

***FRACTAL** game*

TEAM UP TO SAVE ALPINE ECOSYSTEMS!

INSTRUCTIONS



FRACTALgame - Team up to save Alpine ecosystems!

**A cooperative game for 2-4 players Average
game length: 50 min. Age 12+**



For thousands of years, residents of the Alps exploited its natural resources as they pleased to build economically prosperous communities. It seemed as if its abundance would never end. But things don't always go the way we'd like...

Now it's the year 2050 and the Alpine ecosystems, strained by careless overuse of their resources and the local effects of global climate change, are losing fundamental ecosystem services (ES). At first, things didn't look too bad. But whatever happens to biodiversity, the soil, and the trees becomes problematic for human communities too. In no time, we begin to lose food sources, clean water, raw materials and, ultimately, our health. Is it too late to change course?

You are four courageous innovators who have chosen to stand against the tide and make caring for the ecosystems and their ecosystem services a priority for the common good. The future of the Alps is in your hands!

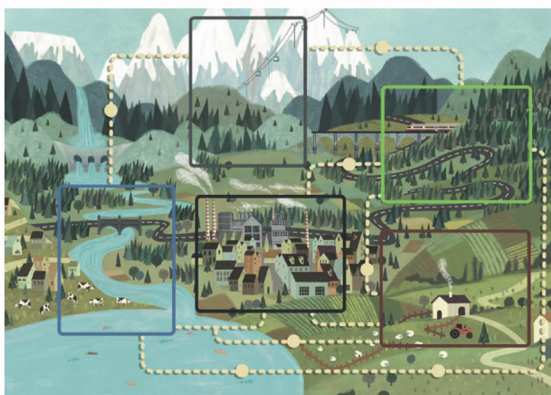
Scope of the game

Cooperate with each other to mitigate the negative effects of overusing natural resources, rebuild ecosystems and restore their functions, and save local communities.

You will use **Green Infrastructure (GI) Cards** and **Ecosystem Services (ES) Cards** in a race to save the five at-risk ecosystems—alpine mountain ecosystem, forest, rivers and lakes, the agroecosystem, and urban areas.

Gameboard

The gameboard illustrates the five ecosystems where the game takes place. The board also shows the routes connecting each ecosystem. Unbroken dotted lines represent a direct route from one ecosystem to another that a player can reach in one move (such as from the city to the countryside). Each yellow circle on a route counts as an additional move (such as from the river to the high-altitude mountains).



4 Eco-Hero Cards and 4 Eco-Hero Markers

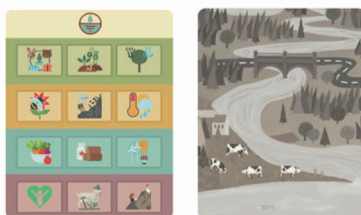
Each Eco-Hero has special powers that their players can use as they choose during the game. Each card has a corresponding Eco-Hero Marker that represents the player on the board.



5 Point Cards

Each card represents one of the five ecosystems, shown by the icon on the top center of the card. Below the icon are the different ecosystems services that can be lost or restored according to the cards played.

The five point cards represent the health of the ecosystems on the board.



50 Markers (green coloured)

The markers, placed on the points cards, indicate which ecosystem services are lost as the game progresses.



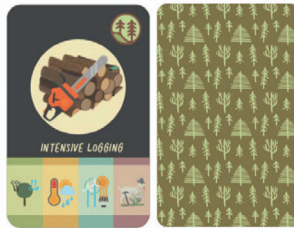
60 Threat Cards (dark green back)

Threat Card affects a particular ecosystem, represented by the icon in the upper right corner.

The central image illustrates the threat and below are the ecosystem services that are lost when it is played (these icons match the squares on that ecosystem's Point Card where you'll place the green markers).

Place a green marker on each of the corresponding spaces on the point cards.

Among the problem cards, there are some with special functions:



- Overexploitation card

This card intensifies the effect of environmental threats.

When you draw it from the Threat Card deck:

- three problem cards must be drawn from the discard pile, and markers are placed on the score cards,
- the number of Threat Cards each player must draw going forward increases by one, starting with the next player's turn.

You can control game difficulty by inserting one Overexploitation card for a beginner level game, two for an intermediate game, and all cards for an advanced/extremely difficult game.



- Extreme Weather Event Cards

This Threat Card affects the ecosystem shown in the upper right corner. When you draw it, place a Counter on all four ecosystem service categories of that ecosystem's Point Card.

Add one Extreme Weather Event card in the Threat Deck for each ecosystem for a beginner level game. For a more difficult game, insert all cards.



68 Solution Cards (light green back)

There are three types of Solution Cards:

- GI Cards

These cards represent green infrastructure solutions for the ecosystem shown in the icon in the upper right corner.

When placed on an ecosystem, the GI Card protects it from two Threat Cards. You can only play a GI Card if your Eco-Hero Marker is on that ecosystem.

A GI Card is needed to form a Resiliency Set, the 5-card set required to save an ecosystem completely.



- Bonus Cards

These Solution Cards give you additional tools for counteracting harmful effects and can be played on the ecosystems shown in the icons along the top. Follow the instructions on the card to apply the Bonus effect. You can only play a Bonus Card if your Eco-Hero is located on the ecosystem shown.

Decarbonization cards

Use them to block an "Extreme weather event" card.

Stop card

It allows to skip drawing a threat card.

Ecosystem Protection Card

This card keeps safe an ecosystem and the point card.

Ecosystem Management Plan Cards

Use them to withdraw one marker from the blue band and one from the purple band of the point card of one of the ecosystems indicated in the icons in the upper section.



- ES cards

These cards represent the four categories of ecosystem services and can be played in two ways:

1- Restore ecosystem services: If your Eco-Hero Marker is on the ecosystem shown on the ES Card you may use it to remove a marker from that ecosystem's Point Card. You can only remove a marker from an ecosystem service shown on the bottom of the ES Card. Each ES Card played removes only one marker and counts as one move.

2- Fully protect an ecosystem: A player who collects four different ES Cards, one for each of the four ecosystem service categories (that is, one of each color with the same ecosystem icon), together with a GI Card with the same icon, forms a Resiliency Set that protects the ecosystem completely.



SET UP

Remind players that **FRACTALgame** is a cooperative game, and they must collaborate to save the five ecosystems. Have players keep their hands open so everyone can see the cards in play.

- 1 - Place the board at the center of the playing surface.
- 2 - Distribute the 5 Point Cards face up so that their ecosystem services are visible and all players can reach the cards.
- 3 - Prepare the Threat Deck: Add to the Threat Cards one Extreme Weather Event card for each of the five ecosystems and one Overexploitation card. Shuffle the Threat Deck and place it face down near the board . (For a more complex game, add two or three Overexploitation cards and all Extreme Weather Event cards.)

4- Shuffle the Solution Cards and place the Solution Deck face down near the board.

5 - Deal the Eco-Hero Cards randomly to the players, then place their Eco-Hero Markers on the urban ecosystem.

6 - Give each player a Reminder Card.

7 - Deal the Solution Cards to each player as their starting hand. In a 2-player game, deal each player 6 cards. For 3 players, deal 5 cards each. For 4 players, deal 4 cards each.

8 - To establish the game's starting threat level, draw 3 cards from the Threat Deck and turn them face up. Place markers on the Point Cards according to the instructions on the Threat Cards.

How to add the green markers to the point cards? See below...

Adding markers to the points cards

For every Threat Card you draw, place a marker on the Point Card, starting with the first icon on the Threat Card that hasn't been covered yet. Fill the Point Cards from top to bottom (first the green row, then the yellow row, then blue, and lastly purple).



First, place markers on the icons in the green row, until it's completely full and we've lost all Supporting ecosystem services.

Then add markers to the yellow row icons until it's full and we've lost all the Regulating ecosystem services.



Finally, having lost all regulatory ecosystem services, we start putting markers on the blue band icons. A marker on the blue band is enough to initiate the acute phase of the system crisis.

From this time onwards, markers must be placed on all icons, both blue and purple, indicated on the problem maps, i.e. we begin to lose ecosystem services of human well-being.



If a problem card shows an icon that is already covered by a marker on the point card, there is no need to add a new one.

When there are two markers in the purple band, the ecosystem of the point card is lost! Turn the point card over and place it face down on the board and remove the markers that can no longer be used from the game.

NB:

The "Extreme weather event" card requires a marker to be placed on all squares of the 4 SE categories of the pointcard on which the weather event acts.



Example: The Biodiversity ES was lost and is covered on the Point Card. You draw an Extreme Weather Event card. Starting with the first available icon on the green row (that has already lost an ecosystem service), add markers to each ES category. On rows with no losses (no placed markers), you can choose which ES to lose.

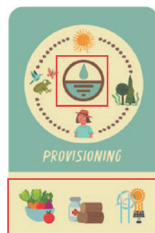
On your turn, you must do the following three actions:

1) Make up to four of the following moves:

a) Move your Eco-Hero from one ecosystem on the board to another. Every change of position, including to or from intermediate points, counts as one move.

b) Place a Green Infrastructure (GI) Card on the ecosystem where you are located to protect it temporarily. Each GI Card protects an ecosystem from two Threat Cards. After countering the second Threat Card, the GI Card is discarded, and the ecosystem becomes vulnerable again. **Each GI Card you play counts as one move.**

c) Use Ecosystem Service (ES) Cards to remove the corresponding markers from the Point Card for the ecosystem where you're located. Each ES Card you play removes only one marker and counts as one move. The card used to remove the marker is then put into the discard pile of the solution cards.



d) Trade cards with a player located on the same ecosystem. Each card you trade counts as one move.

e) Play a Resiliency Set to completely protect the ecosystem where you're located.

Playing the set counts as one move.

2) Draw 2 Threat Cards and add the corresponding markers to the Point Cards. Once the green markers have been placed on the point card, the threat card is discarded into the discard pile.

3) Draw 3 Solution Cards. Note: you can't have more than 7 cards in your hand. If you end up with more cards, you may choose which to discard.

Winning the game

Players win the game when they succeed in completely protecting at least 3 ecosystems, as follows:

- 1) You've placed Resiliency Sets (4 ES Cards + 1 GI Card) on at least three ecosystems



2) You've placed the Full Protection Bonus Card on one ecosystem and on two others you've placed Resiliency Sets.



Loosing the game

You've lost three ecosystems (three Point Cards are flipped upside down).

...or all 56 green markers have been used, even if no single ecosystem has been fully destroyed. In this case, the whole environment has collapsed.

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