

CREATING THE ART
OF
ABZÛ





GIANT SQUID

ABZÛ





UNREAL ENGINE 4
3 YEAR DEVELOPMENT

10 DEVELOPERS AT PEAK TEAM

SIZE

NO DEDICATED ANIMATOR

TECHNICAL ART CHALLENGES

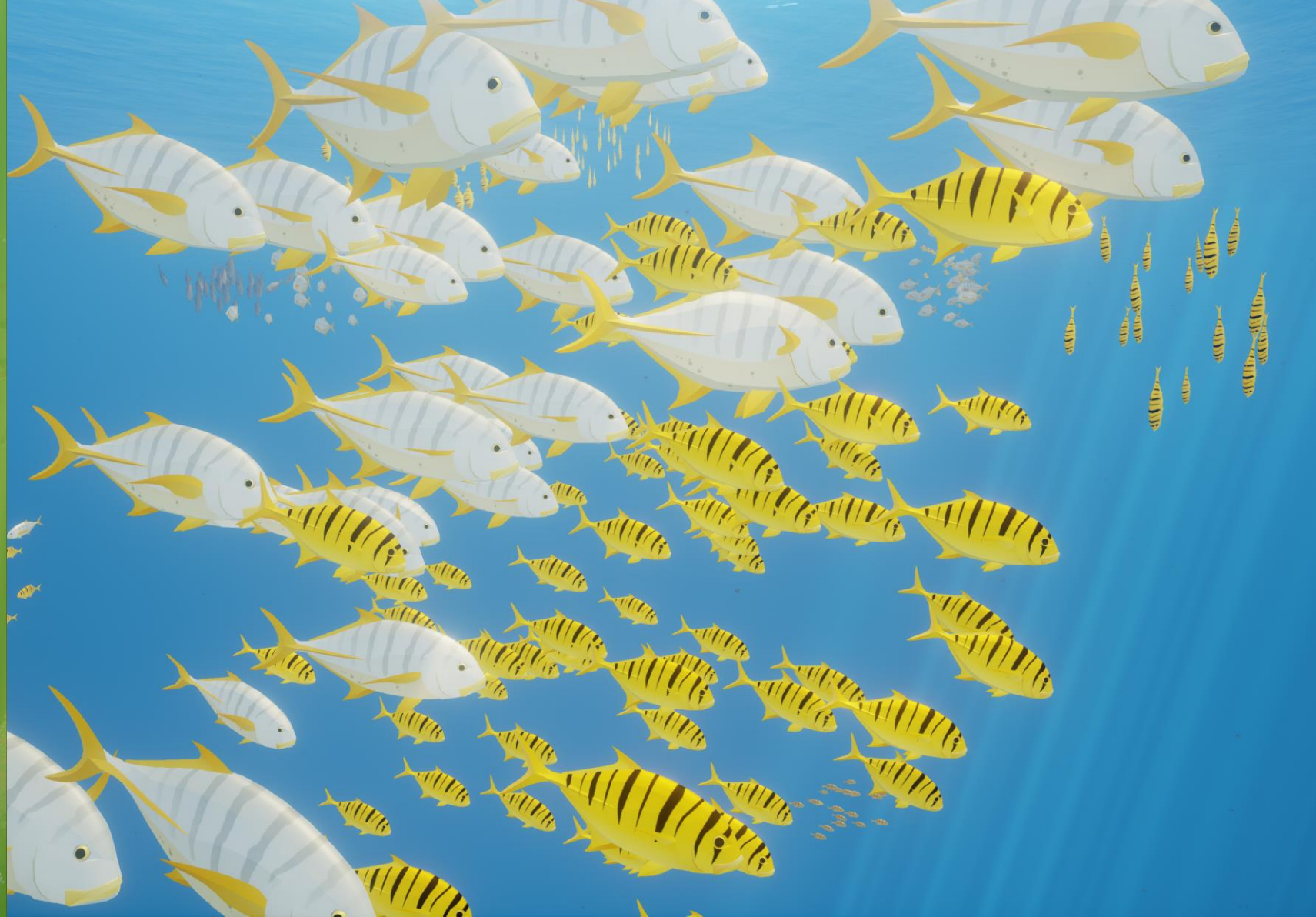
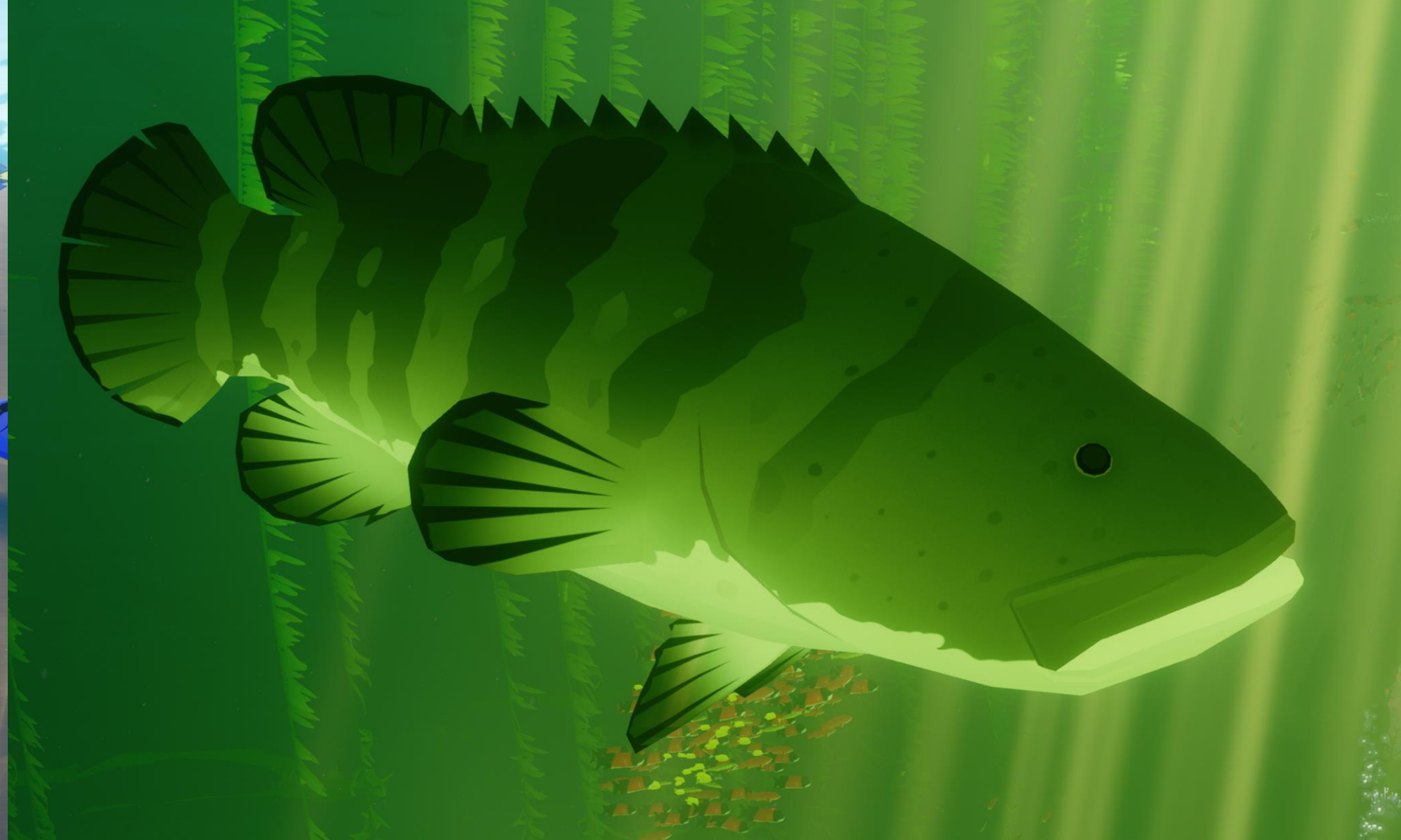
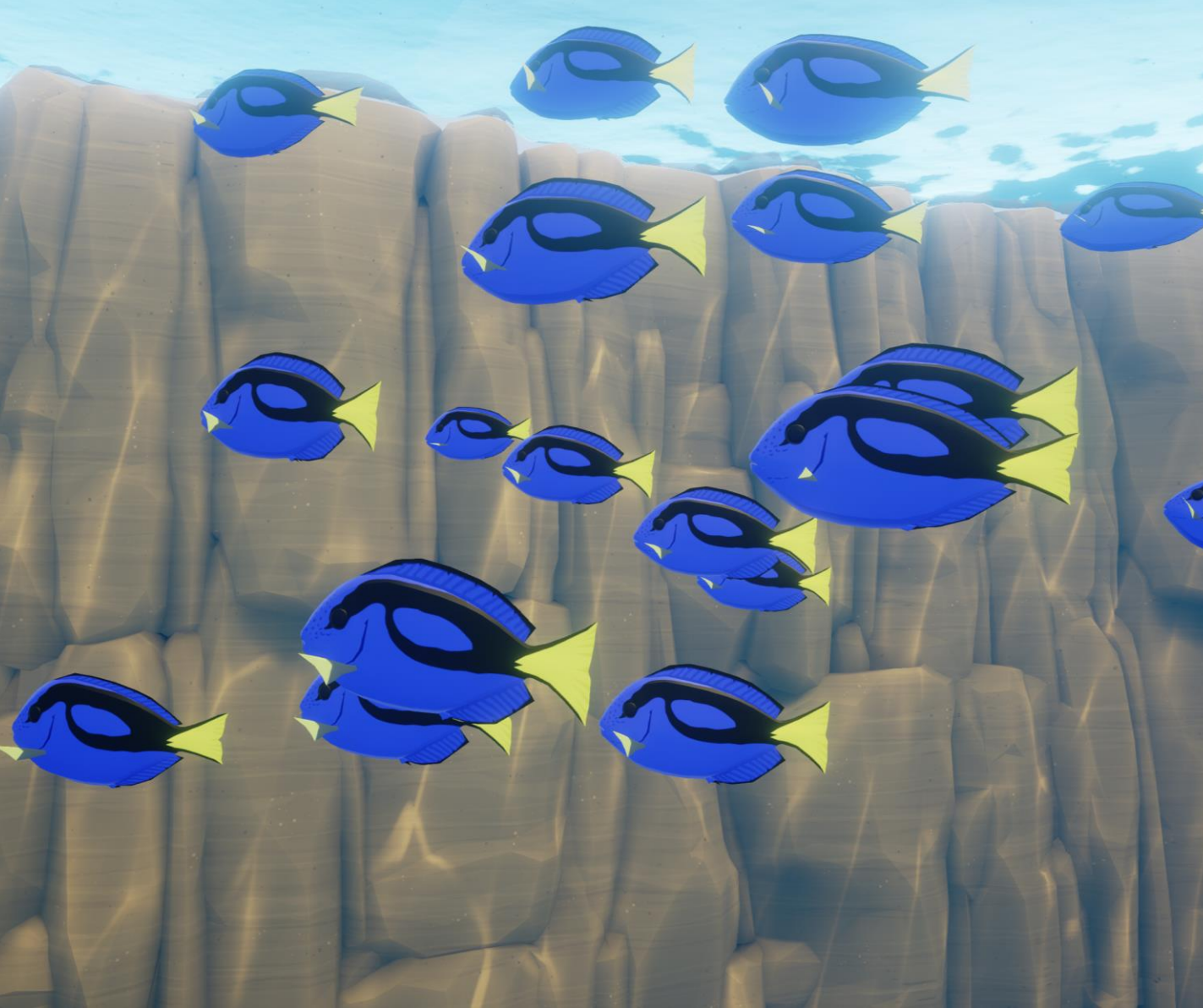
HUGE AMOUNTS OF INTERACTIVE FISH

HUGE AMOUNTS OF INTERACTIVE KELP

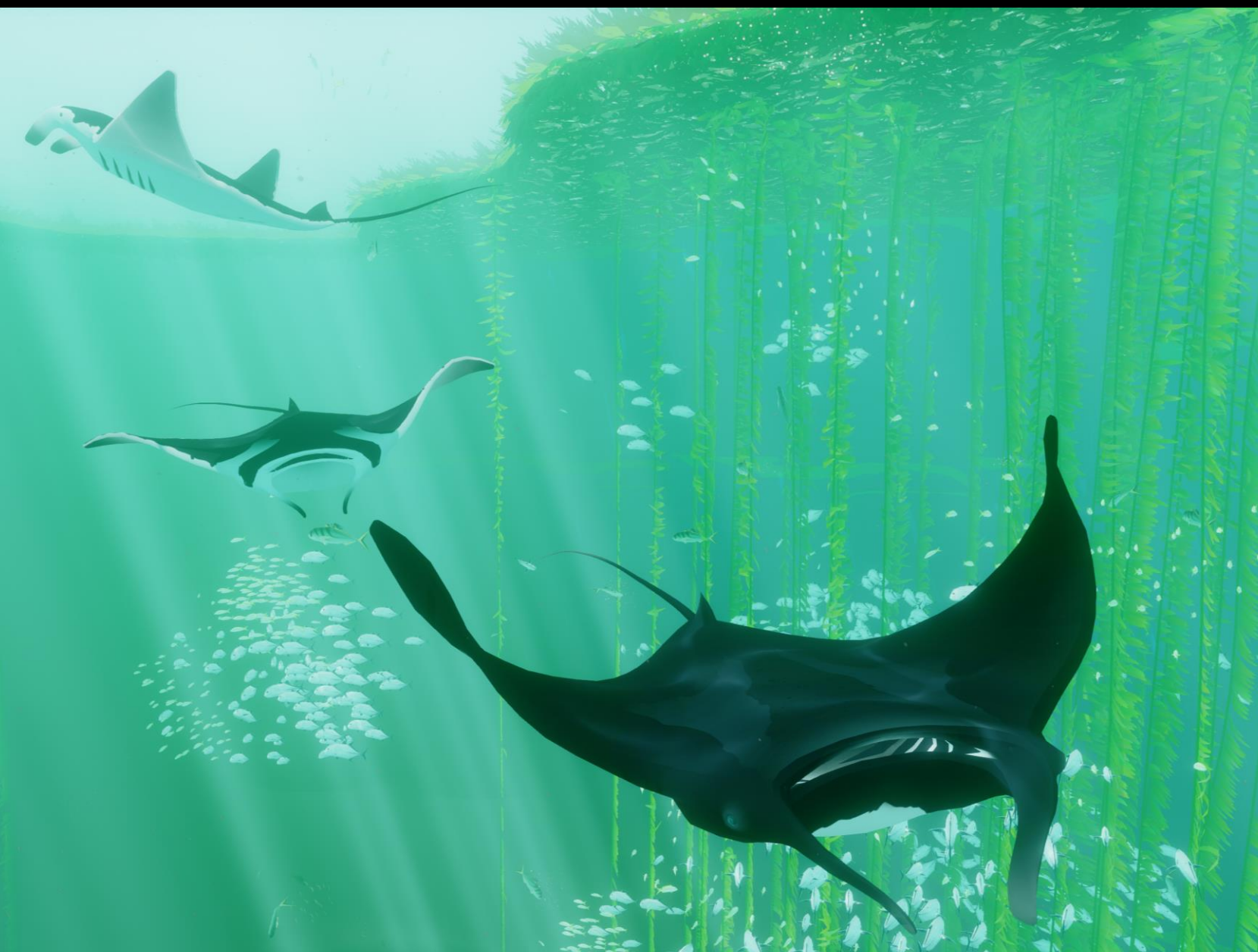
TERRAIN CAPABLE OF SUPPORTING RAPID ITERATION

DIRECTABLE VOLUMETRIC LIGHTING AND

ATMOSPHERE



FISH



FIRST ATTEMPT: SKELETAL
RIGS



LOTS OF FISH

STATIC MESH INSTANCING

SMALL AMOUNT OF UNIQUE DATA PER INSTANCE

HOW CAN WE MAKE STATIC MESH FISH
ANIMATE?

SWIM CYCLE

BITE

TURNING CURL

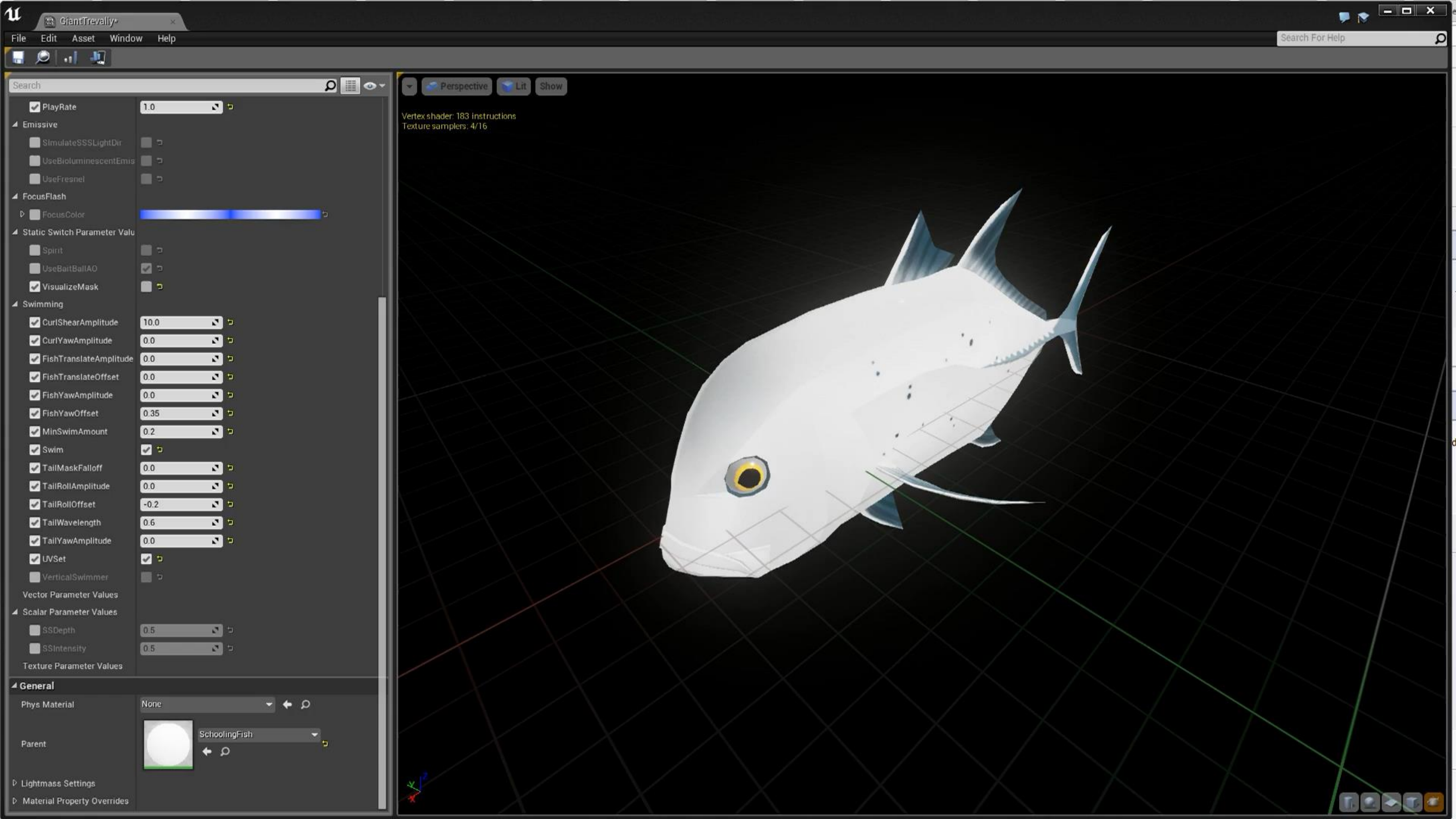
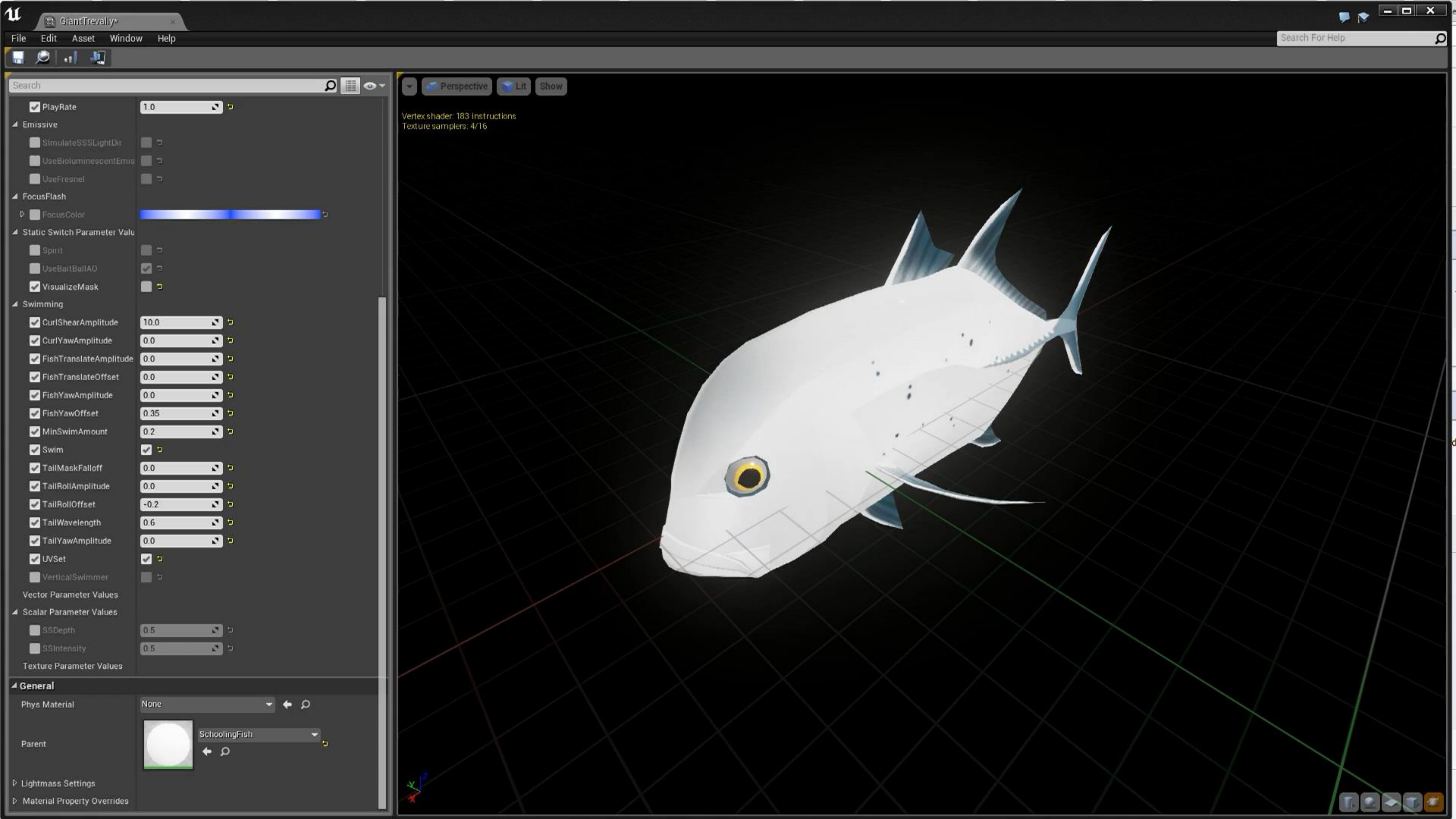
SWIM CYCLE

VERTEX ANIMATION IN MATERIAL

SIDE TO SIDE TRANSLATION

YAW ROTATION

PANNING ROTATIONS ALONG SPINE

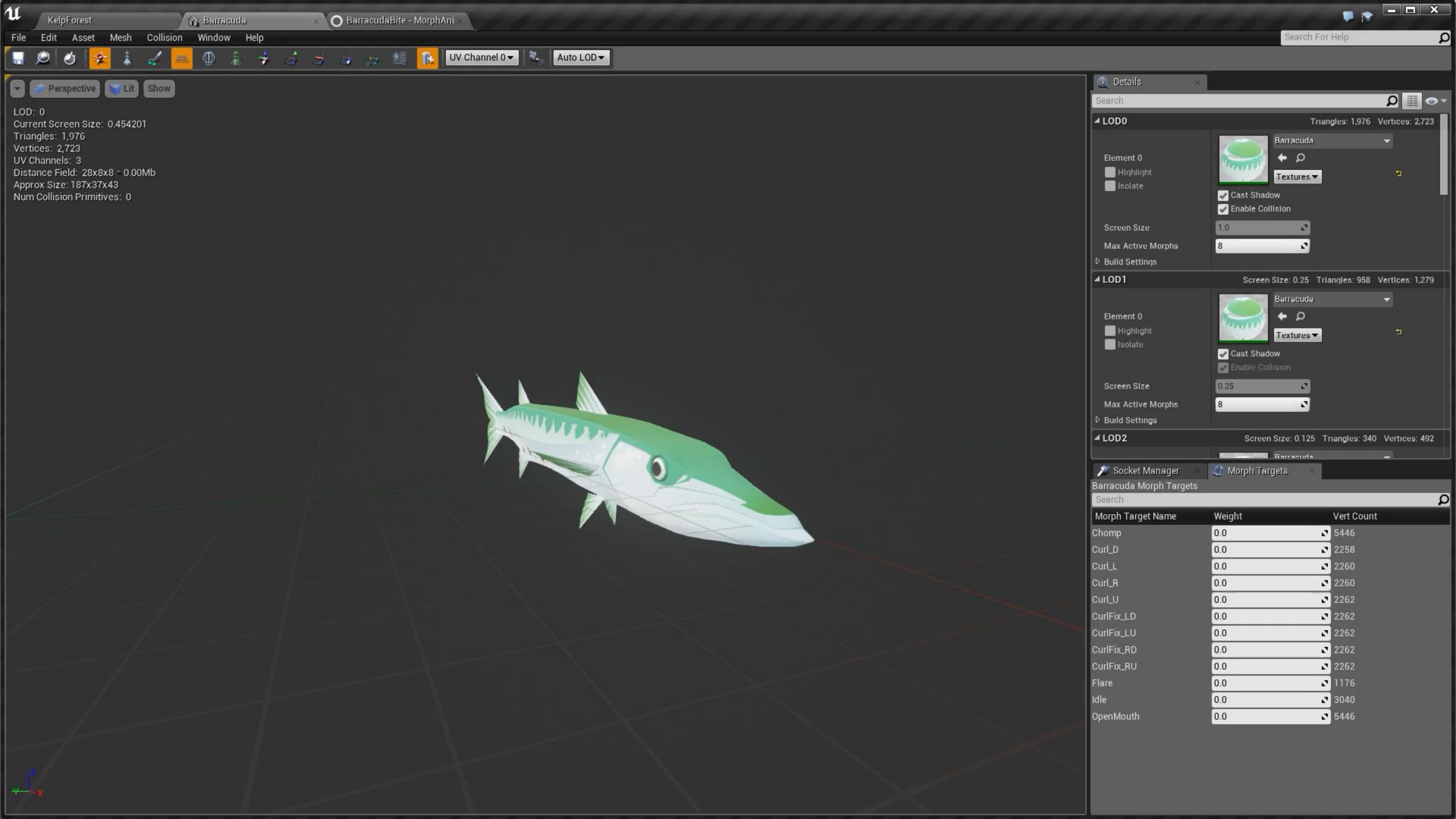




Busy: None
Depth: 40.7m
Speed: 0.1m/s
Temperature: 0.0
Fish Count: 11590
Critter Count: 0
Flotsam Count: 1
Kelp Clusters: 41
Kelp Stalks: 2163
Kelp Knots: 80715
Kelp Leaves: 335223
CamLoc: (2833.5, -185.8, -39.8)

BITE BLEND SHAPE SEQUENCES





KelpForest

Barracuda

BarracudaBite - MorphAni

File Edit Asset Mesh Collision Window Help

Search For Help

UV Channel 0

Auto LOD

Perspective

Lit

Show

LOD: 0
Current Screen Size: 0.454201
Triangles: 1,976
Vertices: 2,723
UV Channels: 3
Distance Field: 28x8x8 = 0.00Mb
Approx Size: 187x37x43
Num Collision Primitives: 0

Details

Search

LOD0

Triangles: 1,976 Vertices: 2,723

Element 0

Highlight

Isolate



Barracuda

Textures

Cast Shadow

Enable Collision

Screen Size

1.0

Max Active Morphs

8

Build Settings

LOD1

Screen Size: 0.25 Triangles: 958 Vertices: 1,279

Element 0

Highlight

Isolate



Barracuda

Textures

Cast Shadow

Enable Collision

Screen Size

0.25

Max Active Morphs

8

Build Settings

LOD2

Screen Size: 0.125 Triangles: 340 Vertices: 492

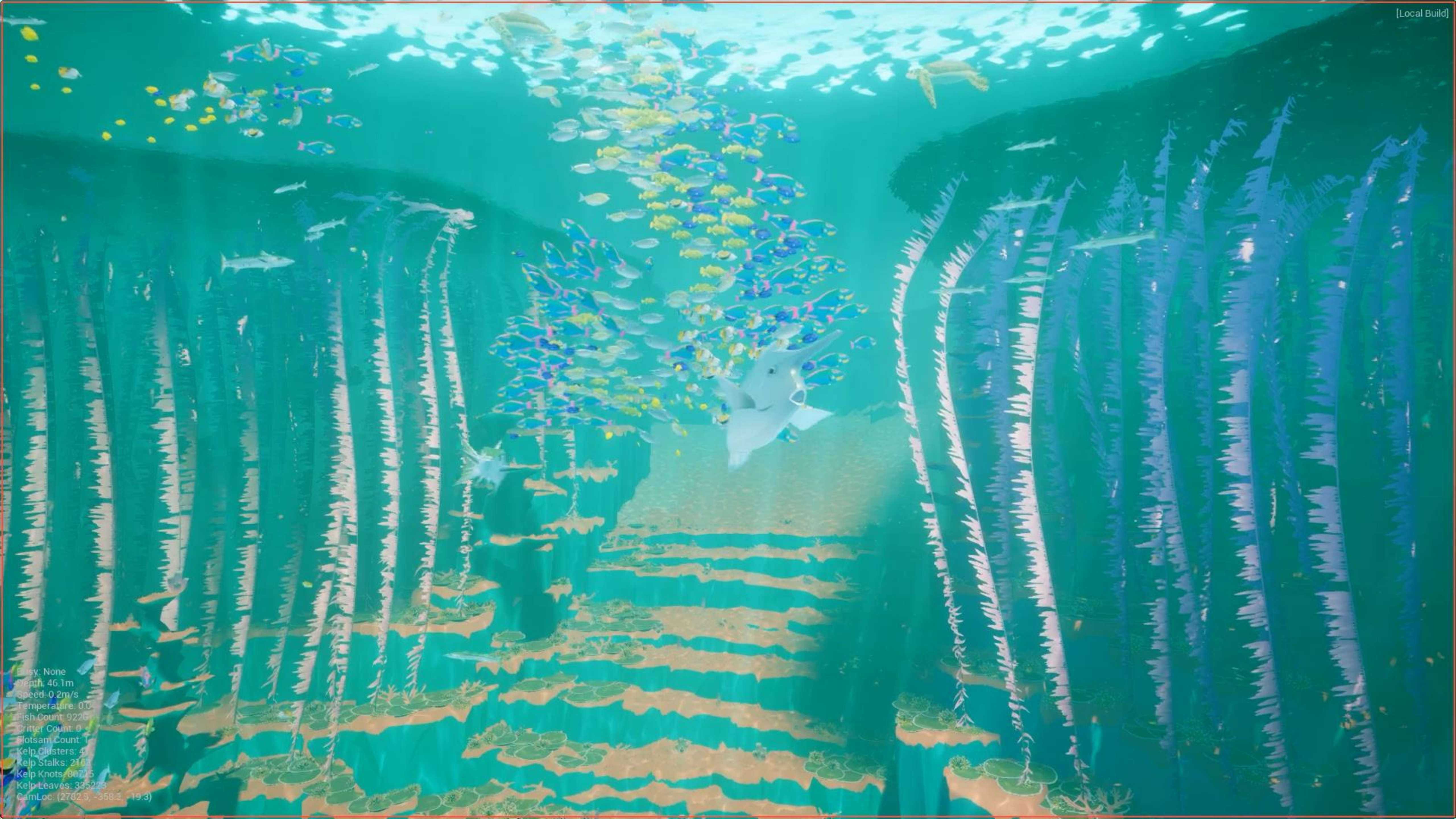
Socket Manager

Morph Targets

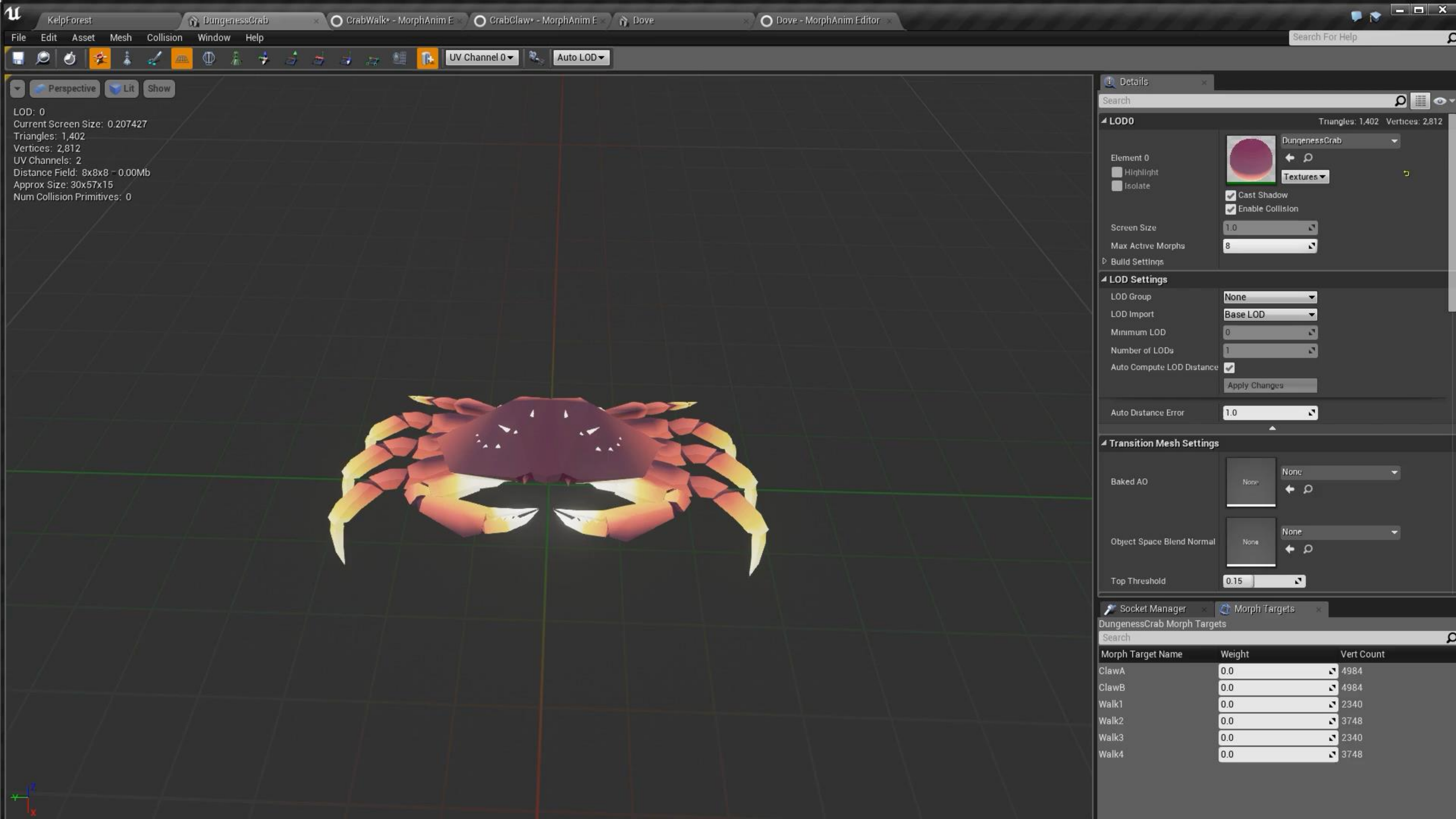
Barracuda Morph Targets

Search

Morph Target Name	Weight	Vert Count
Chomp	0.0	5446
Curl_D	0.0	2258
Curl_L	0.0	2260
Curl_R	0.0	2260
Curl_U	0.0	2262
CurlFix_LD	0.0	2262
CurlFix_LU	0.0	2262
CurlFix_RD	0.0	2262
CurlFix_RU	0.0	2262
Flare	0.0	1176
Idle	0.0	3040
OpenMouth	0.0	5446



Fishy: None
Depth: 46.1m
Speed: 0.2m/s
Temperature: 0.0
Fish Count: 9226
Critter Count: 0
Flotsam Count: 1
Kelp Clusters: 4
Kelp Stalks: 2101
Kelp Knots: 80715
Kelp Leaves: 335223
CamLoc: (2702.5, -358.2, 19.3)



KelpForest

DungenessCrab

CrabWalk* - MorphAnim E

CrabClaw* - MorphAnim E

Dove

Dove - MorphAnim Editor

File Edit Asset Mesh Collision Window Help

Search For Help

UV Channel 0

Auto LOD

Perspective

Lit

Show

LOD: 0
Current Screen Size: 0.207427
Triangles: 1,402
Vertices: 2,812
UV Channels: 2
Distance Field: 8x8x8 - 0.00Mb
Approx Size: 30x57x15
Num Collision Primitives: 0

Details

Search

LOD0

Triangles: 1,402 Vertices: 2,812

Element 0

Highlight

Isolate



DungenessCrab



Textures

Cast Shadow

Enable Collision

Screen Size

1.0

Max Active Morphs

8

Build Settings

LOD Settings

LOD Group

None

LOD Import

Base LOD

Minimum LOD

0

Number of LODs

1

Auto Compute LOD Distance

✓

Apply Changes

Auto Distance Error

1.0

Transition Mesh Settings

Baked AO

None

None

Object Space Blend Normal

None

None

Top Threshold

0.15

Socket Manager

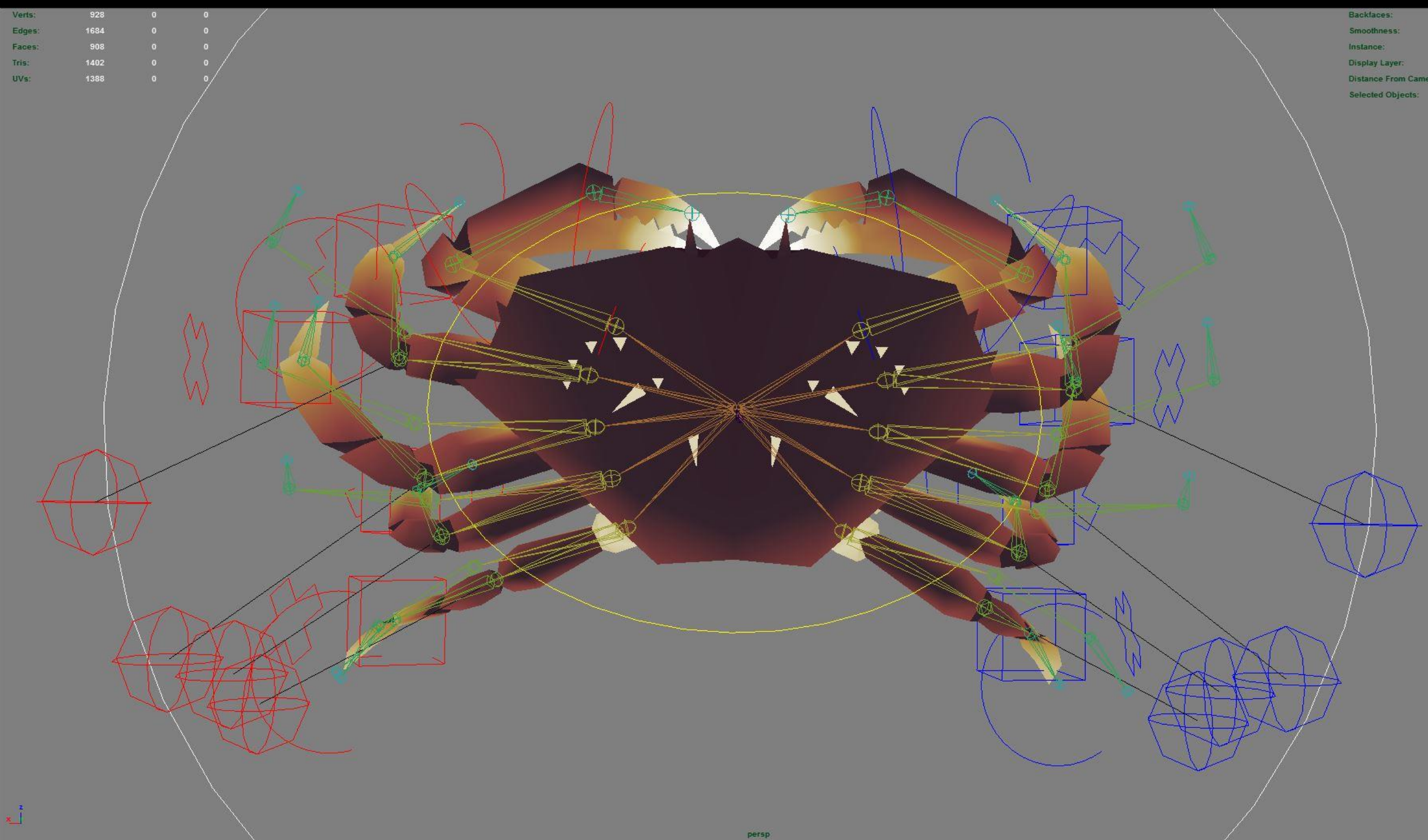
Morph Targets

DungenessCrab Morph Targets

Search

Morph Target Name	Weight	Vert Count
ClawA	0.0	4984
ClawB	0.0	4984
Walk1	0.0	2340
Walk2	0.0	3748
Walk3	0.0	2340
Walk4	0.0	3748

RIGS TO CREATE BLENDSHAPE POSES



41 JOINTS



26 JOINTS

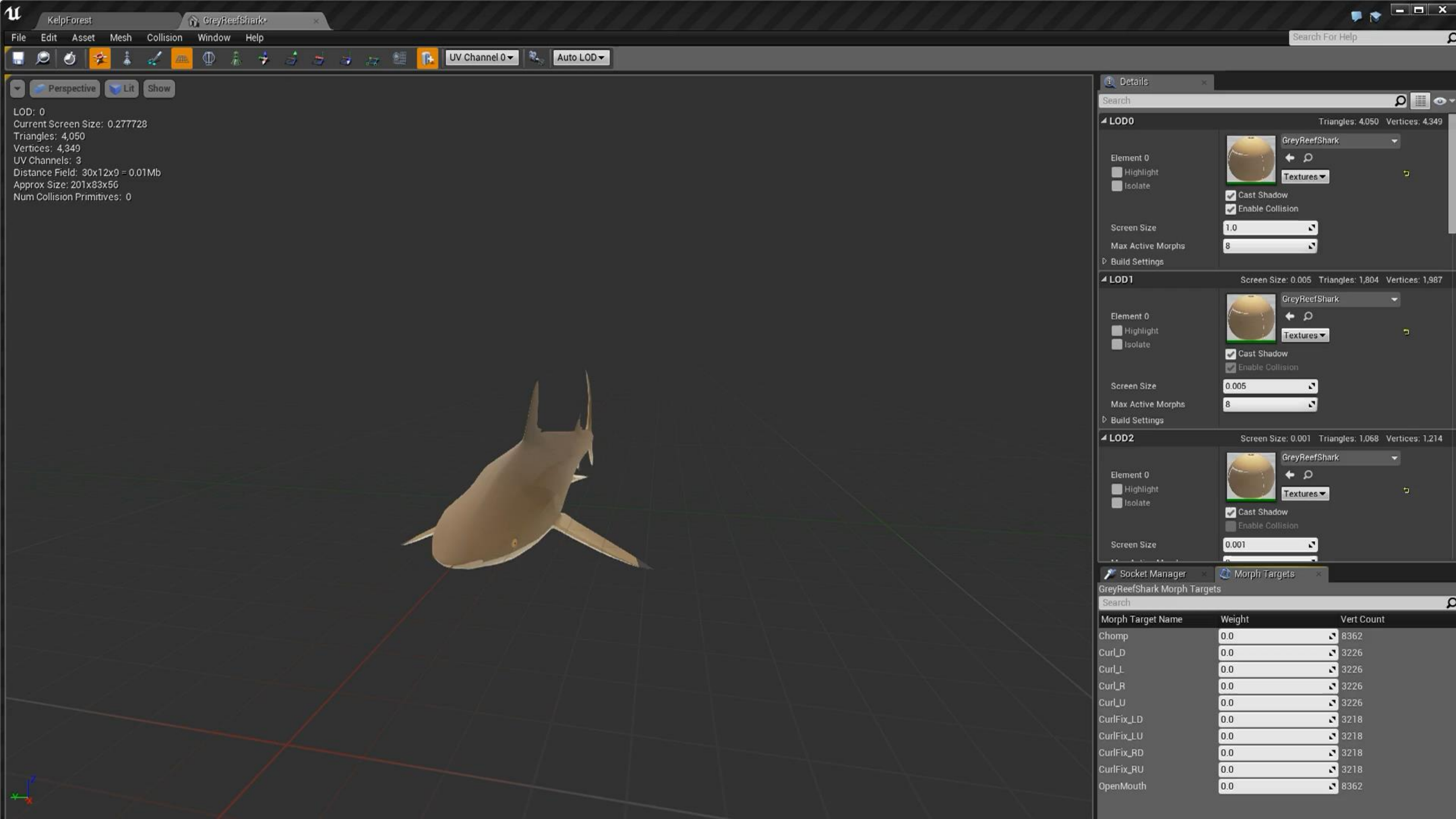
TURNING CURL



Busy: None
Depth: 14.1m
Speed: 1.4m/s
Temperature: 0.0
Fish Count: 7799
Critter Count: 0
Flotsam Count: 1
Kelp Clusters: 41
Kelp Stalks: 2163
Kelp Knots: 80715
Kelp Leaves: 335223
CamLoc: (1493.4, -331.0, -12.9)

BLEND SHAPE BLEND SPACE





KelpForest

GreyReefShark

File Edit Asset Mesh Collision Window Help

Search For Help

UV Channel 0

Auto LOD

Perspective

Lit

Show

LOD: 0

Current Screen Size: 0.277728

Triangles: 4,050

Vertices: 4,349

UV Channels: 3

Distance Field: 30x12x9 = 0.01Mb

Approx Size: 201x83x56

Num Collision Primitives: 0

Details

Search

LOD0

Triangles: 4,050 Vertices: 4,349

Element 0

Highlight

Isolate



GreyReefShark

Textures

Cast Shadow

Enable Collision

Screen Size

1.0

Max Active Morphs

8

Build Settings

LOD1

Screen Size: 0.005 Triangles: 1,804 Vertices: 1,987

Element 0

Highlight

Isolate



GreyReefShark

Textures

Cast Shadow

Enable Collision

Screen Size

0.005

Max Active Morphs

8

Build Settings

LOD2

Screen Size: 0.001 Triangles: 1,068 Vertices: 1,214

Element 0

Highlight

Isolate



GreyReefShark

Textures

Cast Shadow

Enable Collision

Screen Size

0.001

Socket Manager

Morph Targets

GreyReefShark Morph Targets

Search

Morph Target Name	Weight	Vert Count
Chomp	0.0	8362
Curl_D	0.0	3226
Curl_L	0.0	3226
Curl_R	0.0	3226
Curl_U	0.0	3226
CurlFix_LD	0.0	3218
CurlFix_LU	0.0	3218
CurlFix_RD	0.0	3218
CurlFix_RU	0.0	3218
OpenMouth	0.0	8362

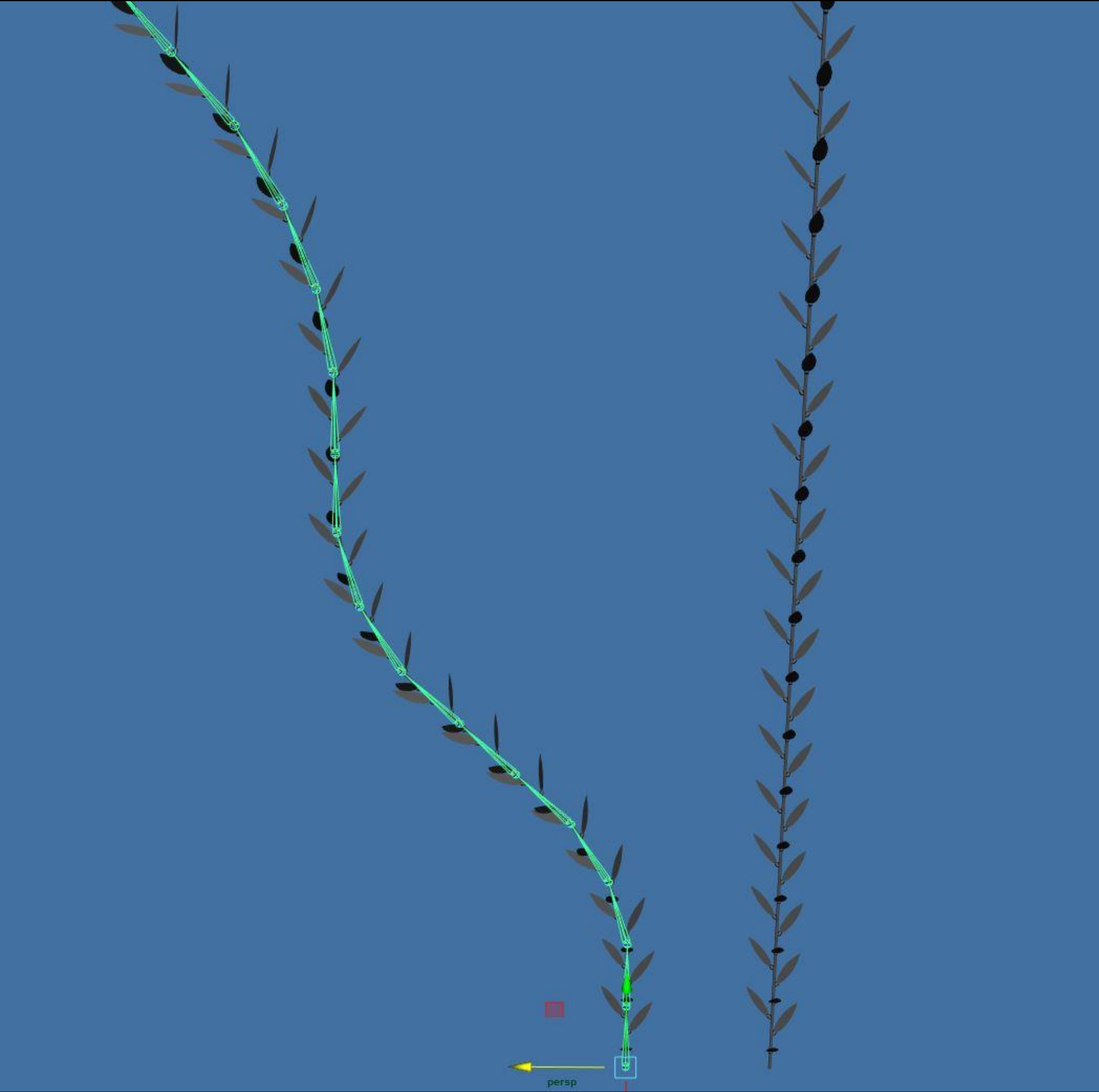




Busy: None
Depth: 17.0m
Speed: 1.6m/s
Temperature: 24.5°C
Fish Count: 124
Critter Count: 11
Flotsam Count: 1
Kelp Clusters: 41
Kelp Stalks: 2163
Kelp Knots: 80715
Kelp Leaves: 338223
Camera: (1360.0, -358.5, -14.5)

A lush green forest scene with sunlight filtering through the trees. The image is dominated by vibrant green foliage, including large ferns and dense trees. Sunlight rays are visible, creating a bright and airy atmosphere. The text "KELP SYSTEM" is centered in the middle of the image in a white, sans-serif font.

KELP SYSTEM







Busy: None
Depth: 37.8m
Speed: 3.8m/s
Temperature: 0.0
Fish Count: 9651
Critter Count: 57
Flotsam Count: 0
Kelp Clusters: 35
Kelp Stalks: 1868
Kelp Knots: 118807
Kelp Leaves: 350986
CamLoc: (360.9, -173.6, -36.5)

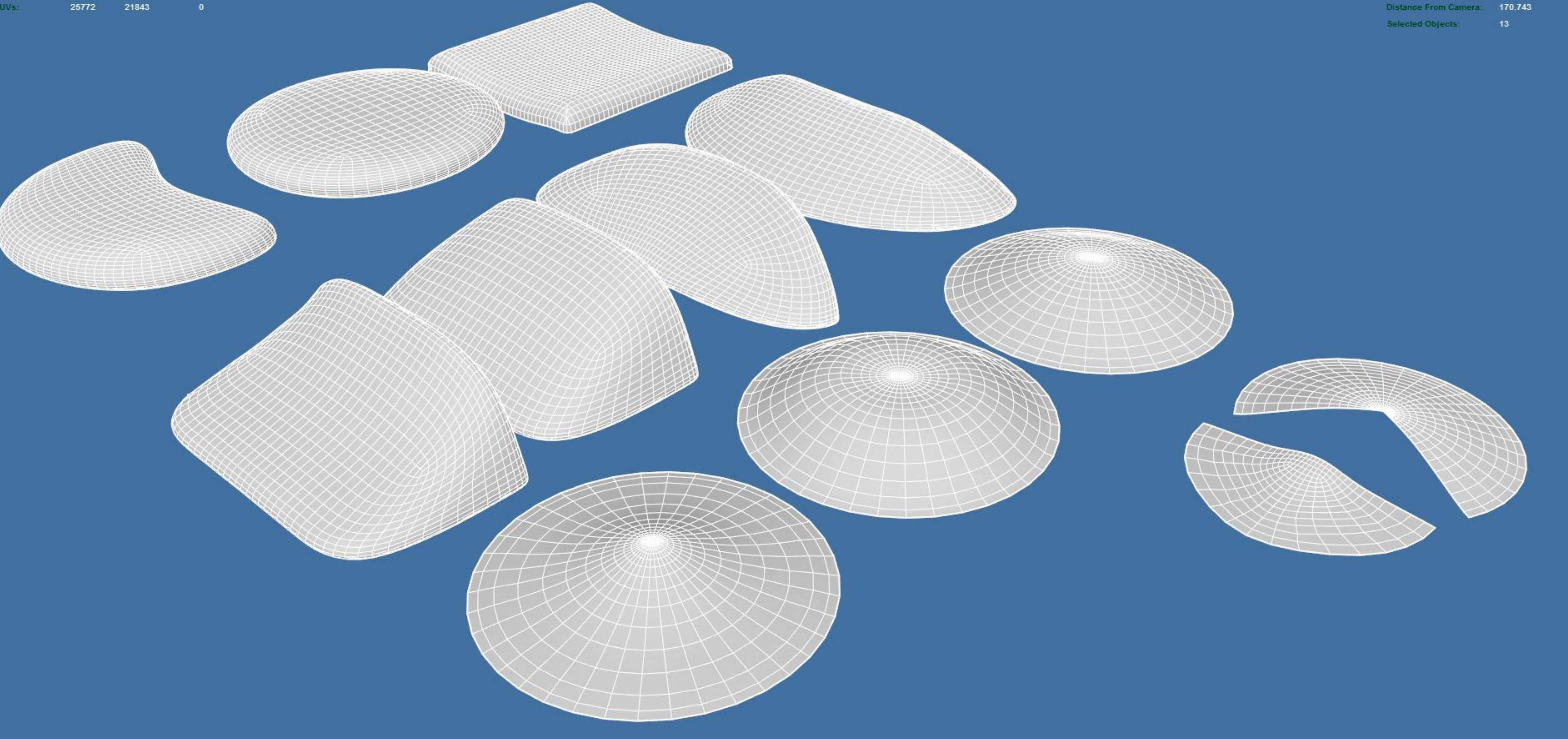
TERRAIN

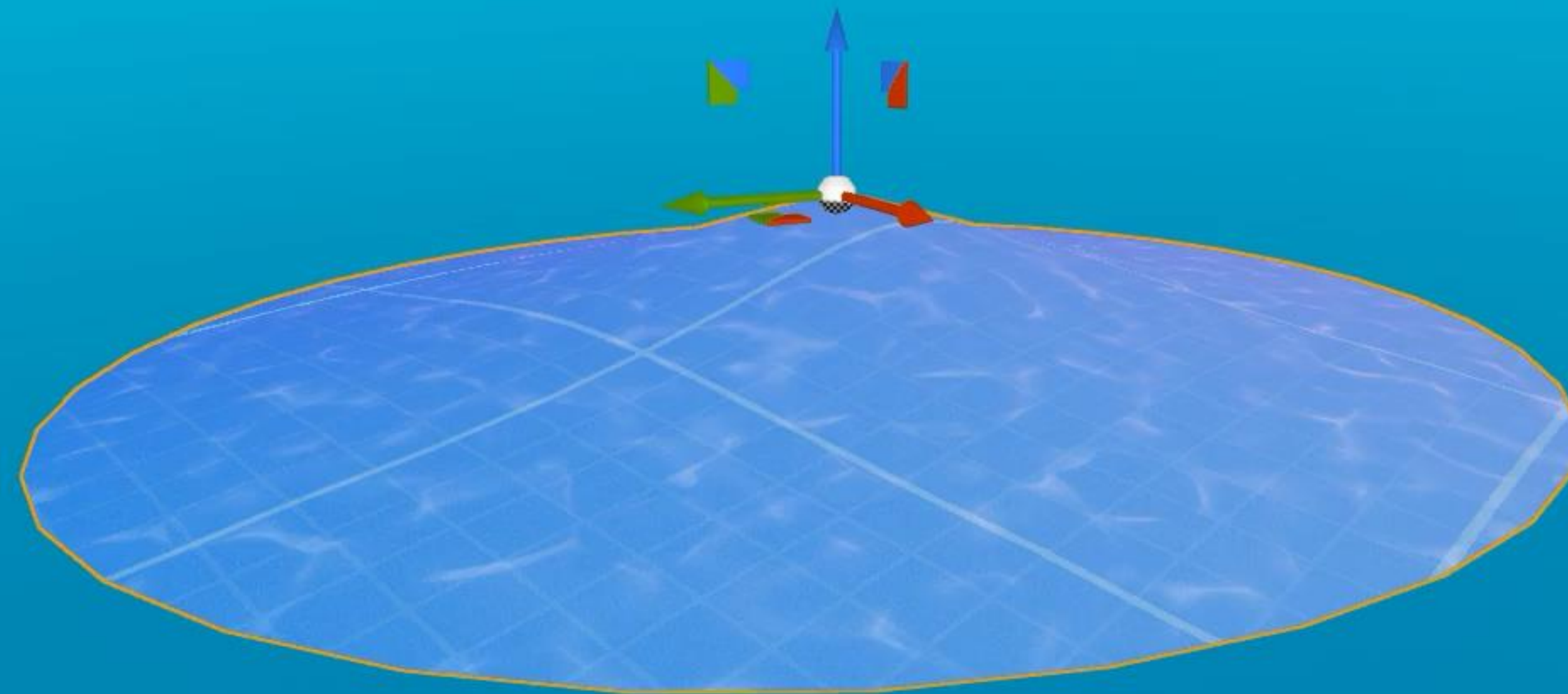
SCULPTING/PAINTING PARADIGM IS NOT
IDEAL FOR LANDSCAPE ITERATION

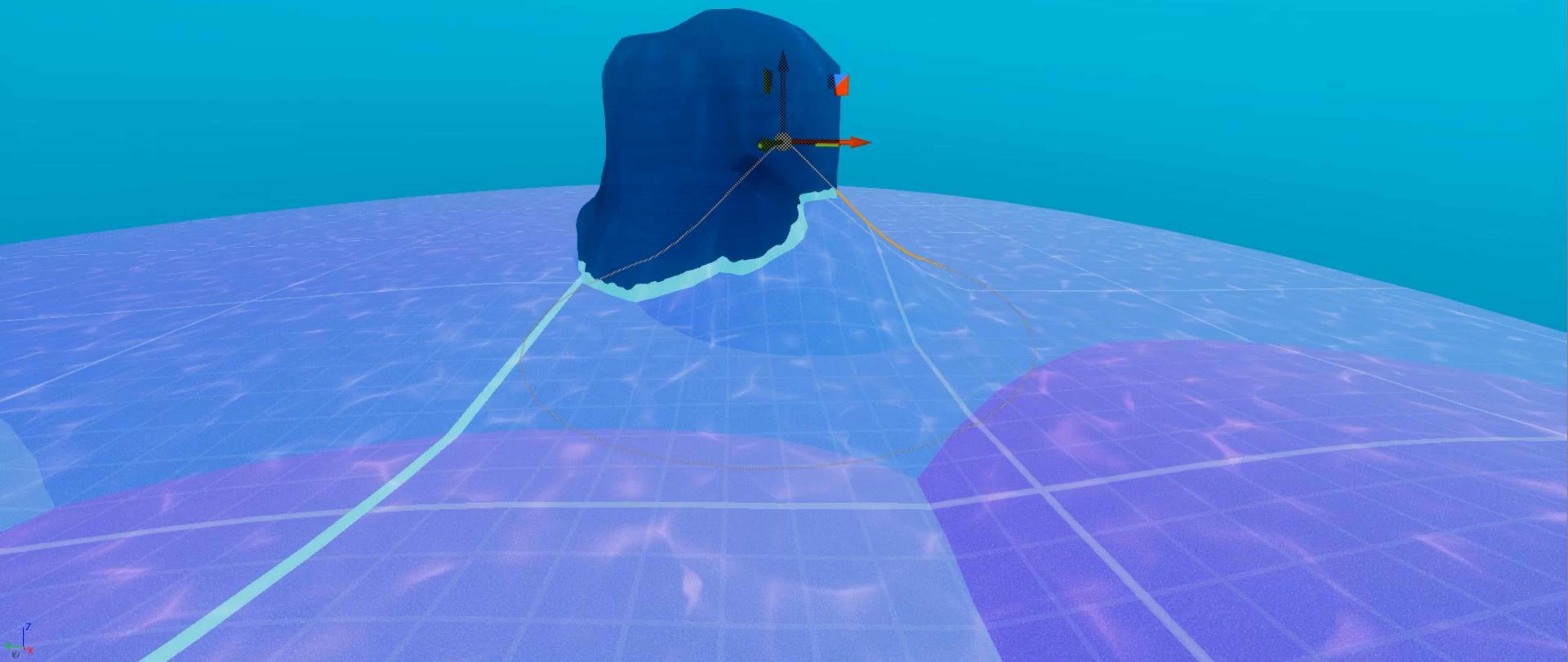
TERRAIN HEIGHT PATCHES

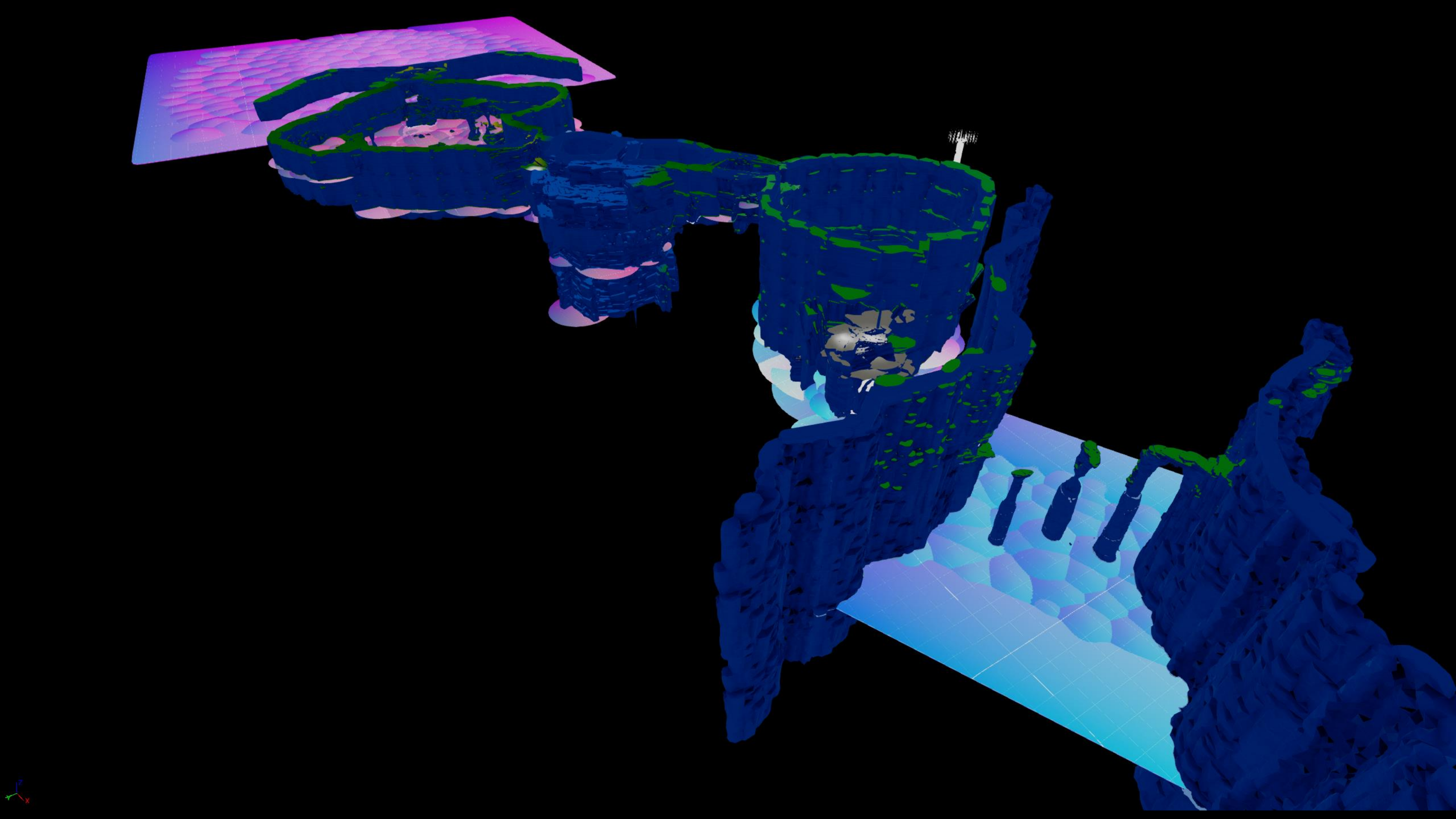
Verts: 24393 21387 0
Edges: 48361 42598 0
Faces: 23994 21230 0
Tris: 47825 42297 0
UVs: 25772 21843 0

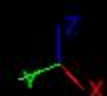
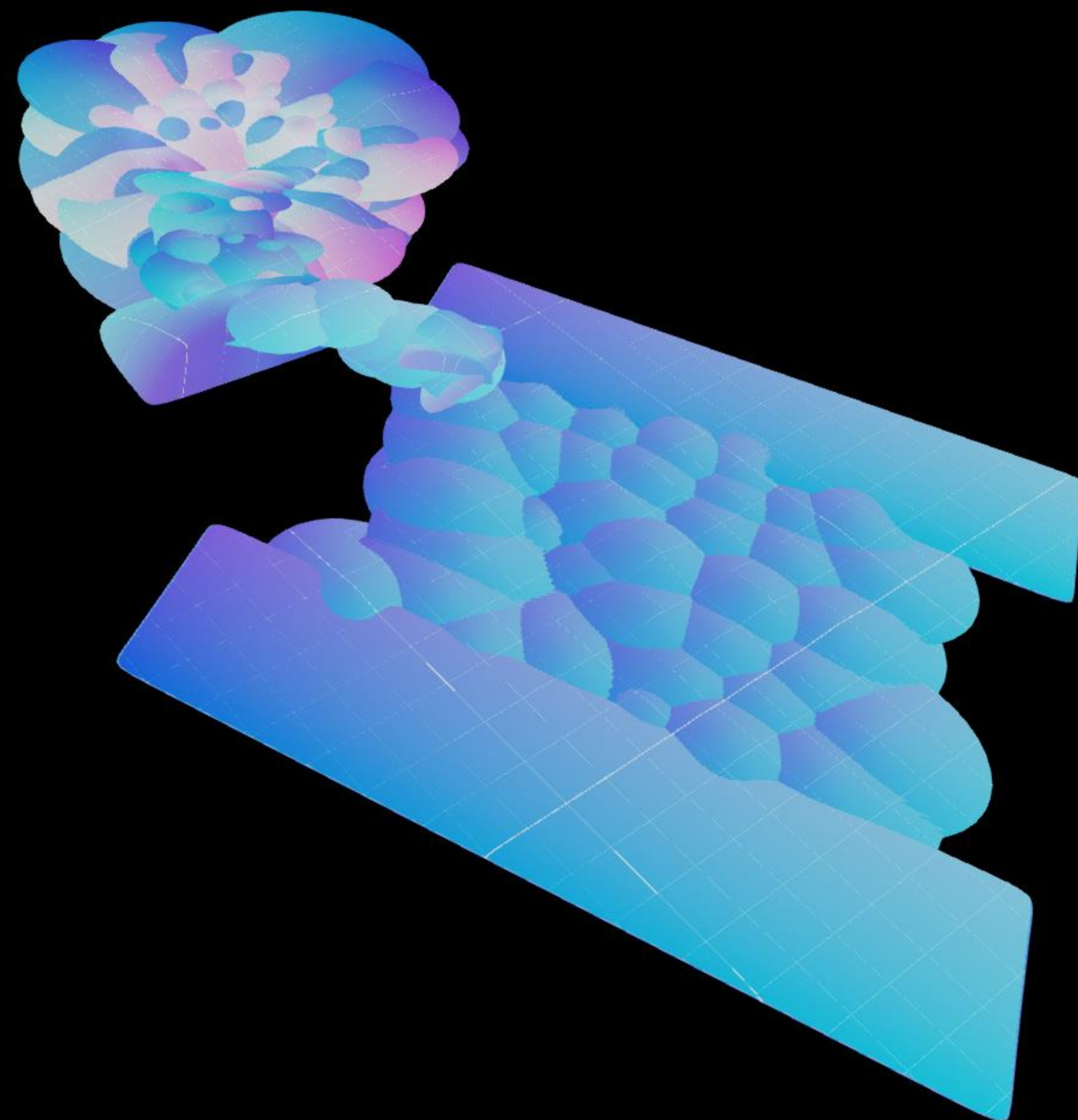
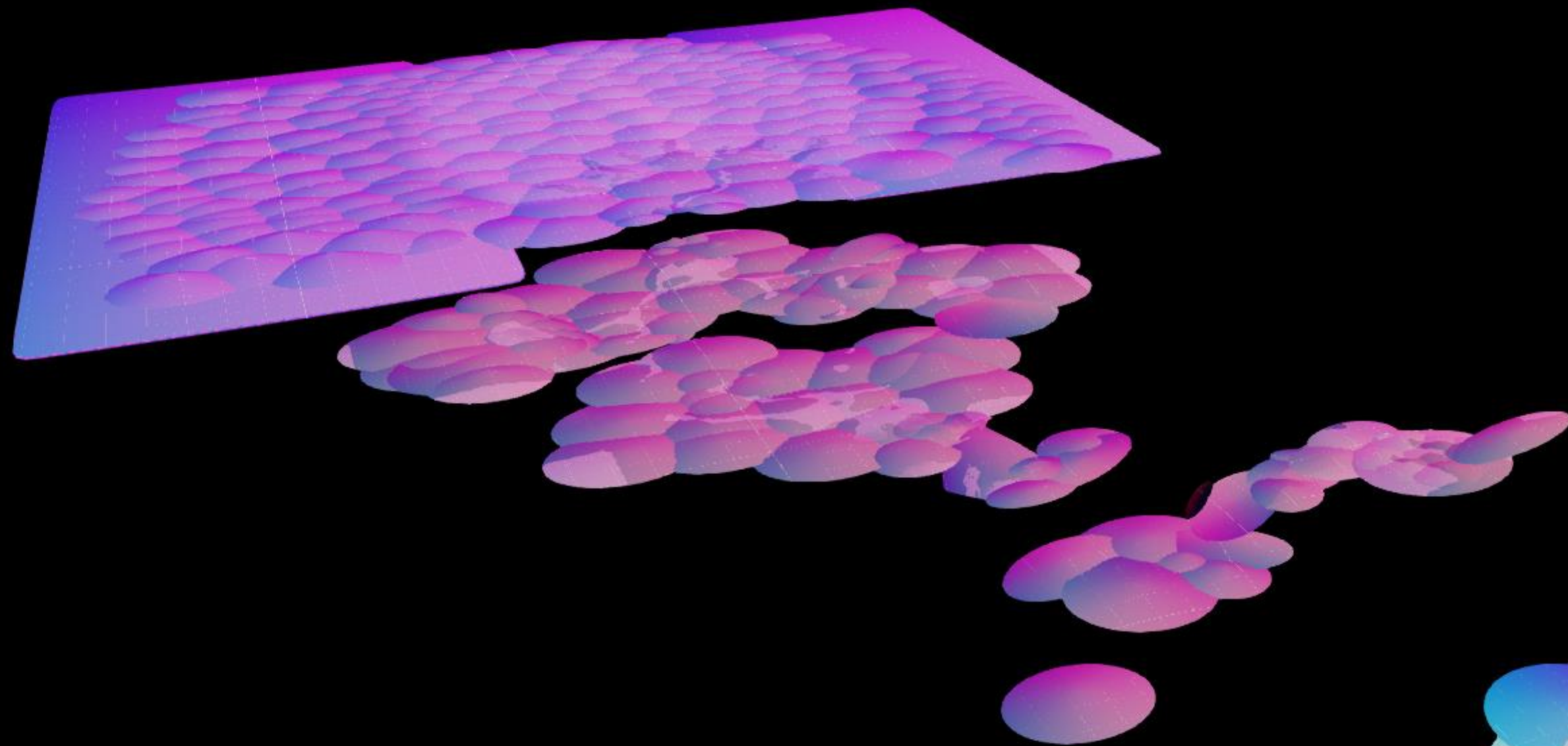
Backfaces: N/A
Smoothness: N/A
Instance: No
Display Layer: TerrainObjects
Distance From Camera: 170.743
Selected Objects: 13



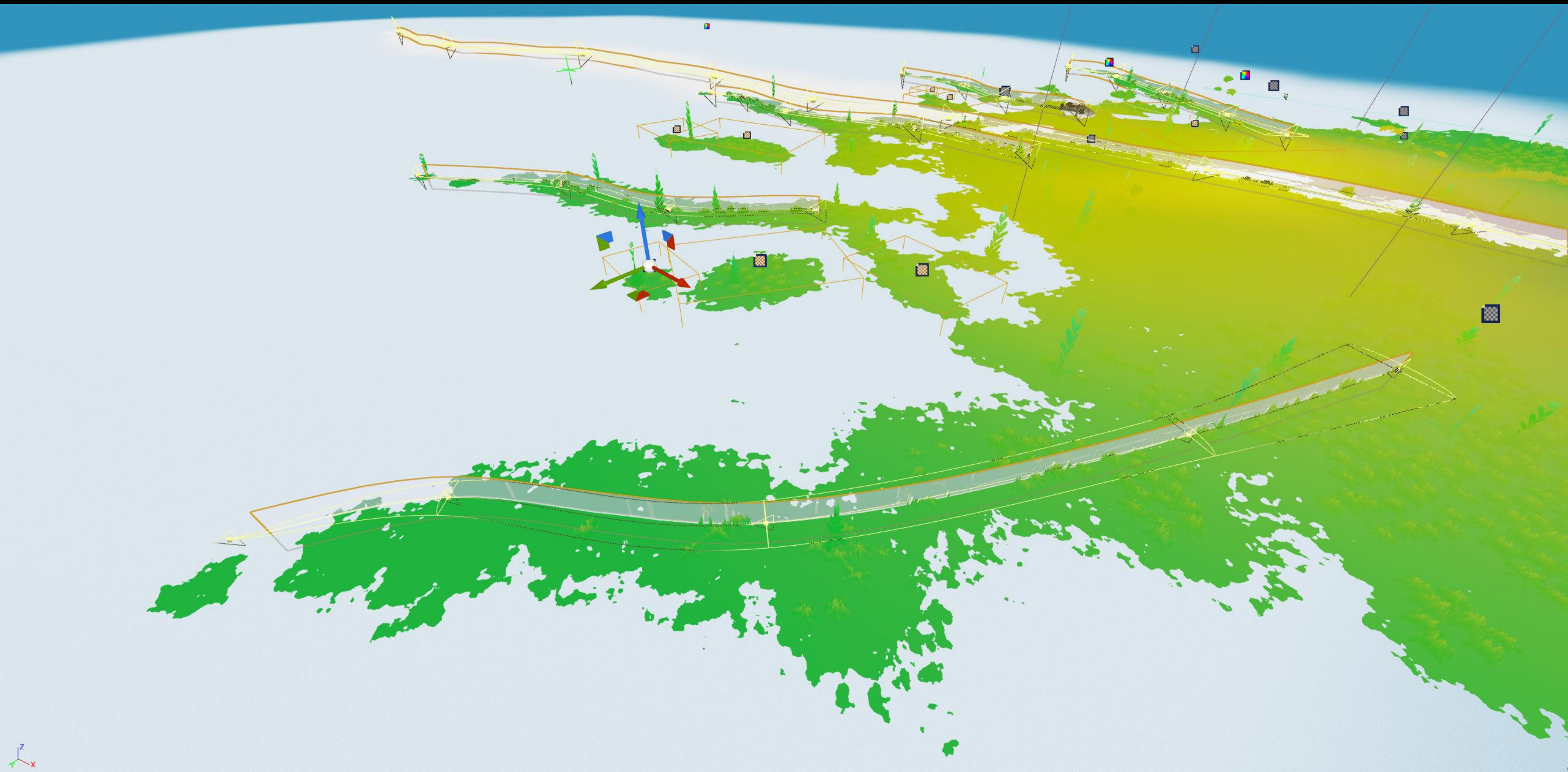








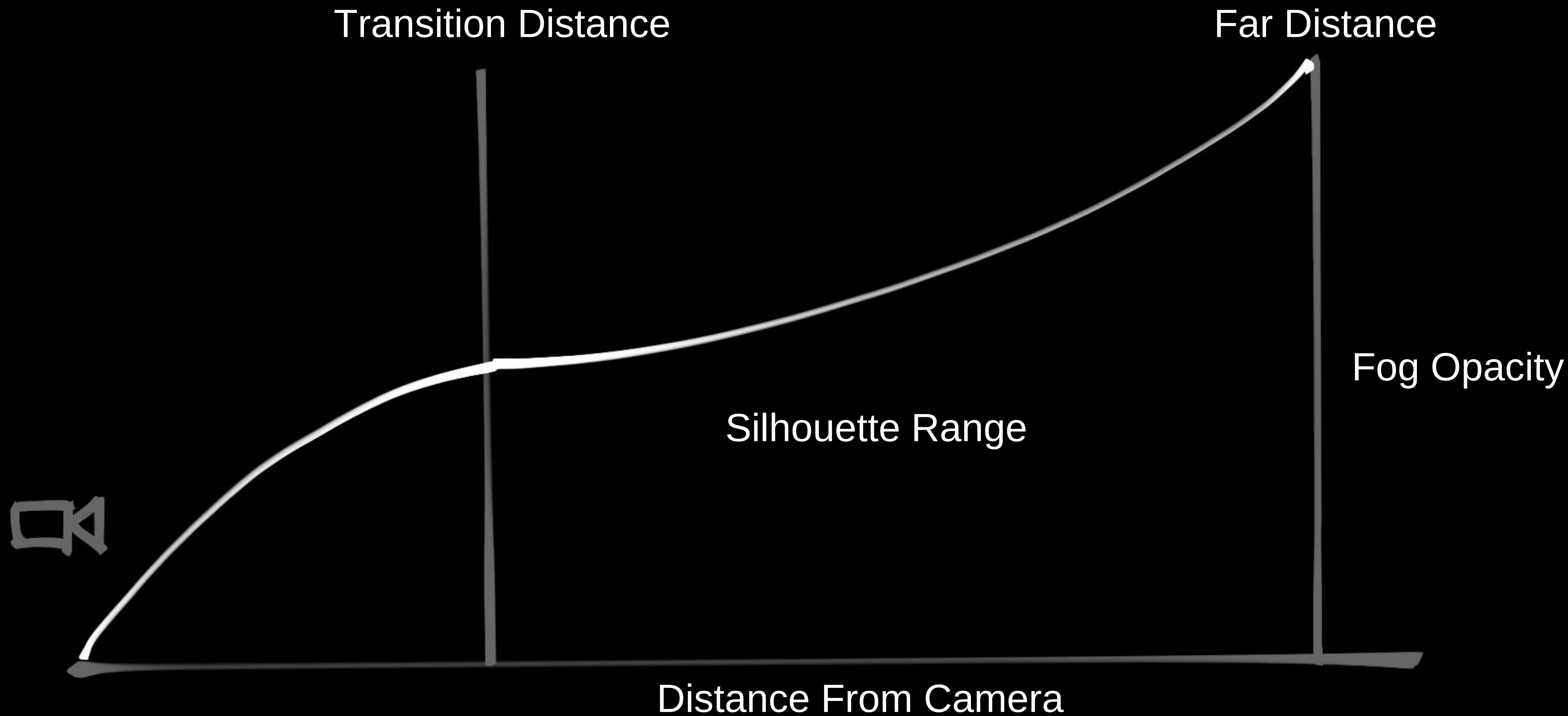
TERRAIN STAMPS



VOLUMETRIC ATMOSPHERICS

SIMPLE LINEAR FOG WITH TUNABLE FALLOFF
CURVE

VOLUMETRICALLY STORED FOG OPACITY CURVE



SIMPLE LINEAR FOG FALLOFF



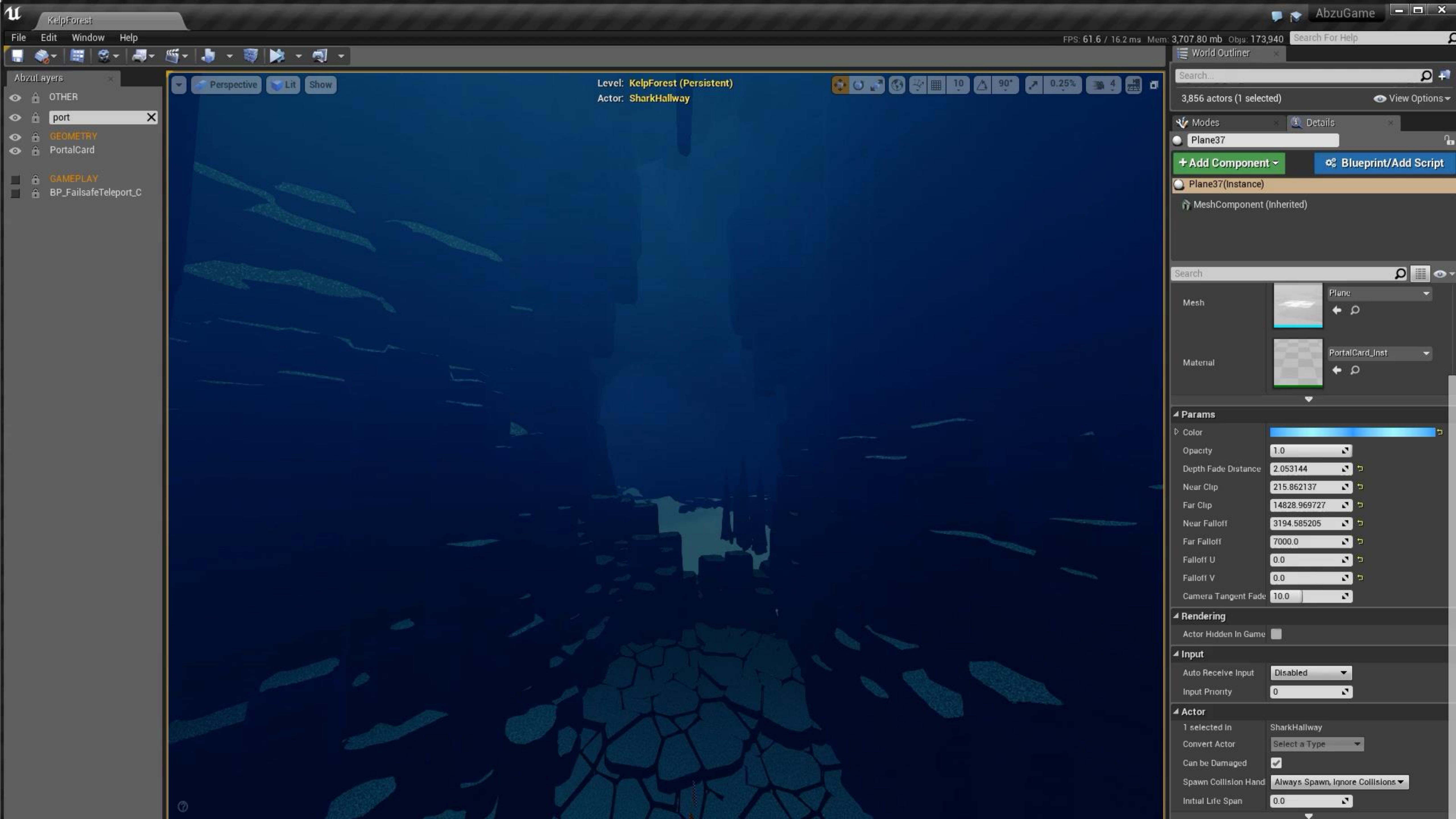
TUNED OPACITY CURVE FALLOFF

Silhouette Range

Transition Distance

PORTAL CARDS

HIGHLIGHT SPECIFIC SILHOUETTES



KelpForest

AbzuGame

FPS: 61.6 / 16.2 ms Mem: 3,707.80 mb Objs: 173,940

Search For Help

World Outliner

Search...

3,856 actors (1 selected)

View Options

Modes

Details

Plane37

+ Add Component

Blueprint/Add Script

Plane37(Instance)

MeshComponent (Inherited)

Search

Mesh



Plane

Material



PortalCard_Inst

Params

Color

Opacity

1.0

Depth Fade Distance

2.053144

Near Clip

215.862137

Far Clip

14828.969727

Near Falloff

3194.585205

Far Falloff

7000.0

Falloff U

0.0

Falloff V

0.0

Camera Tangent Fade

10.0

Rendering

Actor Hidden In Game



Input

Auto Receive Input

Disabled

Input Priority

0

Actor

1 selected In

SharkHallway

Convert Actor

Select a Type

Can be Damaged



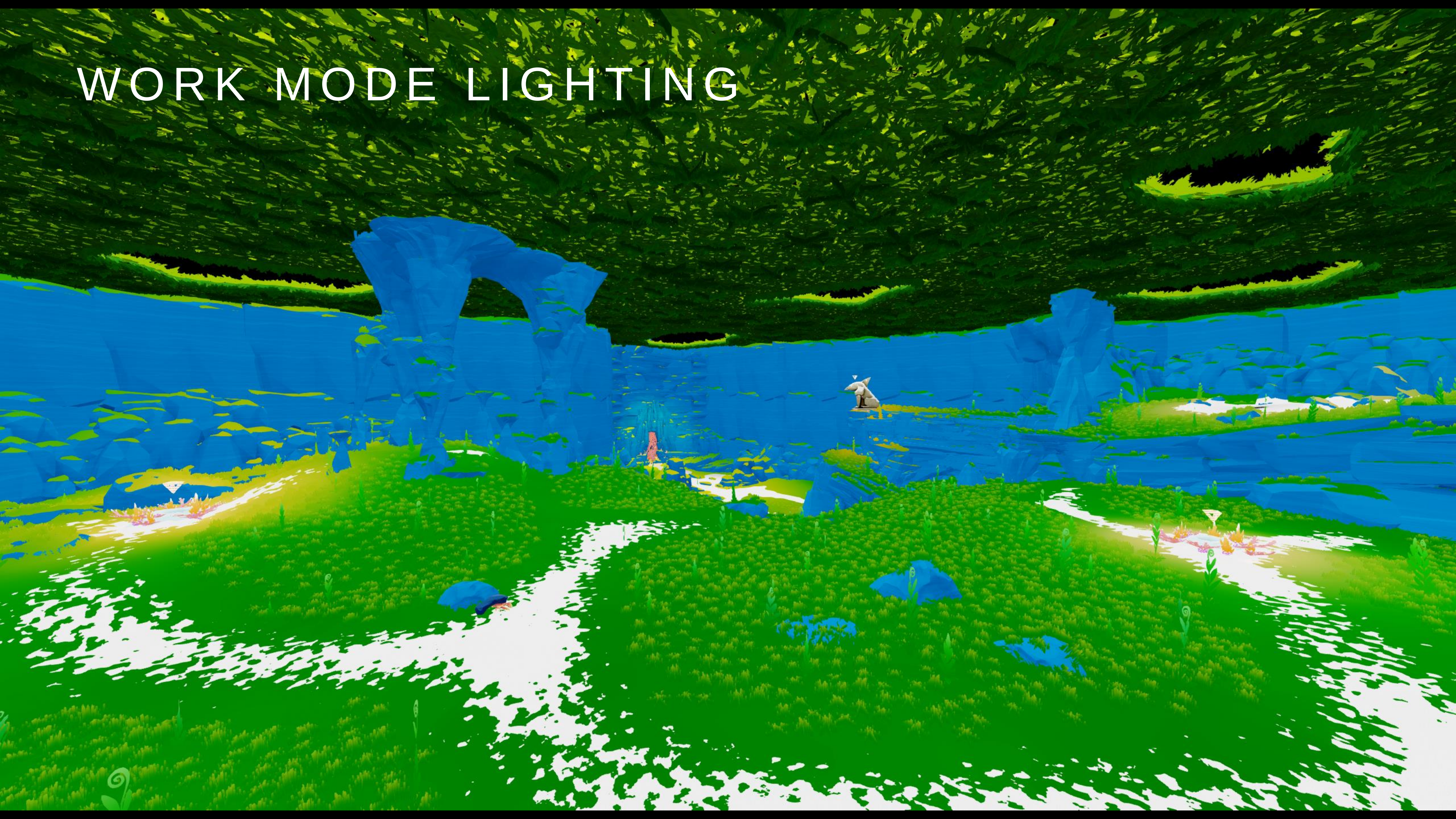
Spawn Collision Hand

Always Spawn, Ignore Collisions

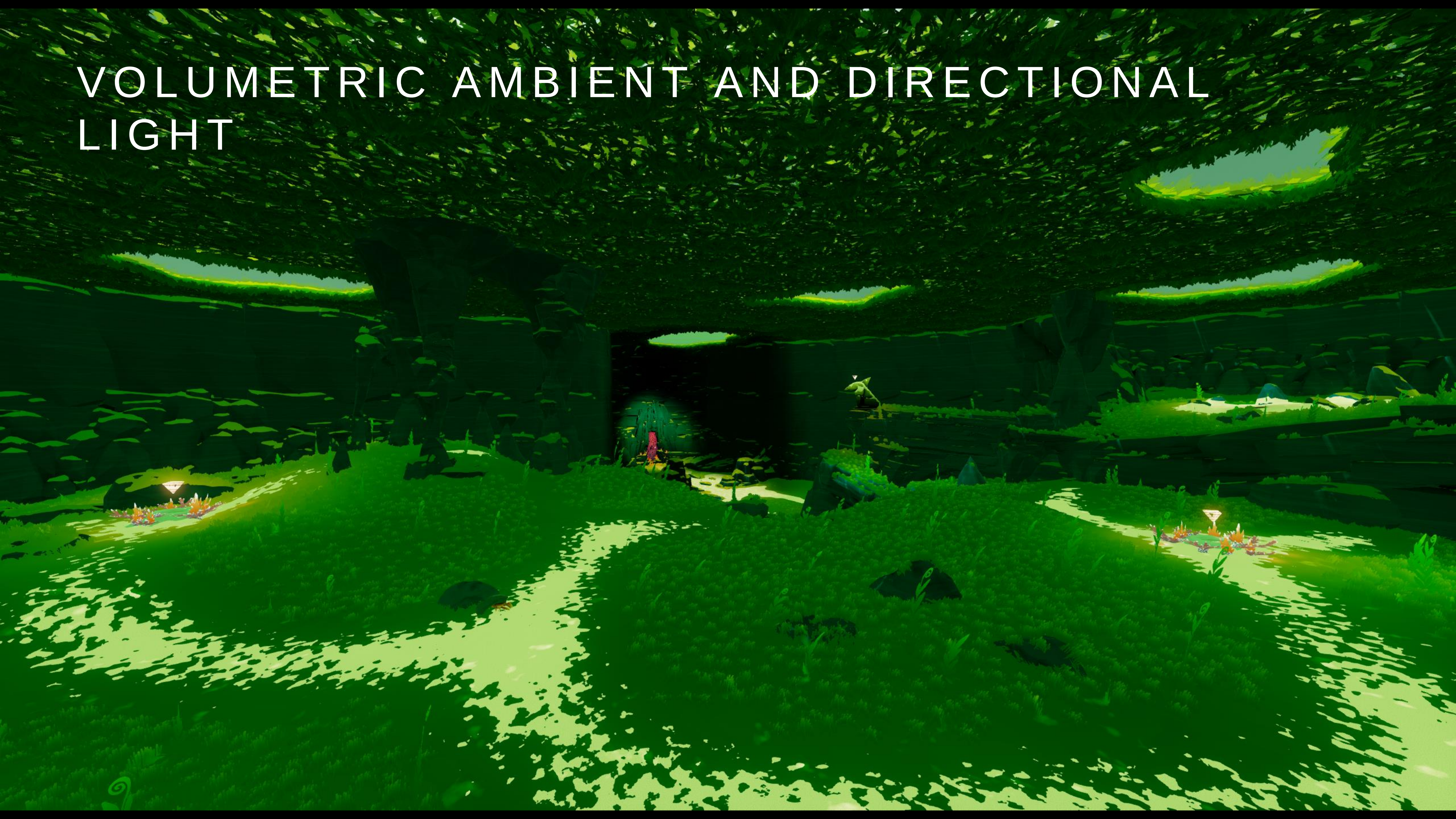
Initial Life Span

0.0

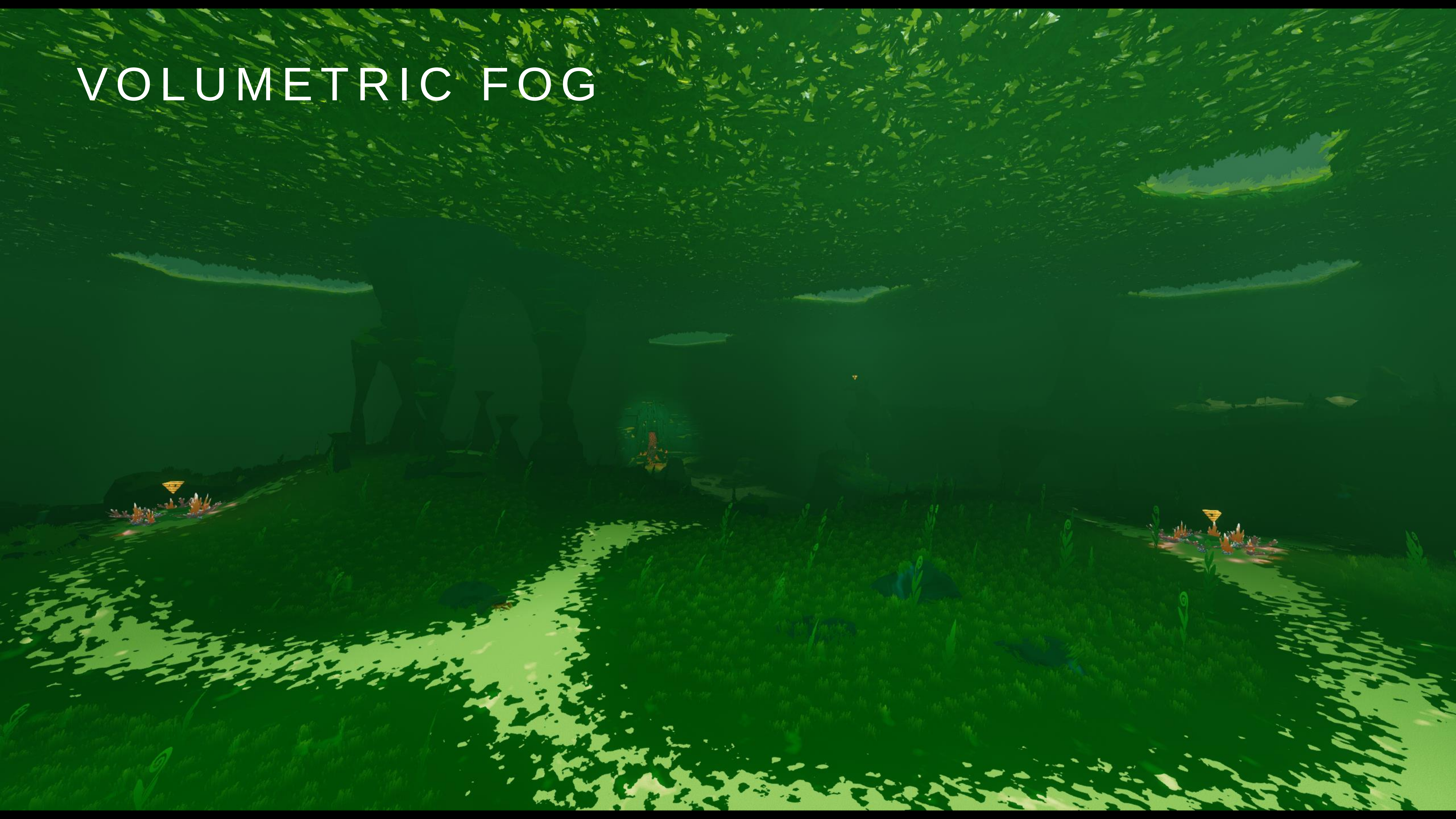
WORK MODE LIGHTING



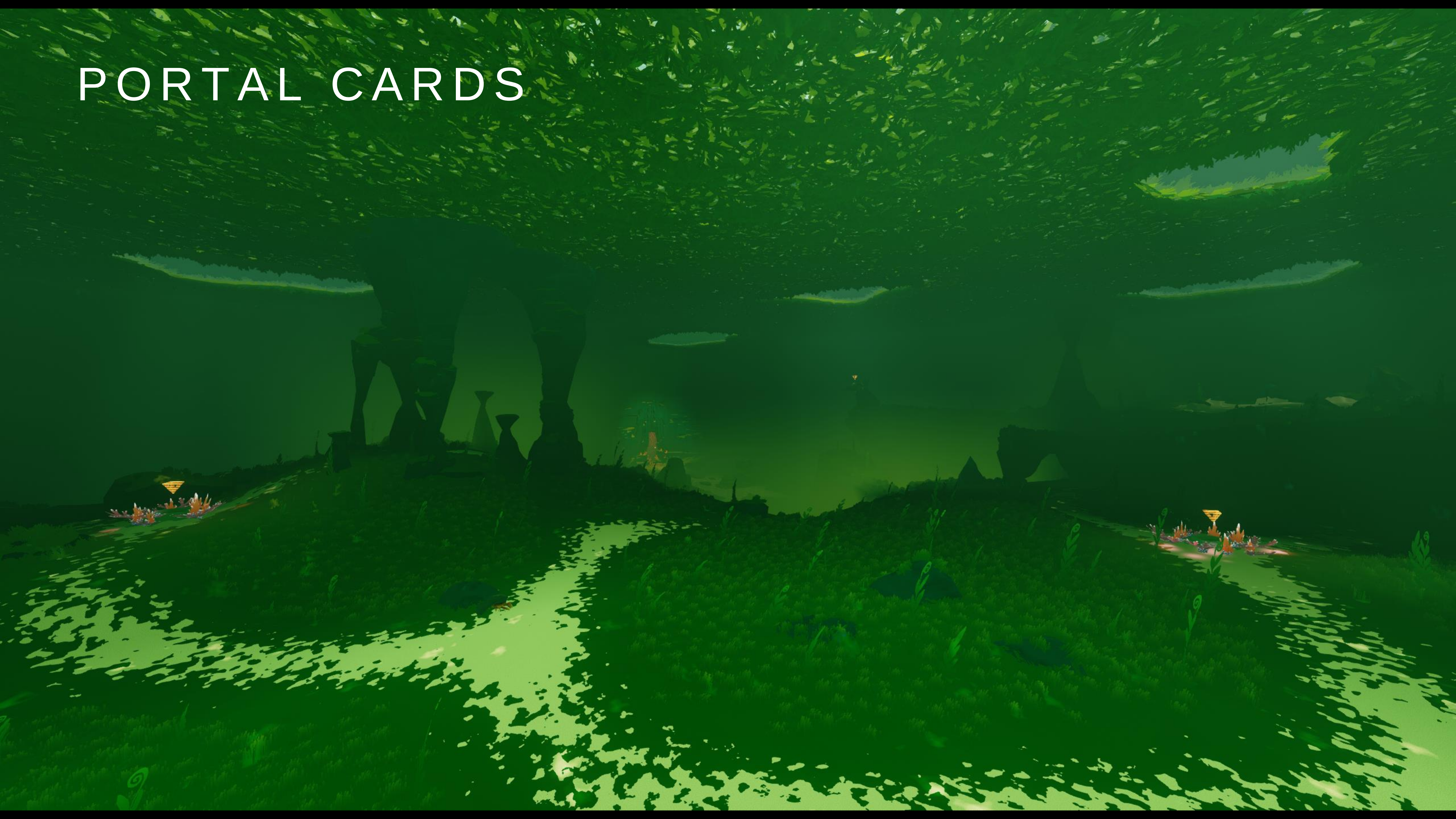
VOLUMETRIC AMBIENT AND DIRECTIONAL LIGHT



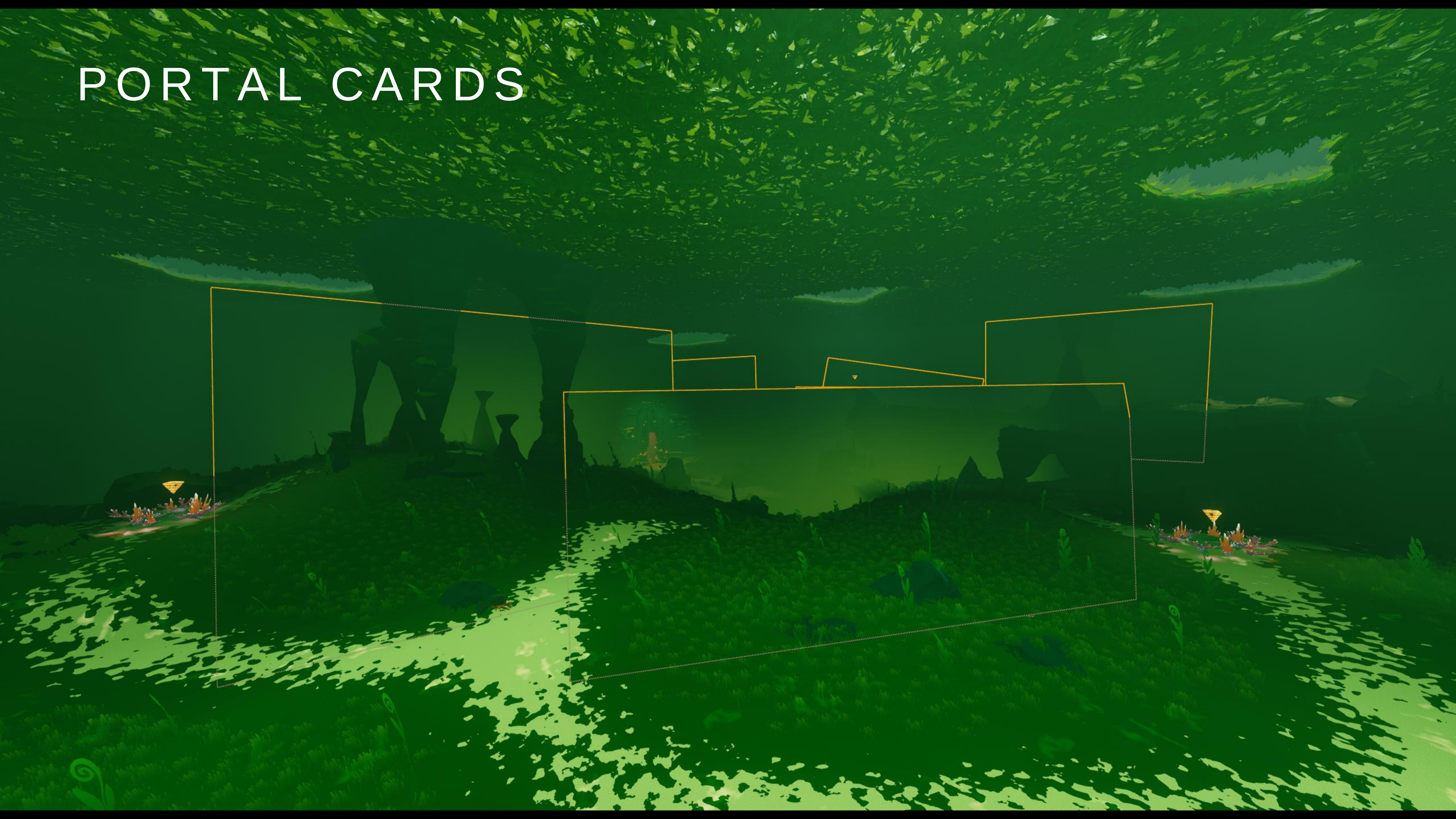
VOLUMETRIC FOG



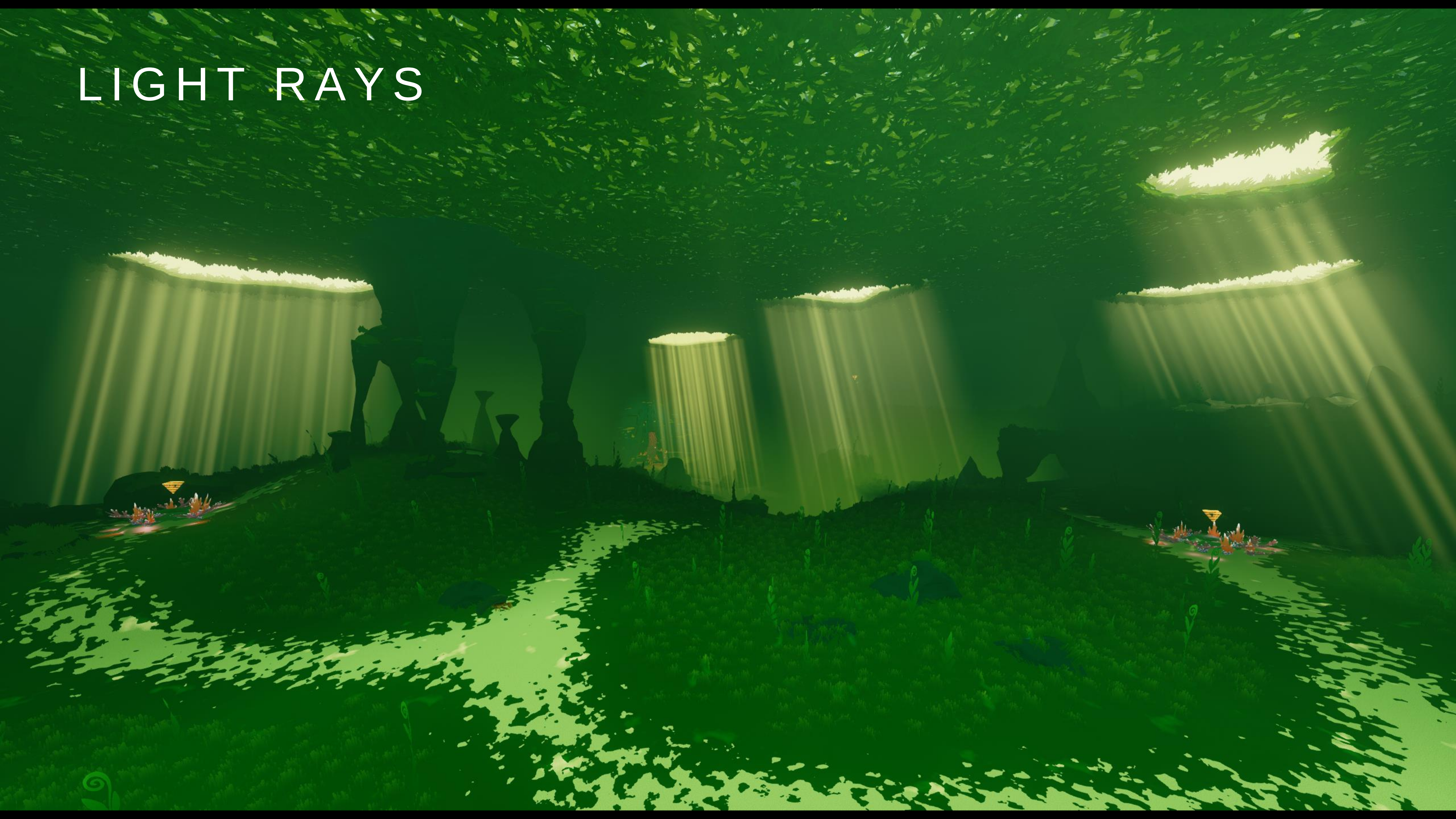
PORTAL CARDS

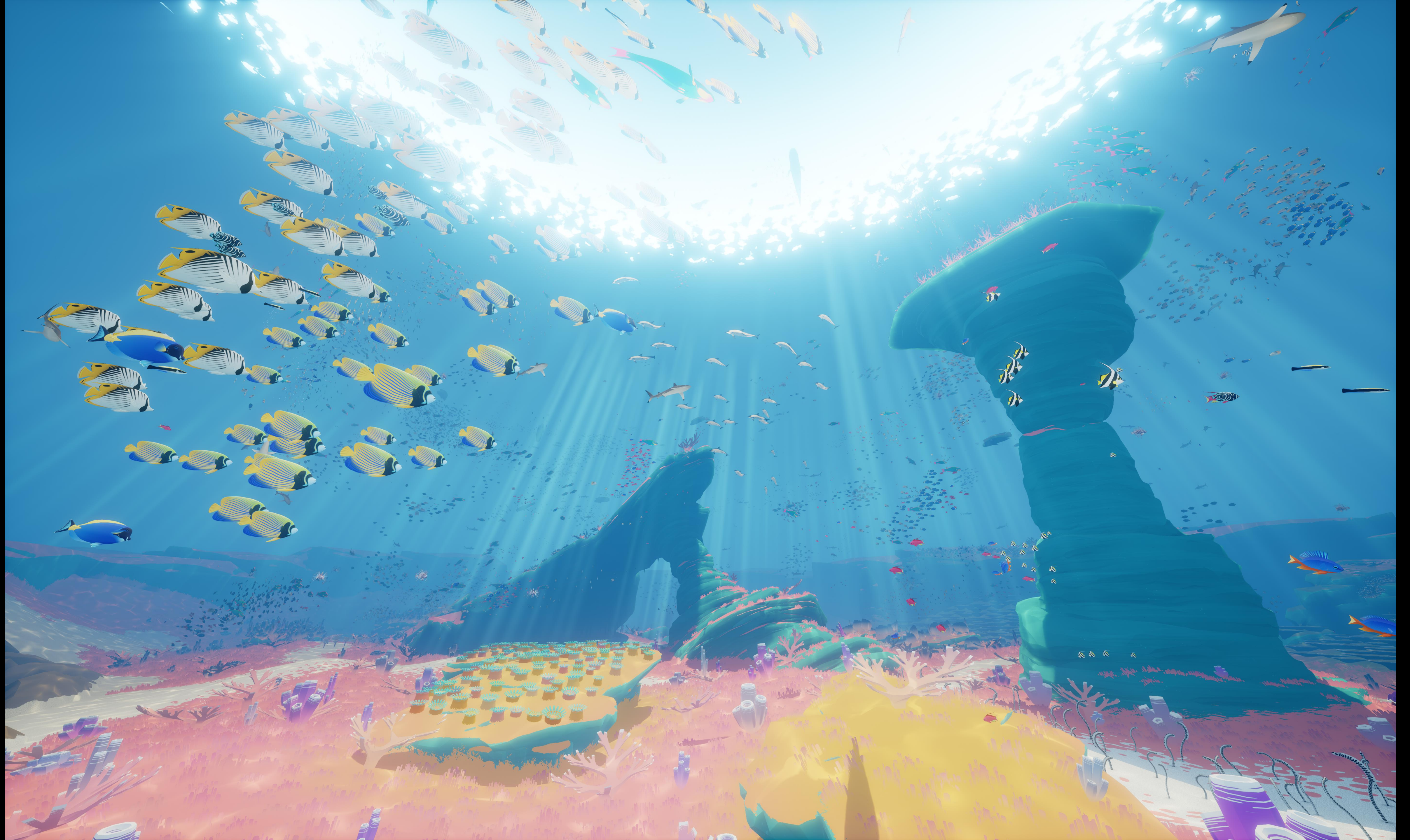


PORTAL CARDS



LIGHT RAYS







GIANT SQUID

WE ARE HIRING

GIANTSQUIDSTUDIOS.CO

M