

Documentation

Ethics Minefields

Last update: v1.5

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What is this script?

ETHICS is a full solution script for ARMA 3 that provides wide creation and management over static kill zones like minefields, UXO zones, and trap zones. Built for single-player and multiplayer, ETHICS include kill zone doctrines such as land anti-personnel, land anti-materiel, naval anti-materiel, unexploded ordnance, and booby-trap.

Demo on youtube: [soon](#)

What exactly are ETHICS features? What can it do?

- Drag and drop a marker on Eden to create a unique minefield;
- Ethics control (ON/OFF) to avoid planting mines through civilian zones;
- Topography control (ON/OFF) to avoid rock clusters, and mountains;
- **NEW!** Built also naval minefields, UXO zones, and trap areas;
- Set (or not) who is the faction owner of each kill zone;
- Set for each classic minefield: Anti-personnel, Anti-materiel, or Hybrid;
- **NEW!** Option for AM doctrine plants its mines only on roads.

Complete 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:

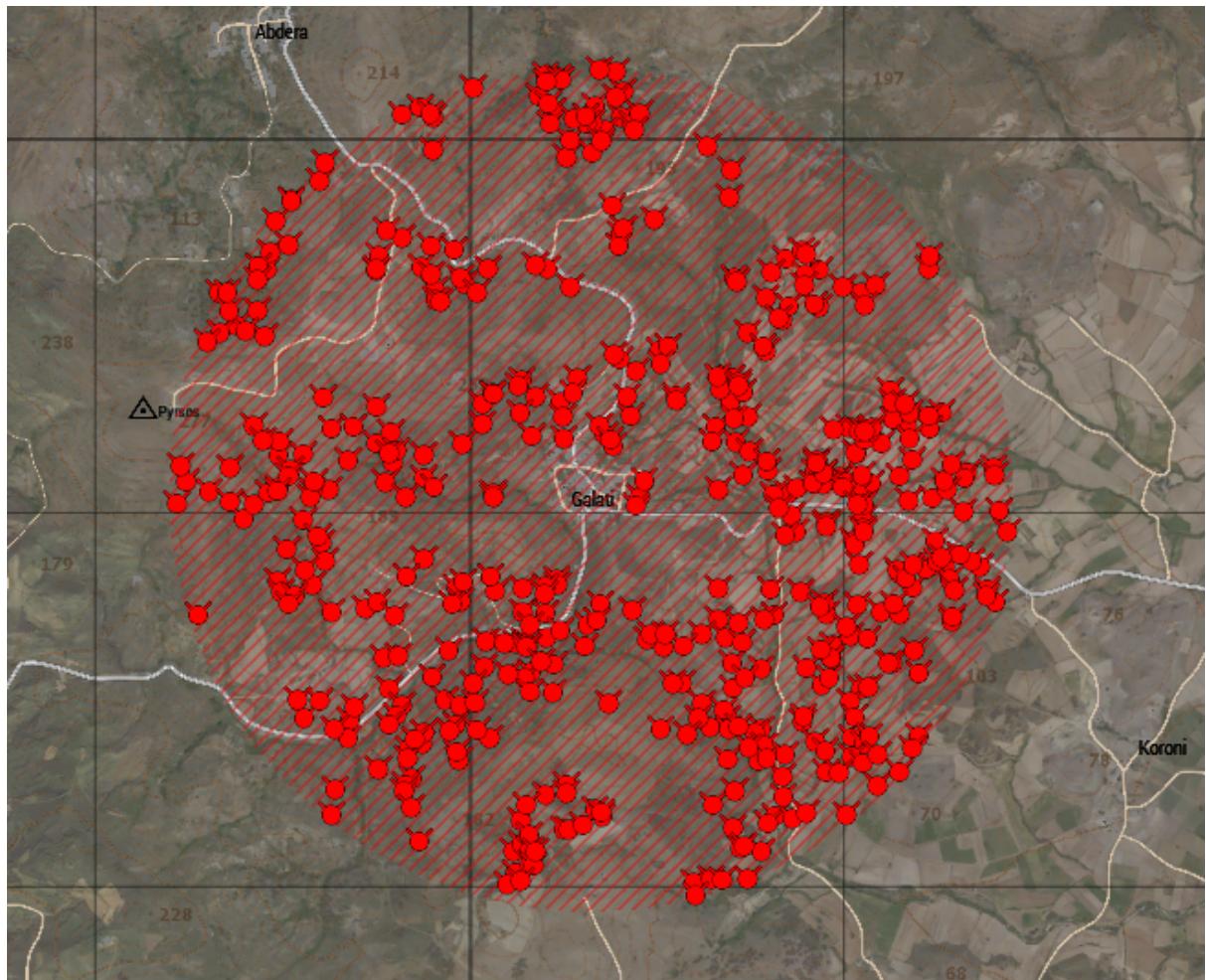
```
class cfgFunctions
{
    // ETHICS MINEFIELDS:
    #include "ETHICSMinefields\THY_ETH_functions.hpp"
};
```

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

What types of minefields can be built?

You might create land minefields, naval minefields, unexploded ordnance zones, and trap zones. All types of kill zones built by Ethics script got their device positions randomly inside the [designed area-marker](#) by the mission's editor on Eden. On this script, these variations of kill zones are called “doctrines”, and here is each of them:

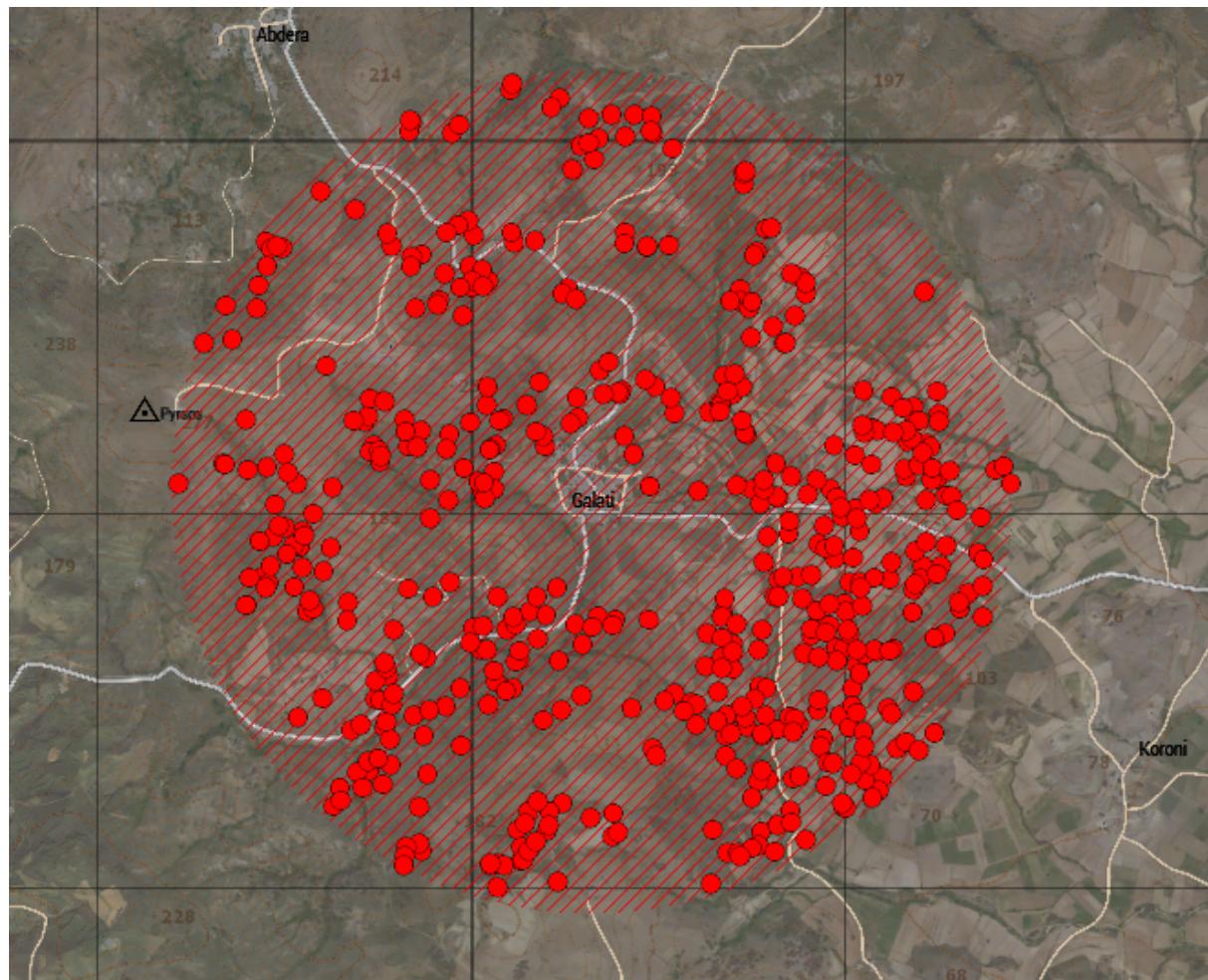
Minefield > Anti-personnel doctrine:



Anti-Personnel doctrine (tag “AP”) has the following features:

- Its land minefield is focused to neutralize soldiers;
- Device occurrence in the area is high;
- Its mines avoid water and roads;
- (optional) Its mines avoid civilian areas;
- (optional) Its mines avoid topographic accidents;
- (optional) The minefield danger’s area is visible for its owner.

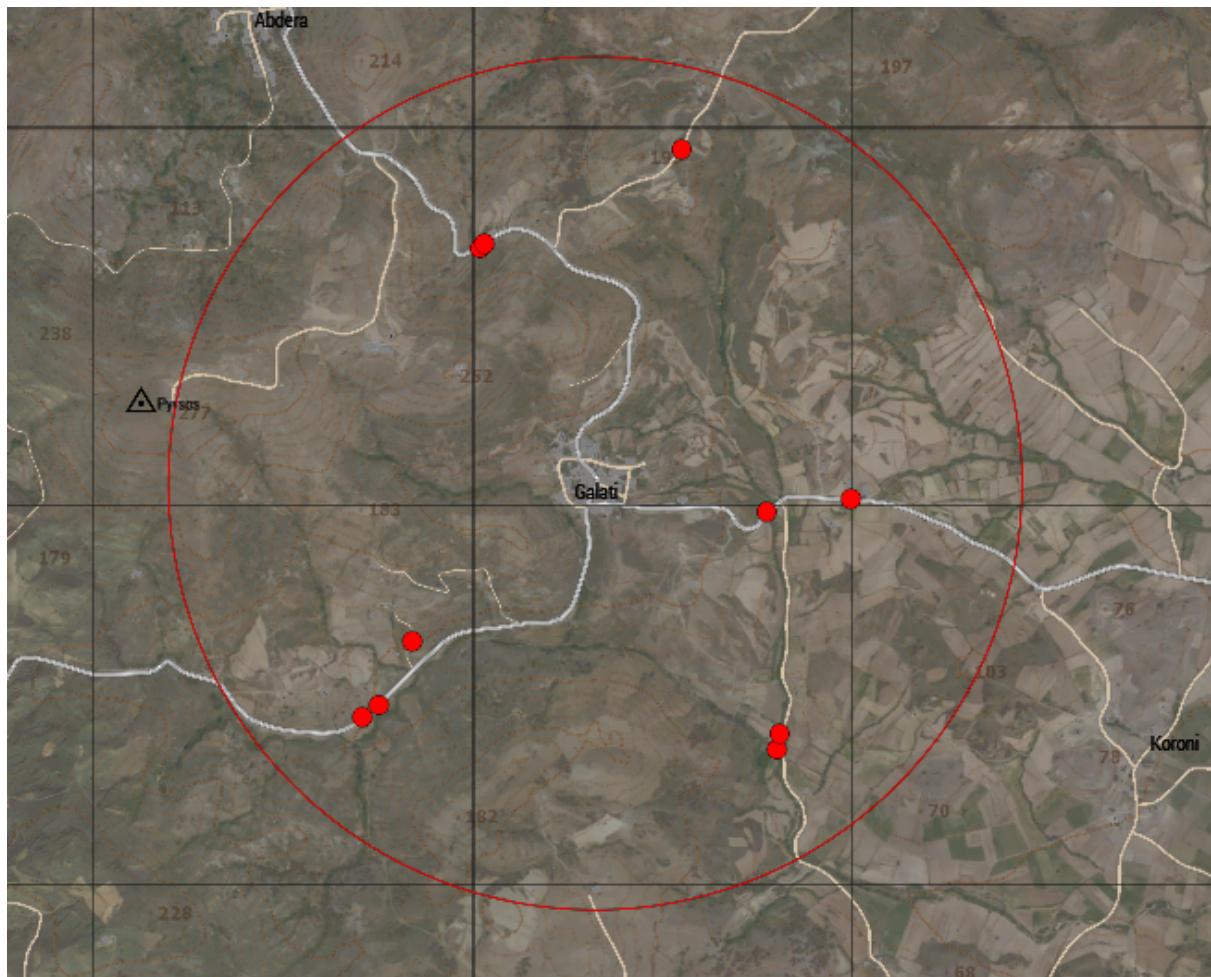
Minefield > Anti-materiel doctrine:



Anti-Materiel doctrine (tag “AM”) has the following features:

- Its land minefield is focused to neutralize mid and heavy ground vehicles;
- Device occurrence in the area is high;
- Its mines avoid water only;
- (optional) Its mines avoid civilian areas;
- (optional) Its mines avoid topographic accidents;
- (optional) The minefield danger's area is visible for its owner.

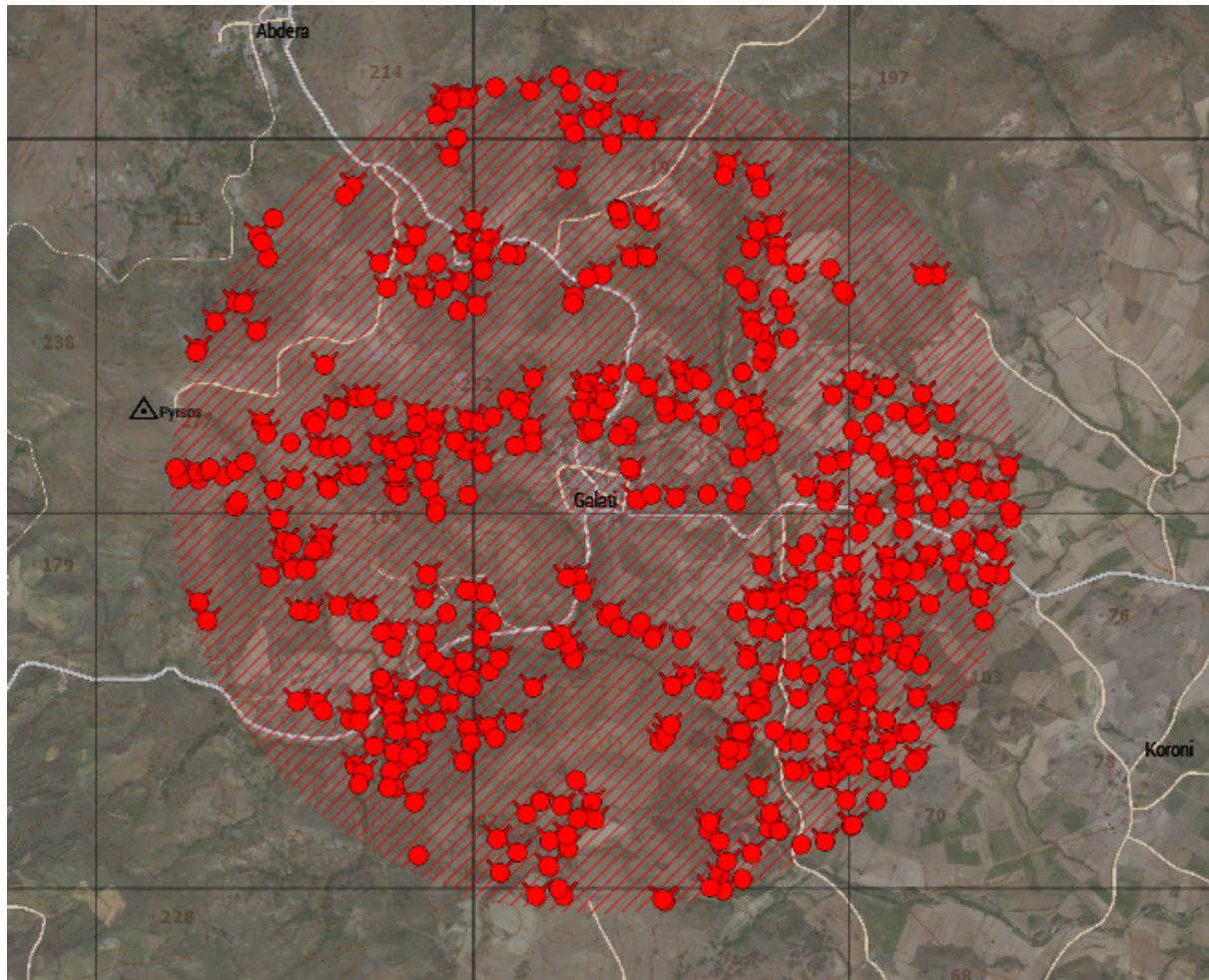
Minefield > Limited Anti-materiel doctrine:



Limited Anti-Materiel doctrine (tag “**AM**” but the *ETH_onlyOnRoadsAM* must be *true* in *fn_ETH_management.sqf*) has the following features:

- Its land minefield is focused to neutralize only mid and heavy ground vehicles driving on roads and streets;
- Device occurrence in the area is pretty low;
- Its mines avoid everywhere, except roads and streets;
- (optional) Its mines avoid civilian areas;
- (optional) Its mines avoid topographic accidents;
- (optional) The danger’s area is limited visible for its owner.

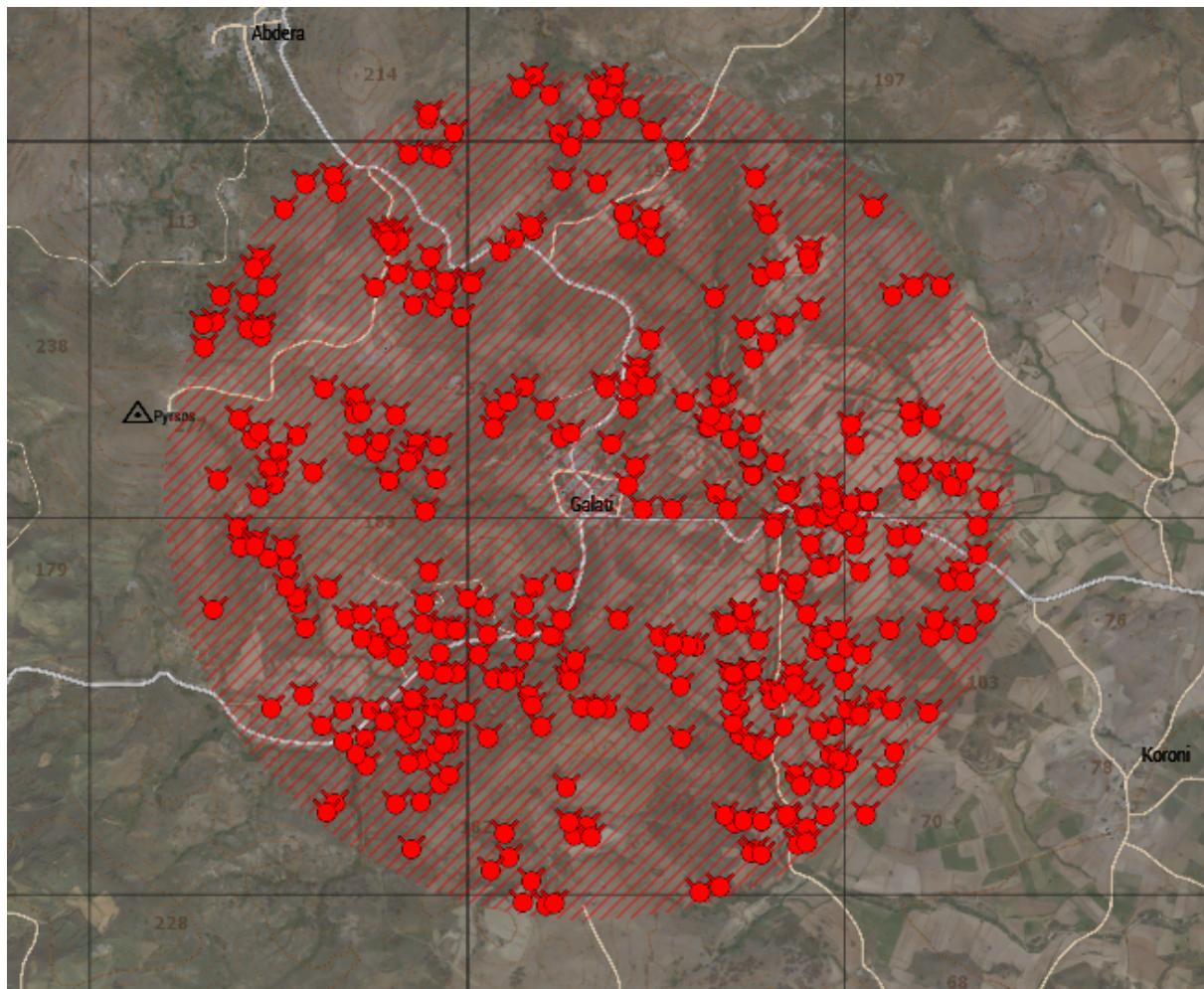
Minefield > Hybrid doctrine:



Hybrid doctrine (tag “**HY**”) has the following features:

- Its land minefield is split into AP and AM as sub-doctrines;
- Device occurrence in the area is high;
- Its AP mines have the same AP features;
- Its AM mines have the same AM features;
- AP gets a more significant proportion of the planted mines;
- (optional) The minefield danger’s area is visible for its owner.

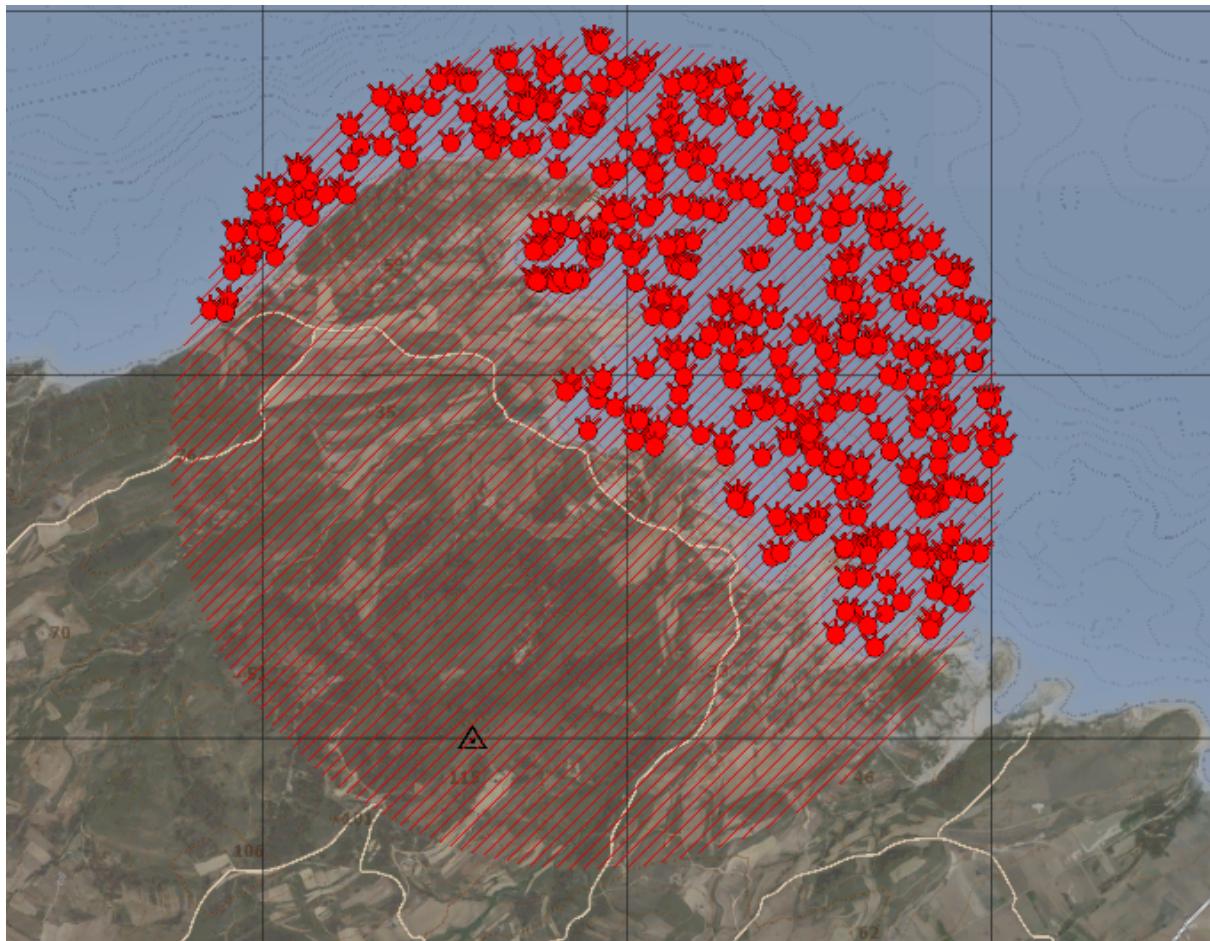
Minefield > Limited Hybrid doctrine:



Limited Hybrid doctrine (tag “HY” but the *ETH_onlyOnRoadsAM* must be *true* in *fn_ETH_management.sqf* file) has the following features:

- Its land minefield is split into AP and AM as sub-doctrines but AM mines are only over roads and streets;
- Device occurrence in the area is medium;
- 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;
- (optional) The minefield danger’s area is visible for its owner.

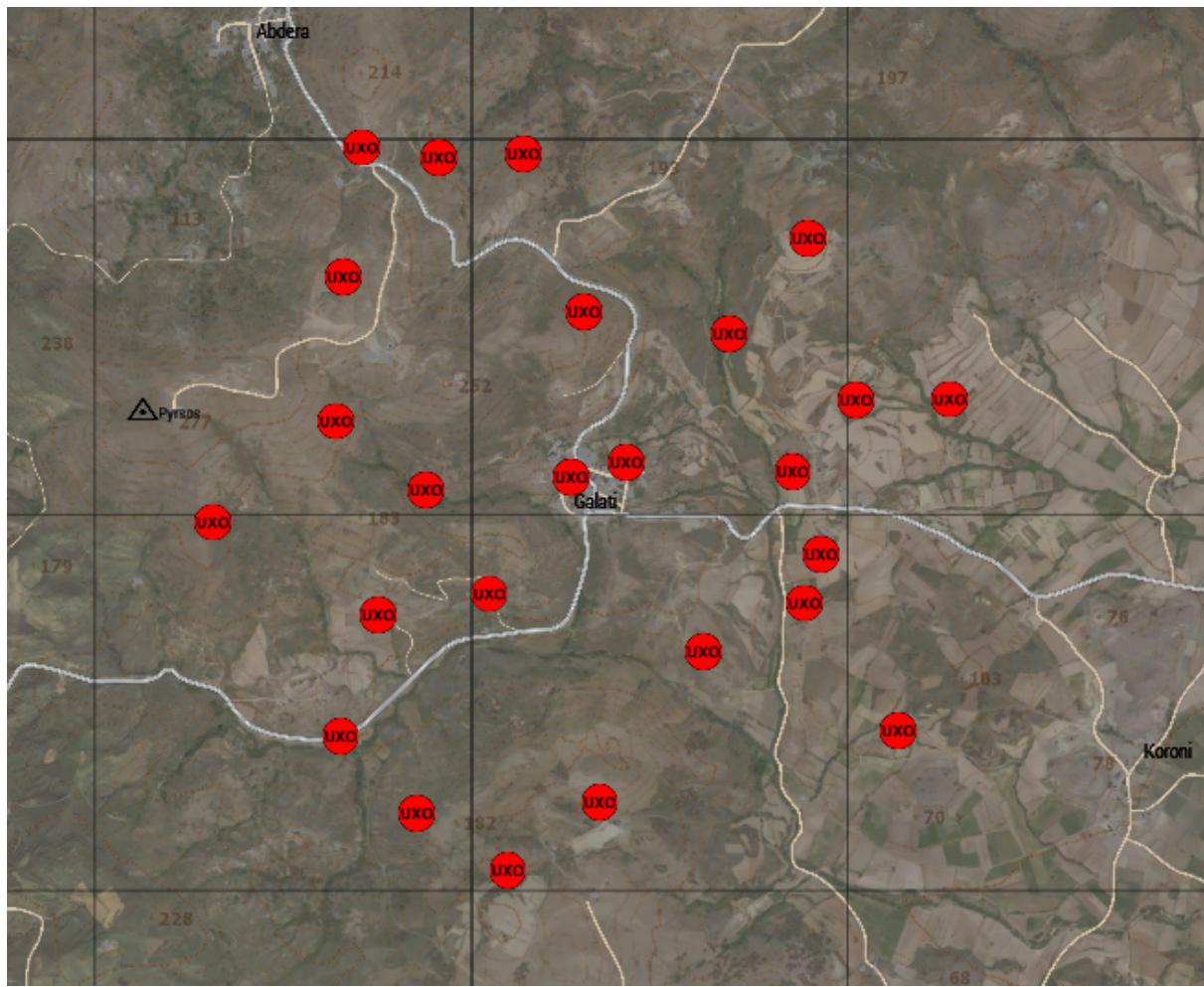
Minefield > Naval Anti-Materiel doctrine:



Naval Anti-Materiel doctrine (tag “**NAM**”) has the following features:

- Its naval minefield is focused to neutralize mid and heavy naval vehicles;
- Device occurrence in the area is high;
- Its mines avoid only terrain;
- (optional) The minefield danger's area is visible for its owner.

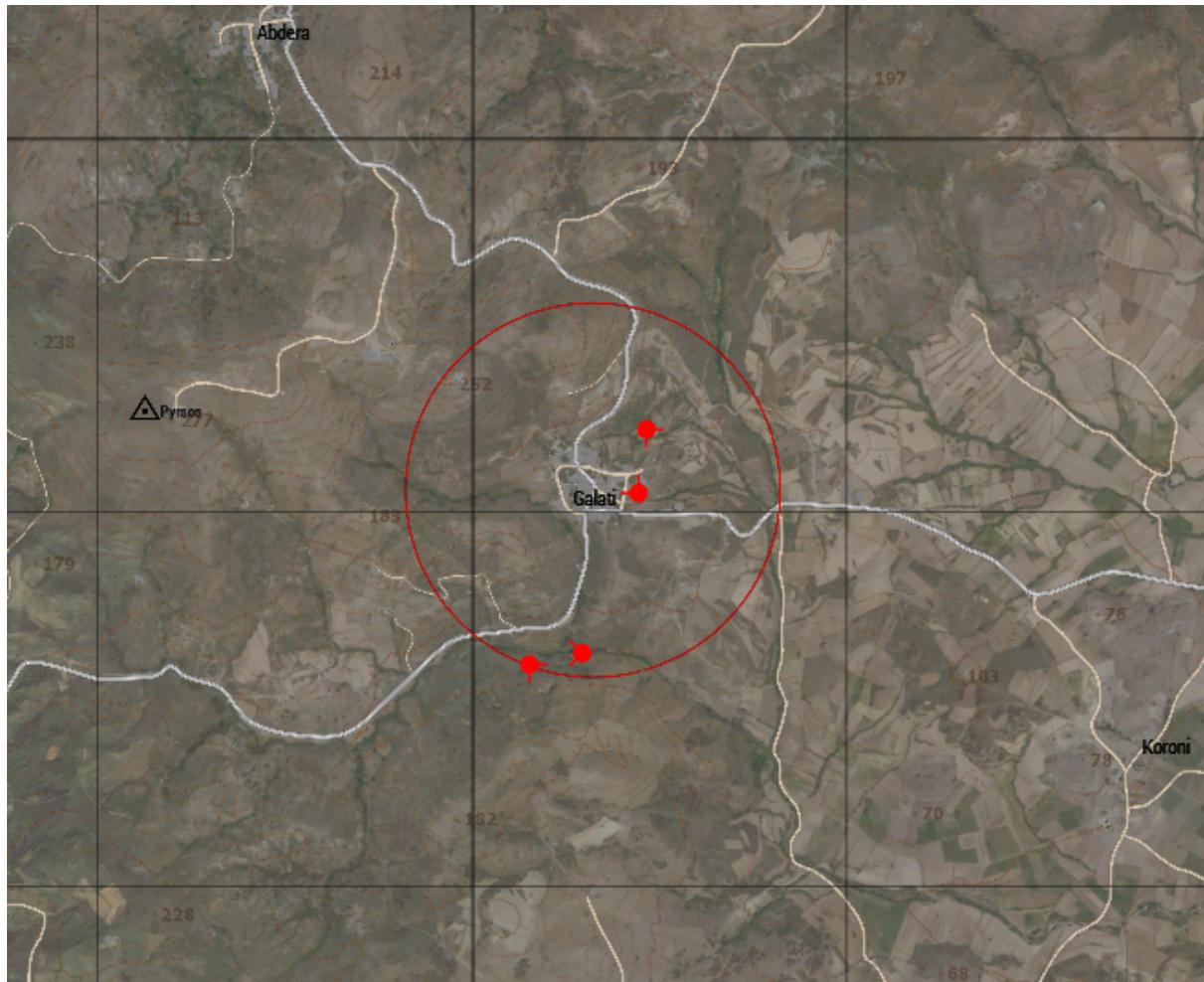
Unexploded Ordnance zone > UXO doctrine:



UXO doctrine (tag “UXO”) has the following features:

- Its zone has no focus but affects deadly civilians and soldiers;
- Device occurrence in the area is low;
- Its devices avoid nothing, so can be everywhere, including on the sea floor;
- The zone NEVER is visible and has no owner.

Trap zone > Booby-trap doctrine:



Booby-trap doctrine (tag “**BT**”) has the following features:

- Its land trap zone is focused to neutralize soldiers;
- Device occurrence in the area is pretty low;
- Its devices avoid water and roads;
- The favorite places are trees, ignoring any topography restriction;
- (optional) Its mines avoid civilian areas;
- (optional) The trap danger’s area is visible for its owner.

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-v1.5
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
11 ETH_killzoneVisibleOnMap = true; //true == The faction's kill zones are visible
12   ETH_killzoneStyleColor = "ColorRed"; //color of the kill zones
13   ETH_killzoneStyleBrush = "FDiagonal"; //texture of the kill zones
14   ETH_killzoneStyleAlpha = 1; //0.5 == Minefield transparency
15 ETH_doctrinesLandMinefield = true; //true == Landmine field
16   ETH_ammoLandAP = "APERSMine"; //Default: "APERSMine"
17   ETH_ammoLandAM = "ATMine"; //Default: "ATMine"
18   ETH_onlyOnRoadsAM = true; //true == AM Landmine only on roads
19 ETH_doctrinesNavalMinefield = true; //true == naval minefield
20   ETH_ammoNavalAM = "UnderwaterMineAB"; //Default: "UnderwaterMineAB"
21 ETH_doctrinesOXU = true; //true == UXO field
22   ETH_ammoPackUXO = ["BombCluster_01_UXO2_F", "BombCluster_02_UXO2_F"]
23   ETH_cosmeticSmokesUXO = true; //true == adds jettisoned UXO smoke
24 ETH_doctrinesTraps = true; //true == Trap field
25   ETH_ammoTrapBT = "APERSTripMine"; //Default: "APERSTripMine"
26 ETH_globalDevicesIntensity = "MID"; //Proportional to device count
27 ETH_globalRulesEthics = true; //true == script based ethics
28 ETH_globalRulesTopography = true; //true == script based topography
29 ETH_A3_dynamicSim = true; //true == device based dynamic simulation
```

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:
killzone_ap_1	Anti-Personnel doctrine minefield;
killzone_am_1	Anti-Materiel doctrine minefield;
killzone_ap_blu_1	Anti-Personnel doctrine minefield of Bluefor;
killzone_am_ind_1	Anti-Materiel doctrine minefield of Independent;
killzone_hy_opf_1	Hybrid doctrine minefield of Opfor;
killzone_nam_1	Naval Anti-Materiel doctrine minefield;
killzone_nam_opf_1	Naval Anti-Materiel doctrine minefield of Opfor;
killzone_uxo_1	NEW! Unexploded bombs zone;
killzone_bt_1	NEW! Booby-trap zone;
killzone_bt_ind_1	NEW! Booby-trap zone of Independent;

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 “killzone_”. Without this variable name's structure, the area-marker is not recognized to be a kill zone in the Ethics script:

Doctrine tag	Description:
“AP” or “ap”	Expected a land minefield with Anti-personnel devices;
“AM” or “am”	Expected a land minefield with Anti-materiel devices;
“HY” or “hy”	A land minefield with AP and AM devices;
“NAM” or “nam”	Expected a naval minefield with Anti-materiel devices;
“UXO” or “uxo”	NEW! Expected zone with UXO devices;
“BT” or “bt”	NEW! Expected land zone with tripwire (or infrared) devices;

Faction tag	Description:
No faction tag	The kill zone is unknown for everyone (players and AI's);
"BLU" or "blu"	The kill zone is known only by Blufor (players and AI's);
"OPF" or "opf"	The kill zone is known only by Opfor (players and AI's);
"IND" or "ind"	The kill zone 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 kill zones created.](#)

How to increase or decrease the number of explosive devices in each doctrine area?

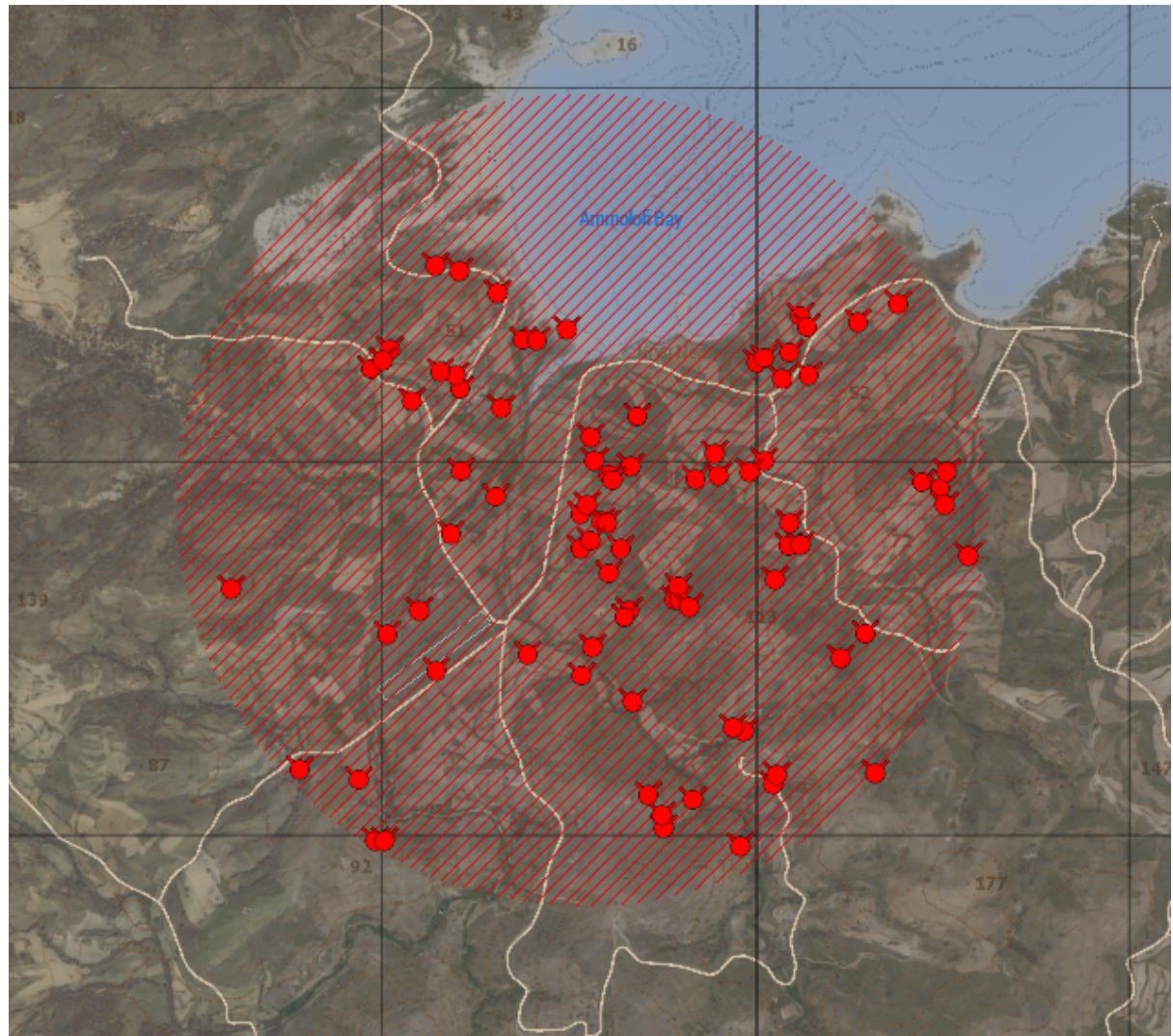
The amount of explosive devices in a kill zone is automatically calculated, based on area-marker size, the default occurrence ratio of devices in the area, and the intensity set by the mission editor. You might change the global intensity through 4 preset levels: LOW, MID, HIGH, and EXTREME.

This setting will increase or decrease the occurrence of devices proportionally at all kill zones built by Ethics script (minefields, UXO, trap zones, etc) in your mission.

```
fn_ETH_management.sqf X
1 //•ETHICS•MINEFIELDS•v1.5
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•o
11 ETH_killzoneVisibleOnMap = true; //•true•=•The•faction•kill•zon
12   ETH_killzoneStyleColor = "ColorRed"; //•color•of•minefields
13   ETH_killzoneStyleBrush = "FDiagonal"; //•texture•of•minefiel
14   ETH_killzoneStyleAlpha = 1; //•0.5•=•Minefields•barely
15 ETH_doctrinesLandMinefield = true; //•true•=•Landmines•will•s
16   ETH_ammoLandAP = "APERSMine"; //•Default:•"APERSMine".•For
17   ETH_ammoLandAM = "ATMine"; //•Default:•"ATMine".•For•mo
18   ETH_onlyOnRoadsAM = true; //•true•=•AM•Landmines•wil
19 ETH_doctrinesNavalMinefield = true; //•true•=•naval•mines•will
20   ETH_ammoNavalAM = "UnderwaterMineAB"; //•Default:•"Underwa
21 ETH_doctrinesUXO = true; //•true•=•Unexploded
22   ETH_ammoPackUXO = ["BombCluster_01_UX02_F", "BombCluster_02_U
23   ETH_cosmeticSmokesUXO = true; //•true•=•adds•few•impact•
24 ETH_doctrinesTraps = true; //•true•=•Traps•will•spawn•
25   ETH_ammoTrapBT = "APERSTripMine"; //•Default:•"APERSTripMine
26 ETH_globalDevicesIntensity = "MID"; //•Proportional•number•of•
27 ETH_globalRulesEthics = true; //•true•=•script•follows•m
28 ETH_globalRulesTopography = true; //•true•=•script•follows•t
29 ETH_A3_dynamicSim = true; //•true•=•devices•that•are
```

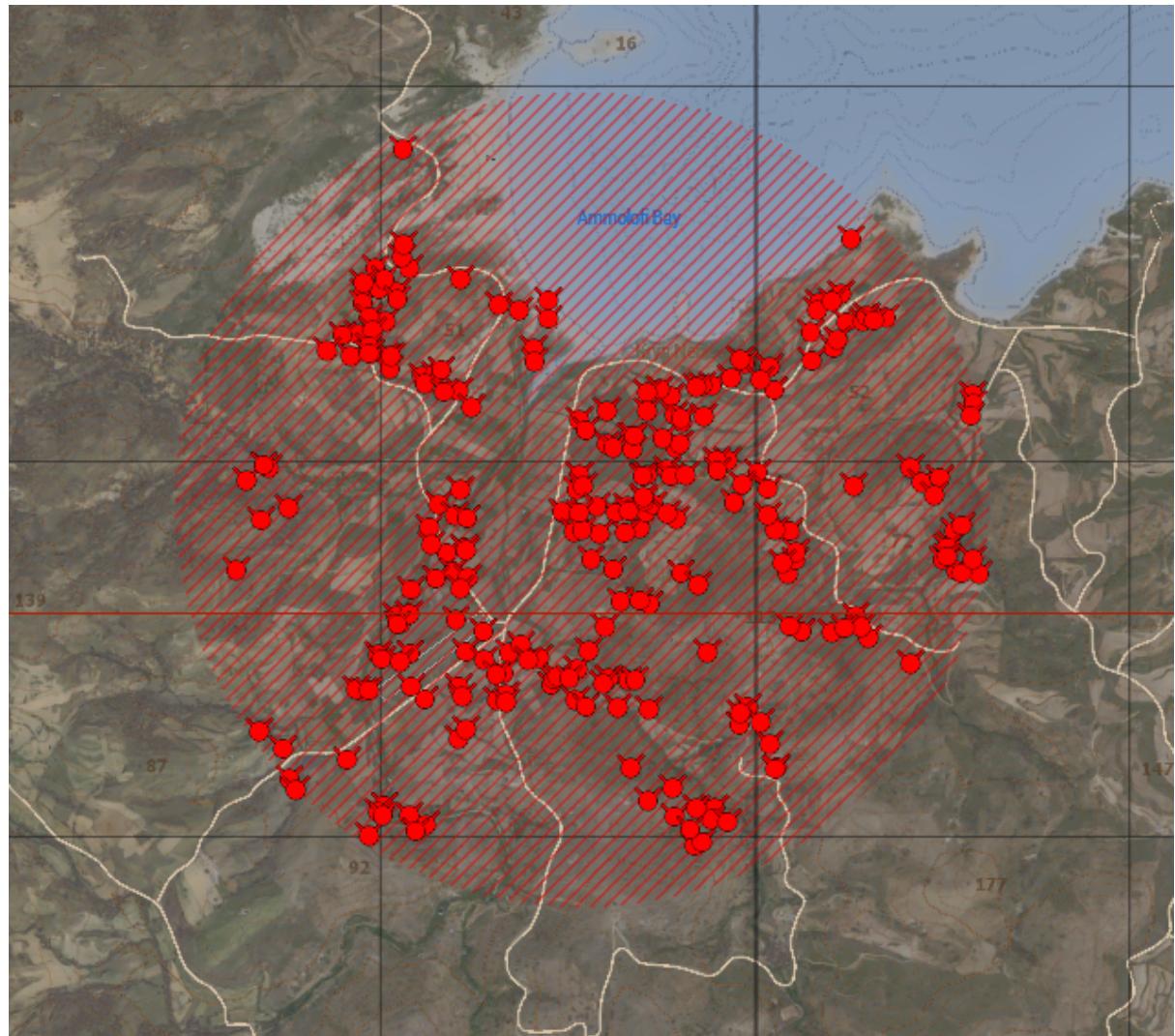
Let's use the same minefield with different settings to check the mines' amount in each case:

Mines' Intensity > Low:



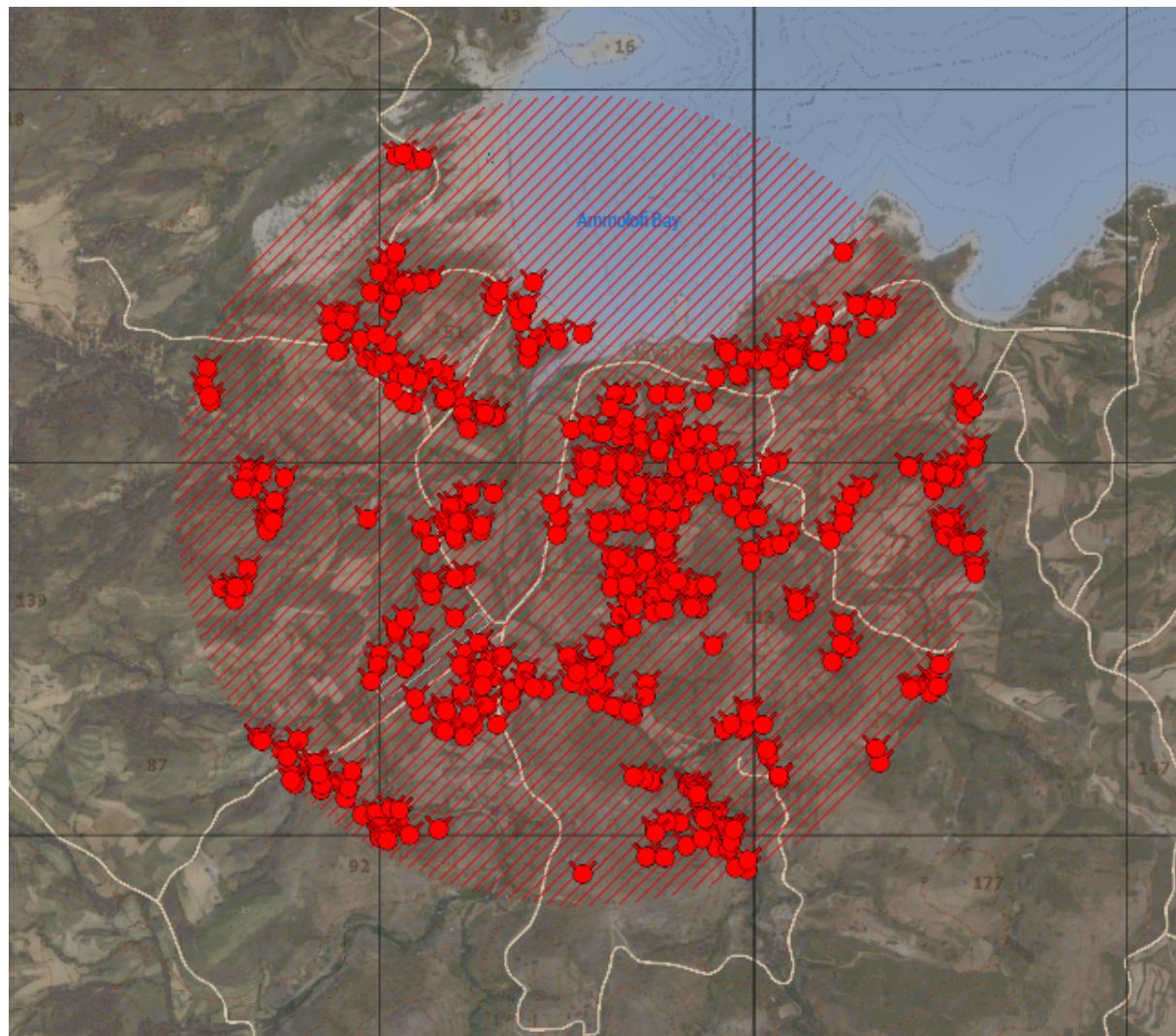
In the LOW example, 84 mines were planted.

Mines' Intensity > Mid:



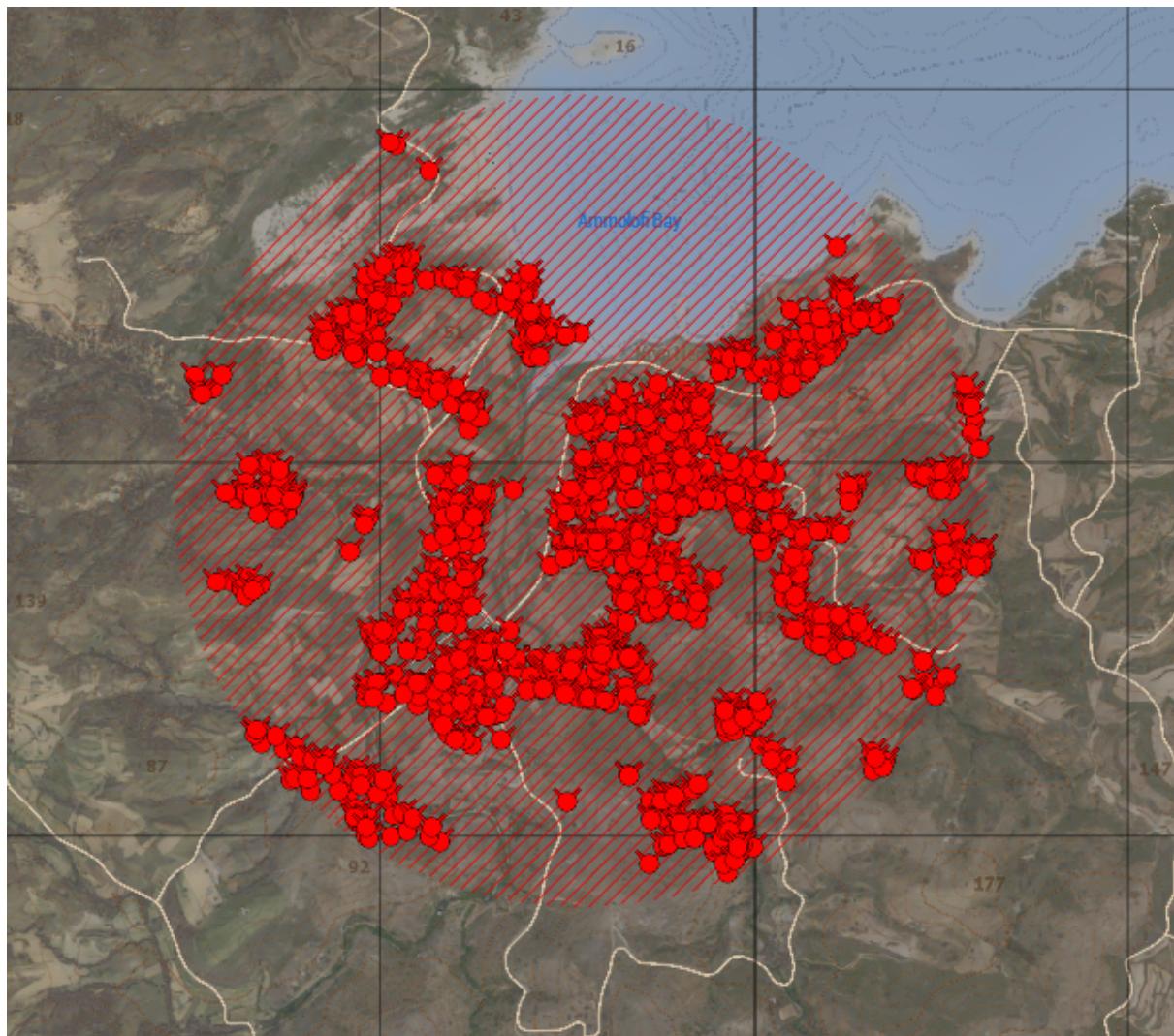
In the MID example, 250 mines were planted.

Mines' Intensity > High:



In the HIGH example, 476 mines were planted.

Mines' Intensity > Extreme:

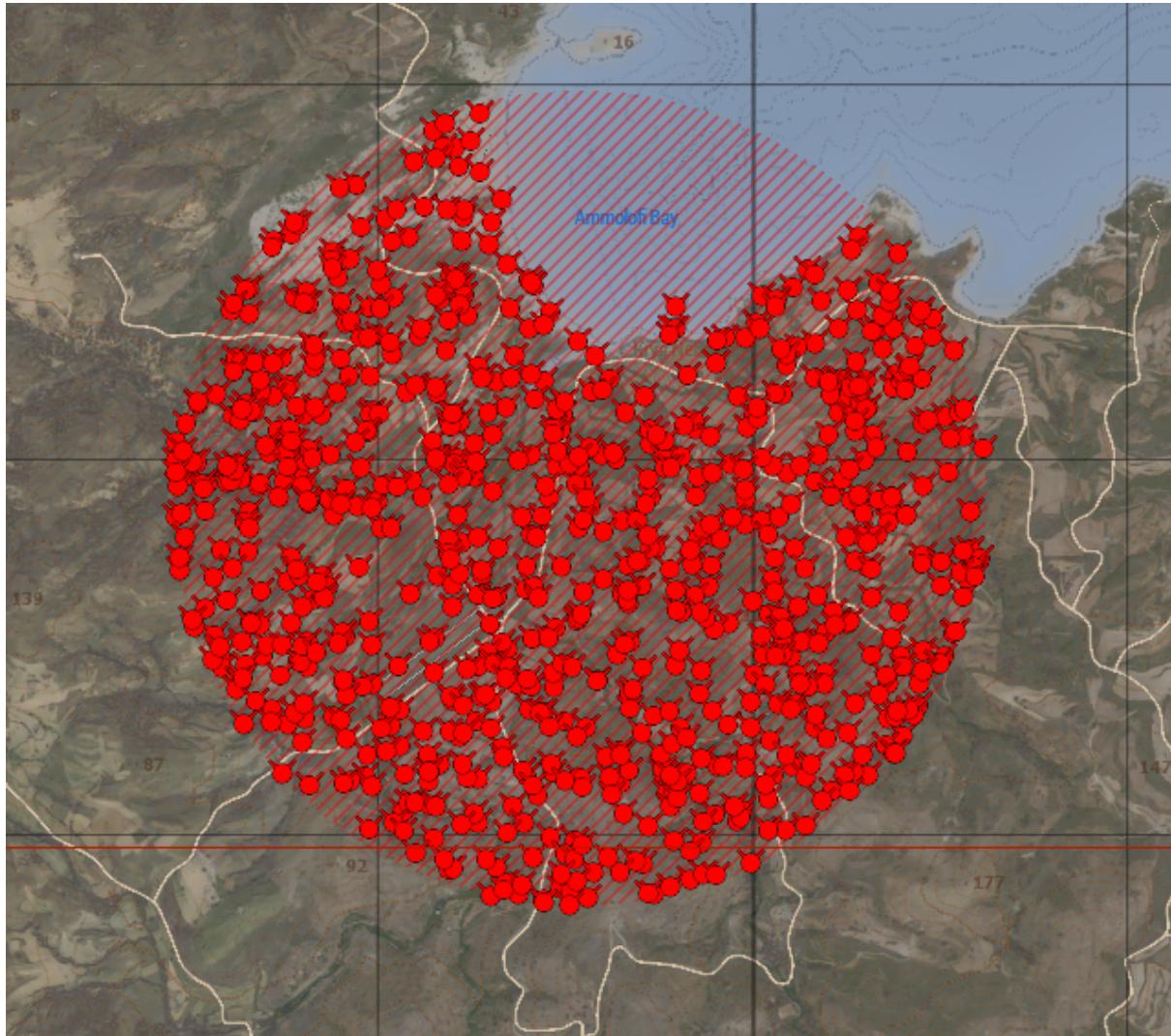


In the EXTREME example, 946 mines were planted.

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

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

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



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

Be careful with the CPU server performance, kid! 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?

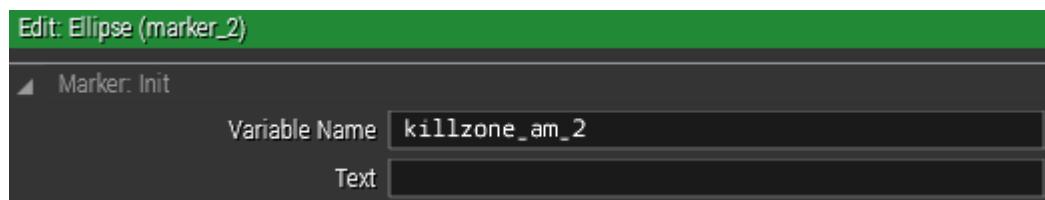
In Arma 3, if your side/faction knows about a minefield you got some benefits. At first, your AI units have the opportunity to avoid each mine spot in that minefield. Second, in the Ethics script, if the mission editor allows the known minefields to be visible, you will see all minefields built by your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

```
fn_ETH_management.sqf X
1 //• ETHICS•MINEFIELDS•v1.5
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_killzoneVisibleOnMap = true; //•true•=•The•faction•kill•zone•is
```

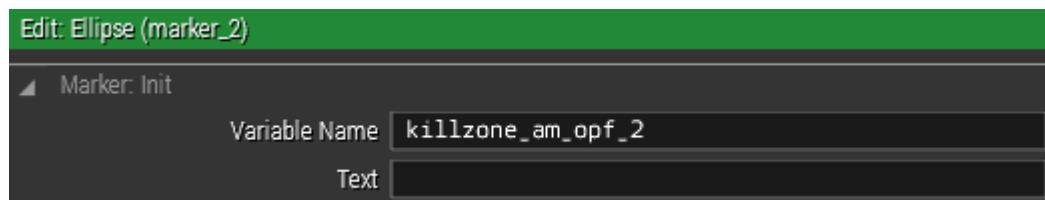
Important: all UXO zones will NOT be visible (even when *ETH_killzoneVisibleOnMap* is *true*) because the UXO doctrine works on the assumption that it's the result of some artillery strike or bombing that resulted in unexploded ordnance. In other words, UXO zones are not clear from an intel point of view.

On Eden Editor:

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



And an example of the same minefield, but now assigned to **Opfor** 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's explosive devices from a minefield and other kill zones?

The mission's editor can easily change the ammunition of all doctrines, using Arma 3 vanilla options ([official explosives list](#), pick names only from the *Class Name* column) and options from mods like RHS and CUP, for example.

```
fn_ETH_management.sqf ×

1 //·ETHICS·MINEFIELDS·v1.5
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·hosted-server-player·/·false
11 ETH_killzoneVisibleOnMap = true; //·true·=·The·faction·kill·zone·is·visible·on·map·only·by·its·fa
12 + ETH_killzoneStyleColor = "ColorRed"; //·color·of·minefields·on·map·in-game.·Default:·"ColorRe
13 + ETH_killzoneStyleBrush = "FDiagonal"; //·texture·of·minefields·on·map·in-game.·Default:·"FDiag
14 + ETH_killzoneStyleAlpha = 1; //·0.5·=·Minefields·barely·invisible·on·the·map·/·1·=·quite·
15 ETH_doctrinesLandMinefield = true; //·true·=·Landmines·will·spawn·if·an·area-marker·requests·th
16 + ETH_ammoLandAP = "APERSMine"; //·Default:·"APERSMine".·For·more·device·options,·check·the·Et
17 + ETH_ammoLandAM = "ATMine"; //·Default:·"ATMine".·For·more·device·options,·check·the·Ethi
18 + ETH_onlyOnRoadsAM = true; //·true·=·AM·landmines·will·be·planted·only·on·roads·/·false
19 ETH_doctrinesNavalMinefield = true; //·true·=·naval·mines·will·spawn·if·an·area-marker·requests·
20 + ETH_ammoNavalAM = "UnderwaterMineAB"; //·Default:·"UnderwaterMineAB".·For·more·options,·check·
21 ETH_doctrinesOXU = true; //·true·=·Unexploded·bombs·will·spawn·if·an·area-marker·requests·th
22 + ETH_ammoPackUXO = ["BombCluster_01_UX02_F", "BombCluster_02_UX04_F", "BombCluster_03_UX01_F"]
23 + ETH_cosmeticSmokesUXO = true; //·true·=·adds·few·impact·smoke·sources·into·the·UXO·zones·/
24 ETH_doctrinesTraps = true; //·true·=·Traps·will·spawn·if·an·area-marker·requests·them·/·
25 + ETH_ammoTrapBT = "APERSTripMine"; //·Default:·"APERSTripMine".·For·more·device·options,·check·
26 ETH_globalDevicesIntensity = "MID"; //·Proportional·number·of·explosive·devices·through·the·area
27 ETH_globalRulesEthics = true; //·true·=·script·follows·military·conventions·for·choosing·wh
28 ETH_globalRulesTopography = true; //·true·=·script·follows·topography·for·choosing·better·where
29 ETH_A3_dynamicSim = true; //·true·=·devices·that·are·too·far·away·from·players·will·be
```

To help you, here are some options for you to customize the devices' doctrines:

Image:	Doctrine:	Classname to use:	Trigger:	From:
	AP	<i>APERSMine</i>	pressure	Arma 3
	AP	<i>APERSBoundingMine</i>	proximity	Arma 3
	AP	<i>TrainingMine_01_F</i>	pressure	Laws of War
	AM	<i>ATMine</i>	pressure	Arma 3
	AM	<i>SLAMDirectionalMine</i>	tripwire	Arma 3
	NAM	<i>UnderwaterMine</i>	contact	Arma 3
	NAM	<i>UnderwaterMineAB</i>	magnetic	Arma 3
	NAM	<i>UnderwaterMinePDM</i>	contact	Arma 3
	UXO	<i>BombCluster_01_UXO2_F</i>	touch (sensitive)	Laws of War
	UXO	<i>BombCluster_02_UXO4_F</i>	touch (delayed)	Laws of War

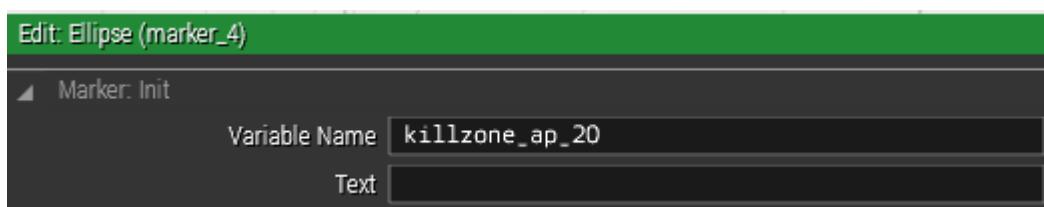
	UXO	BombCluster_03_UXO1_F	touch (common)	Laws of War
	BT	(WIP) Claymore_F	tripwire	Arma 3
	BT	APERSTripMine	tripwire	Arma 3

Critical: be wise regarding devices customization! If you set an anti-tank mine (AM) on AP doctrine, it would be catastrophic for the script where its logic would break apart. Always make some research about the ammunition you want to use to check for what doctrine fits better. Each doctrine has its own logic coded.

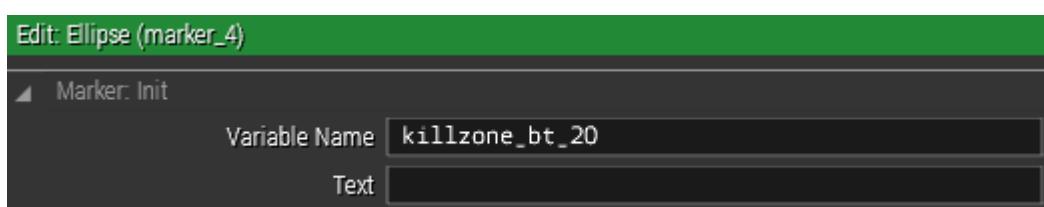
Debug tip: To check the damage from some explosive devices above when detonated, there's a good wiki where the information is shown:
https://armedassault.fandom.com/wiki/Landmines#ArmA_3

Ok, so how to change the doctrine in an area-marker on Eden?

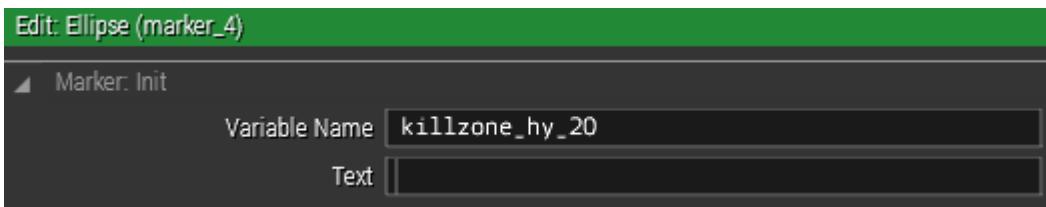
An example of a land minefield loaded with the Anti-Personnel (AP) doctrine:



And another one with the Boobs-trap (BT) doctrine:



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

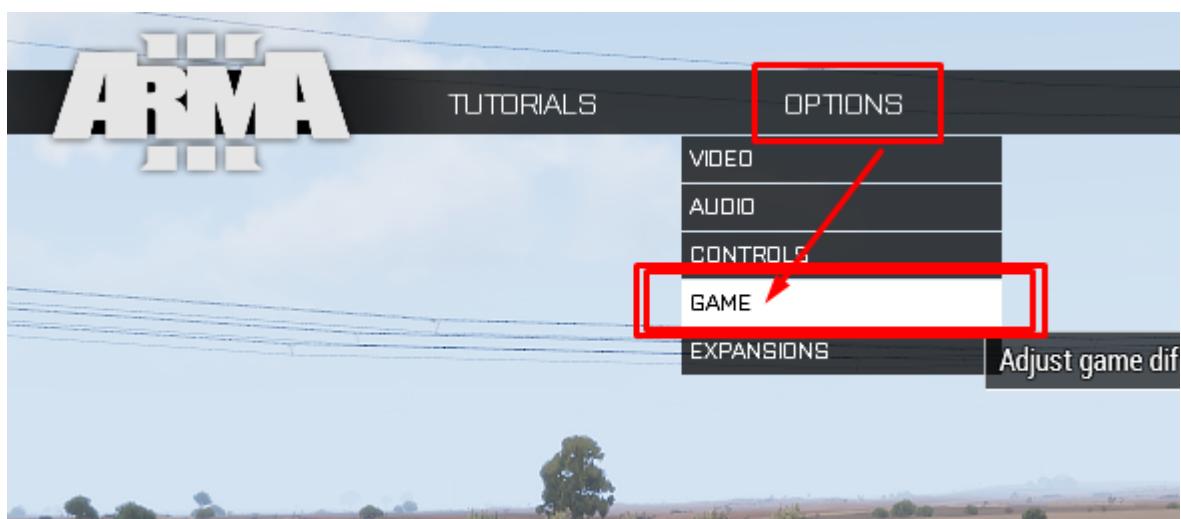


All possibilities are [listed here](#).

How to see each explosive in a kill zone 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.

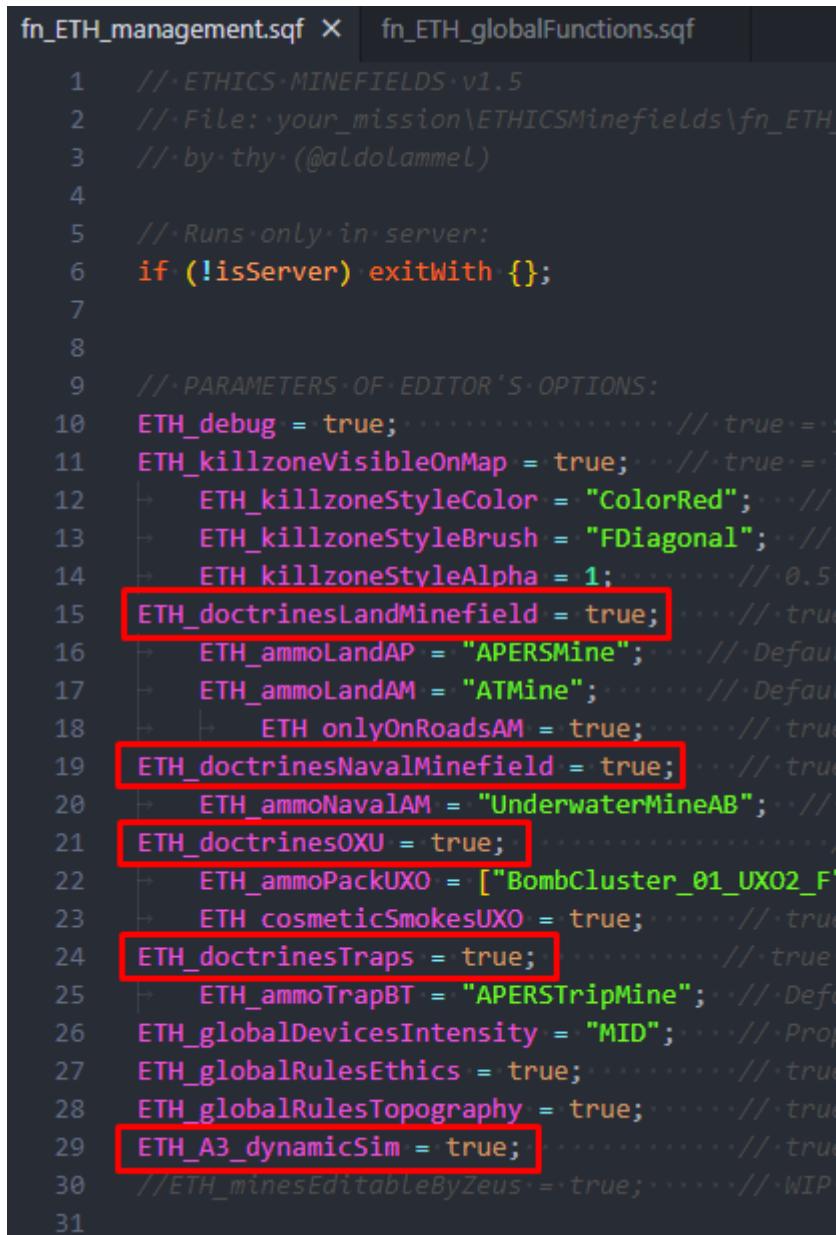


How to add new ammunition doctrines?

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

How to save server performance, using this script?

First, turn off (`false`) all doctrines you don't want to use in your mission, but mainly keep the [Dynamic Simulation](#) `true` always when possible.



```
fn_ETH_management.sqf X fn_ETH_globalFunctions.sqf

1 // ETHICS-MINEFIELDS-v1.5
2 // File: your_mission\ETHICSMinefields\fn_ETH_
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
11 ETH_killzoneVisibleOnMap = true; // true
12   ETH_killzoneStyleColor = "ColorRed"; // ColorRed
13   ETH_killzoneStyleBrush = "FDiagonal"; // FDiagonal
14   ETH_killzoneStyleAlpha = 1; // 0.5
15 ETH_doctrinesLandMinefield = true; // true
16   ETH_ammoLandAP = "APERSMine"; // Default
17   ETH_ammoLandAM = "ATMine"; // Default
18   ETH_onlyOnRoadsAM = true; // true
19 ETH_doctrinesNavalMinefield = true; // true
20   ETH_ammoNavalAM = "UnderwaterMineAB"; // UnderwaterMineAB
21 ETH_doctrinesOXU = true;
22   ETH_ammoPackUXO = ["BombCluster_01_UX02_F"
23   ETH_cosmeticSmokesUXO = true; // true
24 ETH_doctrinesTraps = true; // true
25   ETH_ammoTrapBT = "APERSTripMine"; // Default
26 ETH_globalDevicesIntensity = "MID"; // Prop
27 ETH_globalRulesEthics = true; // true
28 ETH_globalRulesTopography = true; // true
29 ETH_A3_dynamicSim = true; // true
30 //ETH_minesEditableByZeus = true; // WIP
31
```

Second, try don't create too many huge kill zones because those areas might kill your server performance. Give your go by changing the `ETH_globalDevicesIntensity`.

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>

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