Virtual Landscapes

The Embryonic Era (1980-1989)

by Umran Ali

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About The Author

Umran Ali, BSc, M.A, PGCHE, FHEA, was born in 1978 in Manchester, England. After graduating (BSc in 2004, and later with an M.A in 2005) Umran worked as a freelance 3D artist & creative designer, and then as a visiting lecturer and private tutor teaching across Art & Design, 3D, CGI and Animation. Umran later joined the School of Media, Music & Performance at the University of Salford as a lecturer in creative media, and taught across a variety of areas from design, production, & project management for video games, specifically around creative design and production of virtual environments.

From 2006 to 2012 Umran acted as Programme Leader for the BSc (Hons) Computer & Video Games programme at the University and was responsible for curriculum design, programme management and developing the programme's partnerships with a variety of major industry partners. Many of Umran's students since, have gone on to work in the creative industries including the videogame industry

Umran's freelance work included several large projects ranging from PlastiCity; a Will Alsop driven project visualising the regeneration of Bradford city centre in a fully interactive form, the Virtual Jean Claude virtual knowledge space project recreating the French composer Jean Claude Risset, into a 3D avatar, to working on projects in partnership with UK based organisations such as the DarkHorse organisation, BT and the Foundation for Art & Creative Technology (FACT).

Umran currently works as a senior lecturer in creative media, at the University of Salford. and continues to explore virtual natural environment design through his teaching and research, maintaining a deep interest in the meaning, impact, and design of natural spaces, in particular.

In his spare time, Umran is a keen videogames player, and landscape photographer. He lives in Cheadle, Manchester, with his wife and two children.

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Preface

The story of this how this book came to be can be traced back to my early childhood. As a young child growing up in the grim , dirty streets of the inner city of Manchester in the 1980's, my desire to escape the dull concrete and brick surrounding and play in natural spaces like most children was particularly strong. However living in such an environment presented certain challenges, centered around availability and access. Natural spaces were incredibly limited, with the only natural space accessible being a small forested area (which was unfortunately cut off by a 12ft enclosed wall with a single locked wooden door). Around this time I was given an Atari and copy of *Centipede*, and I became hooked, not knowing this would ultimately end up developing into a lifelong interest. Videogames offered me the possibility to play, albeit in a virtual space, and experience the natural spaces I craved for. My interest in the natural environment grew from those early days, and with the explosion of computer & video games over the years, and the phenomenal surge in popularity of the medium from a niche to mainstream culture, I was exposed to increasingly richer, deeper and more extensive virtual natural environments.

Virtual Landscapes developed through a combination of both a personal interest and observations I made over the years of the different communities that developed around particular games. What struck me over the decades since, was that particular aspects of videogames such as characters, player interactions, immersivness, started to increasingly become the centre of discussion and debate, evolving into academic discourse and analysis. However within this there appeared to be a mismatch between one aspect that gamers were sharing and reflecting upon and what became a focal point that designers and academics were analysing; virtual natural environments. This was something that held my interest for nearly three decades, and something that fellow gamers were sharing, discussing and reflecting upon, this was definitely something I felt needed be discussed and shared with a wider audience.

When I set out to write this book, little did I realise that it would end up extensively consuming my thoughts and my time for over three years. Holidays, anniversary's, and weekends, were all consumed. What had started as a intention to a create short visual timeline of virtual natural environments in games I had encountered grew exponentially as my interest seemed to take on a life of its own. I would often recollect the games I had played, for one to suddenly jump out , or would share my experiences of these spaces online with fellow gamers revealing an important old game I had missed, I knew these had to be to be illustrated and shared.

The process of extracting these virtual spaces has not been straight forward, many of these titles were abandoned, years sometimes decades earlier, even before the technical task of extracting the virtual landscapes had begun I was tasked with tracking the actual game first. Once this had been completed, technical hurdles were often marked with moments of joy, frustration, and revelation. Some of the landscapes proved relatively easy to extract, others extremely frustrating with various attempts over several months met with failure after failure.

However moments of late night revelation would soften inspire a new direction or the development of a new technique, and would suddenly yield the result I had struggled to acquire. The final outcome was never a certainty, It was always a nervous moment with the final press of the 'render' button, which would compile all the extracted 'raw' images for a particular virtual space into one coherent landscape. To suddenly see what you imagined that particular landscape to look like in a tangible, shareable form on the screen, was both a satisfying moment of joy and relief, one that spurred me on to continue the work.

Sharing the initial work was met with apathy and did not seem to resonate with anyone but myself, and that did for a while did make me wonder, if the endeavour would end up becoming a waste of time, and perhaps would I better of doing something else, however I soon realised that my ultimate goal was to share a personal and collective experience no matter the final reception of the completed work. It's use in my teaching for example would be more than enough of a justification of the time and energy spent. Sharing the work later on I realised the initial fear was misplaced, as it appeared to resonate strongly with people, mainly with gamers, but this was an encouraging start nonetheless.

The work has also led to the development of workflows around virtual photography. New tools & techniques in extracting rich unseen views of these spaces emerged during the creation of this work, which in many had parallels to traditional landscape photography (sourcing an environment, calculating the best angle etc..) , and I hope this work furthers these virtual spaces in becoming viewed as more than simply entertainment.

Virtual Landscapes stands in the first opening chapter of a something I believe will grow and revolutionise how we see and experience the world around us, and it is therefore critical for the minds of tomorrow to have access to what these virtual spaces looked like, how they were experienced, and what their impact was. Ultimately I hope the work stands as an digital archive preserving these spaces for future generations in the form of a visual repository

Virtual Landscapes has also strangely become a doorway for me into other disciplines such as photography art, and geology. Through these virtual landscapes I discovered traditional photography, been exposed to the works of John Ruskin, landscape artists such as Edwin Church, Turner and more. The work has also triggered an interest in environmental psychology, geology and how these disciplines can further develop virtual natural environment design. The work has also heightened a deeper appreciation of natural spaces, an appreciation of the tranquillity, beauty and sublime nature of natural landscapes.

My hope for this work is that is will to engage gamers and non gamers alike, inciting a critical discussion about the design, impact and meaning of these virtual natural spaces, and ultimately to further celebrate the natural environment. For gamers I hope this work captures some of the virtual spaces that have excited, enthralled and captivated our attentions for over three decades. For designers I hope this work develops an appreciation of the impact of these spaces and further develops natural environment design as a sub-discipline, one that future designers would evolve, giving rise to new possibilities in the medium.

In addition I would want the work to attract and engage non gamers, who share an interest in the natural environment, to foster an appreciation of these new virtual natural spaces, and to recognise the potential of videogames to connect a new generation to what typically maybe perceived as something relatively old fashioned and outdated

Lastly, I would like to dedicate this book to my dear wife, Faiza for her patience and understanding, my daughter. Mariyam (who one day I hope will understand why daddy was always busy working.....) and my young son Zayn, and to all who have motivated and inspired me to work on this.

Umran Ali
2012

Introduction

The magical essence of natural landscapes since the dawn of man have been a source of intrigue, wonder and inspiration in art, philosophy and literature. With each new era in civilisation, new methods of creative expression have been used by artists, designers and writers to capture the rich natural landscapes, and with the 21st century and the emergence of new interactive technologies, this innate desire is being expressed through the digital domain.

From the strange giant mushroom forests of Morrowind, the Archipelago islands of Zelda Wind Waker, to the tropical underground caves of Phantasy Star Online, Virtual landscapes have enthralled, captured and engaged player imaginations for over 30 years. *Virtual Landscapes* is a three part series attempting to, for the first time, visually illustrate, share and critically reflect upon the unique, virtual natural landscapes within Computer & Video Games, through previously unseen , digitally enhanced and panoramic forms.

Natural landscapes have long been a focal point of interest within the natural environment. It has been through reflections either through art, literature, sculpture we see an glimmer of immortality- one that granted a level of persistence to these landscapes in the minds of individuals and society over time, these landscapes were, in essence forever preserved, through art & literature even though the actual landscape , either through adverse natural or manmade change may have been lost centuries before.

The virtual domain is however different, the digital landscapes, are in a sense more vulnerable and prone to being lost than their physical counterparts. The virtual landscapes are in a sense, exposed to the ravages of time since they do not occupy a fixed physical space, and the virtual space that is occupied is limited to fixed relatively short window of time dependant on factors such as the genre of the game, and the platform (and it's own lifespan) These factors have meant that many of these virtual landscapes now remain uninhabited, abandoned and largely forgotten. *Virtual Landscapes* in this respect functions a digital preservation archive, one that attempts to visually record these unique environments and the landscapes contained within, and to present how, over time they have evolved and developed into what we see, play and interact with today.

Virtual Landscapes is not a substitute primary reference for the natural environment (in which there can be no substitute for the real thing), but as one that acts as a complimentary reference in addition to primary landscape reference material .The books also function as body of work that attempts to bring a rich visual chronology to a much underrated yet vital aspect of environments within computer & video games.

Virtual Landscapes attempts to preserve some of the unique and wonderful virtual natural environments using modern day digital restoration tools and techniques, as such certain pieces throughout the series have undergone restoration processes such as up-scaling, digital enhancement & digital cleaning. There has been a commitment throughout the work to present an authentic aesthetic view of the natural environments in computer & video games over 30 years but *Virtual Landscapes* is not about absolute pixel by pixel authenticity, and in many cases slight digital manipulation has been required to restore particular area of the landscapes (where the menu/user interface/other anomalies have prevented capture of that particular section) in an attempt to bring the essence of that particular landscape to the audience.

One could argue that the use of secondary sources in creating a new body of work should be avoided, since a process of reductionism in used in creating the artefact (i.e. one takes a large source of visual and other references to inform the production of an artefact) and by using this 'filtered interpretation, a risk is taken in restricting the richness & originality of the new body of work.

However it should be noted that these virtual landscapes are the final result of a long, often meticulous, process of research, design & testing: one that involves the crafting of these spaces through a combination of selected visual references through cycles of research and iterative design and testing, although they final result cannot be used purely as substitute for the natural environment they can serve as a powerful complimentary reference aid in developing the next generation of virtual environments and landscapes. I hope this work also serves as a collated set of visual references that students can use to both appreciate the evolution of virtual natural environments in games, and one that aids them in the design, synthesis and construction of these spaces in their own creative works.

The visual chronology of these landscapes over thirty years also goes beyond a pure a aesthetic appreciation of these virtual spaces and tries to consider aspects such as the environment design & construction process and seminal occurrences as well as the significance and impact of culture in how we respond to these virtual landscapes. In showcasing these often, spectacular landscapes various elements that could potentially distract the viewer from the landscape (such as the user interface, the player character, field of view, menu's, etc...) have been stripped away, by a process of careful editing, cheats codes/debug menu's etc... to reveal the natural environments underneath.

I have also tried to make a distinction between the virtual, natural environment and natural landscape. As geographer, Jay Appleton so eloquently put it "*Landscape is not synonymous with environment, it is the environment perceived, especially visually perceived.*" My approach in understanding the design, construction, and impact of these virtual natural environments is to visually reflect and analyse specific landscapes within the larger virtual environments, and ultimately my work is to highlight the importance of these virtual landscapes in creating richer and more immersive virtual spaces. I have also attempted to, where possible visually illustrate these landscapes through panoramas, as I feel if landscapes are the environment visually perceived then, a panorama is the ideal visual representation of a landscape

The selection of landscapes throughout the series is by no means indicative of greatest virtual landscapes that have existed, but a combination of both iconic game landscapes that the gaming communities generally hold in high regard and a personal selection based on landscapes I have encountered over the last 27 years.

The representation and evolution of natural environments in computer & video games can broadly be defined by three relatively distinct era's , which I have defined as the *Embryonic Era* (from 1980-1990), the *Transition Era:* (from 1990-2000), and the *Modern Era*: (from 2000-present).

Virtual Landscapes

The Embryonic Era (1980-1989)

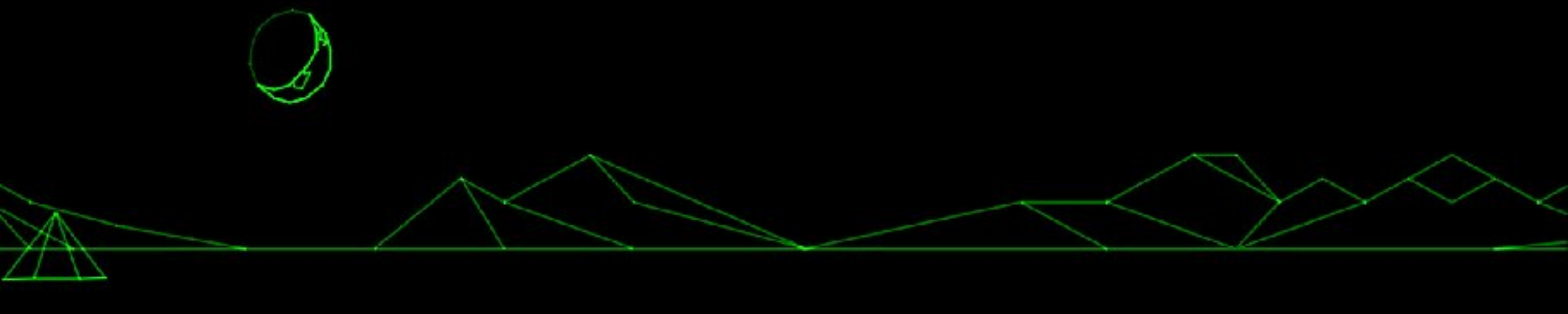
The representation of natural environments in the 'Embryonic Era' begins with at first nothing more than simple shape and forms. Colour, non-existent at first, meant environments were limited to black and white, with later developments allowed the use of several colours (albeit in a very limited range). Geometry was limited to crude block forms and was used to present key natural environment landscape features; i.e. in the *Forbidden Forest* a green background solid colour represented a forest backdrop, with vertical rectangles of brown representing tree's. The representation of 3D space was abstracted due to technological limitations to the 'Ant farm view': a cross sectional slice of the landscape is depicted with the player moving across the environment, usually in one direction(i.e. side scrolling). This abstraction would have a profound impact on the recreation /representation of fictional and non-fictional 3D space in all games including those containing natural environments.

Dig Dug's (1982) design, despite using the 'ant farm' perspective illustrated an early attempt to marry the natural environment with gameplay through a unique mechanic; the natural environment becomes an integral part of the game by becoming embedded as a gameplay feature; the avatar moves through the ground by digging through , tunnelling through the terrain is reduced to the onscreen removal of pixels (a high level of abstraction is present since the digging results in the 'dug space' becoming a black void)

Early in the era, natural environment design was largely limited to simulating entire environments rather than depicting a series of smaller landscapes. Later in games such as *Kings Quest (1984)* the limited screen space illustrated the use of traditional composition techniques, larger game environments were broken down into smaller screen spaces, i.e. traditional representations of landscapes, using the tools & techniques developed in other disciplines such as matte landscape painting, were used with fragmented 2D space (i.e. hotspots) to simulate 3D environmental depth. The environments during this era were also static, dynamic movement was severely limited (i.e. tree's didn't sway, grass didn't move) and for the most part players were unable to interact with any part of the environment, however there were some early attempts at simulating a dynamic environment, such as the day/night cycle (*Forbidden Forest*, *1983*) and rockfalls/flowing water (*CaveLord* ,*1985*).

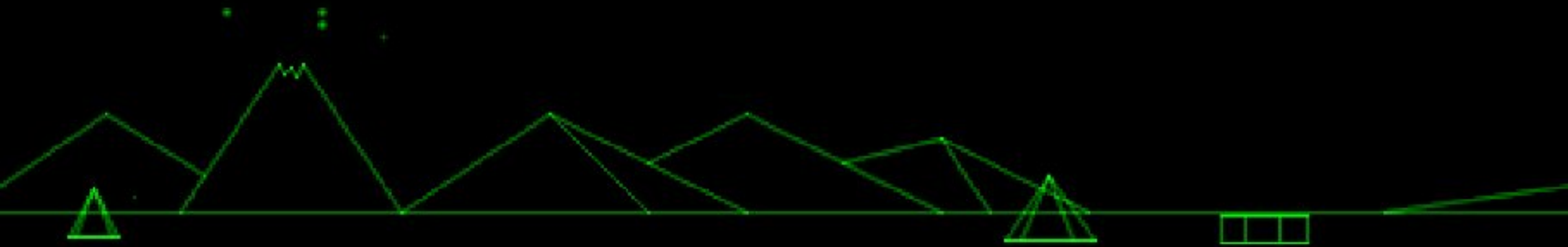
Bullfrog's *Populous(1989)* served as an early indicator of the use of the environment beyond an merely an aesthetic consideration and as a seminal example of the successful coupling of agency and natural environmental design, laying the foundation of how meaningful interaction (agency) could enrich the immersivness experience.

The Embryonic Era
1980-1989

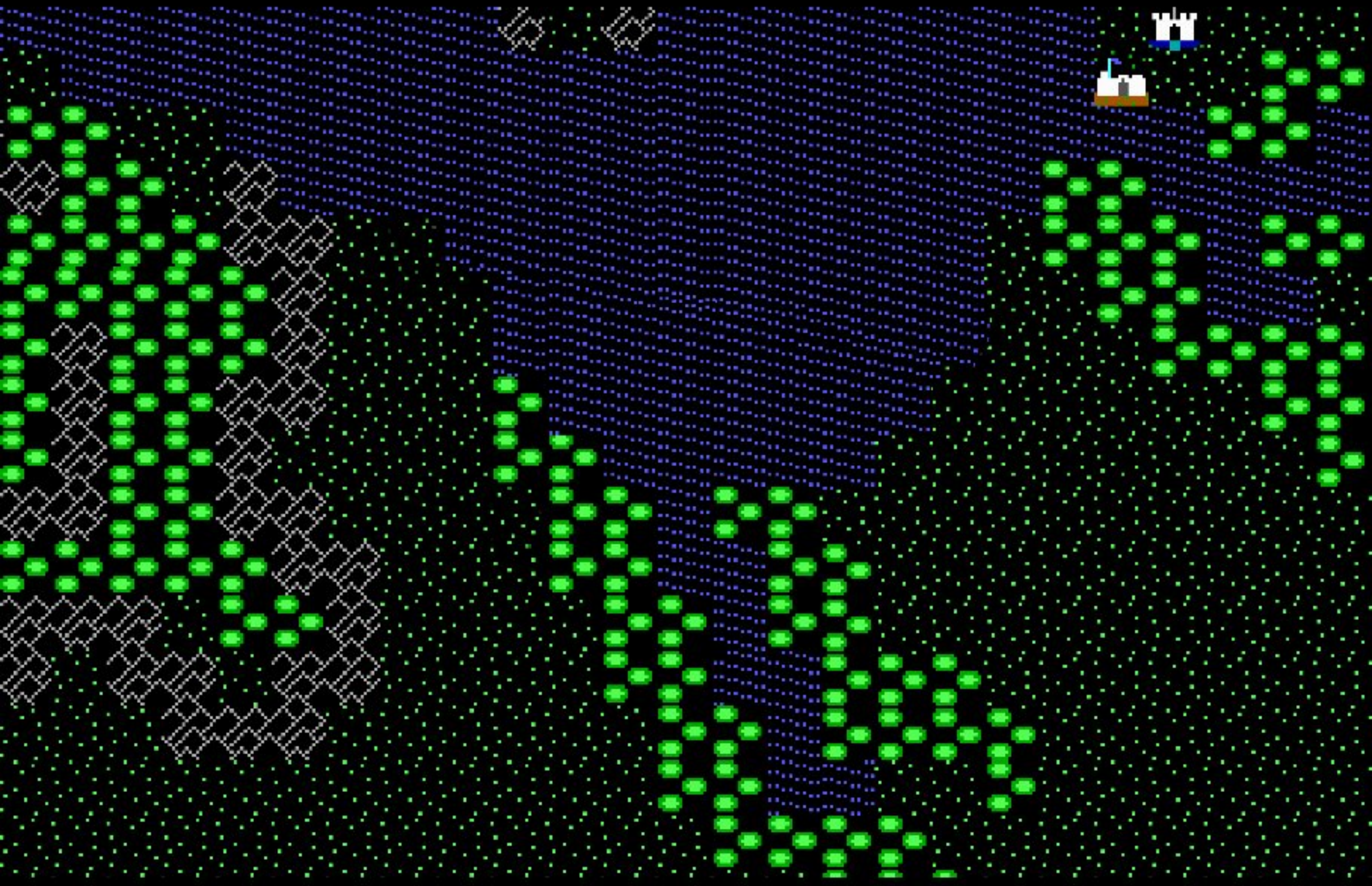


Title: *Battlezone*
Platform: *Arcade*
Developer: *Atari* **Publisher:** *Atari* (*1980)*

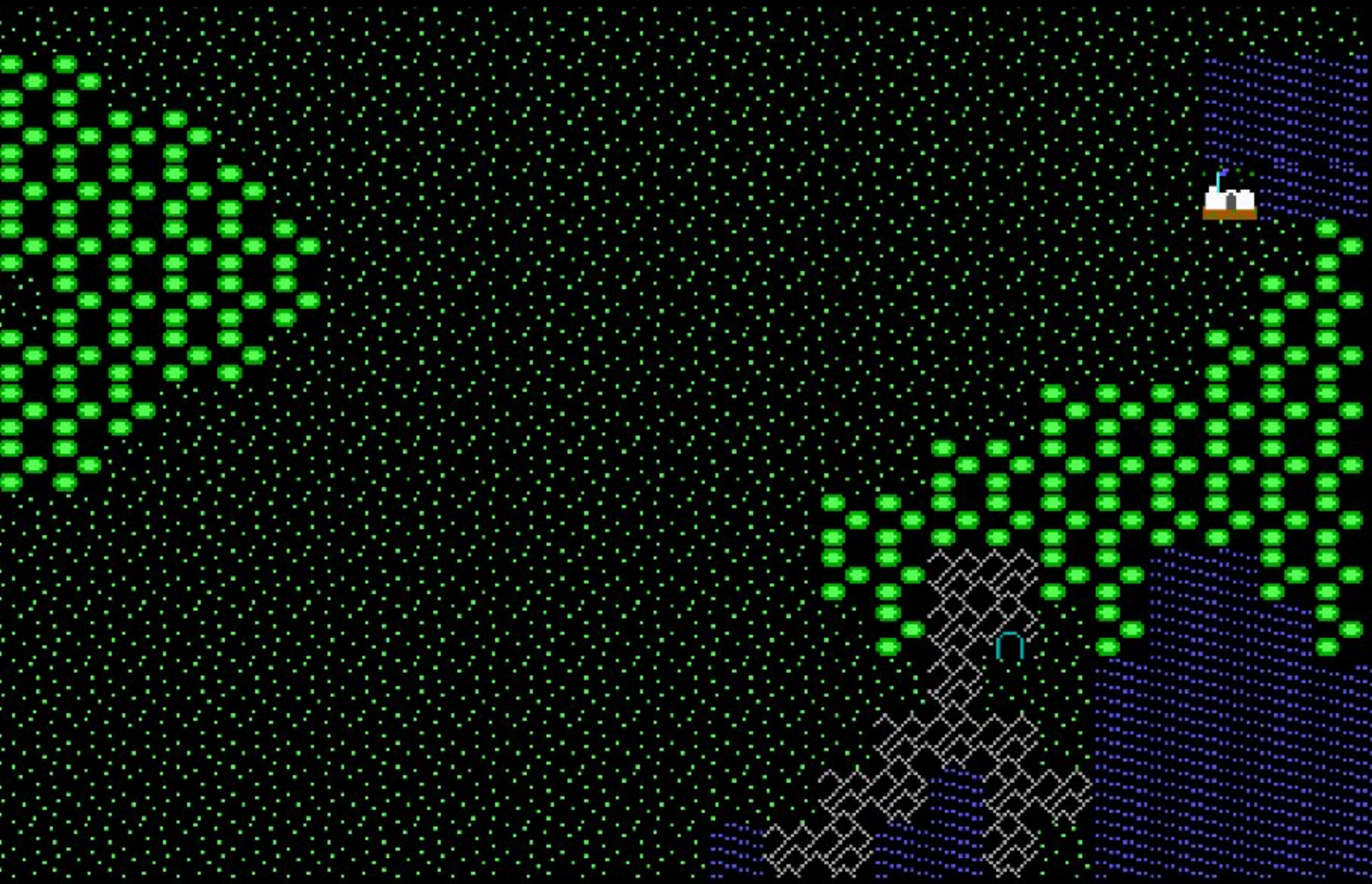
A pseudo 3D, first person game in which players would roam a vast natural landscape in a search & destroy mission, Atari's *Battlezone* was indicative of this new medium; it was crude yet immersive but showed the potential and power of the games. A modified version of the game was used to train U.S Army train soldiers for the Bradley armoured vehicle, one of the first examples of a 'serious game'(i.e. one that had a use beyond entertainment in an areas such as training, health, education etc...)



The landscape was nothing more than a simple vertical green horizon, complete with distant mountains, a crescent moon, and notably an erupting volcano. Graphically the game is simplistic, yet at the time it was incredibly advanced, the 3D vector engine providing a glimpse into the future of virtual environments. On reflection the odd black & green colour palette, and environment abstraction (i.e. green lit wireframes) worked incredibly well in conveying one of the first virtual natural landscapes. The game was also noted for a number of 'myths' that developed around the game(for instance if the player were to travel towards the mountains for over an hour they would find a factory creating the enemy tanks) this phenomena highlighted these environments albeit crude virtual, abstracted representations had the power to incite both player imaginations beyond what they saw, and the the desire to explore and investigate these virtual spaces beyond the designed limits of the world.

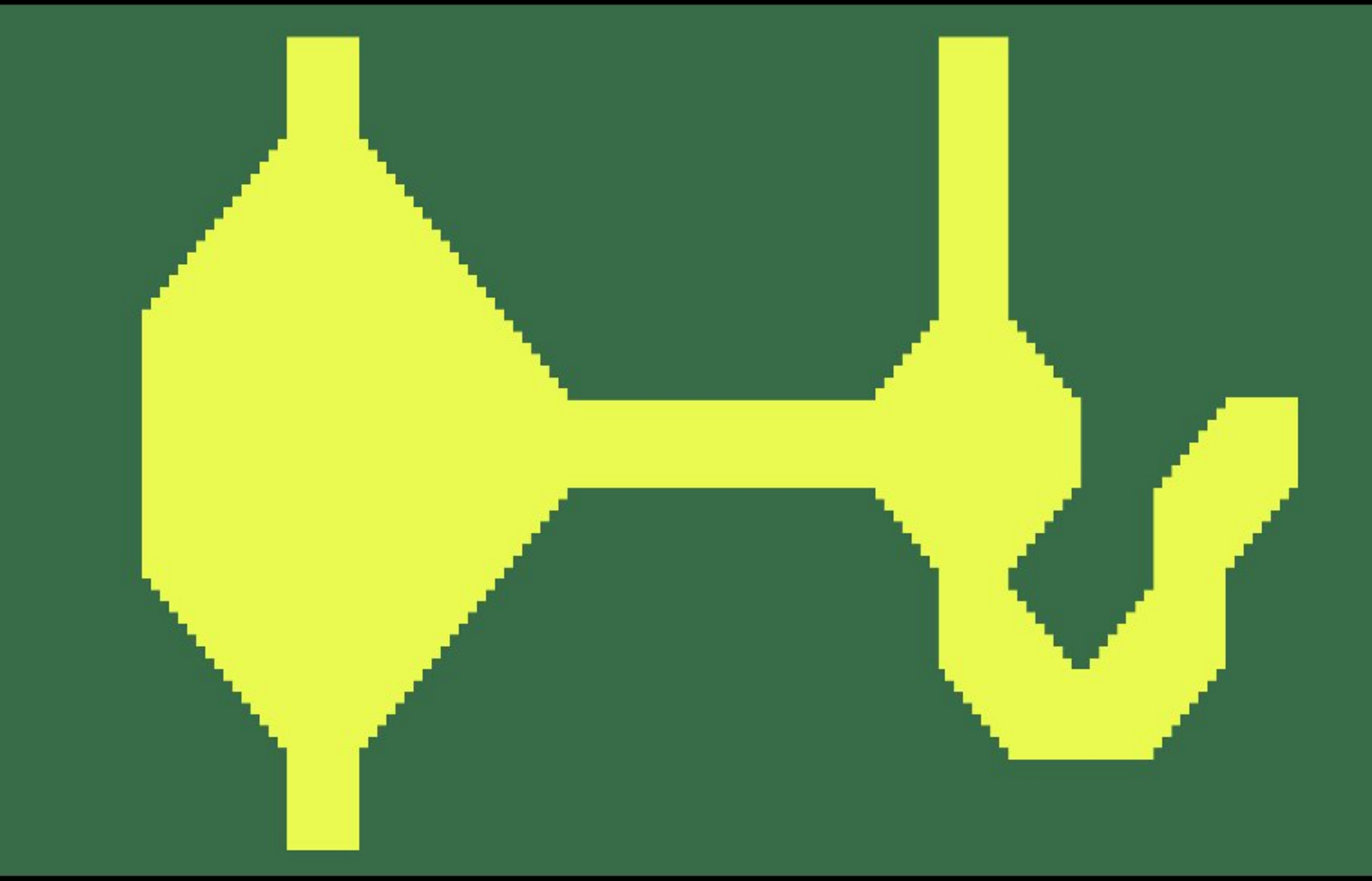


Title: *Ultima I: The First Age of Darkness*
Platform: *DOS*
Developer: *Origin Systems* **Publisher:** *Origin Systems* (*1981)*



*Ultima,*was one of the first computer role playing games to emerge early in the era, presented the vast lands of Sosaria through a top down third person perspective. Players would roam the lands in search of dungeons to explore and quests to solve. Within these early natural landscapes, one starts to see the initial natural landscape abstractions in the virtual domain; grassy plains are reduced to green pixels, tree's to larger blobs of green, mountains to grey angular rectangles and water to uniform lines of blue pixels. This abstraction, mainly a result of technological constraints (and the limited alternatives in game design) would form a legacy in games for many years to come.

Title: *Advanced Dungeons & Dragons: Cloudy Mountain*
Platform: *Intellivision*
Developer: *Mattel Electronics* **Publisher:** *Mattel Electronics(1982)*



The representation of virtual natural environments began at first with nothing more than simple shape forms, limited colour palettes, represented in simple 2D space. Block forms were used to present key natural environment landscape features; i.e. a green solid background colour represented a forest backdrop, with vertical rectangles of brown representing tree's, blue pixel's represented water, and yellow as a space that the player could move within.

Title: *Dig Dug*
Platform: *Namco Galaga*
Developer: *Namco* **Publisher:** *Namco*(*1982)*

One of the earliest exemplars of how virtual natural environments and gameplay could be combined in games was Namco's '*Dig Dug'* (1982). The simple technology behind the game i.e. the 4-bit colour palette with a limited resolution did not limit the ingenious central gameplay feature which was based around terrain deformation (the player character that lived underground could 'dig (hence the name) around his environment to escape and kill his enemies).

Dig Dug's design despite using the 'Ant Farm' perspective illustrates an early attempt to marry the natural environment with gameplay through a unique designed mechanic, the natural environment becomes an integral part of the game by becoming embedded as a gameplay feature; the avatar moves through the ground by digging through , tunnelling through the terrain is reduced to the onscreen removal of pixels (a high level of abstraction is present since the digging results in the 'dug space' becoming a blackless void)

Title: Forbidden Forest
Platform: *C64*
Developer: *Cosmi Corporation* **Publisher:** *Cosmi Corporation* (*1983)*

In *Forbidden Forest t*he player who took on the role of an archer, moving through the forest environment whilst tackling a variety of different creatures ranging from snakes, spiders, bee's to dragons and wizards, ultimately in search of the final nemesis, the Demogorgon.The Forbidden Forest boasted the 'OmniDimension 4D' feature; the player character was able to move for the first time between the background and foreground, allowing a change from the normal single plane movement. Forbidden Forest also featured a day and night cycle, allowing the player to experience real-time environment change, albeit through a simple colour change.

The game was noted for it's high level of attention to detail. The game implemented 'parallax scrolling' (where the background image(s) would move slower than the foreground images, creating an illusion of depth in a otherwise 2D scene). In *Forbidden Forest I,* this meant tree's in the distance moved slower than tree's in the foreground, with creatures spawning and moving between the layers, adding to the impression of the player being chased in multiple directions.

The real-time environment changes were also notable, and impressive considering this was very early in the embryonic era. As the player roamed the side scrolling forest, the moon would slowly drop over the sky, bringing darkness, with the lush greens of the forest floor turning into an eerie moonlit landscape, with the stars twinkling in the distance, added to this was the context-sensitive music, which when coupled to the real-time changes created an exhilarating, dynamic environment that was never experienced in the same way twice.

Title: *King's Quest: Quest for the Crown*
Platform: *PC-DOS*
Developer: *Sierra On-Line* **Publisher:** *Sierra On-Line (1984)*

King's Quest was one of the first adventure games to integrate graphical animation into the player's view of world, depth perspective was simulated; The player could walk behind objects, causing his character to be 'hidden' from view, or walk in front of them, obscuring the object. This attention to graphical animation, while commonplace in arcade-action games, earned *King's Quest* the distinction as the first "3D-animated" adventure game.

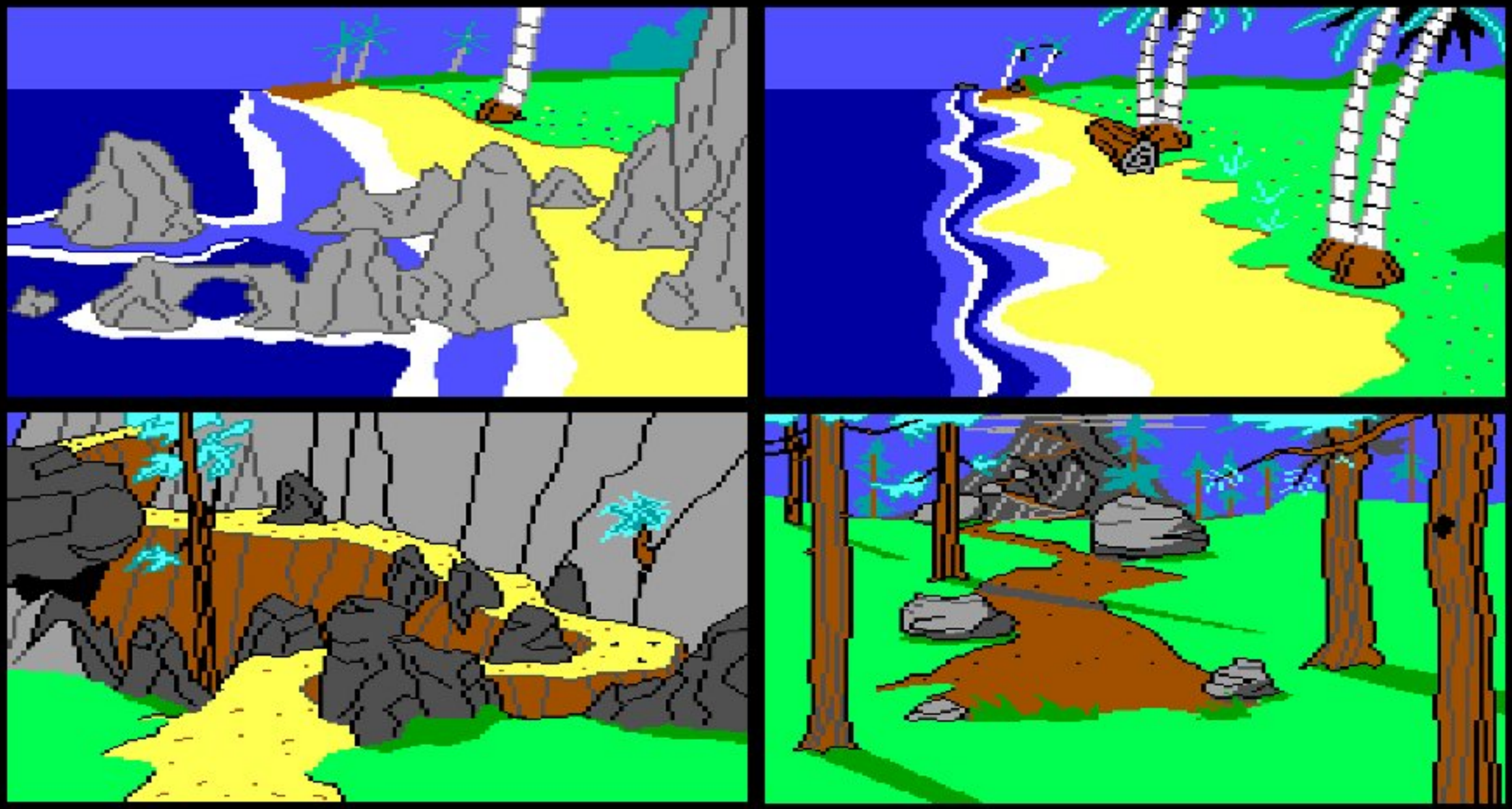
Kings Quest was a typical ‘point & click adventure’. The player travelled across pre-drawn screens to interact with selected objects in a variety of predefined ways. What marked the Kings Quest series as distinct from latter day natural game environments was the carefully designed composition of each 2D pre-drawn natural environment. There is a sense of design reductionism evident in how the natural environments are portrayed: each screen represented a fixed amount of the game world, the natural environments were succinct archetypes (such as the lone magical tree, the precarious cliff edge,) rather than environment generalization that occurred with the development , and transition to the early 3D environments.

The representation of water in the early virtual landscapes was varied and rich; Waterfalls, babbling brooks, rivers, lakes, were all used in the design of these early environments, mainly due to a lack of technological constraint. However interaction was non-existent or severely restricted, Game design was only just developing as a discipline and often based from known systems and rules (i.e. real world physics), so entering a water body implied the character would be able to swim and or change in movement speed, which in turn meant creating new character animations, new design considerations (would the player be able to swim, or simply drown etc...) and the resulting programming needed to link all of this together.

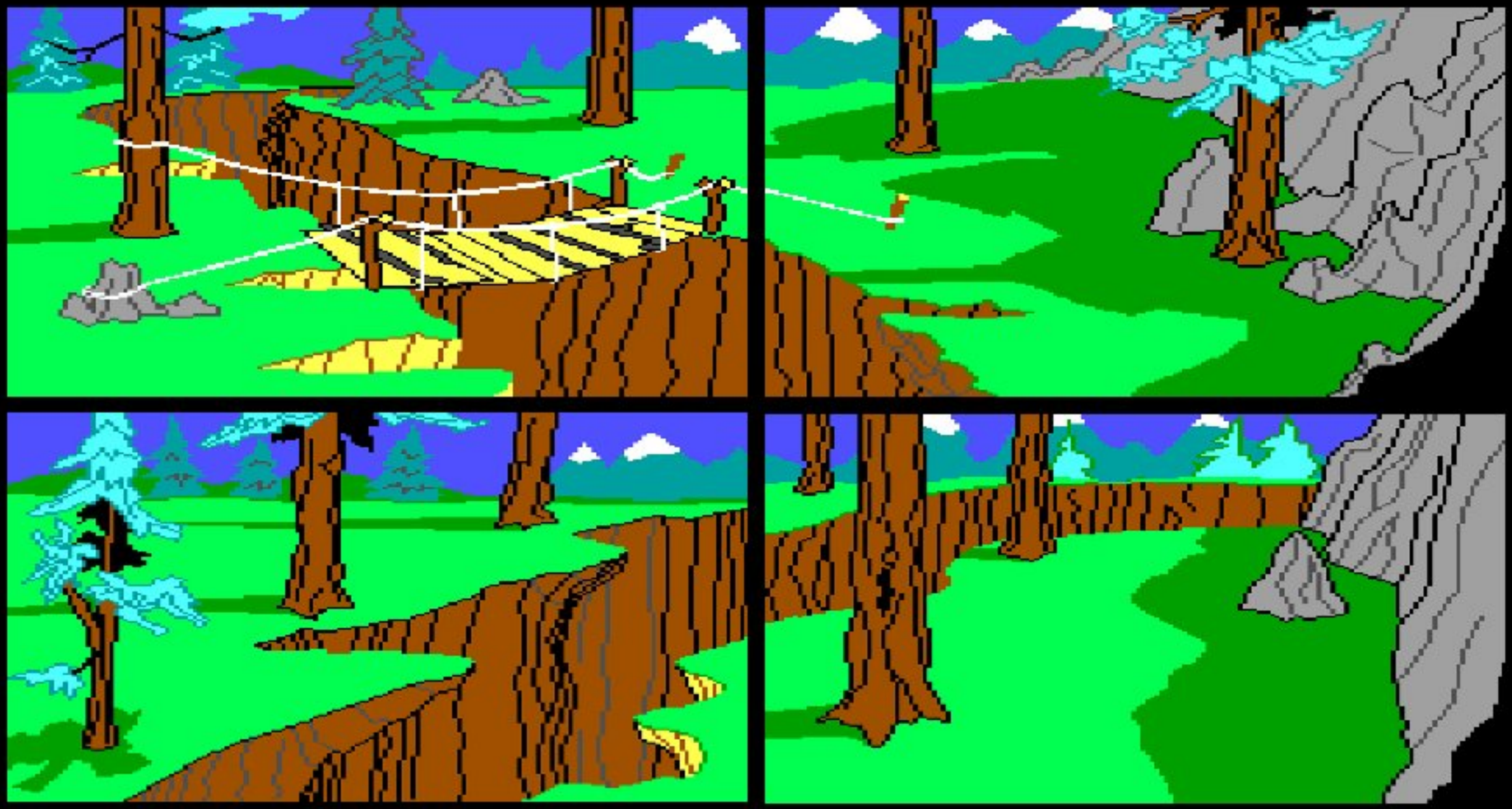
All these considerations relating to a single environmental feature would need to be designed, programmed and implemented, a potentially large task. Early games utilised a clever way out, the player would either be completely prevented by entering the water volume(on attempting to enter a lake or a river, the player's movement would simply stop almost as if they had hit an 'invisible wall; or where it was possible to enter water, the player would simply drown, triggering a default death animation and forcing the player to start again , and thus avoid the water altogether. This inherent flaw(players wanting to enter and explore bodies of water) versus the design implications (how the water and player would interact) and the technological constraints(simulating the properties of water) meant that water simulation and interaction would be a major issue for game designers in the years to follow.

Title: *Robin Of The Wood*
Platform: *C64*
Developer: *Steve Wetherill, Paul Salmon, Fred Gray* **Publisher:** *Odin Computer Graphics (1985)*

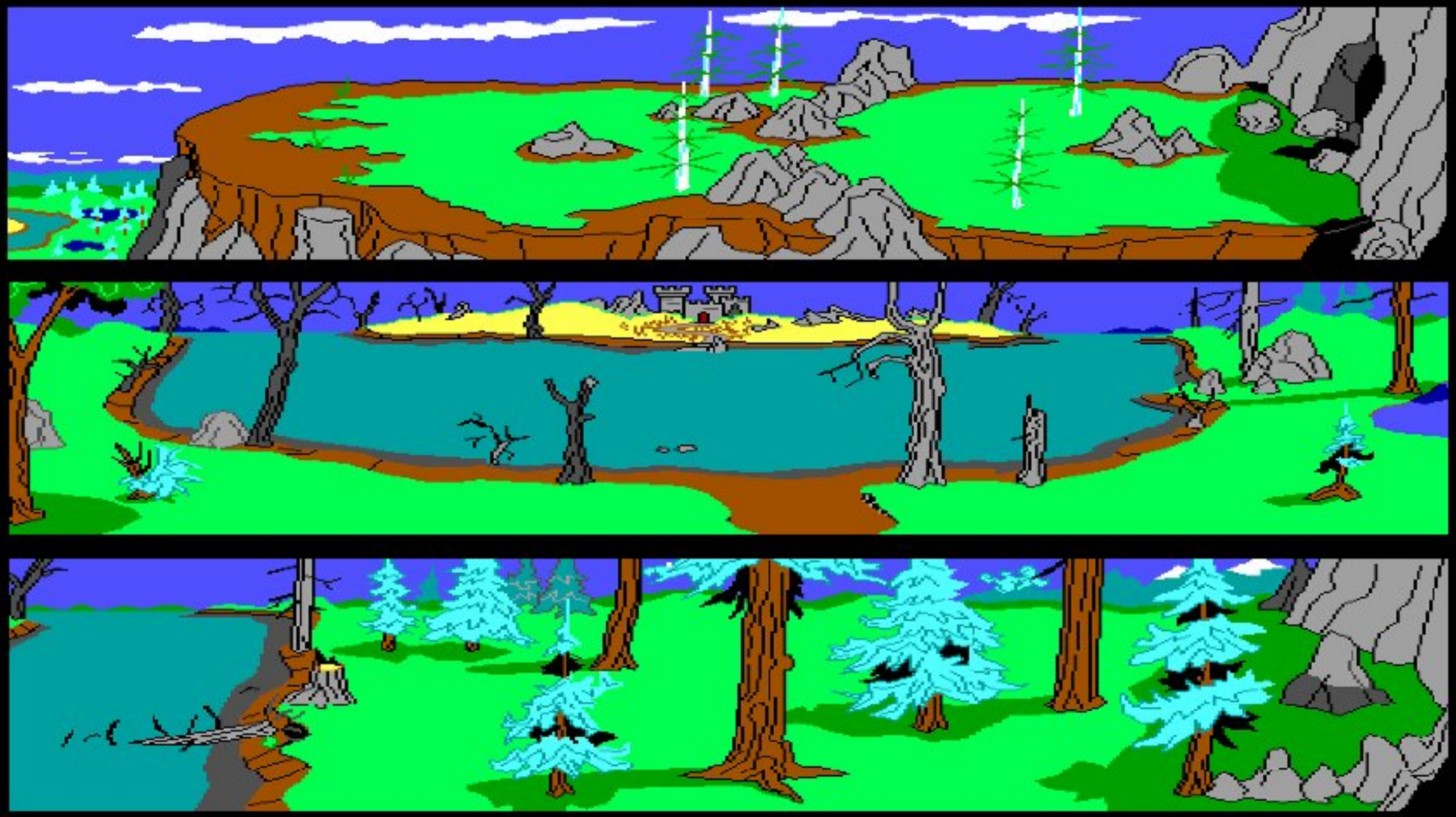
Black was a major component in *Robin Of The Wood's* environment colour palette, bringing a strong contrast to the traditional natural environment green and brown palette often used. Although the use of black as a background was perhaps due to limitations in graphics rendering, (games on certain platforms were limited to a colour palette of 4 colours) there is something aesthetically refreshing about the use of a black background, bringing to life to the foreground elements of the natural landscape.



Title: *King's Quest II: Romancing the Throne*
Platform: *PC-DOS*
Developer: *Sierra On-Line,* **Publisher:** *Sierra On-Line (1985)*



King's Quest II: Romancing the Throne ,continued the adventures of King Graham, the young KIng of Daventry in a quest to find the three keys, needed to rescue Valanice, the mysterious woman he had seen on a vision, trapped on an enchanted Island in the Crystal; tower, where Hagatha the witch had trapped her.



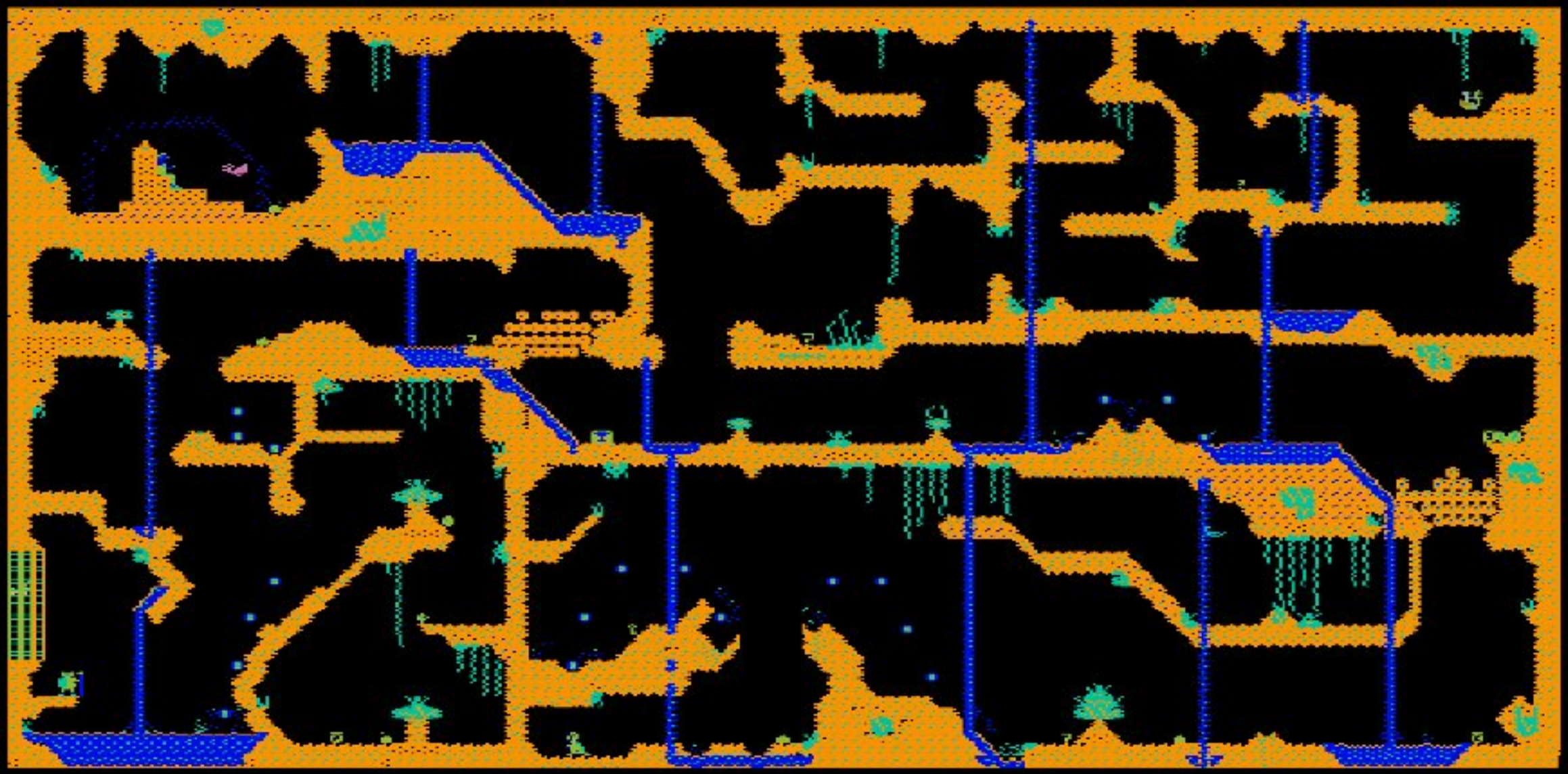
Similar to Kings Quest 1, Kings Quest 2 'solved' the problem of constraining the player to the limited screen space by allowing the player to traverse the outer edges of the game world with one proviso; this would not open up additional areas but transport the player back to the opposite corresponding part of the map(i.e. moving past the northern most limit would transport the player to the south most game screen). The game world was in effect wrapped around back on itself. This feature was integrated within the game world lore as the 'magical law of containment', linking the technological constraint(i.e. limited content/storage of the game world to the game world narrative.

"Geographers say that the magical law of "containment" operates in the western part of the continent. For reasons forgotten, or perhaps it was whimsy on the part of the multiverse--movement to both the north and south in this part of Kolyma eventually turned back upon itself, contained as if inside some transparent cosmic donut. East and west, one could travel at will until confronted by more physical barriers--the sea or mountains for instance--but those that journeyed far enough north of south, would always get back to where they started."

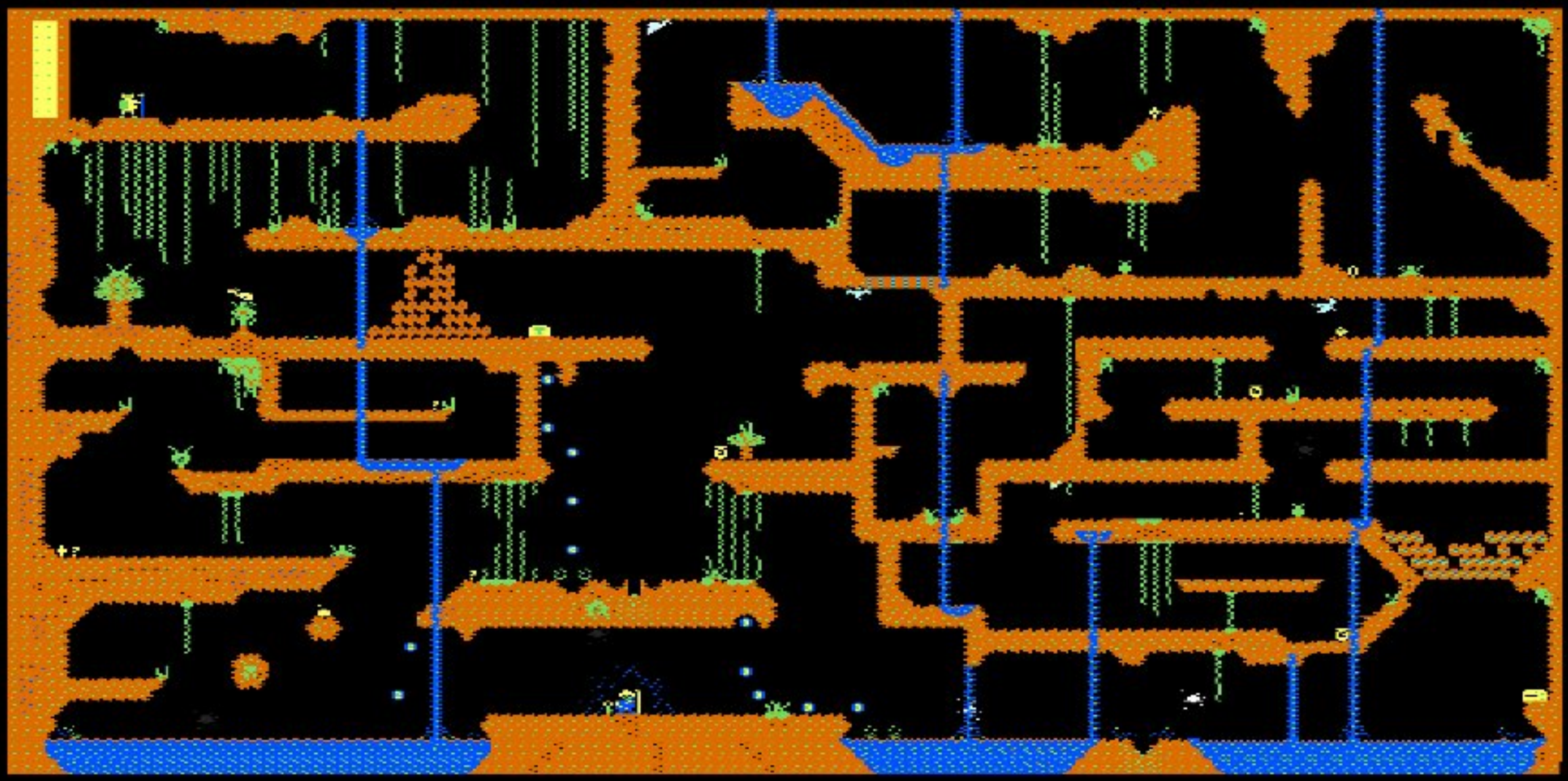
The Kings Quest Companion

Kings Quest 3 takes place in the magical land of Llewdor. In the above scene, the rock formations intersecting the beachfront are intriguing. Although crude in visual representation, there is a definite sense that the designer/artist appreciated landscape composition.

One can imagine if this particular environment were to be constructed in 3D, the player would either be drawn the rock formations or would have their movement broken on traversing the beach, an action which could potentially prove useful to a designer in that the rock formation would serve to be a natural waypoint.



Title: *Cavelord*
Platform: *Atari*
Developer: *Peter Finzel,* **Publisher:** *Axis Komputerkunst (1985)*



Cavelord exemplified the continued use of the 'Ant-Farm' perspective of landscape abstraction in games, i.e. using a cross sectional view of the environment as the game landscape. The game is notable for the large number of continuously animated screen objects such as waterfalls, rockfalls, lakes and vines, although very crude by modern standards, the game does highlight that artists/designers were thinking beyond user driven interaction with the environment, and that perhaps some elements (i.e. vines, water etc..) did not require an conscious action by the player to become dynamic. These simple changes recognising that creating immersion went beyond the players actions, and required creating a believable, but not necessarily realistic world around the player, would serve to be a powerful tool in creating more immersive natural environments in games in the following years.

Title: Phantasie
Platform: Commodore 64
Developer: Strategic Simulations, Inc. **Publisher:** Strategic Simulations, Inc. (1985)

Title: *Black Cauldron*
Platform: *PC-DOS*
Developer: *Sierra On-Line* **Publisher:** *Sierra On-Line (1986)*

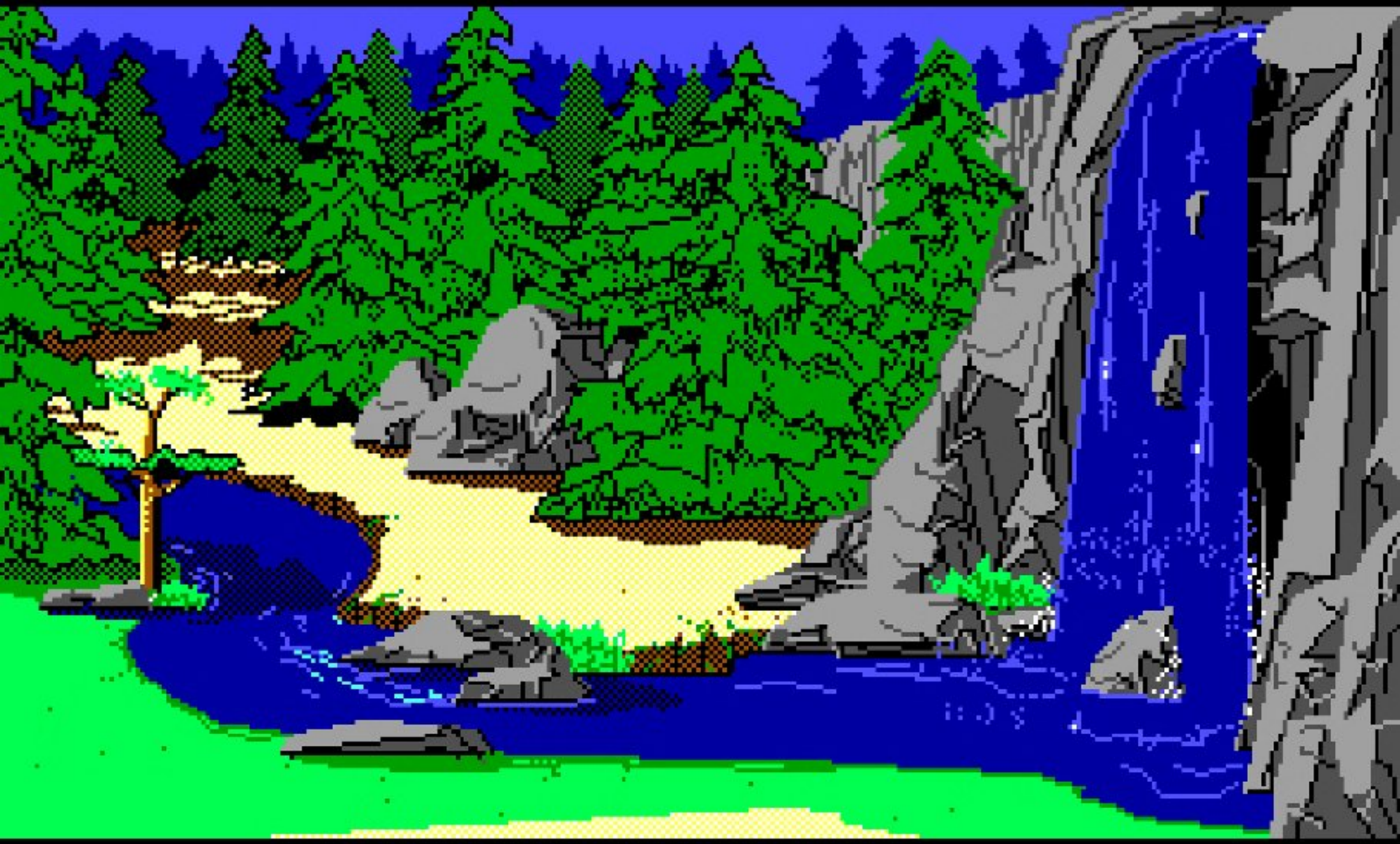
Title: *Safari Hunt*
Platform: *Sega Master System*
Developer: *Sega* **Publisher:** *Sega (1986)*

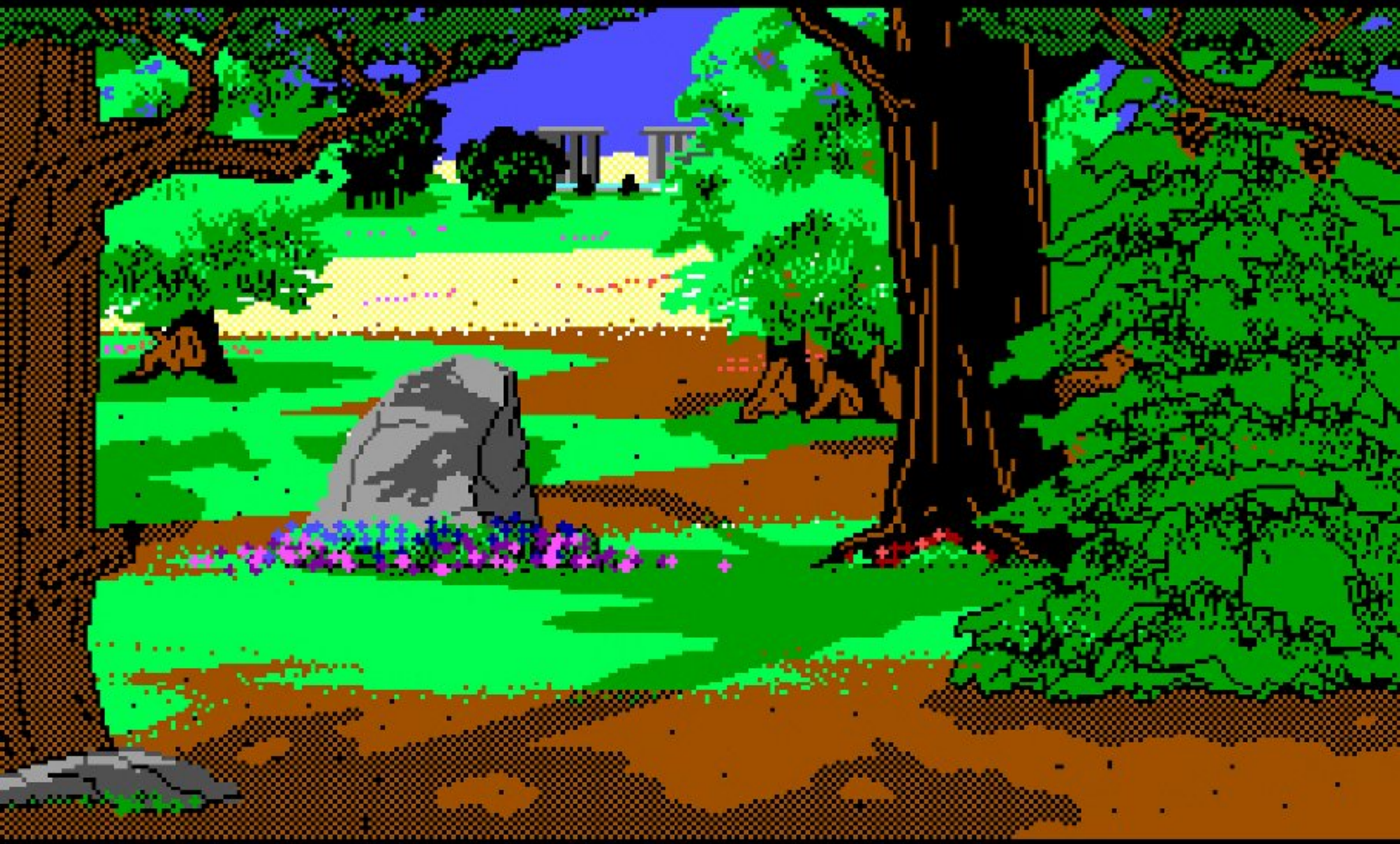
Title: *Wizards & Warriors*
Platform: *NES*
Developer: *Rare* **Publisher:** *Acclaim (1987)*

Title: King's Quest IV: The Perils of Rosella
Platform: PC-DOS
Developer: Sierra Entertainment, **Publisher:** Sierra Entertainment (1988)

Early environments in games utilized traditional depictions of the landscape. This scene from Kings Quest 4 illustrates this, as one can see elements of a classical landscape composition i.e. the river leading in from the left leading to a variety of tree cover depicted in various stages,. inferring natural growth , which in turn infers a dynamic world rather than a static one; a world outside the players interactions; an important consideration if one wants to create a believable immersive world.

This approach, in composing specific scenes or landscapes within a larger environment, one could argue could be useful for current environment designer's wanting to draw a player's attention to specific points in an environment by using unusual forms of flora or geology to draw the player in, as is the case with the winding river and the strangely deformed tree.





Title: *Golvellius*
Platform: *Sega Master System*
Developer: *Compile,* **Publisher:** *Sega (1988)*

Golvellius was a strange isometric 3rd person adventure role playing game, with side scrolling slash'em up elements. What was intriguing was how the natural landscape was inextricably tied to gameplay, If for instance one suddenly came to a strange dead end, slashing at an oddly shaped blue boulder would reveal a secret passage to a hidden cave.

In an age before the internet, game manuals served as the only source of information outside the game. The manual during this era was a vital repository of what lay within the game world, from the characters, enemies, items to be collected, and the different types of environments the player would encounter, ranging from the Despa's Valley, Rolick's Desert, Fosbus Swamp, Warlic's Lake and Crawky Forest, each area came with a particular set of challenges, unique items, and a specific 'boss' enemy to defeat.

The natural environment was wonderfully thematic, starting (strangely) in a arid desert, the game used several natural environment archetypes. The arid desert savannas complete with cactus and the bony carcasses of unknown creatures , the rich green woodlands leading to the dredges of the Fosbus swamp complete with barren tree's to the sandy palm tree beaches of the huge lake in the Warlick expanse.

Frustration was often marked by experimentation and the joy of revelation coupled with the odd *Eureka!* moment: after days of wandering around the same section of the virtual environment not being able to figure out the next step, slashing at a previously ignored boulder revealed a mysterious new path which suddenly opened up new possibilities of exploration, you had to earn the right to explore these new lands through trial and error, enduring battles with strange relentless creatures that constantly spawned from the blurry sparkles that warned of their imminent arrival.

The environment was uniquely tied into gameplay through the careful use of natural environment obstacles; gaining equipment such as the Aqua boots allowed the player to walk on water, or the mythical Ascent boots allowed the hero to walk across rock, or open water or even gaping chasms to find new treasures. Sudden late night revelations often triggered often, with the realisation that the newly found 'Ascent boots' would help traverse previously encountered impassable chasms.

The environment was laid in a particular manner in order to stagger progresion at the same time as offering players a glimpse of what lay in store for them later, whether it was a large chasm with unusual boulders or a lone entrance that sat in an island lake one would often wonder if either a powerful new foe was waiting or a new treasure that would help further the journey into the game was to be found.

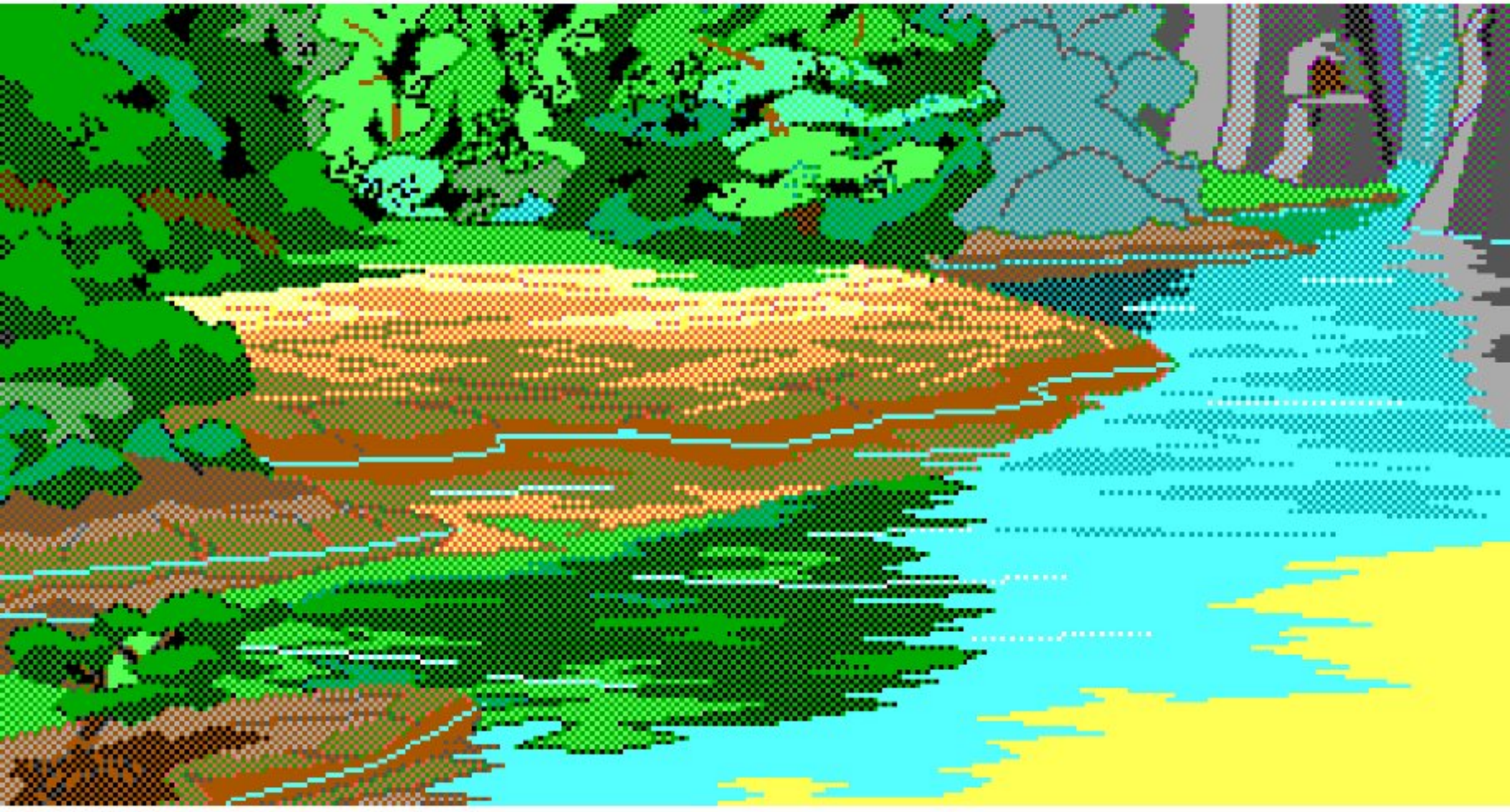
The experience of playing Golvellius was a journey of discovery; discovering new lands and discovering ways of crossing previously encountered natural environment impasses, new equipment and a greater resistance to death only aided the player's adventure to explore these strange new lands. Golvellius wasn't just a game, but an experience ,and in so many ways ,no different to one that children play out countless time in parks and back garden's exploring the environment in the hopes of finding something new and exciting albeit in this case ina virtual space.

Title: *Ghouls'n Ghosts*
Platform: *Arcade*
Developer: *Capcom* ***Publisher:*** *Capcom (1988)*

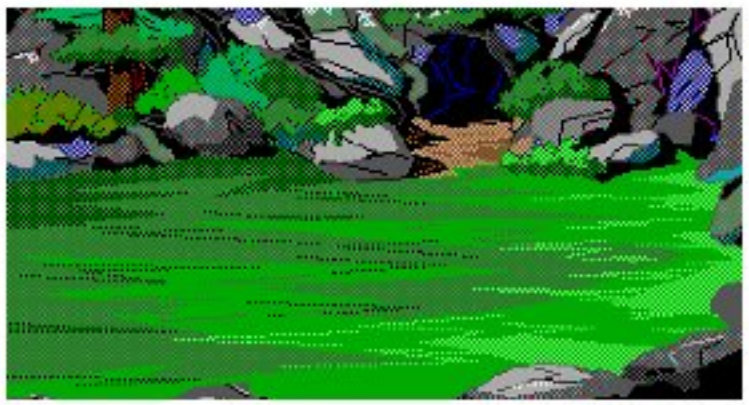
Ghouls'n Ghosts, sequel to Capcom's earlier *Ghosts'n Goblins (1985)* platform game, tasked the player roaming vast medieval landscape's in search of the demon Lucifer. The game carried on the tradition of a black landscape background, as well as using an evolved 'ant farm' perspective of the landscape, by utilizing multiple layers(i.e. a foreground, mid-ground and background layer, in addition to a character sprite layer) to give the illusion of depth by simply scrolling the layers at different speeds when the character moved (i.e. the background would move slowly if at all, with the mid-ground layer moving slightly faster etc..)

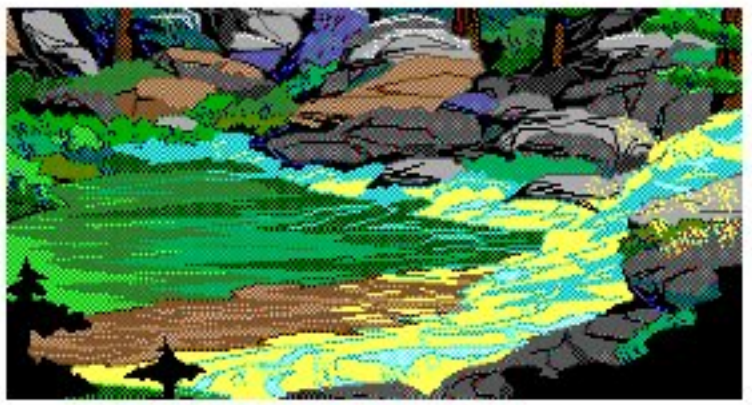
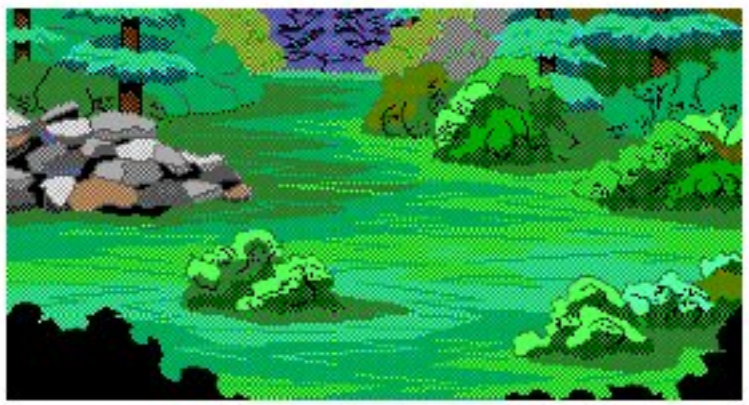
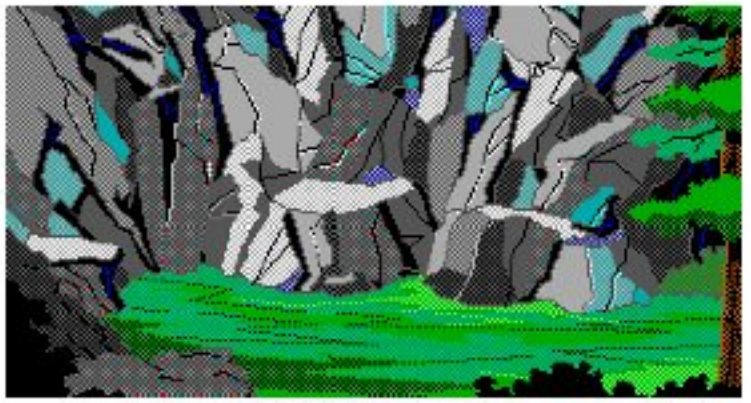
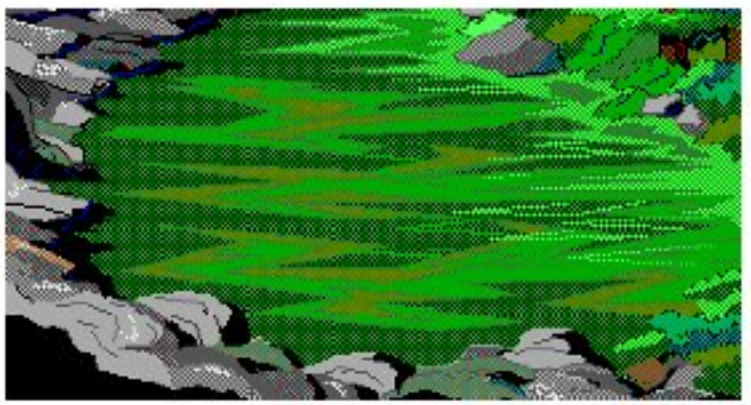
Earlier technical constraints of artists who were limited to 4 or 16 colours were largely removed during the later part of the era (Capcom's CPS-1 Arcade system was able to display over 65,536, 4096 at any one time), so the decision was design based. In the case of G&G, the black background works particularly well, the game taking place at night, so rather than attempting to simulate a night sky, a solid black fill was used, highlighting the eerie medieval 'ant-farm' landscape in the foreground.

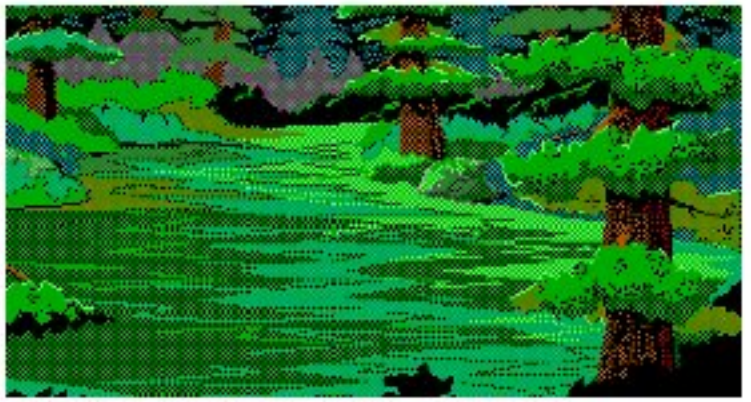
The game was also complete with rudimentary weather effects; brief flashes of lightning would illuminate the eerie forest background, sudden downpours of rain (which surprisingly came in sideways) would start alongside strong winds (the tree's and grass would sway accordingly) all of which added significantly to the feeling that the game took place in a cold, wet haunted forest.

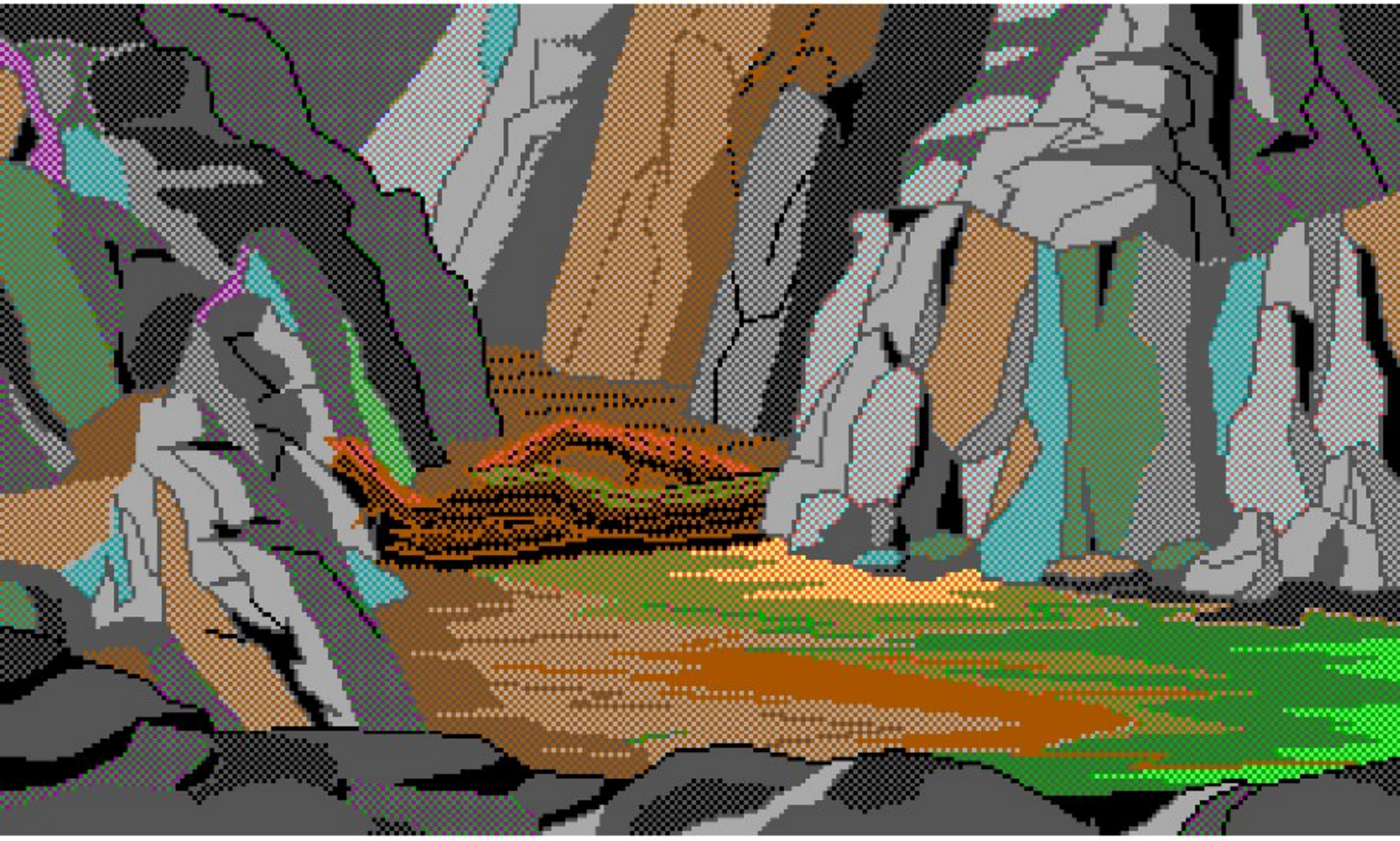


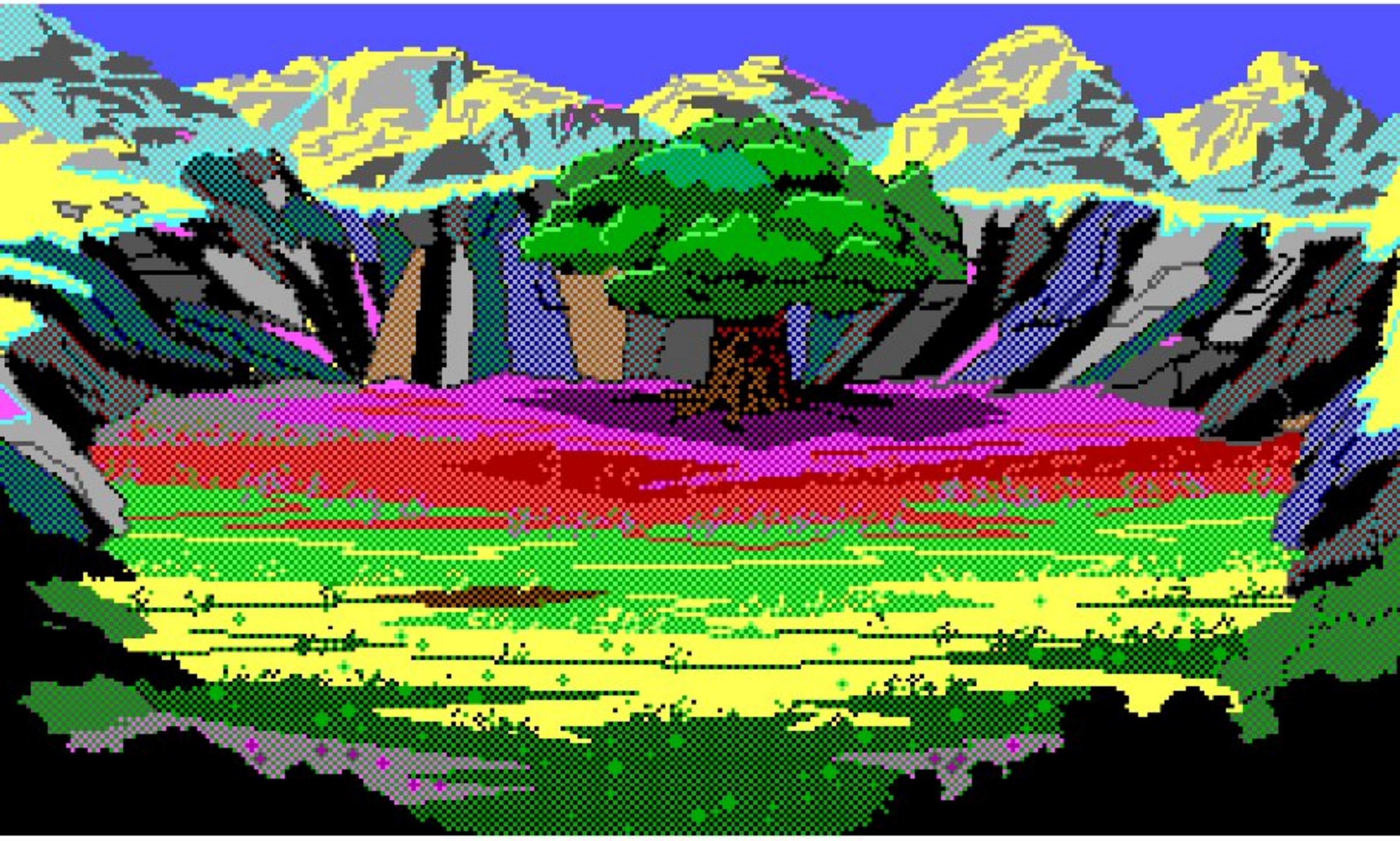
Title: *Quest for Glory*
Platform: *PC*
Developer: *Sierra Entertainment* **Publisher:** *Sierra Entertainment (1989)*

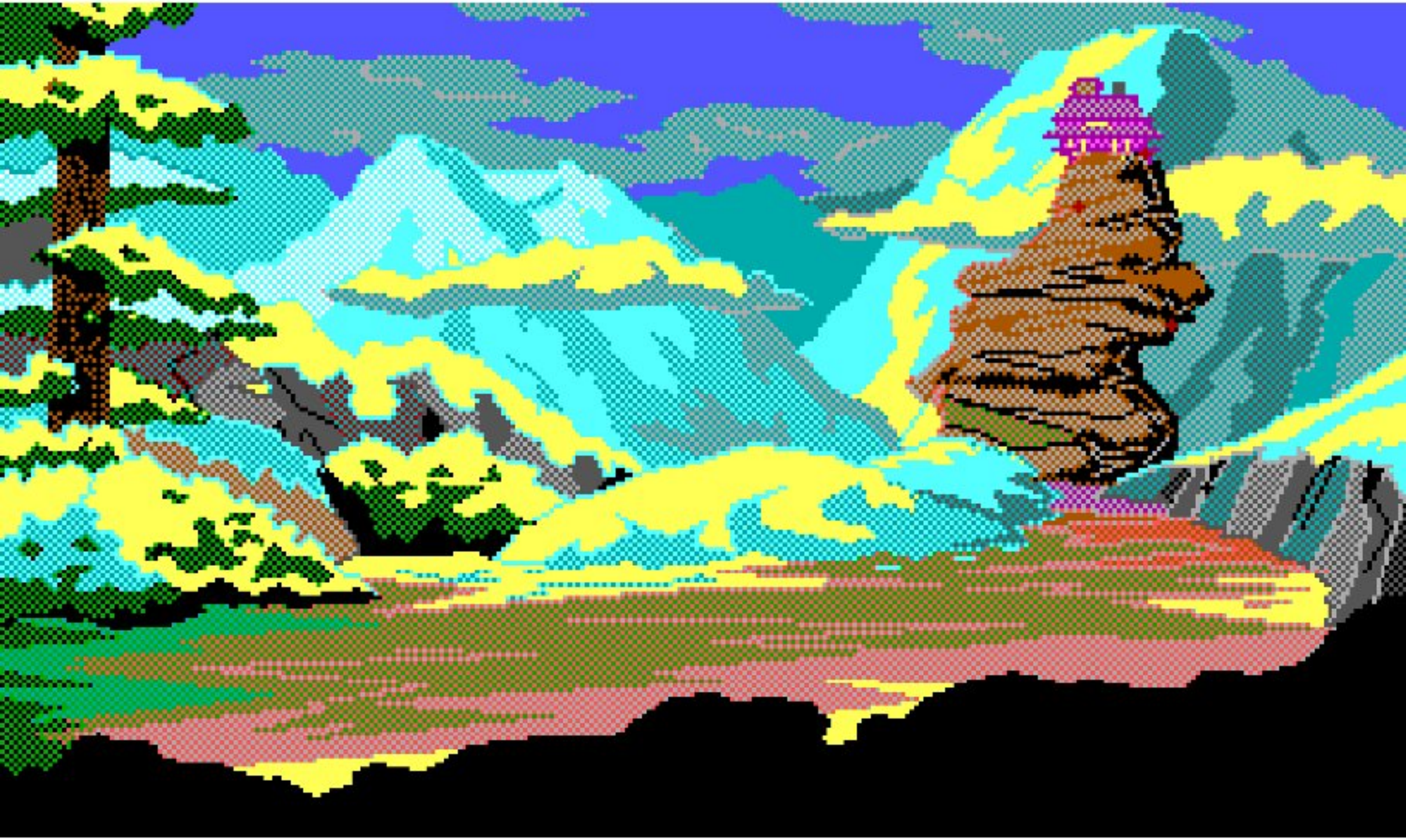


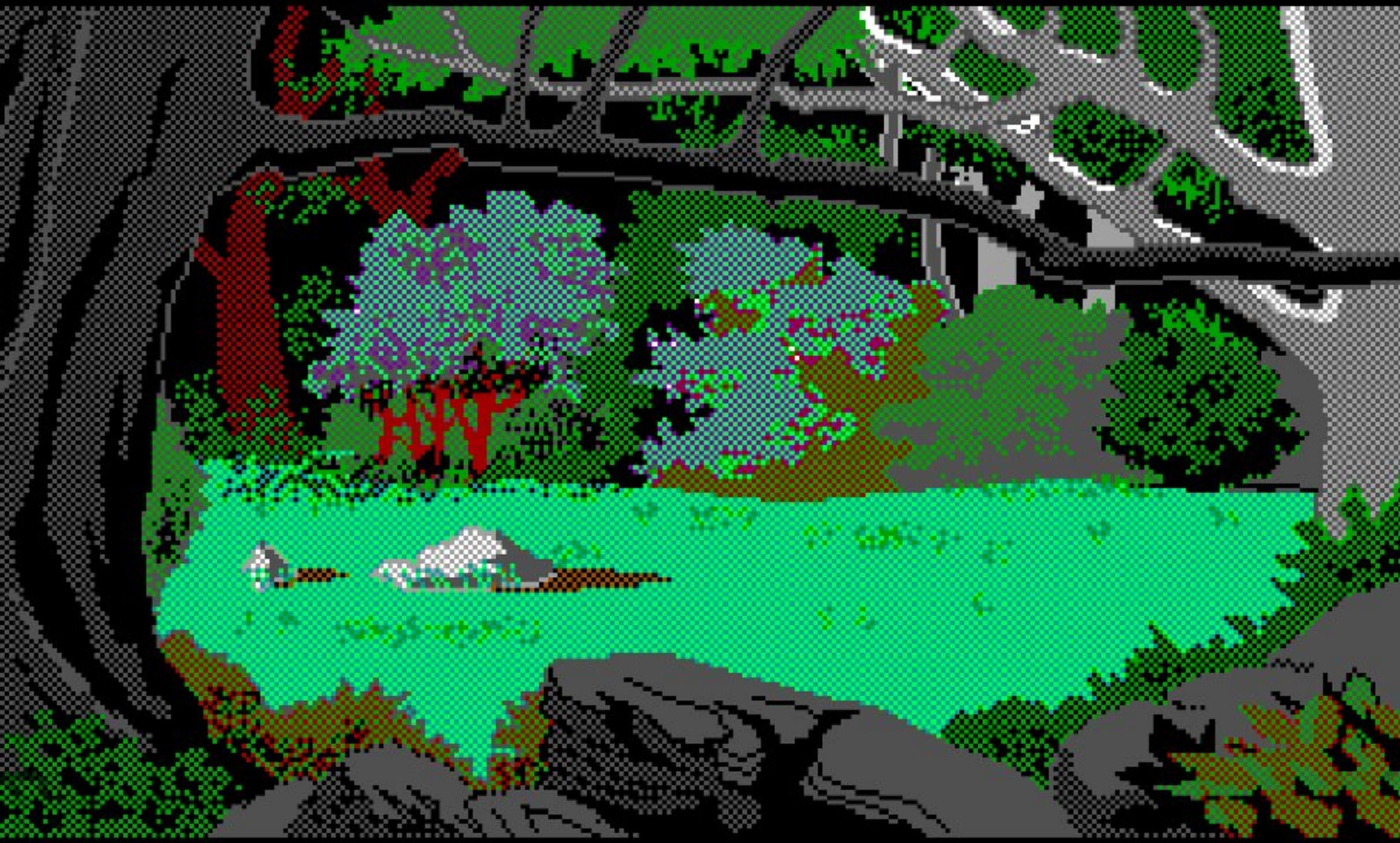




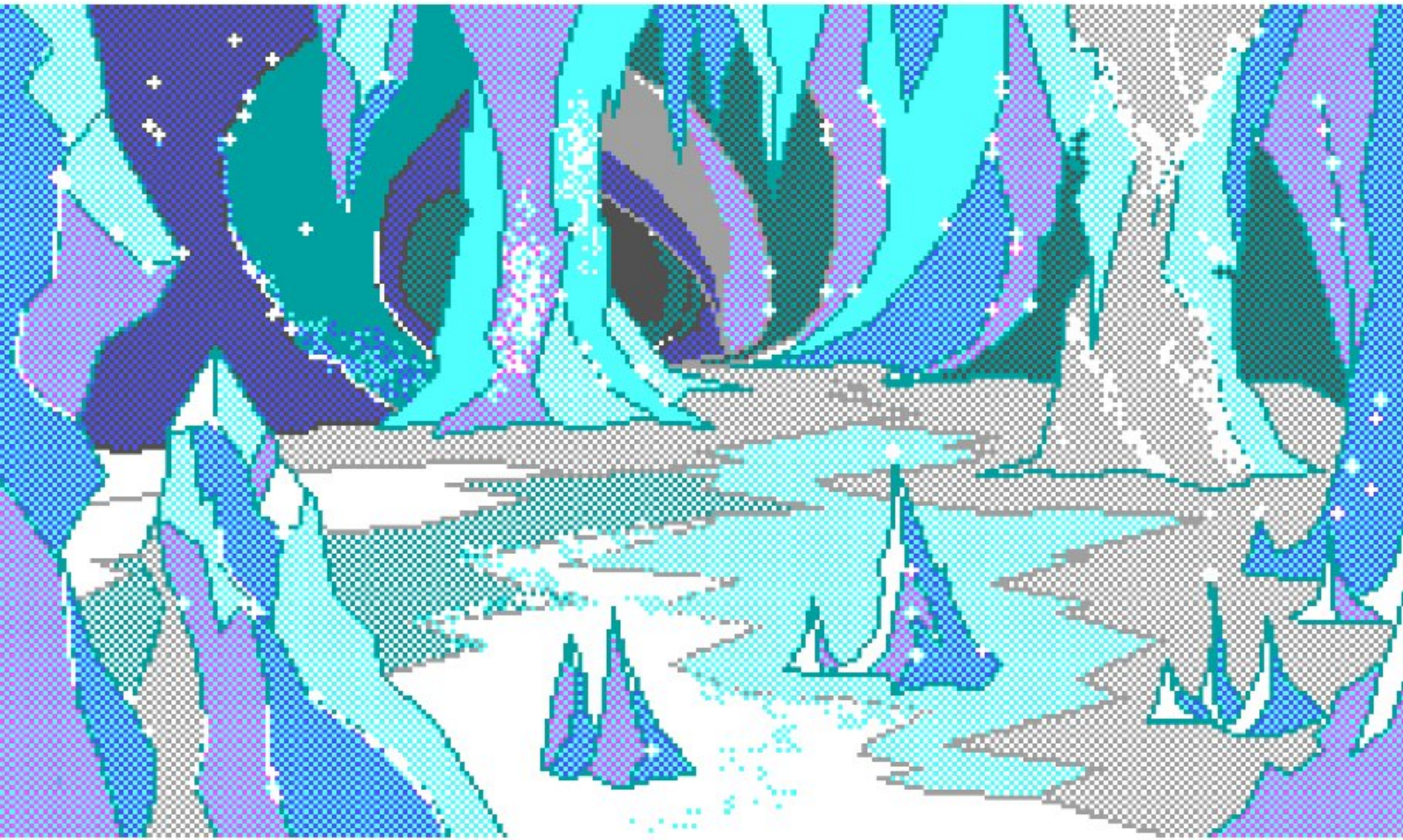


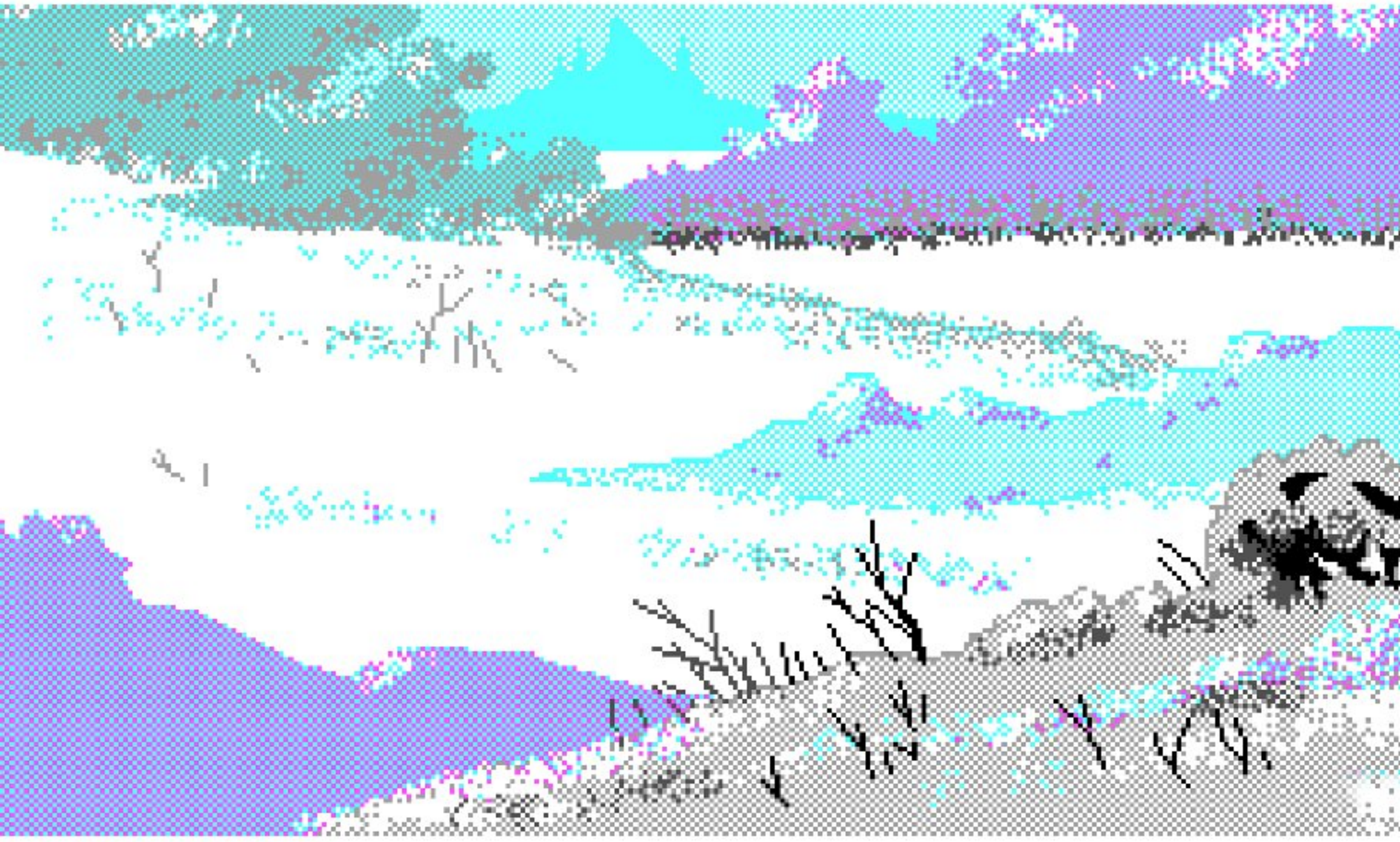
Title: *Wardener*
Platform: *Sega MegaDrive*
Developer: *Toaplan*, **Publisher:** *Taito*(1989)

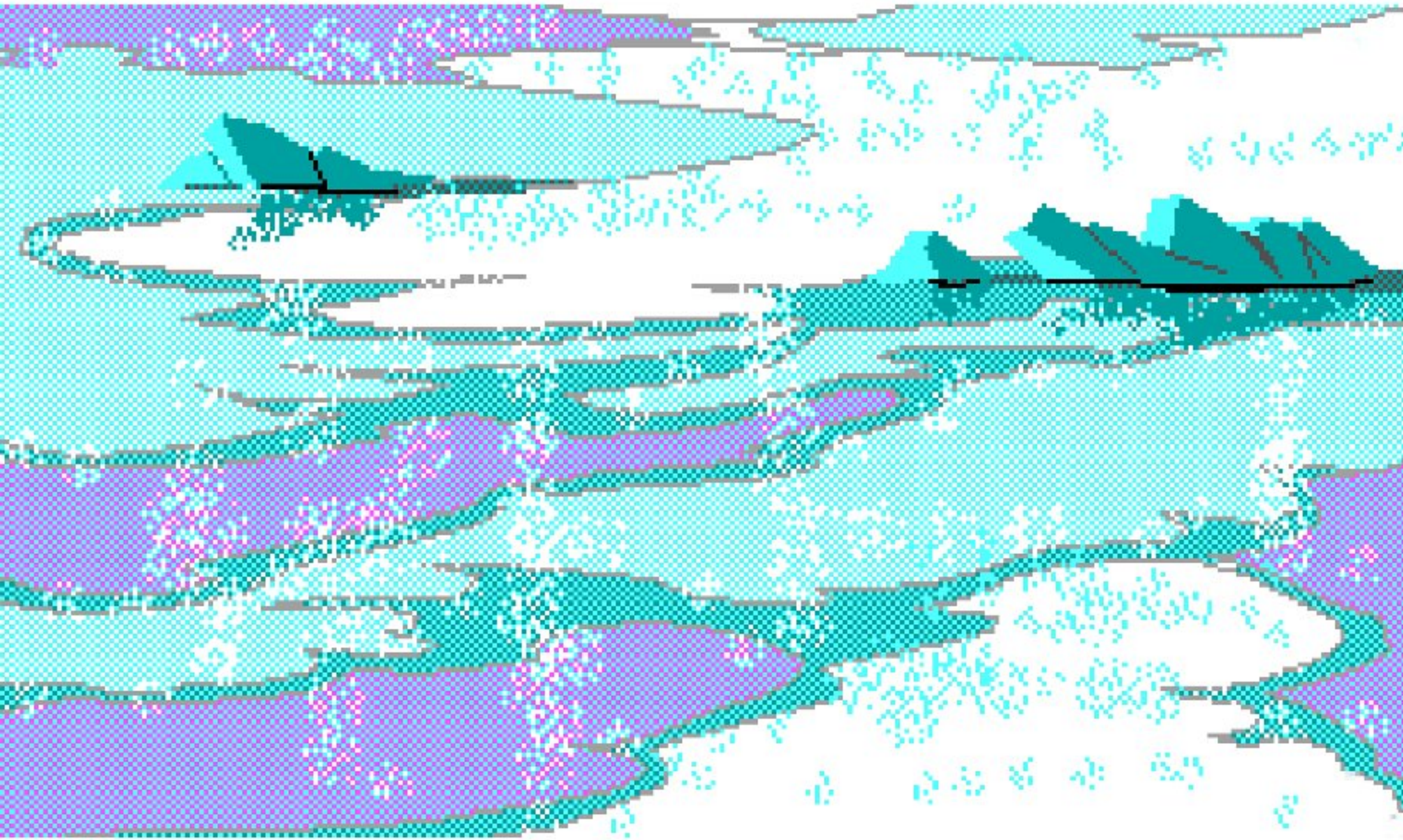


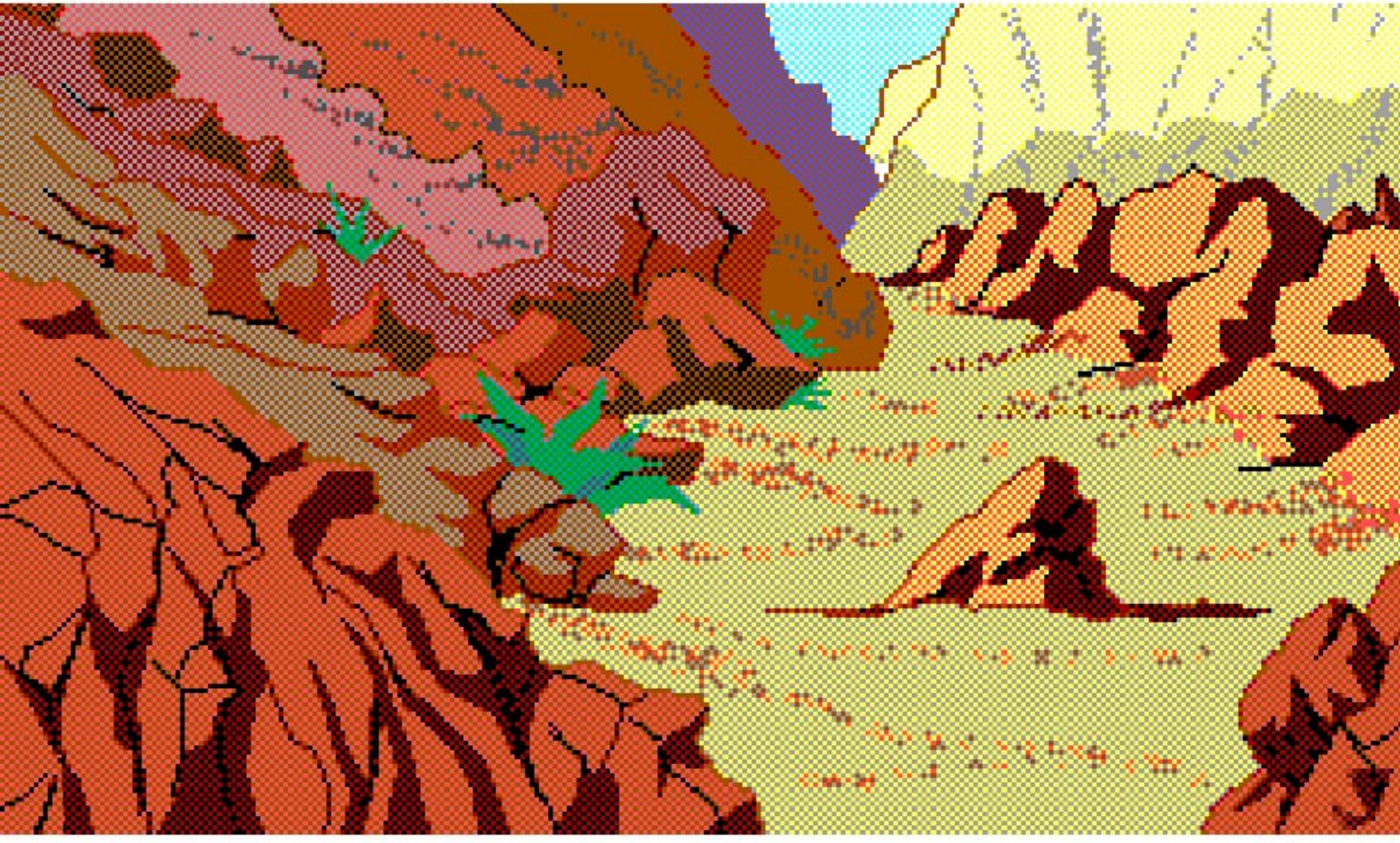
Title: *Conquests of Camelot: The Search for the Grail*
Platform: *PC-DOS*
Developer: *Sierra On-Line* ***Publisher:*** *Sierra On-Line(1989)*

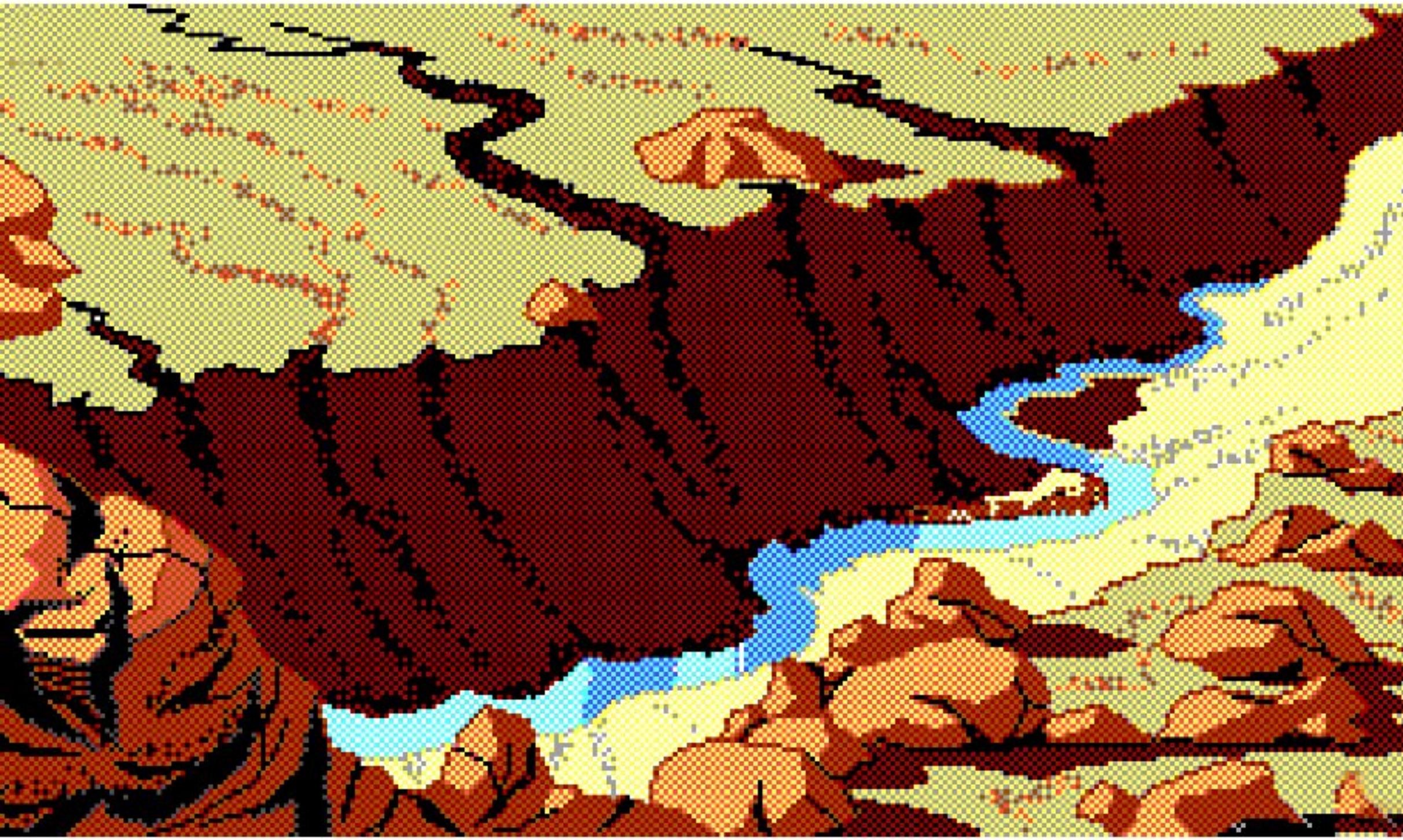
The lone tree growing in a frozen cave creates a powerful environmental mystery. The mystery of what makes this tree unique, and able to not only grow but survive in such a harsh environment, draw the player in and invites them to explore the space and the tree. Environmental clue's such as such can be used as devices by designers to draw the player through the environment in order to for instance trigger events.

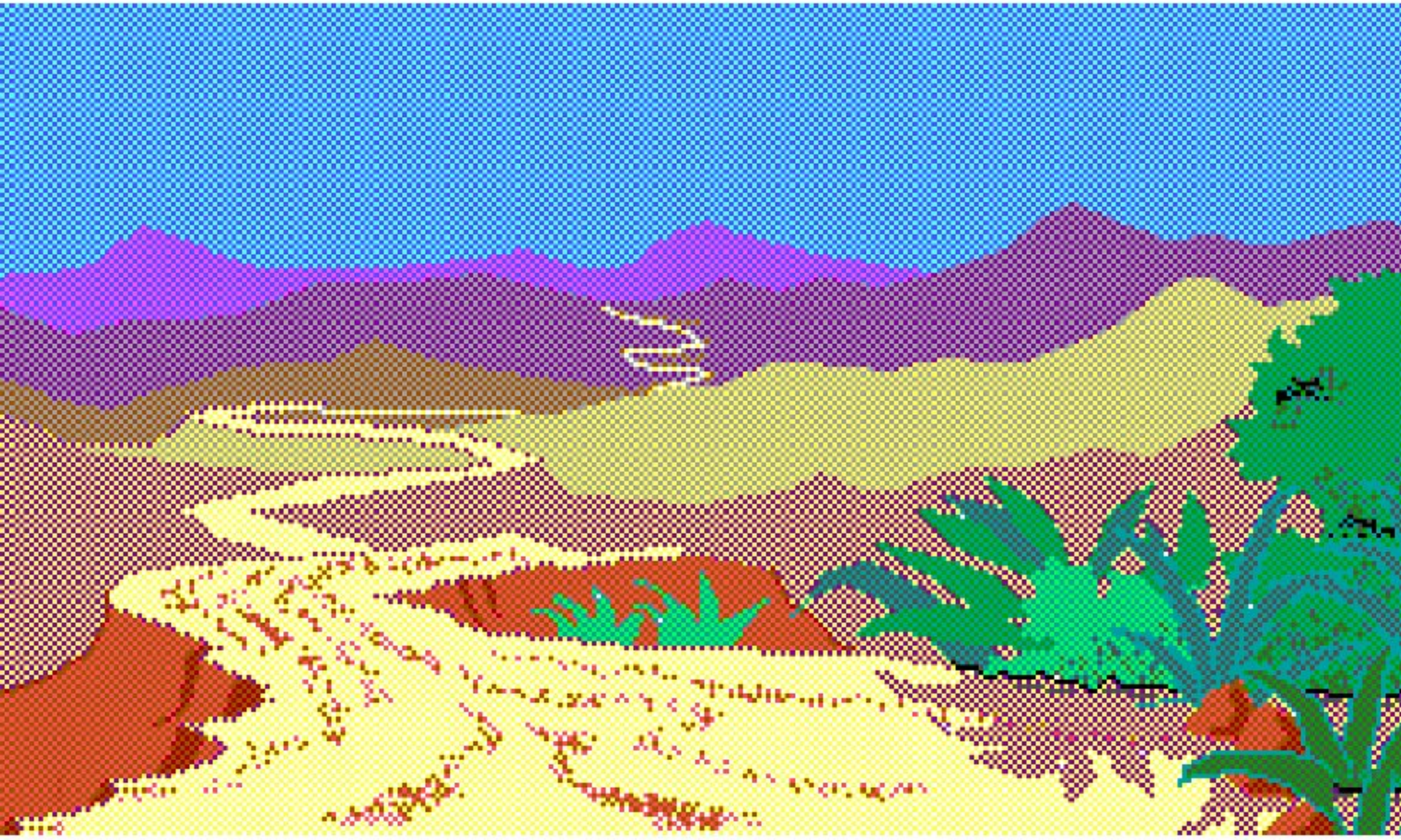


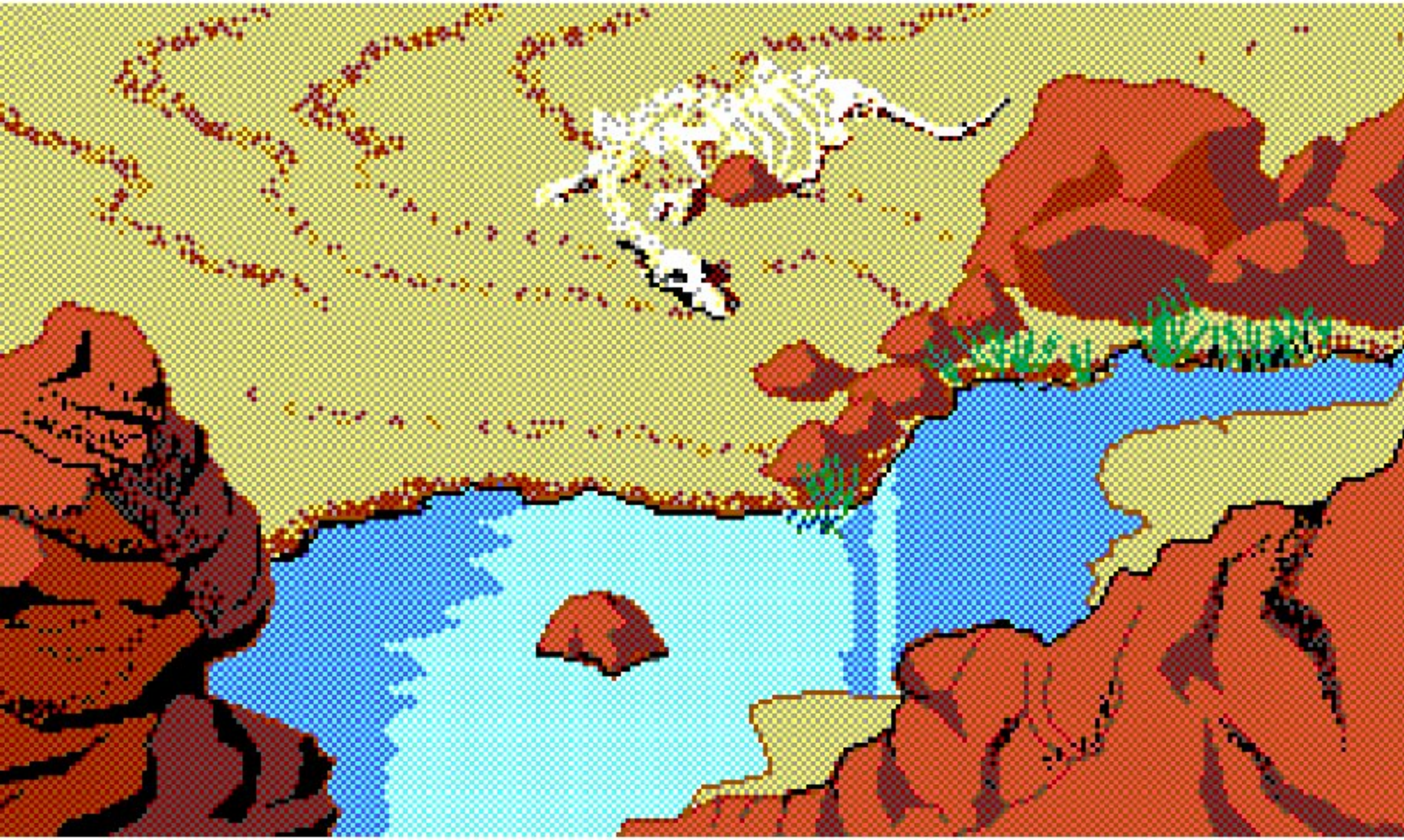












Title: *Populous*
Platform: *Sega MegaDrive*
Developer: *Bullfrog*, **Publisher:** *Electronic Arts* (1989)

Bullfrog's seminal 1989 classic Populous will, forever be held as a milestone in natural environment design and interactivity. The concept behind populous one of the first 'god sims' was to use an array of powers to either build or destroy land, thereby either aiding or obstructing humans followers inhabiting the land, the more you obstruct the 'enemy' followers and aid your own, the more mana (power) that can be gained to access more destructive natural phenomena such as earthquakes, floods and volcanoes. The natural environment wasn't merely a static backdrop to the games other mechanics, it *was* the main mechanic.

The game was a revolution; decisions were played out in real-time, and effects instantly observed. Levelling the land would alter the level of sophistication of the settlements built by the human followers. Many gamers experienced megalomaniacal moment's of raising a volcano on a occupied land, destroying settlements and witnessing the enemy deity's followers scatter and attempt to start building again. The game's isometric, tile based graphics were crude and huge advancements have been made since, but the level of agency (meaningful interaction) in shaping the land in any number of unique ways (you could stack effects so a an earthquake followed by a flood would prove much more devastating than the singular non combined events) is still remarkably high even by today's standards.

Perhaps the immersiveness and allure of *Populous* was due to the game mechanic allowing players to express a natural, innate desire to shape the environment around them, a process of terraforming with instant visual results.

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Zayn
CREATIVE

The magical essence of natural landscapes since the dawn of man have been a source of intrigue, wonder and inspiration in art, philosophy and literature. With each new era in civilisation, new methods of creative expression have been used by artists, designers and writers to capture the rich natural landscapes, and with the 21st century and the emergence of new interactive technologies, this innate desire is being expressed through the digital domain.

From the giant mushroom forests of Morrowind, the Archipelago islands of Zelda: Wind Waker, to the tropical underground caves of Phantasy Star Online, Virtual landscapes have enthralled, captured and engaged player imaginations for over 30 years. *Virtual Landscapes* is a three part series attempting to, for the first time visually illustrate, share and critically reflect upon the unique, virtual natural landscapes within Computer & Video Games.

Virtual Landscapes: The Embryonic Era visually illustrates the emergence and rapid evolution of the virtual natural landscapes in computer & video games from 1980 to 1989. From the pixel based, block form environments of *Forbidden Forest*, the strange lands of *Golvellius*, the eerie 'ant-farm' landscapes of *Ghouls'n Ghosts* and finally to shifting interactive lands of Populous, *Virtual Landscapes* presents these virtual spaces for the first time, in stunning unseen digitally enhanced. high resolution and panoramic forms.

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