



The End of Winter

Martin Kull

**Thesis, Master of Culture and Arts,
Entrepreneurship in the Arts, Photography**

THE END OF WINTER

MARTIN KULL

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Author: Martin Kull

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ABSTRACT

We are all familiar with the iconography and generic images used to visually communicate the climate crisis – smokestacks, polar bears in distress and solar cells. This thesis explores whether a more personal photographic expression of imagery could help us understand our own role in this crisis.

In this regard, the thesis presents a photographic project in the form of three specific visual themes: *The End of Winter*, *Innocent Childhood* and *From Denial to Engaged*. To symbolise the impact of a two-degree temperature difference on our lives (this being recognised by The United Nations in the 2015 Paris Agreement as a significant temperature tipping point), the project includes methods of freezing printed images in the Baltic Sea and then rephotographing them at the same location. Such interventions with ice and sea water turn into a strong metaphor for climate change.

The project is presented with its basis in the humanities and natural science and with a focus on the process to find a visual expression. In the analysis, the project is placed in a context of contemporary environmental art photography, and how the visual outcome relates to different phases of individual climate crisis management.

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1 INTRODUCTION

I have lived by the sea all my life. My father and grandfather both made their living at sea, while my mother painted the sea in light watercolours. The sea has represented the cradle where I was born – safety and prosperity. Nature has been my entry into natural sciences, a safe home and an endless source of inspiration. Living in Sweden, the changing seasons are part of my DNA. I love the winter with all its snow and ice, and to see nature come alive each spring.

This is all now at risk. Even though the greenhouse effect was predicted already in 1896 by Swedish scientist Svante Arrhenius, it took almost a century for it to be recognised in politics and by the general public.

In just a few decades, my beloved winters will cease to be, and the sea is turning into a threat. A threat created by our way of living and that not only my children, but hundreds of generations have to suffer the consequences of. Our way of living must change. In this thesis I discuss and visualise the effect of the climate crisis both in the landscape and on the human condition, should we fail to limit global warming.

The climate crisis has been the topic of two of my previous works. In the documentary project *To my grandchildren*, I photographed the Nordic glaciers. Collectively, we are ruining these unique environments as global warming melts the ice. It is saddening to realise that my grandchildren will only be able to experience the glaciers by sharing my memories and photographs (Kull, 2018).

In my thesis for a bachelor of arts and culture degree at Novia, Jakobstad, Finland, *När vi inte längre finns* (*When we are gone*), I asked the question how long it would take for nature to heal the wounds and imprints we have made should we fail to limit climate change (Kull, 2021). In the BA project, I photographed our traces in nature and

invited my subject – and chance – into the creative work by returning the negatives to the location where they were photographed. There, during a period of three months, nature was given the opportunity to put its physical impression into my negatives.

In this MA project, I once more invite nature into my process, inspired by photographers Stephen Gill (2021) and Matthew Brandt (2014). Both have left straight, descriptive photography, play with the materiality of the medium, and let the location intervene in the photographic process to convey an idea.

The thesis includes a short introduction to the climate crisis with facts from the natural sciences and humanities relevant for the visual project, including warming effects on my latitude, the great acceleration and models for individual crisis management. In the following chapter, I briefly summarise the history of photography leading up to today's environmental photography. The state of the art in contemporary environmental art photography is reviewed in eight different categories.

My project is process-driven, and in a specific chapter, I discuss how the project was inceptioned, how it has changed and the result of several reviews throughout its course – all to find my subject matter and visual expression. The final visual project is shown with sample images from three themes (*The End of Winter*, *Innocent Childhood* and *From Denial to Engaged*) related to the climate science and in an appendix a brief illustration is given, of how a forthcoming exhibition may be created with material from the project. The subject matter originates from my local area. I also use photographs, from the family album, taken during my childhood more than 50 years ago. The goal of the 2015 Paris Agreement is to limit global warming to well below 2 degrees Celsius, preferably at 1.5, compared to pre-industrial levels (United Nations Treaties, 2015).

My project includes methods for freezing printed images in the Baltic Sea and then rephotographing them at the same location. This is done to visualise the significance on our lives of a two-degree temperature difference. Even if my method represents freezing rather than warming the interventions using ice and sea water serve as a strong metaphor for climate change.

In the last chapter, I discuss how the reviewed contemporary environmental art photography is used in the climate crisis to show the problems and effects brought on by our anthropocenic lives, but also possible mitigations. I suggest that there is a need for a more personal visualisation, engaging the viewer beyond what is done by using the common iconography of the crisis.



Åland archipelago, the Baltic Sea, 1966

2 ON THE CLIMATE CRISIS

The research field covering the climate is overwhelming. Ever since the Intergovernmental Panel on Climate Change (IPCC) was established in 1988 and its first assessment report was published in 1990, there is no doubt that what was first termed climate change has now developed into a climate crisis with dramatic consequences, here and now, for many people.

Beyond the climate crisis, there are other environmentally pressing issues caused by our anthropogenic activities. Planetary boundaries, as proposed by Johan Rockström et al. (2009), is a framework that identifies nine global processes in the earth systems critical to sustainability and a safe state for human life and development. These processes include climate change, ocean acidification, stratospheric ozone depletion, biochemical flows of phosphorus and nitrogen from artificial fertilizers, freshwater use, land system change (e.g., the expansion of croplands), loss of biosphere integrity, chemical pollution & novel entities, and atmospheric aerosols (particles). The framework defines (for most of these) a safe operating level. According to recent research (Persson et al., 2022), we have passed the safe operating levels for five of these processes, and we are at a high risk of reaching irreversible tipping points in the earth systems.

What started as a major personal concern has continued into my third project with a climate theme, and I felt a

need to base this MA project on some solid facts. Therefore, I took an introductory class on climate change (“Climate Change – An Interdisciplinary Perspective”) at Stockholm University. I have no intention to cover the complex field of climate science, but in this chapter, I delve into three areas that have inspired my visual project.

The end of winter

Winter is metrologically defined as five consecutive days with an average temperature below zero degrees centigrade (SMHI definition of winter).

Worldwide, the longest series of continuous annual average temperature measurements has been recorded in Stockholm, starting as early as 1756. Researchers at Stockholm University have visualised this in a graphical diagram called warming stripes, where each year is represented by a vertical line coloured from dark blue (cold) to dark red (warm) (Hawkings, 2018; Kirchner, 2021). In looking at the diagram, there is no doubt that we live in a world that is getting warmer!

The annual average temperature in Stockholm has been six degrees for centuries. Since the 1990s, however, the temperature has increased by one degree, and if we continue on



Warming Stripes representing the mean annual temperature in Stockholm 1756–2020, ranging from 4 (blue) to 9 (red) degrees (Kirchner, 2021)

our present path, Stockholm will by the end of this century be eleven degrees warmer than when I grew up in the 1960s (Kirchner, 2021). In the last 30 years (1991–2020), the average number of days with snow coverage in Stockholm is 65, which is down by 18 days compared to the previous period 1961–1990 (SMHI snow coverage). If we continue on our current path, the climate in Stockholm will be like that in Budapest (Bastin et al., 2019) and winters will cease by 2050 (SMHI temperature projections).

Based on this data, it is clear that *The End of Winter* is coming to Stockholm. That is why this constitutes my first subject theme and also the title of the whole project.

The great acceleration

The International Geosphere-Biosphere Programme (IGBP) was a research programme run during 1987–2015 with the aim to describe and understand how natural processes regulate the earth system. IGBP defined twelve socioeconomic and twelve earth system categories to analyse historically and going forward. Examples of socioeconomic categories include population, economic growth and energy use. Earth system categories include atmospheric carbon and nitrogen, surface temperature and acidification of the oceans.

In a meta-analysis, Steffen et al. (2004) compiled all 24 graphs of global data in these categories starting from 1750 until modern times. The analysis was updated in a report to include data until 2015 (Steffen et al., 2015).

The graphs clearly show the dramatic increase in human activity around the middle of the twentieth century and the consequences of the increased standard of living. The human effect on the earth systems is equally dramatic, and many of the defined parameters grow exponentially after 1950.

Steffen et al. also pointed to the fact that even if human activities have had an impact on nature for a long time, in the last century, they have not only affected nature and the environment locally but also the earth systems globally and at a scale where we do not know what the long-term effects will be.

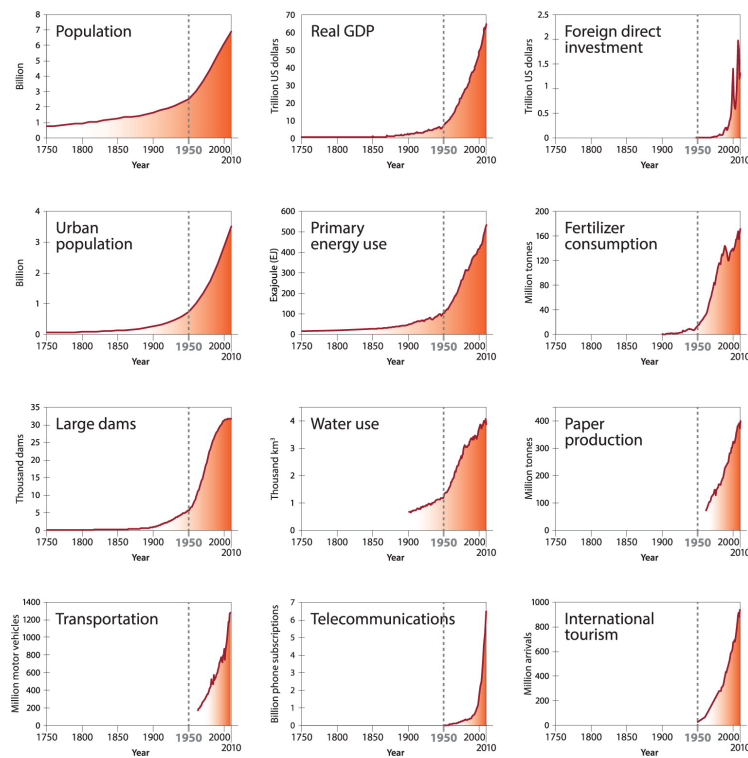
Even if it is hard to prove detailed causality between the socioeconomic and the earth system trends, the science is clear enough – these graphs represent the essence of the Anthropocene (Crutzen, 2002).

One feature stands out as remarkable. The second half of the twentieth century is unique in the entire history of human existence on Earth. Many human activities reached take-off points sometime in the twentieth century and have accelerated sharply towards the end of the century. The last 50 years have without doubt seen the most rapid transformation of the human relationship with the natural world in the history of humankind.

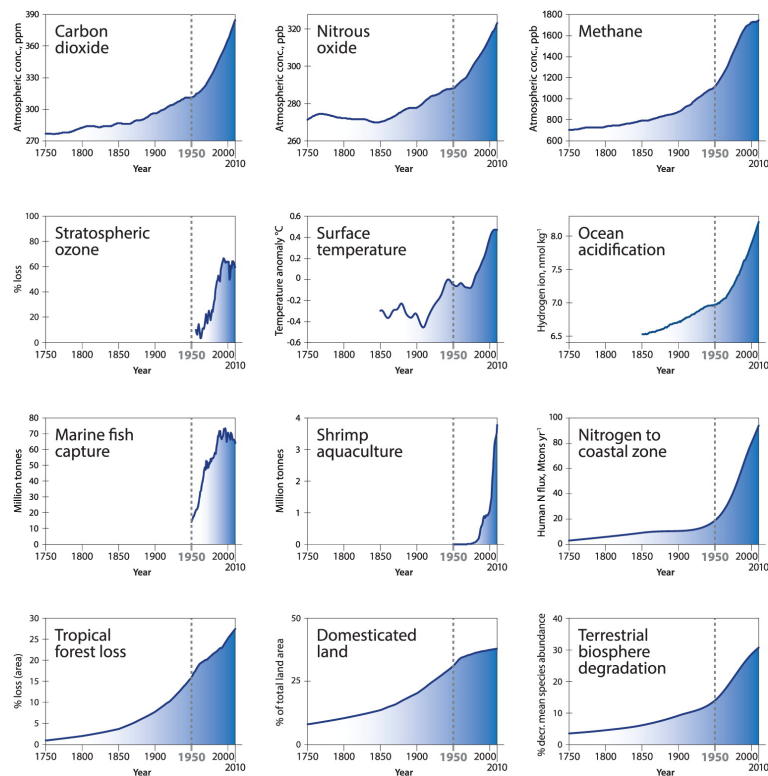
Founder of Climate Council (AU)
Will Steffen (Steffen et al., 2004)

There is also an imbalance between the industrial and the developing countries in that the rich countries vastly overconsume natural resources and have built their prosperity over the last century based on burning fossil fuels, whereas the developing world still lacks minimum standards for human needs such as nutrition, sanitation and health (O'Neill et al., 2018). In the strive to better balance the global standard of living, while at the same time countering global warming, how could the developed part of the world deny the developing countries the opportunity of taking the same shortcut via fossil fuels and over-consuming resources?

It is obvious that my generation in the developed part of the world has caused the climate crisis. If everyone on this planet consumed the same amount of resources as the average Swede, we would need the resources of three planet earths (Wackernagel et al., 2006), and 82 percent of all fossil fuels ever burnt by man have been burnt since 1959 (Wackernagel et al., 2019). In the second theme of my project, *Innocent Childhood*, I delve into my own role in the crisis.



Socio-economic trends. The increasing rates of change in human activity since the Industrial Revolution (Steffen et al., 2015)

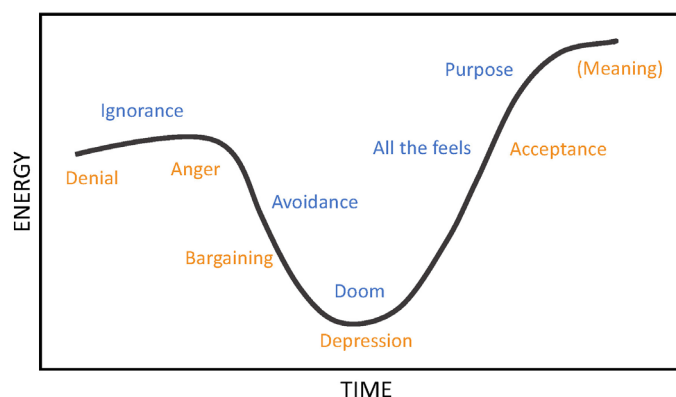


Earth system trends. Global scale changes as a result of human activity (Steffen et al., 2015)

Climate crisis acceptance

Every day in newspapers, on radio and TV and on social media, we are exposed to alarming news about the accelerating climate crisis. How do we react to the overwhelming flood of information and how are we as individuals to cope with the terrifying signs of the climate crisis?

Kimberly Nicholas (2021) defines a model that she terms *the five stages of climate acceptance* in her book *How To Be Human in a Warming World: Under the Sky We Make*. This model describes the stages we go through as individuals and intends to support us when facing the climate crisis.



Models for individual crisis management. Blue (upper) the five stages of climate acceptance by Kimberly Nicholas. Orange (lower) the six stages of grief by Kübler-Ross (& Kessler).

Nicholas' model is a variant of the well-known Kübler-Ross model or *the five stages of grief*, where the stages denial – anger – bargaining – depression – acceptance reflect how people handle grieving or loss (Kübler-Ross, 1970). David Kessler has proposed a sixth stage – meaning – to the original Kübler-Ross model (Kübler-Ross & Kessler, 2019). In Nicholas' model for climate acceptance, the stages are slightly different: ignorance – avoidance – doom – all the feels – purpose.

Climate ignorance or denial is well-documented and was perhaps more understandable a few decades ago. The discrepancy between the scientific evidence on climate change and the limited or even decreasing public concern has been called a psychological climate paradox (Stoknes, 2014). Still in 2019, 12 percent of Americans did

not acknowledge global warming at all, while 30 percent attributed it to natural causes (Leiserowitz et al., 2020).

Already in 1991, Pawlik described five psychophysiological barriers to climate change acceptance and action (Pawlik, 1991, refined by Milfont, 2010). These are 1) physiological barriers in that the temperature increase associated with climate change and its effects on, for instance, precipitation is smaller than seasonal changes or even day-to-day changes. Pawlik terms this the low signal-to-noise ratio. 2) Temporal barriers or in Pawlik's terms extreme masking and delay of cause-effect gradients. The time delay between the consequences we perceive and the actions of burning fossil fuels is extremely long (counted in generations) for the human mind to take in. Other studies also point to our conflict between short- and long-term interests, prioritising immediate needs rather than more long-term interests (Milfont, 2010). 3) Psychology of low probability events refers to the fact that we are cognitively biased to underestimate low-probability events, and even though natural disasters caused by global warming are already upon us and will increase, we tend to forget these as single events rather than a long-term crisis taking shape. 4) Physical and social distance refers to the fact that the distance between actors and victims of global warming may be huge in physical terms and, as discussed above, in time, but also socially. People's spontaneous social learning skills do not handle these distances well. Even if we acknowledge the problem as global, we tend to prioritise actions only when our local community is affected (Milfont, 2010). 5) Perceived personal cost effectiveness concerns that even if we know which actions to take to limit global warming, the individually perceived cost in terms of comfort and convenience is too high. This barrier refers to the social dilemma known as the "tragedy of the commons" (Hardin, 1968), which causes our behaviours as rational, independent free actors to overexploit natural resources and disregard the global needs of the commons (e.g., that of pure water and air). Hardin points to policymaking, taxation and legislation as the means to solve this dilemma.

As part of my research, I carried out a poll among 36 students on the course "Climate Change – An Interdisciplinary Perspective" at Stockholm University in March 2022. The question was "Why don't we adapt or change our way of living fast enough to limit climate change?" The

result, presented as a word cloud in Appendix A, shows that most of the responses were, in fact, in the last of Pawlik's barriers, indicating that our strive for comfort and convenience is so much stronger than our concern for the common good or for future generations.

In Nicholas' stage of avoidance, we are well-aware of the climate crisis, but our coping strategy is to choose not to see the signs and in our daily routines not invest time in understanding more.

It is easy to fall into the pit of despair overwhelmed by the reports on the climate crisis. Conditions such as environmental distress, ecological grief, environmental melancholia, eco-anxiety and climate change anxiety are well described in medical science (Panu, 2020; Schwaab et al., 2022). The term *Solastalgia* describing emotional distress caused by environmental change was coined by Albrecht in 2003 (Albrecht, 2003).

Eventually, we move on from these doomsday feelings, and in the next stage of the climate crisis coping process, we accept that climate change is real. Even if we may resist the new normal, we change, we grow, we evolve and reach out to others and get involved. Nicholas points to the importance to engage in the local community and to focus on the things that you can control. In the final stage, purpose, our way of living is defined by individual values and goals towards a resilient life with a regenerative mindset (as opposed to an exploitative one) (Nicholas, 2021).

In a speech addressed to the World Economic Forum, Sir David Attenborough stated

*The Holocene has ended.
The Garden of Eden is no more.*

David Attenborough (2019)

The similarities between Nicholas' model for climate acceptance and the original Kübler-Ross model are obvious. The latter addresses death and grieving a loss. When applied to the climate crisis, the two models can help us cope with forthcoming major losses like The End of Winter and the loss of the Holocene's Garden of Eden.

In the third and last theme of my work, *From Denial to Engagement*, I turn my camera to people in the street and try to look for signs in which of the climate acceptance stages they are at.

3 ENVIRONMENTAL PHOTOGRAPHY

This chapter reviews the field of environmental photography, including a short summary of photographic history leading up to the state of the art. Historically, we distinguish between landscape photography and wildlife photography, where the latter typically depicts animals in their natural habitat. Even if photographers in these two genres may have (and often have) a focus on nature protection or conservation, in the more recent field of environmental photography, the photographer works specifically with themes, subjects and expressions to highlight the adverse effect of humankind on the environment (Seelig, 2015).

Landscape photography and early environmental photography

Due to shortcomings in the first photographic technologies, many early photographers at the end of the nineteenth century chose the landscape as their subject matter. American photographers Carlton Watkins, William Henry Jackson, Eadweard Muybridge and Ansel Adams all photographed the wild and grandiose landscapes of the American West, and their photographs were actually used to establish the national parks of Yosemite and Yellowstone and save the magnificent nature from exploitation (DeLuca and Demo, 2000; Marien, 2011; Ward, 2008). British author and photographer Peter Henry Emerson photographed landscapes in Europe and argued that photography could be a form of art rather than a form of naturalistic documentation (Palermo, 2007).

In the first half of the twentieth century, world wars and social issues became the focus of many photographers and photojournalism brought documentary images to the public in all available media. One example is the Farm Security Administration (FSA) project documenting the hardships of rural America during *The Great Depression* in the 1930s with the help of strong pictures by, among others, Dorothea Lange and Walker Evans (Marien, 2011).

Inspired by the new ecological influences and as a protest against the commercialisation of the arts, the land art movement saw the light of day in the 1960s. Artists carried out interventions in the landscape, typically using soil, rocks and natural material at the site. The most well-known are perhaps Robert Smithson's *Spiral Jetty* (1970) and Michael Heizer's *Double Negative* (1969) (Reiss, 2021). Land art pieces were often large in scale and photography was used to document and showcase them.

This period was a turning point for environmental photography where photographers started to point their cameras to the effects of modernity on both humans and nature (Seelig, 2015). Air and water pollution became a real threat to human health. In 1952 and 1962, London was exposed to major problems due to fog from burning coal with thousands of fatalities as a result (Marsh, 1963). *The Clean Air Act* was passed in the US, and Rachel Carson published her book *Silent Spring*, thereby raising people's awareness of the devastating effects of DDT on all life forms (Carson, 1962).

Also, landscape photography evolved to include the human condition. In the 1975 exhibition *New Topographics: Photographs of a Man-Altered Landscape* in Rochester, Lewis Baltz's and Robert Adams' photographs showed a landscape of the American West that was close to obliteration and overshadowed by prefabricated industrial structures, shopping malls and tract housing suburbs (Cotton, 2014; Klett, 2014; Marien 2011).

Further, in the project *Documerica* run between 1971 and 1977, the Environmental Protection Agency (EPA) engaged more than one hundred photographers to document subjects of environmental concern all over the US, done in a fashion similar to the FSAs project four decades earlier (Greenwalt & Creech 2018; Shubinski 2009; Wellum 2017).

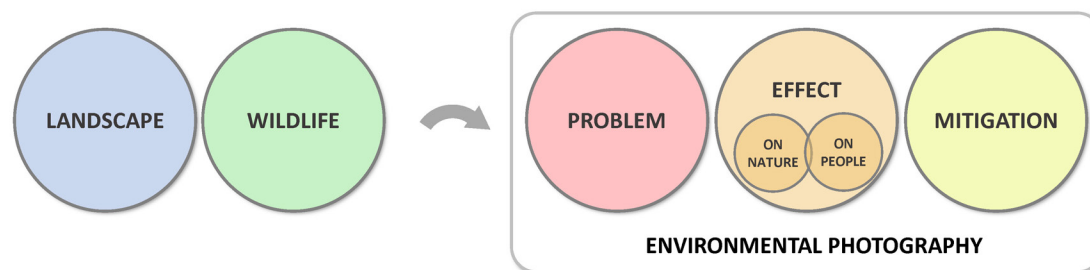
All these early environmental photographic endeavours were documentary in nature. Since then, the field has evolved even further.

Environmental photography today, in use for climate engagement

Since the mid-twentieth century, the field of environmental photography has diversified to now also include photographic investigations of the climate crisis. A way of systematising the field is to categorise its subject matter into three areas: photographs depicting the root problem (smoke stacks, oil drills, traffic jams), the effects or adverse impacts of these human activities (melting ice, flooding, draught, polar bears in distress) and, finally, photos of solutions for mitigating the problem (windmills, solar panels, growing forests) (Carlson et al., 2020; Chapman et al., 2016; Schmidt & Wolfe 2009).

Another important finding is that images related to the neighbourhood, or people in the local community lead to stronger behavioural change compared to generic images depicting anonymous global issues (Seelig, 2015; Marks et al., 2016; Wang et. al. 2018). O’Neill and Nicholson Cole (2009) come to a similar conclusion in that images and icons linking climate change to individuals’ everyday emotions and concerns are the most engaging.

However, using images to communicate regarding climate change is not an unequivocal task since the reception of images depends on the culture, education and political views of the beholder (Chapman et al. 2016; O’Neill 2013), just like Barthes in his essay, *The death of the author* (1967), argued that the meaning of a text depends mainly on the impressions of the reader.



Environmental photography, including the field of climate photography, has evolved from early landscape and wildlife photography to describe environmental problems, effects and possible mitigations.

A great deal of research has been carried out to evaluate which types of images are effective in communicating climate change, which photos attract attention (cognition), create affection and, most importantly, inspire action in the viewer (behaviour) – from politicians to policymakers and the wider public (Chapman et al., 2016; Manzo, 2010).

Several studies focus on the engagement evoked by different types of imagery. One conclusion is that dramatic and fearful images, typically from the problem and effect areas of climate change, can indeed capture people’s attention, but are also likely to distance and overwhelm them with feelings of hopelessness and helplessness (Carlson et al., 2020; Manzo 2010; O’Neill, 2009, 2013).

Environmentally conscious photographers gather in national and international organisations. The largest and perhaps most important is the International League of Conservation Photographers (ILCP), founded in 2005 (Mittermeier 2005). Today, there are plenty of non-governmental organisations (NGOs) working with environmental and climate issues. Specifically, *Art of Change 21*, *NGO Photographers Alliance*, *Photoclimat*, *Climarte*, *Climate Outreach* and *Earth.org* all use photography and visual communication to engage people and call for action. In the commercial photography market, there are agencies (e.g., *The Earth Issue*) as well as individual photographers (e.g., Simon Weith (Germany) and Flavia Müller (Switzerland)) specifically targeting customers with a climate agenda.

Seelig has interviewed climate photographers and concludes that many prefer to work with NGOs and alternative (social) media due to the failure of traditional media to keep the climate on the agenda using sporadic event-based tactics (Doyle 2007). Alternative media is also better at targeting a group that is willing to change, whereas mainstream media is still a good alternative in communicating to politicians and businesses (Seelig, 2015).

In conclusion, negative and dramatic images of the climate crisis in the problems or effects categories may attract attention but will disengage, whereas images showing climate mitigation and, in particular, images with people and a local connection have the best chance to motivate behavioural changes. Chapman et al. (2016) suggest contextualising less familiar climate change images (beyond polar bears and chimney stacks) to achieve both a cognitive and behavioural effect.

Environmental art photography

Contemporary environmental photography has attracted the art world for decades and has reached a high level of sophistication. The number of art photographers that address the climate crisis includes hundreds of artists. Their subject matter and expressions are equally diverse, and to try to give a flavour of the field, I choose to use the categories of photographic art as presented by British curator and author Charlotte Cotton in her book *The Photograph as Contemporary Art* (Cotton, 2014): conceptual, storytelling, aesthetic, still life, intimate life, documentary, revived & remade and materiality.

Conceptual

In this category, the photographer preconceives the image and stages performances or happenings for the camera. The final work is not just a documentation but is meant to become a work of art. Tamara Dean (b. 1976) is an Australian conceptual photographer using herself or models to perform the scenes she envisions. In the series *Endangered* (2018–2019), she photographed humans underwater in a way resembling sea-living creatures. By doing so, she reframes mankind, endangered by the climate crisis and pressing marine environmental problems, like other mammals in the sea.



Tamara Dean, *Endangered 11b* (Dean 2019)

Nicolas Henry (b. 1978) is a French photographer and visual artist who builds tableaux in large collaborative projects. Some of these, like his recent project *Cabane Imaginaires autour du monde*, include ecological themes. Henry is also the founder and art director of Photoclimat Biennale in Paris that, in 2021, exhibited large displays of works by 30 international photographers and 30 NGOs.



Nicolas Henry, *La planète du lac Kivu* (Henry 2013)

Storytelling

Photography is obviously the ideal means for visual storytelling, and with diligent planning and staging, the photographer is able to create a narrative in a single image. Jeff Wall (b. 1946) and Gregory Crewdson (b. 1962) are the most prominent examples in this genre. Their scenes are frequently built like stills from a movie.

In the imaginative project *The Prophecy*, the mother of Earth – Gaia – summons the spirits of nature, her children and allied – the djinns – to try to reach out to humans to stop exploiting natural resources and polluting the earth. Photographer Fabrice Monteiro (b.1972) creates his scenes and the spirits with objects found at locations on the African continent. Monteiro’s tale is sprung from Greek mythology and addresses environmental awareness for children.



Fabrice Monteiro, *The Prophecy Untitled #3* (Monteiro, 2013)

Aesthetic

Aesthetic art photography is often grand in scale, objective without specific drama and without the photographer adding his or her feelings to the image (in Cotton’s terms ‘deadpan aesthetics’).

Mankind’s industrial landscapes and our harmful effects on the environment are horrid subjects, but art photographers use them to draw attention to environmental issues. In large prints and using straight photography, the details or abstract patterns create an aesthetic expression.

This line of photographic art started with *The New Topographics* and was followed by photographers such as Richard Misrach (b. 1949) working in colour and with an interest in politics and ecology.

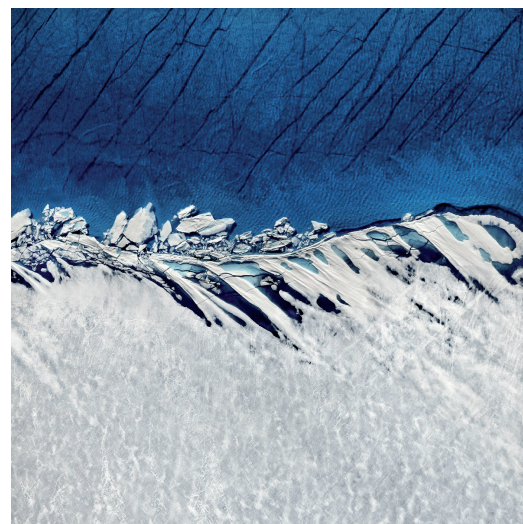
Canadian photographer Edward Burtynsky (b. 1955) is perhaps the best example of contemporary large-format industrial landscape photographers. In 2017, he launched the multimedia project *The Anthropocene* together with Nicholas de Pencier and Jennifer Baichwa with a multitude

of resulting works of art beyond Burtynsky’s photographs, including the documentary film *Anthropocene: The Human Epoch* and exhibitions with virtual reality experiences.



Richard Misrach, *Submerged Gas Pumps, Salton Sea* (Misrach, 1983)

Another example of industrial landscape photographers is the American Peter Essick (b. 1957), who uses aerial photography to capture the deadpan aesthetic in his project *Aerials of the American dream*. The projects of Swedish photographers Helen Schmitz (b. 1960), *Thinking like a mountain*, and Hans Strand (b. 1955), *Manmade land*, both have the qualities of deadpan aesthetics and with an environmental message.



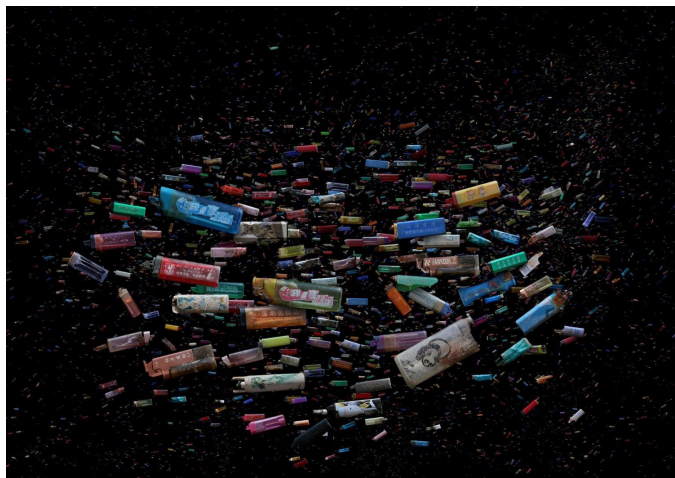
Timo Lieber, *Thaw-2* from project *THAW* (Lieber, 2016)

Sometimes, the beauty of the natural landscape is what first attracts the viewer of photographic art. In Timo Lieber's (b. 1979) photos of blue lakes and rivers forming on the melting ice cap of Greenland, the expression approaches abstract art, but with just a bit of context in the form of a title or text, the viewer understands that these beautiful blue lakes are far from natural and rather caused by human anthropogenic activity.

Still life

Photos of still lifes and everyday objects are made into art based on the visual impact they gain solely by the act of being photographed and by the photographer's intent. *Objet trouvé* or found objects is the term used for this category in the art world.

In the project *SOUP*, Mandy Barker (b. 1964) has collected and photographed debris from the oceans worldwide and digitally arranged them in compositions often resembling life in the sea. With the contradictory beauty of these images and the obvious threat they pose to all lifeforms, she wants to stimulate an emotional response in the viewer.



Mandy Barker, Hong Kong Soup – 1826. 350 lighters retrieved from the shores of Hong Kong and arranged as a school of fish (Barker, 2013)

Intimate life

Cotton's category intimate life may borrow its visual expression from that of the family album, but the subject matter is much more edgy, showing human relations,

feelings and intimacy. Intimate environmental art photography is close to documentary photography or photojournalism, often visualising the effects of the climate crisis on individuals or a local community.

Cristina Mittermeier (b. 1966), founder of ILCP, is a conservation photographer but perhaps foremost with an ethnographic interest. She has photographed indigenous societies all over the world. Their way of life, integrated with nature, and their existence are greatly at risk due to the effects of the climate crisis.



Cristina Mittermeier, The last hunters of the north (Mittermeier, 2015)

Climate Heroes is a collaborative project initiated by Max Riché, producing portraits and multimedia presentations of women and men around the world who protect the environment and mitigate climate change in their daily tasks.



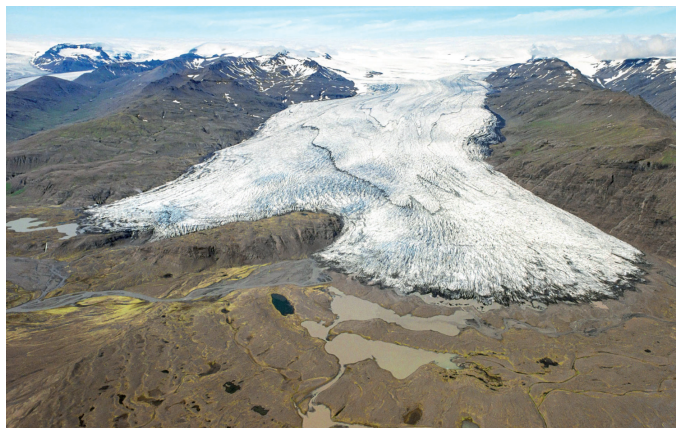
Luke Duggleby, Climate Heroes, Isatou Ceesay and the Women Turning Waste to Wealth (Duggleby, 2019)

British photographer, Tim Flach (b. 1958) takes another direction in his personal portraits of animals. With meticulously lit studio portraits, he captures human-like expressions in animals to evoke a sense of intimacy and empathy. In a quantitative study, it has been shown that this kind of anthropomorphising may represent an effective method for encouraging environmental conservation (Whitley et al., 2020).

Documentary

Documentary projects where the subjects are unique in one way or another are perhaps primarily used in photojournalism but may also maintain their social relevance as art. Cotton terms one type of documentary photography as aftermath photography, used by artists arriving at a scene or location after the decisive moment, often using medium- or large-format cameras. Most environmental art photography projects belong to the documentary category, where a few examples are presented below.

In the book *Climate Change: Picturing the Science*, NASA climate modeller Gavin Schmidt (b. 1965) and photographer Joshua Wolfe (b. 1983) bring together essays on the science behind climate change and documentary photos by Wolfe and others. This approach follows the environmental photography categories above but uses different terms: symptoms-diagnosis-possible cures (Schmidt & Wolfe 2009). The photos in the book are purely documentary and are perhaps better used to visualise the science and are not really intended to be art.



Rephotography (Klett, 2014; Kumar, 2014) is an effective way to show the effects of climate change occurring on a timescale that is hard for us to grasp. In his series *The glacier melt 1999/2019*, artist Olafur Eliasson (b. 1967) has rephotographed 30 Icelandic glaciers twenty years apart, thereby showing the dramatic effect of global warming. A similar approach has been utilised by Swedish scientist Tyrone Martinsson (b. 1967), and in an essay, he and Mark Klett (b. 1952) write the following on methods used to portray the horrors of climate change:

Environmental photography and the techniques of rephotography offer a merger of facts, poetics, and experience. They serve as visual resistance to the debilitating effects of business as usual, ambivalence and helplessness in the face of powerful forces. The photographs tell the stories of different places and communicate the detailed effects of human activity on the planet.

As witnesses to many separate years they also tell us what we stand to lose as a result of change – and most importantly how such losses will feel.

(Klett & Martinsson, 2016)



Olafur Eliasson, *The glacier melt series 1999/2019, detail (Fláajökull)* (Eliasson, 2019)

One example of aftermath photography is British photographer Alan McFetridge (b. 1974), who has photographed the effects on the landscape and on societies in the aftermath of wildfires in Australia and Canada.



Alan McFetridge, *Tree of Life* (McFetridge, 2019)



Gideon Mendel, *Kimberly and Rudy Fralix, Highway 917, Mullins, South Carolina, USA* (Mendel, 2018)

Other aftermath projects include *Drowning world* and *Burning world* by Gideon Mendel (b.1959). In these, he has portrayed property owners outside of or in the remains of their homes after dramatic flooding or wildfires.

Magnum photographer Stuart Franklin (b. 1956) has used 5x4 film to photograph the various landscapes of Europe in his series *Footprint: Europe's Landscape in Flux* with the intent to look at how the landscape has changed in the context of climate change.

Revived & remade

This category relies on a postmodern reuse or reference to previously created images, be they advertising, still films or paintings. The postmodern concept also includes a critique of objectivity, originality and authenticity.

Vik Muniz (b. 1961) is known for reusing commonplace materials to create his artworks and to mimic well-known historic artists. In the series *Pictures of Garbage*, he collaborates with the *Catadores* (garbage pickers) at an open-air dump outside Rio to create images built up using garbage. The project also resulted in a documentary film *Waste Land* directed by Lucy Walker. Photographs of Vik's artworks were later sold at auctions and the proceeds were given back to the *Catadores* community.



Vik Muniz, *Marat (Sebastião)* from *Pictures of Garbage* series (Muniz, 2008)

Materiality

Artists may use the physicality of the photograph as part of the narrative. Historical processes may serve as an important tool, following the pioneering work of Anna Atkins' (b. 1799) cyanotype contact prints (Marien, 2011; Schaaf, 2018). Furthermore, digital photographers may add chance to their process to refer to the medium's analogue past.

This category includes three of my main sources of inspiration, both based on the aspect that they work with the photographic medium as a physical object and based on their processes that interact with their subject matter.

First is Matthew Brandt's (b. 1958) series *Lakes and Reservoirs* in which he photographs American waters and brings back water from the site to his lab. After developing and printing, he lets the C-prints soak for days or weeks in trays filled with water from the site. The colour layers are eventually dissolved, and the result resembles an abstract painting. Brandt's method creates another layer of unity between the subject and the photograph.



Mathew Brandt, *Nymph Lake, WY 4A*, chromogenic print soaked in *Nymph Lake* water (Brandt, 2013)

Stephen Gill (b. 1971) also plays with the materiality and physically intertwines the subject with the photograph in the commissioned work *Coexistence*. Here, he photographed the remains of an industrial wasteland where steel used to be manufactured in the city of Dudelange in Luxemburg. Equipped with a microscope, he photographed small creatures, plants and chemical residues in a pond. In an effort to portray the community, he also took portraits

of the people living nearby. To merge the two worlds, he would soak his camera and lens in the wastewater before taking the portraits. The result is published in one of his beautiful books (Gill, 2011).



Stephen Gill, *Coexistence* (Gill, 2011)

Two of Alan McFetridge's projects represent the final examples of materiality and landscape interventions. In *Pyrograms*, he collects forest leaves, bark and small pieces of wood from the forest, to then at night ignite these and let the flames expose Polaroid films. In *Cryograms*, he takes the Polaroids' backs and lets them freeze outside where the same forest floor leaves traces in the residual chemicals.

To conclude this chapter, the field of environmental art photography is mature with a diversity of expressions. There are different causes motivating the artists, and they use various strategies to attract the viewers' attention, seeking to mobilise and eventually inspire action. Many more examples can be found in the exhibition catalogue of *Photoclimat* (2021) and the book *Surveying the Anthropocene Environment and photography now* (Macdonald, 2022).

4 PROCESS AND METHODOLOGY

The MA project was loosely defined in August 2021. This chapter describes in some detail how the project was developed and iterated using internal and external processes to reach its final form.

Early ideas and soaking experiments

The topic of my BA thesis “When we are gone” was rather dystopic. If man’s days on earth are numbered, what happens when we are gone? How quickly will nature wear down our culture and our traces? By leaving developed negatives in nature at the very location where they were photographed, I invited the subject to take part in the creative process (Kull, 2021). I was encouraged by the result and liked the way chance effected the final image.

In the MA project, I wanted to further explore the climate crisis visually. This time not in a dystopic future, but here and now. I also wanted to include the human condition and continue to involve my subject matter more than just lending its surface to reflect the rays of light into my camera. Hence, I started looking for suitable physical interventions for the images.

One of the very first sources of inspiration was Mathew Brandt’s series *Lakes and reservoirs* in which he soaked colour C-prints in water from the actual place where the photographs were taken (Brandt, 2014; Bendandi et al., 2015). Flooding is a direct and already obvious consequence of the climate crisis, and the resulting disasters would be well-represented by the chaotic mix of colour layers of Brandt’s soaked C-prints. The idea was to take photographs of nearby and familiar scenes and soak the bottom part of the print.



A4 size C-prints (Lambda print on Fujicolor Crystal Archive Supreme HD paper) where the lower part has been submerged in water for up to two weeks. Left London wheel, London 2021. Right Mässkär navigation mark, Jakobstad 2021.

This process seemed straightforward, and I mounted both inkjet prints and C-prints in plastic frames and partially immersed them in water baths. I was surprised to see just how resistant modern prints are to water. The inkjet prints were not really affected at all, just a very slight blue-green shift in colours, even after weeks in the water. For the C-prints (Lambda print on Fujicolor Crystal Archive Supreme HD paper), after 1-2 weeks the colours would eventually come off, but not as in Brandt's case where the yellow-magenta-cyan layers would lose their grip somewhat differently.

In my case, all colours were lost at once, and it was impossible to try to save the colours on the paper. Reading more on Brandt's technique (Brandt, 2014; Sanderson, 2016), I understood that his visual expression relied on the historic C-prints on specific Kodak Supra Endura paper in which the colour layers are separated and bound by gelatine layers in the photographic paper. Brandt's intriguing effect was not at all possible using modern C-prints.

After failing to find labs that supported the older C-print process with the Kodak paper, for a long time out of stock, I set this soaking experiment aside and started to look for other interventions.

Inspirations

One consequence of processing either a photographic negative or a print is that it becomes a one-of-a-kind artefact or, in best-case scenarios, a unique artwork that is not possible to reproduce. Analogue and manual techniques also involve varying amounts of chance. In Walter Benjamin's terms, such work possesses the *Aura* that separates art from mass-produced photographs (Benjamin, 1969).

I used visits to the photo shows Photo London (8-12 September 2021) and Paris Photo (11-14 November 2021) to look for other interventions and manual techniques that I could use for my project.

Steve Harries' collages of geological and glacial photos shown at the Webber gallery in Photo London were unique, not only due to the collage technique but also due to the fact that he combined historical bromide prints and modern C-prints (Harris, 2021).

Another straightforward approach would be to composite images of water reflections onto prime photos, digitally in Photoshop as photographer Ellie Davies showed in her series *Seascapes* in the Crane Kalman Brighton gallery, at Photo London (Davies, 2021). However, the digital nature of her work would not result in unique prints.

Paris Photo displayed many examples of techniques for creating unique photographic artwork, such as collages by Katrine de Blauwer (2021), Gert Motmans (2021) and Alexey Titarenko (2021), alternative processes like cyanotypes with a climate theme by Simon Roberts (2021) and manual painting on photographic prints by Andrea Torres (2021) and Yossef Nabil (2021).

Works of particular interest were also shown in smaller galleries. Echo Gallerie had a show with Chieko Shiraishi using an old Japanese technique known as Zokin Gake, which involves rubbing oil paints onto black and white prints with mesmerising results (Shiraishi, 2021).

I had not abandoned my idea to visualise the bottom part of a print as flooded, and in Gallerie Binome, Laurent Millet showed split photographs where one part was printed digitally and another part as cyanotype (Millet, 2021).

Hybrid photography – manual interventions

Based on my newly gained inspiration, was there a way in which I could show my own thoughts, fears and feelings in relation to the climate crisis?

- A threat – Climate change and sea level rise threaten our way of living and the wellbeing of my children and future generations.
- Fragility – Nature and ecosystems are fragile. Our misuse of resources and ignorance will cause irreparable damage.
- Indifference – We live our lives and ignore the signs as if the threat does not exist. We do not change or adapt fast enough.

For example, Threat could be shown by dramatic, unnerving scenes from nature, fallen trees, stormy skies and big waves on the sea, and in the city, subjects such as waterlines and barriers close to streets and buildings. Fragility is perhaps the easiest to find in nature in the form of thin ice, white frost and delicate foliage, whereas Indifference would be shown in everyday carefree street scenes.

I turned to methods where I could enhance the photos to show these feelings, and this quest led me to work on prints by hand in an area sometimes referred to as hybrid photography (Bittencourt, 2021). Some of the inspiring artists in addition to what I had already seen in Photo London and Paris Photo were Amy Friend (2021) and Sofia Dimitrova (2021).

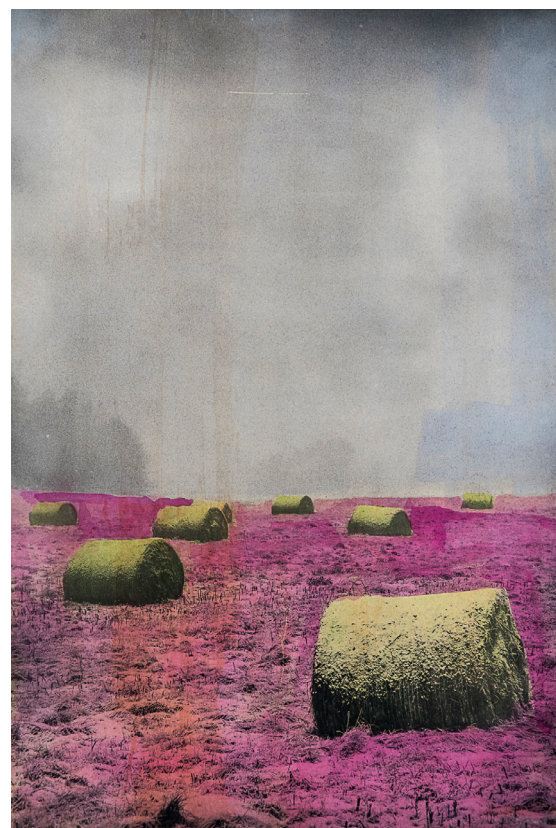
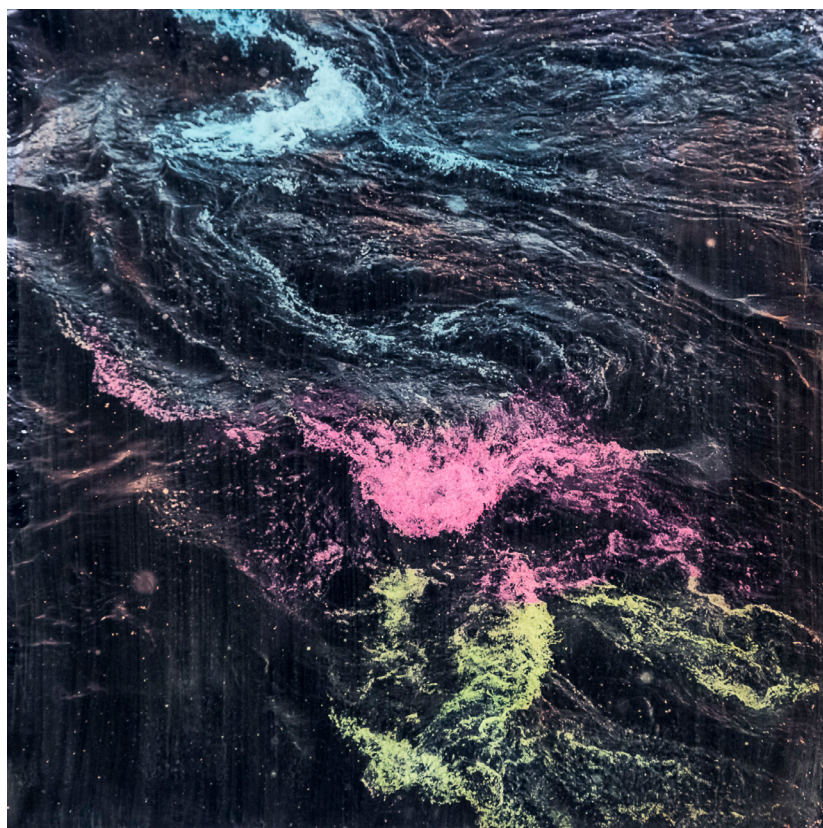
A related technique that I also decided to try is hand-colouring black and white prints using watercolours, a technique refined by Japanese artists at the end of the 19th century (Benson, 2008). Examples of contemporary artists include Shea Datar (2021) and Carine Wallauer (2021).

At this stage, I was almost overloaded with inspiration and had many ideas:

- Colourise using watercolour on black and white prints
- Punch a multitude of holes in prints and backlight them
- Scatter salt on parts of colourised prints
- Use alternative historical printing processes on parts of the photographs

To understand the techniques and skills needed, I took a workshop in alternative printing (cyanotypes and palladium printing) and online courses (at Domestika.com), learning some methods for hybrid photography as well as hand-colouring prints.

What first seemed like a source of endless creative expressions, I soon realised that the techniques by hand would require years of practice to master. Some of them were inspiring to work with, and I may return to these later, but I needed something else for this project.



Black and white inkjet prints, hand-coloured using watercolours, 2021



Backlit inkjet print with manually punched holes, 2021



Cyanotype print, 2021



Palladium print, 2021

Water and ice – natural interventions

The climate crisis is caused by mankind and our burning of fossil fuels, thereby creating an excess of carbon dioxide in the atmosphere. The warming effect is a result of chemical and physical processes, and in the search for image interventions, I now turned to nature.

Water and ice both serve as important metaphors for the climate crisis. Ice based on the fact that global warming will melt polar caps and glaciers, and water from the resulting floodings that we already see in our daily news flow. In my BA project, I successfully invited nature to be part of the creative process. How could I now involve water and ice in my interventions and use them as a metaphor for the climate crisis?

- Let natural white frost build up on prints left out in the winter cold
- Let ice melt on an inkjet print
- Flood a print in water
- Cover all or part of a print with water and let it freeze

White frost only forms under certain conditions (a substantial temperature drop, typically at night, and when the air is humid). Initial experiments showed that matte papers were more prone to catch white frost than glossy paper. The early winter nights in 2021 were not that cold and the effect was difficult to capture. Experiments in the freezer created some frost, but it was not particularly interesting from a visual point of view.

A great idea was to let ice (e.g., from a glacier) sit on a print as it melts. Modern inkjet prints and C-prints are not all that sensitive to water exposure and the effect was minimal.

Experiments with flooding prints were first conducted indoors and with prints mounted on plastic trays filled with water. It was difficult not to get distracting reflections from the ceiling, the surrounding furniture and the camera gear when rephotographing the prints. Also, to get interesting waves, I needed to stir the water and with practically small trays, the small ripples disappeared very soon and were hard to capture. Therefore, I soon moved to the sea, ever-present where I live in Vaxholm.



Inkjet print flooded in the Baltic Sea, 2021

In December, the sea was freezing cold, but still open and I waded near the shoreline and let inkjet prints float around in the sea as I rephotographed them. Depending on the weather conditions, the results could be dramatically different. On windy days, the images were distorted through the rough surface of the sea. On calmer days, ripples of the surface superimposed smooth waves onto the rephotographed photos.

In either case, the sky affected the expression. At this time of year, clear skies were rare, but when the sun appeared, light played on the surface, whereas cloudy days resulted in softer images. Chance was definitely present in these images. The flooded images represented a great metaphor for climate change, or perhaps too obvious?



Black and white Inkjet print flooded in the Baltic Sea, 2021



Inkjet print under ice from freezer, January 2022

Freezing images in ice started with experiments in the freezer. Inkjet prints were fixed on trays and a few centimetres of water was frozen on top at night. Restricted by the frame of the tray, the ice cracked when exposed to room temperatures. The effect was anything from subtle to dramatic.

At this point in the project, the visually most intriguing results originated from the flooding experiments. I also liked the fact that it was a process that invited nature as well as the fact that flooding is strongly linked to the climate crisis. This also encouraged me to continue the freezing experiments outdoors. Winter had now turned into early spring, and the sea ice in the small cove close to where I live started to melt on sunny days. Temperatures at night were still well below zero, and every morning there was a thin layer of fresh ice close to the shore.

I started to leave prints out in the sea over night to then rephotograph them in the early morning when they were covered by a thin layer of fresh ice

Natural ice is far from uniform. When I got out to the cove in the morning, I never knew what the conditions would look like, and the appearance of the ice was never the same from day to day.



Inkjet prints icebound in the Baltic Sea, February 2022



Inkjet print icebound in the Baltic Sea, February 2022

After some time, I found a shortcut: The prints did not need to stay in the sea overnight. It was simpler to carefully push them below the ice in the early morning. Sometimes, I used a steel ruler to make room just below the top layer of ice. The trick was to try not to get water on the ice, as this ruined the ice contrast. Chance was ever-present, of course, but I had the privilege to freeze the same print repeatedly until I had a result that was somewhat unique and visually compelling.

Just as flooding, ice is another metaphor for the climate crisis, and we have for years seen glaciers vanishing and polar ice caps diminishing.

The temperature difference between day and night during my freezing experiments was often just a few degrees centigrade but made a huge impact on the final visual result.



Rephotographing an inkjet print below the ice, March 2022

Time-lapse videos

The process of ice melting or the opposite, ice building up, is visually highly symbolic, showing the difference of what the Paris Agreement goal of 1.5°C can do to our environment. I wanted to catch this in short videos in addition to the still photos. The method was to create time-lapse videos of ice both freezing and melting.

The freezing videos were made outdoors during cold nights and with inkjet prints once again fixed in a tray filled with water. I set the alarm clock every hour to photograph the progress of ice building up. A flash was bounced from the

white ceiling of a patio to get similar lighting conditions. Typically, the time lapse was recorded for 10 hours and with the limited number of photos, one-minute clips were created using long video transitions between images. I will return to these experiments when (if) really cold winter days return.

Videos of melting ice were easier to create. Here, thin flakes of ice were gathered from the sea and placed on top of the prints in trays. Depending on the amount of ice and the surrounding temperature, the melting process could be anything between 5 and 10 hours. Experiments were carried out both indoors, with controlled flash lighting, and outdoors on warm days, using natural (and thus varying) light. The resulting time-lapse videos are made from more shots, typically 20 but in one case even 2,000 shots.

Other developments

One of the workshops of the MA programme was held in secluded Patreksfjörður in Iceland. Here, I had the opportunity to continue with my freezing and flooding experiments. I took some new photos in which I deliberately included the environment as a frame for the images. This obviously reveals the method of flooding and freezing and, in some cases, adds to the aesthetics. However unless I want to discuss the method per se, I decided to present the images as cropped without the extended frames for the final project.

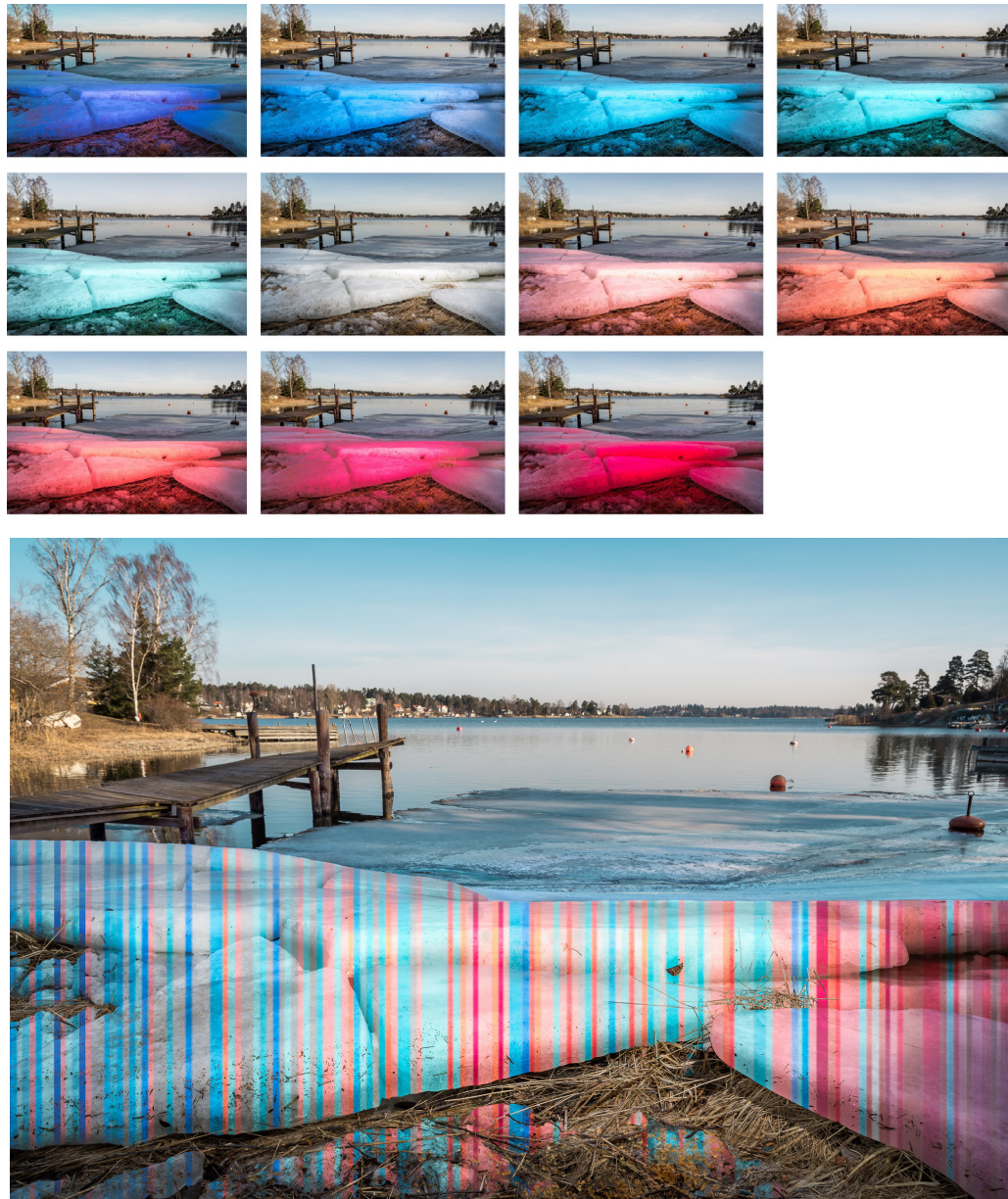


Inkjet print flooded near the Icelandic shore, April 2022

Climate research scientists produce enormous amounts of data, and there is a strong need to visualise the phenomena and processes researched, not only to communicate their findings within the research community, but also to disseminate the understanding and climate consequences to politicians and the wider public (Schmidt & Wolfe, 2009).

The motto for the Royal Institute of Technology from where I have a PhD in physics is “Science and Art”.

I wanted to link my scientific background to my photography practice and relate these to the MA project. My take on warming stripes introduced in Chapter 2, (see diagram on page 3) was made in the cove close to my home and by gel-coloured flash lighting of winter’s very last ice on the shore. The coloured temperature stripes on the ice are then the result of a composite image. The temperature series is the annual average temperature for Sweden ranging from 1860 to 2020.



Warming stripes showing annual average temperatures in Sweden 1860–2020. Dark blue represents 2 °C and dark red 8 °C. The coloured stripes are superimposed on winter’s last ice in a cove near Vaxholm, Sweden, April 2022.

Feedback & reviews during the process

The reception of an image is in the eye of the beholder and out of control of the photographer (Barthes, 1981). However, if my intent is to send a message, evoke feelings or even encourage action, feedback and reviews of my photographic project are important in order to understand how the project is received and understood. Therefore, I have during the MA project shown and discussed the visual material in progress in different settings:

- In the MA class of twelve students and our Artistic Director, Dr. Paul Bevan
- With my mentor, photographer Tim Flach
- In portfolio reviews in Helsinki (February), Stockholm (May) and Arles (July)
- At a first collective exhibition Planket Stockholm (August) where I showed three images from the project

These discussions are summarised in Appendix B. My main takeaways are

- Focus on one intervention to make a series that is visually coherent. After this lengthy process, I thus selected freezing prints as my method.
- Maintain focus in the narrative. The themes *The End of Winter* and *Innocent Childhood* are well-understood. If the third theme *From Denial to Engaged* should be in the project it needs to be carefully presented to not be patronising.
(For a definition and presentation of these three themes, see Chapter 5 – The visual project).
- Create more variation in the final exhibit by
 - Adding in-between shots (pauses, still life, abstract)
 - Differentiating the ways in which the three themes are presented
- An exhibition based on the project should emphasise the process
- Work on the sound in the time-lapse videos. Find natural sounds or more disharmonic music.

In the end, the choices are up to me as an artist, and the result of my work and considerations are presented in the next chapter.

5 THE FINAL VISUAL PROJECT

The End of Winter

In contrast to the images we are used to seeing communicating the climate crisis problems, effects and mitigations, I wanted to create a more personal story. How will the crisis affect my nearby surroundings? How will people on the street manage its consequences? And what is my part in all this? These questions defined my subject matter, and during the project, I have created images in three themes. In order to turn the disparate themes into a visually unified series, I have used the same process for all photos of freezing prints in the Baltic Sea or in some instances in the freezer and rephotographing them under a thin sheet of ice. The resulting images are presented in this chapter.

My work is process-driven, and in Appendix C, I show how a future exhibition may invite the viewer to participate.

Even if future generations will face the ultimate consequences of our way of living, what will we lose first? How will we notice the signs in our local environment?

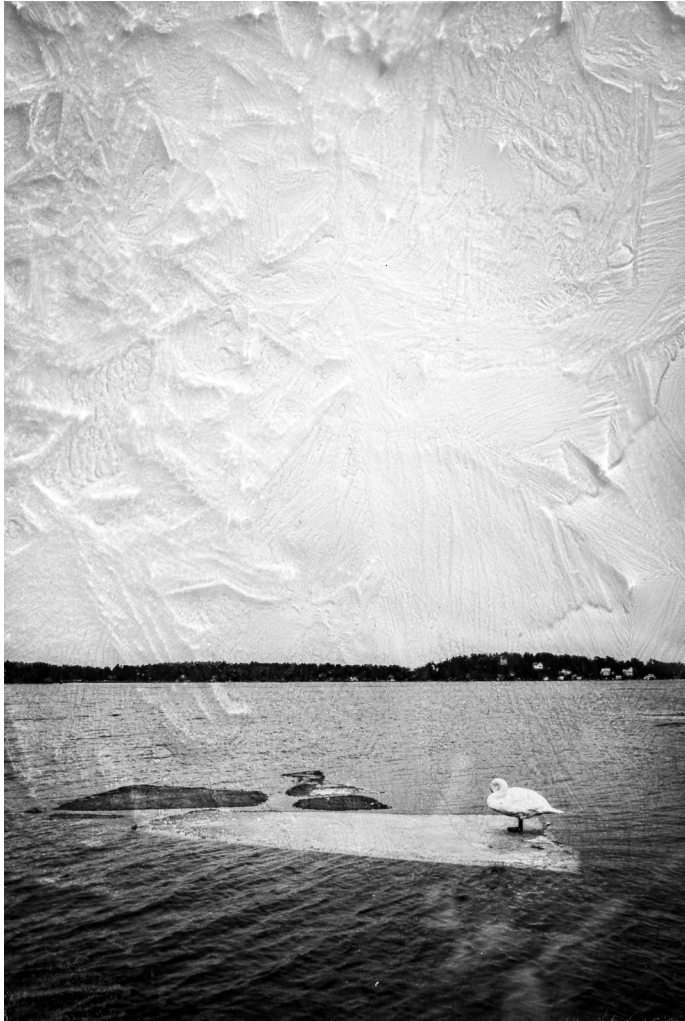
The scientific facts, presented in Chapter 2, of where we are heading are indisputable. The average temperatures in my neighbourhood are increasing, and the number of winter days with snow coverage is decreasing rapidly.

In the Nordic region, winter and ice are crucial for the national identity, and the dramatic change of seasons is in our DNA. Now, this is at risk, meaning that the climate crisis is also becoming an identity crisis. In just a few decades, winter is coming to a definite end, if not dying.

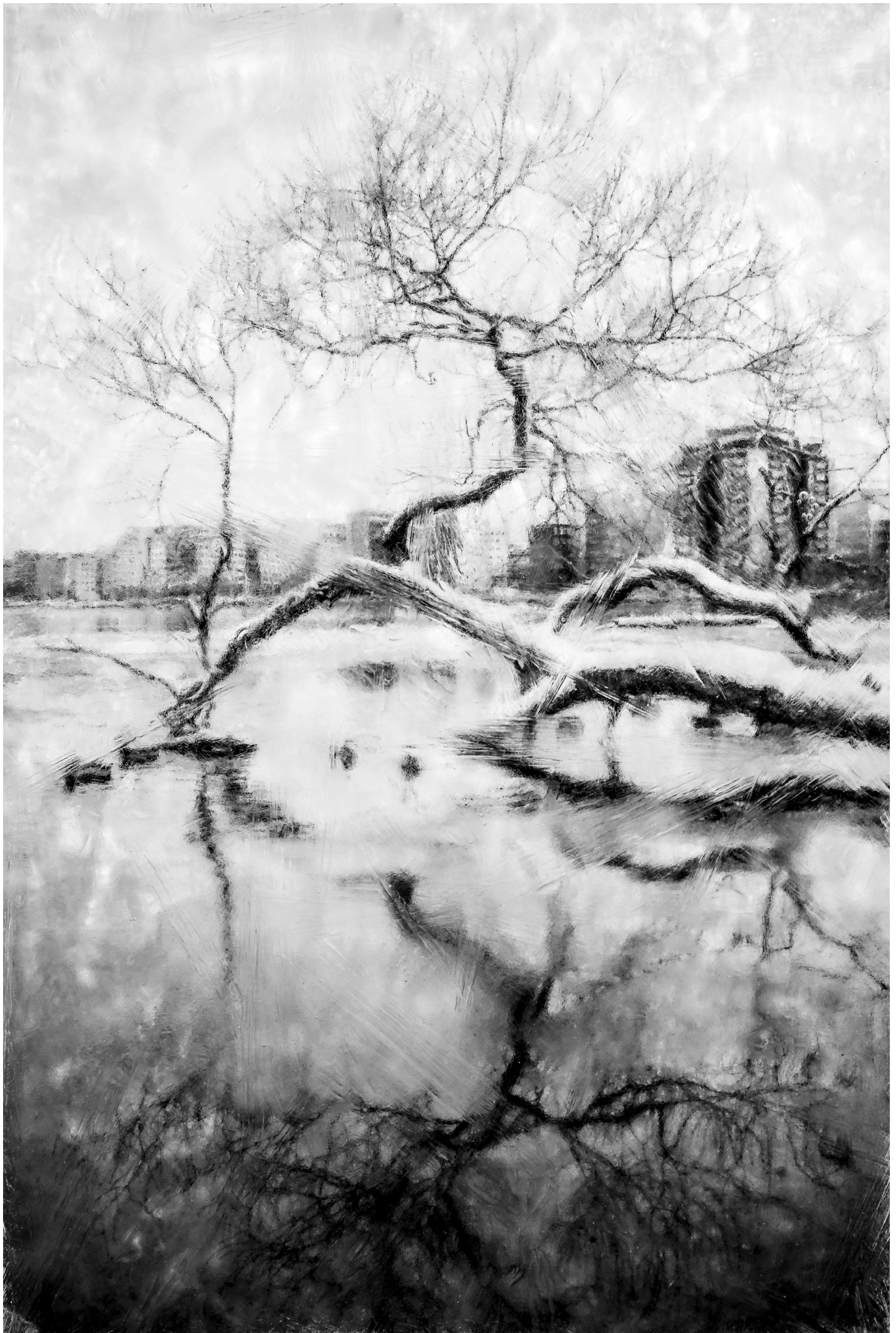
In this theme, I have photographed winter landscapes when it is still possible. The moody black and white images become part of my grieving process in knowing that my beloved winters are dying.

















Innocent Childhood

The great acceleration, described in Chapter 2, led by socio-economic growth and the resulting rapid, often exponential, changes to the earth systems started in the 1950s. Still today, our way of living is dependent on burning fossil fuels, which is the main cause of the climate crisis.

I grew up in the 1960s, oblivious and innocent. As I grew older and formed my life, I noted the reports of the effect of greenhouse gases but took no particular action. I and many in my generation in the developed world have lived with an exploitative mindset exhausting the planet's resources and ultimately causing the climate crisis.

The images representing this theme are original diapositives taken by my mother more than 50 years ago. I have scanned and printed them, and the prints have undergone the freezing treatment in the sea.

At the start of a decade that will be crucial for alleviating our mistakes, my first grandchild was born. Will he be able to grow up as carefree as I did, or will my life in abundance hamper his?

















From Denial to Engaged

We live our lives and ignore the signs as if the threat from climate change does not exist. We do not change or adapt fast enough. Are the consequences and timescales too large to grasp? What is required for us to engage in building a sustainable world?

We don't much want to be told that we're the problem, primarily because it implies we would have to change some of our ways. In a consumer society, those habits constitute a large part of our identity, not to mention our net worth . . .

Environmentalist and author
Bill McKibben (2005)

As I walk the streets of my local community or the nearby city of Stockholm, I wonder where on Kimberly Nicholas' *Five Stages of Climate Acceptance* the people I meet can be found? Are some still denying climate change? Who are in despair? Have some already delt with the identity crisis and passed the transition to become climate heroes with a purpose?

The photographs in this theme are recent street photographs, all subject to my freezing process.

















Contextualising the photographs

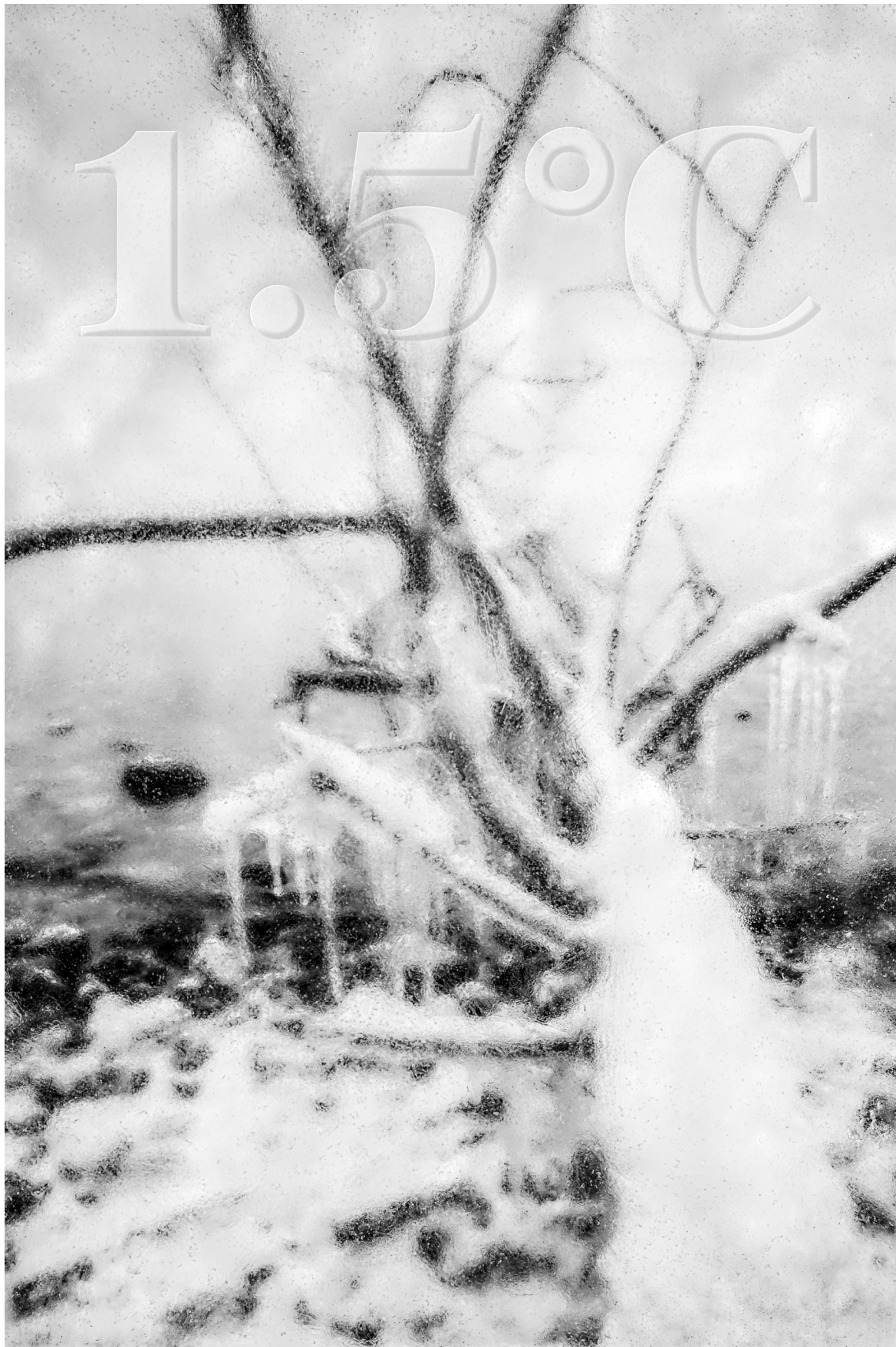
My project with three themes does not show smokestacks, polar bears in distress or solar cells, which is why it does not straightforwardly fit into the environmental photography areas depicting problems, effects or mitigations. Instead, the three themes are personal, and the link between the subject matter and the climate crisis is not obvious at first glance. The imagery consists of series that grow if they are kept together. As single images, the climate topic is even less evident. Guiding the viewer to the climate crisis requires adding some context, titles or short texts.

Irish artist and photographer Willie Doherty (b. 1959) juxtaposes texts or places texts in the photographs. Typically, his photographs are black and white topological landscapes loaded with ambiguity, often shown as diptychs.

The texts add to the complexity and takes the viewer to what Edward Soja calls the thirdspace, a space in between firstspace, the real physical world, and secondspace, our conception of the physical space (Gladwin, 2014). Hence Doherty emphasises the multiple meanings in a photograph and triggers the viewers analysis, thoughts and emotions.

I have added texts inspired by the science part in Chapter 2 to images from my three themes. I include the texts digitally as embossed words to guide the viewer to the topic of the climate crisis and in a manner that disturbs the reading in a subtle way. Other cues to the climate crisis can also be considered such as scientific texts or those suggested in Appendix C, on outlining an exhibition.







6 DISCUSSION

Climate change and even the climate crisis are not easily conveyed in a photographic image. The effects of global warming may take decades before having an adverse effect on the environment. The consequences are also frequently a loss or disappearance – melting glaciers, loss of habitats, less available freshwater, all of which are hard to depict.

Climate change is a very complex problem and in a sense it's not photographic. From looking at a single image you don't know if a glacier is melting or receding, or even that there is a problem. You can't show the catastrophe without comparative images and text to bring it into context

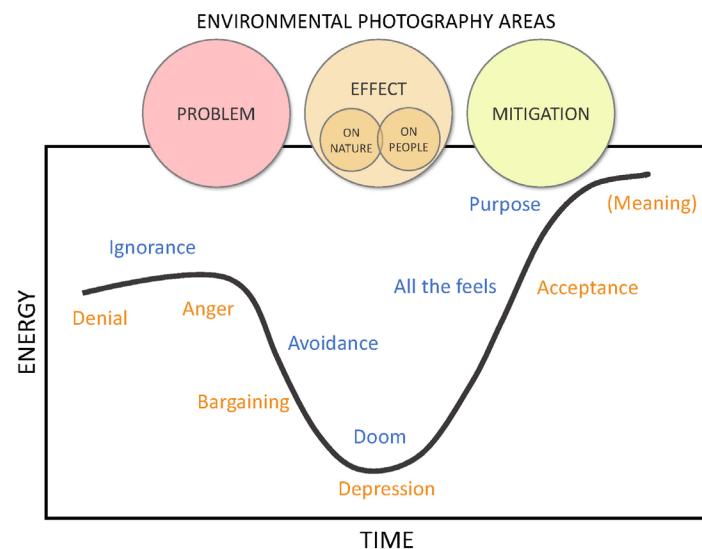
Photojournalist Nick Cobbing (Smyth, 2007)

Climate change is what Timothy Morton defines as hyper objects, objects that are massively distributed in time and space and thus cannot be localised in their entirety, neither

spatially nor temporally. A hyper object is also characterised by inter-objectivity or formed by relations to other objects (for climate change, perhaps the sun, fossil fuels and greenhouse gases) and yet will only be manifested as information on other entities (e.g., sea level and atmospheric temperatures) (Morton, 2012).

In a study on Greenpeace's climate change communication, Doyle argues that our common view that "seeing is believing" has actually represented a problem in relation to scientific knowledge and recommends persuading the public that not all environmental problems are visible and can be seen (Doyle, 2007).

The three areas of contemporary environmental photography in different ways showing problems, effects or mitigations create attention regarding the issue and motivation for behavioural change. If we relate these image areas to Nicholas' five stages of climate acceptance, it is reasonable to suggest that they entice viewers depending on their stage in the model as shown in the figure below.



Proposed matching of the areas of environmental photography and the models for individual crisis management

The literature shows that photographs representing anthropogenic problems may alienate and distance the viewer from the crisis. Images of the gruesome effects of climate change on nature or people and our societies can throw us into depression and doomsday feelings. Both of these environmental image areas, however, are beneficial for creating attention to the crisis. From here, more positive images showing people, local initiatives, proofs of change and alleviations of the problem will help us get out of the pit of despair.

But is there another way to visualise the climate crisis and engage the viewer, both their mind and to create a behavioural change? As reviewed in Chapter 3, inventive environmental art photographers can create images that go beyond the normal iconography of the climate crisis.

Chapman et al. (2016) conclude that contextualising less obvious but powerful images represents an effective way forward. In a study conducted during the 21st UN climate summit in Paris, Klöckner and Sommer (2021) analyse the psychological mechanisms by which climate change-related art may create attention and support for climate policies. Their findings suggest that if art can induce sufficiently strong interest and emotional reactions, it may start a process of reflection and eventual action. These findings suggest that there is a need for more contemplative work where the viewer is engaged in a deeper sense.

Even with the metaphors of ice and the sea my images and themes are not obviously associated to the climate crisis. One way of contextualising them is to add texts, as shown in Chapter 5, leading the viewers reading of the images to consider the consequences of our anthropocentric lives.

It is up to the artists to bring back stories and emotions on a human scale of these tangible climatic changes that we ignore at our peril

Director of the Cape Farewell project
David Buckland (2017)

All photographs in my project are taken locally, in or near places where I have lived. This adds to the personal qualities of the project and engages the viewer with regard to behavioural change better than images from faraway places (O'Neill & Nicholson Cole, 2009; Milfont, 2010; Seelig, 2015; Marks et al., 2016). In addition, this is a signum of my way of working. Many environmentalist photographers, reviewed in Chapter 3, travel the world to exotic places to find unique subjects. I have chosen to find the subject matter in my immediate vicinity. This choice is not only practical but also environmentally conscious.

Out of the eight art photography categories suggested by Cotton (2014), my photographs relate to three. First and foremost is *materiality*. For all themes, I rely on the physical prints of my photographs regardless of whether the originals are digital or diapositive films, and they are all subject to the same freezing process. The process creates a new layer of information in the pictures, where the thin ice is a metaphor for climate change showing that just a few degrees difference will make a dramatic change in the photos but surely also in our lives.

My action of placing the prints in the sea is an intervention with the landscape, but whereas land art is a much more direct way of making permanent or irreparable changes to the landscape, and often on a large scale, my method is more subtle, and after rephotographing the prints, the only remaining traces I leave behind consist of broken ice.

The second category is *aesthetic*. I have always been drawn to the expression of Impressionist painters who could convey a feeling or sensation with their fleeting brushstrokes while emphasising human perception. I am also inspired by the first art photographers – the Pictorialists who at the end of the nineteenth century challenged painting artists with black and white photographs saturated with atmosphere, blurriness and grain. My freezing process creates images with a visual expression that can be recognised in Pictorialist photos or Impressionist paintings. An important difference, however, is the fact that artists representing these movements rarely worked with a political idea or cause in mind. Combining aesthetic artwork with the grave topic of the climate crisis can be problematic. T. J. Demos (2017) uses a quote from Walter Benjamin to criticise how the beauty of Burtynsky's photos of the

American oil fields tends to neutralise the detrimental effects of the fossil industry.

Humanity's self-alienation has reached such a degree that it can experience its own destruction as an aesthetic pleasure of the first order.

Walter Benjamin (1969)

In my work I use aesthetics, not to beautify the climate problems or effects, but as a means to initially attract the viewers' attention. With additional complexity, layers or meanings and contextualisation, the artwork could consequently inspire reflection and, in a best case scenario, a behavioural change.

The third and last art category where my project fits in is *intimate*; however, in my case, personal is perhaps a better term. Communication approaches taking this route are more likely to engage individuals with regard to climate change (O'Neill & Nicholson-Cole, 2009). In the theme *Innocent Childhood*, I consider my own role in the climate crisis in a subtle way. Even though these photos are portraits of me from my childhood, the freezing treatment obliterates the possibility of identification. Perhaps this helps make the theme more general in the sense that the viewers can more easily identify themselves and thereby trigger thoughts regarding their own role in the climate crisis.

The End of Winter theme reflects the forthcoming loss of winters. With my love for the great outdoors, this is an almost unthinkable deprivation. In *Camera Lucida*, Roland Barthes in great detail describes a photograph of his passed mother in a winter garden and analyses his feelings of loss and death based on the photograph (Barthes, 1981). His analysis leads to his definition of *Noeme*, or the fact that the photograph is evidence of "what-has-been". In my project, the loss concerns winter itself and the garden of Holocene. It is heart-breaking to think of these in past tense or as "what-has-been"—the climate crisis becomes a personal identity crisis.

In conclusion, I present a project referencing the climate crisis by means of physical photographic interventions with the sea and ice. It is my hope that its personal and aesthetic qualities will spark an interest and engage the viewer to make a behavioural change with a pro-environmental outcome.

REFERENCES

- Albrecht, G. (2005) “Solastalgia”. A New Concept in Health and Identity’, PAN: Philosophy Activism Nature, (3), pp. 41–55. doi:10.3316/informit.897723015186456
- Arrhenius, S. (1896) ‘XXXI. On the influence of carbonic acid in the air upon the temperature of the ground’, Philosophical Magazine Series 5, 41(251), pp. 237–276
- Barthes, R. (1981). Camera Lucida: Reflections on Photography. New York: Hill and Wang
- Benson, R. (2008). The printed picture. New York: Museum of Modern Art
- Bendandi, L., Antonini, M., Minniti, S., Gómez, F., Lungarella, G. & Bendandi, L. (2015). Experimental Photography: A handbook of Techniques. New York: Thames & Hudson Inc.
- Benjamin W. (1969). The Work of Art in the Age of Mechanical Reproduction, in Illuminations, edited by Hannah Arendt, translated by Harry Zohn, from the 1935 essay. New York: Schocken Books
- Bittencourt D (2021) Fotografia híbrida, Entrelinha Editora
- Brandt, M. (2014) Lakes and reservoirs. Bologna, Damiani Press and Yossi Milo Gallery
- Buckland, D., MacGilp, A., Parkinson, S. (eds.) (2017) Burning ice Art & climate change. Gaia Project Press
- Carlson, J.M. et al. (2020) ‘Paying attention to climate change: Positive images of climate change solutions capture attention’, Journal of Environmental Psychology, 71. doi:10.1016/j.jenvp.2020.101477
- Carson, Rachel (1962). Silent spring. Boston: Houghton Mifflin
- Cotton, C. (2014). The Photograph as Contemporary Art. 3rd edition. New York: Thames & Hudson
- Crutzen, P.J. (2002) ‘Geology of mankind’, Nature, 415(6867), p. 23. doi:10.1038/415023a
- Demos, T. J. (2017). Against the Anthropocene: visual culture and environment today. Berlin: Sternberg Press
- Doyle, J. (2007) ‘Picturing the Clima(ct)ic: Greenpeace and the Representational Politics of Climate Change Communication’, Science as culture, 1 January, pp. 129–150
- Gladwin, D. (2014) ‘Thirdspace in Willie Doherty’s Photo-Text Diptychs of Northern Ireland’, Visual Culture in Britain, 15(1), pp. 104-122. doi:10.1080/14714787.2014.870447

- Greenwalt, D.A. and Creech, B. (2018) 'Nostalgic environmentalities in the EPA's Documerica and State of the Environment projects', *Visual Communication*, 19(4), pp. 458-482. doi:10.1177/1470357218779119
- Hannah D, Cooper, Brenda, Eschrich, Joey & Selin, Cynthia (red.) (2018). *A year without a winter*. New York: Columbia Books on Architecture and the City
- Hardin, G. (1968) 'The Tragedy of the Commons', *Science*, 162(3859), pp. 1243-1248
- Klett, Mark (2014) 'On new topographics: Man-Altered Landscapes and Revolutions' in 'Broken: Environmental Photography'. Stockholm: Art and Theory Publishing
- Kumar, N. (2014) 'Repetition and Remembrance: The Rephotographic Survey Project', *History of photography*, 38(2), pp. 137-160
- Kübler-Ross, Elisabeth (1970). *On death and dying*. London: Tavistock
- Kübler-Ross, Elisabeth & Kessler, David (2014). *On grief & grieving: finding the meaning of grief through the five stages of loss*. Trade paperback edition London: Simon & Schuster
- Macdonald Patricia (2022). *Surveying the Anthropocene: Environment and Photography Now*. Edinburgh: University Press
- Marien, Mary Warner. (2011). *Photography: a cultural history*. 3rd ed. Upper Saddle River, NJ: Pearson Prentice Hall
- Marks, M., Chandler, L. and Baldwin, C. (2016) 'Re-imagining the environment: using an environmental art festival to encourage pro-environmental behaviour and a sense of place', *Local environment*, 21(3), pp. 310-329
- Marsh, A. (1963) 'The December smog, a first survey', *Journal of the Air Pollution Control Association*, 13(8), pp. 384-387. doi:10.1080/00022470.1963.10468197
- McKinnis, J. (1993) *Coloring my world by hand*, *Petersen's Photographic*, 21(11)
- Milfont, T. L. (2010) *Global warming, climate change and human psychology*. In Frías Armenta, Martha, García Cadena, Cirilo Humberto & Corral Verdugo, Victor (eds.). *Psychological Approaches to Sustainability: Current Trends in Theory, Research and Applications* Nova Science Publishers Inc
- Mittermeier, C. (2005) *Conservation Photography - Art, Ethics, and Action*. *International Journal of Wildlife* vol. 11, no. 1 pp. 8-13
- Morton, Timothy (2012). *The ecological thought*. 1st Harvard University Press paperback ed. Cambridge, Mass.: Harvard University Press
- Nicholas, Kimberly (2021). *Under the sky we make: how to be human in a warming world*. New York: G.P. Putnam's Sons
- O'Neill, S. J. (2013) 'Image matters: Climate change imagery in US, UK and Australian newspapers', *Geoforum*, 49, pp. 10-19. doi:10.1016/j.geoforum.2013.04.030

- O'Neill, D.W., Fanning, A.L., Lamb, W.F. et al. (2018). A good life for all within planetary boundaries. *Nat Sustain* 1, 88–95 doi:10.1038/s41893-018-0021-4
- Palermo, C. (2007) 'The World in the Ground Glass: Transformations in P. H. Emerson's Photography', *The Art Bulletin*, 89(1), pp. 130–147
- Panu, P. (2020) 'Anxiety and the Ecological Crisis: An Analysis of Eco-Anxiety and Climate Anxiety', *Sustainability*, 12(19), p. 7836. doi:10.3390/su12197836
- Pawlik, K. (1991) 'The Psychology of Global Environmental Change: Some Basic Data and an Agenda for Cooperative International Research', *International Journal of Psychology*, 26(5), p. 547. doi:10.1080/00207599108247143
- Persson, L. et al. (2022) 'Outside the Safe Operating Space of the Planetary Boundary for Novel Entities', *Environmental science & technology*, 1 January, pp. 1510–1521
- Photoclimat (2021) *Photoclimat les artistes s'engagent pour la planète*. Paris: Éditions Gründ
- Schaaf, Larry J. (2018). *Sun gardens: cyanotypes by Anna Atkins*. New York, NY: The New York Public Library
- Schmidt G, Wolfe, J (2009). *Climate change: picturing the science*. 1st ed. New York: W.W. Norton
- Schwaab, L. et al. (2022) 'Climate Change Related Depression, Anxiety and Stress Symptoms Perceived by Medical Students', *International journal of environmental research and public health*, 19(15). doi:10.3390/ijerph19159142
- Seelig, M.I. (2015) 'Advocating Environmental Issues Beyond Photography', *Qualitative research reports in communication*, 16(1), pp. 46–55
- Smyth, D. (2007) 'Global warning', *British Journal of Photography*, 154(7647), pp. 29–32. Available at: <https://search.ebscohost.com/login.aspx?direct=true&db=edo&AN=26400983&site=eds-live&scope=site>
- Steffen, W., Sanderson, A., Tyson, P.D. (2004) *Global Change and the Earth System: A Planet Under Pressure*. The IGBP Book Series. Berlin, Heidelberg, New York: Springer-Verlag
- Steffen, W. et al. (2015) 'The trajectory of the Anthropocene: The Great Acceleration', *Anthropocene Review*, 2(1), pp. 81–98. doi:10.1177/2053019614564785
- Stoknes, P.E. (2014) 'Rethinking climate communications and the "psychological climate paradox"', *Energy Research & Social Science*, 1, pp. 161–170. doi:10.1016/j.erss.2014.03.007
- Wackernagel, M., Kitzes, J., Moran, D., Goldfinger, S. & Thomas, M. (2006). The Ecological Footprint of cities and regions: comparing resource availability with resource demand, *Environment and Urbanization*, 18 (1) 112. DOI: 10.1177/0956247806063978
- Wackernagel, M., Beyers, B. & Rout, K. (2019). *Ecological footprint: managing our biocapacity budget*. Gabriola Island, British Columbia: New Society Publishers

Wang, S, Corner, A, Chapman, D & Markowitz, (2018), 'Public engagement with climate imagery in a changing digital landscape', Wiley interdisciplinary reviews.Climate change, 9(2), p. e509. doi:10.1002/wcc.509

Wellum, C. (2017), 'The Ambivalent Aesthetics of Oil: Project Documerica and the Energy Crisis in 1970s America', Environmental History, vol. 22, no. 4, pp. 723-732

Whitley, C.T., Kalof, L. and Flach, T. (2021) 'Using Animal Portraiture to Activate Emotional Affect', Environment & Behavior, 53(8), pp. 837-863

Digital sources

Attenborough, D. 'The Garden of Eden Is No More' (2019) Vital Speeches of the Day, 85(4), p. 114. Accessed 2022-08-10, <https://search-ebscohost-com.ezp.sub.su.se/login.aspx?direct=true&db=buh&AN=135595670&site=eds-live&scope=site>

Barthes, R. 'The death of the author' (1967) Aspen, no. 5-6, accessed 2022-10-14 <https://ubu.com/aspen/aspen5and6/threeEssays.html>

Bastin J-F, Clark E, Elliott T, Hart S, van den Hoogen J, Hordijk I, et al. (2019) Understanding climate change from a global analysis of city analogues. PLoS ONE 14(7): e0217592. <https://doi.org/10.1371/journal.pone.0217592>

Datar S. Artist website, accessed 2021-10-30 <https://www.shaedetar.com/>

Davies E. Artist website, accessed 2021-12-10 <https://elliedavies.co.uk/gallery/seascapes-2020/>

De Blauwer K. Artist webpage, accessed 2021-12-03 <https://www.katriendeblauwer.com/?nspl>

Dimitrova S. Artist website, accessed 2021-11-05 <https://sofiadimitrova.art/>

Friend A. Artist website, accessed 2021-10-27 <http://www.amyfriend.ca/>

Gill S. Artist website, accessed 2021-10-10 <https://www.stephengill.co.uk/portfolio/portfolio>

Harries S. Project Octopus in Webber gallery, Photo London 2021, accessed 2022-01-05 <https://www.webberrepresents.com/exhibitions/photo-london-1>

Hawkings, E. (2018) Warming stripes, Climate lab book. Accessed 2022-09-23 <https://www.climate-lab-book.ac.uk/2018/warming-stripes/>

IPCC, website of The Intergovernmental Panel on Climate Change, accessed 2022-05-12 <https://www.ipcc.ch/>

Jylhä K. (2016) 'Refusing to acknowledge the problem: Interests of the few, implications for the many', Environment, climate change and international relations IR Edited Collections, pp. 75-85. Accessed: 18 August 2022). <https://search.ebscohost.com/login.aspx?direct=true&db=edsswe&AN=edsswe.oai.DiVA.org.uu.288681&site=eds-live&scope=site>

- Kirchner, N. (2021) Warming stripes – visualisations of annual temperature series from the Nordic countries. Dataset version 1. Bolin Centre Database, accessed 2022-02-17 <https://doi.org/10.17043/kirchner-warming-stripes-1>
- Klett, M. and Martinsson, M. in Adamson, J., & Davis, M. (Eds.). (2016). *Humanities for the Environment: Integrating knowledge, forging new constellations of practice* (1sted.). Routledge. <https://doi-org.ezp.sub.su.se/10.4324/9781315642659>
- Klöckner, C.A. and Sommer, L.K. (2021) ‘Visual art inspired by climate change—An analysis of audience reactions to 37 artworks presented during 21st UN climate summit in Paris’, *PLoS ONE*, 16(2), pp. 1-18, accessed 2022-07-29, <https://doi.org/10.1371/journal.pone.0247331>
- Kull, M. (2018). To my grandchildren – Nordic glaciers. Contextphoto, accessed 2022-06-13 <http://contextphoto.com/albums/to-my-grandchildren-nordic-glaciers/>
- Kull, M. (2021). När vi inte längre finns (Eng: When we are gone), Theseus Finland, accessed 2022-06-13 https://www.theseus.fi/bitstream/handle/10024/743903/N%C3%A4r%20vi%20inte%20%C3%A4ngre%20finns_Martin%20Kull%20compressed.pdf?sequence=2
- Leiserowitz, A., Maibach, E., Rosenthal, S.A., Kotcher, J., Bergquist, P., Ballew, M.T., Goldberg, M.H., Gustafson, A., 2020. Climate change in the American mind: November 2019, accessed 2022-08-19 <https://doi:10.31234/osf.io/z3wtx>
- McKibben, B. (2005), Grist “What the warming world needs now is art, sweet art”, accessed 2022-09-16. <https://grist.org/article/mckibben-imagine/>
- Mendel, G. 2015. Face to face with Gideon Mendel, ARTCOP21, accessed 2022-06-13. <http://www.artcop21.com/events/8521/>
- Millet L. Artist website Project Cyanomètre, accessed 2021-12-15 <http://laurent-millet.com/Cyanometre>
- Motmans G. Artist website, accessed 2021-12-09 <https://gertmotmans.com/>
- Nabil Y. Artist website, accessed 2021-12-01 <https://www.youssefnabil.com/works/#/3>
- Reiss, J. author (2021) ‘Art and climate change’, *Oxford Art Online* [Preprint]. <https://doi:10.1093/oao/9781884446054.013.90000369384>
- Roberts S. Artist website, project The Celestial, accessed 2021-12-15 <https://www.simoncroberts.com/work/the-celestials/>
- Sanderson K. (2016) Balancing preservation strategy & artist intent, *Treatment of a Unique Chromogenic Print by Matthew Brandt*, *VoCA Journal*, Feb. 8, accessed 2021-11-10 <https://journal.voca.network/balancing-preservation-strategy-and-artist-intent/>
- Shiraishi C. Artist webpage book project Shimakage, accessed 2021-11-10 <https://www.shashasha.co/en/book/shimakage>
- Shubinski. (2009). *From FSA to EPA: project documerica, the dustbowl legacy, and the quest to photograph 1970s America*, University of Iowa. Accessed 2022-08-23 <https://doi.org/10.17077/etd.ernl7umv>

SMHI, the Swedish Meteorological and Hydrological Institute, definition of winter accessed 2022-02-05. <https://www.smhi.se/kunskapsbanken/meteorologi/arstider/vinter/vinter-1.22843>

SMHI snow coverage presented by the city of Stockholm, accessed 2022-02-05. <https://miljobarometern.stockholm.se/klimat/klimat-och-vaderstatistik/snotacke/>

SMHI, the Swedish Meteorological and Hydrological Institute, web based tool for historical and predicted temperatures in Swedish regions, based on different scenarios, accessed 2022-02-05 https://www.smhi.se/klimat/framtidens-klimat/fordjupade-klimatscenarioer/met/stockholms_lan/medeltemperatur/rcp85/2041-2070/winter/abs

Titarenko A. Artist website, project Nomenclature of signs, accessed 2021-12-05 <http://www.alexeytitarenko.com/#/nomenclatureofsigns/>

Torres A. Artist website, project The Unknown, accessed 2021-11-28 <http://www.andreatorresbalaguer.com/3897149-the-unknown#1>

United Nations treaties. (2015) Paris agreement. Accessed 2022-10-17 https://treaties.un.org/doc/Treaties/2016/02/20160215%2006-03%20PM/Ch_XXVII-7-d.pdf

Image sources

Barker, M. (2013) Accessed 2022-08-23 www.lensculture.com/articles/mandy-barker-hong-kong-soup-1826-1826

Brandt, M. (2013) Accessed 2022-08-29 matthewbrandt.com/lakesandreservoirs

Dean, T. (2019) accessed 2022-08-15 <https://michaelreid.com.au/art/endangered-11b/?context=22499&v=322b26af01d5>

Duggleby, L. (2019) Accessed 2022-08-23 www.climateheroes.org/isatou-ceesay-turning-waste-to-wealth

Eliasson O. (2019) Accessed 2022-08-24 glacermelt.is/#glacier9

Gill, S. (2011) Accessed 2022-08-30 www.stephengill.co.uk/portfolio/portfolio/nggallery/album-1-2/coexistence

Henry, N. (2013) Accessed 2022-08-15 <https://artxlagos.com/Nicolas-Henry-La-Planete-Du-Lac-Kivu-2013-arch-d>

Kirchner N. (2021) Warming stripes – visualisations of annual temperature series from the Nordic countries. Dataset version 1. Bolin Centre Database, accessed 2022-02-17 <https://doi.org/10.17043/kirchner-warming-stripes-1>

Lieber, T. (2016) Accessed 2022-08-20 www.timolieber.com/works/view/thaw-2/thaw

McFetridge, A. (2019) Accessed 2022-08-24 alan-mcfetridge.com/#/fire-in-australia/

Mendel, A. (2018) Accessed 2022-08-25 gideonmendel.com/submerged-portraits/

Misrach, R. (1983) Accessed 2022-08-20 www.moma.org/collection/works/185913

Mittermeier, C. (2016) Accessed 2022-08-23 www.theatlantic.com/sponsored/sony-gallery/at-the-waters-edge/670/

Monteiro, F. (2013) Accessed 2022-08-19 <https://fabricemonteiro.viewbook.com/>

Muniz, V. (2018) Accessed 2022-08-26 architecturaldigest.com/story/artist-vik-muniz-2016-exhibition

Steffen W. et al. (2015) 'The trajectory of the Anthropocene: The Great Acceleration', *Anthropocene Review*, 2(1), pp. 81-98. [https://doi: 10.1177/2053019614564785](https://doi.org/10.1177/2053019614564785)

Appendix B – Summary of thirteen portfolio reviews

February 23, 2022, MA programme reviews in Helsinki

Showed portfolio (A3 format), 20 min

- Nordic glaciers as intro (8 images)
- BA project (When we are gone) (7 images)
- MA project (*The End of Winter* & *From Denial to Engaged*) (5 images both flooded and frozen)

Laura White, Exhibition Director, VB Photography Centre Kuopio

Laura saw the interventions as layers of the image. Best when the layers blend with the image. She also liked when details from the landscape/nature enter the frame. She proposed having more focus in the review (fewer themes). Of the two MA topics shown, she liked the human component in *From Denial to Engaged* the most. Be brutal to get to the core of the project. Be (more?) enthusiastic when presenting.

Terhi Tuomi, curator, Amos Rex Helsinki

Try other interventions but decide on one only for the final project to create a visual unity (for now, freezing or flooding). Flooding photos may be a bit too obvious. Stick to the more abstract expressions.

Reference: Jorma Puranen (images reflected in wood painted black)

Elina Heikka, Museum Director Finnish Museum of Photography Helsinki

The intervened photos have a visual expression resembling analogue processes and a painterly effect. Project well thought through. The themes *The End of Winter* and *From Denial to Engaged* go well together.

Paul Bevan, tutor MA programme

Estheticise less. Keep the original prints after intervention as physical objects and as proof of the intervention. Continue with historic processes and try time lapses.

May 1, Mentor feedback Tim Flach

Showed portfolio (PDF online), 1 hr

- MA project (*The End of Winter*, *From Denial to Engaged*, *Innocent Childhood*, (The end of winter intro v4.pdf))

Tim Flach, Photographer, UK

Tim likes the more abstract and cropped photos for their ambiguity, but they should not reach a state of total abstraction. Recommends staying with the freezing intervention, it has a strong link to climate change. Discussion on the function of the image. Rethink the general perspective that art cannot be art if it has a function. Better to contextualise the series than to make the expression moodier. Also, OK to use texts. The colour in the images gives a form or shape whereas the luminance (in B&W) gives depth. References to New Topographics: Photographs of a Man-Altered Landscapes. Recommended festival Zingst in Germany

May 7–8, 2022, CFF, Nordic portfolio review, Färgfabriken Stockholm

Showed portfolio (A4 format), 30 min

- Nordic glaciers as intro (1 image)
- BA project (When we are gone) (7 images)
- MA project (*The End of Winter*, *From Denial to Engaged*, *Innocent Childhood*, 24 images)

Jenny Lindhe, curator, Landskrona Foto festival, publisher

Likes how I (in both the BA and MA projects) collaborate with nature – emphasise this. Appreciates the abstract the most and likes more (some) images with some of the environment visible (natural frame). Out of the three MA themes, she suggests skipping *From Denial to Engaged* which is weaker than the other two. Jenny also suggests using the images to create sculptural installations. In an exhibition, scientific images or texts might introduce my photographs to the topic of climate change. On the question of whether my expression is not sufficiently grave for the topic, she does not think I need to make them moodier. If the topic is clear, the colourful photos could make a good contrast.

Reference: Stephen Gill

Linda Bergman, author, editor-in-chief Verk.se, publisher

Linda started by saying that the pure documentary style (in my Nordic glaciers series) is also OK as fine art. I do not need to complicate things (!) She also thinks that I can keep the aesthetic expression. If I want to influence or affect my audience, there is no need to make moody pictures. Grab their interest and then make them think. Linda also liked the abstract photos the most. On a question about using texts to guide the viewer, she suggested using texts that challenge or partly contradict the images. Also, it is important not to turn the images into illustrations of texts. She recommended that I make a more careful choice of images for the final project.

Magnus af Petersens, independent curator

Likes “the element of seduction” in the more abstract pictures. The themes *The End of Winter* and *Innocent Childhood* are stronger than *From Denial to Engaged*. Also thinks that it is OK to keep the aesthetics of the images. The title *The End of Winter* is sufficient to lead the viewer to climate change. If more text is used with the images, use it sparsely

Recommended reading T. J. Demos Against the Anthropocene. Suggested galleries for my work: Artipelag, Galleri Kontrast and Landskrona photo festival

July 4–10, 2022, Rencontres d’Arles, France. Photo folio reviews

Showed the MA project in its three parts: *The End of winter*, *Innocent childhood* and *From denial to engaged*. 20 min.

- 20 A4 prints
- One time-lapse video.
- Left printed booklet after review.

Katharina Mouratidi, F3 - Freiraum für Fotografie Berlin

Thinks that the project is too sprawling with a mix of images showing summer/winter contemporary/historical and documentary/artistic. Together with the frozen treatment, there are too many layers. Suggests that I should decide on one narrative, such as just the black and white *The End of winter* images or focus on winter themes in colour. The project is suitable as an editorial submission.

Caroline O’Breen, Galerie Caroline O’Breen Amsterdam

Based on the previous review, I tried to do a minimalistic presentation showing only eight images from the themes *The End of winter* and *Innocent childhood*, which was not well-received. Caroline wanted to see more variation, and I had to show the full series with 20 images for her to engage in the project. A great suggestion was to separate the three themes by displaying them differently in a show. For instance, the childhood pictures originally shot as diapositive slides could be shown as a slideshow on a wall. Also,

The End of winter theme could be printed with a different historical process. Suggested that I should submit the project to festivals.

Verena Kaspar-Eisert, Foto Wien

Initially thinks that there is a disruption between the project title *The end of winter* and the subject matter. Wants to see a better rhythm by introducing in-between shots, such as abstract pictures, behind-the-scenes shots or still lifes (e.g., photographs of ice). The winter picture from Stureplan is just too romantic – skip it. Wants me to bring in the cause (of the climate crisis) to the series. The time-lapse video should have a more dramatic sound in it, disharmonic music or the sound of melting ice.

Stephanie von Spreter, UiT The Arctic University of Norway Tromsø

Stephanie's first association was to a new reference, the book *A year without winter*. Edited by Dehlia Hannahs, the book comprises essays with references to the climate crisis while also referencing the historical volcanic eruption of 1815 in Indonesia that globally led to "The year without a summer". In my project, she thinks that all three parts work well together and suggests making an exhibition focusing on the process.

Louise Fedotov-Clements, Format International & International Photography Festival/QUAD

Liked the ice as a "fog of our daily lives". Suggested that I use natural and/or muffled sound in the time-lapse videos. Important to identify "trigger images" that could help the viewer enter the subject. Encouraged me to submit to the Format festival.

Appendix C – The exhibition, a proposal

The project *The End of Winter* is to a great extent process-driven. In an exhibition, I would like to invite the audience into my process to consider their own role in the climate crisis. A valuable piece of advice I received from Dutch gallerist Caroline O'Brien in the portfolio review process was to clearly separate the three themes, shown in chapter 5, by how they are displayed in an exhibition. The way in which the themes are represented should also say something about their meaning.

The first theme – *The end of winter* – is in black and white to add mood, but the theme also represents a progression of time. Historically, winter has always been a fact at my latitude and will ultimately soon cease to be so. I want to reflect this by applying a historical technique, such as cyanotype or van Dyke Brown printing from digital negatives. To further emphasise these prints as unique objects and the environmental subject matter, they would be framed with passepartouts and in natural oak frames.

The original photos in the theme *Innocent Childhood* are diapositive slides more than 50 years old. In an exhibition, I want to keep this format to make the viewer reflect upon the aged subject and eventually understand that this part is personal and about the artist. The frozen prints must thus be rephotographed (once more) using reversal film. In terms of their display, I see two options (depending on the exhibition space). For a smaller space, the original slides can be shown side by side with the rephotographed “frozen” slides on a light box. The viewer would engage with these by using a magnifying glass. If there is sufficient space, the slides could also be presented using a traditional carousel projector.

The third and last theme – *From Denial to Engaged* – is in bright colours and taken from our everyday life in the street. To emphasise that this is here and now and that the depicted people could really be anyone among us, the

photos would be printed semi-transparently on print-glass and hung from the ceiling. The viewer would then walk through this part of the exhibition and see the subjects just as I did when photographing them.

There are a few more displays that could contribute to an exhibition. The time-lapse videos showing images in the freezing or melting process may roll on a screen. To further focus on the process, a centre piece of the exhibition could be a pedestal with a plastic tray in which a print is placed. On top of the print, there is a pile of ice gradually melting during the show (at room temperature, this could take 2–5 hours). The melting water would be drained to a tank inside the pedestal. In this way, the image would be revealed as time passes and the ice melts, symbolising global warming and melting glaciers.

Finally, there is a performative action where prints in trays are covered in water and placed in a small freezer in the exhibition space. The viewer is encouraged to open the freezer to see these artworks in the making. This action not only reveals the photographs but also contributes to global warming, hence constituting an artistic dilemma. In this tentative exhibition, the viewer becomes part of my process and ultimately considers his or her role in the climate crisis.

Appendix D – Future developments and project ideas

The climate crisis is a major threat not only to mankind but to all living creatures on earth. Research shows that images of possible mitigations are effective both as a means to draw attention and to inspire action (Chapman et al., 2016; Carlson et al., 2020). With my background in science, I am compelled by the technical solutions proposed and needed to reach the Paris Agreement. It is clear that we not only need to limit our carbon emissions but also capture already emitted carbon from the atmosphere. With carbon capture and storage (CCS) technologies, CO₂ is taken from the atmosphere or directly from its source of emission and stored in the ground.

Sweden's largest cement factory is located on the island Gotland. Here, the company Cementa uses limestone to produce cement. This factory alone accounts for 3 percent of Sweden's carbon emissions. A decision has recently been made to build a large-scale CCS plant here with the goal of becoming a carbon sink. This project could be visualised in large-size photos and in the deadpan aesthetics category inspired by Edward Burtynsky, now showing a climate mitigation effort rather than root the problems of the industry.

Many of the mitigation approaches to the climate crisis need to be initiated here and now, whereas their effect will take decades or generations to materialise. The concept of *cathedral thinking* stretching back to medieval building projects for large sanctuaries, where the planning and construction work was carried out for future generations, must also be adopted for climate mitigations (Nicholas, 2021). *Cathedral thinking* could be another rather open and abstract theme for a photographic exploration.

Finally, in the framework of *planetary boundaries* (introduced in Chapter 2) the other planetary boundary processes are just as hard to visualise as climate change, which means that engagement from artists and photographers is needed to visually communicate these to the general public and decision- and policymakers.

The End of Winter

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We are all familiar with the iconography and generic images used to visually communicate the climate crisis – smokestacks, polar bears in distress and solar cells. In this thesis photographer Martin Kull explores whether a more personal photographic expression of imagery could help us understand our own role in this crisis