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A MULTISPECIES RED-LIGHT DISTRICT for AMSTERDAM

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A Propositional Image

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Tina O'Connell and Neal White

This project was made in relation to the exhibition *Perfect Nature* with Dutch hosts zone2source, who are based in Amstelpark, the location of our three-month "Test Site" residency.¹ The research we undertook highlights art's role as an eco-social practice that requires forms which respect futures orientated toward cohabitation and coexistence with other species. In this brief text and visual essay, we explore light as pollution as we gradually shifted our gaze away from *operational* images of anthropogenic noise toward a *propositional* image both in situ at Amstelpark and further afield through symbiotic activism.

Note: for readers of the print version, these black-and-white images give you an idea of how other animals perceive color in the real world, owing to the different number of cone photoreceptors in the eye. For full color, see the online version. With three cone photoreceptors, you will perceive better than a dog, which has only two photoreceptors, if not as well as the moth with its six cones.

Phase 1: Situating Anthropogenic Noise; Perpetual Daylight

The warm sulfurous phosphorescence associated with suburban lighting is increasingly being replaced by the new snaking pathways of bright white LED (light-emitting diode) light that illuminates roads across our cities and that thread across our rural landscapes at night. The human need for artificial light



20 **Figure 1** NASA—Black Marble Satellite Images. Northern Europe focus. © NASA.
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23 that is entangled with the challenge of low-
24 impact energy use actually saturates other
25 worlds with a form of visual pollution.
26 While some forms of anthropogenic noise,
27 such as auditory pollution, are evident in
28 terrestrial and aquatic ecosystems (see
29 Kok et al. 2023; Kunc and Schmidt 2019;
30 and Nemeth and Brumm 2010), light is
31 a pollutant prevalent in areas in northern
32 Europe densely populated by humans and
33 linked by scientists to biodiversity collapse.

34 Given the lack of action by govern-
35 ment agencies to deal with the wide-
36 spread increase of such anthropogenic
37 noise, as concerned citizens and artists
38 equipped with acute visual interests, we
39 felt compelled to engage with the issue
40 directly. Across areas of Holland, a form of
41 perpetual daylight has become a feature
42 over recent years, a prismatic spectacle
43 where vast landscapes of greenhouses
44 require artificial light through long win-
45 ter nights, illuminating skies with pink

and orange hues.² This vast post-natural
landscape, an essential dimension of our
shift to produce fresh salad for markets
twenty-four hours a day, is also a glazed
unnatural landscape that annuls seasonal
change and operates in defiance of plan-
etary cycles. This post-natural landscape
is increasingly regulated, but close by,
among the urban sprawl, further saturation
of nocturnal light intrudes on the senses
of resident lifeforms. As Douglas H. Boyes
and colleagues (2021) observe, “Based
on the visual sensitivities of many taxa,
including nocturnal insects,” white broad-
spectrum LEDs have significant “potential
for ecosystem disruption.”

A Propositional Image—Integrating Operational and Embodied Vision

Our research integrates both operational
images and embodied vision to create
propositional images. *Operational images*
refers to geo-spatial satellite visualizations

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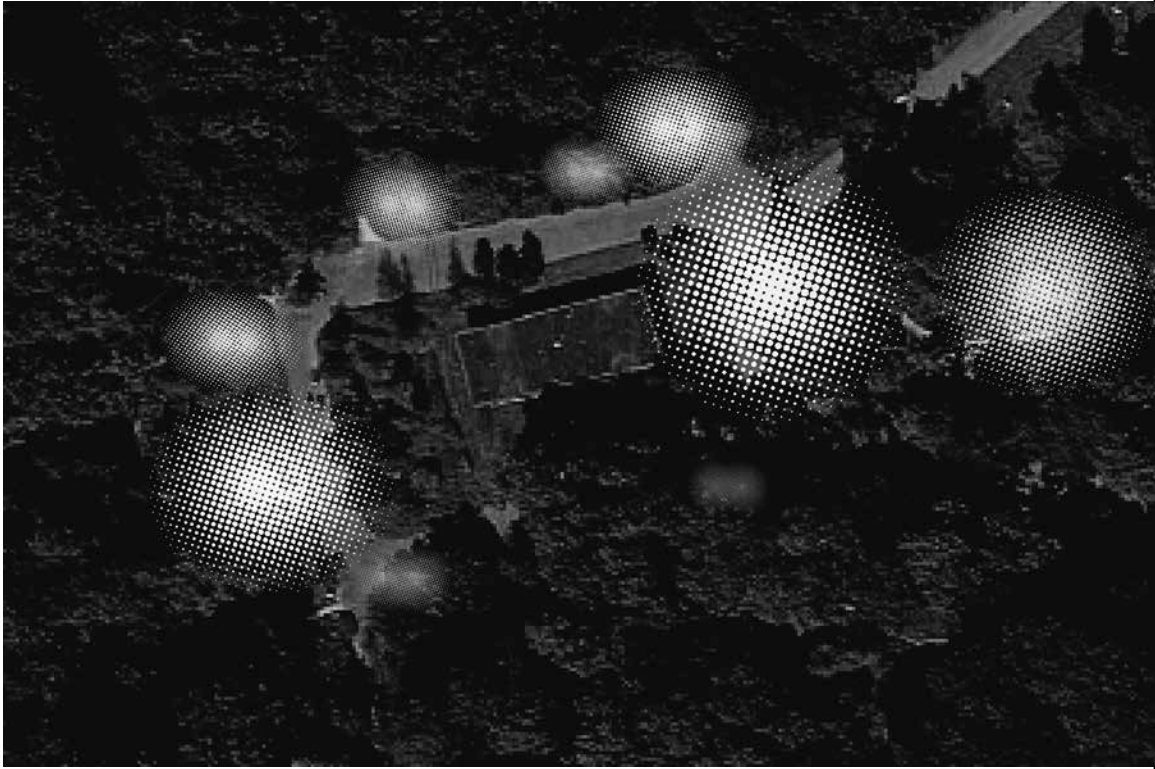


Figure 2 Measurement of lighting around the exhibition *Perfect Nature*, using handheld sensors. Glazen Huis, Amstelpark, May 2023.

of light pollution that use machine vision from space to make visual information legible.³ As Jussi Parikka (2023:18) notes, it can be argued that operational images organize the world, as well as “organize our sense and skills in terms of how we are trained to approach such images, from the photogrammetric mapping of landscapes to pattern recognition, astronomy datasets to Mars Rover imaging practices.” In our practice, an operational image can be only one part of a critical artistic method. It represents to us a scientific mirror that is part of a vast instrument, the product of both a techno-scientific and military-industrial global complex.

Thinking with Donna Haraway (1988: 581), we contrast the operational image with Haraway’s assertion that we should

reclaim the nature of all vision as embodied. In this case, we approach the subject phenomenologically, to “reclaim the sensory system that has been used to signify a leap out of the marked body and into a conquering gaze from nowhere.” Our practice recognizes the gaze from nowhere—the operational image we associate with both surveillance and geo-spatial data, while drawing on our embodied senses as artists to create action. These are scalar issues, and we remain focused on a form of grounded local action as a response to global crises that have been defined by Karl Marx as a metabolic rift⁴ (Foster, Clark, and York 2010; Saito 2017), which separates society from nature in cascading ecological crises driven by capitalism.



25 **Figure 3** Beautiful arches—a pixelstick-generated image of a machine scan of a moth specimen taken from
26 Natural History Museum (NHM) Collections.
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29 ***Phase 2: Amstelpark; Deep Fieldwork***

30 We created a new work called “Truth to
31 Nature” for the exhibition *Perfect Nature*
32 that demonstrates the essential need for
33 embodied response to biodiversity. This
34 starts with our use of scientific literature
35 dealing with the impact of anthropogenic
36 noise on nocturnal insects, moths in par-
37 ticular, whose populations have declined
38 enormously across northern Europe. Refer-
39 ring to butterflies, Arco J. van Strien and
40 colleagues (2019) note that over a century
41 of data reveals more than an 80 percent
42 decline in the Netherlands.

43 Our grounded approach to fieldwork
44 in the nocturnal landscape is to use a tech-
45 nique of light painting and drawn images of

moths using a tufting gun and neon wool
to place disappearing moths back into the
park. We select species using scientific
sources that indicate decline in northern
Europe, such as the viper’s bugloss, the
conformist, and beautiful arches, among
others. In addition, we included moths
linked to polar migration, heading north
to avoid the heating climate of the Medi-
terranean (such as the hummingbird
hawk-moth). One of the moths we were
interested in is, in a sense, post-natural:
the Friendly™ Diamond-Back, which is
a genetically modified terminator organ-
ism. (We have a long-standing interest in
post-natural landscapes; see, for example,
Office of Experiments projects; Redactor

1 featuring Rich Pell [2010], or Tiny Love
2 Songs [2018], commissioned by zone-
3 2source, Holland.).

4 In Amstelpark, our images of moths
5 are created using a pixelstick—a tool that
6 magically produces images temporally
7 in the camera’s open shutter—while
8 remaining imperceptible to the human
9 eye as a simple set of lights flashing on
10 and off. The images we made on location
11 led to a film installation inside the parks’
12 glass box gallery; Glazen Huis, which was
13 integrated with an experimental installation
14 that included its own twenty-four-hour
15 perpetual sound and light scape. This
16 immersive light element is generated from
17 field recordings of local bat populations,
18 as they use echo-location to close in on
19 moths on the wing. The recordings were
20 slowed down in order to be perceptible to
21 the human ear. Seen and heard at night
22 through the glass walls of the gallery, the
23 installation made us aware of our own
24 agency on the park as we also added to
25 the illuminated landscape. This aspect
26 gave us pause for thought.

27 The following photographs in this
28 section were made by taking elements of
29 our studio practice used to create the neon
30 wool images of moths using UVB light, fur-
31 ther into the park. We equipped a mobile
32 cargo bike with similar high powered
33 ultraviolet (UV) lights and cycled it through
34 the closed park at night. We immediately
35 began to get some idea of what other
36 worlds could be sensible to other species
37 exploring this nocturnal landscape.

38 With zone2source, we led other artists
39 from the School for Multispecies Knowl-
40 edges on nocturnal visits in the park, to
41 discuss and exchange ideas. We handed
42 out light-measuring instruments and began
43 to map the perpetual lights within the park.
44 We moved into the rhododendron gardens,
45 into the woodland, as night fell. We began

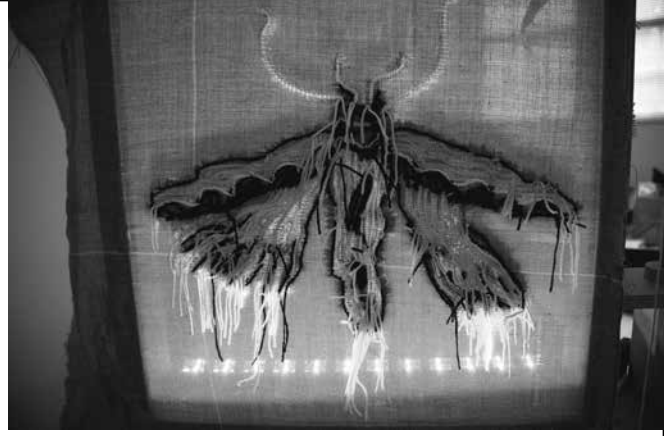


Figure 4 “Truth to Nature.” Hand-drawn moth based on NHM Collections. Tufted with neon wool and illuminated using ultraviolet lights.



Figure 5 “Truth to Nature.” Hand-drawn moth in wool described using pixelstick and the open camera shutter.



Figure 6 “Truth to Nature.” One of a series of ten archive specimens from the collections of the Natural History Museum, London, that featured in the film, showing moths of various species that have recently arrived or departed from Holland because of climate change and biodiversity loss. An image created in the open shutter of the camera using a pixelstick.



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Figure 7 Cargo bike with UV lights.



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Figure 8 Exploring Amstelpark with artists from the School of Multispecies Knowledges.

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Figure 9 Manifest images. Using projected ultraviolet light, we are able to both see and understand the nocturnal landscape of the moth who can see into a deep ultraviolet blue spectrum.



Figure 10 The red streetlights use a spectrum that is friendlier to both bats and moths.
© Compass. <https://www.compass.nl>.



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Figure 11 A potential lighting solution for Amstelpark with lights related to those developed by Signify/Philips using a lighting “recipe” that does not impact certain species of moths and their predators—bats. Computer rendering, Cassius O’Connell-White.

to see nighttime flora and fauna by glimpsing the world of the deep ultraviolet.

Phase 3: A Multispecies Red-Light District for Amsterdam: A Propositional Image for Action

It was not our intention when embarking on this research to propose a solution to the urban light pollution of Amsterdam or within Amstelpark that could be extended to other parks across Amsterdam. We were drawn to anthropogenic noise as a manifest visual toxicity in which multiple species are prevented from roaming across natural habitats. Our intention to explore anthropogenic noise in relation to the metabolic rift in relation to climate and biodiversity crises does, however, align with Diann Bauer’s work on the *propositional image*, a form of visual activism. She based her ideas in part on the work

of Wilfred Sellars (2007), which creates a distinction between a “manifest image,” one that we experience as we see the world, and a “scientific image”—one that explains what we know of the world—a binary that is reflected in our interest in the operational and a situated image or embodied vision. As Bauer framed it, the propositional image⁵ is not an image at all, but a way to articulate a future that can be apprehended and then shaped. It is neither speculative design nor science communication. It draws from the images associated with climate data but separates them from scientific solutions, partly as a critique of the failure of science to lead behavioral change alone.

Our research has led us toward a convergence with what might be termed a propositional image, through our observation of light in the nocturnal landscape

1 and in relation to visual ecology—the
 2 knowledge of how other species see. As
 3 we proceeded, we also became aware of
 4 existing technologies already in existence
 5 (Signify/Philips and Innolumis) that are
 6 scientific solutions to our concerns—
 7 lighting that is both bat and insect friendly.
 8 Their “bat lamps” use a lighting “recipe”
 9 that is perceived optically by humans as a
 10 form of amber or red light. However, there
 11 appears to have been no research into
 12 why the adoption of such systems across
 13 parks or other urban areas has had poor
 14 uptake. We assume that costs, application
 15 (including patents), or cultural associations
 16 of red light might be a factor, combined
 17 with issues relating to the safety of pedes-
 18 trians at night. Our question nonetheless
 19 was, how could this or other open-source
 20 technologies be developed and used
 21 in parks? What role might propositional
 22 images or art in its manifest forms play in
 23 this scenario? This is the basis for our next
 24 phase of eco-social art and our interest to
 25 create insights here that might help toward
 26 generating collective responses immedi-
 27 ately. A call to action.

28
 29 ***Summary; or, Toward the Symbiocene***

30 In advanced economies our assumptions
 31 are that there is no capitalist logic that
 32 trumps cost/energy savings of replacing
 33 phosphorescent lights with new LED
 34 systems. The applications may be there
 35 for other LED recipes, but there appears
 36 to be slow behavioral change. We experi-
 37 enced in conversations and dialogue with
 38 park keepers, conservationists, and the
 39 public engaged with ecology in Amstelpark
 40 a general lack of widespread awareness
 41 of the impact of white LED light on other
 42 species and in turn our ecological futures.
 43 In terms of our project, which is focused
 44 on biodiversity and anthropogenic noise,
 45 we feel that means there is no alternative

but to move forward to embrace solutions,
 technological or collective, that positively
 engage symbiotic futures. As artists we
 observed light as both a toxin in the noctur-
 nal landscape and an immaterial presence
 that gave us an insight into how to achieve
 a “sensable” propositional image that can
 lead to direct action for all species.

We are therefore asking the reader to
 go change the bulbs on your own streets,
 or around the exterior of your homes. To
 work with other generations, parents,
 children, to take control. To wrap existing
 LED lights with red filters or use ~630 nm
 (“high-efficiency red” or orange-red) LEDs
 (Spoelstra et al. 2017), or find alternative
 homemade solutions using lights with
 these different spectrums. To work with
 other species to enact behavioral shifts
 and alter our own nocturnal worlds.

To move toward a more general activ-
 ity that addresses symbiotic forms of activ-
 ism, to address other similar issues within
 and across the institutions we are based,
 we also propose both functional changes
 and adjustments to how artists work and
 are taught, how we interact in symbiosis
 with the natural world, to address a range
 of needs. This includes thinking through
 how we expand our definition of society,
 or community, to include other species
 and more-than-human rights and respon-
 sibilities. To use science as a source to
 ensure that we apprehend the impacts
 we are having on environments alongside
 multisensory, multispecies knowledge. We
 need to rethink opportunities so that we
 can create situated placements at sites so
 that artworks or eco-social art practices
 can address the needs of multiple species.
 In pedagogic terms, we need living peda-
 gogies that extend the role of art schools
 with a focus on multispecies justice and
 knowing. These changes also need to
 be attentive to time and temporality, to



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Figure 12 A pixel-stick image of a moth pictured with the public (here with a member of the zone2source team) that formed part of our social media campaign about moth population decline and lighting that formed part of an event in Amstelpark.

provide for extensive research periods that lead to potentially meaningful change. Lastly, we recognize that to balance cohabitational and coevolutionary terms, we need ecological and social justice for future generations of all species. Toward art as a symbiotic activism.

Notes

1. Test Site is a concept developed by our colleague, Arts Catalyst curator and founder Nicola Triscott. Between 2016 and 2018, Neal White undertook research exploring Poole Harbour with Arts Catalyst, using this method

of co-inquiry with multiple collaborators, from ecologists to tourism experts.

2. Visible from flights in and out of Schiphol Airport and as recorded in Tom Hegen's aerial photography, "The Greenhouse Series" (2019).

3. Harun Farocki is widely accredited with the idea of an operational image, but it has been adopted by other artists such as Trevor Paglen and Hito Steyerl, and is the focus of projects by Forensic Architecture, Territorial Agency, and multi-institutional projects including More-than-Planet.

4. Here, we thank artist Vivek Vilasani, who so passionately described the metabolic rift as an idea that links degrading soil health to capitalism. Vivek was part of the The Soil

- 1 Assembly, an event at the Kochi Biennale
 2 February 2023, curated by Neal White, Meena
 3 Vari, Ewen Chardonnet, and Maya Minder,
 4 <http://www.soilassembly.net>.
 5 5. Neal White was supervisor to the late artist Dr.
 6 Diann Bauer, who in her unfinished PhD thesis
 7 "Xenotemporality," was also exploring how we
 8 might create alternative visions for the future.
 9 Working with Deep Field Project (University of
 10 Westminster) and colleagues in the AST (Alliance
 11 of the Southern Triangle, USA), she proposed
 12 an alternative vision of our shared ecological
 13 futures through films and media, drawing from
 14 operational images as assemblages to create a
 15 dynamic "prototype propositional image" of the
 16 world.

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