



## **Emerald Object Library | MSFS 2020**

**v25.9.2 | September 2, 2025**

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## Product Information

Emerald Object Library (EOL, for short) is a collection of models produced by Emerald Scenery Design. This library is designed for and primarily intended to be used with Emerald Scenery Design addons!

However, as of June 10, 2021, these libraries may now be referenced by other developers in their **freeware** addons! [Developers, please read the terms of use!](#)

## Installation

### If downloaded from a website

Unzip the downloaded **.zip** archive.

Make sure that Microsoft Flight Simulator 2020 is not running! Once unzipped, the included "**esd-modellib-eolib**" folder should be placed into your MSFS "Packages\Community" folder. The library will load the next time you start MSFS!

### If downloaded from Marketplace

Once the addon has finished installing, you need to restart Microsoft Flight Simulator 2020 in order for the scenery to load and display correctly!

This is the case for *every* addon downloaded through Marketplace, whether you are on PC or Xbox.

## Distribution

Emerald Object Library is only available to download at emeraldscenerydesign.com, flightsim.to, and on MSFS Marketplace. If you find this addon uploaded anywhere else other than these three sources, please report it on Discord [or through the following form](#). Redistribution of this addon is forbidden!

## Dynamic SimObjects

Emerald Object Library contains SimObjects that may only be visible if certain conditions are met. This section lists these objects and their conditions for your reference.

*See list on next page.*

## Fauna

### Alligator (WorldScript)

Will react to the user aircraft if you get too close!

### Bears (WorldScript)

Black & Grizzly Bears are only visible when the ambient temperature is above 32°F (0°C).

### Butterflies

#### Alaska

Alaska Butterflies are only visible from May through September and will not show up during Rain or Snow.

#### United Kingdom

UK butterflies show from April through October, however each variation has it's own time-frame:

**Red Admiral:** April-October

**White Admiral:** July-August

**Large Blue (Rare):** June-July

**Painted Lady:** March-October

### Frog

Appears when Rain has been reported in the area.

### Fox (WorldScript)

Plays a call roughly every 6 minutes.

### Wolf (WorldScript)

Changes to a winter coat when the ambient temperature is below 32°F (0°C).

## VFX

### Chimney Smoke/Campfires

Chimney Smoke and Campfire VFX are only visible once temperatures fall to 50°F (10°C) or less.

## SFX (Wwise)

*Dev Note: All require "ESD\_CTRL\_Dynamic" WorldScript!*

### Downy Woodpecker

Audible from Dawn to Dusk, but not when Rain or Snow is reported. Randomly switches between call and drumming sounds.

### Great Horned Owl

Audible at Night, but not when Rain or Snow is reported.

### Junco & Fox Sparrow

Audible from Dawn to Dusk, but not when Rain or Snow is reported.

### Cicadas

Audible during the Day, from May through July, but not while Raining or Snowing.

## Environmental

### Morel Mushrooms

Only visible from May through July.

### Snow Berms

Appear when snow depth has been reported on the ground. *Dev Note: Requires "ESD\_CTRL\_Dynamic" WorldScript!*

### Water Puddles

Appear when Rain has been reported in the area.

## ESD\_CTRL\_Dynamic (WorldScript)

Developers must place this WorldScript in their project when using some of the dynamic features listed above. This bypasses some limitations imposed by the SimObject and Wwise XMLs. Without it, features will not act as they should.

## Deprecated/Depreciated Assets

**Deprecated** = These assets are not used internally and are not planned to be updated in the future. If currently used, they should be considered for replacement. They will likely be removed in the future.

**Depreciated** = These assets are being phased out internally because they have been replaced with a better alternative. This mostly applies to Emerald Object Library for MSFS 2024, where some assets are better replaced with default sim assets due to either quality or functionality. These assets will likely not be removed from the library, but it is encouraged to not use them.

### Deprecated (2020)

- Veg\_Bush01
- Veg\_Bush02
- Veg\_Bush03
- Veg\_Bush04
- Veg\_Bush05
- Veg\_Grass1\_2\_Legacy
- Veg\_Grass1\_Group\_Legacy
- Veg\_Grass1\_Legacy
- Veg\_Grass2\_2\_Legacy
- Veg\_Grass2\_Legacy
- Veg\_Grass3\_2\_Legacy
- Veg\_Grass3\_Legacy
- Veg\_Pinecone1
- Veg\_Pinecone2
- Veg\_Plant\_Tropical\_01
- Veg\_Plant\_Tropical\_02
- Veg\_Plant\_Tropical\_03
- Veg\_Plant\_Tropical\_04
- Veg\_Plant\_Tropical\_05
- Veg\_Plant\_Tropical\_06

- Veg\_Plant\_Tropical\_07
- Veg\_Plant\_Tropical\_08
- Veg\_Plant\_Tropical\_09
- Veg\_Plant\_Tropical\_10
- Veg\_Plant\_Tropical\_11
- Veg\_Plant\_Tropical\_12
- Veg\_Plant\_Tropical\_13
- Veg\_Plant\_Tropical\_14
- Veg\_Plant\_Tropical\_15
- Veg\_Plant\_Tropical\_16
- Veg\_Plant\_Tropical\_Group
- Veg\_Tree01

*See the [2024 version of this documentation](#) for the full list of Deprecated/Depreciated library objects in 2024.*

## Credits & Acknowledgments

Emerald Object Library created by Chris "Rotornut44" of Emerald Scenery Design.

A very special thanks to Mykrode and the [Got Friends](#) team for their knowledge and contributions in making these libraries and accompanying projects the best they can be!

Visit Emerald Scenery Design on:

[Our Website](#) | [Facebook](#) | [Twitter](#) | [Discord](#)

Get in contact!

<https://emeraldscenerydesign.com/support/>

Additionally, Emerald Scenery Design would like to thank the following artists for allowing their creations to be included in Emerald Object Library:

The following objects are licensed under Creative Commons Attribution (<http://creativecommons.org/licenses/by/4.0/>).

- **"Cow"** (<https://skfb.ly/DTQH>) by Josué Boisvert.
- **"cow"** (<https://skfb.ly/6RZ7s>) by rocket95.
- **"Forklift low poly"** (<https://skfb.ly/onxDM>) by Ricardo Sanchez.
- **"Tent"** (<https://skfb.ly/6UypT>) by alexxx\_xarchenko.
- **"Tent"** (<https://skfb.ly/6CqqL>) by Tactical\_Gamer.
- **"Tent"** (<https://skfb.ly/6UyAW>) by marsh\_tt.
- **"Shack"** (<https://skfb.ly/SszN>) by Scott Rafferty.
- **"Propane Tank"** (<https://skfb.ly/6AWtA>) by Oliver Triplett.
- **"Furniture Pack For Summer Caffe Free"** (<https://skfb.ly/o7Kw6>) by Kozlov Maksim.
- **"Tractor"** (<https://skfb.ly/6GuHP>) by selfie 3D scan.
- **"area 9 golf cart"** (<https://skfb.ly/6XWt6>) by maxdragonn.
- **"Small Trees"** (<https://skfb.ly/oxyMt>) by BazukaliKartal.
- **"フナエルの Pond Frog, Pelophylax nigromaculatus"** (<https://skfb.ly/ooPSH>) by ffish.asia / floraZia.com.
- **"DOZER0"** (<https://skfb.ly/6Zoxs>) by raulpatrone
- **"Canoe"** (<https://skfb.ly/6XAtM>) by EmilyCossette
- **"Alligator"** (<https://skfb.ly/oF8MO>) by all of life
- **"Low Poly Palms Pack"** (<https://skfb.ly/6AZQA>) by Rusoski
- **"Piper Pa 28 Cadet"** (<https://skfb.ly/LZwT>) by helijah
- **"Cirrus SR 22"** (<https://skfb.ly/BDCL>) by helijah
- **"Piper Pa 18"** (<https://skfb.ly/NvEt>) by helijah
- **"FK9-Mk2"** (<https://skfb.ly/RQwW>) by helijah
- **"Socata ST 10 Diplomate"** (<https://skfb.ly/B9Kw>) by helijah
- **"Modern Hatchback - Low Poly model"** (<https://skfb.ly/6WUzy>) by Daniel Zhabotinsky

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- **"Pump Jack"** (<https://skfb.ly/YJK7>) by Renafox.

*All models have been altered in some form, be it optimization, changes to the mesh, or new UVs and PBR textures. None of these altered items are to be distributed outside of this pack without written permission.*

# Change Log

## v25.9.2 | September 2, 2025

- Added new materials: Asphalt\_Rough.
- Added new models: WaterTank (5 variations), GardenHose (3 variations), TrashCan (4 variations).
- Adjusted values of some DistanceToNotAnimate SimObject tags and removed tags when not needed.
- Adjusted volume of Horse Wwise sounds (lowered).
- Adjusted walk speed of Wild Boar to better match animations.
- Fixed Alligator sliding when not placed on level ground.
- Fixed rainbow colors on last LOD of Firewood\_Shelter, Shed\_Medium, & Shed\_Medium2.
- Fixed WaterCalm Wwise SFX only playing interior sound. Adjusted attenuation distance.
- Fixed Wwise sounds being highly dominant in one ear depending on where the emitter is located in 3D space (hard panning).
- Improved LODs: FlowerPot.

## v25.3.21 | March 21, 2025

Some files have changed. Please remove the old package to ensure there are no leftovers!

- Added new models: Grapevine\_06m, Cone02, Cone03.
- Added new vertex paint material to give metal roofs of Cabin, Cement, & House building models better reflectivity and shading for a less noticeable LOD transition.
- Adjusted LOD minsizes to switch further from the camera: Bulldozer, Roller, Loader, Excavators, Oak01-08, OakDead01-08.
- Adjusted Palm Tree vertex colors for a less noticeable LOD transition at a distance.
- Adjusted roughness of Tires vertex material for a less noticeable LOD transition at a distance.
- Fixed incorrect wood grain direction on stairs of Cabin08. Also adjusted door glass grunge.
- Fixed inverted normals on light fixture of OutHouse03.
- Fixed Log\_Group01-05\_2 final LOD vertex color matching.
- Fixed missing grunge on roof of Cement building and Silo\_Tall.
- Fixed missing metallic on various roof parts (caps, edges) of Cabin01-07, House01-04, & Cover01.
- Fixed Snow Berm final LOD vertex color being too dark due to misconfigured metallic value.



- Improved Abandoned Cottage: Merged loose model parts, fixed model base elevation, reworked material, added LOD, added collision.
- Improved Airstream Camper: New model with much cleaner geometry.
- Improved Bathroom: Reworked LODs, improved shading, increased lights emissive bloom.
- Improved Bears: New custom model to get away from importing Asobo assets.
- Improved Buckets: Repacked UVs and baked textures, color variations now use vertex paint for reduced texture memory, reworked LODs, added collision.
- Improved Butterflies: New wing flap animation, increased path animation speed to better match wings animation, merged wing backface parts, instanced wing mesh.
- Improved Camper\_5thWheel\_1 & 2: Improved shading, fixed bake issues due to paint and final UVs being slightly different, reworked LODs.
- Improved Campfire VFX: New smoke texture, tweaked opacity and fade-out, tweaked fire spawn rate, tweaked smoke and heat velocity, fire and sparks are now affected by wind.
- Improved Chimney Smoke VFX: New smoke texture, tweaked opacity and fade-out.
- Improved Fence Divider Left & Right: Reworked LODs, added collision.
- Improved FlowerPot\_Plant: Last two LODs now use only vertex paint, fixed XML typo that was causing one LOD to be skipped.
- Improved FuelTank & FuelTank\_Extension: Now uses a single texture set, added LODs, added collision, rebaked textures.
- Improved Grapevine\_20m: Merged model parts, removed unnecessary material, added LOD.
- Improved Hedges (5 & 20m): Reworked LODs, retextured with tiling textures (higher resolution, less texture memory).
- Improved Horses: New custom model to get away from importing Asobo assets. The White horse has been replaced with a Black variant (Updating the SimObject title would break compatibility with other 3rd party sceneries calling the model).
- Improved Log1: Retextured using tiling textures for better texel density, increased mesh resolution, reworked LODs, added collision.
- Improved Log Stack 1 & 2: Retextured using tiling textures for better texel density, improved shading, reworked LODs, added collision.
- Improved Old Wood House: Fixed model base elevation (floating), reworked material, added LOD, added collision.
- Improved Propane Large: Fixed shading, adjusted material roughness, cleaned up duplicate & stray verts, reworked LODs, added collision.
- Improved Pumpjack: Added LODs, fixed shading.
- Improved Railroad Bridge: Fixed shading, fixed incorrect normal map format, instanced geometry, reworked LODs, added collision.
- Improved StoragePod & StoragePod\_Sign: New models with cleaner geometry and better packed UVs, overhauled textures.
- Improved Stump1: Retextured using tiling textures for better texel density, increased mesh resolution, improved shading, reworked LODs, added collision.

- Improved Stump2: Retextured using tiling textures for better texel density, fixed shading, reworked LODs, added collision.
- Improved Well Shack: Fixed missing shading for electric box panel lines, fixed wrong wood grain direction on some roof boards, reworked LODs.
- Removed BurnBarrel VFX: BurnBarrel now uses Campfire VFX.
- Replaced Road Cone with new Cone01 model.
- Reverted SimObjects to call needed templates directly instead of common.xml, as it was loading unnecessary templates.
- Reworked ESD\_CTRL\_Dynamic script to be more efficient.
- Reworked LODs for Campfire, BurnBarrel, Cabin02-06, Cabin10-15, House01-04, Outhouse03, Beaver, Brick Pile, Block Concrete, Cart Rusty, Doormat, Firewood Shelter, Light Globe, Light\_Medium, Light\_Tall, Portable, MobileHome01, Dog House, Shed\_Medium, Shed\_Metal01, Shed\_Metal03, Shed\_Rusty, Shed\_Rusty\_Derelict, Shed\_Frame, Bld\_Cement1-3, Bld\_Metal1-2, Potash Tank, Silo Tall, Warehouse, Cart Wood, Bee Hives, Rusty Mustangs, Forklift, GolfCarts, Glider Trailer, Rock01-12, Birch01-04, Pine01-07, Bilberry1-6, BlackLocust1-6, DwarfBirch1-6, SilverDownyWillow1-6, Shrub\_Group1-3, GreenAlder01-04, Silverberry01, Willow01-03, Palmetto Group 12m, Log2-4, Driftwood1-2.

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#### **v24.11.1 | November 1, 2024**

- Added new ground material: MossyRock.
- Adjusted Oak Tree Leaf vertex color to transition less noticeably at a distance.
- Fixed Wind Turbine missing pole texture.
- Horse and Bear SimObjects are now stand-alone and no longer rely on texture fallbacks.
- Improvements to Propane (Tanks) Small: All variants now use the same model, reworked LODs, new textures, added two new variants.
- Reworked LODs for Campfire, Burn Barrel, Buckets, Propane (Tank) Tall, Rock09-12, Firewood Stacks, Firewood Pile.
- Reworked Windsock LOD3 to not be as noticeably deformed.

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#### **v24.9.12 | September 12, 2024**

- Added new ground material: Grass\_Striped, Paint\_Yellow\_Dashed.
- Added new models: Alligator (SimObject), Barbwire Fence (2 variations), Wood Fence (2 variations) Oak Tree (16 variations), Palm Tree (10 variations), Shed Metal 02 & 03, Shed\_Plastic01, MobileHome01, Utility\_Pole\_01, Utility\_Pole\_02 (light pole), Utility\_Wires\_01 (Powerlines), Utility\_Wires\_01\_Marker (airport marker balls), Car\_Hatchback01\_White, Turf Roller.
- Added new static aircraft models: J3 Cub, PA18, PA28 Cadet, FK9, & SR22.

- Added new WorldScripts: Alligator\_Provoke, Gate\_Metal. (Animations triggered by distance)
- Added new paint variations: Tiger Moth (Yellow), Rover (White).
- Improvements to Picnic\_Wood\_2: Reworked LODs, fixed incorrect vertex color on last LOD, improved shading.
- Improvements to Snow Berms: Reduced mesh complexity, reduced base textures to 2k and added snow detail texture.
- Improvements to Tractor: Corrected scale (1.3x), reworked LODs, added collision.
- Improvements to various SimObject XML logic and structure.
- Improvements to Weeds\_Wildflowers: Fixed texture turning white at a distance, adjusted texture colors, reworked LODs.
- Optimized some textures by reducing resolution where quality isn't noticeably affected.
- Overhauled Palmetto vegetation models.
- Reworked LODs: Forklift, Trailer\_Tractor, Tractor\_2, Shed\_Rusty, Camper\_5thWheel\_1 & 2, Bulldozer, Flower\_Blue1 & 2, FlowerPot\_Plant, Boar, Fox, Moose, Wolf.
- Tweaked Beehives LOD transition distance.

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#### **v24.3.26 | March 26, 2024**

- Added new dynamic SFX: Great Horned Owl, Junco, Fox Sparrow, Woodpecker (Birds), Cicadas (Insect). [[Requires "ESD\\_CTRL\\_Dynamic" WorldScript to be placed](#)]
- Fixed Bees SFX barely audible.
- Fixed Mud Puddles missing reflectivity.
- Fixed shading on roof of Cabin03.
- Fixed Windsock pole last LOD texture not updated.
- Improved Bear Rug: Improved shading, rebuilt materials, rebaked textures, added vertex paint LOD.
- Improved Chainsaw: Improved shading, rebuilt materials, reworked last LOD.
- Improved Firewood Shelter: Further reduced verts on last LOD.
- Improved Picnic Table: Reworked last LOD, rebuilt materials, rebaked textures as 16-bit.
- Improved Shed\_Medium: Further reduced verts on last LOD.
- Improved Tents (Red, Blue, Green, Green\_Yellow): Improved shading, reworked LODs, rebuilt materials, reworked emissive (Green tent), added hood back to red tent.
- Improved Wood Bench 1 & 2: Improved shading, added collision, reworked last LOD, rebuilt materials, converted textures to PBR.
- Improved WorldScripts: Removed unused code.

- Snow Berms are now tied into the snow depth slider (Live Weather doesn't detect properly and uses the original temp/precip based code as a fallback - reported to Asobo).

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#### **v24.2.22 | February 22, 2024**

- Added new dynamic SimObjects: Flags (Canada, USA, Alaska, Florida, Idaho, Wyoming), Wind Turbine (Small).
- Added new static models: Bulldozer, Canoes (Red & Green), Docks (10 variations - replaces the two existing dock models), Log Groups (10 variations), Outhouse, Pine Group2 (less dense), Shrub\_Group1\_2 (less dense), Tires (5 variations), & (Fire) Wood Shelter.
- Added new WorldScript (pathed/walking) Animals: Boar, Fox (Plays audible call), Moose, Wolf.
- Cabin 04 & 05: Reverted textures back to 4K as quality was too low on Xbox.
- Fixed Puddle05 LODs not in the correct order.
- Improved code for Windsocks, Wind Tee, & WindVane: All directional objects will now orientate into the wind no matter their placement heading (WindVane still needs to be oriented to 0 degrees for compass rose to be correct).
- Improvements to Cabin01-07, House01-05, & Outhouse03: Reworked LODs, fixed some shading, reworked window emissives, now use simple collisions.
- Improvements to Cows: Reworked LODs, rebuilt materials.
- Improvements to dead (pine) trees: Fixed some inverted normals on branches, reworked LODs, new textures.
- Improvements to Excavators: Reworked LODs, the tracks on LOD0-1 are now instanced for improved performance, rebaked textures, removed unnecessary interior glass.
- Improvements to Fireweed: Reworked LODs, improvements to texture mask and colors.
- Improvements to FlowerPot\_Plant: Reworked LODs, fixed collision scale.
- Improvements to Folding Chair & Table set: Added LODs, fixed shading, fixed incorrect normal texture type, rebuilt material, added collision.
- Improvements to Log Stack 3 & 4: Completely reworked textures using tiling and detail textures to cut memory usage in half and increase resolution (textures are now shared between multiple models such as pine/birch trees and log groups), reworked LODs.
- Improvements to Morel Mushrooms & Pinecones: Fixed shading, merged duplicate vertices, reduced texture memory by remapped UVs to a 512px texture.
- Improvements to Outhouse Open & Closed: Merged duplicate vertices, fixed door clipping, reworked LODs, added collision, both variations now use the same COMP texture.

- Improvements to Pine Tree Groups: Added another LOD, fixed some duplicated trunks.
- Improvements to Shrub Groups: Optimized LODs (Saw a 5 fps increase at Fort Crosby).
- Improvements to static DHC-2 Beaver: Reworked LODs, added collision.
- Improvements to Wind Tee: Added LOD, rebuilt materials, rebaked textures.
- Improvements to Windsocks: Reworked LODs, rebuilt materials, optimized animation, adjusted pole Albedo color (Will also effect WindVane).
- Improvements to WindVane: Added LODs, rebuilt materials.
- Improvements to Wwise SFX: Streamlined Internal/External view SFX, which are now defined in Wwise instead of XML.
- Reworked LODs for Deer Skull.
- Reworked LODs for Dry Grass Sparse.
- Reworked LODs for Hay/Straw round bales.
- Reworked LODs for Metal Drums.
- Reworked LODs for Roller, Loader, & Excavators.

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#### **v23.11.23 | November 23, 2023**

- A complete overhaul for Xbox Performance: This update rolls back most LOD optimizations and reduces overall texture memory for some objects. During Xbox testing for Fort Crosby, it was discovered that most optimizations were hurting more than helping. Users with a higher end PC or the Xbox Series X should not notice any major changes. This should reduce the load on the CPU, but will come with an increase to GPU usage (though, a decrease in memory usage). A balance which will likely need to be further tuned over time.
- Added NRM textures for Grass01, 02, 03, 04, & GrassPlants01 ground materials.
- Fixed Cabin5 & Roller UV issues.
- Fixed Log01 incorrect Normal texture type.
- Fixed mirrors on Roller & Loader.
- Improved Doormat: Added vertex paint LOD, removed unused day/night material switch.
- Improved Pavers: Added vertex paint LOD, improved texture baking.
- Improved Rock Groups, Pine, & Birch Trees: Now use simple collisions instead of mesh.
- Improved Shed\_Small, Shed\_Medium: Added vertex paint LOD, fixed shading, improved texture baking.

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#### **v23.10.23 | October 23, 2023**

- Added new Birch Trees (x3).

- Added new Burn Barrel dynamic SimObject (Lit below 50F/10C).
- Added new Log Stacks (Pine & Pine/Birch mix).
- Added new Shrubs: Bilberry, Black Locust, Dwarf Birch, Silver Downy Willow (6 variants each + two 10-meter mixed groups).
- Added new Snow Berm (Visible at or below -12C/10F or it has to be -1C/30F or below AND Snowing.)
- Added new Water Puddles (x16).
- Added new Weeds & Grass 5-meter vegetation group.
- Added NRM textures for Gravel and Dirt ground materials.
- Adjusted LOD trigger distances for lower poly shrub group to reduce popping.
- Fixed missing LOD3 vertex color for Log\_4.
- Fixed shading on LOD3 of the Potted Plant.
- Fixed VFX Material conflict with Got Friends Mini 500.
- Fixed wrong vertex color for Bench\_Wood\_3.
- Fixed Z-sorting issue for Campfire & Chimney Smoke VFX.
- Improved Birch Short: Added LODs, renamed textures for new Birch Trees.
- Improved Brick Pile: Added additional LODs, fixed shading, fixed missing vertex colors on last LOD.
- Improved Campers: Added additional LODs to reduce distance popping, reworked window glass and emissive materials/textures.
- Improved Campfire: Doubled rocks mesh resolution, removed unnecessary texture, fixed shading, adjusted emissive texture, added & optimized LODs.
- Improved Chain Fences: Added collision, fixed shading issue on Fence 3.
- Improved Dehavilland Beaver: Cleaned up and merged model parts, reworked and optimized LODs, converted textures to PBR.
- Improved Driftwood Logs: Reworked and optimized LODs, added collision, converted to PBR.
- Improved Excavator, Roller, & Loader: Reworked and added additional LODs, added collision, improved textures, fixed "ASOBO\_material\_windsheild\_v2" depreciated warning.
- Improved Flipped Row Boat: Removed occluder, reworked & optimized LODs.
- Improved Frog: Added & optimized LODs, added idle animation.
- Improved Glider Trailer: Added and optimized additional LODs.
- Improved Golf Carts: Added and optimized LODs, added collision, improved texture baking & grunge layers.
- Improved Hangars: Additional LOD memory optimization.
- Improved Metal Drums: Added additional LOD (Should improve spawn/despawn distance being too aggressive on some systems).
- Improved Metal Fence: Added collision, added additional LOD.
- Improved multiple Forwood clutter model LODs, fixing missing material for vertex colors.
- Improved Portable Building: Added additional LOD to reduce distance popping, improvements to LOD3 geometry.

- Improved Round Bales (Hay1, Hay2, Straw1, Straw2): Added and optimized LODs, added collision, reduced scale, fixed shading, converted textures to PBR.
- Improved Shed\_Frame, Rusty, Rusty\_Derelict: Reworked and optimized LODs, increased roughness of wood floor (no longer "shines").
- Improved Snowmobiles: Added collision, reworked & optimized LODs, fixed "ASOBO\_material\_windsheild\_v2" depreciated warning.
- Improved Tents (GF & ESD): Added collision, added additional LOD, optimized LODs.
- Improved Tiger Moth: Added and optimized additional LODs.
- Improved Tractor 2 & Trailer: Added & optimized additional LODs.
- Improved Windsocks: Added & optimized LODs.
- New bark textures for all pine trees.
- Reduced scale of "Bucket\_GotFriends\_Blue" to 0.73 (Now correctly scaled by default, matching other buckets).
- Renamed several vegetation objects for organization (No 3rd party changes needed).
- WWISE audio now properly insulates when sitting in the cockpit.

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#### **v23.6.2 | June 2, 2023**

- Fixed backface highlighting on Butterflies.
- Fixed missing shrub textures.
- Improvements to Buckets: Reworked and optimized LODs, fixed shading, improved baking, grunge, & exported textures as 16-bit.
- Improvements to Rocks 1-8: Added and optimized LODs, added collision, fixed shading, improved baking & exported textures as 16-bit.
- Improvements to Rocks 9-12: Reworked and optimized LODs, added collision, now use PBR textures.

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#### **v23.5.17 | May 17, 2023**

- Added collisions to multiple Forwood clutter models.
- Added LODs to (those missing them) and aggressively optimized all Forwood props to reduce texture memory.
- Added new Wind Vane model. (Dev Note: All ESD wind direction objects should be oriented on a heading of 0 degrees – best done in your scenery XML.)
- Fixed backface highlighting on Chain Fences.
- Fixed Bees and Honey signs labeled incorrectly in the Scenery Editor (No 3rd party changes needed).
- Fixed missing emissive texture on Astro Corsa buildings.
- Fixed naming for "Cherry" shrubs, which are actually Raspberry's (Not sure how it got named that way – No 3rd party changes needed).

- Fixed shading for multiple Forwood props.
- Improved texturing for: Bathroom & Portable Building.
- Removed "Emerald Object Library missing" system (Cannot be implemented due to sim limitations – hope to revisit in the future).

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#### **v23.4.25 | April 25, 2023**

- Added new heavy equipment models: Excavator (x2), Roller, & Loader.
- Added 7 new models from ESD/Got Friends Astro Corsa.
- Fixed duplicate material names warning for ESD\_Veg\_Plant\_Tropical\_Group.
- Fixed missing window detail texture on "Camper Small" SimObjects.
- Implemented "Emerald Object Library missing" system for upcoming scenery updates (When fully implemented, warning signs will display when EOL is not installed).
- Improvements to 55-gallon Drums: Improved mesh resolution, completely reworked shading, improved textures & doubled resolution to 2k, reworked & optimized LODs, added collision.
- Improvements to Amazon Warehouse: Exported COMP & Normal as 16-bit, added collision, reworked & optimized LODs.
- Improvements to Butterflies: Moved animation code into an XML Include (reduces duplicate code between variations).
- Improvements to Left/Right Fence Dividers: Fixed shading & backface highlighting, improved baking & exported textures as 16-bit (Affects multiple Forwood props).
- Improvements to Rusted Mustangs: Reworked AO, exported COMP & Normal as 16-bit, fixed an issue where materials were emissive at night, added collision, reworked & optimized LODs.
- Improvements to Windsocks: Moved animation code into an XML Include, fixed shading, fixed a metal bar that was clipping through the sock, & removed an unnecessary material.
- Reorganized SimObjects file structure (These changes will not affect any dev calling these models in their own addon).

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#### **v23.2.15 | February 15, 2023**

- Changed Title for Bee SFX node to fix a conflict with Forwood Farm (If you placed this model after the last update, you will need to delete & place it again - sorry!).
- Fixed Bathroom light emissives not turning off during the day.
- Improved Storage Pods: Added LODs & fixed shading.



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**v23.1.27 | January 27, 2023**

- Added and improved on default Black & Grizzly Bears: Now hidden at 32F (0C) or below to simulate hibernation.
- Added new Dead Pine Trees color variation.
- Added new Pine Tree group.
- Added water lapping SFX node.
- Added WorldScripts for a single walking Grizzly & Black Bear.
- Adjusted audio levels and falloff distances for Horses and Bees.
- Cleaned some unused code from the Bee SFX XML.
- Fixed Butterflies flickering.
- Horses now use fallbacks to default textures vs. having duplicates included.
- Improved 3m Concrete Block: Removed unused emissive channel.
- Improved Campfire & Chimney Smoke VFX: Smoke and heat effects will now fade out and no longer pop.
- Improved Doormat: Fixed normal shading, removed unused emissive channel.
- Improved GA Hangar 1 (All color variants): Added LODs & collision, fixed parallax, improved & optimized textures, merged model parts.
- Improved Light Globe: Fixed normal shading, reworked & optimized LODs, reduced size of emissive texture, removed unused normal channel.
- Improved Pine Trees: Recolored to blend better with default surroundings, baked AO into Albedo to further optimize textures, reworked LODs.
- Improved Pine Trees Dead: Added LODs with material optimizations, filled open trunk bases.
- Light Emissives will now produce light bloom when bloom is enabled in settings.
- Removed collisions from small campers, as they do not work as a SimObject.
- Replaced Frog with new model.
- Reworked hedges to be much higher detail and darker in color.

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**v22.11.17 | November 17, 2022**

- Added 84 new models and 8 new SimObjects!
- Fixed an issue where Windssocks and Wind Tees were 180\* off heading.
- Fixed white highlighting on multiple vegetation models: Bush Crop Small, Grape Vine, Green Alders, Silverberry, Willows, Branches, Pinecones.
- Improved Campfire: new VFX, new WWISE sounds, now casts light in the general area.
- Reduced opacity of chimney smoke VFX.
- Tweaked LOD2 trigger distance for Picnic Table.

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**v22.9.21 | September 21, 2022**

- Added new models:
    - UK Butterflies (4 variations)
  - Added texture.cfg alias for SimObject texture folder.
  - Made Improvements & Optimizations to several models:
    - Butterflies: Removed unnecessary parent node and bloat from old exporter, rewrote visibility code to use new template format.
    - Campfire: Joined model parts for less drawcalls, added dynamic Wwise ambient sound, rewrote visibility code to use new template format.
    - Chainsaw: Joined model parts for less drawcalls, reduced LOD texture memory.
    - Chimney Smoke VFX: Removed an unneeded segment of visibility code.
    - Cows: Removed duplicate vertices, reworked LODs, added collision box.
    - Firewood Pile, Stacks, & Stump Axe: Added collisions, reduced LOD texture memory.
    - Flipped Row Boat: Removed duplicate vertices, added collision mesh, parented occluder, removed metallic value for material, reduced LOD texture memory.
    - Frog: Removed duplicate vertices, added dynamic Wwise ambient sound.
    - Grape Vines & Shrub Crop: Corrected normal shading (Also fixes issue where snow wouldn't accumulate on crops).
    - Morel Mushrooms: Linked to renamed texture, set metallic value to 0, rewrote visibility code to use new template format.
    - Pavers: Added LOD, reduced LOD texture memory, COMP texture now uses proper 16-bit format, added additional AO cast from ground.
    - Picnic Table: Added LODs, reduced LOD texture memory, removed duplicate vertices, COMP texture now uses proper 16-bit format, added additional AO cast from ground.
    - Pinecones: Some housekeeping - Linked to renamed texture, tweaks to material settings.
    - Pine Trees: Slightly reduced drawcalls and improved overall texture memory.
    - Shed Small, Shed Medium, & Firewood Shelter: COMP texture now uses proper 16-bit format, added additional AO cast from ground, model parts joined for less drawcalls, removed duplicate vertices, added LODs, LOD texture memory optimizations, now use box collisions instead of mesh (lighter weight), removed collision from Firewood Shelter.
    - Water Puddles: Rewrote visibility code to use new template format.
  - Reduced windsock/windtee DistanceToNotAnimate value to 1000m.
-

**v22.7.17 | July 17, 2022**

- Added new models:
    - Amazon Warehouse
    - Golf Cart (2 Styles)
    - Tractor
  - Improved ForkLift: Removed duplicate vertices, reworked LODs, & fixed material showing as emissive at night.
  - Improved XML behavior code for Windsocks & Wind Tees.
- 

**v22.7.1 | July 1, 2022**

- Added new models:
    - Concrete Block (1 Style)
    - Doormat (1 Style)
    - Fuel Tank (2 Styles)
    - GrapeVine (1 Style)
    - Small Shrub Crop (1 Style)
    - Windsock NoPole (1 Style, 4 Variations)
  - Improved Globe Light Pole: Fixed shading, new UV unwrap, reworked PBR materials.
  - Improved Windsock: Mesh optimization, new UV unwrap for pole, added 2 new faded sock variations.
- 

**v22.6.16 | June 16, 2022**

- Added new models:
    - 5-Gallon Buckets (2 styles, 8 variations)
    - GA Hangar (1 style, 2 new variations: Grey & Brown accents)
  - Fixed an issue where some 3D Pine Tree collisions were not being removed at a distance.
  - Improved Abandoned Cottage: Cleaned up mesh.
  - Improved Chainsaw: LOD mesh optimization.
  - Improved Deer Skull: Cleaned up mesh, converted to PBR material, reworked LODs.
  - Improved GA Hangar: Overhauled mesh, added glass details, new PBR materials, 2 new variations (see above).
  - Improved Old Flipped Rowboat: Added environmental occluder, added LOD.
  - Improved Red Propane Tank: Fixed shading & incorrect material nodes.
  - Improved Shed Rusty, Rusty Derelict, & Frame: Cleaned up mesh, fixed inverted normals, reworked UVs, reduced texture drawcalls, fixed shading, added environmental occluder, reworked LODs.
  - Improved SimObject behaviors:
-

- Butterflies will no longer display when it's raining or snowing.
    - Morel Mushrooms will no longer display when it's snowing.
  - Improved Snowmobile: Fixed inverted normals, fixed position of windshield, fixed windshield material and added rain FX, added LODs, corrected scaling proportions.
  - Improved White Propane Tank: Fixed shading & incorrect material nodes, cleaned up mesh, reworked LODs.
  - Re-exported several models using the official Blender exporter to ensure proper material settings.
- 

#### **v22.5.16 | May 16, 2022**

- Added two new rusty variations for Fuel Drums (4 models total).
  - Adjusted LODs of Reeds vegetation model.
  - Fixed incorrect texture mapping on upright blue Fuel Drum.
  - Improved Old Flipped Rowboat: Cleaned up mesh, reducing some polys and many vertices.
  - Improved Rocks Legacy: Renamed, cleaned up mesh, new UV unwrap, added new 4K PBR material.
- 

#### **v22.5.8 | May 8, 2022**

- Fixed an issue where butterfly XML was overwritten with old code in the last update, causing them to be visible year-round.
- 

#### **v22.4.14 | April 14, 2022**

- Changes to 3D Pine Trees: Cleaned up mesh, corrected normals, added collisions, added additional LOD.
  - Corrected surface types for materials
- 

#### **v22.3.16 | March 16, 2022**

- Added new models!
    - [Buildings: "ESD\_Bld"]
      - Small Shed
      - Firewood Shelter
    - [Clutter: "ESD\_Clu"]
      - Bearskin Rug
-

- Firewood Stack NoSupport
- Paver Stones Irregular (4 variations)
- Table and Chair Folding Set
- [Environmental: "ESD\_Env"] Dynamic SimObjects
  - Butterflies - Alaska Native (4 variations - Only visible from May through September!)
  - Chimney Smoke Small (Only visible at or below 10°C / 50°F)
  - Morel Mushrooms (3 variations - Only visible from May through July!)
  - Water Puddles (4 variations - Only visible when raining!)
  - Windsock (2 variations - Red/White Striped, Orange - Rotates with wind)
  - Wind Tee (2 variations - Orange & Yellow - Rotates with wind)
- Fixed apron materials also sorting under default Asobo material categories.
- Fixed overly bright textures & tweaked LODs on Weeds & Wildflowers vegetation model.
- Improved Campfire: Cleaned up mesh, reducing triangles and vertices.
  - Converted to a SimObject (Devs: You will need to replace the old model with this one, sorry!).
- Improved Chainsaw: Cleaned up mesh, fixed teeth transparency, and converted textures to PBR.
- Improved color and exposure of shrubs, so that they blend much better.
- Improved Firewood Pile, Stack, & AX Stump: Reduced triangles and vertices. Created new LODs.
- Improved Fuel Drums: Corrected scale, reworked mesh, added new PBR materials, and LODs.
- Improved Picnic Table: UV Unwrapped and added new PBR materials.
- Removed COMP texture from gravel material, as it was not working as intended.
- Removed unused XML code from the static Beaver.
- Tweaked LODs on small Propane tanks.
- Tweaked LODs on UHD Rocks.
- Tweaked Roughness Material on 3D Pine Trees & Branches.

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### **v21.12.13 | December 12, 2021**

- Added new models!
  - [Clutter - Clu] Storage Pod (2 Variations), Propane Tank Small (2 Variations).
  - [Vegetation - Veg] Green Alder Shrub (4 Variations), Silverberry Shrub, Willow Shrub (3 Variations).
  - [Vehicles - Veh] Snowmobile (3 variations - Green/Black/Red)
- Fixed inverted green channel in Outhouse Normal.
- Fixed missing normal maps and windshield border on Snowmobiles.
- Fixed texture overexposure issue for "ESD\_Veg\_Weeds\_Wildflowers\_Dense"

- Improved shading on Outhouse models.
  - Renamed "ESD\_Ind\_Propane\_Tank" to "ESD\_Clu\_Propane\_Tank\_Home" to match small tank naming.
- 

#### **v21.10.29 | October 29, 2021**

- Added new models!
    - [Buildings - Bld] Abandoned Cottage, Old Wood House
    - [Clutter - Clu] Stump with Axe, Firewood Pile, Firewood Stack, Water Well (Capped), Dog House, OutHouse (2 variations: Open/Closed)
    - [Industrial - Ind] Propane Tank
    - [Vegetation - Veg] 3D Pine Tree Dead (6 variations), 3D Pine 07
    - [Vehicles - Veh] Snowmobile (3 variations - Green/Black/Red)
  - Changes to dock models:
    - Added colliders (Float planes will no longer drift through the docks)
    - Now use PBR textures.
  - Changes to GA Hangar 1:
    - Added collider
    - Now uses PBR materials
    - Fixed inverted channel in Normal map
  - Fixed glass on the static DHC-2 Beaver
- 

#### **v21.8.30 | August 30, 2021**

- Added two new models!
    - [Buildings - Bld] Shed Rusty - Including three variations: Rusty, Derelict (Same as Rusty, but with missing panels), and Frame (No metal panels).
    - [Buildings - Bld] Shed Metal - Different style than above, with only one variation.
- 

#### **v21.7.28 | July 28, 2021**

- Added several new models!
    - [Aircraft - AC] Static DHC-2 Beaver and Jodel on floats (Converted from FSX).
    - [Vegetation - Veg] 6 3D Pine Tree models inc. 3 sets of fallen branches (These were in the last update, but I forgot to include a note about them).
    - [Industrial - Ind] Railroad Bridge.
  - Added some new handicap marking materials.
-

- White Symbol, White Symbol w/ Blue Background, White Symbol w/ Blue Background & White Outline. (Special thanks to FlyingsCool!)

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**v21.7.12 | July 12, 2021**

- Added several new models!
  - [Clutter - Clu] Camping Tents (4 Variations)
  - [Clutter - Clu] Light Globe (Includes light Effect/Emissive)
  - [Vehicles - Veh] Derelict Rusty Mustangs (4 Variations)
  - [Vehicles - Veh] Forklift
- Adjusted scale of Cow models.
  - Brown/White (1.1x)
  - White/Black (1.25x)
- Fixed an issue where the "EOL\_Aspalt" Material Editor tag failed to show.

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**v21.6.16 | June 16, 2021**

- Added some new models for Fantasy of Flight dev release.
  - [Industrial - Ind] Pump Jack
  - [Animals - Anm] Black/White & Brown/White Cows
- Added some new materials.
  - Right Turn Arrow [White]
  - Left Turn Arrow [White]
- ESD materials now show under Material Editor tags/categories (EOL\_).
- Fixed white artifacts on handicap marking material.

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**v21.4.27 | April 27, 2021**

- Added apron materials (Common materials will be removed from ESD's current MSFS releases in an effort to reduce file duplication).

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**v21.2.24 | February 24, 2021**

- Initial Release

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