

Paul Gaboury

ZBrush®

PROFESSIONAL
TIPS + TECHNIQUES



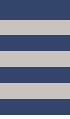
Foreword by Rick Baker

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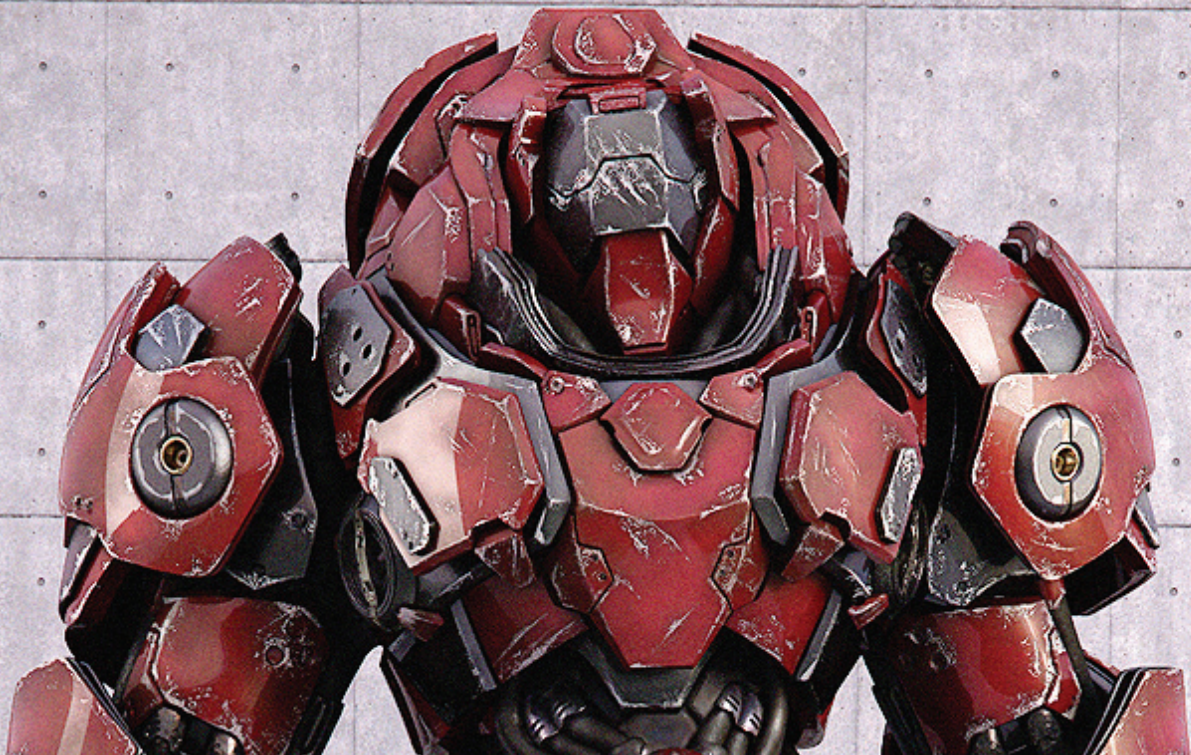
ZBrush[®] Professional Tips and Techniques





ZBrush® Professional Tips and Techniques

Paul Gaboury



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Best regards,

A handwritten signature in black ink, appearing to read 'Neil Edde', with a stylized, flowing script.

Neil Edde
Vice President and Publisher
Sybex, an Imprint of Wiley



This book is dedicated to Jim and Helen Cook. Without your support, I would never have had the opportunity to write this book; thank you so much.

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I'm so excited to provide this book to all who enjoy creating art in ZBrush. This book would never have been possible without the amazing ZBrush community. Thank you for always inspiring me and pushing me to keep experimenting to improve my artistic journey. I would also like to thank all the ZBrush artists I have met over the years for their willingness to share their work, thoughts, and techniques with me.

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Thank you to the all the editors and the Sybex team for making this book possible and for helping to put this book together: Mariann Barsolo, Stephanie Barton, Christine O'Connor, and Pete Gaughan. I cannot give enough appreciation to the technical editor, Eric Keller, for being so honest throughout the process. This book would not be what it is without your advice.

To all my family in the areas of Stevensville, Ontario, Canada, and Buffalo, New York, thanks for allowing me to be that loud and crazy kid growing up. I would not be the person I am today without all of you. To my mother, Mindy, my father, David, my step-mother, Janette, and my sister, Tammy: thank you for all the support you gave me to realize my dreams and accomplish my goals, some of which are still to come. I cannot tell you how much the four of you have influenced my life.

To the love of my life, Cali, there is no way this book would have happened without you. Thank you for being there to advise me, push me, and continue providing that loving support. I enjoyed working those long nights together. You will always keep me inspired to discover art.



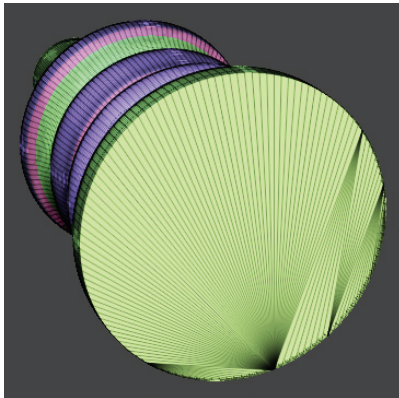
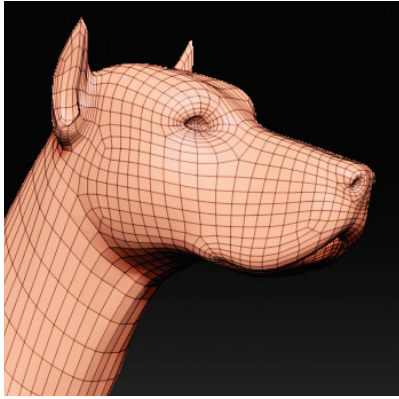
About the Author

Paul Gaboury is the lead application engineer for Pixologic, the makers of ZBrush. Paul is involved with the development of ZBrush and works with artists around the world offering support on ZBrush and Sculpttris. Paul has been working with CG software since 2001. He has worked with several studios such as Legacy Effects, Walt Disney Animation Studios, Pixar Animation Studios, Industrial Light & Magic, and many more, enhancing their ZBrush sculpting pipeline and providing training and development, and giving demos and support to all the artists in the studio. As part of the Pixologic team, Paul also travels to various schools giving demos on ZBrush and works with the institutions' instructors to build and establish a ZBrush curriculum.

Paul graduated with a BFA from Bowling Green State University and was an extension student at Gnomon School of Visual Effects.

A fantastic group of ZBrush artists contributed their expertise to this book. Please see the Artist Spotlight features in each chapter for the individual biographies of these extremely creative people.

Contents



Foreword xii
Introduction xiii

Chapter 1 Understanding the Basics 1

- Customizing Your ZBrush 2
 - Customizing Your 3D Brush Fly-Out Window 2
 - Customizing Your LightBox Tabs 3
 - Adding a Folder Shortcut to LightBox 4
 - Adding a Texture or Alpha to a 3D Brush from LightBox 5
- Recovering Your Subdivision Levels 6
- Using Reproject Higher Subdivision 8
- Using Relax Deformation 10
- Using Local Subdivision 10
- Creating a Custom Tileable Alpha with 2.5D 13
- Using Alphas to Create Meshes 17
- Creating Wallpaper 20
- Creating Your Own Palette 25
- What's Next 26
- Artist Spotlight: Joe Lee 27
- Artist Spotlight: Magdalena Dadela 35

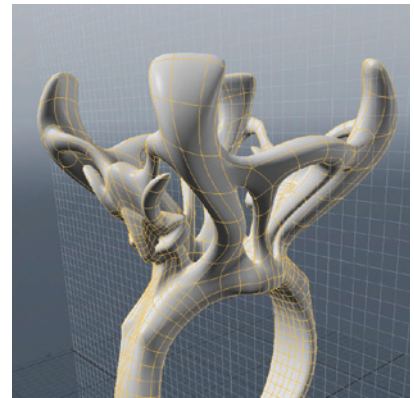
Chapter 2 Special Project—Creating Accessories for a Bust 43

- Creating the ZMan Logo 43
 - Placing the ZMan Logo on the Hoody 48
- Creating the Zipper 49
 - Making the Zipper Shape 49
 - Making the Zipper Mask 50
- Creating the Stand 52
 - Completing the Stand 55

- Creating a Skin Texture 57
- What's Next 59
- Artist Spotlight: Morgan Morey 60
- Artist Spotlight: Zack Petroc 68

Chapter 3 Sculpting—Developing Your Next Piece 75

- Using Hard-Edge Brush Techniques 75
 - ClipCurve Brush with BRadius 76
 - ZSketch Brushes for BaseMesh 78
- Adjusting and Creating Brushes 81
 - Using a Custom Brush with Tilt 81
 - Creating a Stone Column 84
 - Creating a Surface Noise Brush 87
- Understanding the Power of ShadowBox 88
 - Getting Started with ShadowBox 88
 - Silhouette Drawing with ShadowBox 89
 - Using ShadowBox to Create Accessories 92
- Making Difficult Items with ZSpheres 93
 - Creating Chain Mail 93
 - Creating a String of Bullets 97
- Using Morph Difference to Create Thickness 99
- Artist Spotlight: Tomas Wittelsbach 102
- Artist Spotlight: Vitaly Bulgarov 110

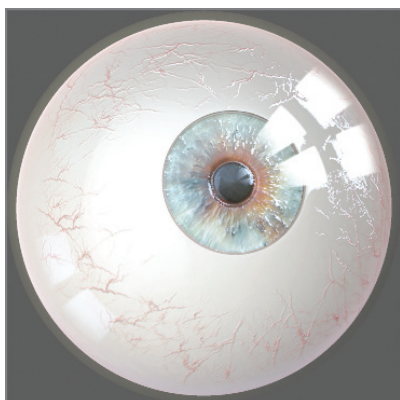


Chapter 4 Sculpting Hard-Surface Details 115

- Creating a Hose Component 115
- Creating the Front Eye Piece 128
- Using NoiseMaker for Patterns 135
- Artist Spotlight: Sebastien Legrain 138
- Artist Spotlight: Steve Warner 146

Chapter 5 Adding a Splash of Color 151

- Understanding the Basics of Polypaint 152
- Using AO to Colorize 153
- Using Mask By Cavity to Paint Out Detail 156



- Painting with UV Master 157
- Texturing with Projection Master 160
- Using Photoshop to Paint 163
 - Using ZAppLink 163
 - Using GoZ Photoshop 167
- Using SpotLight 170
 - Adjusting Hue 172
 - Masking Out a Texture 174
 - Using the Pin Feature 175
 - Texturing a Face 178
- Artist Spotlight: Michael Defeo 181
- Artist Spotlight: Rudy Massar 188

Chapter 6 Working with Scan Data 193

- Starting with Scan Data 193
- Understanding How to Manipulate Scan Data 194
- Capturing Color from the Scan Data 198
- Making the Back Mesh of the Ball Cap 201
- Sculpting the Hair with FiberMesh 205
- Artist Spotlight: Mike Jensen 211
- Artist Spotlight: Bryan Wynia 215

Chapter 7 Posing—Bringing Movement to Your Work 221

- Setting Up a ZSphere Rig with a Single Subtool 221
- Rigging a Single Subtool with Sculpted Detail 226
- Using a Rig with Transpose Master 227
- Creating Multiple Poses with Layers 229
- Assigning Multiple Poses to the Timeline 231
- Exporting Blend Shapes from ZBrush to Maya 233
- Artist Spotlight: Geert Melis 236
- Artist Spotlight: Marco Menco 240

Chapter 8 Special Project—Creating Hockey Skates 245

- Creating the Laces 245
 - Using the CurveTube Brush 245
 - Using ZSpheres 248
- Using a Custom Stitch Brush 250
 - Creating the Model Used for the Alpha 251
 - Creating the Alpha from the Model 252
- Using Decimation Master to Reduce Poly Count 254
- Artist Spotlight: Joseph Drust 258
- Artist Spotlight: Christopher Brändström 264

Chapter 9 Rendering—Bringing Life to Your Image 271

- Rendering a More Realistic Eye 271
 - Creating the LightCaps 272
 - Adjusting the Materials 273
 - Creating the Second Material 276
- Adjusting the Shadow Settings 276
- Creating an SSS Material 280
 - Adjusting the Lights 281
 - Building the Material 281
 - Making Adjustments to the Render 285
- Using the Filter System with BPR 288
- Artist Spotlight: Mark Dedecker 292
- Artist Spotlight: Julian Kenning 296

Appendix About the Companion DVD 303

- What You'll Find on the DVD 303
 - Chapter Files 303
- System Requirements 304
- Using the DVD 304
- Troubleshooting 305
- Customer Care 305



Foreword

My name is Rick Baker, and I am a ZBrushaholic. That's right—I am addicted to ZBrush.

If you don't want to be addicted to ZBrush, you must put this book down immediately and run away. If you don't take my advice and you read Paul's *ZBrush® Professional Tips and Techniques* book, I would be willing to bet that you, too, will become addicted.

My life just hasn't been the same since I became a ZBrush addict. I am constantly enjoying sculpting crazy creatures on my computer.

I didn't think it could happen to me. When computer modeling first started, I thought that I would give it a try, but modeling with points and polygons just wasn't for me. It was so foreign—I couldn't make anything organic-looking. No way I was going to get hooked on this computer stuff; nope, I'll stick with my real-world sculpting. But then along came ZBrush. I have been hooked ever since. It was so much like real-world sculpting—only better, faster, and way more fun.

So take my advice: if you, too, want the ZBrush addiction, this book will definitely give you what you're looking for. It's filled with dozens of tips and insights to feed your addiction, including how to create a Subsurface Scattering SSS material in Chapter 9 and a cool walk-through of creating hair with FiberMesh in Chapter 6. You will spend every free moment on your computer sculpting, painting, and having a blast making all sorts of amazing things.

You were warned.

Sincerely,
Rick Baker

As a teen, Rick Baker began creating artificial body parts in his own kitchen. One of the earlier films Rick worked on was as an assistant to Dick Smith on The Exorcist. He received the inaugural Academy Award for Best Makeup for his work on An American Werewolf in London. He also created the "werecat" creature Michael Jackson transforms into in the music video Thriller. Subsequently, Baker was nominated for the Best Makeup Oscar ten more times, winning on seven occasions, both records in his field. Baker claims that his work on Harry and the Hendersons is one of his proudest achievements. On October 3, 2009, he received the Jack Pierce Lifetime Achievement Award at the Chiller-Eyegore Awards. Rick's most recent Oscar in 2011 was for the makeup effects he created in The Wolfman. Baker's most recent work can be seen in MIB3.

Introduction

Welcome to *ZBrush® Professional Tips and Techniques* and the world of digital sculpting. During my years of traveling in and out of studios, schools, medical institutions, conferences, and many other industries, I found myself speaking with artists about various techniques and how certain features of ZBrush work to improve pipelines. I discovered that there was always more than one way to create something in ZBrush, but there was not one good location to learn all the techniques.

I wrote this book with the hope of sharing the many tips and techniques I gathered from these presentations with the community, to inspire you to discover new ideas on how to use ZBrush.

Because ZBrush is so powerful, it can be hard to figure out the necessary steps to accomplish specific sculpts. In this book, you will find various techniques that can be applied to several industries. Artist Spotlights feature ZBrush specialists from various markets, including film, games, jewelry, and education. You will also find chapters dedicated to sculpting, texturing, rendering, and much more. The book also contains Special Projects, which provide a final image of a sculpt and share a step-by-step tutorial on how parts of the image were accomplished.

Finally, my hope is that these techniques will get you to start thinking about how you can change your workflow in ZBrush and give you a great base to expand from to continue your journey in digital sculpting.

Who Should Read This Book

This book is meant primarily for artists who have been using ZBrush for a while and have a basic knowledge of the program. However, there are definitely techniques in here that will be invaluable to beginners. At least, I wish I'd known some of this stuff when I started using ZBrush more than six years ago.

In addition, this book is great to accompany any curriculum at any institution as a resource for ZBrush workflows. This is also a great resource for any self-taught artist trying to learn more about how ZBrush can be used in different industries. Finally, this book is great for artists making the transition from clay sculpting to digital, from Photoshop to 3D, from traditional 3D packages to digital sculpting, and for artists who are just looking to use the computer as a new medium.

What You Will Learn

In *ZBrush® Professional Tips and Techniques*, I will show you how you can use ZBrush to create several workflows by combining various tools to accomplish a final image or sculpt that will be rapid-prototyped out. This book is full of step-by-step tutorials and completed images in ZBrush.

You will learn several tips that extend beyond the basics of ZBrush: sculpting techniques, texturing, rendering, posing, hard-edge sculpting, creating hair, and so much more. This book is also chock-full of tips from ZBrush artists sharing workflows that they use every day at their studios.

After you finish this book, you will have an arsenal of knowledge for ZBrush, giving you a solid foundation to expand your art in creating more realistic CG images and animations.

The goal of this book is to provide you with tips and techniques to make you more familiar with all the parts of ZBrush and combine those elements into your own workflow.

Hardware and Software Requirements

Computers are always changing, and ZBrush has grown with these changes. It can run on two operating systems (Windows XP/Vista/7 and Mac OS X 10.5 or newer), but figuring out your hardware can be more involved. This book also includes a DVD full of assets that will require you to have at least ZBrush 4R2b to open all tools and projects found on the DVD. You will also need to have QuickTime or VLC player to play all videos found on the DVD.

For hardware, ZBrush really relies only on your RAM and processor. Because it's not an OpenGL application, the video card has no real effect on performance. ZBrush doesn't need much to run, but I recommend a minimum of 4 GB of RAM and a dual-core processor. For best results in ZBrush, you should install 8 GB of RAM and get the best processor you can afford or even two processors. ZBrush is currently a 32-bit application, but Pixologic has announced that future versions of ZBrush will be 64-bit; I would install 12 GB of RAM or more to take full advantage of this version when it arrives.

Even though at the time of this book's release, ZBrush 4R2b was still a 32-bit application, I still recommend having a 64-bit operating system so that ZBrush can use up to 4 GB of RAM on the Windows side and at least 3.5 GB of RAM on the Mac side.

ZBrush offers a free upgrade to all registered users; therefore, this book was written primarily with ZBrush 4R2b but also includes tips for ZBrush4R3. For many of these tips and techniques, you will need at least ZBrush 4R2b. To learn more about the most current ZBrush system requirements, visit the Pixologic website:

www.pixologic.com/zbrush/system/

How to Use This Book

This book was designed with a particular workflow. This book is set up so that each odd-numbered chapter focuses on a specific area of ZBrush and includes Artist Spotlights offering tips from two artists representing different industries. Each even-numbered chapter presents a Special Project of one of my sculpts and includes two more Artist Spotlights.

Chapter 1, “Understanding the Basics,” gives you some basic tips on sculpting, painting, creating base meshes, and much more. This chapter is not only great for beginners but also has some great tips for any level of ZBrush user. This chapter includes Artist Spotlights from Magdalena Dadela and Joe Lee.

Chapter 2, “Special Project—Creating Accessories for a Bust,” will give you four tips from my sculpt of a bust I created to be tested for a rapid-prototype. There are tips on creating a logo, creating a zipper, creating a base of the chess piece, and sculpting skin. This chapter includes Artist Spotlights from Zack Petroc and Morgan Morey.

Chapter 3, “Sculpting—Developing Your Next Piece,” covers some really cool techniques for improving your sculpting in ZBrush. These include hard-edge techniques, creating a brush, using ZSpheres and ShadowBox, and using a morph target. This chapter includes Artist Spotlights from Tomas Wittelsbach and Vitaly Bulgarov.

Chapter 4, “Sculpting Hard-Surface Details,” guides you through several steps on how to create hard-edge components and use the NoiseMaker for patterns. This chapter includes Artist Spotlights from Sebastien Legrain and Steve Warner.

Chapter 5, “Adding a Splash of Color,” covers how you can use ZBrush to paint your sculpts, including the basics of polypainting, Projection Master, and SpotLight; using Photoshop with ZBrush; combining painting with UV Master; and using various masking techniques for painting. This chapter includes Artist Spotlights from Michael Defeo and Rudy Massar.

Chapter 6, “Working with Scan Data,” covers how to use scan data in ZBrush as a great start. This technique is used in several industries including film, games, toys, and collectibles. You’ll learn the basics of scan data manipulation, creating a ball cap for the data, and creating hair with FiberMesh. This chapter includes Artist Spotlights from Mike Jensen and Bryan Wynia.

Chapter 7, “Posing—Bringing Movement to Your Work,” covers how you can use ZSpheres to rig your models, whether you have one subtool or several subtools, and how to take ZBrush layers to Maya as blend shapes. This chapter includes Artist Spotlights from Geert Melis and Marco Menco.

Chapter 8, “Special Project—Creating Hockey Skates,” takes you through two specific techniques on how to create laces, how to create a custom stitch brush, and how to use Decimation Master to maintain a logo. This chapter includes Artist Spotlights from Joseph Drust and Christopher Brändström.

Chapter 9, “Rendering—Bring Life to Your Image,” covers how you can use the BPR render in ZBrush to create more realistic rendered images. You will learn how to create a multiple shaded material for a Subsurface Scattering SSS render, render out a realistic eye, use the filter system, and understand the shadow controls of the BRP settings. This chapter includes Artist Spotlights from Mark Dedecker and Julian Kenning.

How to Contact the Author

I would love to hear your thoughts about the book, or if you have any questions, please email me at paul.gaboury@gmail.com. In the subject line, please just let me know you are contacting me about the book by putting something like, “I read your book and have a question.” Thank you for picking up this book and for all the support. Above all else, enjoy the reading—and happy ZBrushing.

one

C H A P T E R



Image by Magdalena Dadela

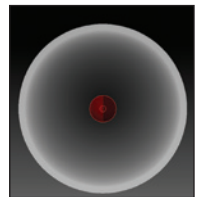
Understanding the Basics

This first chapter introduces you *to tools and features of ZBrush that you will use constantly throughout your journey. Understanding the powerful core of ZBrush is essential before you dive into more complex procedures. I often notice that the simplest ZBrush features serve as a foundation for the more complex tricks along my workflow.*

People often ask me how to become a great sculptor in ZBrush, and my answer is always “Time and effort.” You must put in the time to learn the new art form. However, the effort you expend as you learn is crucial. Use your time to the fullest.”

My goal in this book is to encourage you to use new workflows by helping you understand more of ZBrush. This chapter introduces a wave of new features that you can build upon to get better and faster results. I encourage you to open your mind to new techniques and, above all, to have fun doing it.

- Customizing your ZBrush
- Recovering your subdivision levels
- Using Reproject Higher Subdivision
- Using Relax deformation
- Using local subdivision
- Creating a custom tileable alpha with 2.5D
- Using alphas to create meshes
- Creating wallpaper
- Creating your own palette



Customizing Your ZBrush

Before artists can create, they must first understand their tools. ZBrush is constantly changing the way I sculpt, but before I can get to the cool features, I need to set up a comfortable work area. Just like a painter, a ZBrush artist needs to get all his tools in the right locations. Some users prefer the default user interface (UI), but these next few tips will give you the necessary information to set up your very own ZBrush UI.

Customizing Your 3D Brush Fly-Out Window

As a ZBrush artist, you will visit the Brush palette often to switch brushes. The brush fly-out window in Figure 1.1 can be overwhelming. However, you can easily customize it.

Press B on your keyboard to call up the 3D brush fly-out window. Note that the 3D brushes in Figure 1.1 are available only when a tool is in Edit mode. The brush fly-out appears at the current position of the brush icon. Pressing B is the same as clicking the large brush icon in the Brush palette at the top of the interface or clicking the large brush icon on the left of the default ZBrush interface, as shown in Figure 1.2.

You can find a list of ZBrush hot keys on the ZBrush wiki at www.pixologic.com/docs/index.php/ZBrush_4_Shortcuts.



Figure 1.1 3D brush fly-out window



Figure 1.2 3D brush icon at the top of the icons

To customize the 3D brush fly-out, follow these steps:

1. Open your Windows Explorer or Mac Finder. Go to the following directory:
 Windows = Program Files(x86)\ZBrush4R2b ZBrush4\ZData\BrushPresets
 Mac = Applications\ZBrush0SX ZBrush4R2b 4.0\ZData\BrushPresets

These directories contain all the 3D brushes in the fly-out window. Any brushes you remove will no longer appear in the 3D brush fly-out window. I do *not* recommend deleting these brushes completely from your system.

2. Move the brushes you do not want to be in the fly-out window into the following directory:

Windows = Program Files(x86)\ZBrush4R2b\ZBrushes

Mac = Applications\ZBrush0SX 4.0R2b\ZBrushes

This moves the brushes into LightBox, under the Brush tab.

3. After you remove the brushes from the fly-out window folder, you must restart ZBrush to apply the changes.

Be careful not to delete certain brushes such as the Transpose.ZBP, any brush that starts with Clip, any brush that starts with Mask, SelectLasso.ZBP, SelectRect.ZBP, Smooth.ZBP, or any of the ZSketch brushes, because this will render certain features unusable. If you are unsure, never delete a 3D brush. You can watch the DVD video in the Chapter 1 Assets folder called *Customize Brush Fly-Out* for more details.

Customizing Your LightBox Tabs

LightBox is an internal ZBrush browser that makes it easy to access assets such as 3D brushes, tools, projects, textures, and alphas. Figure 1.3 shows an open LightBox with the Project tab highlighted. This tab displays all projects saved in the ZProjects folder.

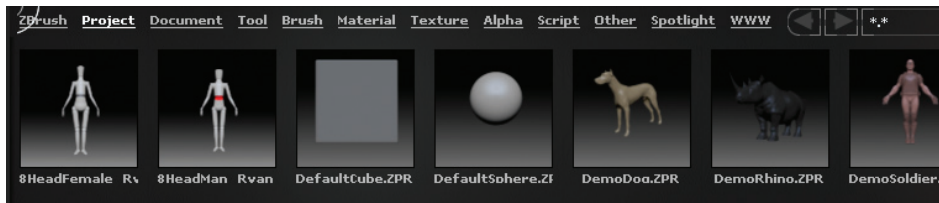


Figure 1.3 Default open LightBox with projects highlighted

All LightBox tabs can host several brushes, alphas, textures, and so on. Because you just learned how to remove brushes from the 3D brush fly-out, let's move Deco1.ZBP into LightBox. The following example can be applied to any brush:

1. Open two Windows Explorer or Mac Finder windows.
2. In one of the Explorer/Finder windows, go to the following directory:

Windows = Program Files(x86)\ZBrush4R2b\ZData\BrushPresets

Mac = Applications\ZBrush0SX 4.0R2b\ZData\BrushPresets

3. Search for the brush called Deco1.ZBP.
4. In the other Explorer/Finder window, go to the following directory:

Windows = Program Files(x86)\ZBrush4R2b\ZBrushes

Mac = Applications\ZBrush0SX 4.0R2b\ZBrushes

5. Move Deco1.ZBP into the ZBrushes folder. This folder relates to the Brush tab at the top of the LightBox interface.
6. If ZBrush is still open, you will see the Deco1 Brush in LightBox when you click the Brush tab. To remove the brush from the 3D brush fly-out window, you must restart ZBrush. However, when you add any brush to LightBox, that brush immediately appears even if you do not restart ZBrush.
7. To add more content into LightBox, visit the following folders:

Windows = Program Files(x86)\ZBrush4R2b

Mac = Applications\ZBrushOSX 4.0R2b

Each relates to the same titled tab in LightBox, as shown in Table 1.1.

Table 1.1: ZBrush and LightBox matchup

ZBrush Folder	LightBox Tab
ZAlphas	Alpha tab
ZBrushes	Brush tab
ZDocs	Document tab
ZMaterials	Material tab
ZProjects	Project tab
ZScripts	Script tab
ZSpotlights	Spotlight tab
ZTextures	Texture tab
ZTools	Tool tab

Adding a Folder Shortcut to LightBox

As a digital artist, I have already saved up several gigabytes of textures and alphas on my external hard drive. If I wanted to just move all of my textures and alphas into the ZTextures and ZAlphas folders, I could then access the textures and alphas in LightBox.

However, if I prefer not to take up more space on my hard drive or I just want to keep these files on my external hard drive, I can add a shortcut in LightBox to my external hard drive. This also works for any folder on your computer. This is currently possible only on a Windows machine. Here are the steps:

1. Create a shortcut to the folder or hard drive you want LightBox to access.
2. Move the shortcut into the following directory:

Windows = Program Files(x86)\ZBrush4R2b\ZProjects

Figure 1.4 shows that I have placed the shortcut in the ZProjects folder.

3. If ZBrush is not already open, launch it. As you can see, LightBox opens by default to the Project tab. That is why I have placed my shortcut to the external hard drive in the ZProjects folder.

I can now search my texture and alpha files as well as anything on my external hard drive from this shortcut.

Adding a Texture or Alpha to a 3D Brush from LightBox

As you become a crafty veteran of ZBrush, you will start to add various features to your 3D brushes for texturing and/or sculpting. LightBox is a perfect source to browse through resources and add elements to your selected brush. You can add a texture and an alpha by following these steps:

1. Load a project from LightBox so you have a tool in Edit mode. Select the Project tab in LightBox, as shown in Figure 1.5, and then double-click the DefaultSphere.ZPR project to load a polysphere into ZBrush. Also make sure the Standard brush is selected.
2. If you already have a tool in Edit mode, ZBrush asks whether you want to save changes to the current open project. Save the project to this point.
3. Navigate to the Texture tab in LightBox and select bark17.jpg. Figure 1.6 shows the selected texture file.
4. Double-click the bark17.jpg image. The bark texture is added to the Standard brush.
5. Now navigate to the Alpha tab in LightBox, and find the alpha called Leathery_skin13.psd (see Figure 1.7).

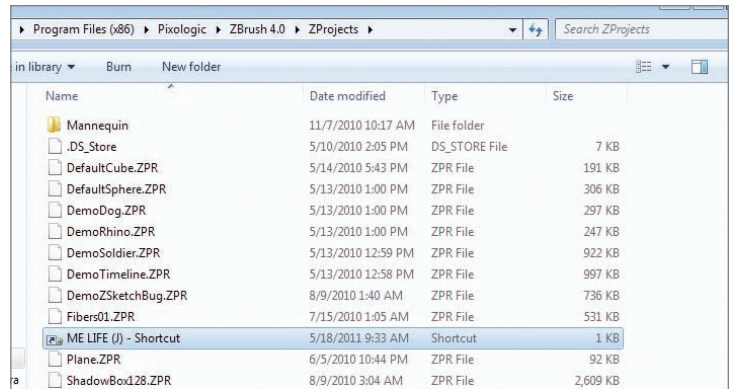


Figure 1.4 Shortcut in the LightBox ZProjects folder

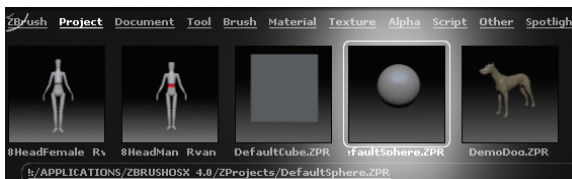


Figure 1.5 LightBox Project tab with DefaultSphere.ZPR selected

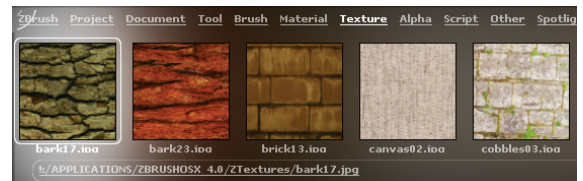


Figure 1.6 LightBox Texture tab with bark17.jpg selected

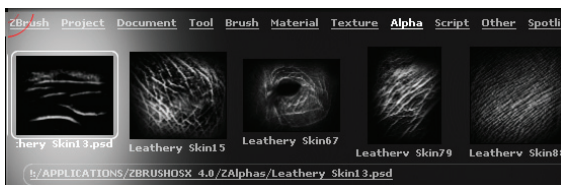


Figure 1.7 Alpha called Leathery_skin13.psd in LightBox

- Double-click the Leathery_skin13 alpha. As you can see in right image of Figure 1.8, the leathery skin alpha has been added to the Standard brush.

You can use this technique with any 3D brush and at any time in your creative process.

Recovering Your Subdivision Levels

Reconstruct Subdiv has saved me many times, and this button is my solution when I encounter an issue with a tool file and I still have a high-resolution OBJ of the same Tool; I can import the OBJ and get back my subdivision levels.

The Reconstruct Subdiv button will reconstruct your subdivision levels back to the lowest level if you have a tool that only has the highest level. As shown in Figure 1.9, the Reconstruct Subdiv button is in the Tool palette → Geometry subpalette.

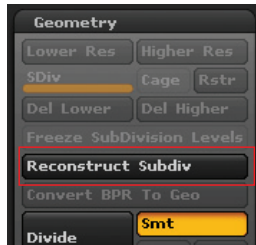


Figure 1.9
Reconstruct
Subdiv button
in the Geometry
subpalette



Figure 1.8
Standard brush
with no alpha or
texture applied
(left), with just
texture applied
(middle), and
then with texture
and alpha
applied (right)

Figure 1.10 shows that my dog tool clearly has a high polygon count. However, it has no subdivision levels. ZBrush is a multiresolution subdivision-level application, so I want to take advantage of this.

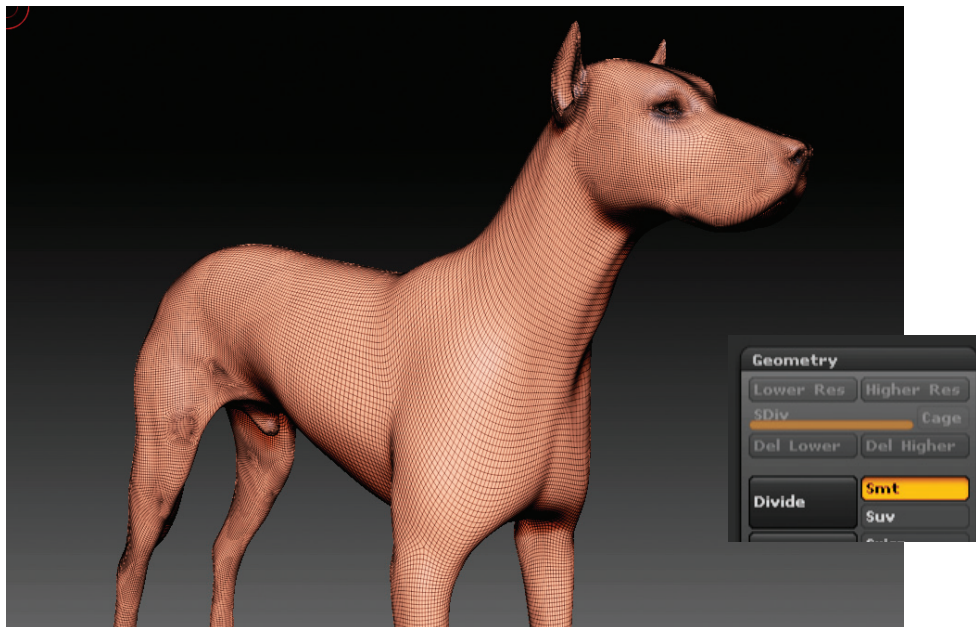


Figure 1.10 ZBrush Dog with high poly count and no subdivision levels

By clicking Reconstruct Subdiv once, I gain back one subdivision level (see Figure 1.11).

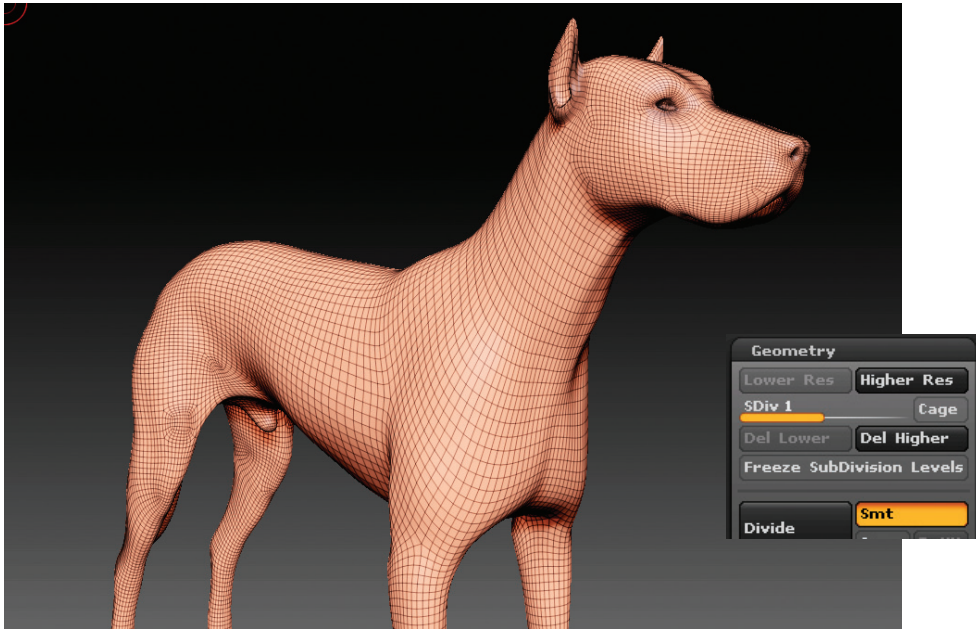


Figure 1.11 ZBrush Dog with fewer polygons and two subdivision levels

Figure 1.12 shows that when I click Reconstruct Subdiv again, I get another level of subdivisions.

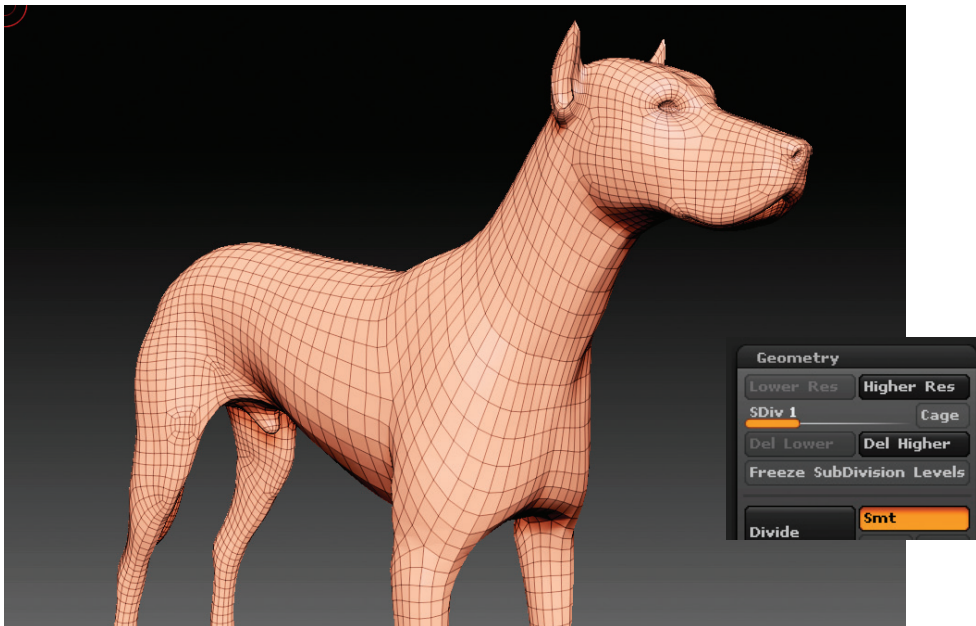


Figure 1.12 ZBrush dog with another lower level of subdivision

When ZBrush has no more subdivision levels to reconstruct. A warning will pop up right below all of the palettes, starting at the Alpha palette.

Using Reconstruct Subdiv is a cool trick, but it will not work on every tool. Tools created from ZSketch, Unified Skin, Extractions, and ShadowBox will not work with Reconstruct Subdiv. Don't worry if you don't know what these mesh creation methods are. By the end of this book, you will have a better understanding.

Using Reproject Higher Subdivision

I cannot tell you how often I get caught up in my sculpt and then realize how much I have damaged the topology of my creation. I will have overlapping geometry or geometry that is so close together that I cannot continue to sculpt on the mesh.

The Reproject Higher Subdiv button is near the bottom of the SubTool subpalette (see Figure 1.13).

In the example shown in Figure 1.14, the geometry has been stretched and pinched pretty heavily on a sphere. The bubblelike parts were created with the Inflat brush, and the crisp edges were created with the Pinch brush.

I set the tool to the highest subdivision level and I walk down to a lower subdivision level. I usually go at least two to three levels lower than the highest. I will smooth out the mesh by using the Smooth brush, as you can see in Figure 1.15, to the point where my geometry looks more relaxed.

Do not walk back up your subdivision levels after you have smoothed out the mesh. ZBrush will update the mesh as you walk up, and your high-level detail will be lost.

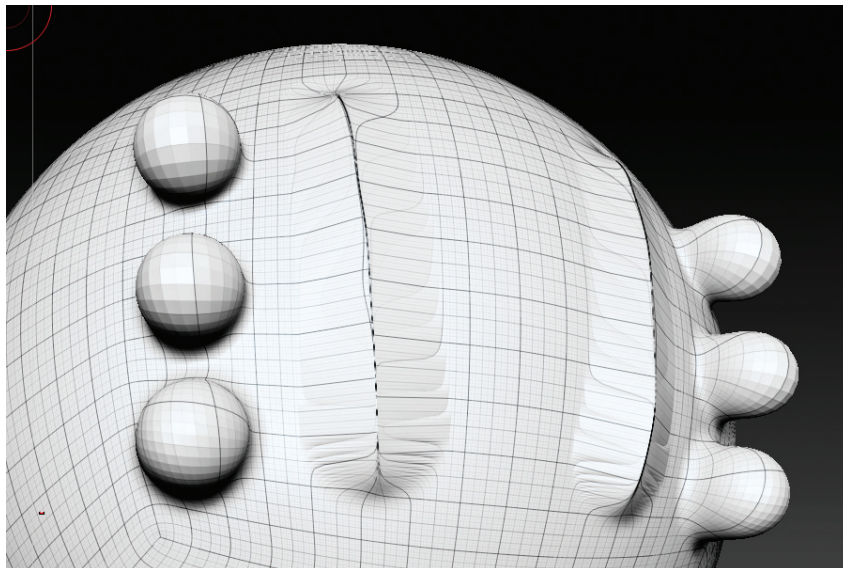
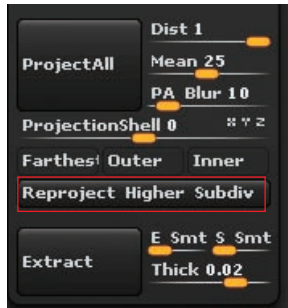


Figure 1.14 Sphere geometry stretched from Inflat brush and Pinch brush

*Figure 1.13
Reproject Higher
Subdiv button*



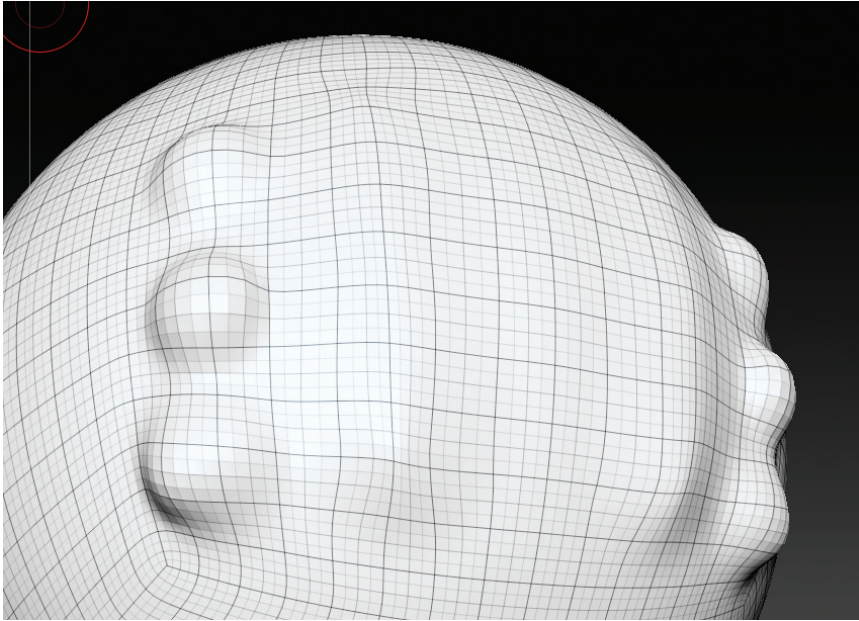


Figure 1.15 Sphere on lower subdiv level but smoothed out

When I click the Reproject Higher Subdiv button, ZBrush will recall the highest-level details and project those details into the mesh with a more relaxed geometry flow. Figure 1.16 shows that my sphere still has an inflated and pinched surface, but my geometry has been redistributed so I can continue to sculpt.

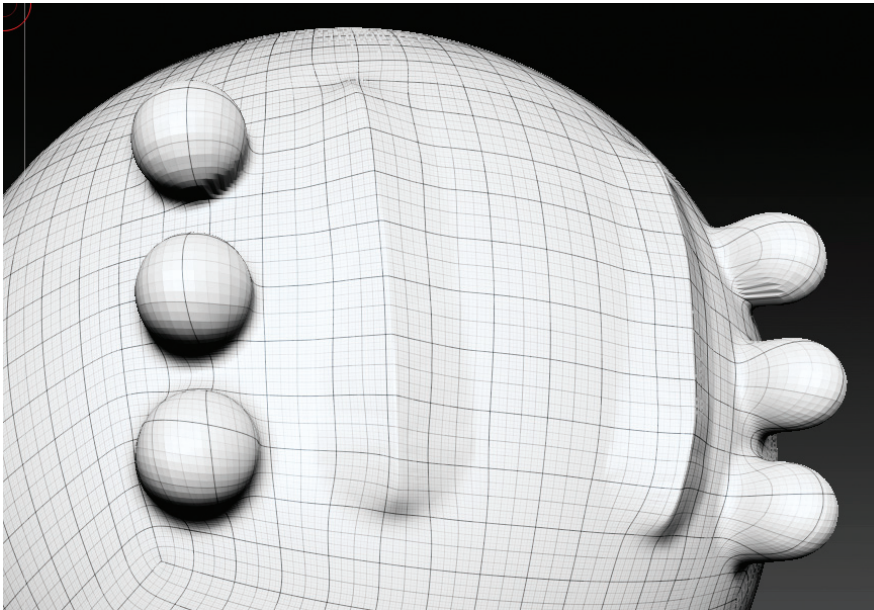


Figure 1.16 New geometry with sculpted detail still intact

Using Relax Deformation

The next tool to add to your toolbox is the Relax deformation. This is a great tool to use with the clipping brushes or if you have really stretched out any geometry. As you can see in Figure 1.17, the model has quite a bit of overlapping and stretched geometry.

In the Tool → Deformation subpalette, I slide the Relax feature all the way over, as shown in Figure 1.18.

Sometimes you must use the Relax slider more than once. I also recommend duplicating the subtool before using Relax. Relax will give a slight polish to your model. After you apply Relax, you can use Project All to get your mesh back to its original state with the new relaxed geometry.

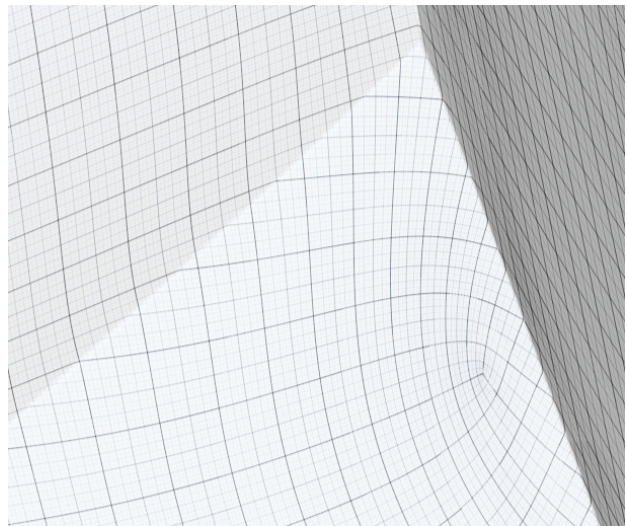
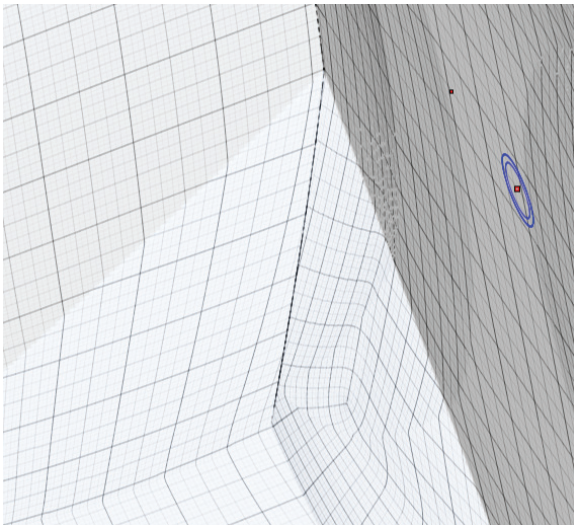


Figure 1.17 Geometry that is completely overlapped *Figure 1.18* Geometry after the Relax deformation

Using Local Subdivision

Often you will need more geometry in a certain section of your model; this is where you can locally subdivide the mesh by using masking. You do this most commonly in environments, but I have used this technique on some of my characters too.

I would like to add a walkway around the middle of the cliff in Figure 1.19. I do not want to just add another subdivision level because I don't need the whole mesh to be divided, or the computer system may not be able to give me another subdivision level.

As you can see in Figure 1.20, my geometry is pretty evenly distributed, but I need to add more geometry to create a walkway on the cliff.

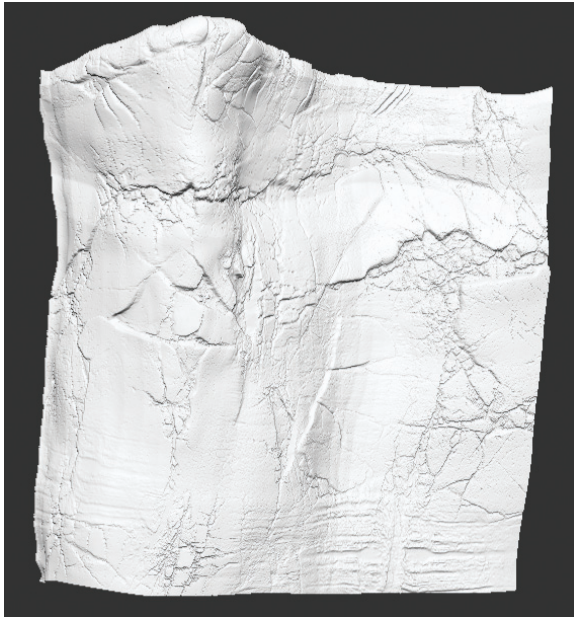


Figure 1.19 Adding a walkway around the cliff



Figure 1.20 Rock wall in Polyframe mode

To add the walkway, follow these steps:

1. Mask out the section you want to subdivide locally on the highest subdivision, as shown in Figure 1.21.
2. Invert the mask on the mesh, as shown in Figure 1.22. Do this by holding Ctrl and clicking anywhere in an empty space on the ZBrush document.



Figure 1.21 Mask out the section you want to subdivide.



Figure 1.22 Invert your mask.

3. Now walk down to the lowest subdivision level of your tool, as shown in Figure 1.23.
4. Click Divide in the Tool → Geometry subpalette or use the shortcut Ctrl+D to divide the mesh. The result looks like Figure 1.24. ZBrush will divide the mesh only where no masking is applied.

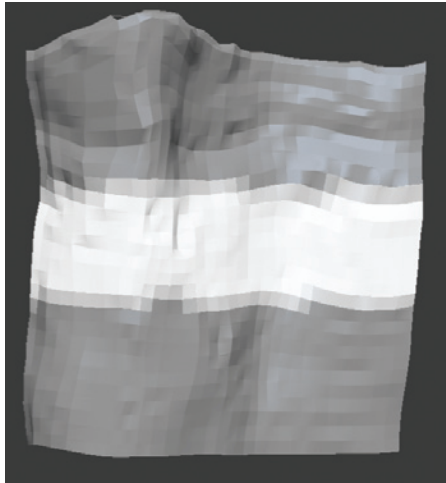


Figure 1.23 Lowest level with mask still applied

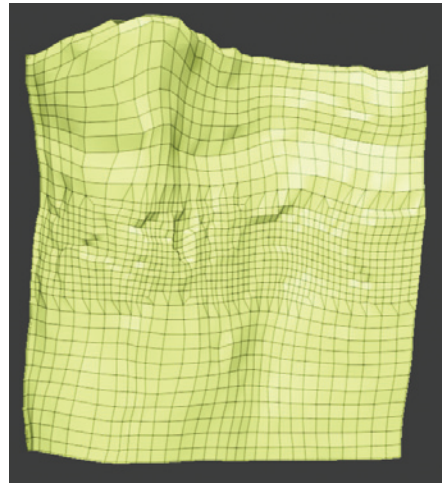


Figure 1.24 Local subdivision

5. You may have noticed some triangles in the mesh. Hold the Alt key as you click the Divide button to get a result like that shown in Figure 1.25. In this technique, ZBrush will make sure that the mesh contains only quads.

However, this action creates a mesh that becomes two separate pieces. If I sculpted across the geometry where the local subdivision took place, the geometry would begin to separate.

As you can see in Figure 1.26, I have also sculpted on the extra geometry to make the walkway blend in with the rest of the cliff.

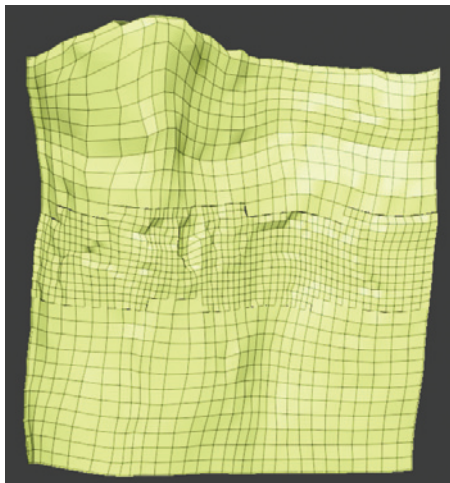


Figure 1.25 Local subdivision while holding the Alt key

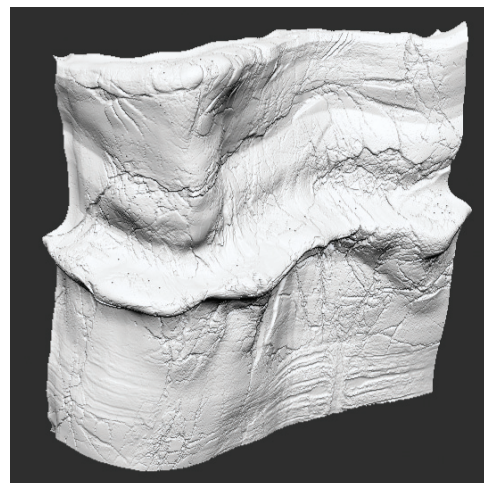


Figure 1.26 Finished cliff with walkway