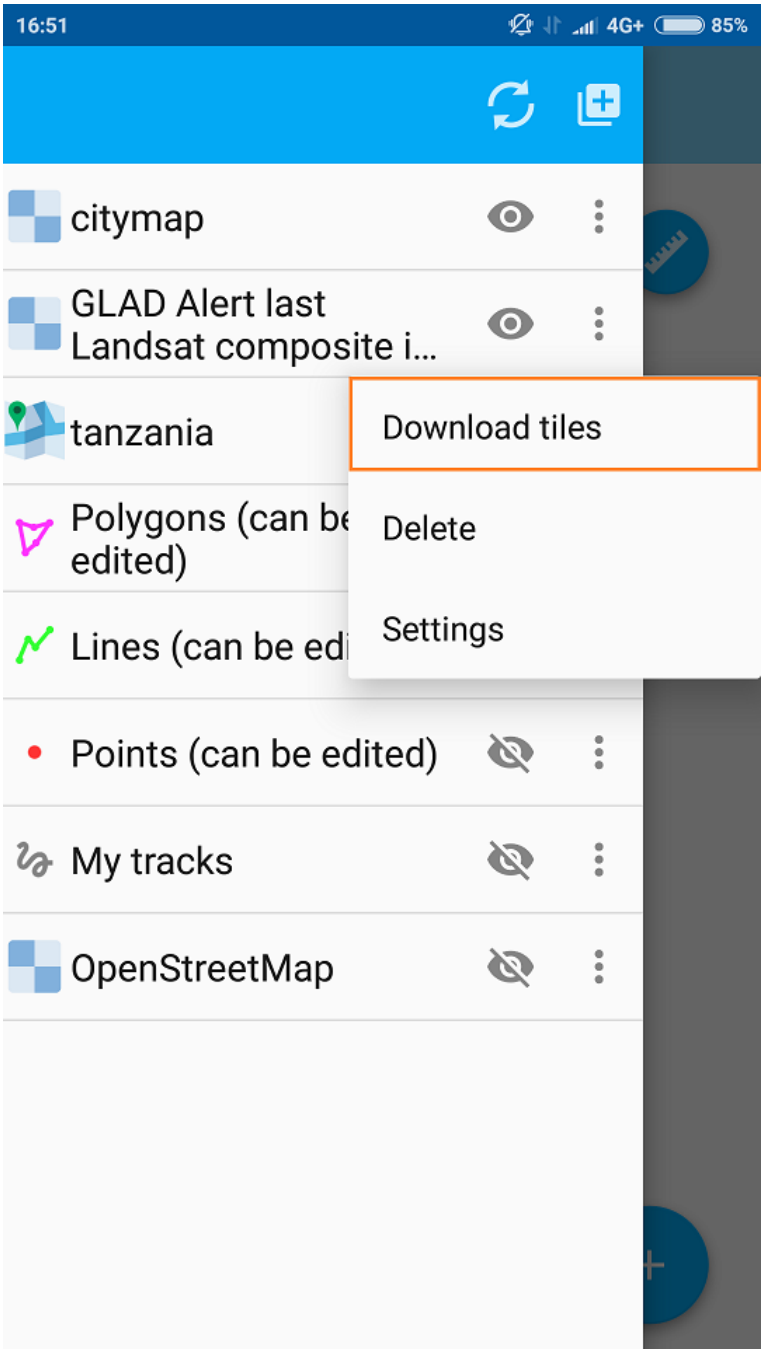

Рис.6.22: Download tiles button

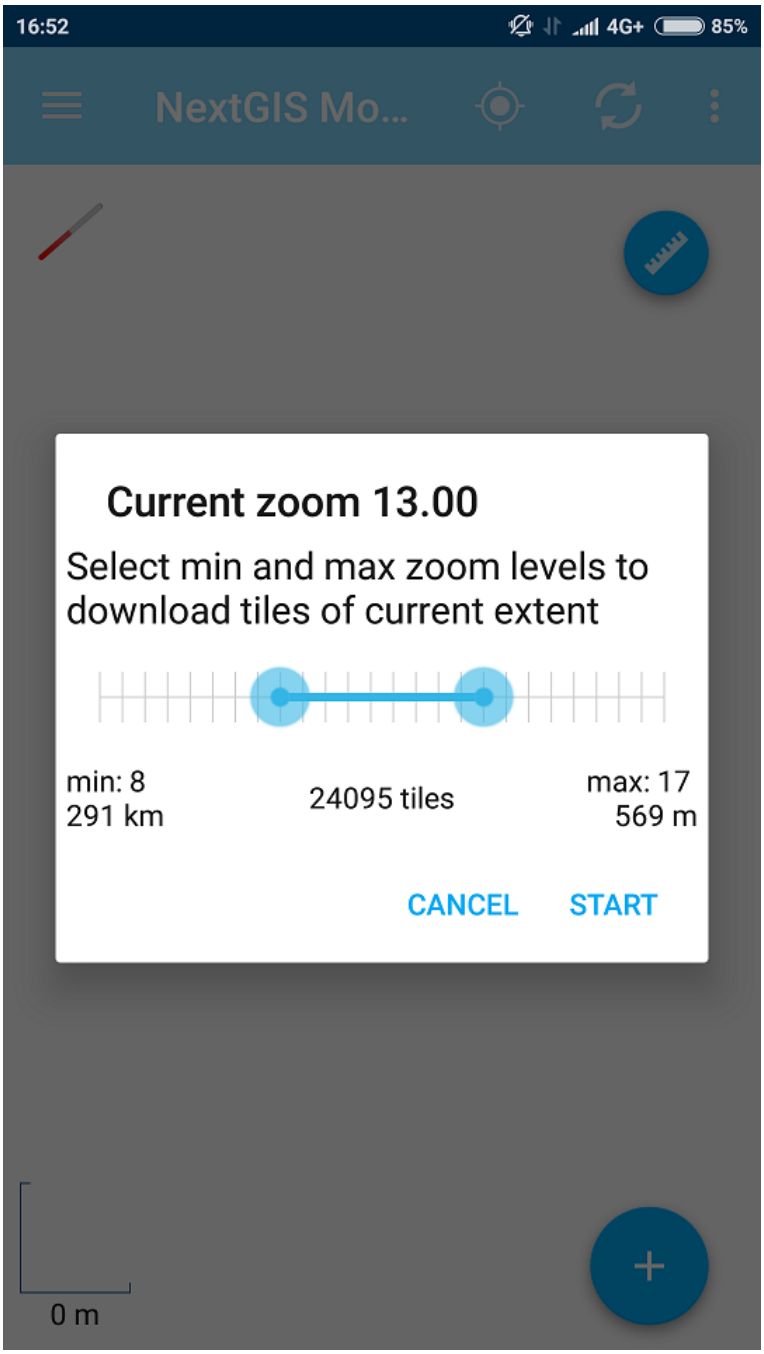

Рис.6.23: Select zoom levels dialogue

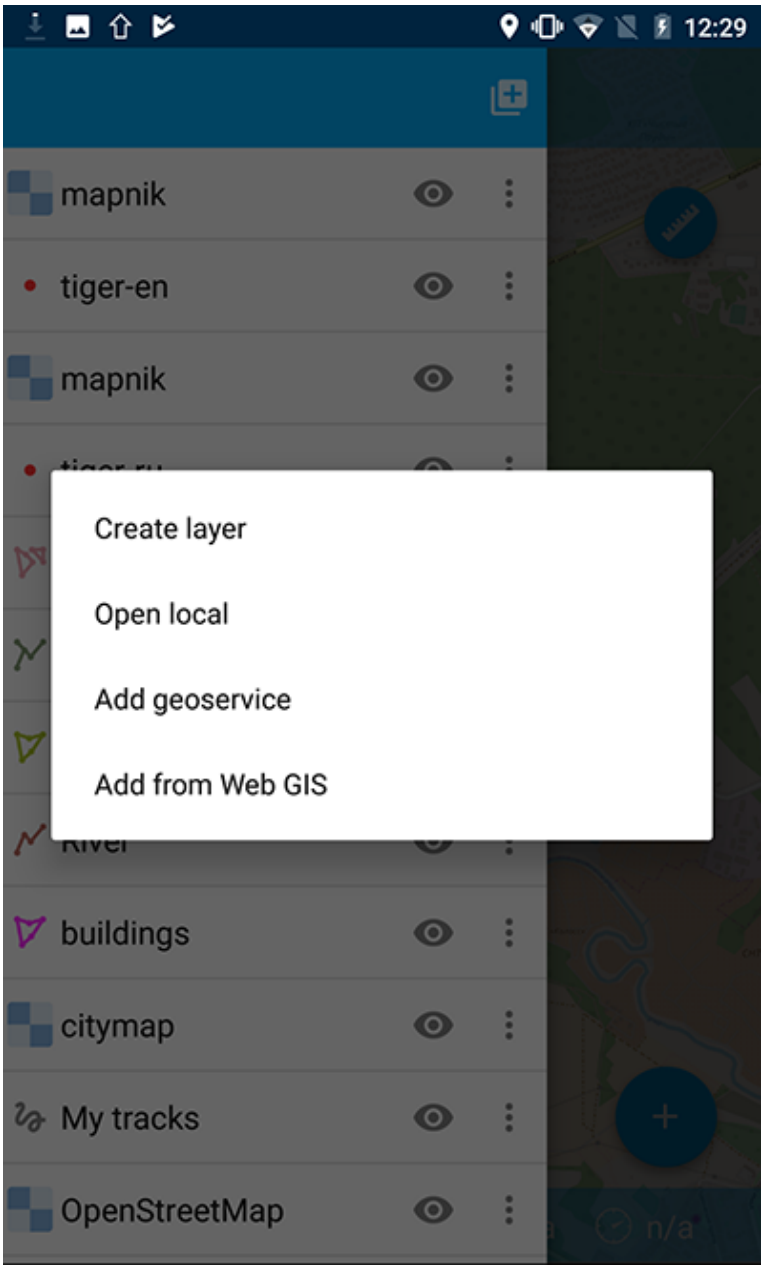

Рис.6.24: Adding from Web GIS

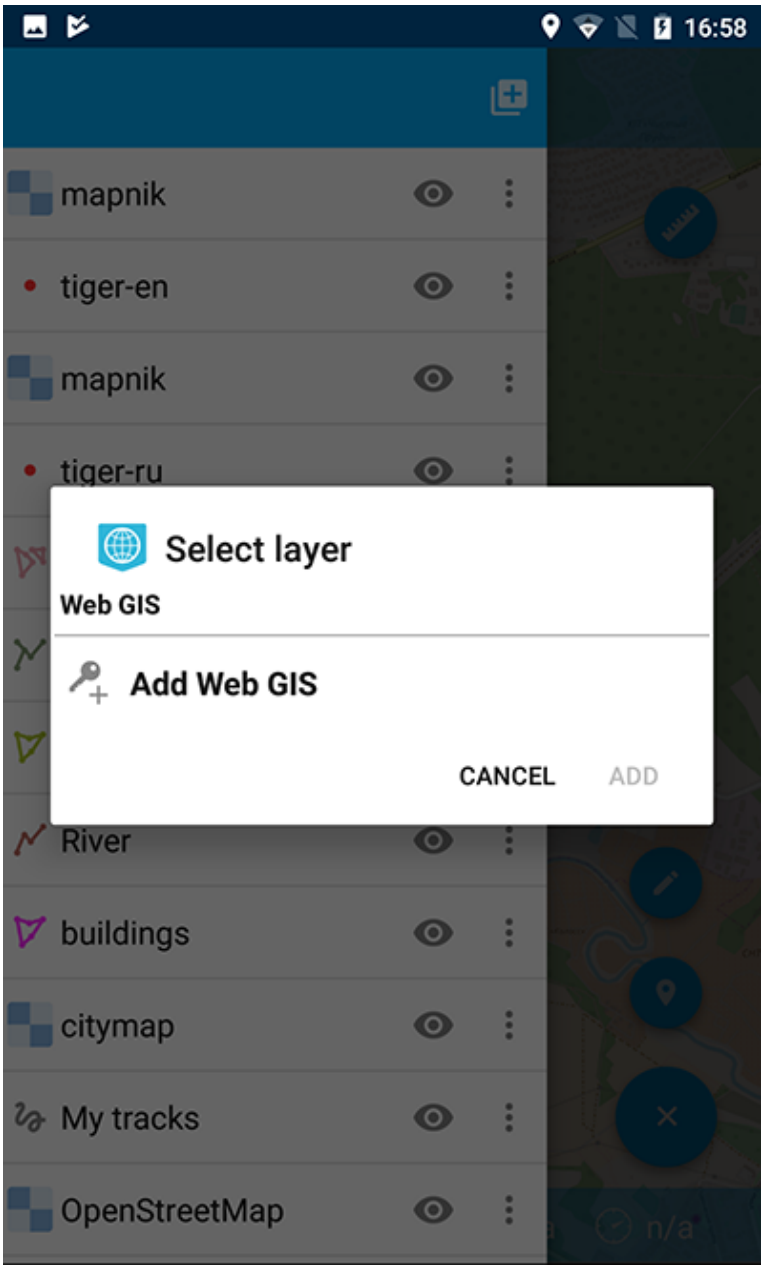

Рис.6.25: Adding Web GIS connection

3. Enter your Web GIS name and password set on nextgis.com, then tap **Sign in** button (see Fig. 6.26):

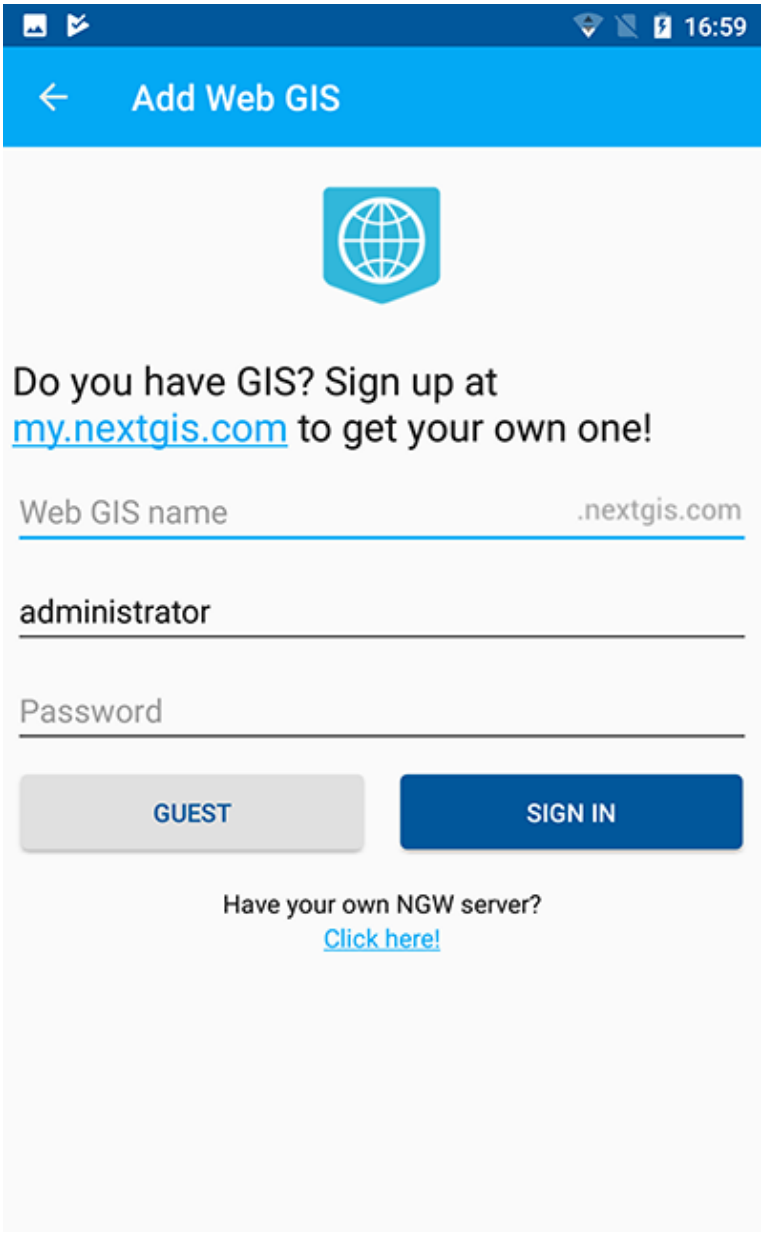

Рис.6.26: Web GIS adding dialog

If you're adding geodata from an on-premise Web GIS, first you need to change the authentification server[32].

4. After the connection is successful you will see the list of available Web GIS. Select the one you added (see Fig. 6.27):
5. The dialog of layer selection for importing geodata from your Web GIS to NextGIS Mobile will open (see Fig. 6.28):

If Web GIS layer has a style, there is a possibility to choose not only vector data, but also raster data for importing. Vector data are downloading to the mobile device and can be used offline. Raster data can be used only online. A vector layer can be

[32] https://docs.nextgis.com/docs_ngmobile/source/auth.html#ngidop

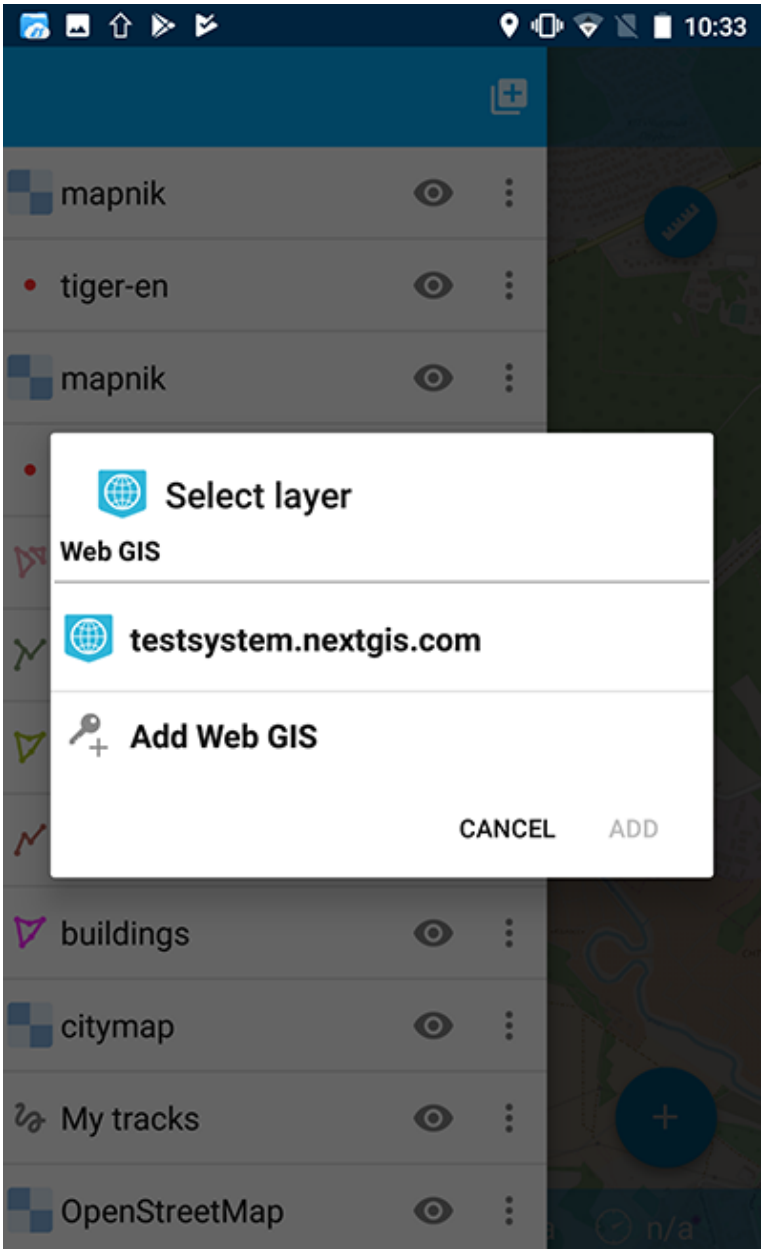

Рис.6.27: Selecting Web GIS

Рис.6.28: Selecting layer for geodata import

added/imported either as vector or as raster data. Tick off the type for the layer in the right side of the screen (see Fig. 6.29):

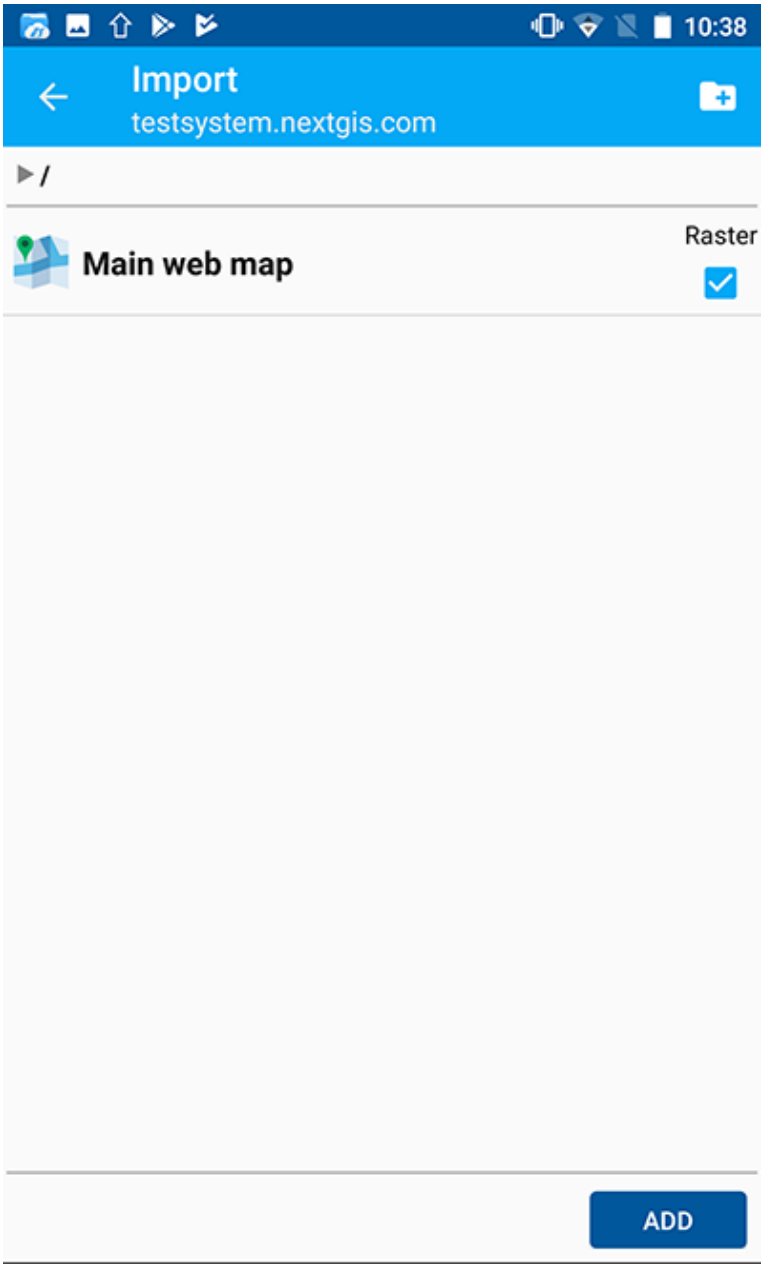

Рис.6.29: Layer type selection

Tap the button in the upper right corner of the screen to create a new group of data in your Web GIS. Specify a name for the group and tap “OK”. In the case of the success you will see it in your Web GIS window (see Fig. 6.30):

6. After the layer selection for importing from your Web GIS to NextGIS Mobile, tap “Add” button. The importing process will begin. The newly created layer will be shown up in the layers tree in Layers tree.

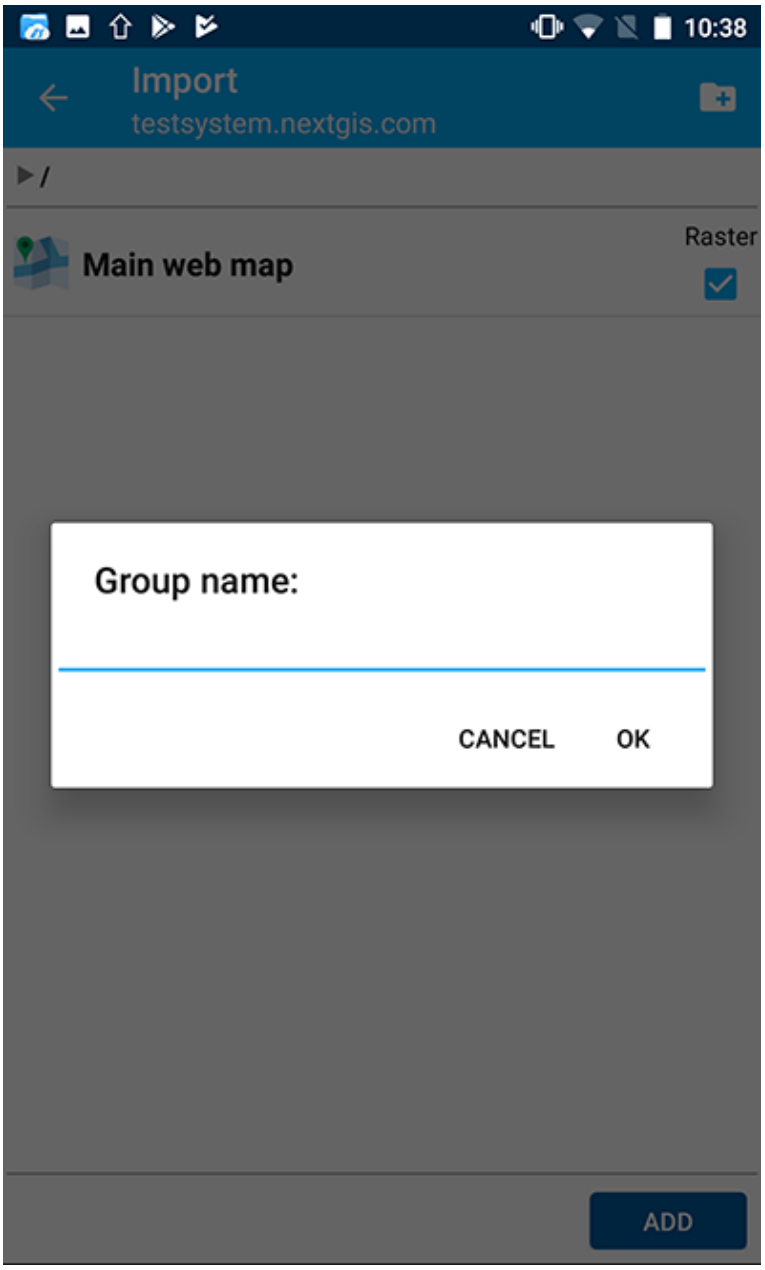

Рис.6.30: Adding a new group

Глава

SEVEN

EDITING LAYERS

NextGIS Mobile allows you to edit vector layers added to the map. While editing, you can:

- add new features;
- delete features;
- edit features.

7.1 Switching to Edit mode

There are several ways to switch to Edit mode.

1. The first way is Main actions button (the big blue button in the right bottom corner of map screen). Pressing Main actions button opens a menu of most common actions (see Fig. 7.1).

You need to tap the pencil button (item 6 in Fig. 7.1) to switch to Edit mode.

Then select a vector layer you want to edit in an opened dialog (see Fig. 7.2).

2. The second way to switch to Edit mode is to long-press the feature on the Map. This will activate Edit mode for the layer which includes this feature. (A short press will activate a similar menu, but only the “info” icon will be available.) If there are multiple overlaying features, a list will appear. Select the layer you wish to edit from that list.
3. The third way is to open Layers tree panel (item 1 in Fig. 4.1) and tap on Layer contextual menu icon next to the vector layer name . This will open the contextual menu items. There you need to select “Edit”.

7.2 The Editing Toolbar

After switching to Edit mode using any of the methods described in *Switching to Edit mode* (c. 60) section Editing Toolbar is opened at the bottom of the map screen (see Fig. 7.4).

Note: This editing toolbar is common for all vector layers irrespective of the type of geometry they contain (point, line or polygon).

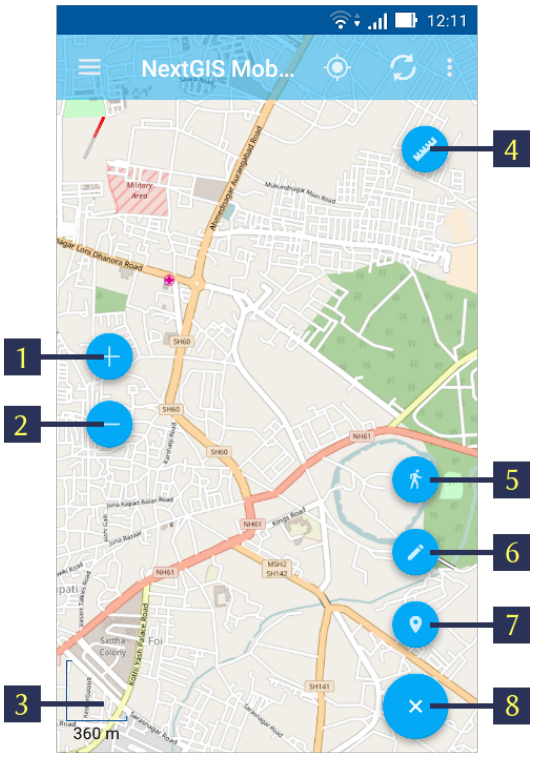

Рис.7.1: Common actions menu
The numbers indicate: 1 - Zoom in; 2 - Zoom out; 3 – Scale ruler; 4 - Measure button; 5 - Add geometry by walk; 6 - Edit layers; 7 - Add current location; 8 - Close Common actions menu.

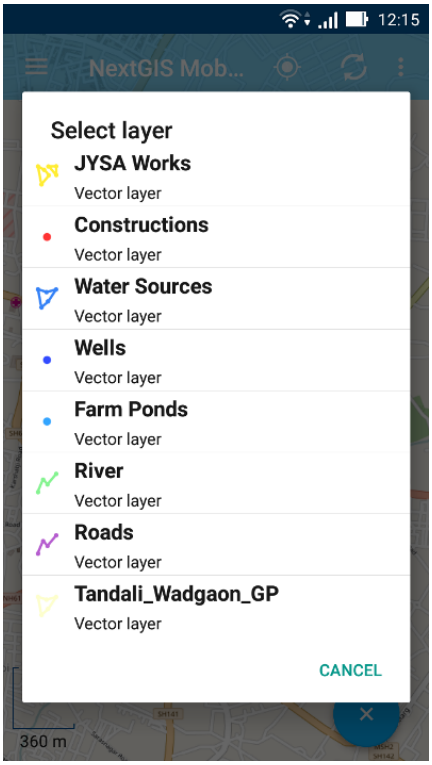

Рис.7.2: Select layer dialog

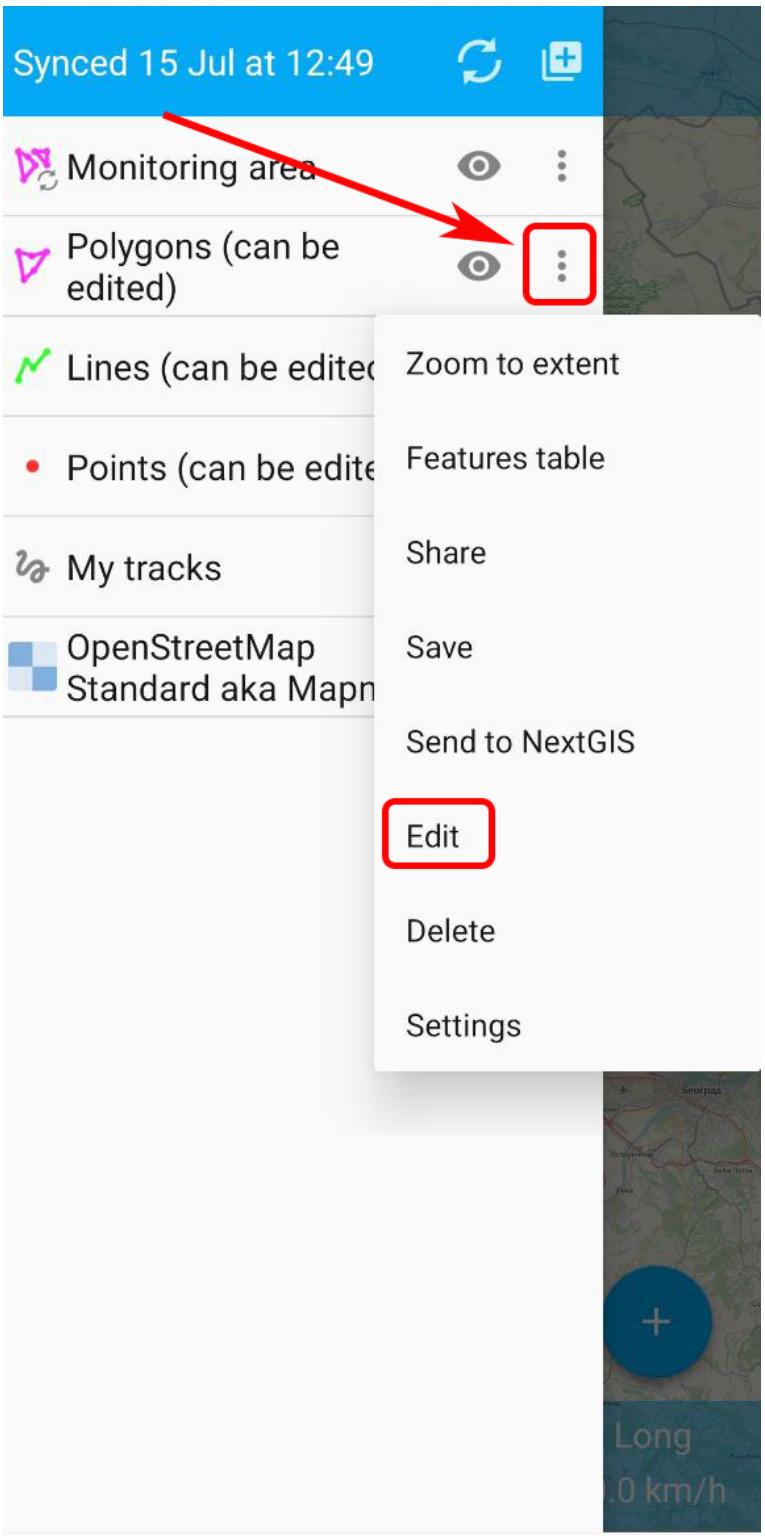

Рис.7.3: Layer context menu

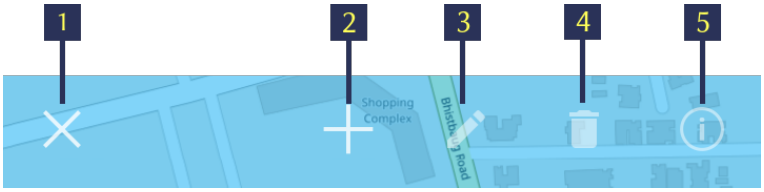

Рис.7.4: Editing Toolbar.
The numbers indicate: 1 - Quit Edit mode; 2 - Add new feature; 3 – Edit feature; 4 - Delete feature; 5 - Attributes info.

7.3 Adding features

To create a new feature first select a layer you want to add this feature to. Then switch to Edit mode using any of the methods described in *Switching to Edit mode* (c. 60) section.

After Editing Toolbar is opened tap “Add new feature” button (item 2 in Fig. 7.4).

Note: Type of geometry of a new feature should correspond to the type of geometry of the layer you want to add this feature to (e.g. you can only add a new point to a point/multipoint vector layer, a new line - to a line/multiline vector layer, etc.).

Note: If you want to start adding new features from scratch first you have to create an empty layer as described in *Creating new vector layer* (c. 24) section.

7.3.1 Adding a point

1. To create a new point first select a point/multipoint vector layer you want to add this feature to. Then switch to Edit mode using any of the methods described in *Switching to Edit mode* (c. 60) section.
2. Tap “Add new feature” button in Editing Toolbar (item 2 in Fig. 7.4).
3. In a point layer a new point will appear in the center of the screen highlighted in red. You can move this point anywhere on the map simply by dragging the circular handle attached to it. The red crosshair marker indicates the center of Map screen (see Fig. 7.5).
4. For adding a point to a multipoint layer execute steps 1-2 and then tap “Add point” (item 6 in Fig. 7.6). After that you can set point’s location as described above in the step 3.
5. After a geometry of new point is added you may set its attributes by tapping on the “floppy” button (item 5 in Fig. 7.5 and Fig. 7.6). Pressing floppy icon will save a new point and open Attributes editing form (see Fig. 7.7).
6. When all the attributes are set tap “Apply changes” button (item 2 in Fig. 7.7) to save the attributes. If you tap “Back” button instead (item 1 in Fig. 7.7) the app will warn you of any unsaved changes. You can also attach photos to

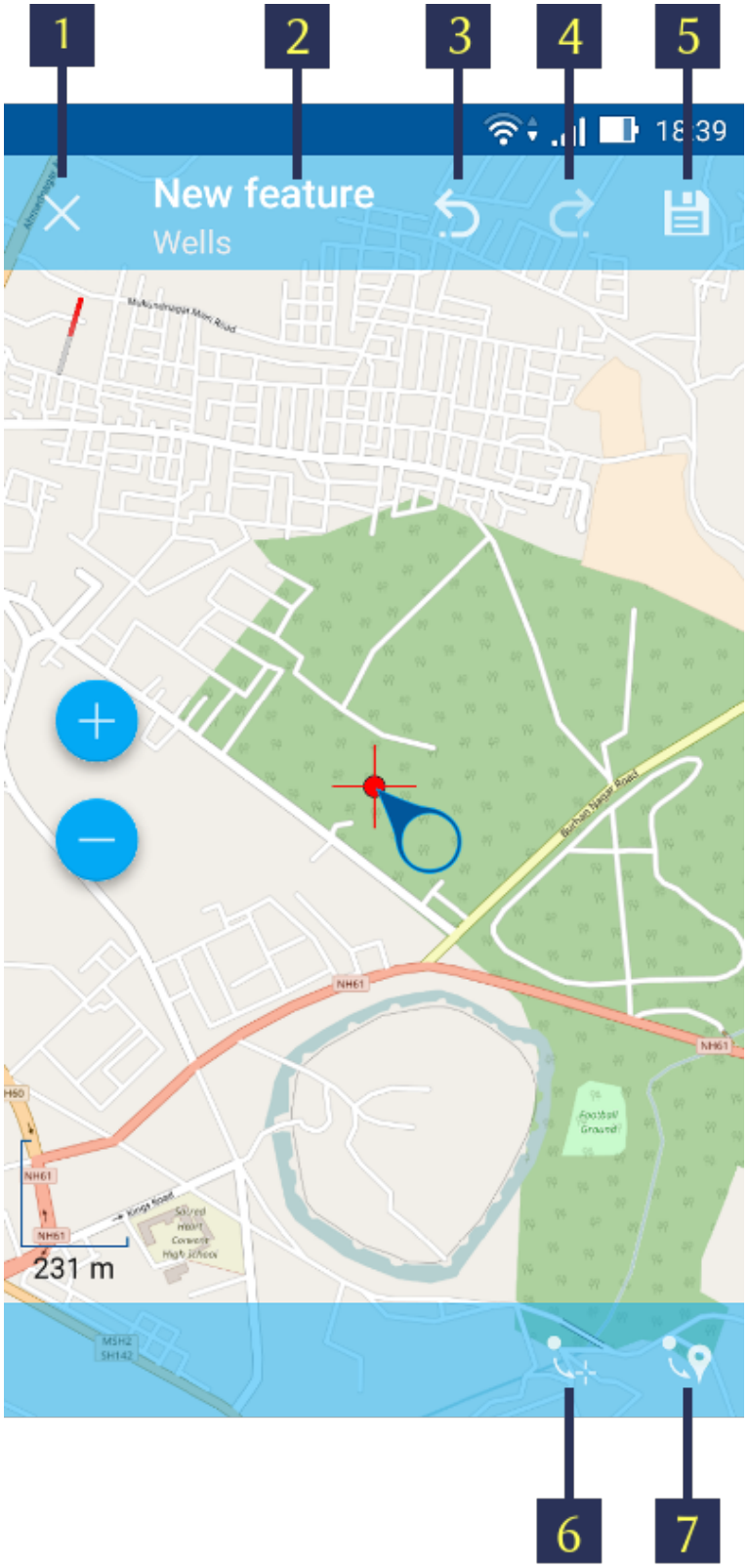

Рис.7.5: Adding a point to Point layer.
The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & Name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Move point to the center of Map screen; 7 - Move point to the current location.

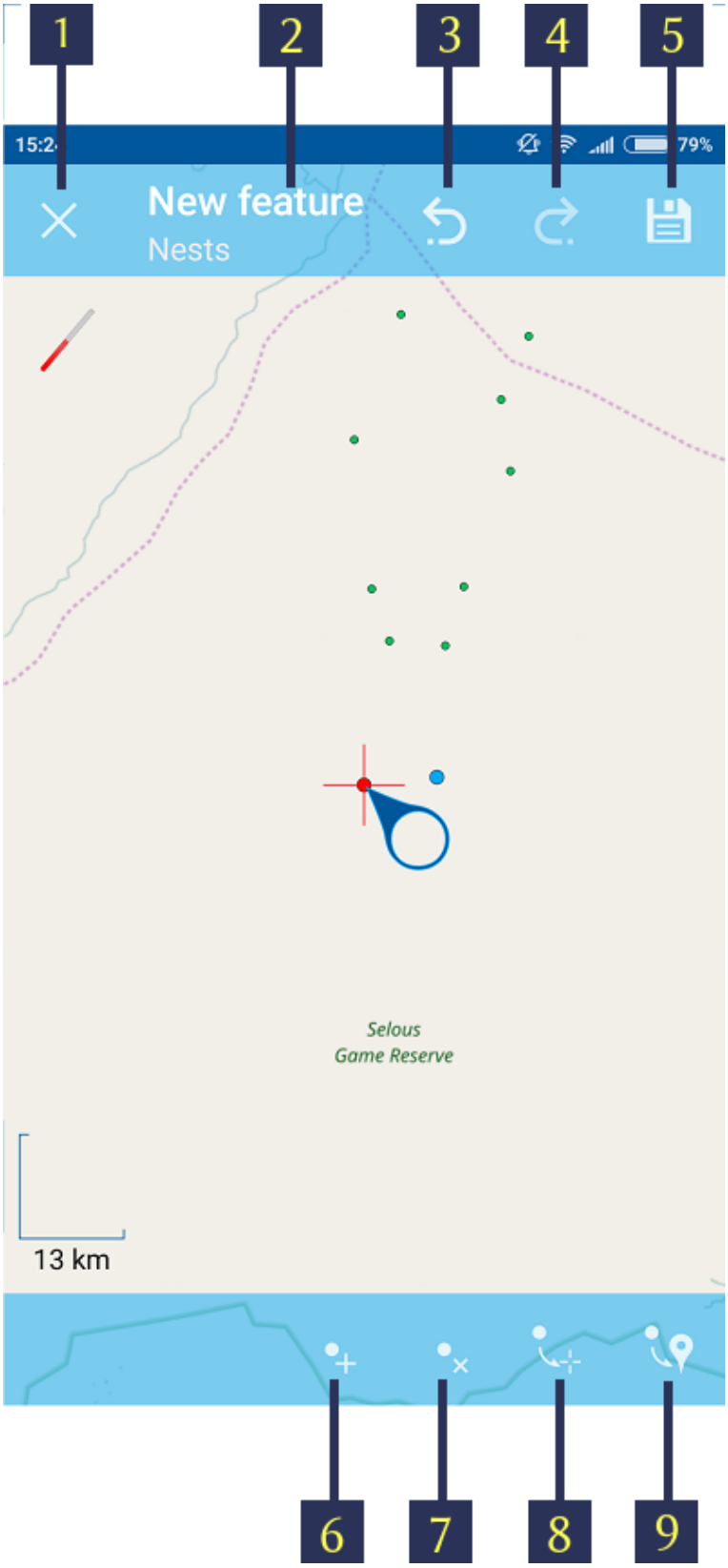

Рис.7.6: Adding a point to Multipoint layer.
The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & Name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Add point; 7 - Delete point; 8 - Move point to the center of Map screen; 9 - Move point to the current location.

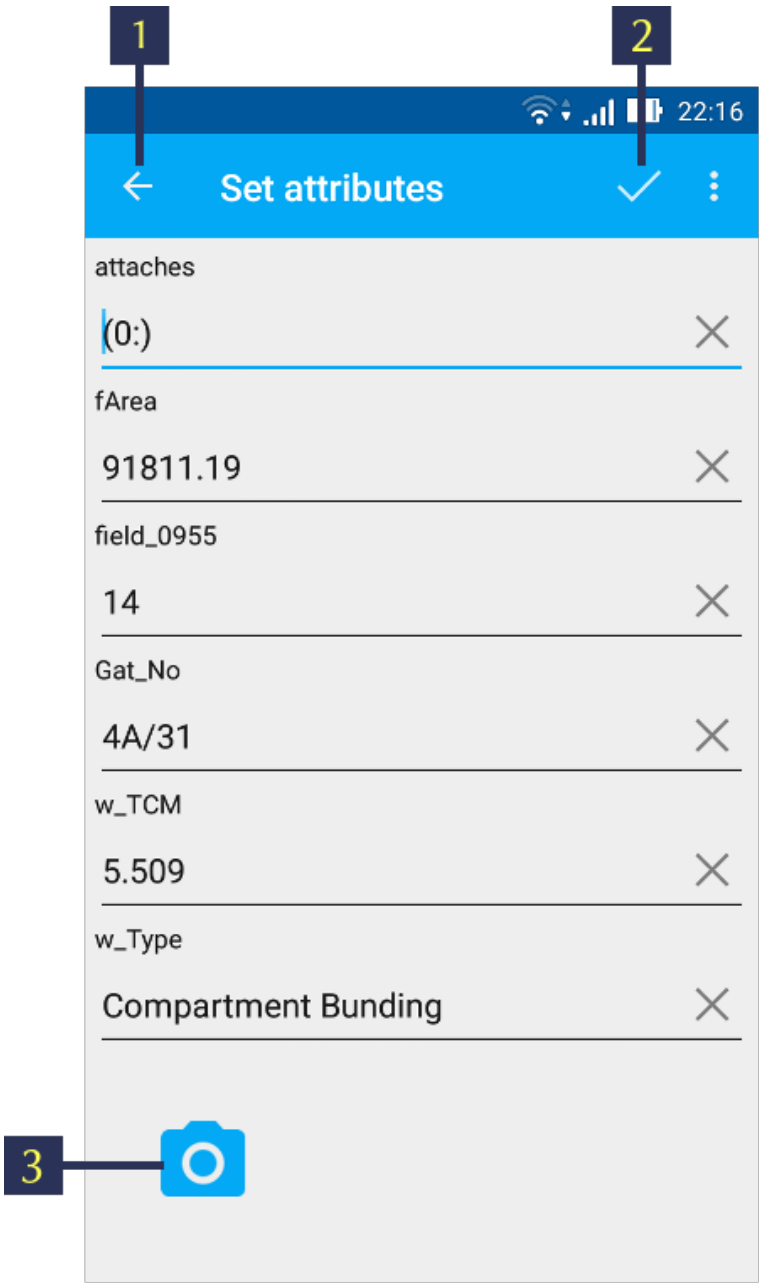

Рис.7.7: Attributes editing form.
The numbers indicate: 1 - Back to previous screen; 2 - Apply changes; 3 - Add photo.

each feature using “Add photo” button in Attributes editing form (item 3 in Fig. 7.7).

See how to add and label points in our videos:

Watch on youtube[33].

Watch on youtube[34].

7.3.2 Adding a line

1. To create a new line first select a linestring/multilinestring vector layer you want to add this feature to. Then switch to Edit mode using any of the methods described in *Switching to Edit mode* (c. 60) section.
2. Tap “Add new feature” button in Editing Toolbar (item 2 in Fig. 7.4).
3. In a linestring layer a new line will appear in the center of the screen, with one of its vertices highlighted in red (see Fig. 7.8).

You can move the vertices anywhere on the map simply by dragging the circular handle attached to the selected vertex. If you tap on the vertex in the middle of the line, two new vertices will be created automatically. This way you can add as many vertices as you need and shape the line geometry any way you like, including smooth curves.

4. For adding a line to a multilinestring layer execute steps 1-2 and then tap “Add line” (item 6 in Fig. 7.9). After that you can set vertices’ location as described above in the step 3.
5. After a geometry of new line is added you may set its attributes by tapping on the “floppy” button (item 5 in Fig. 7.8 and Fig. 7.9). Pressing floppy icon will save a new line and open Attributes editing form (see Fig. 7.7).
6. When all the attributes are set tap “Apply changes” button (item 2 in Fig. 7.7) to save the attributes. If you tap “Back” button instead (item 1 in Fig. 7.7) the app will warn you of any unsaved changes. You can also attach photos to each feature using “Add photo” button in Attributes editing form (item 3 in Fig. 7.7).

7.3.3 Adding a polygon

1. To create a new polygon first select a polygon/multipolygon vector layer you want to add this feature to. Then switch to Edit mode using any of the methods described in *Switching to Edit mode* (c. 60) section.
2. Tap “Add new feature” button in Editing Toolbar (item 2 in Fig. 7.4).
3. In a polygon layer a new polygon will appear in the center of the screen, with one of its vertices highlighted in red (see Fig. 7.10).

You can move the vertices anywhere on the map simply by dragging the circular handle attached to the selected vertex. If you tap on the vertex in the middle of the

[33] https://youtu.be/WzMJE9ExGXA?si=8yor6iJIVjswuuTu
[34] https://youtu.be/5M9uzmU_lgA?si=ow5589SuuR70Dg1S

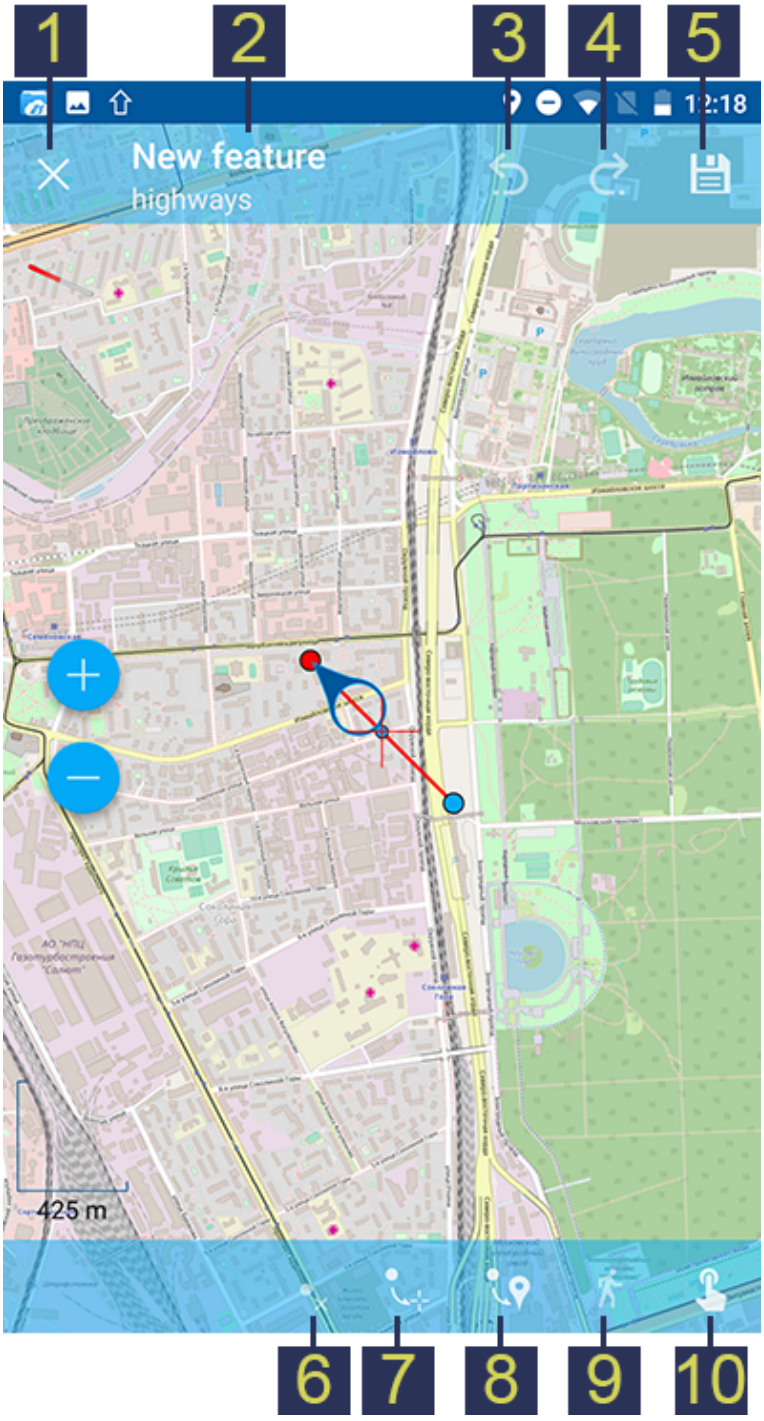

Рис.7.8: Adding a line to Linestring layer.
The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Delete vertex; 7 - Move vertex to the center of Map screen; 8 - Move vertex to the current location; 9 - Append geometry by walk; 10 - Edit by touch.

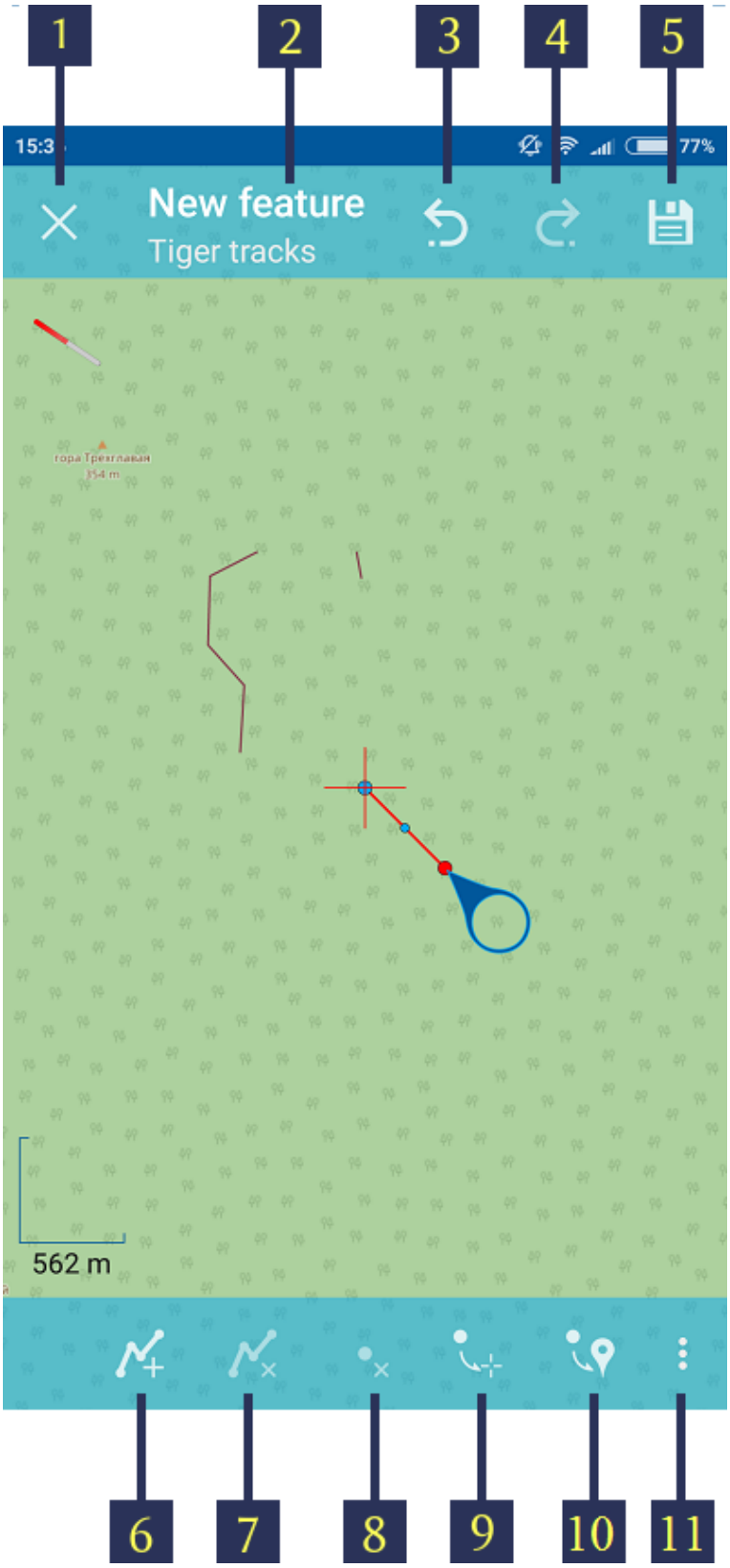

Рис.7.9: Adding a line to Multilinestring layer.
The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Add line; 7 - Delete line; 8 - Delete vertex; 9 - Move vertex to the center of Map screen; 10 - Move vertex to the current location; 11 - Contextual menu with the rest of commands (Append geometry by walk, Append geometry by touch).

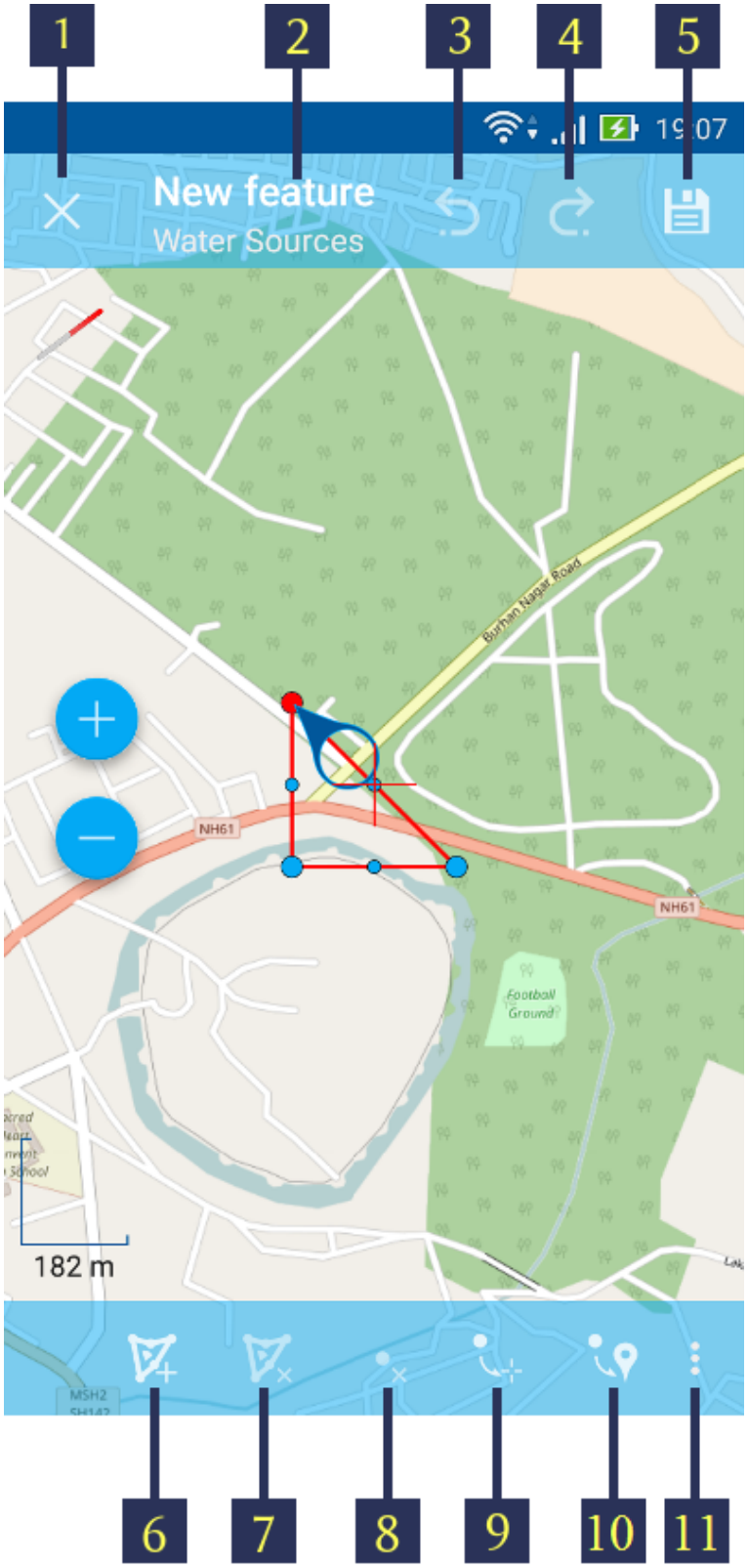

Рис.7.10: Adding a polygon to Polygon layer.
The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Add hole; 7 - Delete hole; 8 - Delete vertex; 9 - Move vertex to the center of Map screen, 10 - Move vertex to the current location, 11 - Contextual menu with the rest of commands (Append geometry by walk, Append geometry by touch).

line, two new vertices will be created automatically. This way you can add as many vertices as you need and shape the polygon geometry any way you like, including smooth curves.

You can also create holes in polygons by tapping button “Add hole” (item 6 in Fig. 7.10 or item 8 in Fig. 7.11) and creating a hole geometry the same way you create polygon geometry.

Note: Hole geometry must be located INSIDE a polygon geometry otherwise the changes won’t be saved!

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4. For adding a polygon to a multilipolygon layer execute steps 1-2 and then tap “Add polygon” (item 6 in Fig. 7.11). After that you can set vertices’ location as described above in the step 3.
5. After a geometry of new polygon is added you may set its attributes by tapping on the “floppy” button (item 5 in Fig. 7.10 and Fig. 7.11). Pressing floppy icon will save a new line and open Attributes editing form (see Fig. 7.7).
6. When all the attributes are set tap “Apply changes” button (item 2 in Fig. 7.7) to save the attributes. If you tap “Back” button instead (item 1 in Fig. 7.7) the app will warn you of any unsaved changes. You can also attach photos to each feature using “Add photo” button in Attributes editing form (item 3 in Fig. 7.7).

7.4 Adding current location

To add current location to a vector layer press Main actions button (item 8 in Fig. 4.1), and then press a pushpin icon (item 7 in Fig. 7.1). In an opened dialog select a layer you’d like to add current location to (only point/multipoint geometry will be displayed) (see Fig. 7.12). If there is only one point/multipoint layer available, it will be selected automatically.

Current location will be added to selected layer as a new point or a new multipoint consisting of 1 point.

You can then add attributes as described in *Adding a point* (c. 63) section.

Note: You can add current location to Point and Multipoint layers only!

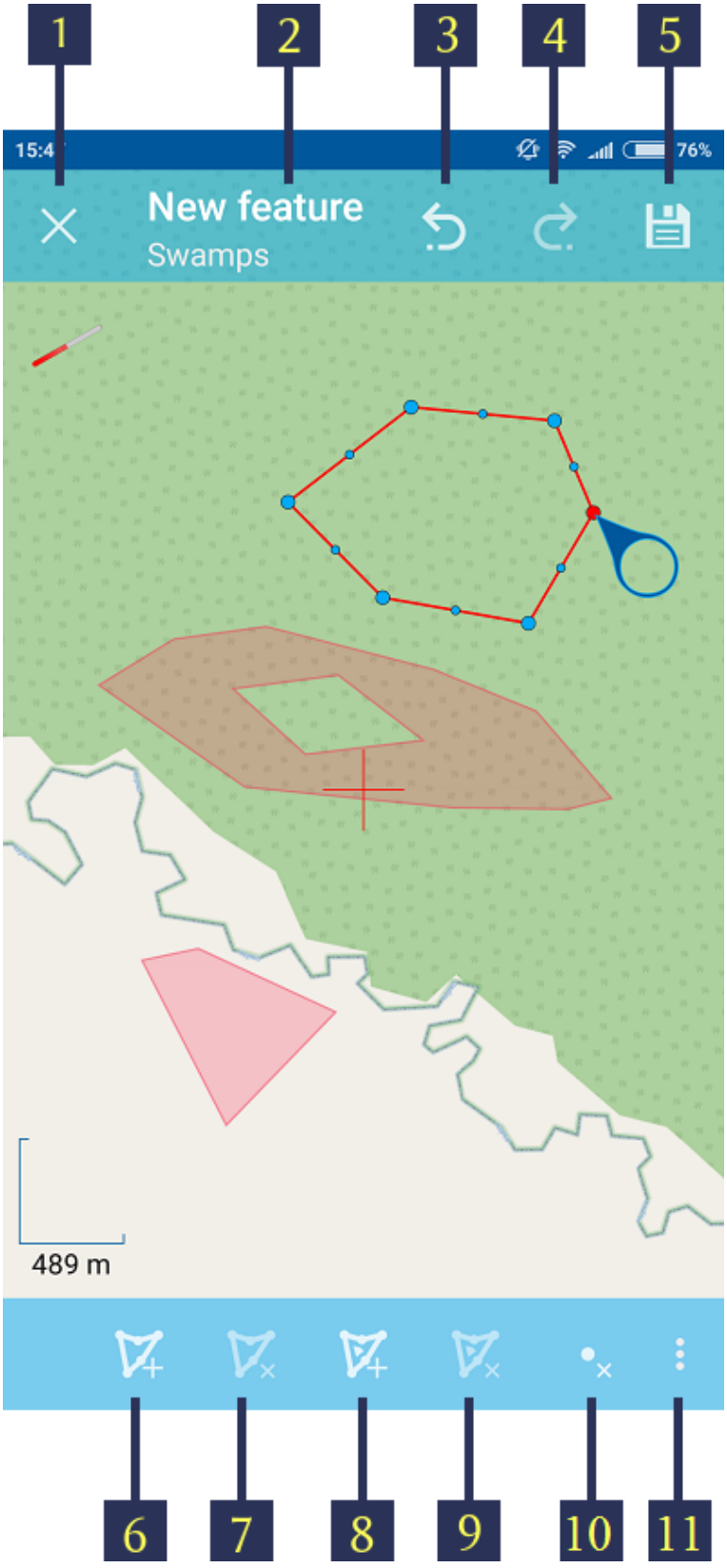

Рис.7.11: Adding a polygon to Multipolygon layer.
The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Add polygon; 7 - Delete polygon; 8 - Add hole; 9 - Delete hole; 10 - Delete vertex; 11 - Contextual menu with the rest of commands (Move vertex to the center of Map screen, Move vertex to the current location, Append geometry by walk, Append geometry by touch).

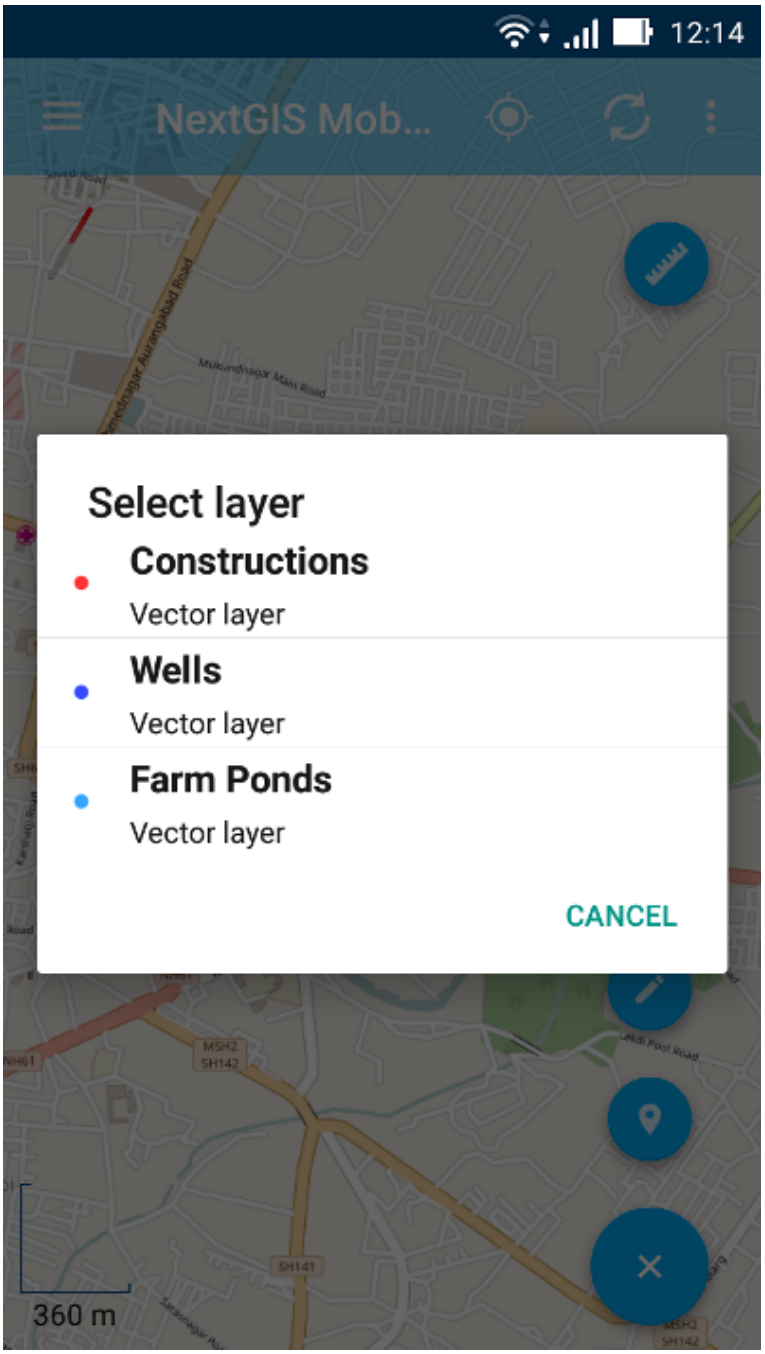

Рис.7.12: Select layer dialog.

7.5 Adding line or polygon by walk

To add line or polygon by walk to a vector layer press Main actions button, and then press a walking man icon (item 5 in Fig. 7.1). In an opened dialog select a layer you'd like to add a new feature to (only linestring/multilinestring and polygon/multipolygon layers will be displayed) (see Fig. 7.13).

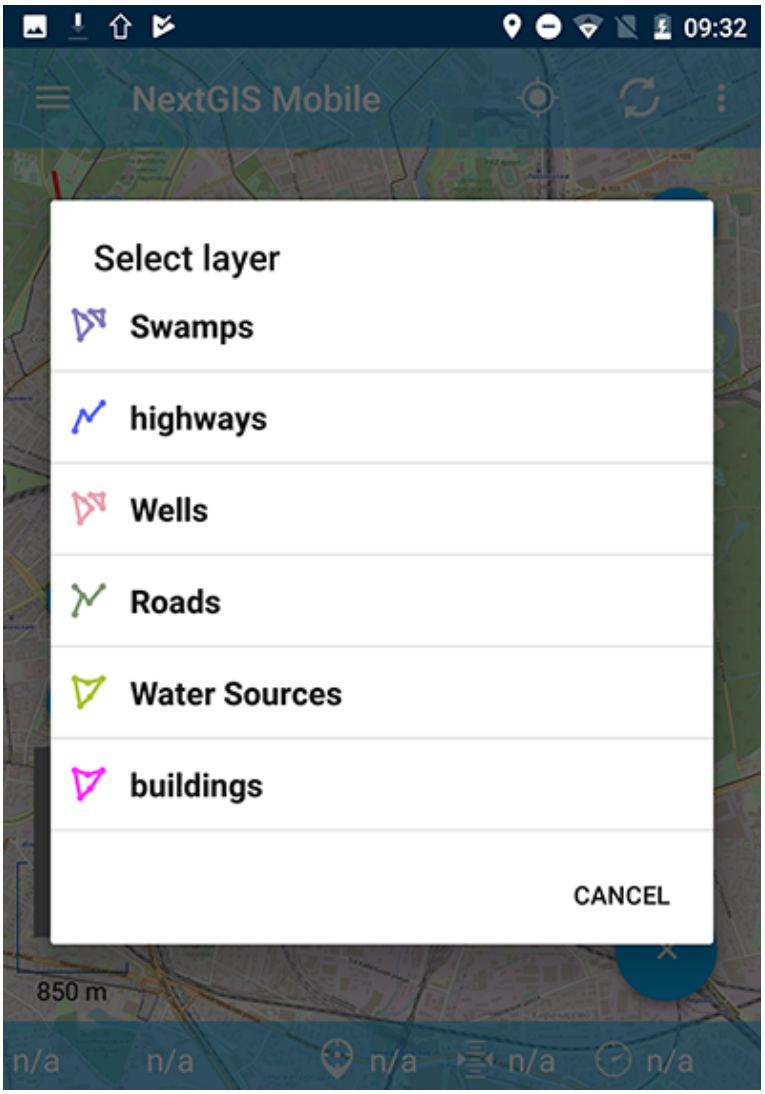

Рис.7.13: Select layer dialog.

Find more information about adding geometries in *Record tracks to vector layer* (с. 90) section.

Note: You can add tracks to either Linestring/Multilinestring or Polygon/Multipolygon layers!

7.6 Editing a geometry

To edit an existing layer first select that vector layer and switch to Edit mode using any of the 3 methods described in *Switching to Edit mode* (c. 60) section. The feature will turn its colour to **Blue**. Then tap on the pencil icon in Bottom toolbar (item 3 in Fig. 7.4). The feature will turn its colour to **Red** in edit mode.

7.6.1 Editing a point

To start editing a point first select the point/multipoint layer in the Layer tree and switch to Edit mode, then select a point by pressing on it. It will change its colour to blue. Then tap on the pencil icon in Bottom toolbar (item 3 in Fig. 7.4). The selected point feature will be highlighted in red and have an arrow pointing at it.

To change location of a selected point simply pull it or arrow pointing at it to a desired place. Also a point can be moved using buttons from Bottom toolbar - to the center of the screen shown as Red Crosshair marker (item 6 in Fig. 7.14) or to the current device location (see item 7 in Fig. 7.14).

You can cancel editing at any point of time, without saving changes, by close editing button. (see item 1 in Fig. 7.14). The system will warn you about this.

In the end you can have your geofeatures digitized as shown below. See Fig. 7.14.

The numbers indicate: 1 - Close editing (without saving); 2 - Feature ID & name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Move point to the Red Crossover (Center); 7 - Move point to the current location.

When you edit a multipoint all points included in it change their colour to blue. The selected point will be highlighted in red and have an arrow pointing at it (see Fig. 7.14).

The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & Name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Add point; 7 - Delete point; 8 - Move point to the center of Map screen; 9 - Move point to the current location.

You can delete selected point (item 7 in Fig. 7.15), move it to a new location simply pulling it or arrow pointing at it to a desired place, to the center of the screen shown as Red Crosshair marker (item 8 in Fig. 7.15) or to the current device location (item 9 in Fig. 7.15). Also you can add a new point to the multipoint (item 6 in Fig. 7.15).

7.6.2 Editing a line

To start editing a line first select the linestring/multilinestring layer in the Layer tree and switch to Edit mode, then select a line by pressing on it. It will change its colour to blue. Then tap on the pencil icon in Bottom toolbar (item 3 in Fig. 7.4). The line will change its colour to red and will show all its vertices. Current vertex is highlighted in red and has an arrow pointing at it. The center of line segment between vertices is also indicated. Pressing the center of line segment leads to two new vertex being added to the line.

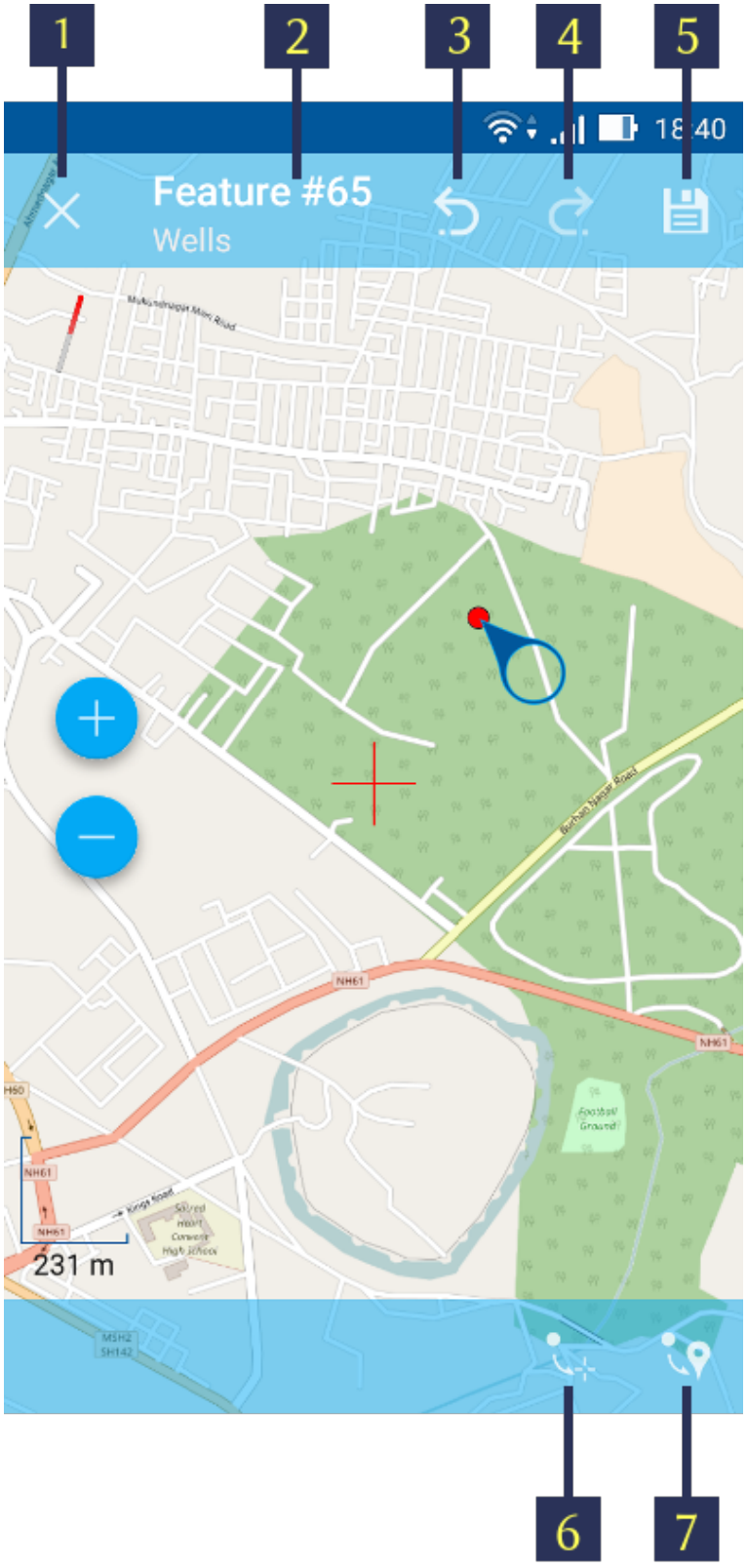

Рис.7.14: Editing point.

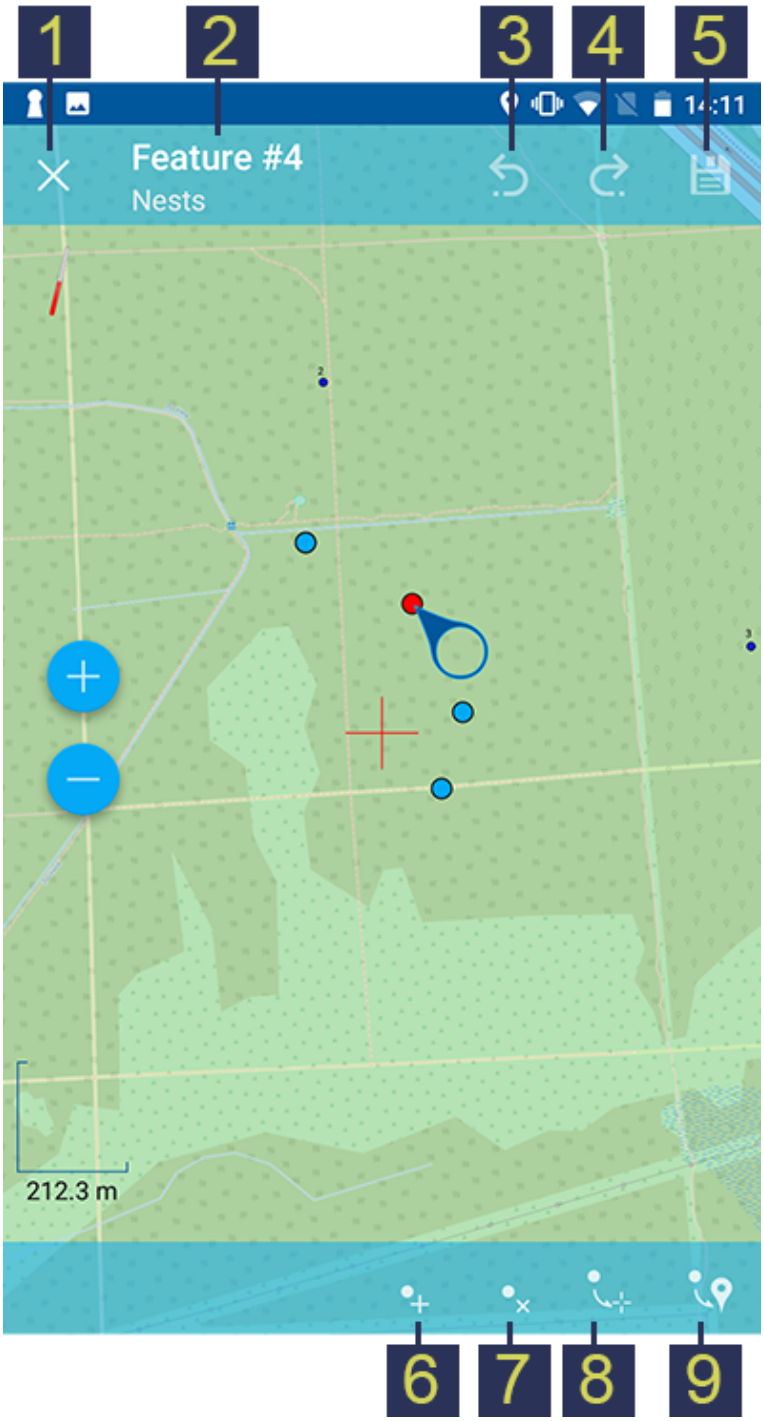

Рис.7.15: Editing multipoint.

Selected vertex can be moved simply by pulling it or arrow pointing at it to a desired place. Also a vertex can be moved using buttons from Bottom toolbar - to the center of the screen shown as Red Crosshair marker (item 7 in Fig. 7.16) or to the current device location (see item 8 in Fig. 7.16).

You can delete the unrequired vertex by highlighting it and tapping delete vertex (see item 6 in Fig. 7.16)

In this way you can even get a smooth curve as per the geographic shape.

In the end you can have your geofeatures digitized as shown below. See Fig. 7.16.

The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Delete vertex; 7 - Move vertex to the center of Map screen; 8 - Move vertex to the current location; 9 - Append geometry by walk; 10 - Edit by touch.

Note: If only one vertex remains in a line this line is deleted automatically.

When you edit a multiline all points included in it change their colour to blue. The selected point will be highlighted in red and have an arrow pointing at it (see Fig. 7.17)

You can delete selected point or line (item 7 and 8 in Fig. 7.17), move a point to a new location simply pulling it or arrow pointing at it to a desired place, to the center of the screen shown as Red Crosshair marker (item 9 in Fig. 7.17) or to the current device location (item 10 in Fig. 7.17). Also you can add a new line to the multiline (item 6 in Fig. 7.17).

7.6.3 Editing a polygon

To start editing a polygon first select the poligon/multipoligon layer in the Layer tree and switch to Edit mode, then select a poligon by pressing on it. It will change its colour to blue. Then tap on the pencil icon in Bottom toolbar (item 3 in Fig. 7.4). The polygon will change its colour to red and will show all its vertices. Current vertex is highlighted in red and has an arrow pointing at it. The center of line segment between vertices is also indicated. Pressing the center of line segment leads to two new vertex being added to the line.

New vertex can be moved or otherwise edited right after it has been added. Selected vertex can be moved simply by pulling it or arrow pointing at it to a desired place. Also a vertex can be moved using buttons from Bottom toolbar - to the center of the screen shown as Red Crosshair marker (item 7 in Fig. 7.18) or to the current device location (see item 8 in Fig. 7.18).

You can delete the unrequired vertex by highlighting it and tapping “Delete vertex” button (see item 6 in Fig. 7.18).

Note: If only two vertices remain in a poligon this poligon is deleted automatically.

When you edit a multipolygon all points included in it change their colour to blue. The selected point will be highlighted in red and have an arrow pointing at it (see

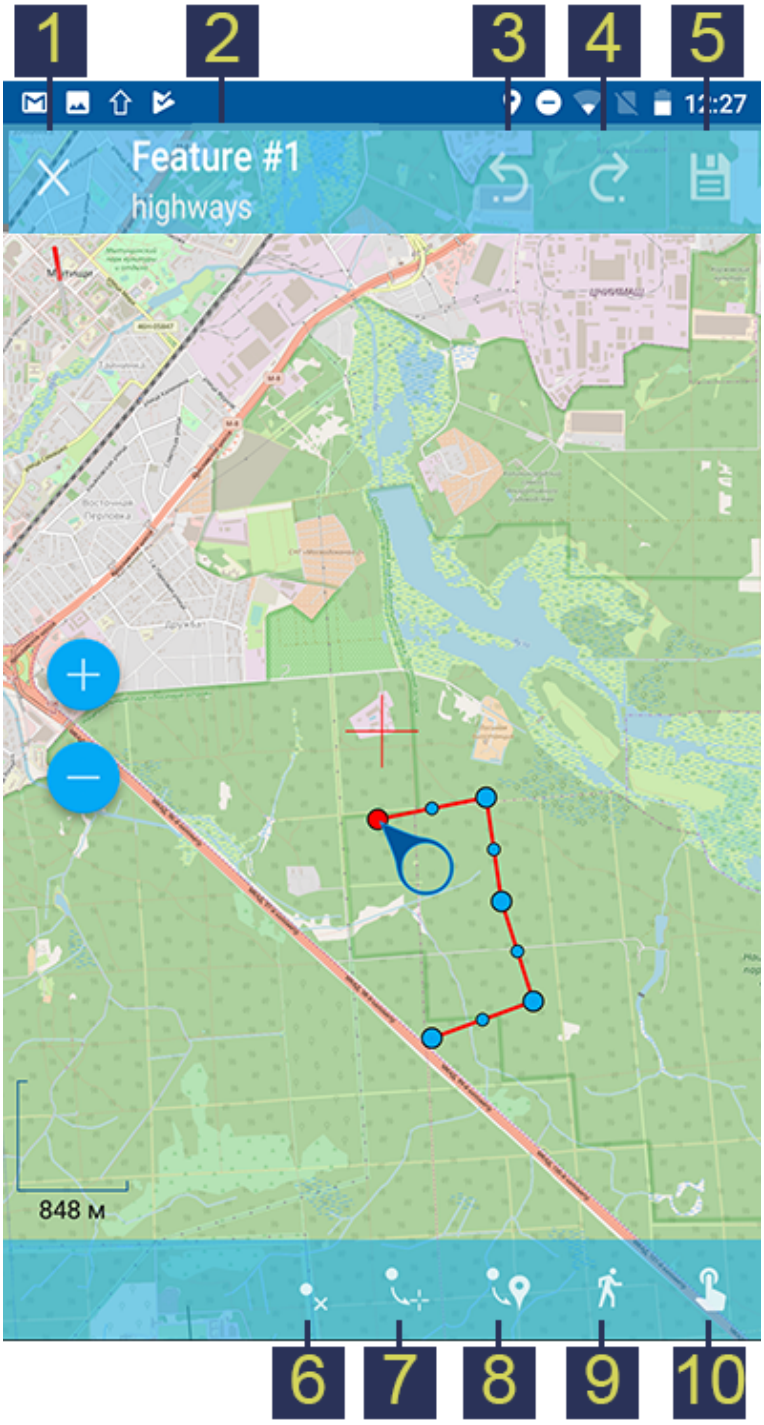

Рис.7.16: Editing line.

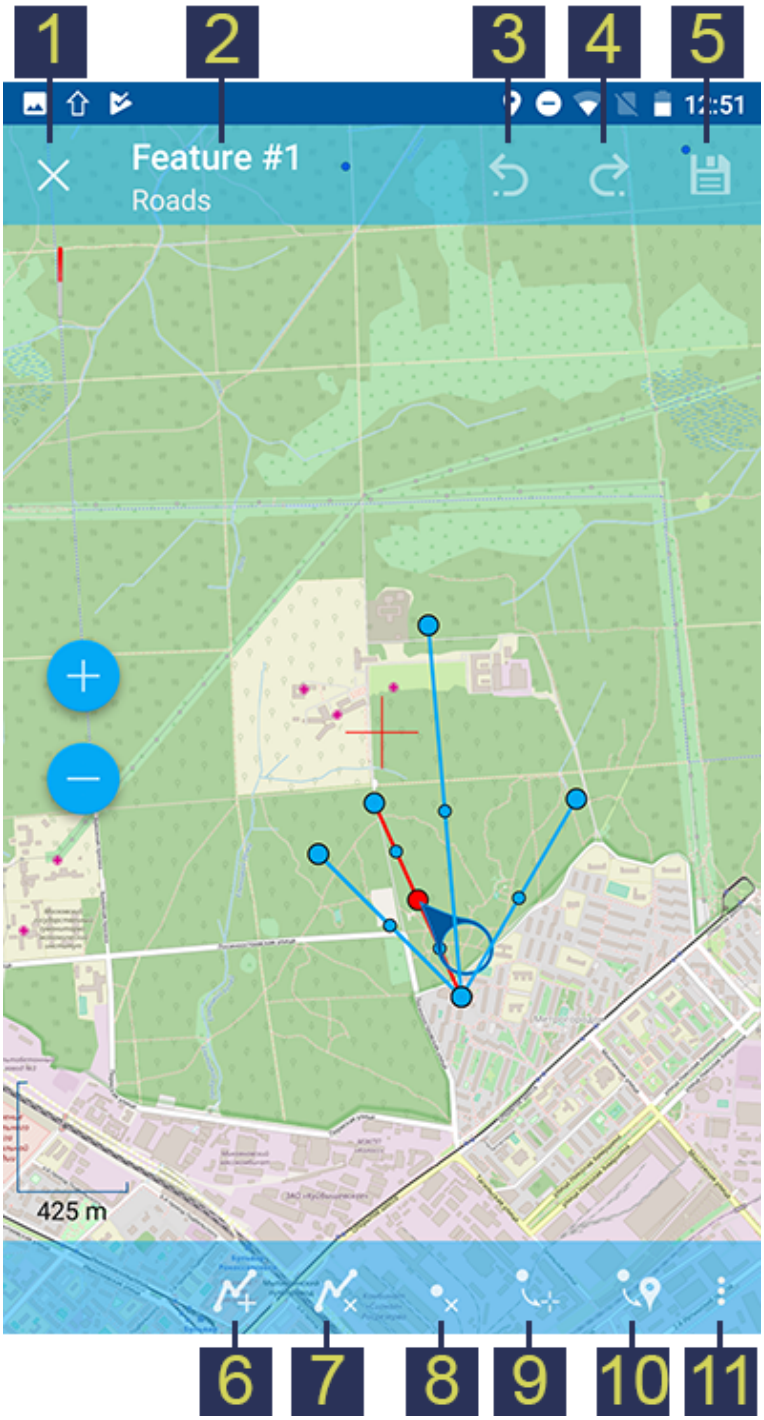

Рис.7.17: Editing multiline.
The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Add line; 7 - Delete line; 8 - Delete vertex; 9 - Move vertex to the center of Map screen; 10 - Move vertex to the current location; 11 - Contextual menu with the rest of commands (Append geometry by walk, Append geometry by touch).

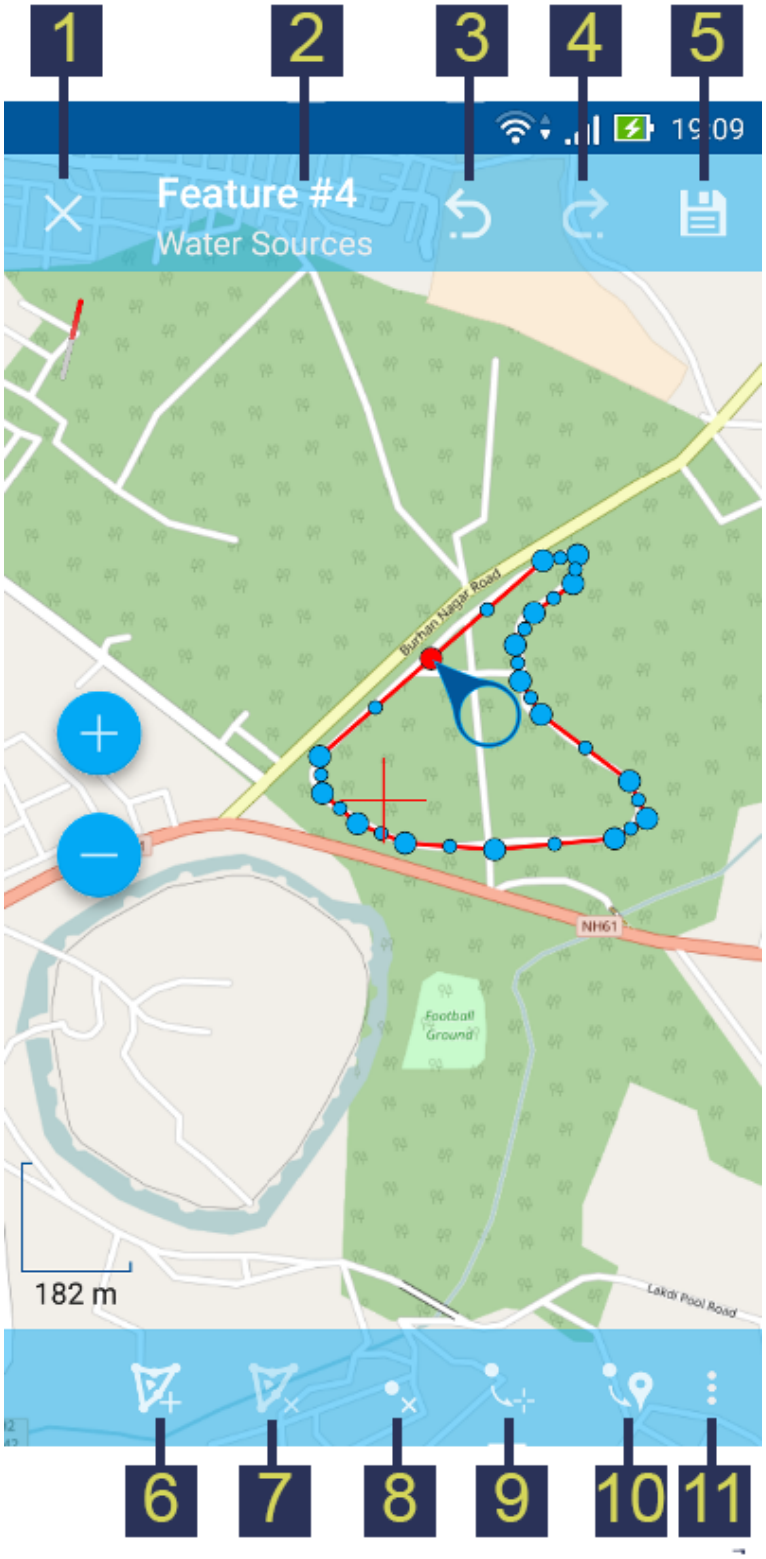

Рис.7.18: Editing polygon.
The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Add hole; 7 - Delete hole; 8 - Delete vertex; 9 - Move vertex to the center of Map screen; 10 - Move vertex to the current location; 11 - Contextual menu with the rest of commands (Append geometry by walk, Append geometry by touch).

Fig. 7.19).

You can delete selected point or polygon (item 7 and 10 in Fig. 7.19), move a point to a new location simply pulling it or arrow pointing at it to a desired place, to the center of the screen shown as Red Crosshair marker (item 11 in Fig. 7.19) or to the current device location (item 11 in Fig. 7.19). Also you can add a new polygon to the multipolygon (item 6 in Fig. 7.19) and add or delete a hole (item 8 or 9 in Fig. 7.19).

7.7 Editing attributes

To start editing attributes first select a layer you want to edit attributes in. Then switch to Edit mode using any of the methods described in *Switching to Edit mode* (c. 60) section.

After Editing Toolbar is opened tap “Attributes info” button (item 5 in Fig. 7.4). This will open Attributes Info panel as shown in Fig. 7.20 below.

Note: NextGIS Mobile shows the following attribute fields by default (see item 4 in Fig. 7.20):

- For Point/Multipoint layers: each point’s location (in Latitude/Longitude).
- For Line/Multiline layers: length of each line feature (in meters).
- For Polygon/Multipolygon layer: length of each polygon feature’s perimeter (in meters) & area of each polygon feature (in square meters).

7.7.1 Editing attributes using standard form

To start editing attributes using standard form first tap on “Set attributes” button (see item 6 in Fig. 7.20).

This opens a standard Attributes editing form as shown in Fig. 7.7.

After all the attributes are set tap “Tick” icon in the top right corner (item 2 in Fig. 7.7) to save the edits.

Note: If you tap the back button in the top left corner (item 1 in Fig. 7.7) instead, the system will warn you about unsaved changes.

The Camera icon at the bottom of a standard Attributes editing form (item 3 in Fig. 7.7) allows to add to each feature image files (e.g. photos) from the local storage or take new photos.

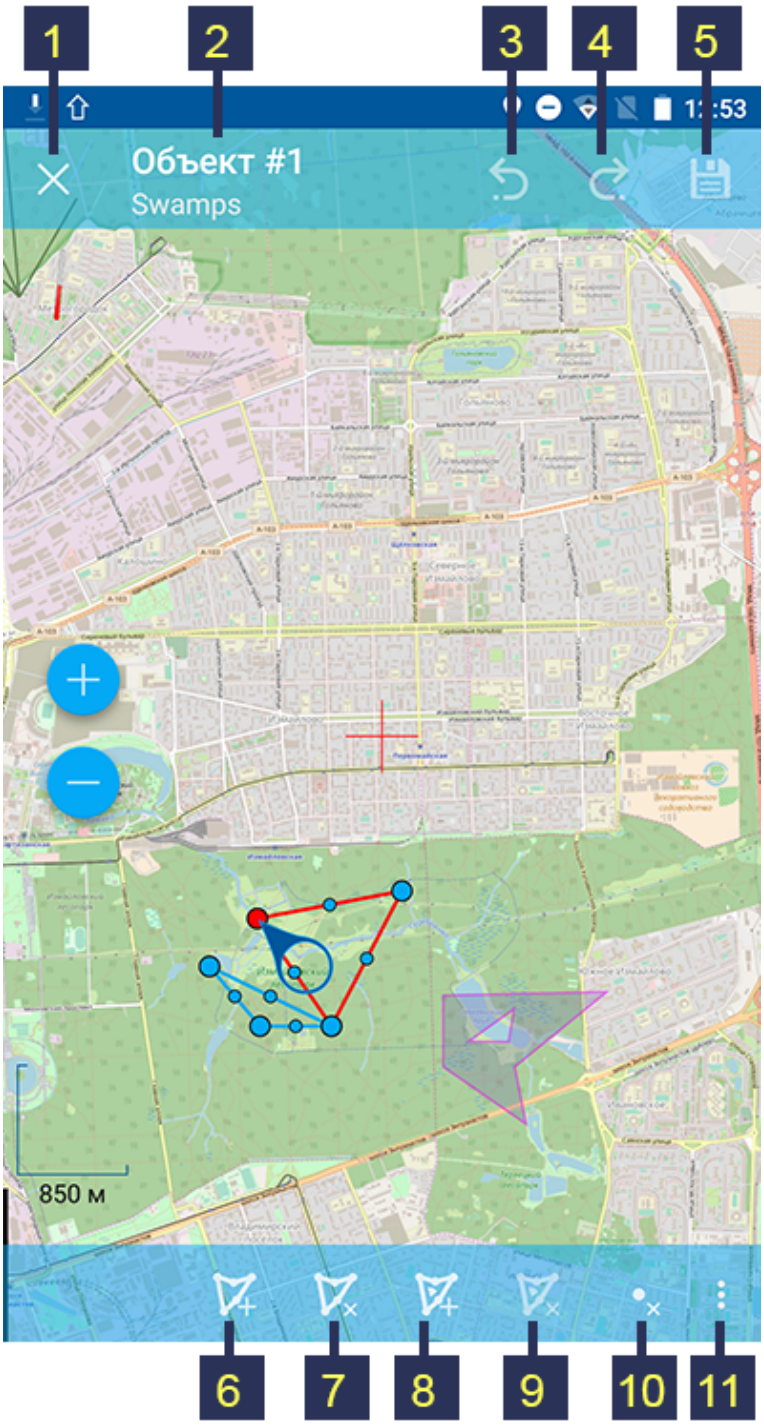

Рис.7.19: Editing multipolygon.
The numbers indicate: 1 - Quit (without saving); 2 - Feature ID & name of the Layer; 3 - Undo changes; 4 - Redo changes; 5 - Set attributes; 6 - Add polygon; 7 - Delete polygon; 8 - Add hole; 9 - Delete hole; 10 - Delete vertex; 11 - Contextual menu with the rest of commands (Move vertex to the center of Map screen, Move vertex to the current location, Append geometry by walk, Append geometry by touch).

Рис.7.20: Attributes Info panel
The numbers indicate: 1 - Back to previous screen; 2 - Layer name & feature count; 3 - Settings; 4 - Attribute fields; 5 - Close Attributes Info panel; 6 - Set attributes; 7 - Previous record; 8 - Next record.

7.7.2 Editing attributes using custom form

If the layer was *created from a custom form (NGFP)* (c. 32) the custom Attributes editing form will be used for editing. An example of such custom form is shown below in Fig. 7.21:

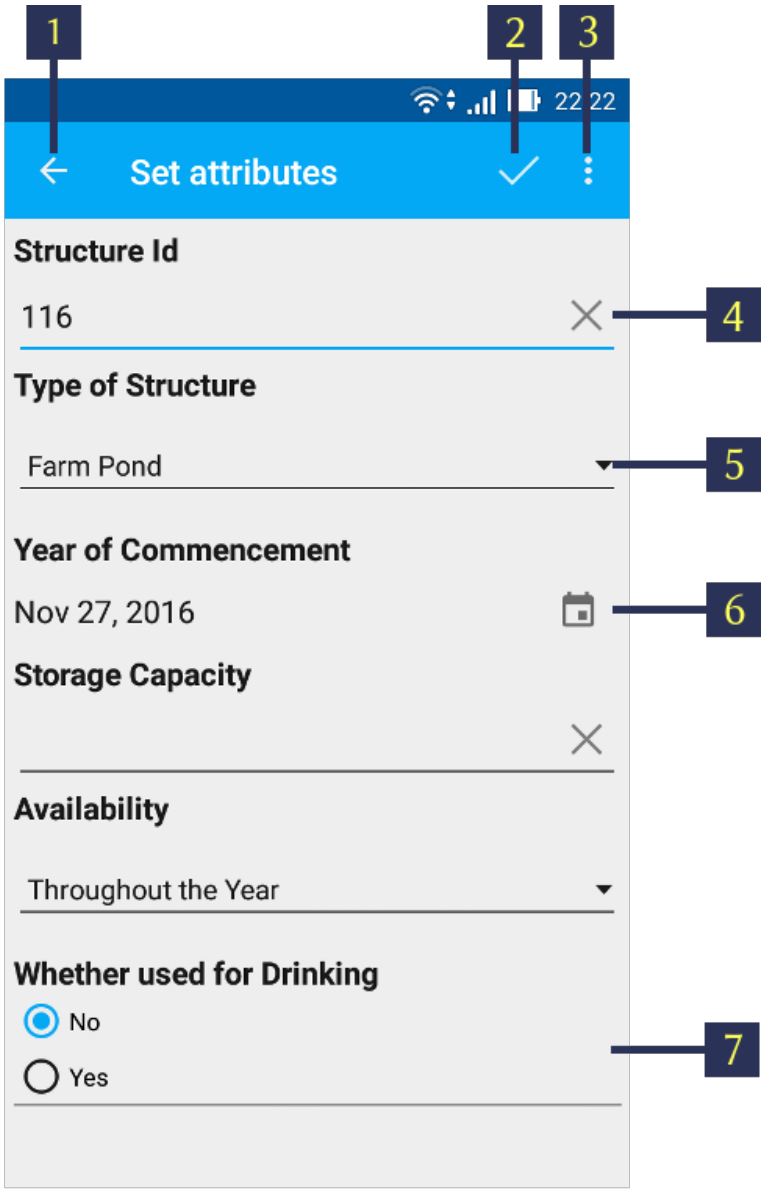

Рис.7.21: Custom Attributes editing form.
The numbers indicate: 1 - Back to previous screen; 2 - Apply changes; 3 - Settings; 4 - Text or Integer field; 5 - Dropdown list; 6 - Date & Datetime; 7 - Radio buttons.

Custom Attributes editing forms may contain the following entry fields:

- Text;
- Space;
- Text field;
- List; Tandem list;
- Checkbox;

- Radio button;
- Date Picker;
- Photo.

“Text” field is used to provide additional information about geometry feature.

“Space” field is used to increase intervals between fields.

“Text field” can be used to add text or integers, depending on the field type (see item 4 in Fig. 7.21).

“List” and “Tandem list” fields are used to store and select values included in custom lists, for example, “List” - region/republic/territory, “Tandem list” - district/area in region/republic/territory (see item 5 in Fig. 7.21).

“Checkbox” field allows to check or uncheck a value.

“Date picker” field allows to select date, time or both of them (see item 6 in Fig. 7.21).

“Radio button” field allows to select one element from a list of mutually exclusive options (see item 7 in Fig. 7.21).

“Photo” field allows to take a new photo or to add photos from the local storage.

After all the attributes are set tap “Tick” icon in the top right corner (item 2 in Fig. 7.21) to save the edits.

Note: If you tap the back button in the top left corner (item 1 in Fig. 7.21) instead, the system will warn you about unsaved changes.

Глава

EIGHT

TRACKS

NextGIS Mobile allows to record and display tracks. Recorded track points are saved to the internal database. Track points recorded within one session are combined and displayed on the map as a line.

Important: To use this function, make sure to set up your device.

More on sending tracks to Web GIS here[35].

8.1 Settings

To record tracks, set up the following parameters:

- grant the mobile app permission to access device location (in the Android Settings).
- in NextGIS Mobile Settings go to Location page and set it up as show in Fig. 5.4.
- in My tracks page of the Settings check “Send location to server” Fig. 5.5.

8.2 Recording a track

Tracks can be recorded in two ways.

8.2.1 Record tracks in GPX format

For each point of the track, the following information is recorded: date, time, speed (km/h), height (m), course (bearing i.e. the horizontal direction of travel of this device in the range between 0 and 360 counting clockwise from the North), number of satellites and HDOP.

1. To start recording a track press “Start new track” button in the Contextual menu on the Main screen (item 5 in Fig. 4.1).

[35] https://docs.nextgis.com/docs_ngcom/source/tracking.html#tracking

Track recording is performed in background mode. You'll need to allow in your device settings. See details in our video:

Watch on youtube[36].

To indicate that the process is running a status icon of the walking man is displayed in Android Notification bar. For more information click on it and it will show the track status as shown in Fig. 8.1 below.

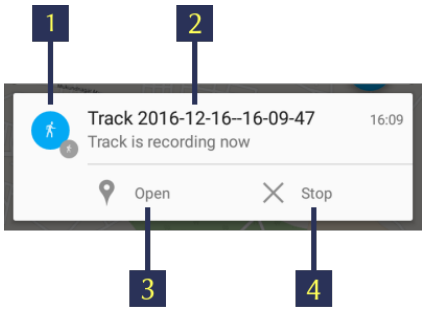

Рис.8.1: Recording track status
The numbers indicate: 1 - The status icon; 2 - Name of track session; 3 - "Open recording" button; 4 - "Stop track recording" button.

During track recording you can see the geometry of the track on Map screen as shown below in Fig. 8.2

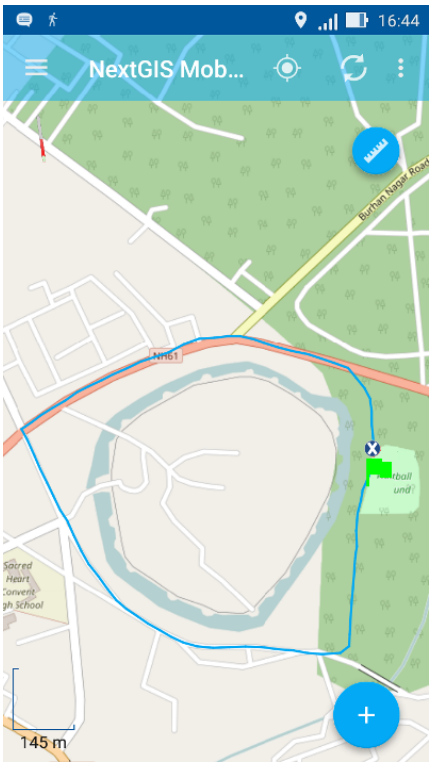

Рис.8.2: Recording track.

Recorded track is displayed on the map immediately even though recording is not completed. The status icon (walking man) is still visible in the notification bar. The

[36] https://youtu.be/uPkVkVakppE?si=bZKQqlM4xmwuRqbC

green flag shows the starting point of the track whereas the location marker shows the current device location.

Note: Track points are grouped by days and sessions within a day. If track recording continues the next day track will be split up into two parts.

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2. To stop track recording, tap “Stop” button either in notification bar (see item 4 in Fig. 8.1) or in Contextual menu (see item 5 in Fig. 4.1). The status icon will disappear from notification bar, the location marker will be replaced by the red flag indicating the end of the track, and the track line will change its colour as shown below in Fig. 8.3

Рис.8.3: Recorded track.

3. You can now manage this track, including its export in GPX format. To learn how to export the tracks see *Exporting tracks in GPX* (c. 96). Tracks can also be displayed on a Web Map[37].

[37] https://docs.nextgis.com/docs_ngcom/source/tracking.html#tracking-create

8.2.2 Record tracks to vector layer

You can also add a feature to an existing line or polygon vector layer by tracking.

1. Tap on Main actions button (see item 8 in Fig. 4.1) and then"Add geometry by walk" button (see item 5 in Fig. 7.1). It will open list of all editable Linestring/Multilinestring and Polygon/Multipolygon vector layers in a separate dialogue as shown below in Fig. 8.4

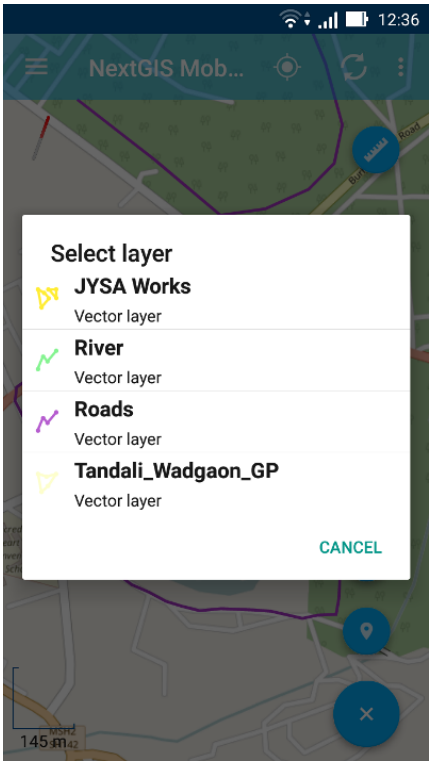

Рис.8.4: Select Layer dialogue.

2. Select the layer to which you want to add a new feature by walk. This layer will be opened in Edit mode as shown below in Fig. 8.5, and NextGIS Mobile will start recording a new geometry to the vector layer.

Note: You can also switch to "Edit by walk" mode by first switching to Edit mode using any of the methods described in *Switching to Edit mode* (c. 60) section, and then by tapping "Append geometry by walk" button (see item 9 in Fig. 7.8, item 11 in Fig. 7.9, item 11 in Fig. 7.10 and item 11 in Fig. 7.11)

If you're not satisfied with the accuracy of the appended geometry, you can access NextGIS Mobile Location settings (see Fig. 5.4) directly from "Edit by walk" screen (see item 6 in above Fig. 8.5).

3. When recording is finished tap on the "floppy" button (see item 4 in Fig. 8.5). It will open the standard Attributes editing form, similar to Fig. 7.7, as shown below in Fig. 8.6.

4. The new feature is now added to the existing Linestring/Multilinestring or Polygon/Multipolygon vector layer.

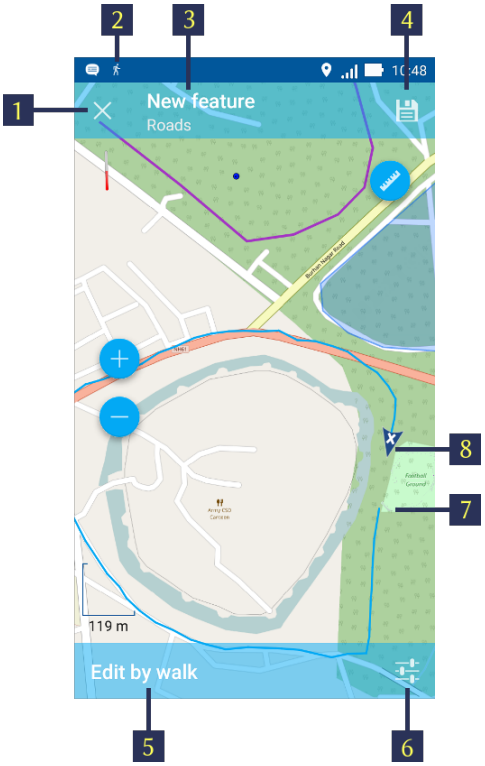

Рис.8.5: Vector layer editing by walk.
The numbers indicate: 1 - Close editing (without saving); 2 - Status icon; 3 - Feature ID & name of the Layer; 4 - Save feature; 5 - “Edit by walk” mode status; 6 - Location settings; 7 - Start point; 8 - Current device location.

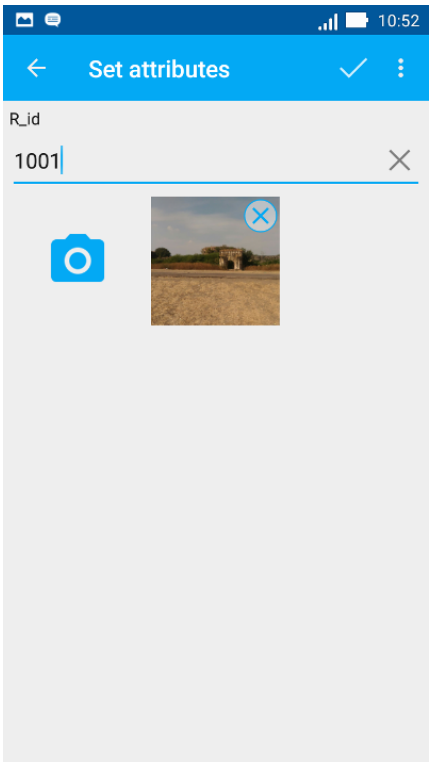

Рис.8.6: Vector layer attribute editing.

8.3 Managing recorded tracks

To start managing recorded tracks first find “My Tracks” group in Layers tree panel. Then tap on contextual menu button as shown in Fig. 8.7 and select “List”.

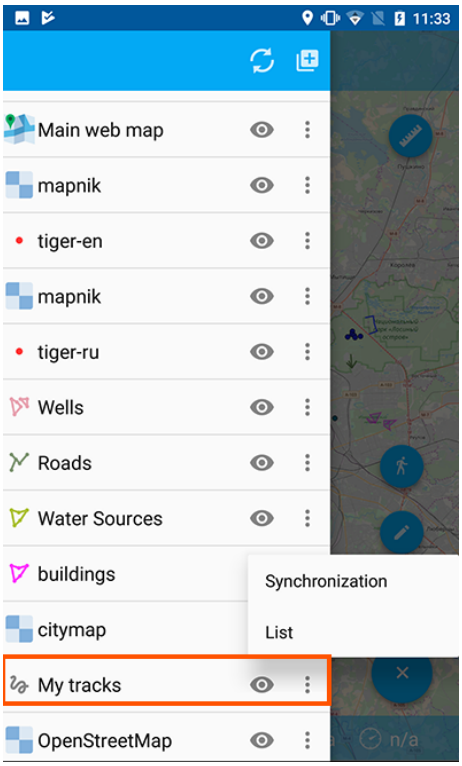

Рис.8.7: “My tracks” in Layers tree panel.

This will open a list of recorded tracks as shown in Fig. 8.8 below. Tracks’ points will be grouped by days and sessions within the day.

Select a track by ticking the corresponding checkbox, and buttons in Top toolbar will become active as shown in Fig. 8.9 below.

To hide a layer from Map screen tap on “Eye” button (item 6 in Fig. 8.9).

You can change the colour of the track tapping the “Colour palette” button (item 3 in Fig. 8.9).

When you tap to open contextual menu (see item 5 in Fig. 8.9), the following menu items will pop up as shown below in Fig. 8.10.

- You can Show or Hide the selected track in the map screen. The starting point is shown in Green marker & the end point is shown in Red marker.
- You can delete the track (permanently).
- You can select all the tracks and perform above actions for all of them at a once.

Рис.8.8: List of recorded tracks.

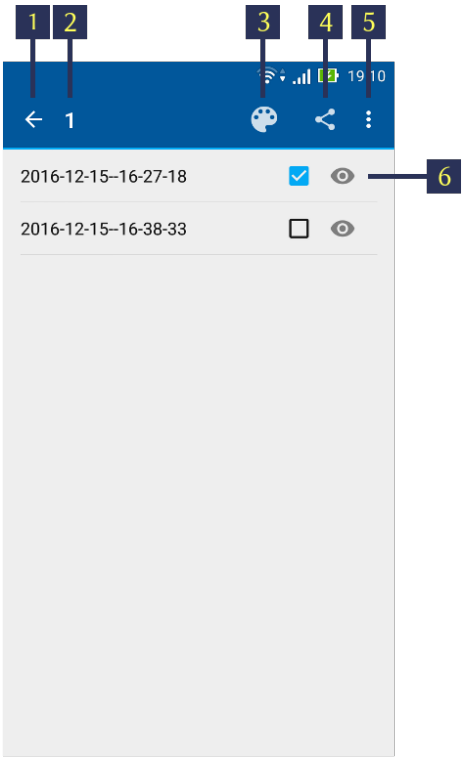

Рис.8.9: Toolbar for selected track.
The numbers indicate: 1 - Go back; 2 - Track ID; 3 – Colour palette; 4 - Export button; 5 - Contextual menu; 6 - Track visibility button.

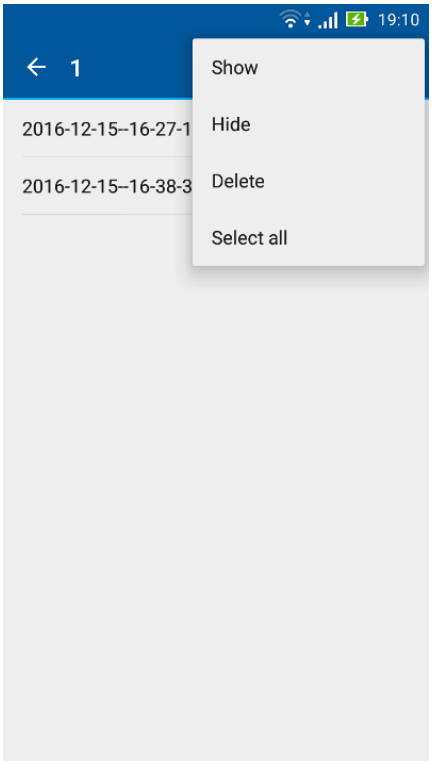

Рис.8.10: Tracks contextual menu.

Глава

NINE

EXPORTING DATA

9.1 Exporting data in GeoJSON

To export data from NextGIS Mobile vector layer open Layers tree panel (item 1 in Fig. 4.1). Then tap on the contextual menu icon next to the layer name (item 5 in Fig. 4.2). This will open the contextual menu items as shown in item 6 in Fig. 4.2 There you need to select “Share”.

Android standard Share dialogue window with a list of available Share options will open as shown in Fig. 9.1.

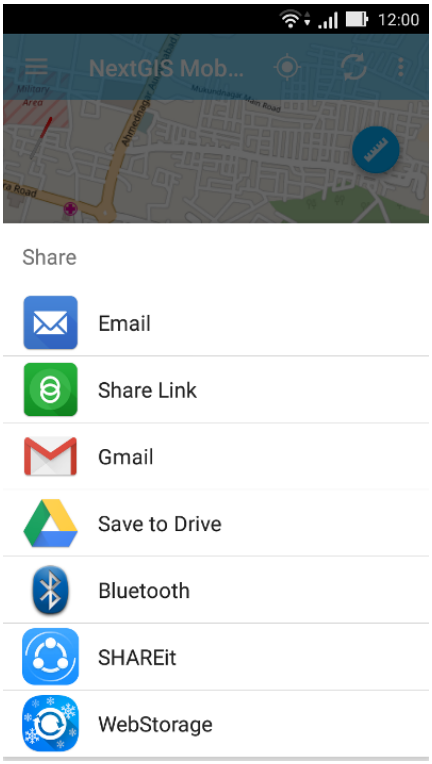

Рис.9.1: Share dialogue window.

After you select a share option, data in the selected layer will be recorded in GeoJSON format (coordinate system Web Mercator, EPSG:3857) and exported via the selected application. The name of GeoJSON file will be the same as the name of the exported layer.

Some of the share options (availability is dependent on the apps installed on your device):

- You can send the file as an attachment via Gmail or different Email app.
- You can upload the file to Google Drive/Dropbox/other cloud service and then share it with your colleagues.
- You can send the file to another device via Bluetooth or SHAREit.
- You can save the file on a memory card.

Warning: In many Android versions to save a file on the device memory card you need a file manager app (for example, ES Explorer or similar).

See how to change the default sharing method:

Watch on youtube[38].

9.2 Exporting attachments

Each feature in vector layer can have one or more photos attached to it. Photos are stored separately as image files and added to archive file with layer data during the export. For each feature a separate attachments folder is generated in the archive, the name of the folder corresponds to feature ID.

Example:

(4:10000002.jpg,10000000.jpg,10000001.jpg,10000003.jpg)

Explanation:

4 photos are attached to a feature. These 4 photos are stored in the folder which name is similar to the feature ID.

9.3 Exporting tracks in GPX

To start exporting tracks first find “My Tracks” group in Layers tree panel. Then tap on contextual menu button as shown in Fig. 9.2 and select “List”.

This will open a list of recorded tracks as shown in Fig. 8.8. If there are few tracks recorded in a day, tracks will be divided into sessions. If a track was recorded during few days, this track will be divided into parts corresonding to recording days.

Select a track you want to export by ticking the corresponding checkbox, and buttons in Top toolbar will become active as shown in Fig. 8.9

To export the track, tap on Share button (see item 4 in Fig. 8.9). It will open the same Share dialogue window as shown in Fig. 9.1 above.

[38] https://youtu.be/ducW-h1T-8M?si=9oYserBatgQ72jum

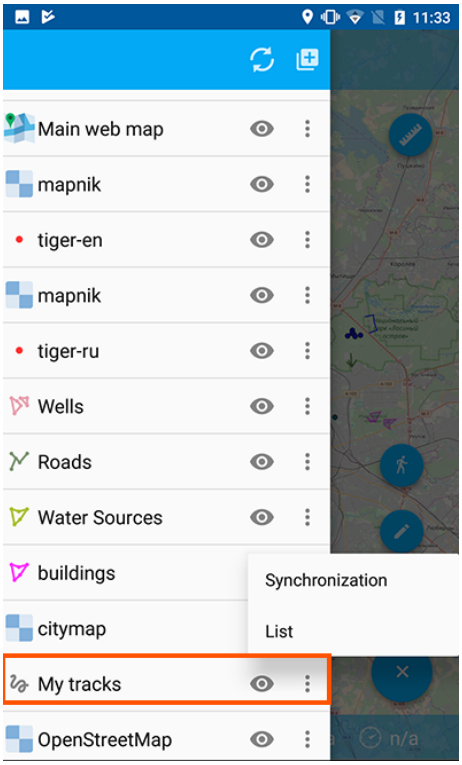

Рис.9.2: “My tracks” in Layers tree panel.

After you select a share option, data in the selected track will be recorded in GPX format and exported via the selected application.

Глава

TEN

LAYER SETTINGS

Map is a set of raster and vector layers. Layers tree panel is designed to display the content of a map and to control visibility and hierarchy of map layers.

To change the hierarchy of map layers long-press the layer which is to be moved up or down. Layers tree panel will switch to Edit mode. Keep pressing and move the selected layer to its new position.

For turning layer visibility on/off tap on Layer visibility button (item 3 in Fig. 4.2).

Additional operations with layers are available from a separate layer contextual menu (item 5 in Fig. 4.2).

For example, contextual menu for a vector layer includes following items:

1. Zoom to extent
2. Attributes
3. Share
4. Send to NextGIS
5. Edit
6. Delete
7. Settings

Note: Contextual menu depends both on layer type and geodata source. Raster layers have different contextual menus than Vector layers. Raster layers created from tile cache have different contextual menus than raster layers created from external geoservices.

10.1 Vector layer settings

10.1.1 Style settings

Open layer contextual menu and tap on “Settings”. Vector layer style settings will open as shown in Fig. 10.1 below.

Vector layer style settings depend on the selected Render type - Simple or Rule (item 4 in Fig. 10.1).

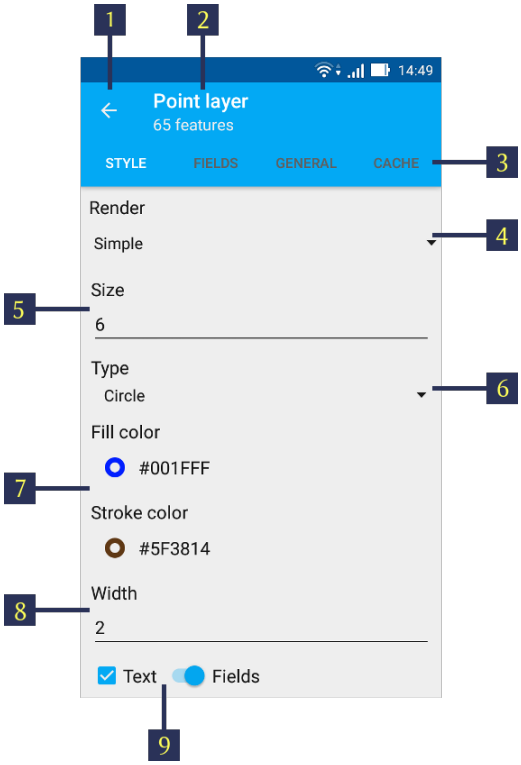

Рис.10.1: Vector point layer style settings (simple render style).
The numbers indicate: 1 - Go back; 2 - Layer type & Feature count; 3 - Layer Settings tabs; 4 - Render type; 5 - Feature size; 6 - Feature type; 7 - Color palette; 8 - Stroke width; 9 - Label settings.

Simple rendering

Fig. 10.1 shows Simple Render style settings. If you select this Render type, all the features in the layer will have the same shape, color, size, etc.

For example, for a point/multipoint layer you can select features shape by using “Type” menu (see item 6 in Fig. 10.1) using the following options:

- Point
- Circle
- Diamond
- Cross
- Triangle
- Box
- Edit circle
- Crossed box

You can also set point size (see item 5 in Fig. 10.1), fill and stroke color (see item 7 in Fig. 10.1) and stroke width (see item 8 in Fig. 10.1).

In linestring/multilinestring layers you can select line type (solid, dash or edge solid), as well as fill and stroke color and stroke width.

In polygon/multipolygon layers you can select stroke color and width. Also you can select to display polygons as filled or empty (the semi-opaque stroke color will be applied if “Filled” is selected).

For any vector layer you can also choose to show Labels for each feature on a map. To do this tick “Text” checkbox and either enter the label text yourself or select the attribute field which will be used to label features on a map (item 9 in Fig. 10.1).

Rule-based rendering

You can also use the advanced styling option for your vector layer, and set different shapes, colors, sizes, etc. for layer features based on their attribute values.

For advanced styling of vector layer select “Rule” in the Render. It will open different style settings as shown in Fig. 10.2 below.

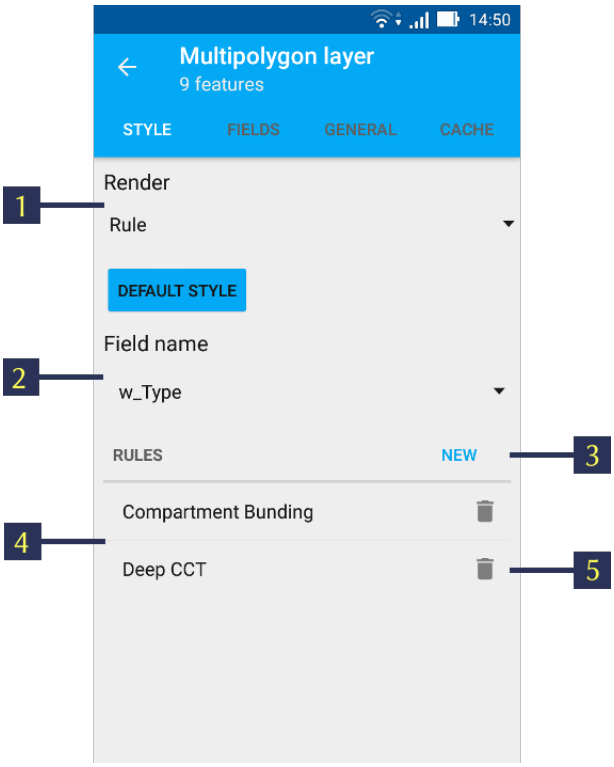

Рис.10.2: Vector layer style settings (rule-based render style).
The numbers indicate: 1 - Render type; 2 - Field selection; 3 - “Create new rule” button; 4 - Previously created rules; 5 - “Delete rule” button.

To adjust rule-based style settings first select the attribute field - its values will be used to create rules (see item 2 in Fig. 10.2).

Then tap on “Create new rule” button (item 3 in Fig. 10.2). It will open a list of all the unique values from the attribute field you have selected earlier. Select the value and tap “OK” to open Style settings dialogue as shown below in Fig. 10.3.

Here you can select and apply the same style settings as described above in *Simple rendering* (c. 99) (rule-based style settings are also dependent on vector layer type). Select “OK” when finished.

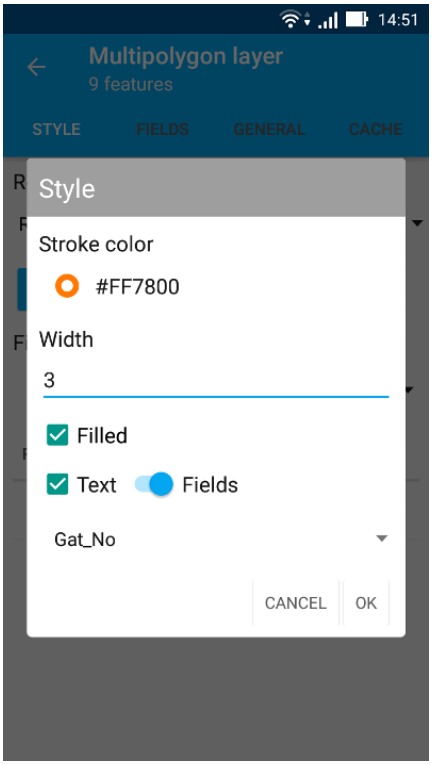

Рис.10.3: Rule-based style settings dialogue.

In this way you can create rule-based render styles for every value in the selected attribute field.

10.1.2 Fields settings

You can select which attribute field will be used to provide Feature ID for Edit screens, etc. To do this tap on “FIELDS” tab (see item 3 in Fig. 10.1) and select one of the fields as shown in Fig. 10.4

Warning: The selected field will not be used for rendering features labels on the map. For label settings see *Style settings* (c. 98).

10.1.3 General settings

“GENERAL” settings tab shows such information about vector layer as its local path, layer name & zoom levels to show on the map (it is possible to display the layer within certain zoom levels only). See Fig. 10.5 below.

Using this tab you can change layer name and zoom levels to show.

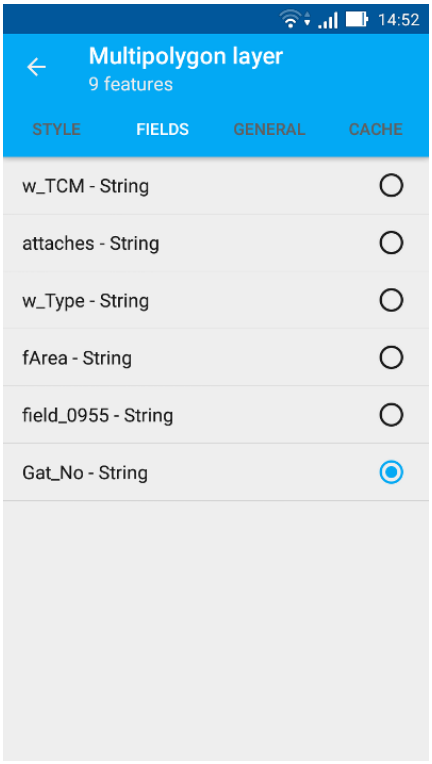

Рис.10.4: “FIELDS” vector layer settings tab.

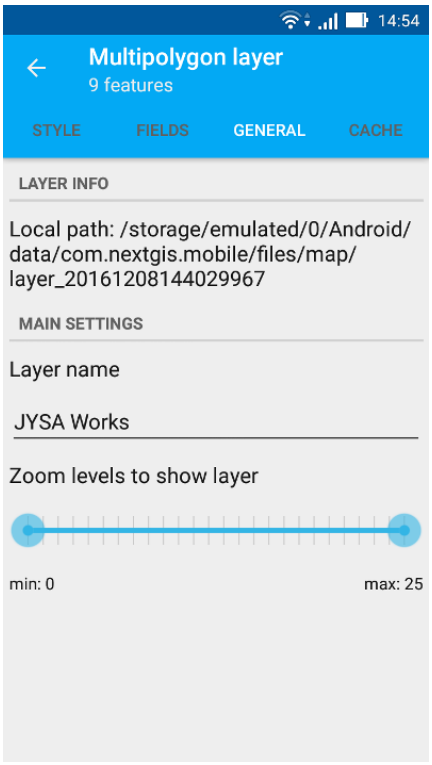

Рис.10.5: “GENERAL” vector layer settings tab.

10.1.4 Cache settings

Using “CACHE” settings tab you can execute “Rebuild cache” command to optimize the layer creation process with the ability to save and cancel changes.

10.2 Raster layer settings

Raster layer contextual menu includes the following items (see Fig. 10.6):

- Zoom to extent
- Delete
- Settings

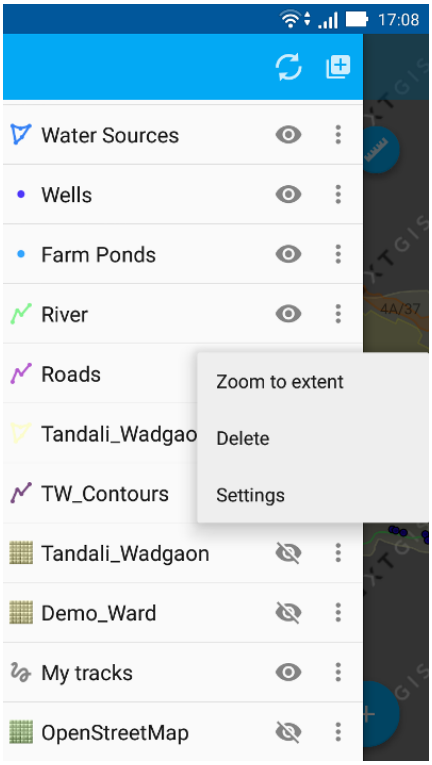

Рис.10.6: Raster layer contextual menu.

Note: Raster layer created from external geoservice will have the option “Download tiles” instead of “Zoom to extent”. See *Caching of tile service data* (с. 50) for details.

10.2.1 Style settings

Open layer contextual menu and tap on “Settings”. Raster layer style settings will open as shown in Fig. 10.7 below.

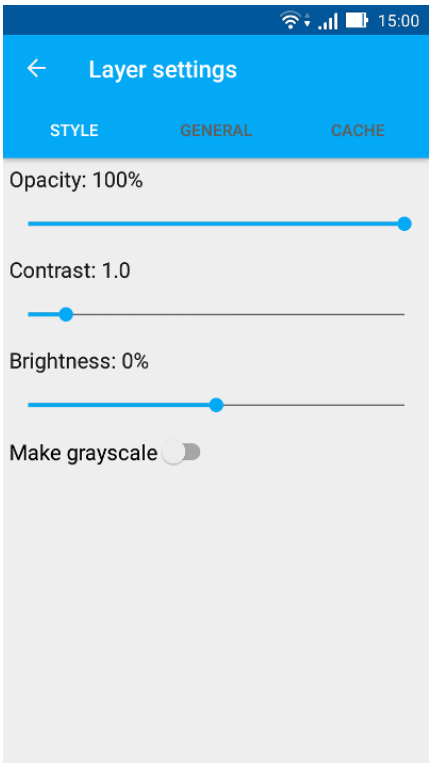

Рис.10.7: Raster layer style settings.

Here you can set the values for:

1. **Opacity.** The value of layer opacity determines how intensive it hides or displays the contents of the underlying layer. Raster layer with 1% opacity is almost transparent. Completely opaque raster layer has an opacity of 100%.
2. **Contrast.**
3. **Brightness.**

You can also apply to Raster layer the option “Make grayscale” - the layer will be displayed in shades of gray instead of original colors.

10.2.2 General settings

“GENERAL” settings tab shows such information about raster layer as its local path, layer name & zoom levels to show on the map (it is possible to display the layer within certain zoom levels only). See Fig. 10.8 below.

Using this tab you can change layer name and zoom levels to show.

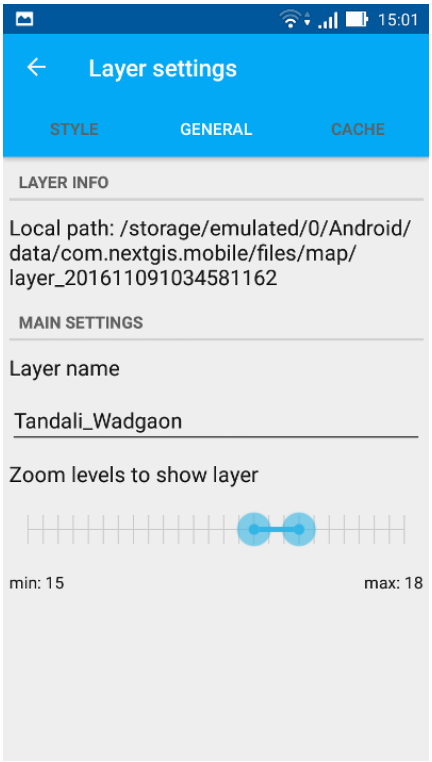

Рис.10.8: “GENERAL” raster layer settings tab.

10.2.3 Cache settings

Using “CACHE” settings tab you can set TMS in-memory cache size for a raster layer from these options:

- No cache
- 1 screen
- 2 screens (recommended)
- 3 screens

You can also clear in-memory cache for this layer from this settings tab.

Глава

ELEVEN

INTEGRATION WITH NEXTGIS WEB

You can learn more about the main features of Web GIS in Web GIS: Description and Main Features[39].

NextGIS Mobile can be connected to a Web GIS created on the NextGIS Web platform. This integration allows to exchange data with a Web GIS: upload local layers to the server, download data from the server, edit the data, view tracks recorded with the app on a Web Map.

To add a connection to a Web GIS, you need to be logged in[40].

If the NextGIS ID already has a Web GIS associated with it, it will be automatically added to the app. All the Web GIS where the user is a team member[41] will also be added.

If you don't have a Web GIS yet, create it[42] from your account.

You can add more connections to cloud-based Web GIS[43] as well as on-premise Web GIS[44].

You can edit[45] or delete[46] a Web GIS connection.

11.1 Add a layer (vector/raster) from Web GIS

1. Open Layers tree panel (item 1 in Fig. 4.1).
2. Then tap "Add geodata" button.
3. Select "Add from Web GIS" in the opened menu.
4. If you have multiple Web GIS connections added to the app, select the one you need (see Fig. 11.2).

[39] https://docs.nextgis.ru/docs_ngcom/source/description.html#ngcom-description
[40] https://docs.nextgis.com/docs_ngmobile/source/auth.html
[41] https://docs.nextgis.ru/docs_ngcom/source/teams.html
[42] https://docs.nextgis.com/docs_ngcom/source/create_webgis.html
[43] https://docs.nextgis.com/docs_ngmobile/source/ngw_integration.html#ngmobile-create-a-connection
[44] https://docs.nextgis.com/docs_ngmobile/source/ngw_integration.html#ngm-create-connection-onp
[45] https://docs.nextgis.com/docs_ngmobile/source/ngw_integration.html#ngmobile-change-account
[46] https://docs.nextgis.com/docs_ngmobile/source/ngw_integration.html#ngmobile-delete-account

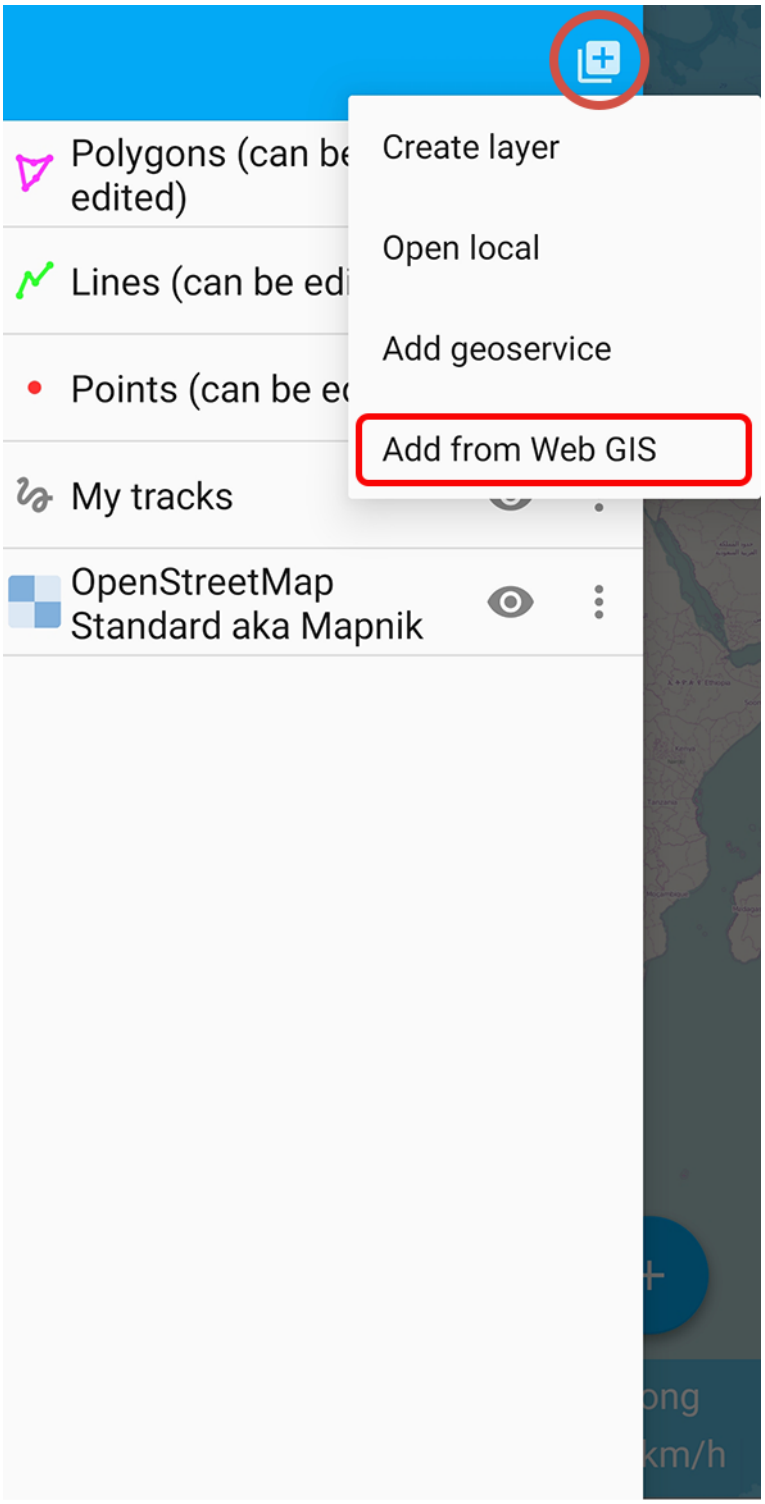

Рис.11.1: Select how to add data

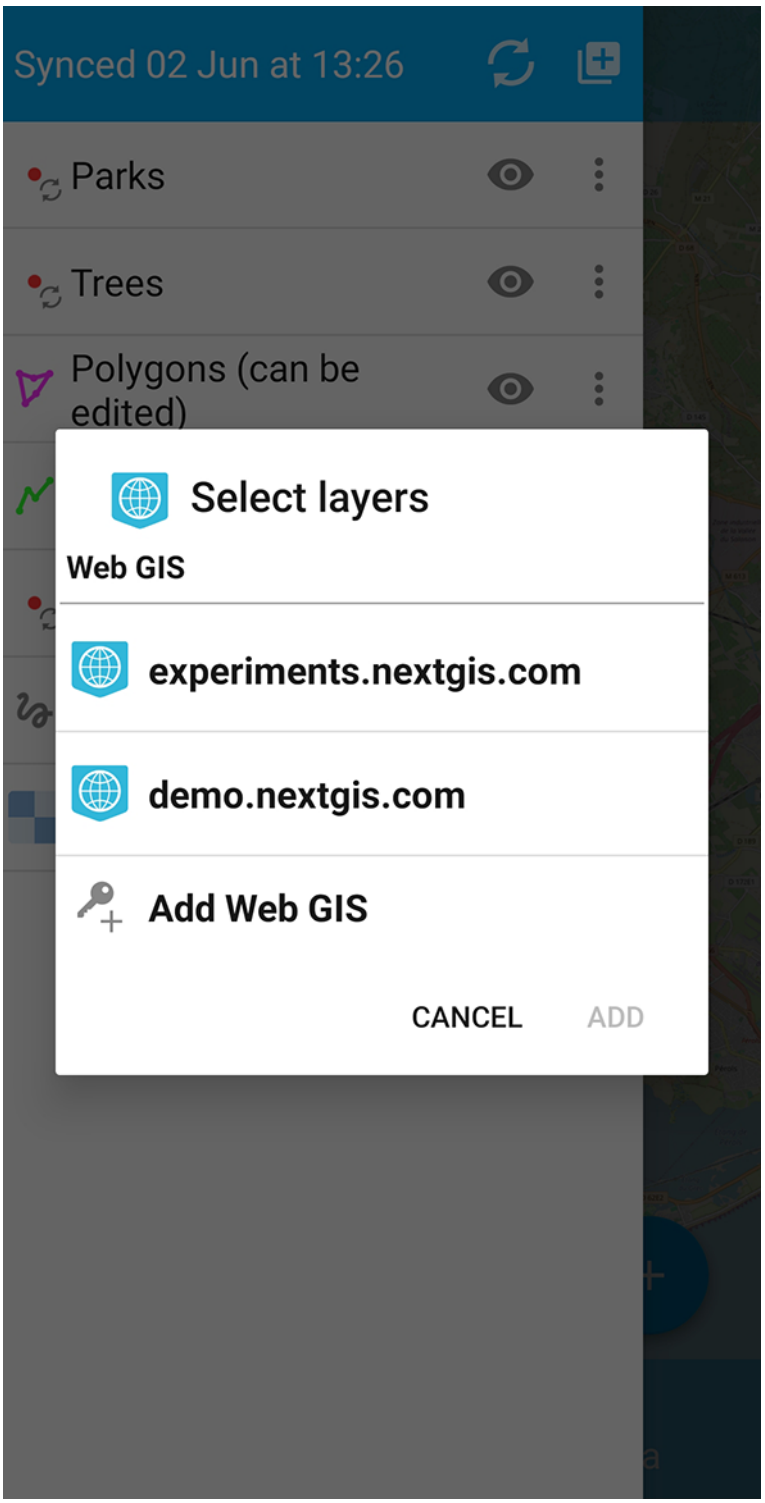

Рис.11.2: Selecting Web GIS

Note: How to add a Web GIS connection *Add Web GIS connection* (c. 115).

In the opened window you can see the list of internal resources and layers (vector and raster) for the selected Web GIS account. Select a group of Web GIS resources, then tick a layer and tap “Add”. A vector layer can be added both as vector and as raster.

Note: If you need to select several layers in different groups of the same Web GIS, the ticked layers stay selected while you switch between groups.

6. A pop-up window of layer processing progress will appear.

If you need to stop downloading the layer, press **Cancel**. To continue using the app as the layer is being processed, press **Hide**. The progress bar will be moved to the notification panel (see Fig. 11.5).

If you want to stop downloading the layer, open the notification panel and press **Stop**.

11.2 Parameters for synchronization with Web GIS

NextGIS Mobile application can access the server at set intervals to share edits and keep layers on the device and in the Web GIS up to date.

To enable synchronization:

1. Open the menu by tapping the three dots in the top right corner (item 5 in Fig. 4.1).
2. Select “Settings” (Fig. 11.12).
3. Select “Web GIS” (Fig. 11.13).
4. Select the Web GIS from the list.
5. On the Web GIS settings screen you can:
   - Turn on automatic synchronization;
   - Set up sync interval (between 5 min and 2 hours);
   - Turn on/off synchronization for a particular Web GIS layer.

Synchronized layers are marked with the  icon. The same icon appears by the layer name in the layer tree.

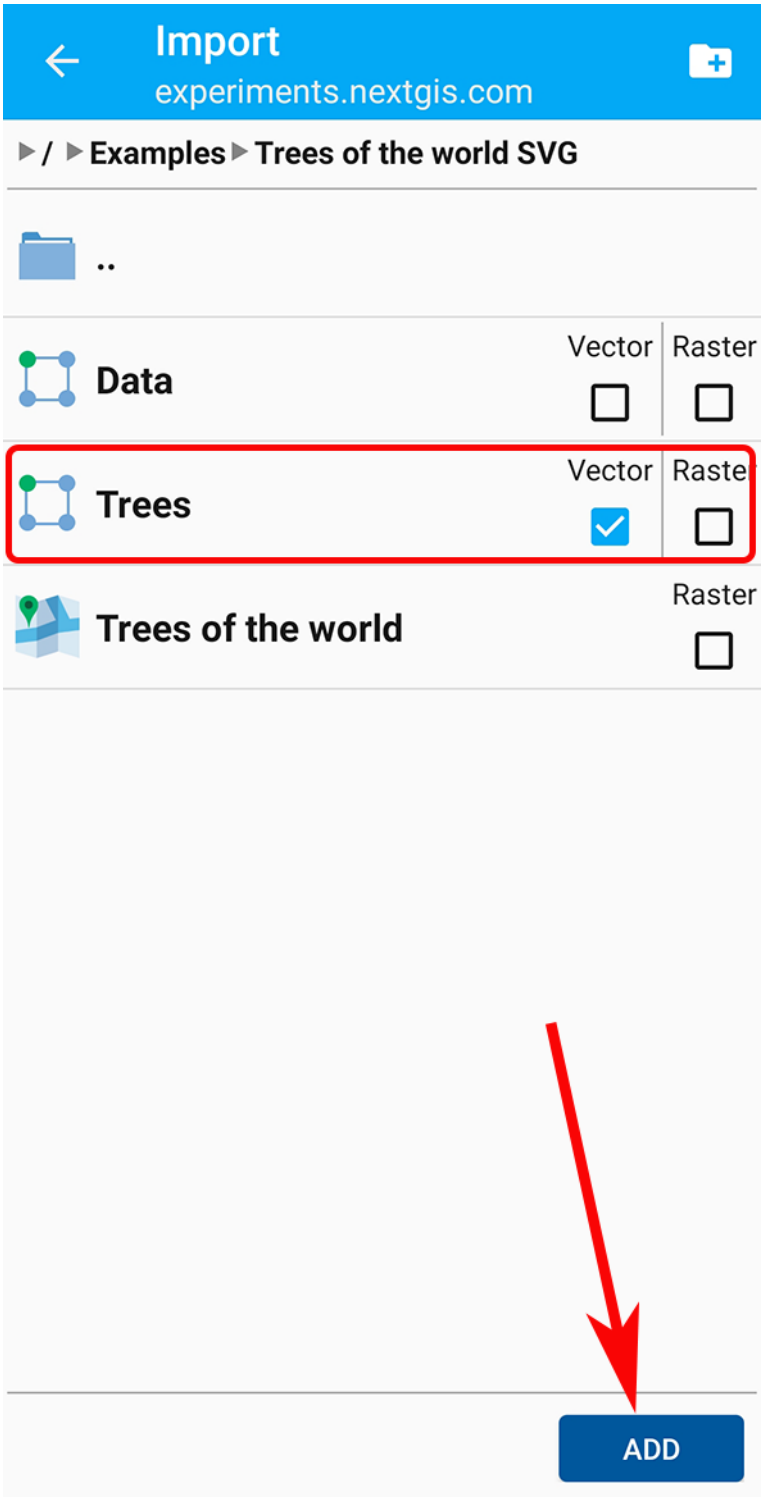

Рис.11.3: Selecting a layer in the Web GIS resource group

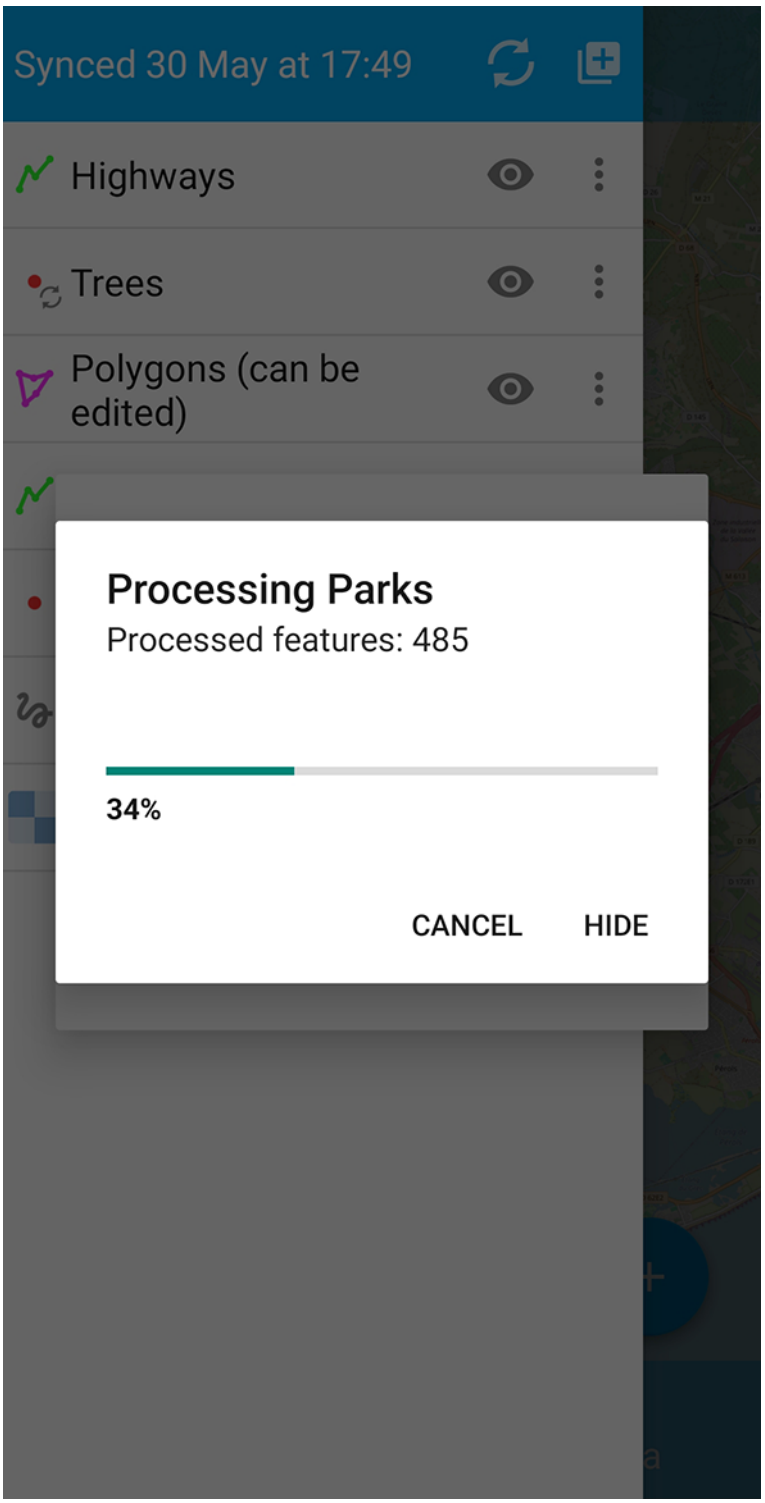

Рис.11.4: Layer processing pop-up

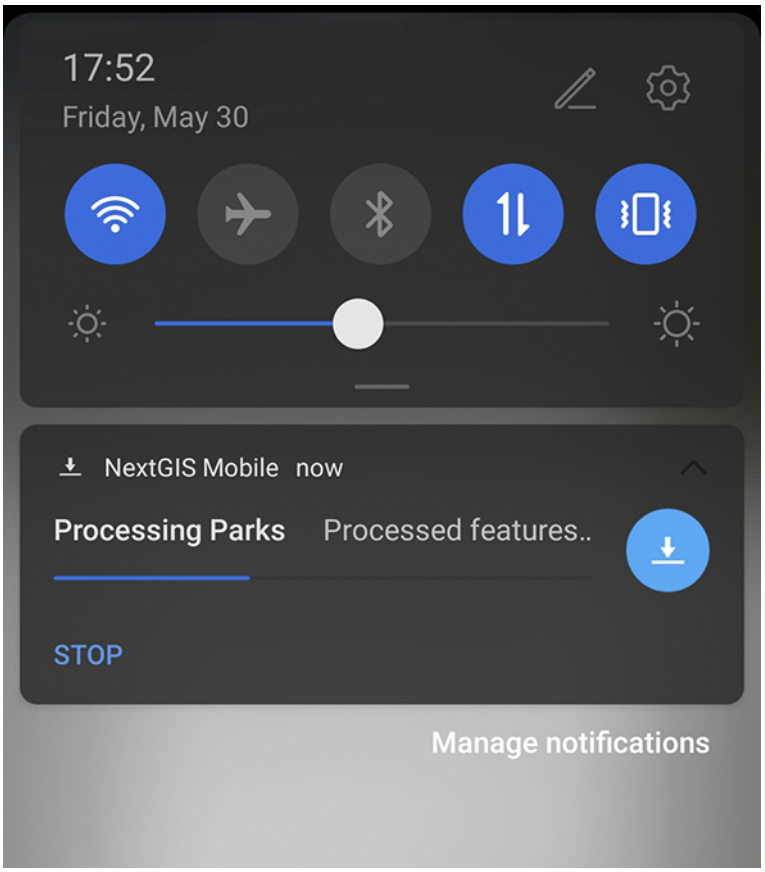

Рис.11.5: Download status in the notification panel

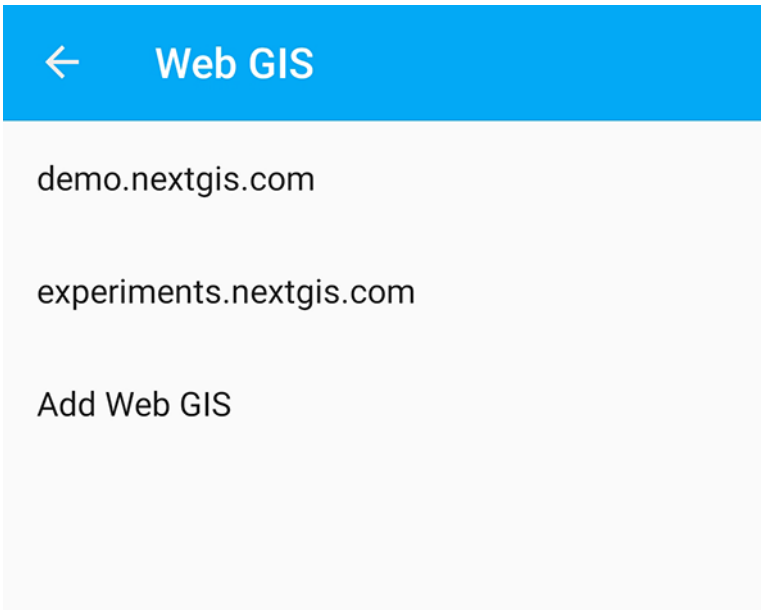

Рис.11.6: List of added Web GIS connections

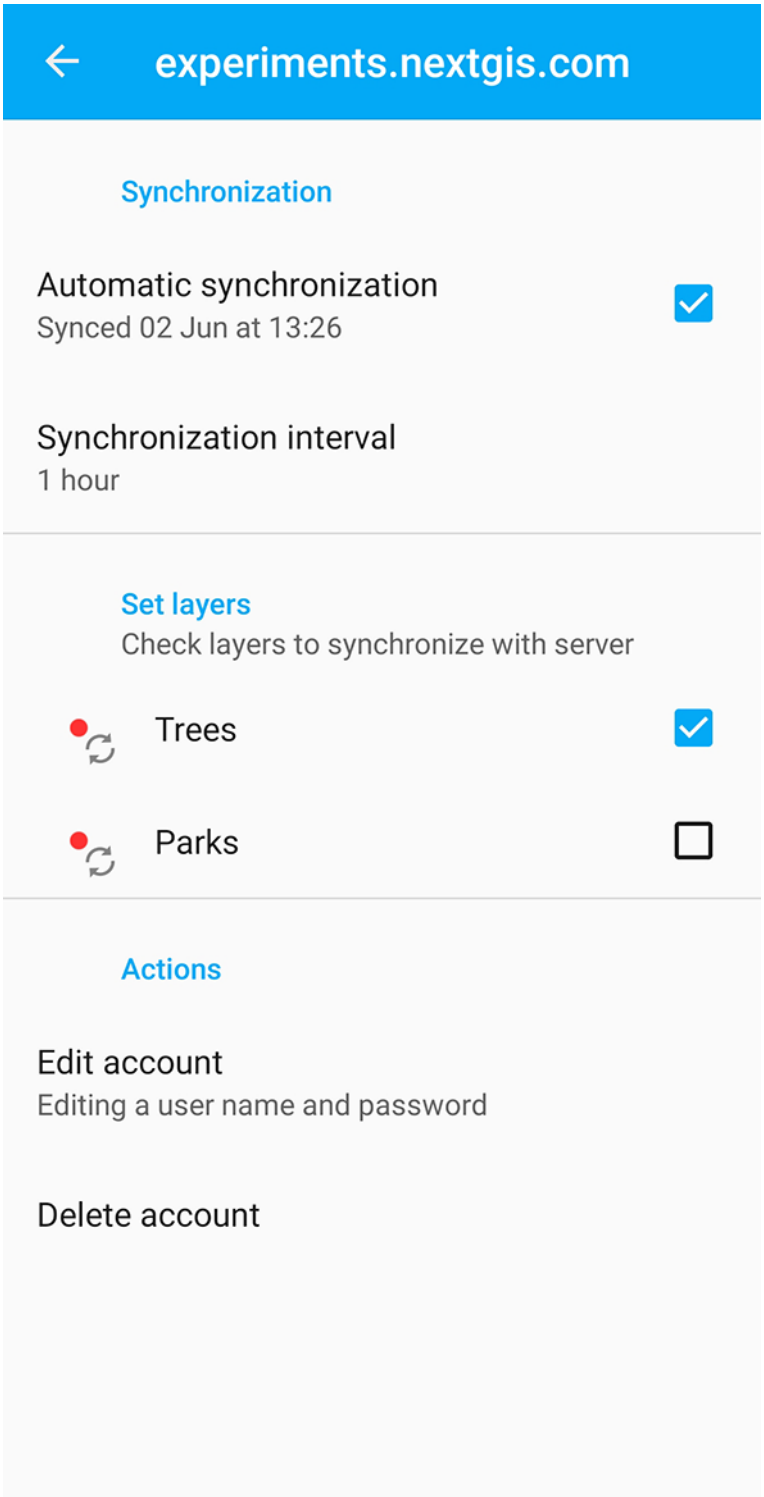

Рис.11.7: Settings of a Web GIS account

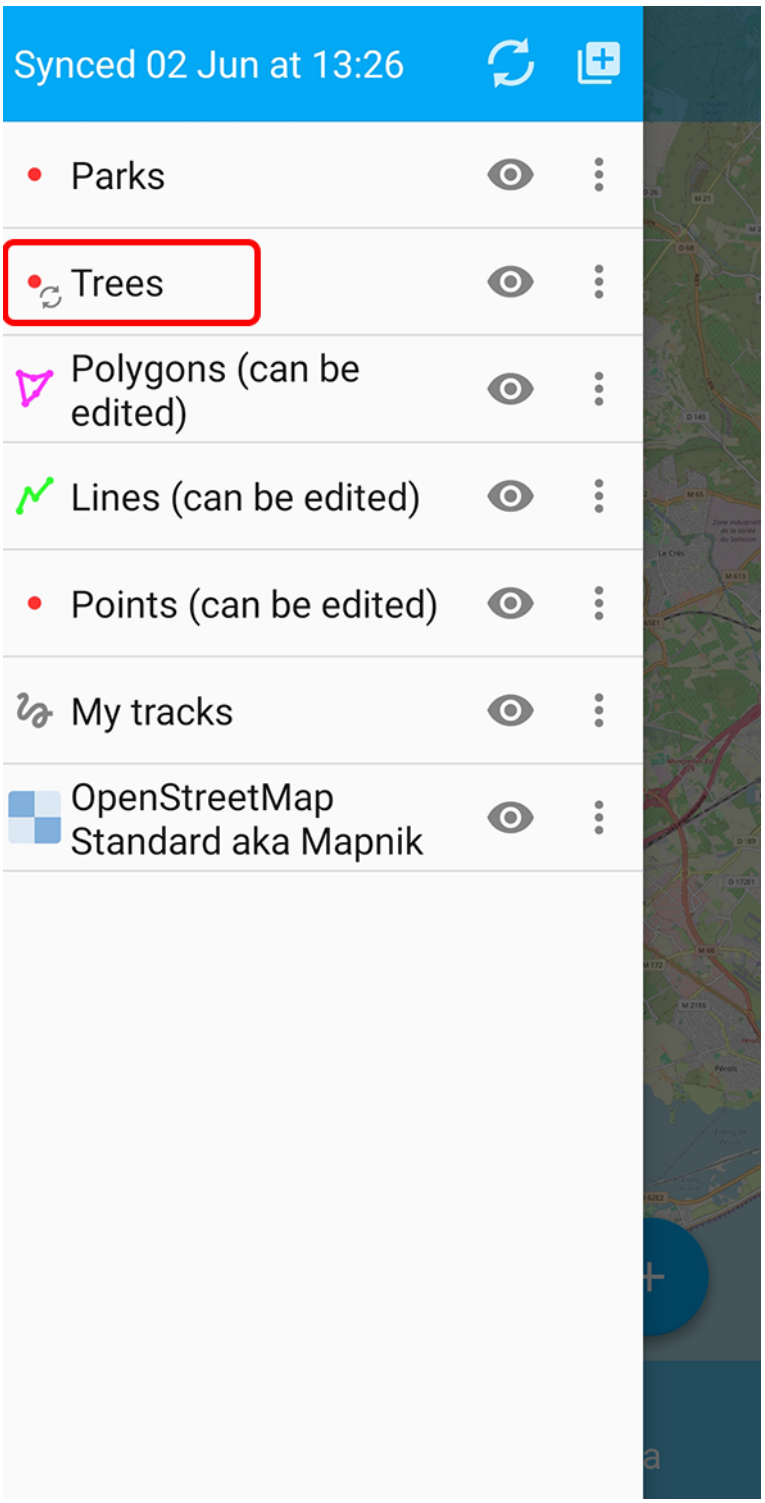

Рис.11.8: Synchronized layers marked in the layer tree

11.3 Add Web GIS connection

There are two ways to connect your NextGIS Mobile app to a Web GIS.

Via layer tree

1. Open Layers tree panel (item 1 in Fig. 4.1).
2. Then tap on “Add geodata” button (item 4 in Fig. 4.2).
3. Select “Add from Web GIS”.
4. In the opened dialog select “Add Web GIS”.
5. On the next screen enter the Web GIS name, username and password of your NextGIS ID and press **Sign in**.

If you don’t have a Web GIS, tap **create** on this screen. Your account page will be opened in a browser. From that page you can create a Web GIS[47].

From the Settings

1. Open Layers tree panel (item 1 in Fig. 4.1).
2. Select “Settings”.
3. Select “Web GIS”.
4. In the opened menu press **Add Web GIS**.

On the next screen enter the Web GIS name, username and password of your NextGIS ID and press **Sign in** (see Fig. 11.11).

11.4 Add connection to NextGIS Web on-premise

You can learn more about main features of NextGIS Web on-premise in Key features of NextGIS Web[48].

If you keep your data on your own NextGIS Web server, tap “Add Web GIS” using either of the ways to add a new Web GIS connection (see above), then tap the link at the bottom of the screen (see Fig. 11.15).

In the opened dialog fill in the connection details: Web GIS URL, username and password, then press **Sign in**.

Note:

> Many devices automatically add a space at the end of a text field when using

auto-complete or pasting from a clipboard. In this case you need to delete the space manually. For NextGIS Web an additional character makes it a different username / password, so you won’t be able to log in.

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[47] https://docs.nextgis.com/docs_ngcom/source/create_webgis.html
[48] http://docs.nextgis.com/docs_ngweb/source/general.html#ngweb-keyfeatures

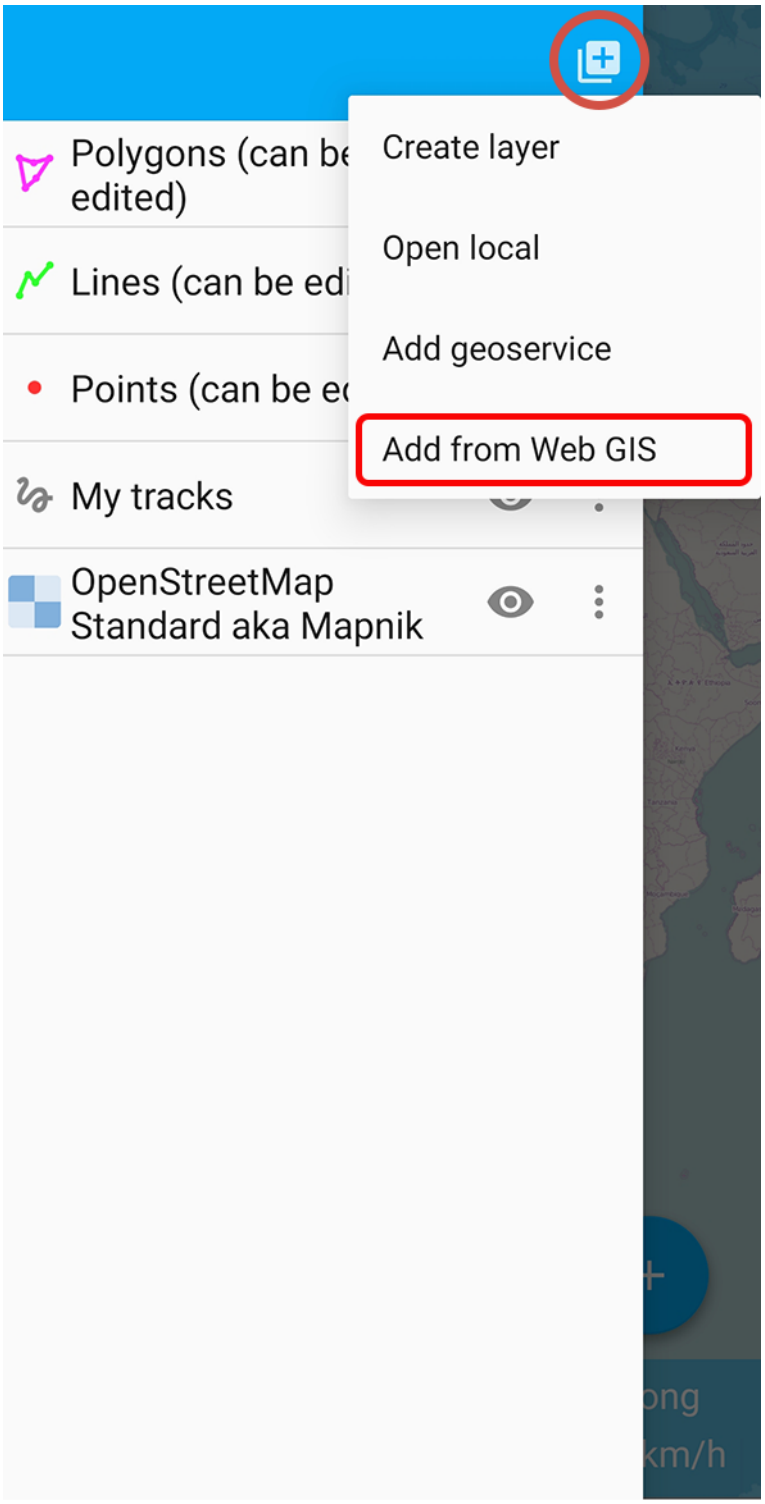

Рис.11.9: Add geodata dialog

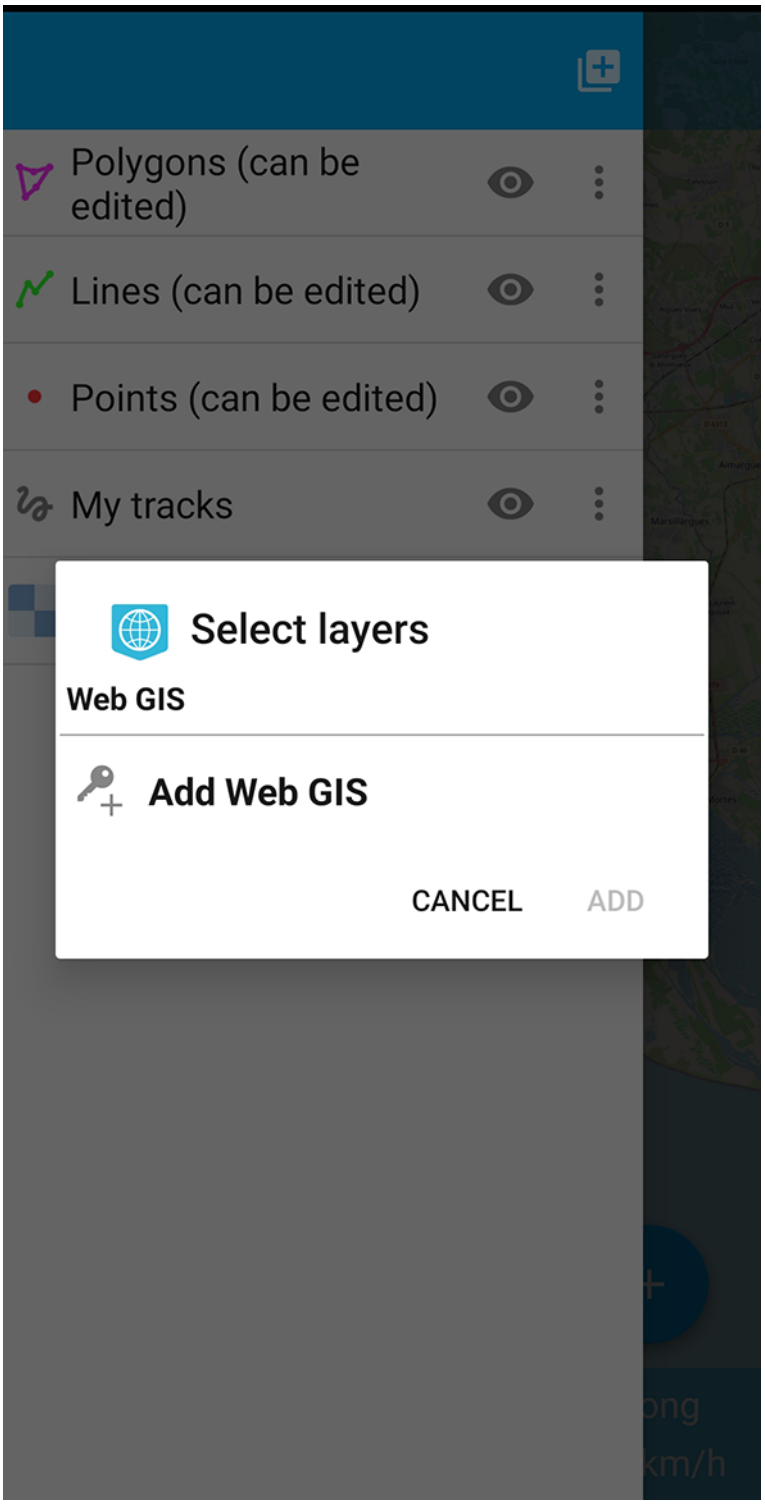

Рис.11.10: Web GIS dialog

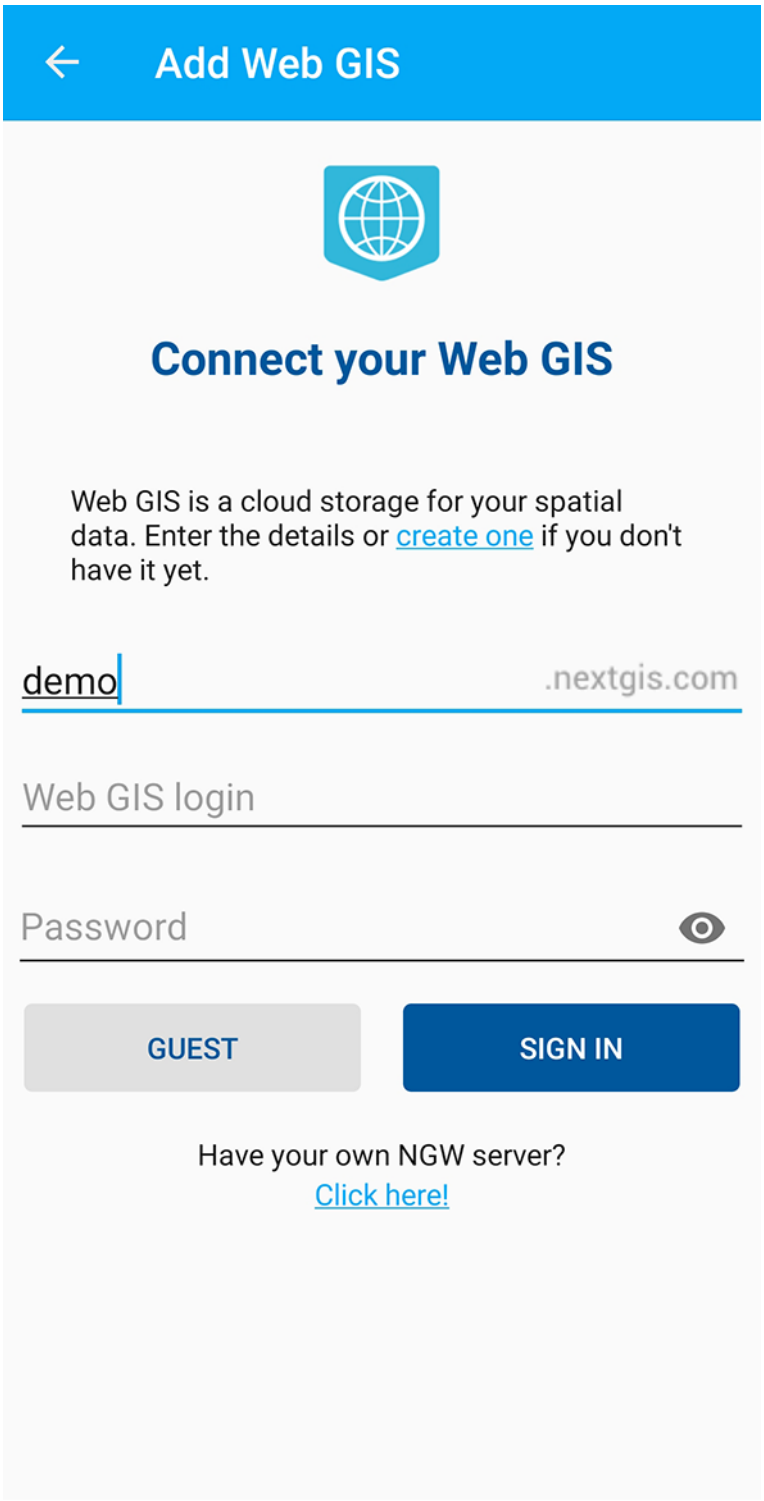

Рис.11.11: Adding new Web GIS connection

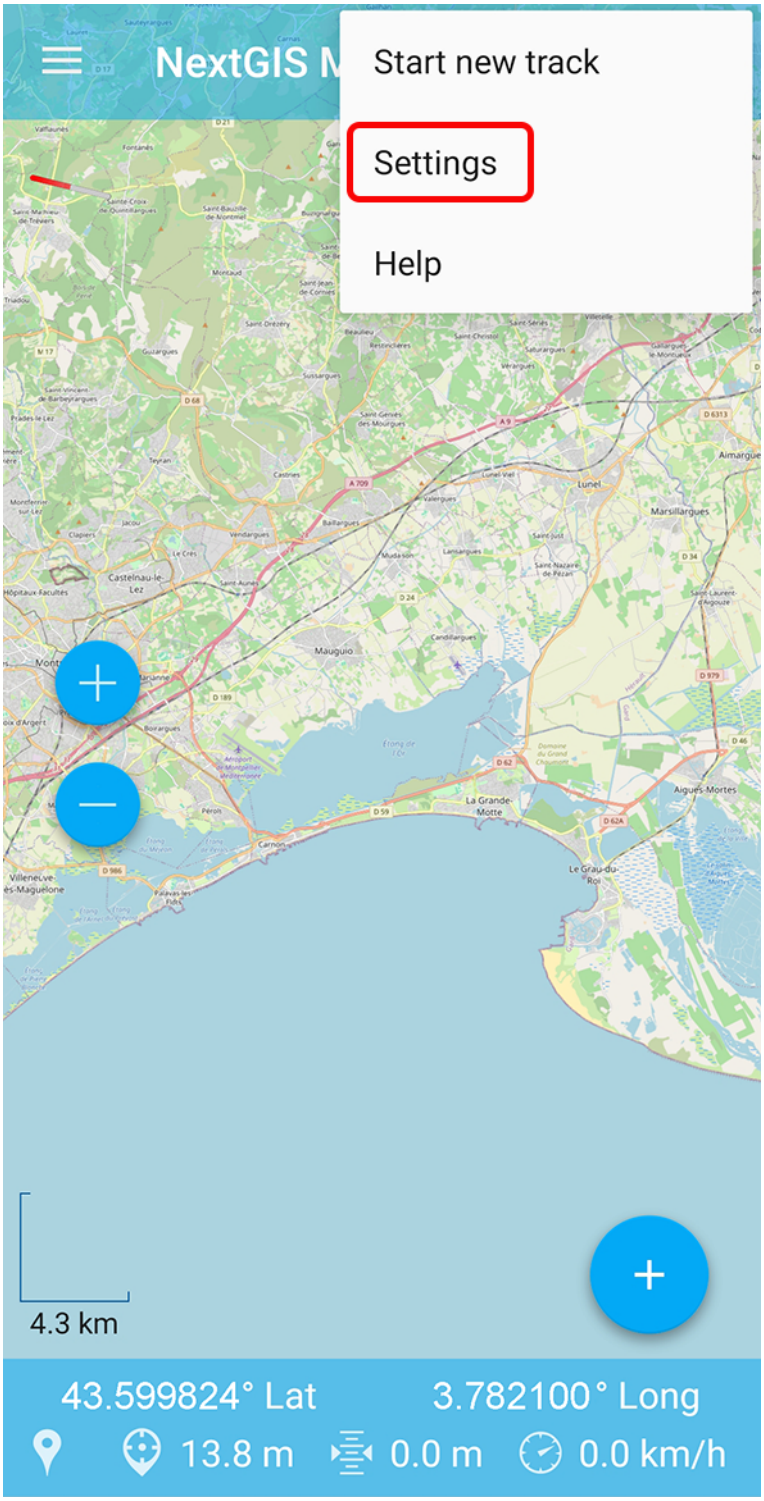

Рис.11.12: Main menu

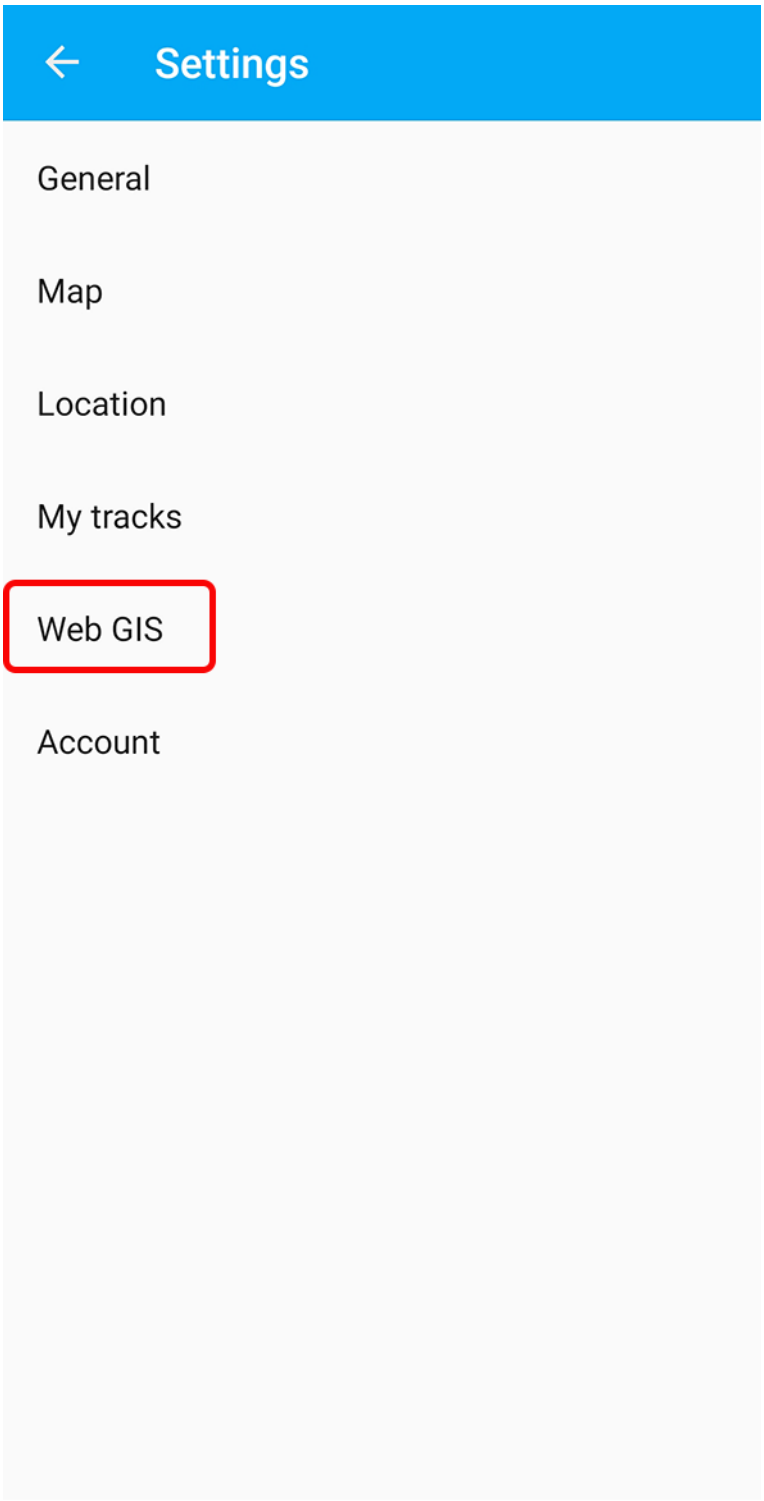

Рис.11.13: Settings menu

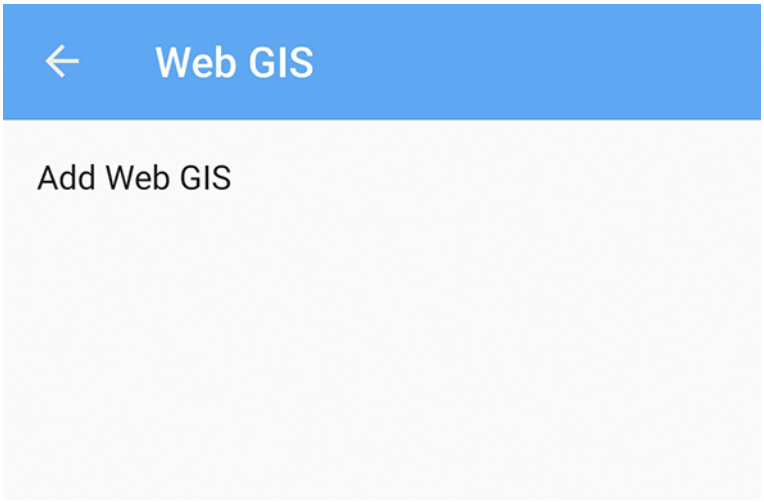

Рис.11.14: Web GIS menu

11.5 Edit Web GIS connection

1. Open the menu by tapping the three dots in the top right corner (item 5 in Fig. 4.1).
2. Select “Settings” (Fig. 11.12).
3. Select “Web GIS” in the opened menu (Fig. 11.13).
4. Select a Web GIS from the list (see Fig. 11.13).
5. On the next screen select “Edit account”.

6. In the opened window you can modify the following fields (see Fig. 11.18):
   1. Username;
   2. Password.

11.6 Delete Web GIS connection

There are two ways to delete a connection to a Web GIS.

You can delete the connection **in the app settings**.

1. Open the menu by tapping the three dots in the top right corner (item 5 in Fig. 4.1).
2. Select “Settings” (Fig. 11.12).
3. Select “Web GIS” (Fig. 11.13).
4. Select a Web GIS from the list.
5. Select “Delete account”.
6. Confirm deleting the account.

You can also delete a connection to a Web GIS in your **device settings**.

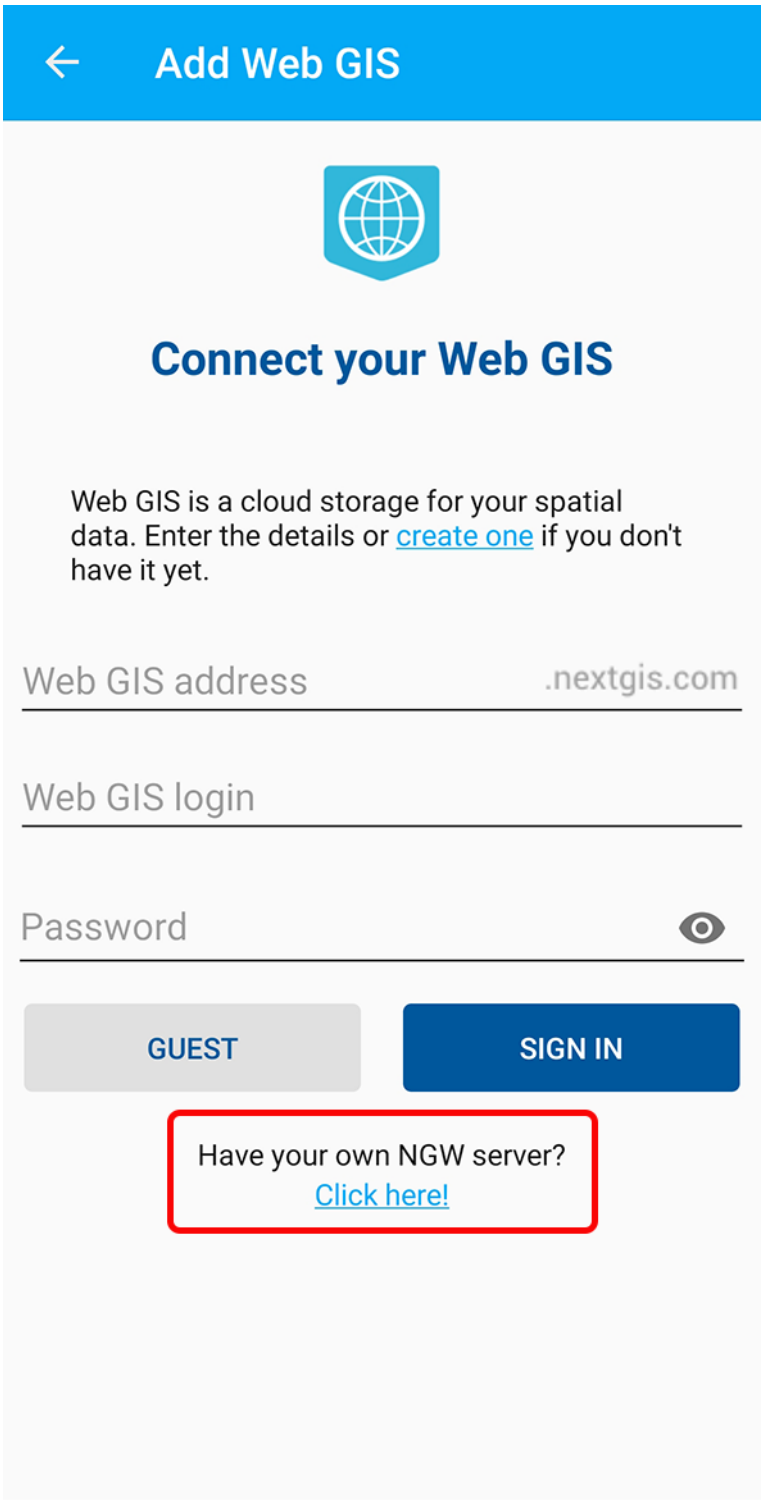

Рис.11.15: Add Web GIS dialog

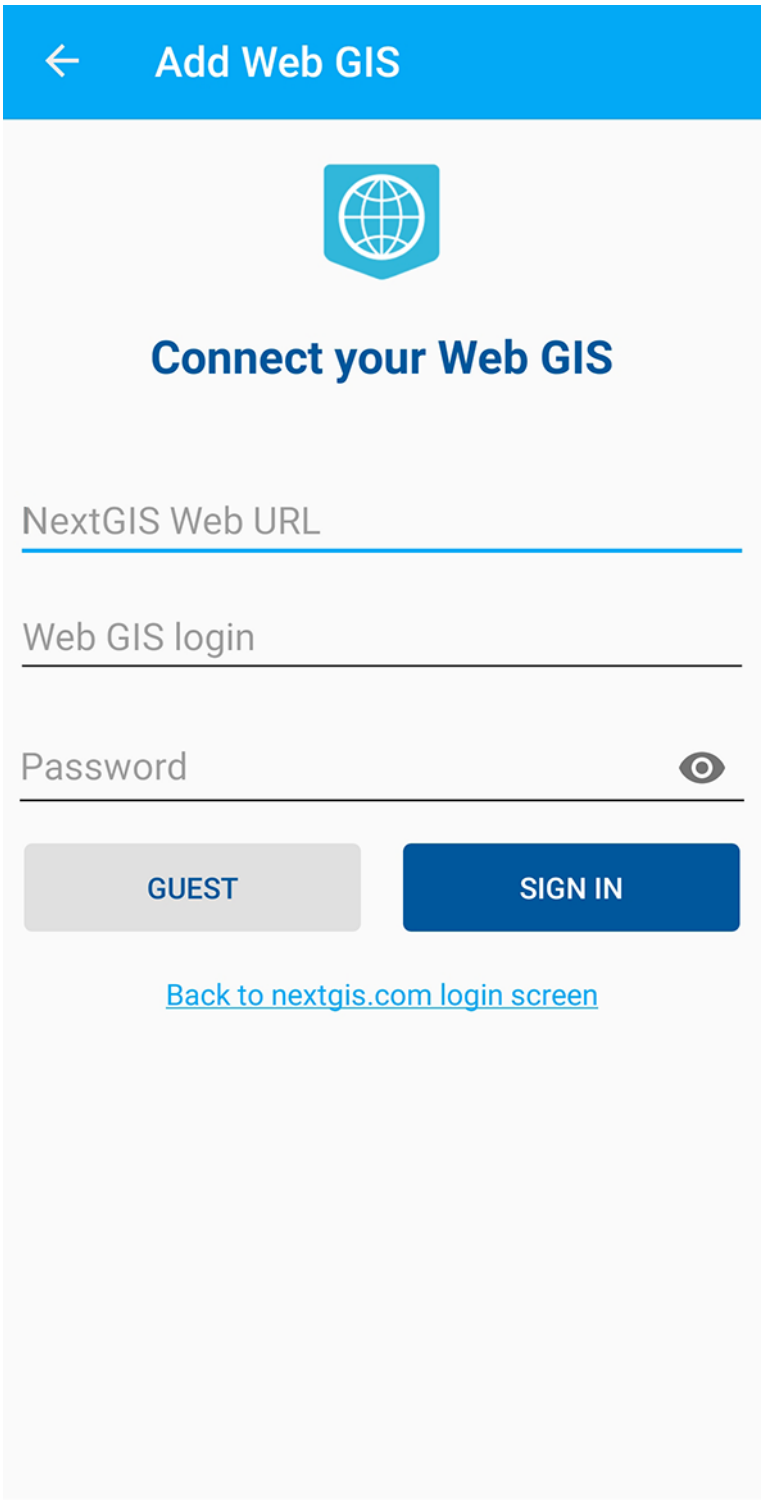

Рис.11.16: Web GIS connection parameters

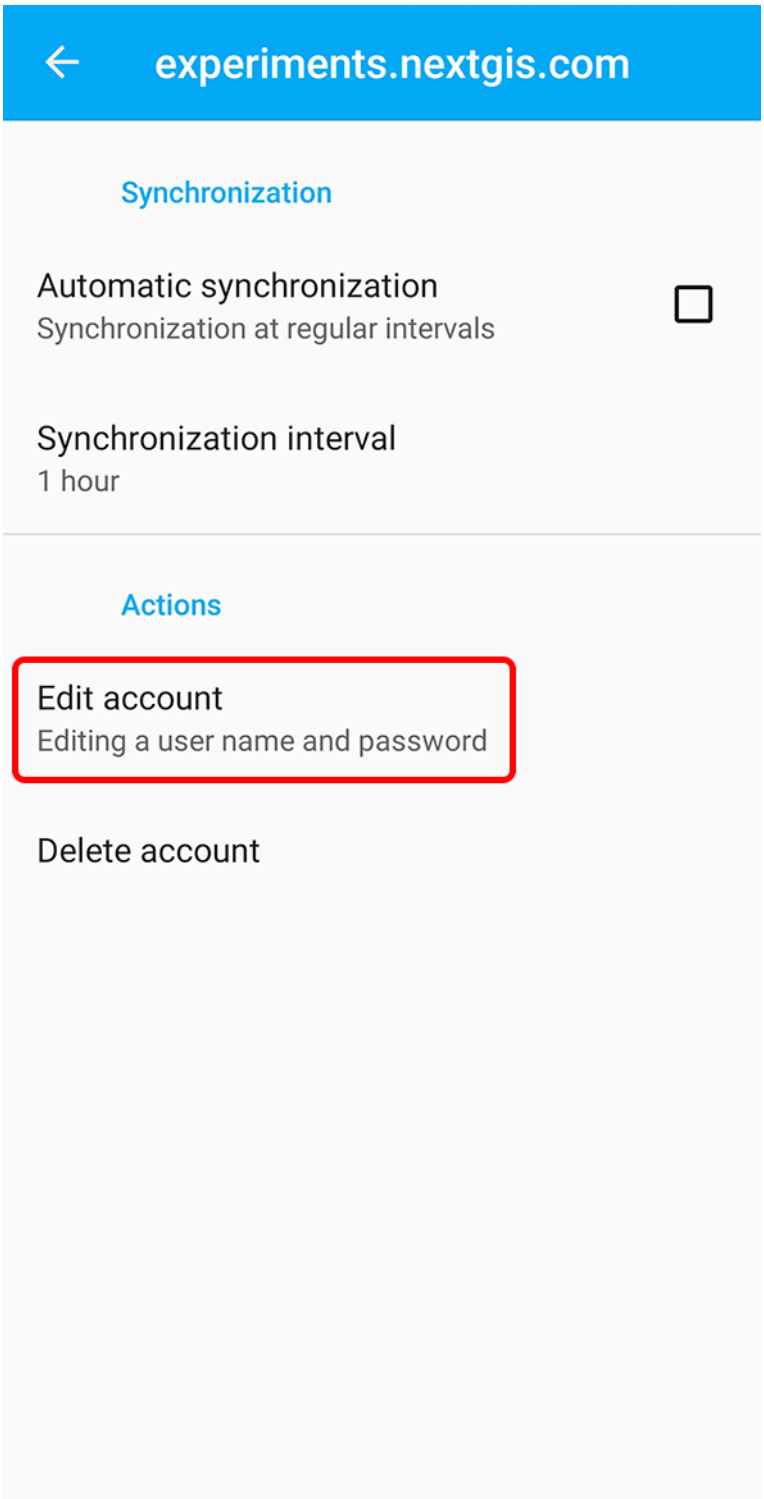

Рис.11.17: Editing Web GIS connection

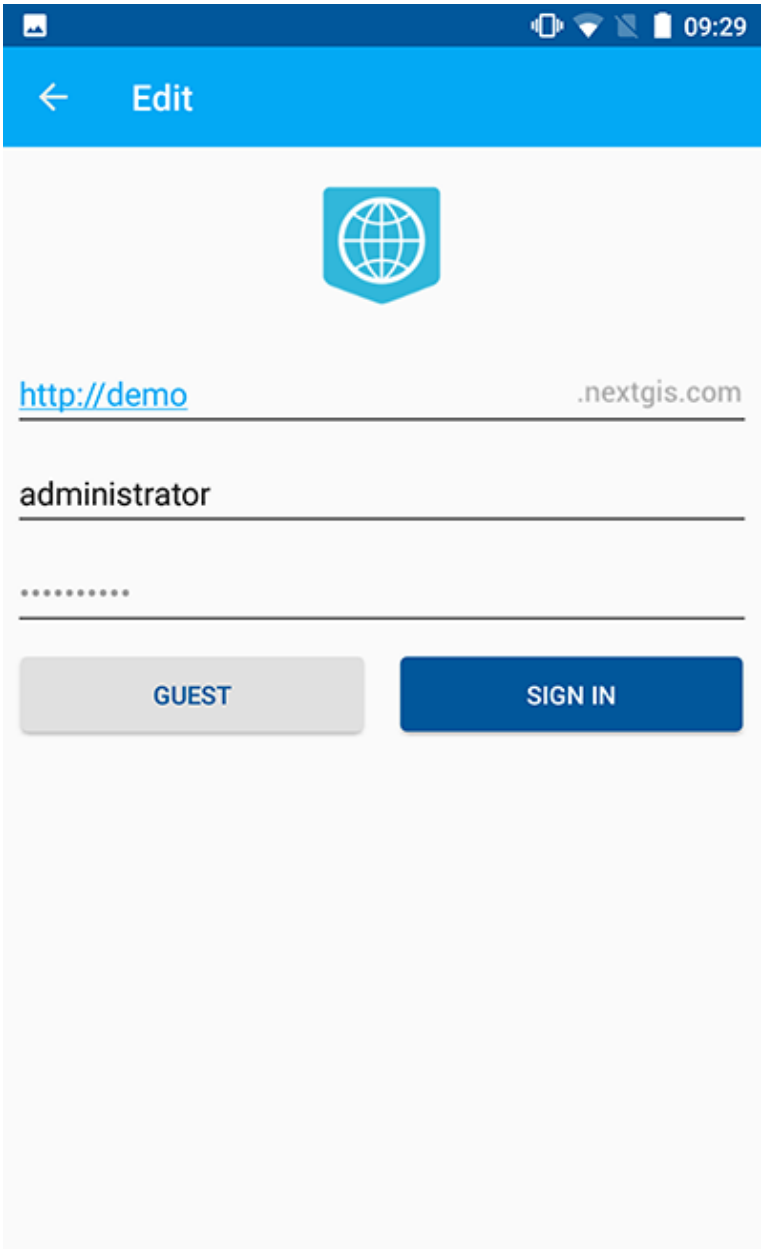

Рис.11.18: Editing a Web GIS connection

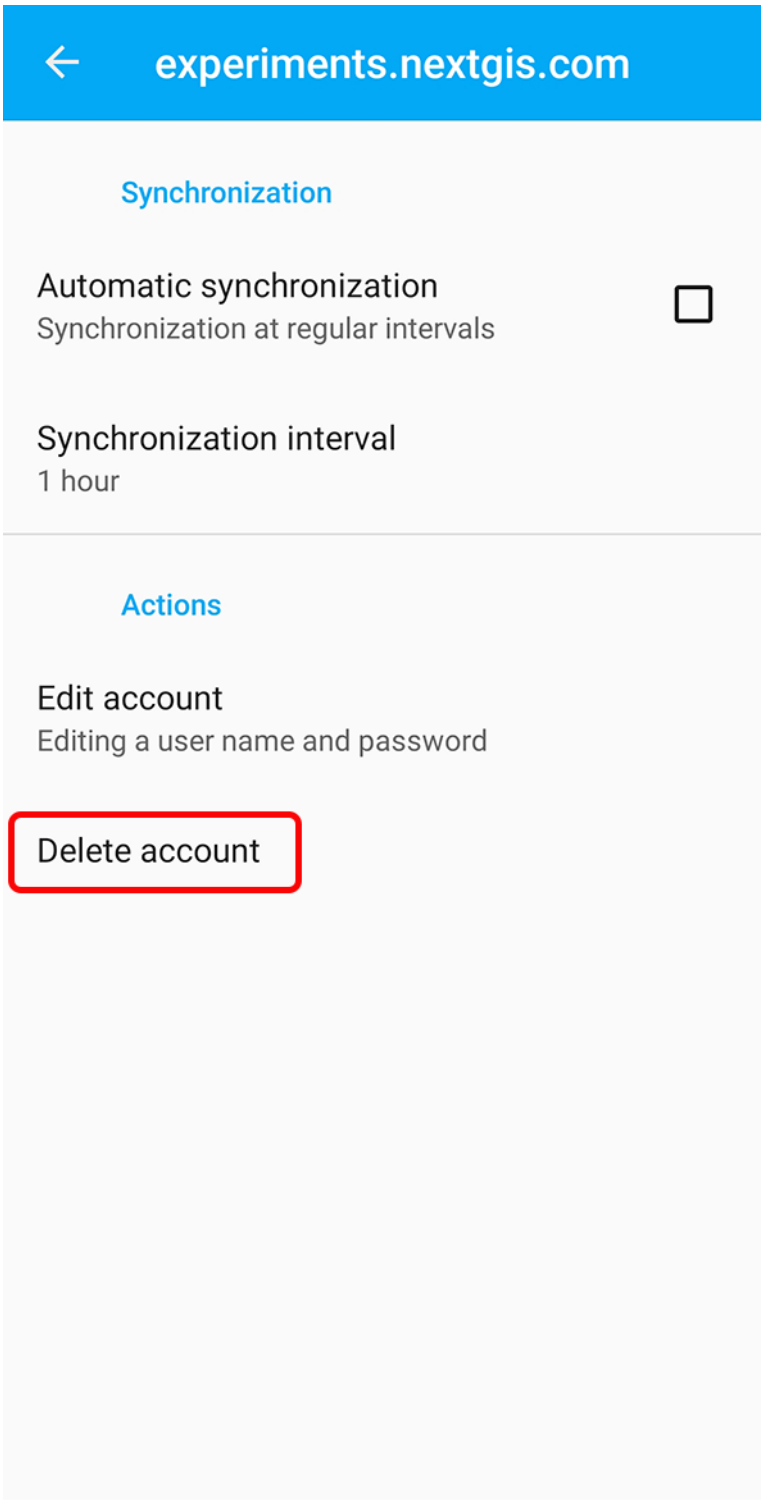

Рис.11.19: Delete Web GIS connection

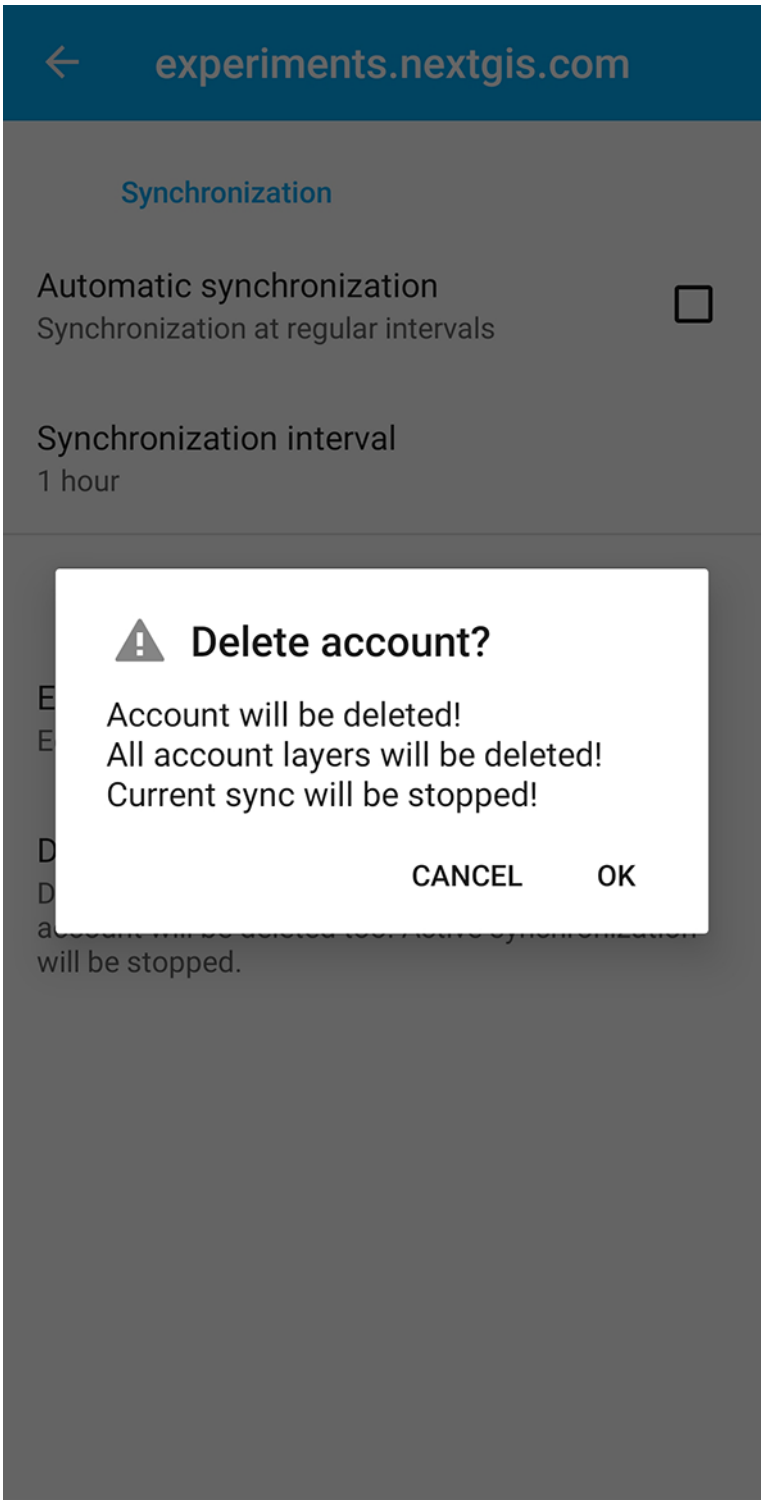

Рис.11.20: Delete Web GIS connection

1. Go to the Settings of your phone or tablet.
2. Go to Accounts section of the settings.

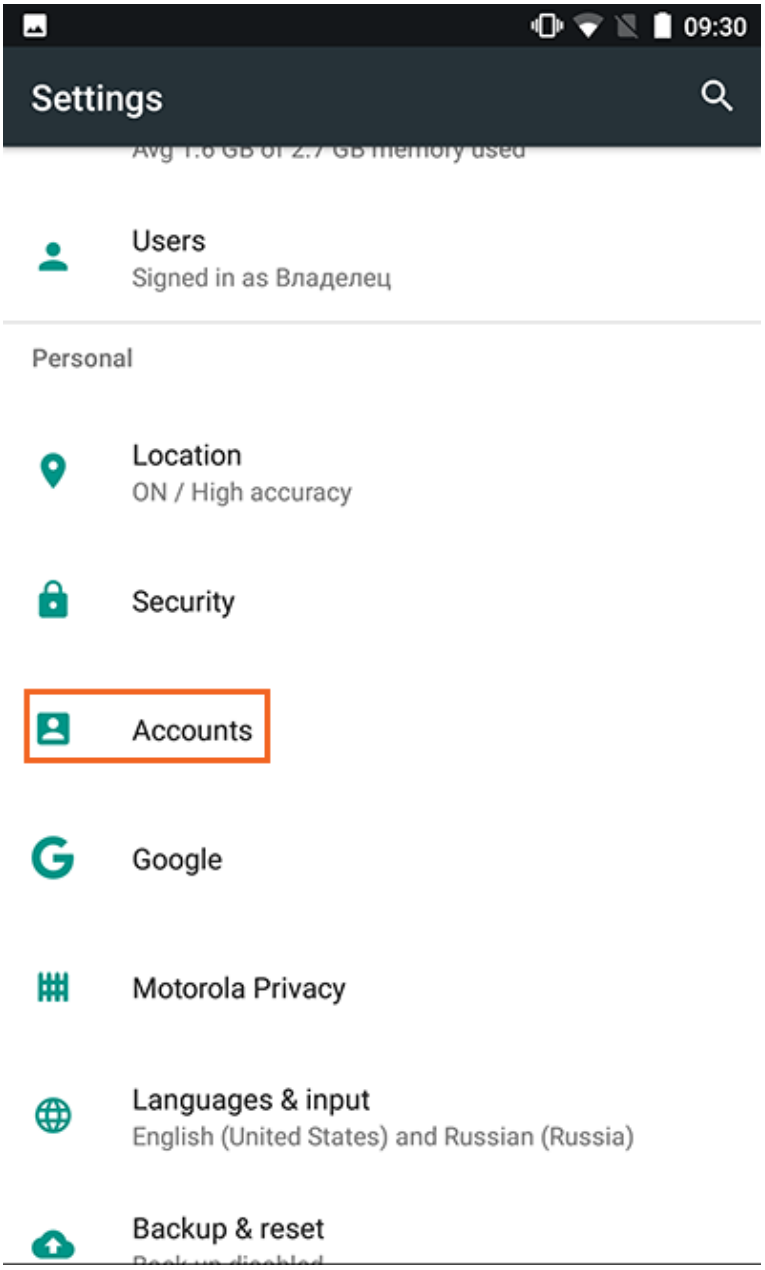

Рис.11.21: Selecting accounts in OS settings

3. Select the “NextGIS” account from the list.
4. Select the Web GIS connection you want to delete.

Tap **Delete** (it can be on the same page or in a context menu).

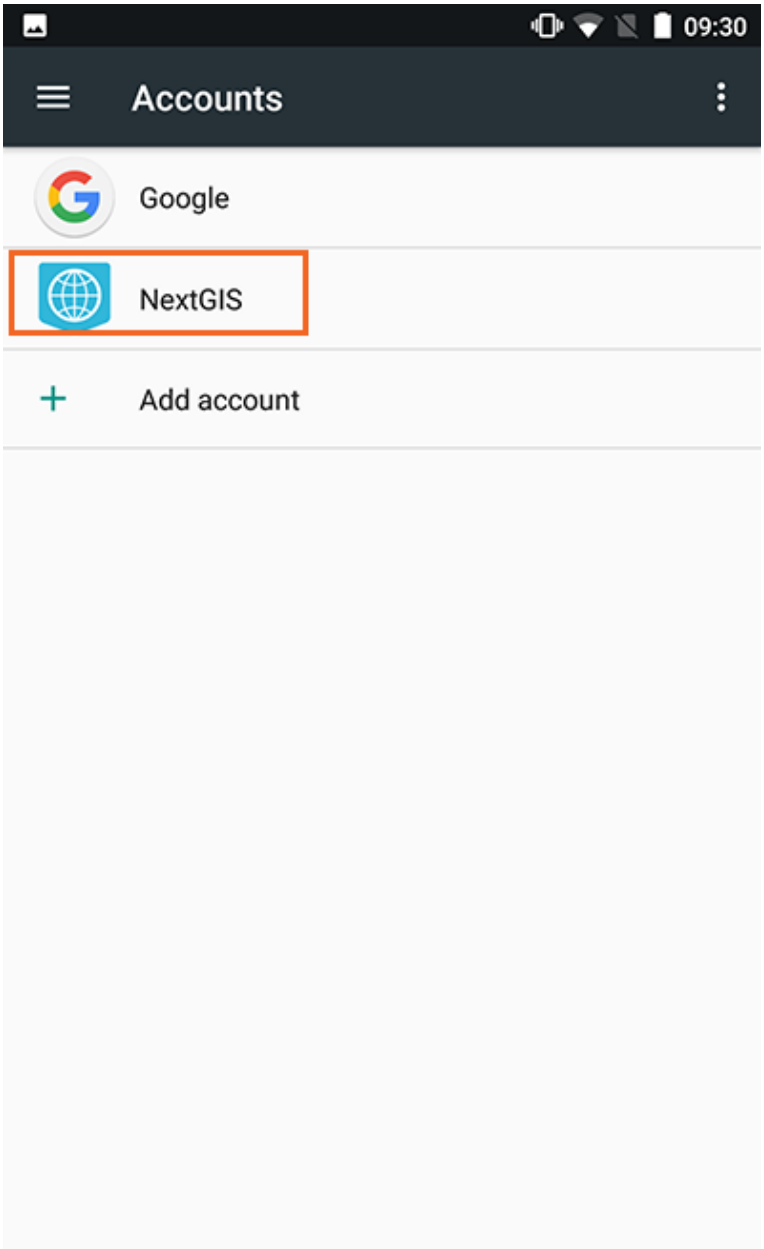

Рис.11.22: NextGIS account in OS settings

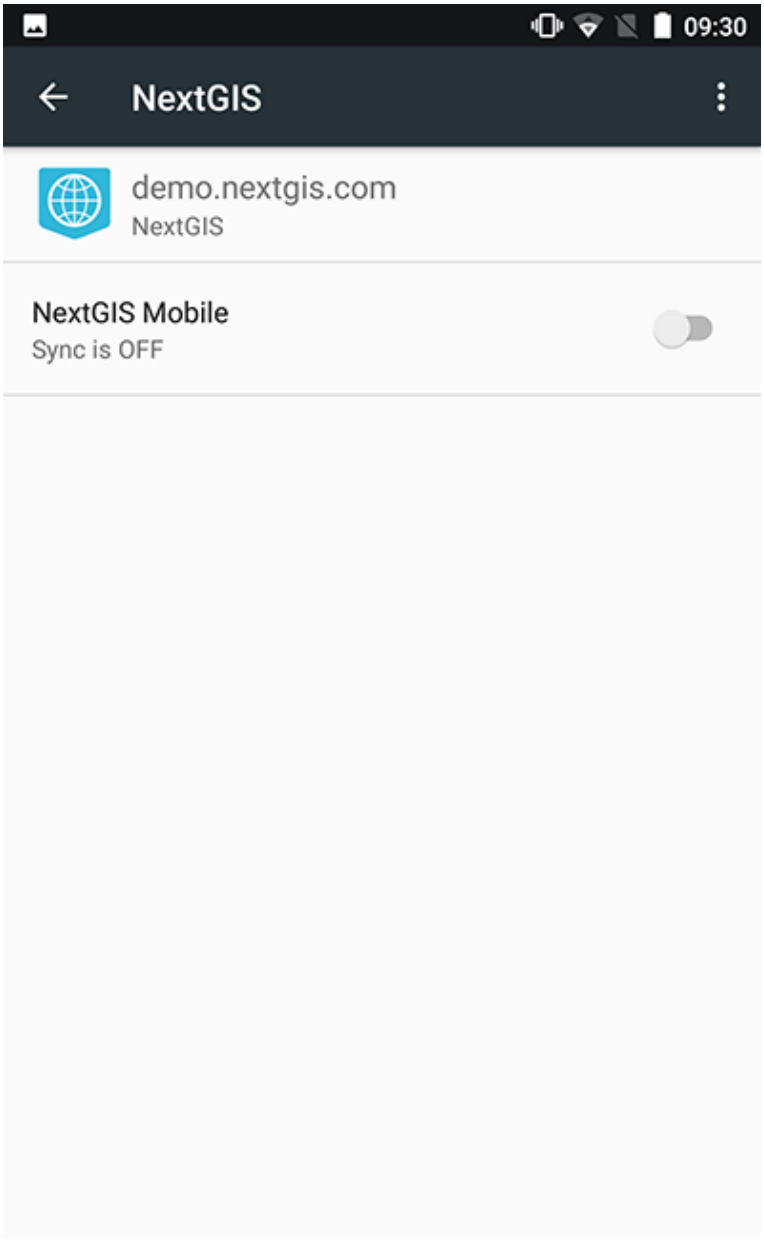

Рис.11.23: Selecting Web GIS account in OS settings

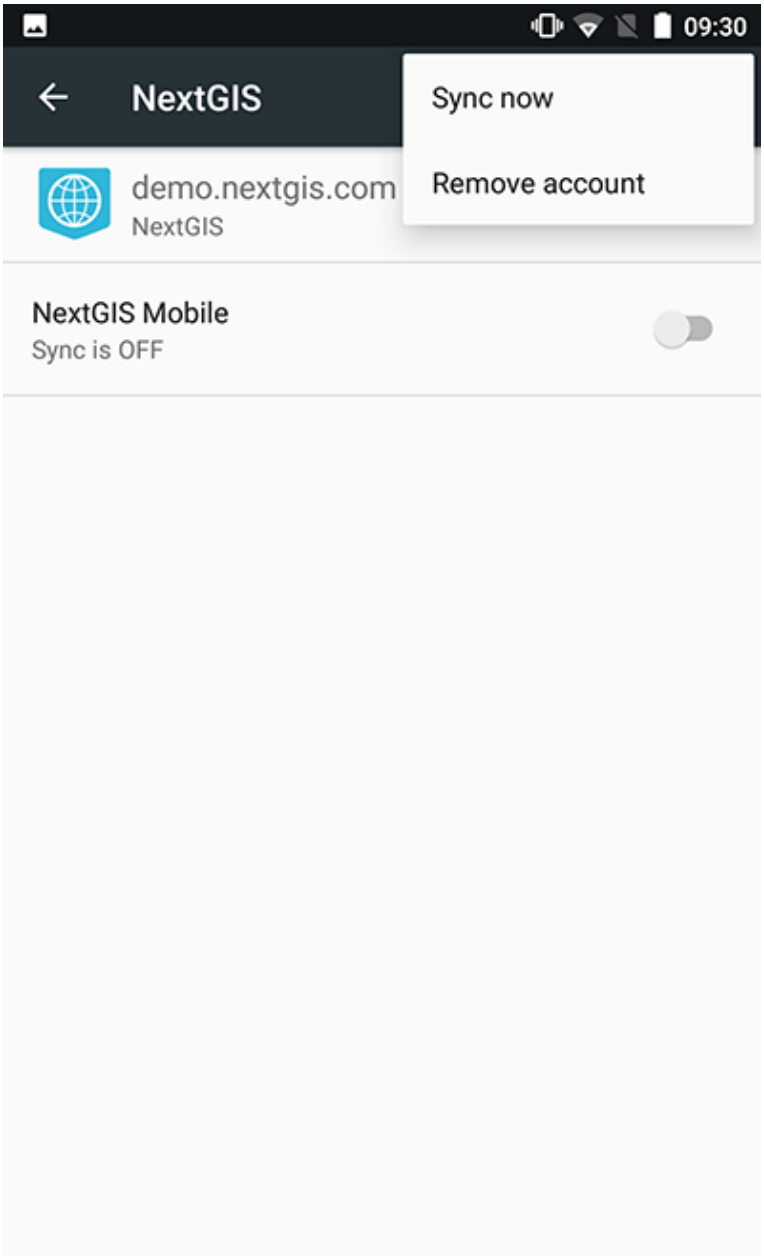

Рис.11.24: Deleting Web GIS account through the OS settings

Глава

TWELVE

LOGGING

In NextGIS Mobile you can have a log of technical information about the functioning of the app.

12.1 How to get useful logs

1. Turn on logging.
2. Repeat your actions until the issue arises again.
3. Send the logs to support.
4. Turn off logging.

12.2 Enable logging

Tap three dots in the top right corner and select “Settings” in the drop-down menu.

Then select “General”

In General Settings tick “Extended logs”.

12.3 Send log or save as file

You can also share your log. Open the contextual menu from the top panel and tap “Share log”.

Next step is to select the app to send the log or save it to a cloud or to your device.

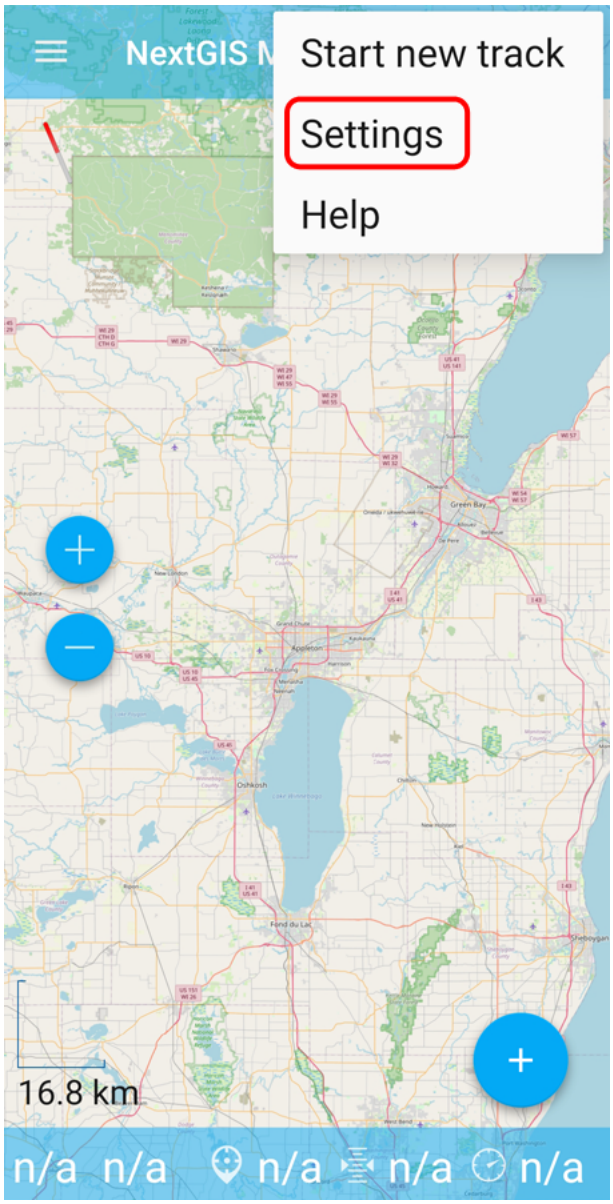

Рис.12.1: Context menu

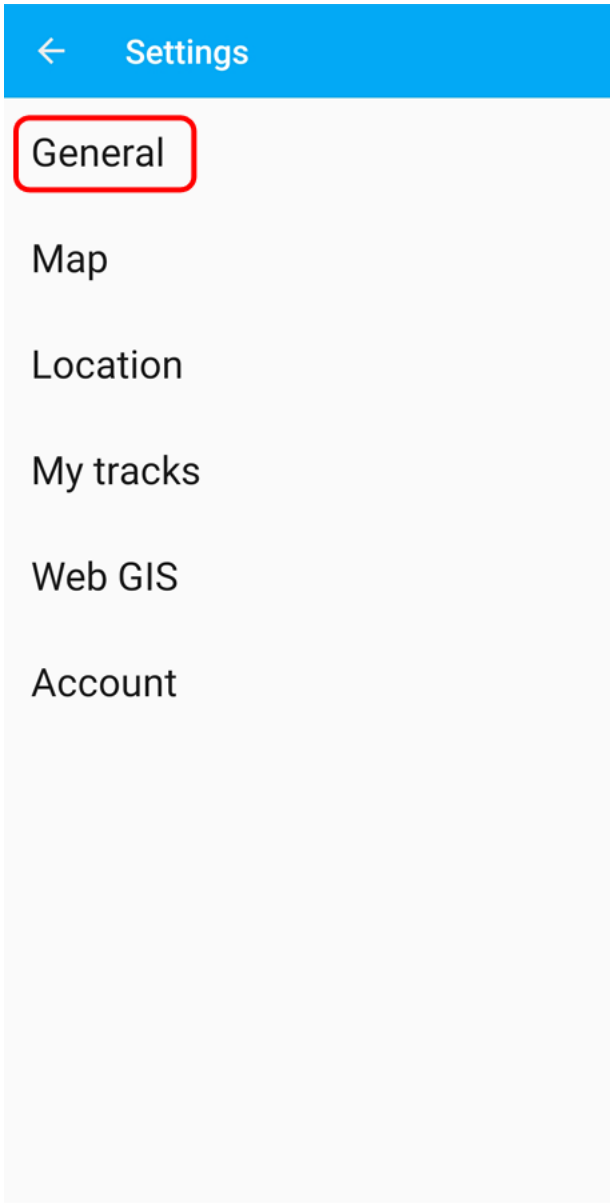

Рис.12.2: General settings

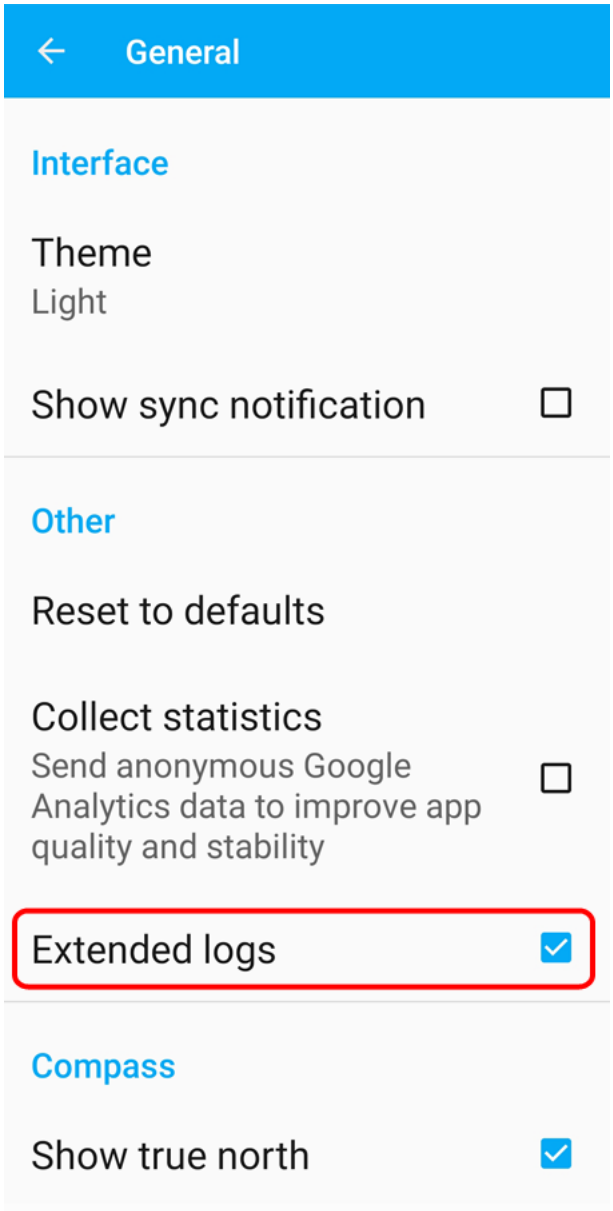

Рис.12.3: Logging enabled

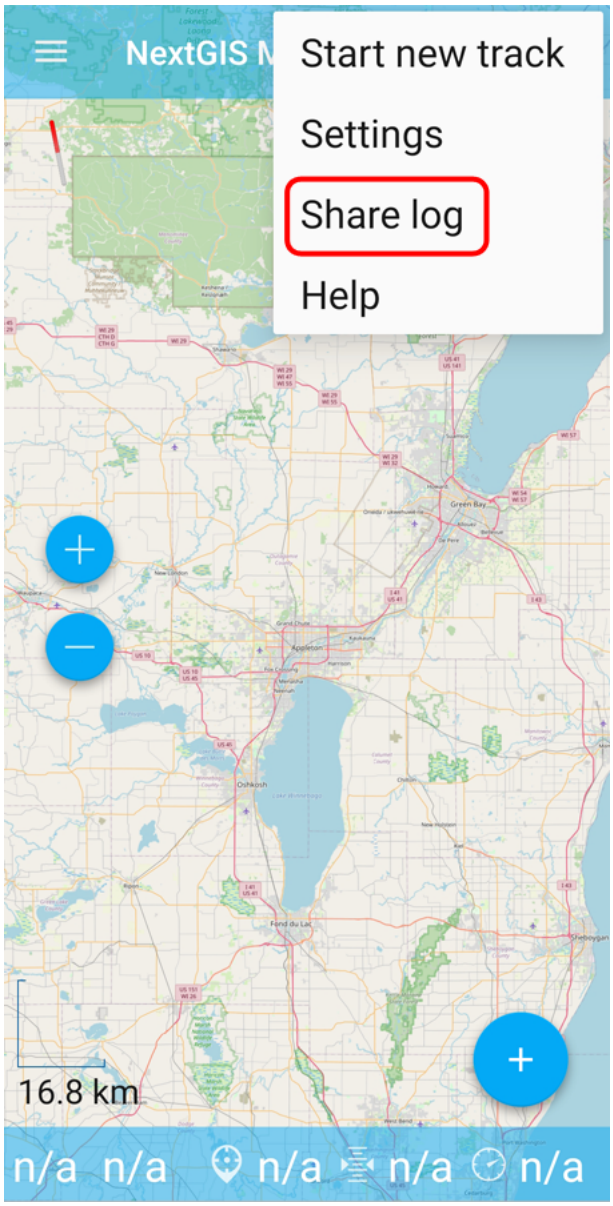

Рис.12.4: Selecting “Share log” in the context menu

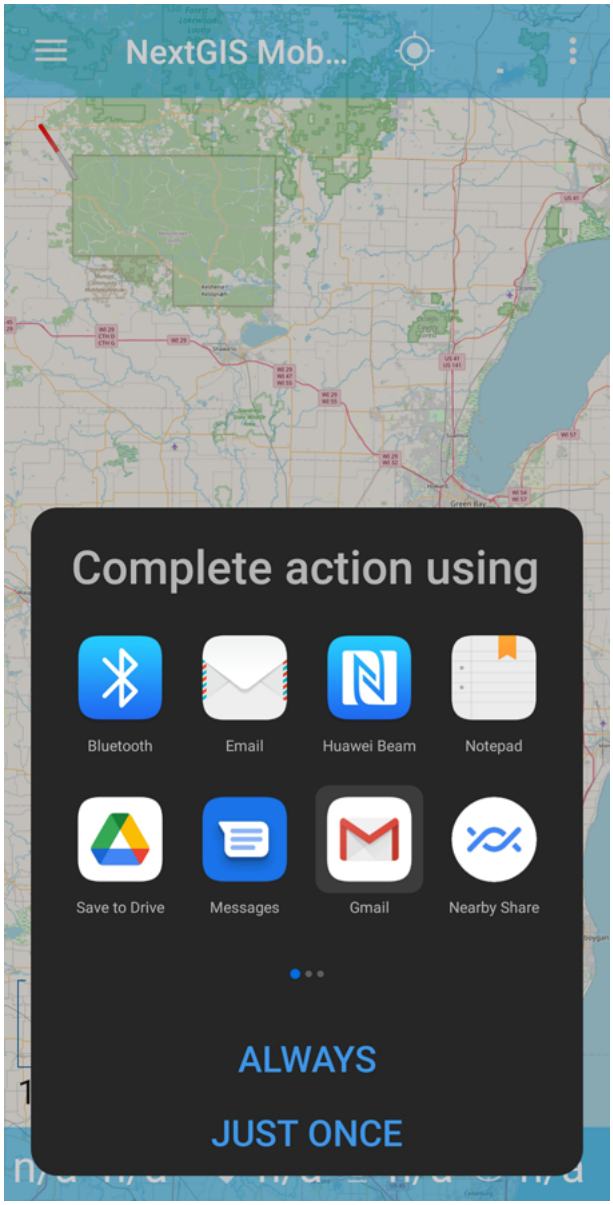

Рис.12.5: Selecting app to send or save the log

Глава

THIRTEEN

SOLVING PROBLEM (Q&A)

In this section you can find answers to the most frequently asked questions about using NextGIS Mobile (NGM).

13.1 Application sign in

13.1.1 What should the username and password be to sign in to NGM?

To sign in to NGM, you need to use NextGIS ID, account you've created while registering at my.nextgis.com Here[49] you can see how to get it. If you created, but forgot the password for NextGIS ID, follow password recovery instruction[50]. Note that log in part is optional and only needed if you'd like extended NGM functionality.

13.1.2 I sign in to NGM as administrator and the application shows an error. What am I doing wrong?

To sign in to NextGIS Mobile, you need to use **NextGIS ID**. Administrator is a Web GIS username local to this Web GIS. You cannot sign in to NGM with this name.

13.1.3 I entered mywebgis.nextgis.com as my authorization server but stil can't sign in. What am I doing wrong?

If you're on Premium your authorization server is my.nextgis.com. If you entered something else - please remove it. Different authorization setting is for NGW installations on your own servers.

[49] https://docs.nextgis.ru/docs_ngcom/source/create.html#nextgis-id/
[50] https://docs.nextgis.ru/docs_ngcom/source/faq_webgis.html#q-nextgis-id/

Глава

FOURTEEN

SIMULATION OF LOCATION DATA

How to use a third party software as a source of location data for your device.

Install a mock location app. For example, this one[51].

Turn on Developer mode on your smart phone. To do so, tap the Build number 7 times (in Software information).

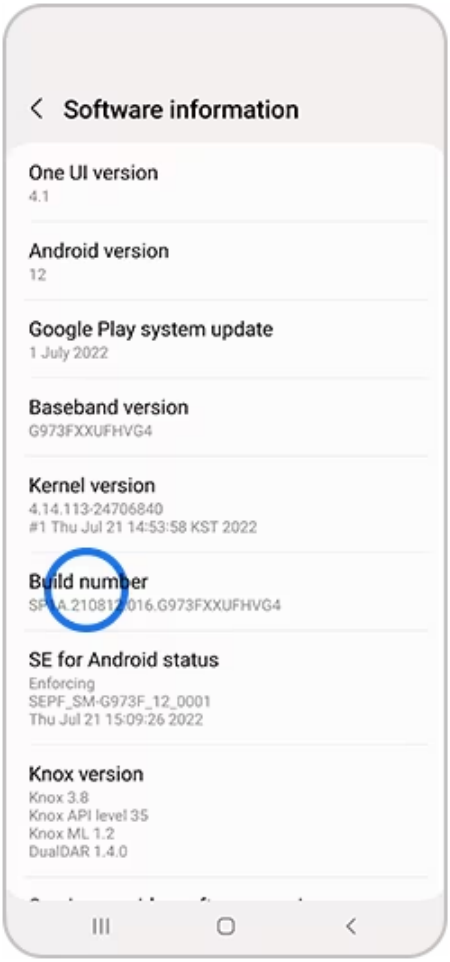

Рис.14.1: Enabling developer mode

In the Developer options select mock location app installed on step 1.

Open the mock location app. Create a simulation, name it.

[51] https://lockito-app.com/

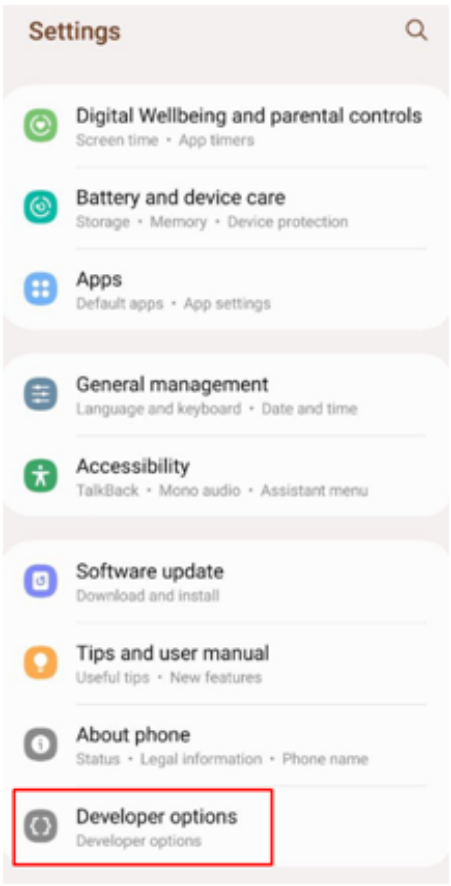

Рис.14.2: Opening developer settings

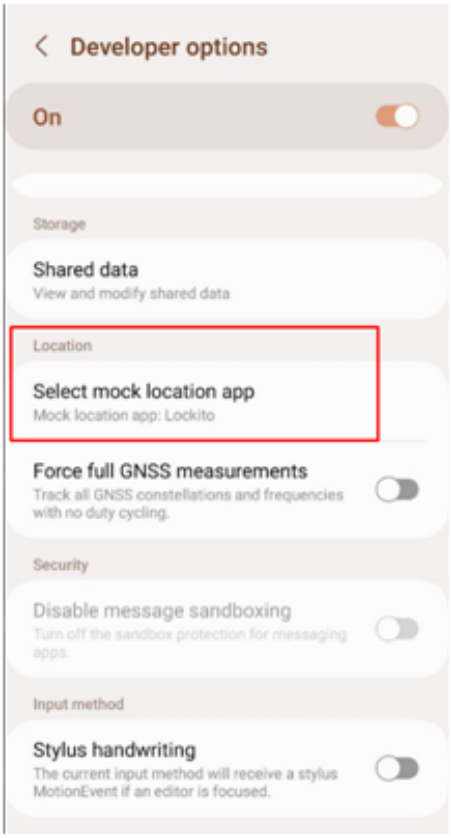

Рис.14.3: Selecting mock location app

Select a point on the map (or use current location) and tap Play.

From that moment on your smart phone will get coordinates of your current location from the app. Open NextGIS Mobile to see that it works.

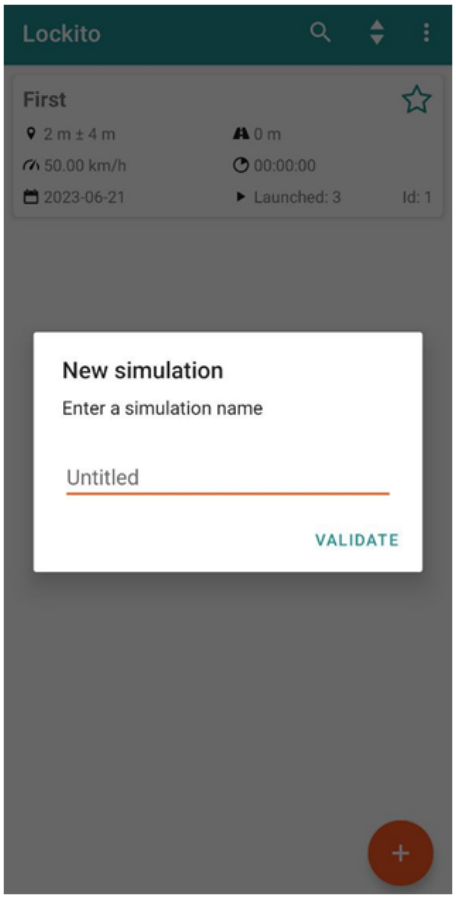

Рис.14.4: Creating a simulation

Рис.14.5: Selecting point on the map

Рис.14.6: Simulation in progress

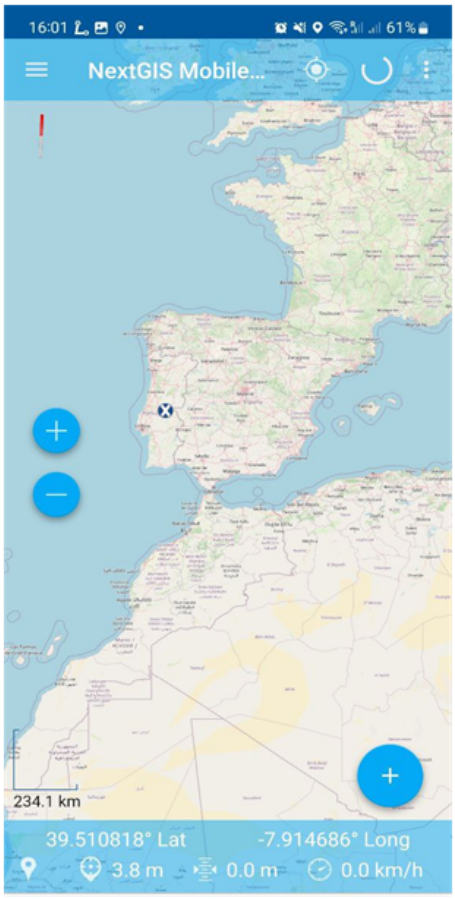

Рис.14.7: Coordinates from an external source in NextGIS Mobile

Приложение

A

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Version 3, 29 June 2007

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