

## Documentation

# Ethics Minefields

Last update: v1.3

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## What is this script?

**ETHICS** is a full solution script for ARMA 3 that provides wide management over minefield creation for single-player and multiplayer missions.

Demo on youtube: [soon](#)

## What exactly are ETHICS features? What can it do?

- Drag and drop a marker on Eden to create a full and unique minefield;
- Ethics control (ON/OFF) to avoid planting mines through civilian zones;
- Topography control (ON/OFF) to avoid rock clusters, and mountains;
- **NEW!** Also, it works with naval mines for minefields in water;
- Set (or not) for each minefield which faction is its owner;
- Set for each minefield a doctrine: Anti-personnel, Anti-material, or Hybrid;
- **NEW!** Option for AM doctrine plants its mines only on roads.

Complete list of script features:

<https://github.com/aldolammel/Arma-3-Ethics-Minefields-Script#readme>

## Can it be used on Hosted and Dedicated servers?

Yes, the script was built for both server types.

## Is it compatible with ACE, RHS, or CUP?

Yes! You can use ETHICS with any mod.

## Does ETHICS support missions with BIS Respawn system?

Not tested yet.

## How to just run the script for a first look?

1. Go to: <https://steamcommunity.com/sharedfiles/filedetails/?id=2926204522>
2. Subscribe and wait for Steam to download it;
3. Open Arma 3, go to Multiplayer > Server browser > Host server > click Host Server button;
4. Select “Altis” map and, after that, select “Ethics Minefields”;
5. Play.

**Important:** if you want to apply this script in your own missions, [check this out](#).

## How to install the script in my own mission? ★★★

1. Go to: <https://github.com/aldolammel/Arma-3-Ethics-Minefields-Script>
2. Download the zip and open it;
3. In zip, find the folder “ETHICSMinefields” and copy it to your mission folder root: DRIVE:\Users\yourName\Documents\Arma 3\yourProfile\missions\yourMission\
4. In the mission folder root, if you don't have a “description.ext” file, create one and there add the code down below:

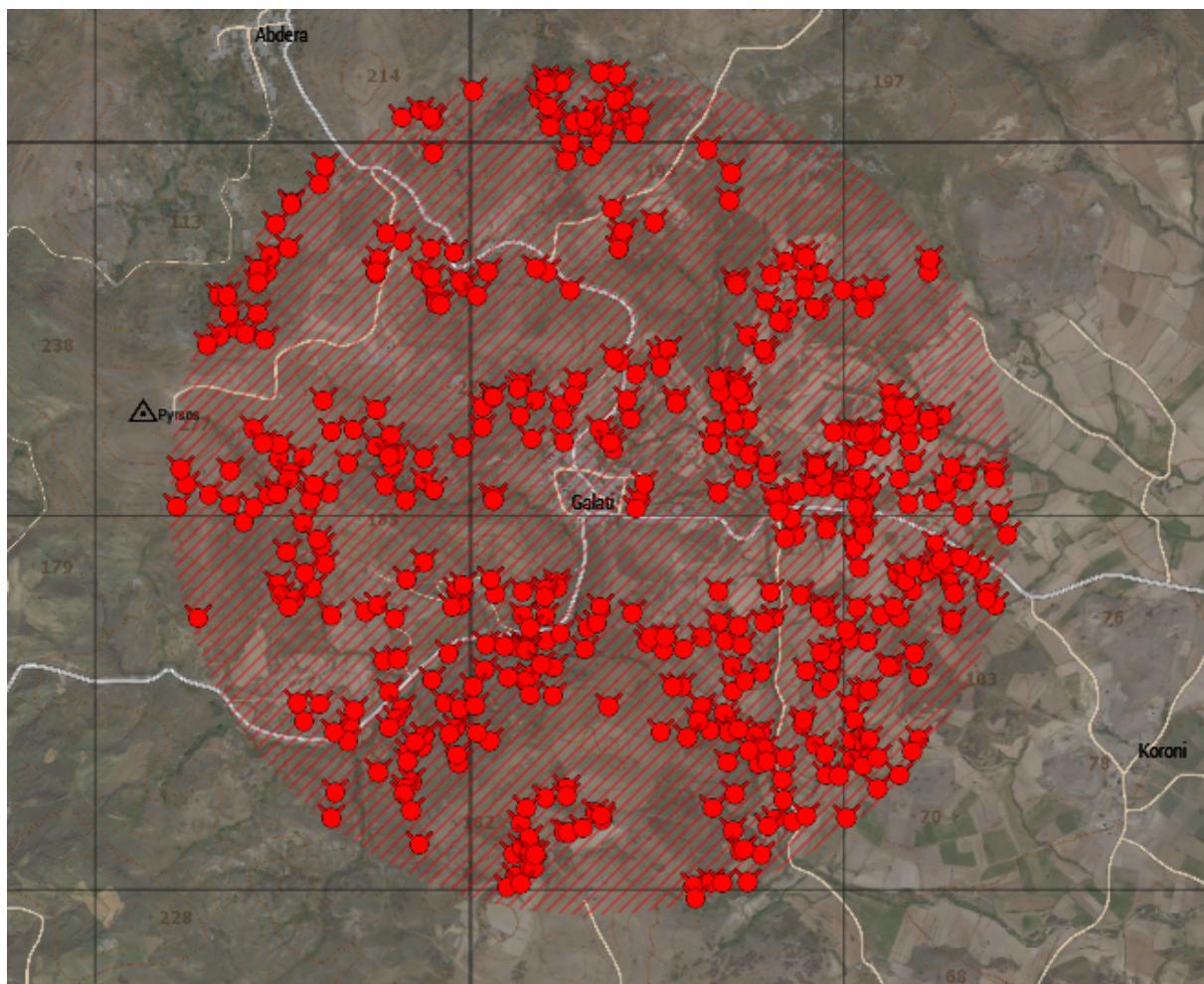
```
class cfgFunctions
{
    // ETHICS MINEFIELDS:
    #include "ETHICSMinefields\THY_ETH_functions.hpp"
};
```

5. Now, [let's create your first minefield!](#)

## What types of minefields can be built?

You might create land minefields and naval minefields. All types of minefields got all their mine positions randomly inside the [minefield area designed by the mission editor on Eden](#). There are variations of these two global minefield types:

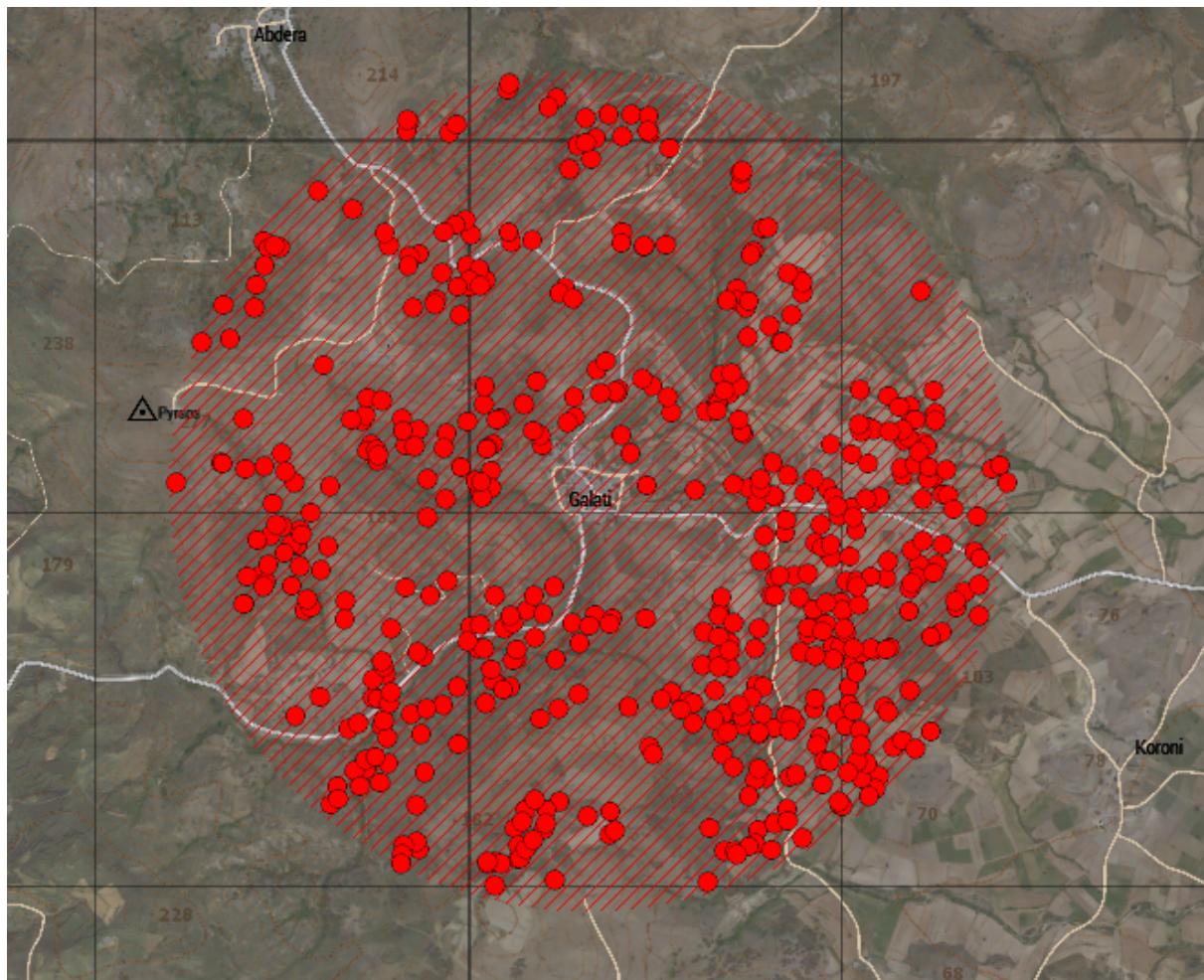
### Land minefield > Anti-personnel doctrine:



**Anti-Personnel** land minefield (its tag is “AP”) has the following features:

- Its focus is to neutralize soldiers;
- Its mines avoid water and roads;
- (optional) Its mines avoid civilian areas;
- (optional) Its mines avoid topographic accidents.

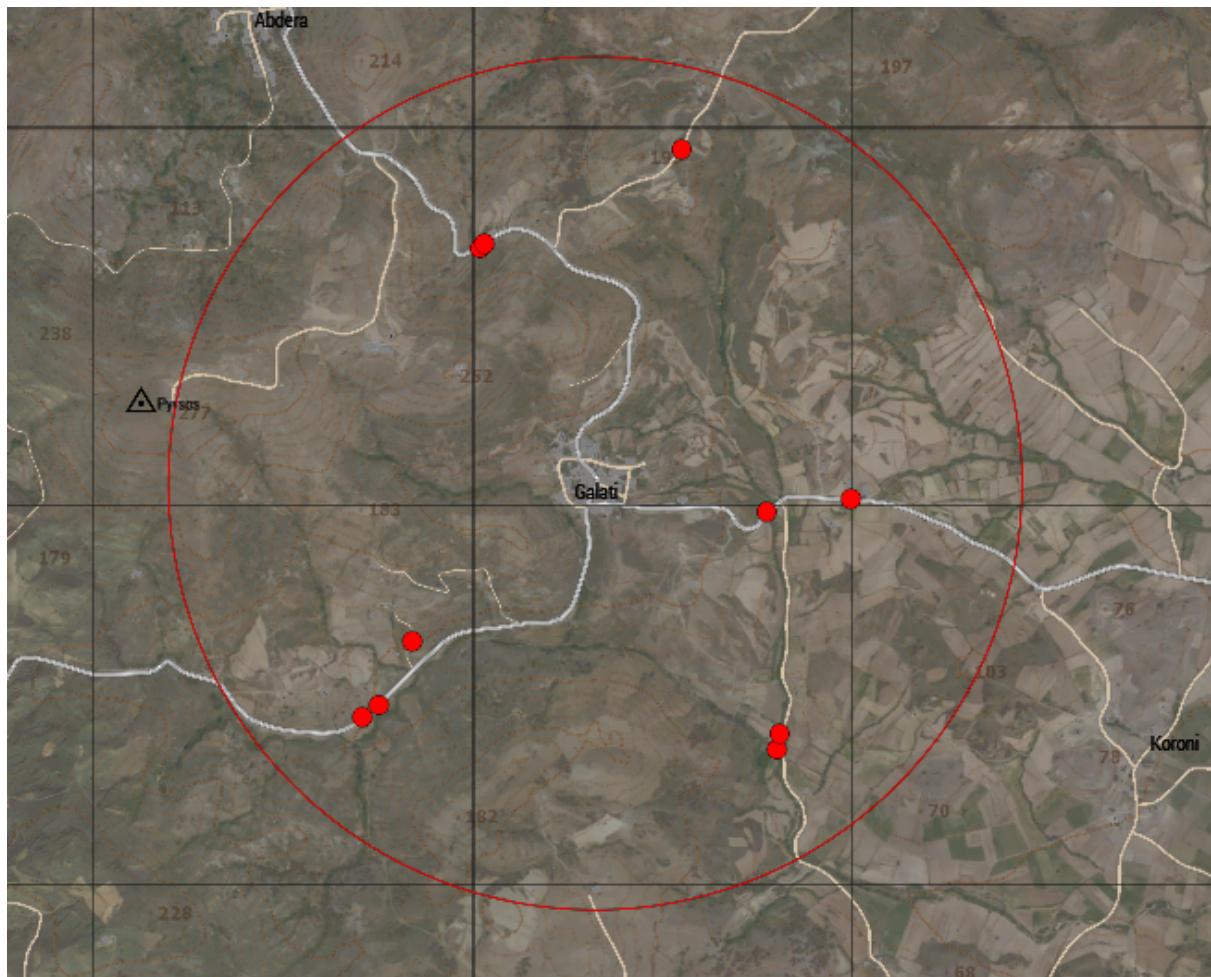
## Land minefield > Anti-material doctrine:



**Anti-Material** land minefield (its tag is “AM”) has the following features:

- Its focus is to neutralize the mid and heavy ground vehicles;
- Its mines avoid water only;
- (optional) Its mines avoid civilian areas;
- (optional) Its mines avoid topographic accidents.

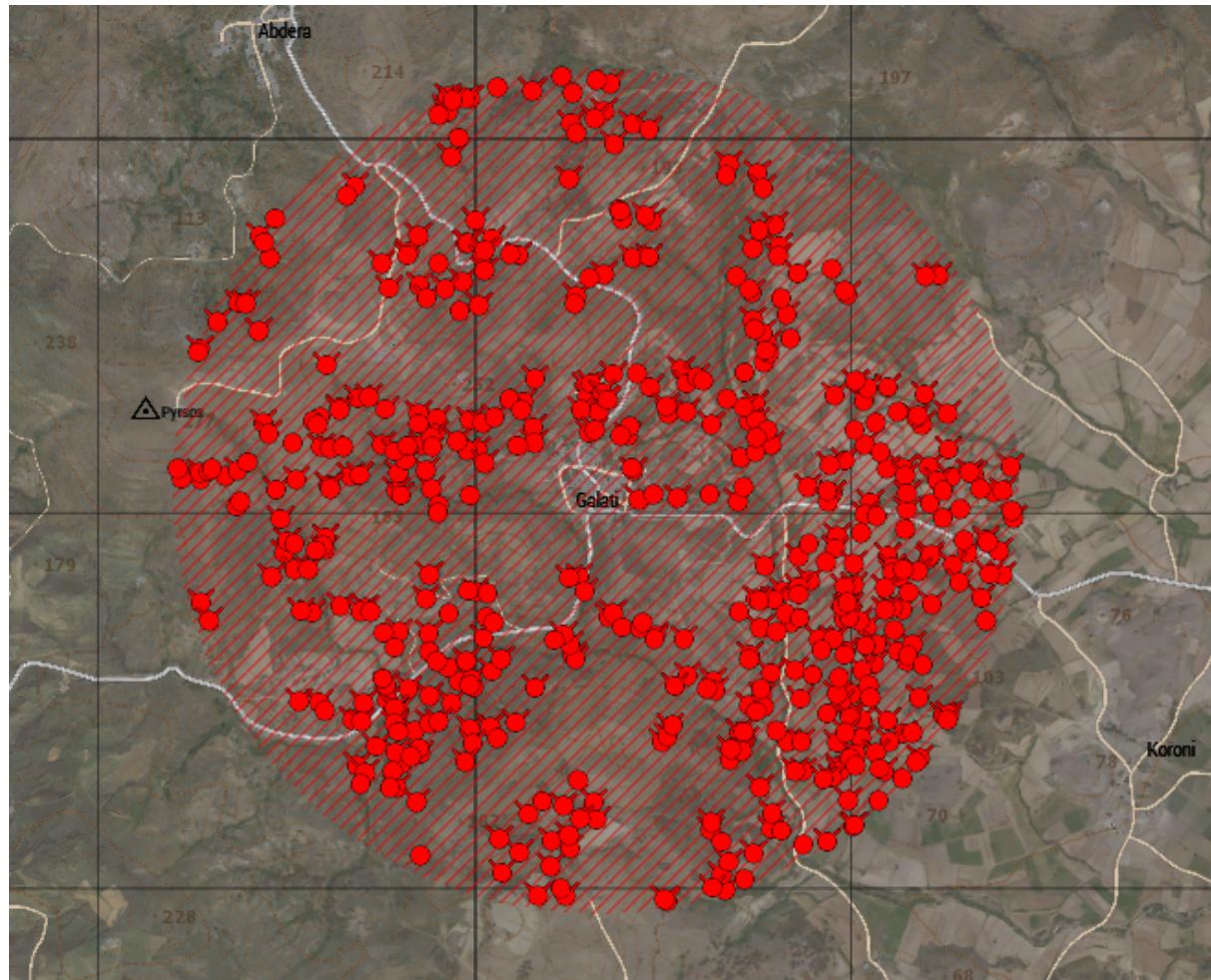
## Land minefield > Limited Anti-material doctrine:



**Limited Anti-Material** land minefield (its tag is “AM” but the `ETH_AMonlyOnRoads` must be `true` in `fn_ETH_management.sqf` file) has the following features:

- Its focus is to neutralize only the mid and heavy ground vehicles traveling on roads and streets;
- Its mines avoid everywhere, except roads and streets;
- (optional) Its mines avoid civilian areas;
- (optional) Its mines avoid topographic accidents.

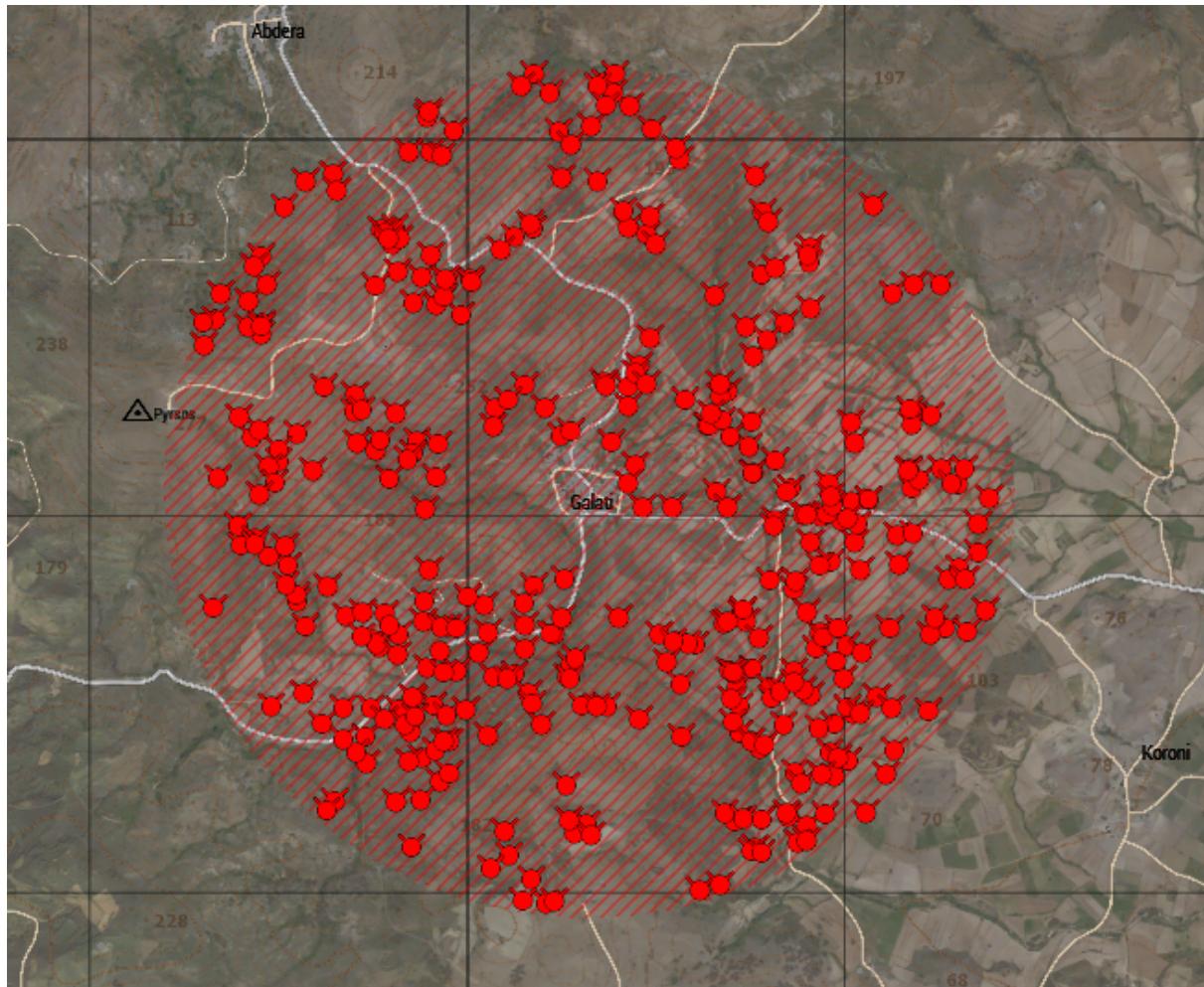
## Land minefield > Hybrid doctrine:



**Hybrid** land minefield (its tag is “**HY**”) has the following features:

- Its focus is split into AP and AM sub-doctrines;
- Its mines have the same AP and AM features;
- AP gets a more significant proportion of the planted mines.

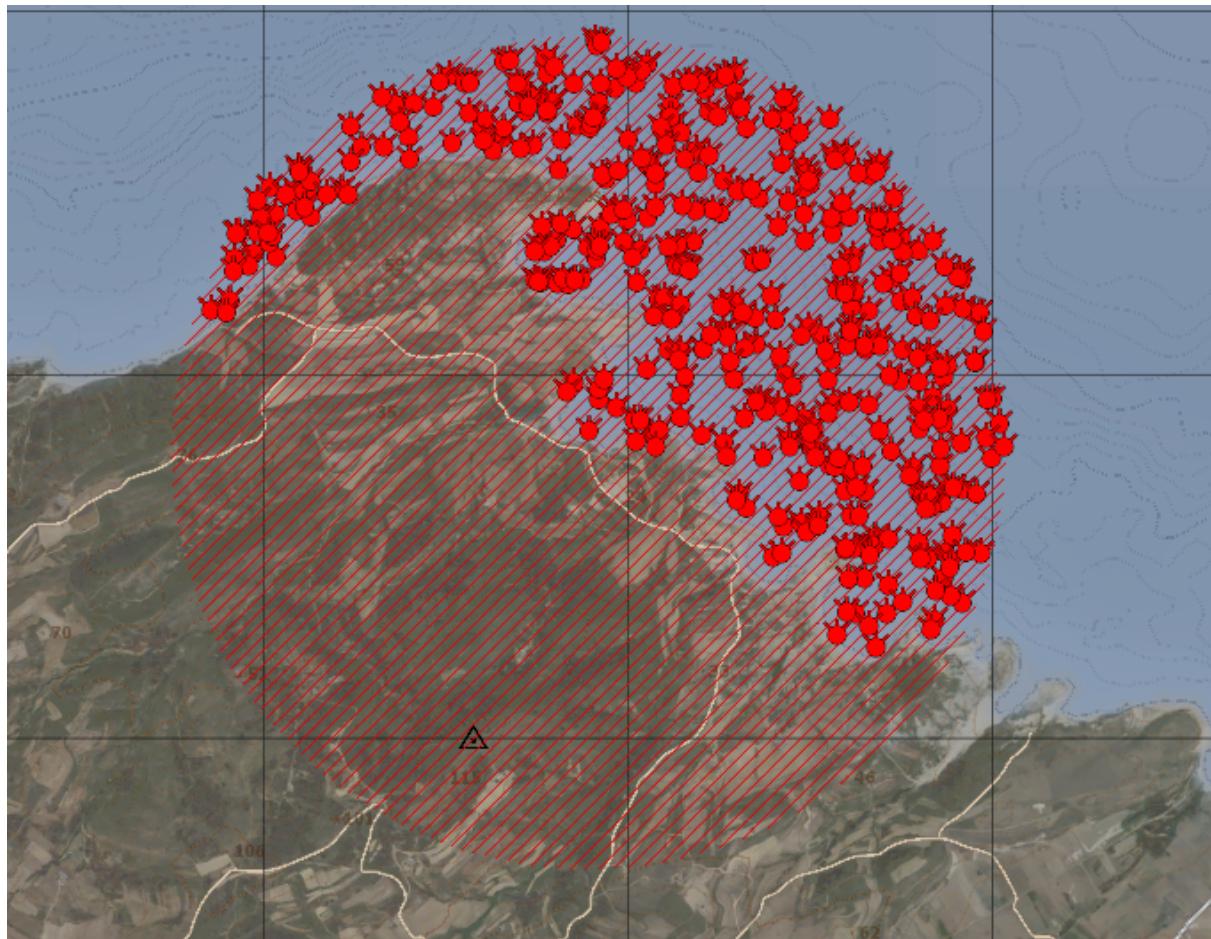
## Land minefield > Limited Hybrid doctrine:



**Limited Hybrid** land minefield (its tag is “HY” but the `ETH_AMonlyOnRoads` must be *true* in `fn_ETH_management.sqf` file) has the following features:

- Its focus is split into AP and AM sub-doctrines but AM targeting only mid and heavy ground vehicles on roads and streets;
- Its AP mines have the same AP features;
- Its AM mines have the same Limited AM features;
- AP gets a more significant proportion of the planted mines.

## Naval minefield > Anti-Material doctrine:



**Anti-Material naval** minefield (its tag is “**NAM**”) has the following features:

- Its focus is to neutralize the mid and heavy naval vehicles;
- Its mines avoid terrain only;

Now, you are ready [to create your minefields](#) as you need for your mission.

## How to create a minefield?

Make sure your script has *true* what you want to apply in your mission:

```
fn_ETH_management.sqf X
1 //-.ETHICS-MINEFIELDS-v1.3
2 //-.File:-your_mission\ETHICSMinefields\fn_ETH_management.sqf
3 //-.by-thy-(@aldolammel)
4
5 //-.Runs-only-in-server:
6 if (!isServer) exitWith {};
7
8
9 //-.PARAMETERS-OF-EDITOR'S-OPTIONS:
10 ETH_debug = true; .....//.true--shows-crucial-info-only-to
11 ETH_visibleOnMap = true; .....//.true--The-faction-minefield's-an
12 ETH_styleColor = "ColorRed"; .....//.color-of-minefields-on-map-in-game..D
13 | ETH_styleBrush = "FDiagonal"; .....//.texture-of-minefields-on-map-in-g
14 | ETH_styleAlpha = 1; .....//.0.5--Minefields-barely-invisible
15 ETH_minesIntensity = "MID"; .....//.Proportional-number-of-mines-thro
16 ETH_landMinesDoctrines = true; .....//.true--Landmines-will-spawn-if-th
17 | ETH_landmineClassAP = "APERSMine"; .....Default--"APERSMine"--https://
18 | ETH_landmineClassAM = "ATMine"; .....Default--"ATMine"--https://
19 | ETH_AMonlyOnRoads = true; .....//.true--AM-Landmines-will-be
20 ETH_navalMinesDoctrines = false; .....//.true--nauticalmines
21 | ETH_navalmineTypeAM = "UnderwaterMineAB"; .....Default--"UnderwaterM
22 ETH_ethicsRules = true; .....//.true--script-follows-military-co
23 ETH_topographyRules = true; .....//.true--script-follows-topography
24 ETH_dynamicSimulation = true; .....//.WIP
```

Already on Eden Editor, follow this:

1. Press F6 and select the “Area Markers”;
2. Select, for example, an ellipse and, pressing Shift, click over the map and drag until the desired size;
3. Go to your new area-marker attributes, clicking twice over it;
4. In “Variable Name”, type one of these logics down below:

Variable Name possibilities:	Description:
mf_ap_1	Minefield with Anti-Personnel doctrine;
mf_am_1	Minefield with Anti-Material doctrine;
mf_ap_blu_1	Minefield known only to Blufor;

mf_am_ind_1	Minefield known only to Independent;
mf_hy_opf_1	Hybrid minefield (AP+AM) known only to Opfor;
mf_nam_1	<b>NEW!</b> Naval minefield with Anti-Material doctrine;
mf_nam_opf_1	<b>NEW!</b> Naval minefield known only to Opfor;

5. If you want to add more minefields, just copy and paste the area marker on Eden and it will increase the variable name's number automatically through each new marker.
6. Now just run your mission to test it.

The logic behind the variable name's table above is here, starting always with the prefix "mf". With no this variable name structure, the area marker is not considered to be a minefield:

Doctrine tag	Description:
"AP" or "ap"	Expected a land minefield with Anti-personnel mines;
"AM" or "am"	Expected a land minefield with Anti-material mines;
"HY" or "hy"	A land minefield with AP + AM (AP greater amount than AM);
"NAM" or "nam"	<b>NEW!</b> A naval minefield with Anti-material mines;

Faction tag	Description:
No faction tag	The minefield is unknown for everyone (players and AI's);
"BLU" or "blu"	The minefield is known only by Blufor (players and AI's);
"OPF" or "opf"	The minefield is known only by Opfor (players and AI's);
"IND" or "ind"	The minefield is known only by Independent (players and AI's);

**Important:** for more customization, in your mission's folder, access this file:

[\ETHICSMinefields\fn\\_ETHICS\\_management.sqf](#)

Now it's a good time to check [how you can increase the danger of the minefields created.](#)

## How to increase or decrease the number of mines in each minefield?

The amount of mines in a minefield is automatically calculated, based on its size and the intensity of mines that the mission editor sets. You might change the minefield intensity through 4 preset levels: LOW, MID, HIGH, and EXTREME.

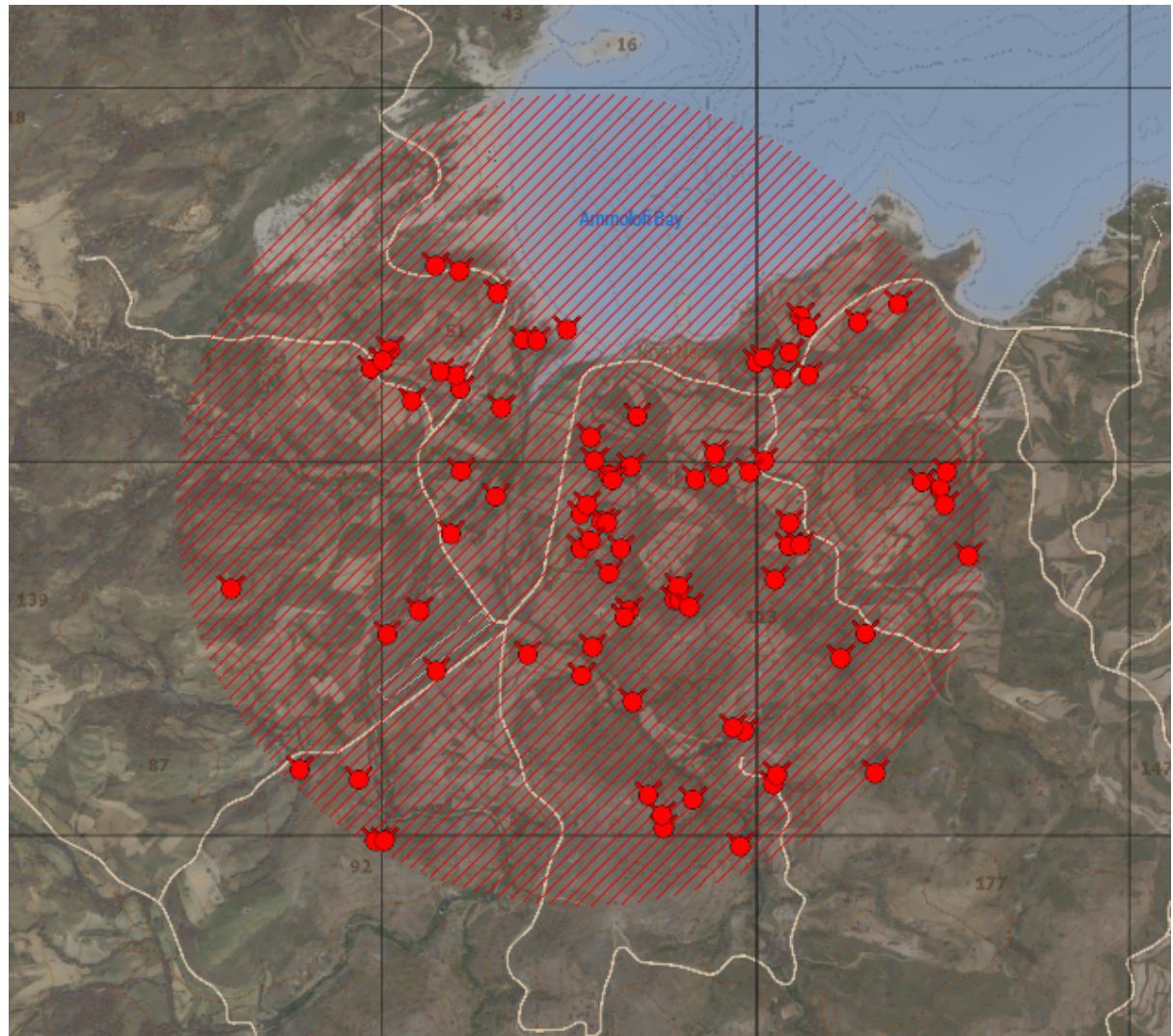
This setting will impact all minefields in your mission.

```
fn_ETH_management.sqf X

1 //-.ETHICS-MINEFIELDS-v1.3
2 //-.File:-your_mission\ETHICSMinefields\fn_ETH_management.sqf
3 //-.by-thy-(@aldoLammel)
4
5 //-.Runs-only-in-server:
6 if (!isServer) exitWith {};
7
8
9 //-.PARAMETERS-OF-EDITOR'S-OPTIONS:
10 ETH_debug = true; .....//.true--shows-crucial-info-on-map
11 ETH_visibleOnMap = true; .....//.true--The-faction-minefield
12 ETH_styleColor = "ColorRed"; .....//.color-of-minefields-on-map-in-game
13 | ETH_styleBrush = "FDiagonal"; .....//.texture-of-minefields-on-map
14 | ETH_styleAlpha = 1; .....//.0.5--Minefields-barely-inv
15 | ETH_minesIntensity = "MID"; .....//.Proportional-number-of-mine
16 ETH_landMinesDoctrines = true; .....//.true--Landmines-will-spawn
17 | ETH_landmineClassAP = "APERSMine"; .....//.Default--"APERSMine"-->
18 | ETH_landmineClassAM = "ATMine"; .....//.Default--"ATMine"-->
19 | | ETH_AMonlyOnRoads = false; .....//.true--AM-Landmines
20 ETH_navalMinesDoctrines = false; .....//.true--nautical
21 | ETH_navalmineTypeAM = "UnderwaterMineAB"; .....//.Default--"UnderwaterMineAB"
22 ETH_ethicsRules = true; .....//.true--script-follows-military
23 ETH_topographyRules = true; .....//.true--script-follows-topography
24 ETH_dynamicSimulation = true; .....//.WIP
```

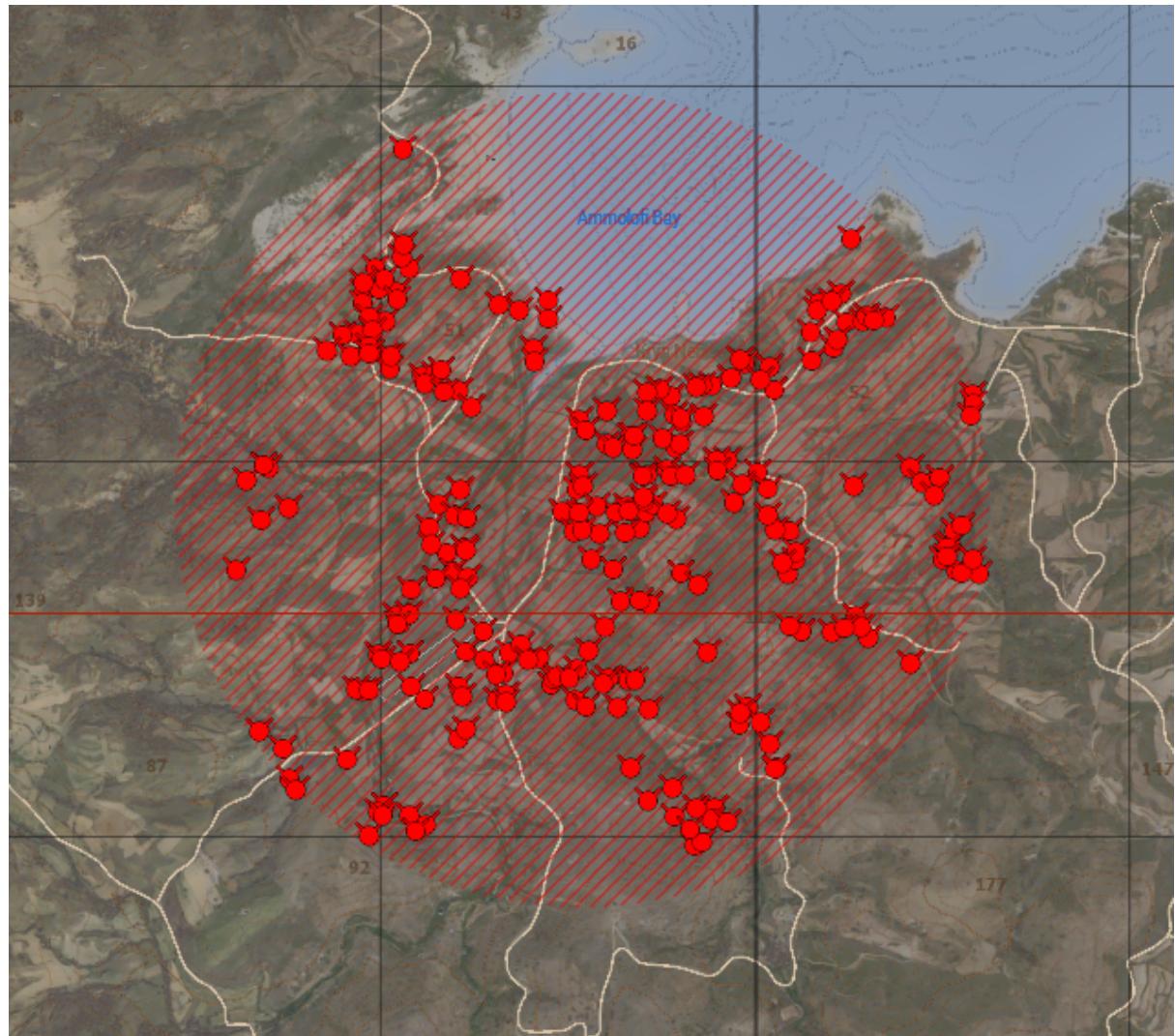
Let's use the same minefield with different settings to check the mines' amount in each case:

Mines' Intensity > Low:



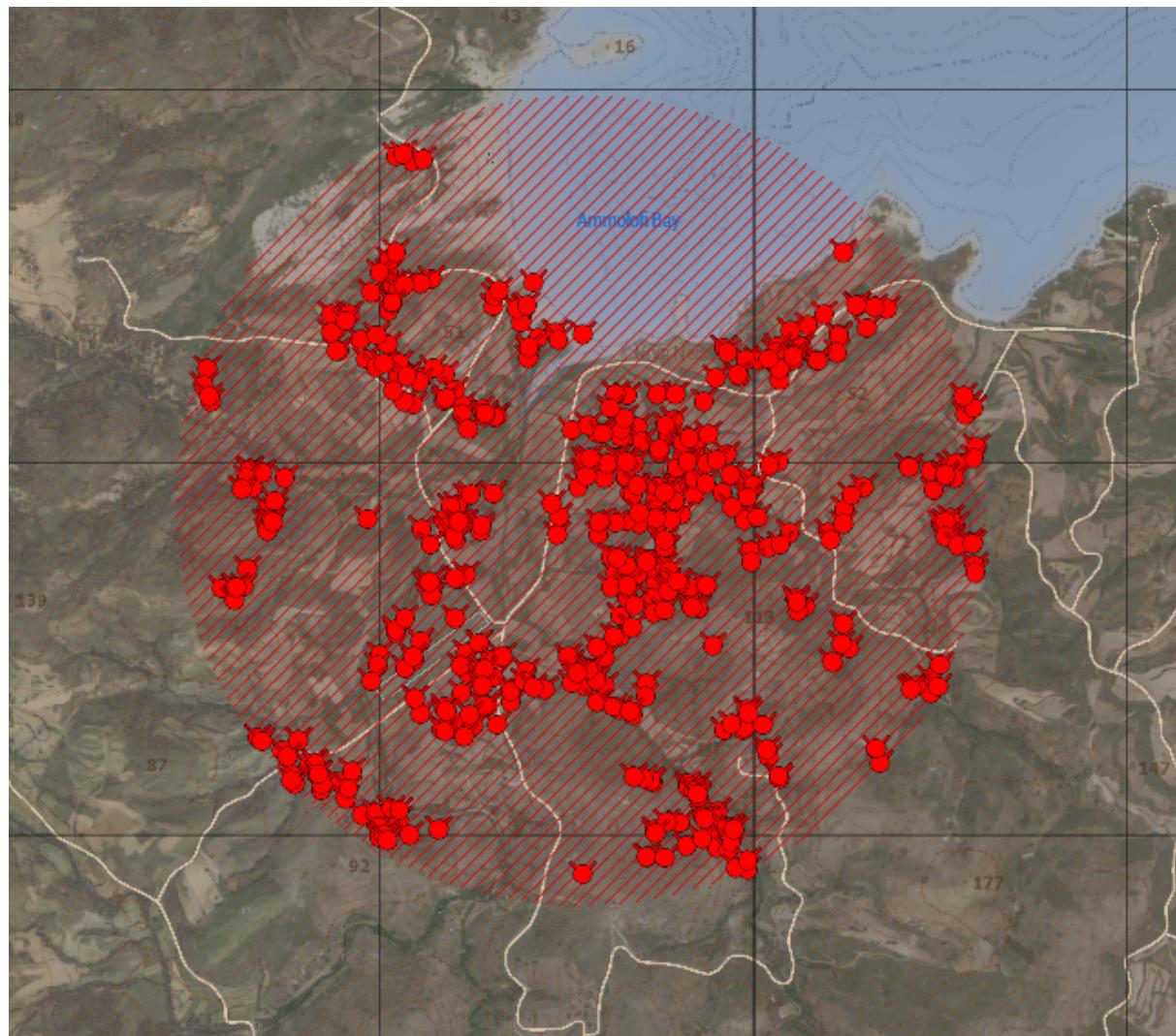
In the LOW example, 84 mines were planted.

Mines' Intensity > Mid:



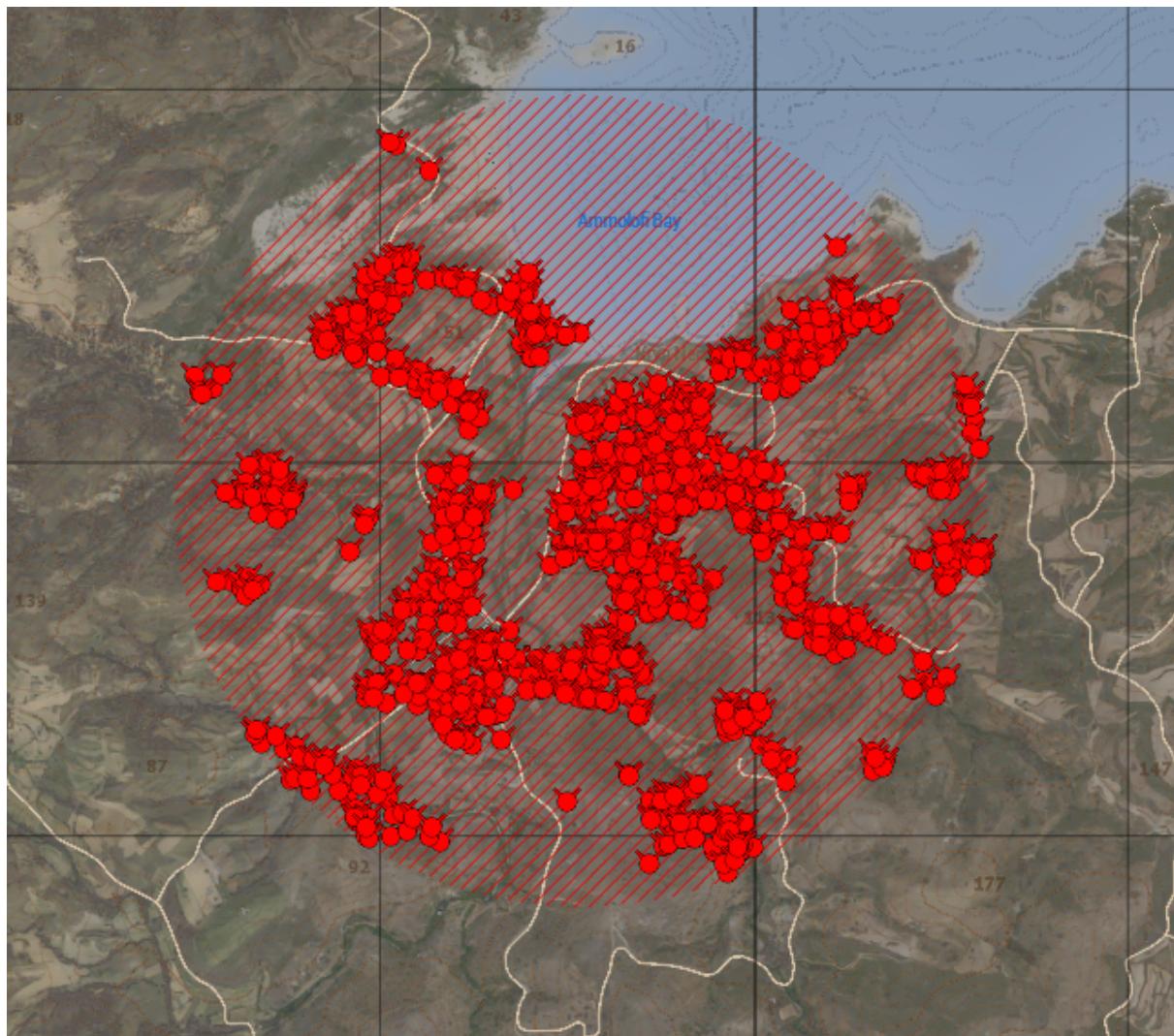
In the MID example, 250 mines were planted.

Mines' Intensity > High:



In the HIGH example, 476 mines were planted.

Mines' Intensity > Extreme:

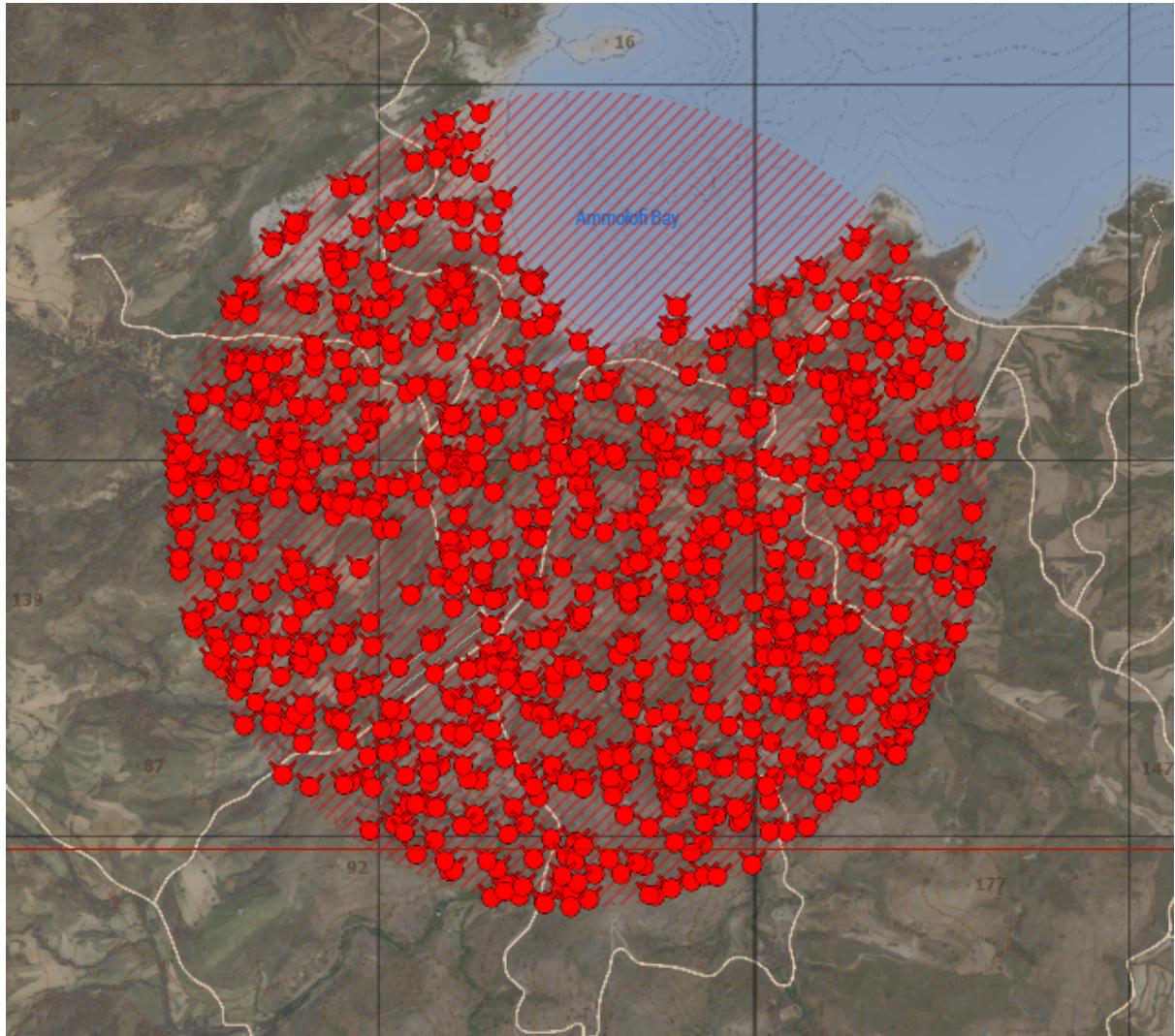


In the EXTREME example, 946 mines were planted.

Is there a way to further increase the danger of a minefield?

Yes. The mission editor might turn off the global ethics rules (`ETH_ethicsRules`) and global topography rules (`ETH_topographyRules`) of minefields, as well as turn off the “AM ammunition only on roads” (`ETH_AMonlyOnRoads`).

Example with no rules with MID intensity (812 mines in total):



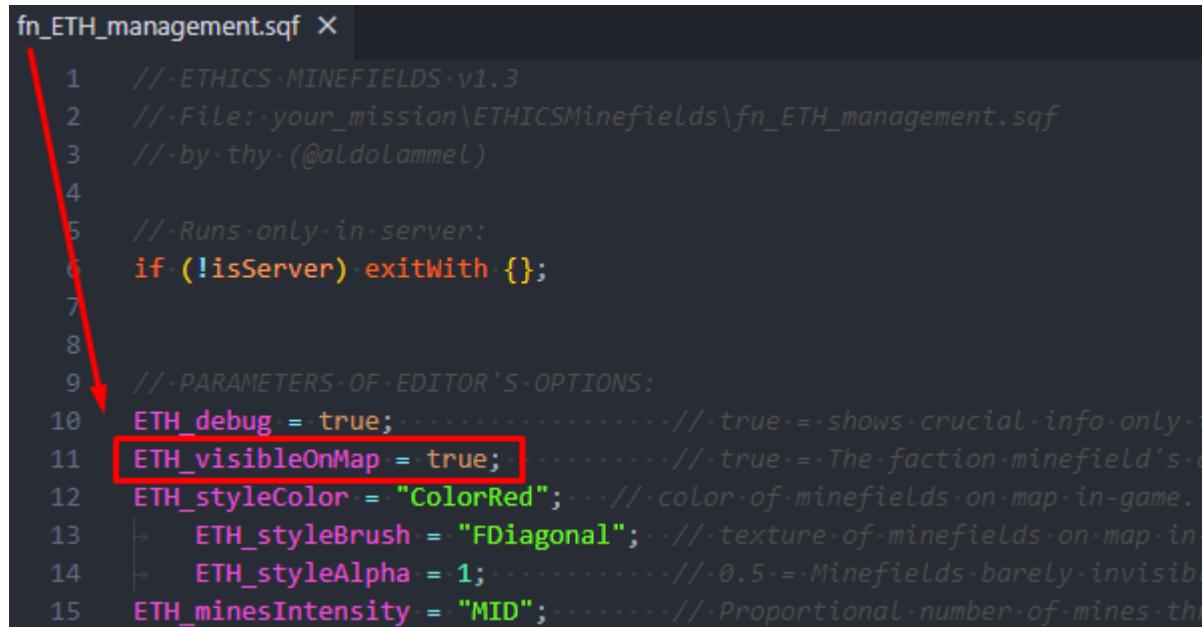
But how to increase even fucking more mines only at specific  
minefields and not for all of them?

Be careful with the CPU server performance, man! You can create more minefields  
literally over another one to increase even more the danger in an area.

Did you know you can also [set a faction as the owner of each minefield](#)?

## How to create a minefield that a faction (including its AI) can avoid?

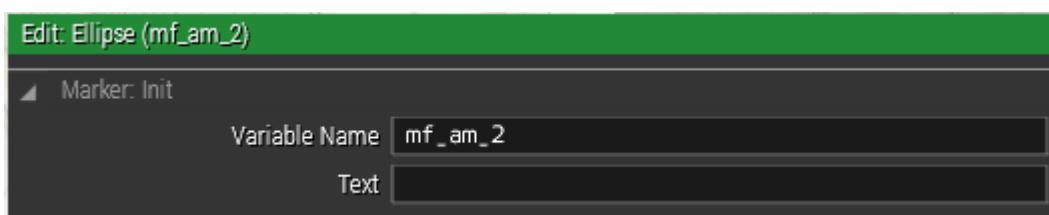
In Arma 3, if your side/faction knows about a minefield you got some benefits. At first, your AI units have the opportunity to avoid each mine spot in that minefield. Second, in the ETHICS script, if the mission editor allows the known minefields to be visible, you will see all minefields built by your side on your map if you got one.



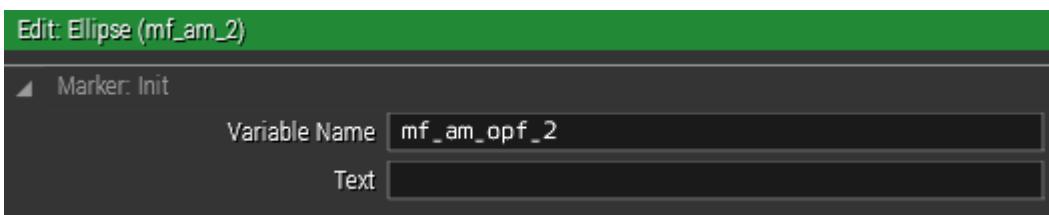
```
fn_ETH_management.sqf X
1 //·ETHICS·MINEFIELDS·v1.3
2 //·File···your_mission\ETHICSMinefields\fn_ETH_management.sqf
3 //·by·thy·(@aldolammel)
4
5 //·Runs·only·in·server:
6 if (!isServer) exitWith {};
7
8
9 //·PARAMETERS·OF·EDITOR'S·OPTIONS:
10 ETH_debug = true; .....//·true···shows·crucial·info·only·
11 ETH_visibleOnMap = true; .....//·true···The·faction·minefield's·
12 ETH_styleColor = "ColorRed"; .....//·color·of·minefields·on·map·in-game·
13 ETH_styleBrush = "FDiagonal"; .....//·texture·of·minefields·on·map·in
14 ETH_styleAlpha = 1; .....//·0.5···Minefields·barely·invisib
15 ETH_minesIntensity = "MID"; .....//·Proportional·number·of·mines·th
```

On Eden Editor:

An example of a minefield from an **unknown** side:



And an example of the same minefield, but now assigned to **Opf** side:



**Debug tip:** when Debugging, all minefields assigned to your faction will have the minefields marked in red on the map while all others, from other factions or unknown, will be in yellow.

Some missions need a different approach, then keep in mind [you also might customize the ammunition used for each doctrine](#).

## How to customize the doctrine ammunition from a minefield?

Today, the Ethics script works with two different types of mine: an anti-personnel type (AP); and an anti-material type (AM). The mission's editor can easily change the ammunition of both doctrines, using Arma 3 vanilla options ([official explosives list](#)) and options from mods like RHS and CUP, for example.

```
fn_ETH_management.sqf X
1 //·ETHICS·MINEFIELDS·v1.3
2 //·File:·your_mission\ETHICSMinefields\fn_ETH_management.sqf
3 //·by·thy·(@aldolammel)
4
5 //·Runs·only·in·server;
6 if (!isServer) exitWith {};
7
8
9 //·PARAMETERS·OF·EDITOR'S·OPTIONS:
10 ETH_debug = true; //·true···shows·crucial·info·only·t
11 ETH_visibleOnMap = true; //·true···The·faction·minefield's·a
12 ETH_styleColor = "ColorRed"; //·color·of·minefields·on·map·in-game·
13 → ETH_styleBrush = "FDiagonal"; //·texture·of·minefields·on·map·in-
14 → ETH_styleAlpha = 1; //·0.5···Minefields·barely·invisibl
15 ETH_minesIntensity = "MID"; //·Proportional·number·of·mines·thr
16 ETH_landMinesDoctrines = true; //·true···Landmines·will·spawn·if·t
17 → ETH_landmineClassAP = "APERSMine"; //·Default···"APERSMine"···http
18 → ETH_landmineClassAM = "ATMine"; //·Default···"ATMine"···https://
19 → ETH_AMonlyOnRoads = false; //·true···AM·Landmines·will·
20 ETH_navalMinesDoctrines = false; //·true···nauticalmines
21 → ETH_navalmineTypeAM = "UnderwaterMineAB"; //·Default···"Underwater
22 ETH_ethicsRules = true; //·true···script·follows·military·c
23 ETH_topographyRules = true; //·true···script·follows·topography
24 ETH_dynamicSimulation = true; //·WIP
```

**Critical:** be wise because if you set an anti-tank mine type on AP doctrine, it would be catastrophic for the script where its logic would brake. Always make some research about the ammunition you want to use to check for what doctrine fits better.

On Eden Editor:

An example of a land minefield loaded with Anti-Personnel (AP) doctrine:

### Edit: Ellipse (mf\_am\_2)

Marker: Init

Variable Name

Text

And another one with Anti-Material (AM) doctrine:

### Edit: Ellipse (mf\_am\_2)

Marker: Init

Variable Name

Text

The mission editor also is able to set a hybrid doctrine (HY) to land minefields:

### Edit: Ellipse (mf\_hy\_5)

Marker: Init

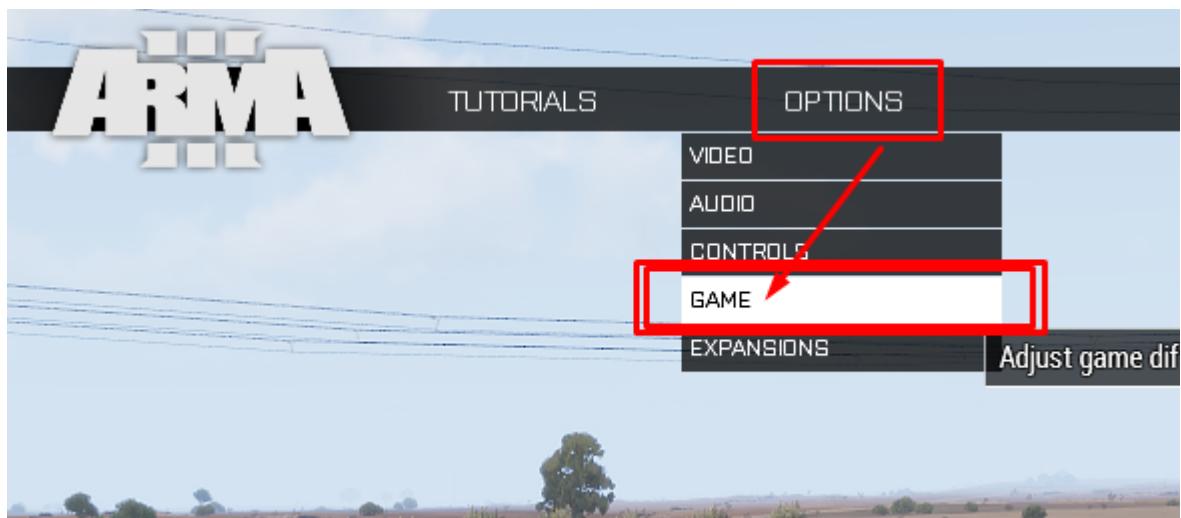
Variable Name

Text

## How to see each mine in all minefields on the map?

It depends on the server settings. Even if you're playing as a single-player mission, you are your own server ("Hosted server" type). That said, Arma 3 has a couple of features that allow a server to show its players all early revealed mines on the mission. In my dedicated server, I do not use those settings to reveal known mines on the map, although only when I am building some mission with minefields it's crucial (for debugging purposes and checking the CPU performance) to know how many mines are loaded.

On the game main menu:



**Debug tip:** even when debugging I don't use the feature above. For me, it's super annoying to have many HUD icons on the screen, but the feature below is great for debugging purposes.



## How to add new ammunition doctrines?

[Easily you might change the ammunition from an existing doctrine](#), but adding a new doctrine is not possible with the current ETHICS script scope.

## How to contribute to the ETHICS script?

Discussion on Bohemia Forums

<https://forums.bohemia.net/forums/topic/241257-release-ethics-minefields/>

Changelog on GitHub

<https://github.com/aldolammel/Arma-3-Ethics-Minefields-Script#readme>

## Author

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