Game Design Document

Project Name: **11 Years**
Team Name: **H2O2**
Team Members:

- **Antonio** *(Narrative Designer)*
- **Dante** *(Lead Programmer)*
- **Harry** *(Game & Level Designer)*
- **Kevin** *(3D Environmental Artist)*
- **Jason** *(Programmer & Project Manager)*

GAME DESCRIPTION

Design Goals

To be written by the Project Director.

The game aims to achieve the following goals:

- *to spread awareness of Humans direct or indirect influence on oceans ecosystems*
- *to illustrate how humans disrupted the animal food web and ecosystem*
- *to convey humans are the ultimate cause of animal endangerment and extinction, ultimately of climate change*
- *to present an opposing view to the world's view of animals*

Influences Sources & Prior Work

- *Our Planet - Netflix Series*
- *Abzu*
- *Eco*
- *Ecco the Dolphin*

Target Market

Anyone who knows of or wants to know of climate change and its effect on the planets oceans, and what they can do to help to help take or push action to solve it.

FUNCTIONAL SPECIFICATIONS

Game Mechanics

Swim, Eat, Die

Core Game Play

Ideally, written by the Project Director.

Actions that the playable character (PC) can perform are:
Swim → “light swim” & “Boost”
Eat → (In terms of planned production this summer) “Kill”
Die

Swim and Eat through the player objectives and earning a point from the point system

Game Flow

Ideally, written by the Project Director.

Actions that the playable character (PC) can perform are:

1. Swim
    a. Boost
2. Eat

Characters / Units

Ideally, written by the Project Director.

Playable characters: (small scope)

Shark
~~Angelfish~~
~~Manta Ray~~

NPC:
Coral
other fish

Gameplay Elements

Ideally, written by the Project Director.

These are elements present in the game level that the PC can interact with:

- Smaller edible fish
- Fishnets

Additionally we have elements that communicate the PC’s game state:

- Ocean Acidification

There also exist elements that determine the PC’s stats:

- Health
- Energy, boost skill

Game Physics and Statistics

Physics in the game work as such:

- 3D “Physics” → More translating & rotating than working with forces

Artificial Intelligence

Fish AI

- How to face up, down, left, right, diagonal aka Turning
- Attack movements
- Death movements
- Eating movement

Multiplayer

n/a

USER INTERFACE

Flowchart

To be designed by the students, supervised by the Director.

Functional Requirements of the Flowchart

To be written by the students, supervised by the Director.

Mockups

To be designed by the students, supervised by the Director.

GUI Objects

What will the GUI look like? Again, to be designed by the students, supervised by the Director.

ART AND VIDEO

Overall Goals

What is the art style? Explain the reason and intention for using this art style. How does it influence, augment and/or ameliorate the project?

Low Poly, simplified textures.

3D Art & Animation

We need GUI artwork for the following: Assets list

- Various Coral and plant life
- Various fish and animal life
- Coral plates
- 3D model of Manta Ray, and animation for movement

Marketing and Packaging Art

To be designed by the students, supervised by the Director.

Terrain

Ocean floor, and substructures of rock and tectonic plates.

Game Play Elements

Sprites:

- Idle (for example)
- Defend (for example)

Other elements (health, power, etc)...

Special Effects

What visual effects will be incorporated into the game? To be designed by the students, supervised by the Director.

3D Art and Animation

Cinematics

How many "cinematics" will be included in the game. To be designed by the students, supervised by the Director.

Assets Pipeline

In order to organize of the assets we have for the game we created a pipeline for creating, saving and naming the files, as well as a file structure that determines where everything is put and how the files and folders are organized. Here is a breakdown on how the files and naming structures work.

Folder Structure:

Github

SOUND AND MUSIC

Overall Goals

What is the sound and music style? Explain the reason and intention for using this style. How does it influence, augment and/or ameliorate the project?
Music, Cinematic, similar to nature documentaries and other underwater games
Sound a realistic underwater environment since it fits the description of the game, gives player "realistic feel"
Narration to explain, also similar to nature docs

Sound FX

How will it sound to interact w/ the GUI? How will the special effects sound? How will the character action sound? How will the enemies and obstacles sound?

The sound will interact as it should, and fit the experience of the great barrier reef .

1) regular speed swimming noise
2) eating noises (chomp) need various, so that one doesn't get too repetitive
3) clicking menu button sound
4) completed objective noise (possibly a bell)
5) new objective notification sound (ding maybe)
6) death sound (grunt)
7) ocean ambience
8) rapid swimming noise
9) fishnet grasp noise
10) voice acting narration
11) cinematic music during gameplay
12) main menu music
13) main menu button click sound
14) tense music (escaping fish nets)
15) failure sounds
16) negative/bad music (relating to coral bleaching)
17) hunger sounds

Music and Sound FX assets

Song loops
Ambient sounds
Main character(s)
Enemies
GUI/HUD

STORY

One paragraph description, to be written by the Director.

Player Characters

Name and describe. To be written by the students, supervised by the Director.
Shark, Manta Ray, Angel Fish
The main character starts from the apex predator in the food chain and then goes down the chain in future levels to manta rays, and then the angelfish.

Secondary Characters

Name and describe. To be written by the students, supervised by the Director.
Narrator narrates the ways of life and what is overall happening, as well as giving educational facts about preventing the issues such as overfishing and the bleaching of the coral reefs.

Enemy Characters

Name and describe. To be written by the students, supervised by the Director.
Just the obstacles in the game, such as the acidic dead zones, dying from hunger, or not completing objectives. Not really a main enemy, that is seen, although humans are the main enemy.

Story Theme

What is the central story theme?
Indirect or direct interference in great barrier reef ecosystem

Visual Theme

What is the central visual theme?
Bleaching of corals, dead zones

Story Outline

LEVEL REQUIREMENT

Level Diagram

Enemies/Obstacles	**level 1 appearance**
Ocean acidification	yes
ghost nets	yes
starvation (incompletion of objectives)	yes

Level Narrative
playing as a shark's objectives
Objectives ❏ First set (QI) ❏ Breadcrumbing ❏ 1 Angelfish ❏ Hunt 4 Angelfish

- ❏ Hunt 8 Angelfish

- ❏ Second set (QII)
  - ❏ Breadcrumbing
    - ❏ 2 medium green fish and an angelfish
  - ❏ Hunt 5 green medium fish
  - ❏ Hunt 4 Angelfish
    - ❏ Spread out
  - ❏ Transition: Hunt 2 small manta ray

- ❏ Third set (QIII)
  - ❏ Hunt 3 medium manta ray
    - ❏ Spread out
    - ❏ Hard to find
  - ❏ Hunt 4 small rays

- ❏ Fourth set (QIV)
  - ❏ Breadcrumbing
  - ❏ Hunt 9 Angelfish
  - ❏ Hunt 5 blue large fish

“Tension”

- Universal Tension
  - (applies to all animals below which hinders the game mechanic; it’s why they’re called challenges)
  - Lack of prey
  - Spread out prey
  - Ghost nets, lost by fishermen; abandoned
    - Close to corals
      - Fishermen like fish to catch but there are ghost nets near the surface too
    - Can be on the seafloor as well
  - Starvation, incompletion of objectives in time due to ocean acidification
  - Ocean Acidification, dying inevitably in the end, rushing to complete objectives
    - Impossible to be AFK unless game is paused

Assets Revelation Schedule

Level Design Seeds

TECHNICAL SPECIFICATIONS

Game Engine

Unity

Platform and OS

PC, iOS, X-Box

External Code

Code Objects

Control Loop

Game Object Data

Data Flow

Artificial Intelligence

Students will create a flowchart of the enemy AI to explain how it works

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PRODUCTION

Scope

Our project Scope includes the following:

1 level; playing as a shark

Scheduling

The production schedule is divided into the following major points:

● Pre-Production / Discovery –

- Concurrent Development of Art and Code Assets –
- Integration and Design Balancing –
- Alpha –
- QA –
- Beta –
- Deployment and Presentation –

Dependencies

The schedule and scope outlined in the above sections can only be followed and fulfilled when the necessary assets are delivered on schedule. Below is a initial list of the necessary assets and times that we will be dependent upon:

3D Character Assets
Art Assets
Sound Assets

Cost Estimate

If applicable.

The asset on the Unity A.S was $30, so we paid $6 each of 5 people.