

Extinction: The Game of Ecology

For 2 or 4 Players

Rules

You play the part of a species whose goal is to survive while rivals become extinct. Extinction simulates several ecological events, some natural and others caused by man. You may play until all but one species become extinct, or you may set a time limit. The first approach often takes three hours or longer.

Elements of the Game

Board. The island Darwinia contains six different habitats (hexagons): woodland, meadow, brushland, marsh, lake, and swamp.

Population Cubes (dice). Twenty for each player.

Spinner. Indicates the two ecological actions a player may take in a turn. The top action is played first.

Gene Cards. Six decks of cards determine each species' characteristics: Predator Type, Prey Defense, Reproduction, Barrier Crossing, Habitat & Mobility, and Environmental Tolerance.

Environmental Change Cards. A card from this deck is drawn when the spinner indicates Environmental Change.

Barriers. There are two each of the five different barriers: cities, jetports, mountains, rivers, and deserts.

Beginning a Game

Each player picks a color of population cubes as his species. Each player then throws two cubes; the lowest scorer goes first and colonizes Darwinia with 30 individuals. "**Individuals**" **Means Dots, Not Cubes.** Proceeding clockwise, the other players do the same. Cubes can be placed in any unoccupied hexagon and any combination of dots can be used to make up 30 individuals.

Next, each player in sequence may, if so desired, take a second turn to reposition any of his individuals. Then, after each deck is well shuffled, each player draws one of each gene card (**but not an Environmental Change card**). Play begins when the first player spins the spinner to see which move to take.

Moves of the Game

Some moves are required; that is, if the spinner indicates the move, it must be made. Other moves are optional and the player decides whether to make the move or not. An optional move is indicated on the spinner with a star.

Required Moves

Reproduce. Only individuals in optimal habitats, as listed on the **Habitat & Mobility** card, reproduce. To reproduce, count individuals (dots) in optimal habitats and multiply by the

number on the **Reproduction** card. It may be necessary to round off to the nearest individual. Add as many of this number of new individuals as you can to your species. Example: Your optimal habitats are Meadow and Swamp and you have 13 individuals in these habitats. Your **Reproduction** card reads "0.6 x # Individuals in Optimal Habitats = # New Individuals." Then, $0.6 \times 13 = 7.8$, which rounds off to 8.

You may add new cubes or turn your existing cubes to higher numbers in those hexagons adjacent to your reproductive individuals (those in optimal habitats). Or you may turn existing cubes in optimal habitats to higher numbers or combine these strategies.

Environmental Change. In this move you must draw an Environmental Change card from the top of the deck. There are several different ways in which the environment is changed, most of which cause mortality in one or more species. Your tolerance to some of these changes depends on your **Environmental Tolerance** card. After all the effects of the environmental change have been produced, the **Environmental Change** card is returned to the bottom of the deck.

The following environmental changes affect only the species drawing the card: Famine, Pestilence, Cold Wave, Drought, and Mild Season. Famine and Pestilence eliminate only those animals in habitat hexagons containing five or six individuals. You must remove all your cubes showing five or six dots.

Cold Wave and Drought vary in severity, causing no mortality in tolerant species, but causing 10, 30, or 50% mortality in nontolerant species. Multiply the total number of your nontolerant population by the percentage figure on the card and round off to the nearest individual. Remove this number from the board.

If you draw a card that reads Mid Season—"Choose any Paired Moves on Spinner Except Environmental Change," take the extra paired moves and then return to the second of the original moves.

Fire, Water Pollution, and Air Pollution affect all the species in the game that are nontolerant, regardless of who draws the card. Nontolerant species are removed from woodlands, meadows, and brushlands by fire; and from marshes, lakes and swamps by water pollution. Cutting woodlands, draining swamps, dumping garbage in marshes, filling lakes, and grazing meadows or brushlands eliminate all species in these habitats. Air pollution eliminates all nontolerant individuals in hexagons adjacent to city and jetport barriers.

Place Barrier. In this move you must erect a barrier of your choice in any hexagon not occupied by another barrier or the last (sole surviving) population cube of a species. Any cube in the hexagon is removed when the barrier is placed. Habitats containing barriers cannot be occupied by any species. When all barriers are in place, the move requires you to relocate one. No barrier can be relocated until all 10 barriers have been placed on the board.

Optional Moves

Migrate. This move allows you to seek more favorable habitats. The mobility specified on your **Habitat & Mobility** card gives you either no mobility, mobility = 20, or mobility = 40. If you have mobility = 20, you may move one individual 20 hexagons, or two individuals 10 hexagons, or three six hexagons and one two hexagons, and so on. You need not use all of your mobility and you may split your individuals (i.e., if six dots are showing you might move two using a new cube and leave four behind). You may not migrate through habitats

occupied by rivals or over barriers that you cannot cross (see your **Barrier Crossing** card).

Compete/Prey. You can compete and prey in the same turn, but each cube can be used only once per turn to take one adjacent rival cube. Both competition and predation can take place across any barrier that your species can cross (see your **Barrier Crossing** card) as if the habitat across the barrier were adjacent.

COMPETE. You may compete only against those adjacent rivals whose particular cube shows fewer individuals than yours. In occupying the captured hexagon, you may split your individuals, but you must replace your rival with more individuals than he had in the hexagon (thus, if you are taking three individuals with six, you must move at least four into the new hexagon).

PREY. You may take any adjacent rival whose **Prey Defense** card does not protect against the predator type listed on your **Predator Type** card. After you announce your predator type (crafty, swift, etc.), any adjacent rival who is protected must show you only that word on his **Prey Defense** card. In occupying the captured hexagon, you may split your individuals and leave as many behind as you choose.

Return cubes displaced by competition and predation to the appropriate players.

Change Genes. In this move you may change from one to four gene cards. When you have decided which genes you want to change, return one card to the bottom of the appropriate deck and then draw one new card to replace the old.

Winning a Game

If you play without a time limit, all species except one will be eliminated from the board. This sole surviving species is the winner. Games played to completion often last over three hours. To determine the winner of a time limit game, stop at the end of the limit and remove all cubes showing five or six individuals. The remaining individuals of each species are then counted, and the most populous species wins. Cubes with five or six individuals are not counted because in nature overcrowded populations have poorer long-term survival chances than less crowded ones. In the game, hexagons containing five or six individuals are inevitably struck by a famine or pestilence unless their densities are reduced by other factors. Hence, they contribute less to the long-term survival of a player's species and are not counted in the final population score.

***Game available from Carolina Biological Supply Company*