
AUSTRALASIAN
DARK SKY
ALLIANCE
Valuing Darkness Symposium 2025

Published by Australasian Dark Skies Alliance (ADSA) April 2025

Edited by Selena Griffith and Marnie Ogg

Illustrated by Hyunh Kim

Page Setting by Devni Goonaratne
Amoda Designs, Sydney, NSW

ISBN: 978-9-69-719249-6

Valuing Darkness, Melbourne, 19-21 March 2025

The Valuing Darkness Symposium was a pioneering event that brought together experts in lighting design, environmental science, urban planning, and public health to discuss the importance of preserving darkness in our lives.

Co-hosted by the Australasian Dark Sky Alliance (ADSA), International Association of Lighting Designers (IALD), and NERAL, the symposium featured thought-provoking talks, interactive workshops, and dynamic roundtable discussions. It was a whole systems exploration of the impact of light pollution on human health, wildlife, urban environments, and our night skies, emphasising policy, technology, and best practices for sustainable lighting. Keynote speakers, panel discussions, and workshops provided actionable insights and fostered collaboration among designers, policymakers, and advocates dedicated to protecting natural darkness for future generations.

On behalf of the Australasian Dark Skies Alliance board, I am happy to share this compendium with our community. It is a record of the collective, impactful and diverse perspectives that industry, community, academia, and government shared at the Valuing Darkness Symposium 2025. What an amazing and memorable 3 days of community, connection, collaboration and conversation. Thank you to all our presenters for preparing an impressively high-quality range of engaging content for us. Thank you to our sponsors Department of Climate Change, Energy, the Environment and Water, Pendoley Environmental, IALD, Australian Age of Dinosaurs, Selux, J&P Richardson Industries, Paddy Pallin, EWC, Opticity, Thorlux Lighting, LiTEsource and controls, Dark Sky Traveller, Versalux, Filix, and we-ef who generously provided the resources we needed to produce the Symposium. Thank you to our outstanding outreach speakers, demonstrators, workshop, and roundtable facilitators. Thank you to our volunteers who helped with set-up. pack down, lighting, sound, videography, photography and all the things that make a seamless experience.

I hope this is the first of many regular opportunities we can create to bring those interested in Dark Skies together to further advocacy, connect collaborators, and deliver evidence-based approaches to better outcomes for our ecosystems, flora, fauna, and ourselves.

Selena Griffith, Board Chair, ADSA

Valuing Darkness, Melbourne, 19-21 March 2025

When I first became involved with dark sky advocacy at Siding Spring Observatory in 1999, it was a tough call engaging with the wider community. My colleagues and I felt like voices in the wilderness, and were often treated that way. Fast forward to 2025 and the Valuing Darkness Symposium, and things could hardly be more different. From its opening session on the Cultural Connection to the Dark Sky Placemaking, Local Government Hacks and Roundtable sessions at the end, the event radiated darkness - or more accurately, the benefits of darkness. It was hallmarked by an extraordinary range of disciplines represented in sessions on measuring light, ecology, community engagement, dark sky places, industry, policy and planning - and, of course, astronomy. Between them, the experts featured in these sessions forged a true milestone in the evolution of environmentally-sustainable lighting and the dark skies movement. As Patron of the Australasian Dark Sky Alliance - the not-for-profit body that hosted the symposium - I can't thank the organisers enough for an event that has rightly brought wide acclaim and will no doubt bring a brighter(?!) future for dark skies.

Professor Fred Watson AM, Macquarie University, former Australian Astronomer-at-Large

Fred Watson, Patron, ADSA

Sponsors

Australian Government
Department of Climate Change, Energy, the Environment and Water

PENDOLEY ENVIRONMENTAL
MARINE CONSERVATION ENVIRONMENTAL SERVICES

IALD

AUSTRALIAN AGE OF DINOSAURS WINTON Q.

selux

J&P RICHARDSON INDUSTRIES
Electrical Contractors & Engineers

Paddy Pallin SINCE 1930

ewo

Opticity by Ironbark Sustainability

Thorlux Lighting AUSTRALASIA PTY LTD

we-ef

LiTEsource and controls

DARK SKY traveller

2B DESIGNED

Versalux

FILIX

Conference Organisers

IALD

NERAL

Table of Contents

Table of Contents

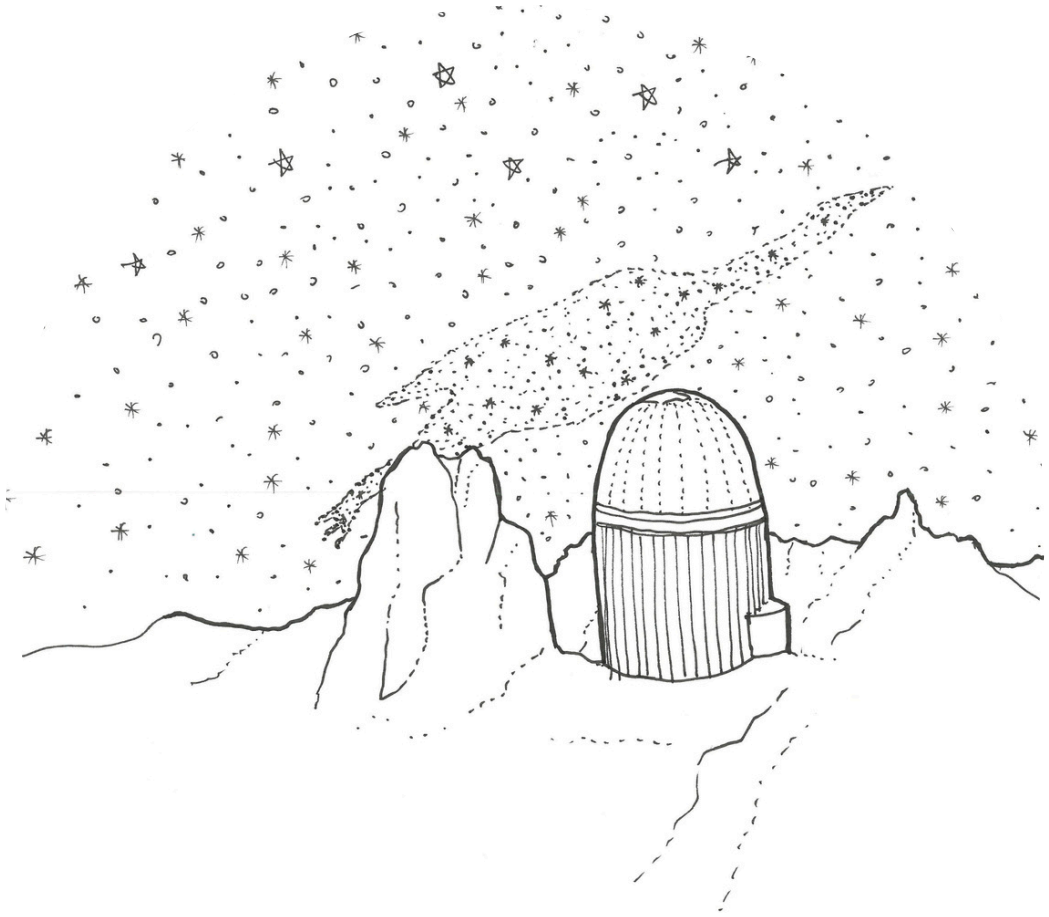
Table of Contents

Table of Contents

https://www.australasiandarkskyalliance.org/conferencephotos

https:/www.australasiandarkskyalliance.org/speakers

Astronomy



Title: Dark Skies Down Under - and What Keeps Astronomers Awake at Night

Author: Fred Watson

Association: Macquarie University

Contact Details: https://www.linkedin.com/in/fred-watson

Presentation Link:

Category: Astronomy

Abstract: Australian investment in astronomy spans the continent, from the optical telescopes of Siding Spring Observatory in Gamilaraay Country in the east, to major new radio astronomy facilities at remote Murchison in Wajarri Yamaji Country in the west. All these observing sites were chosen for their freedom from human-made constraints in the form of light pollution or radio-frequency interference. And their pristine dark and radio-quiet skies are protected by legislation from local, state and commonwealth government authorities.
But today we are in a new era of satellite communications, with up to 100,000 spacecraft operating in low Earth-orbit by the end of the decade. This unprecedented crowding of orbital space is driven by cheaper launches and the demand for fast global Internet, and the legislation protecting observatories from terrestrial interference carries no weight. The damaging impact on professional astronomy is already well understood and has led to the foundation of an international centre addressing the issue. But other affected communities include amateur astronomers, interested members of the public and those with a cultural investment in the sky. There are glimmers of hope, however, and this overview outlines both the threats and the opportunities that mega-constellations will bring to the world of sky watching.

Bio: *Fred Watson AM is an honorary professor in the School of Mathematical and Physical Sciences at Macquarie University in Sydney. From 2018 to 2024, he was the Australian Government's first Astronomer-at-Large in the Department of Industry, Science and Resources. Fred grew up in Yorkshire and was educated in Scotland at the universities of St Andrews and Edinburgh, gaining BSc, MSc and PhD degrees. After early training at the Newcastle-upon-Tyne telescope-building company of Sir Howard Grubb, Parsons & Co. Ltd., he worked at both of Britain's Royal Observatories before joining the Australian Astronomical Observatory as Astronomer-in-Charge in 1995. He led several projects in advanced astronomical instrumentation and large-scale spectroscopic surveys, as well as in the legislative protection of the Observatory's dark sky. He was also a founding Director of the not-for-profit Public Education Foundation. As the Government's Astronomer-at-Large, his contributions included supporting the Parliamentary ratification of the international SKA Observatory treaty and joining Australia's delegation to the UN Committee on the Peaceful Uses of Outer Space in Vienna on the issue of satellite constellation interference. Today, Fred is best known for his award-winning radio and TV broadcasts, books, music, dark-sky advocacy and the Space Nuts podcast, which nets more than a million downloads per year. He is the expert lead in the science-focused expedition company Dark Sky Traveller, founded and directed by his wife Marnie. Fred was made a Member of the Order of Australia in 2010, and his honours include the degree of DSc honoris causa conferred in 2022 by Macquarie University. He has an asteroid named after him (5691 Fredwatson), but says that if it hits the Earth, it won't be his fault.*

Title: Globe At Night - Bringing Dark Skies and Citizen Science Together

Author: Connie Walker

Association: Scientist at NoirLAB

Contact Details: https://www.linkedin.com/in/connie-walker

Presentation Link: 

Category: Astronomy

Abstract: What is the best way to combine appreciation of a starry night sky with its need for good stewardship? Participate in Globe at Night! Globe at Night is an international citizen science campaign whose goal is to raise public awareness of the impact of light pollution by inviting citizen-scientists to rate the brightness (or darkness!) of their night sky and submit their observations online.

Globe at Night has been shown to raise awareness centered on light pollution mitigation. The resulting data allows for monitoring changes and for intercomparison with other datasets concerning animals, plants, human health, output from light fixtures, urban population growth and more. A wide variety of stakeholders have used Globe at Night data, which strengthened a wide variety of partnerships. (One has been with the Australasian Dark Sky Alliance where 6700 measurements were taken in one night, making the Guinness Book of World Records.) Data taking could not be simpler for the public. As long as your eyes are adjusted to the dark, data collection takes less than a minute. If you have a smartphone that can input your date, location and time automatically, then all you need is to choose the star chart that most resembles what you see and the image that most resembles your weather condition. The ease in taking data has accumulated over 300,000 measurements in less than 20 years.

Get ready for using Globe at Night during the International Dark Sky Week the third week of April 2025. Come join us!

Bio: *Connie Walker has been a Scientist at the US national center for optical-infrared astronomy (NSF NOIRLab) for 23 years. She is actively involved with light pollution issues on the ground and in space, coordinating their Office of Observatory Site Protection. For 18 years, she has been fortunate to lead their Globe at Night citizen science program that asks people to help monitor light pollution levels worldwide. She has leadership roles on dark skies protection nationally with the American Astronomical Society and internationally with the International Astronomical Union and DarkSky International. In the last five years, she co-chaired five conferences and two recent, day-long IAU General Assembly sessions, focusing on the impacts of satellite constellations and artificial light at night. As of April 2022, she took on the co-directorship of the new IAU Center on the Protection of the Dark and Quiet Sky from Satellite Constellation Interference (CPS)…. Her family tolerates her interest in the dark side.*

Title: Dark Sky Victoria

Author: Kelly Clitheroe

Association: President of Dark Sky Victoria

Contact Details: https://www.linkedin.com/in/kelly-clitheroe

Category: Astronomy

Abstract: Under the naturally dark skies of Victoria, this presentation—delivered as part of the Dark Skies International initiative—will highlight the growing efforts of Dark Sky Victoria to preserve the region's night environment. Presented by Kelly Clitheroe, member of the Astronomical Society of Victoria, the session will explore the cultural, ecological, and astronomical value of dark skies, and showcase local initiatives aimed at reducing light pollution. Through case studies and community engagement strategies, attendees will gain insight into practical, place-based approaches being used across Victoria to protect the natural nightscape for future generations.

Bio: *Kelly Clitheroe the current President of DarkSky Victoria. She has been a Maths and Science teacher at a Regional Victorian School for 30 years and the Section Director for the Geelong branch of the ASV for nearly 12 months and was previously the Secretary for the Astronomical Society of Geelong. Kelly has practised Astronomy for over 10 years and has been taking Astronomical images for even longer. She is a passionate advocate for Dark Skies and providing people with practical options for encouraging others to get on board. Kelly is also interested in Indigenous Astronomy and promoting Astronomy in Regional Areas.*

Title: Dark Sky Destinations

Author: Mark Iscaro

Association: Building Designer & Social Media Influencer at Holmesglen

Contact Details: https://www.linkedin.com/in/mark-iscaro

Category: Astronomy

Abstract: Join Mark as he takes you on a journey through some of Australia's most breathtaking dark-sky destinations! From the crystal-clear skies of Sea Lake and Lord Howe Island to the mountain peaks of Mt Buller and beyond, Mark will share his experiences volunteering at astronomy events across the country.

Mark will also dive into the stark contrast between observing the cosmos in these pristine locations versus battling the glow of city lights. If you've ever wondered what you're missing under light-polluted skies, this is a talk you won't want to miss!

Bio: *Mark Iscaro, the AstroPunk, is a dedicated volunteer in astronomy, supporting community outreach programs that bring the wonders of space to the public. With a punk ethos of rebellion, independence, and challenging the norm, he assists with stargazing events, educational initiatives, and public astronomy gatherings. His use of humour and creativity makes space exploration feel accessible, creating a relaxed atmosphere where people can learn about the cosmos without feeling intimidated. By embracing the DIY spirit, he encourages curiosity and participation, making the universe open to everyone, regardless of experience or background.*

Presentation Link: 

Title: Dark Sky Place Status in Australia, Why We Need Them and The Benefits of International Certification

Author: Nalayini Brito-Davies

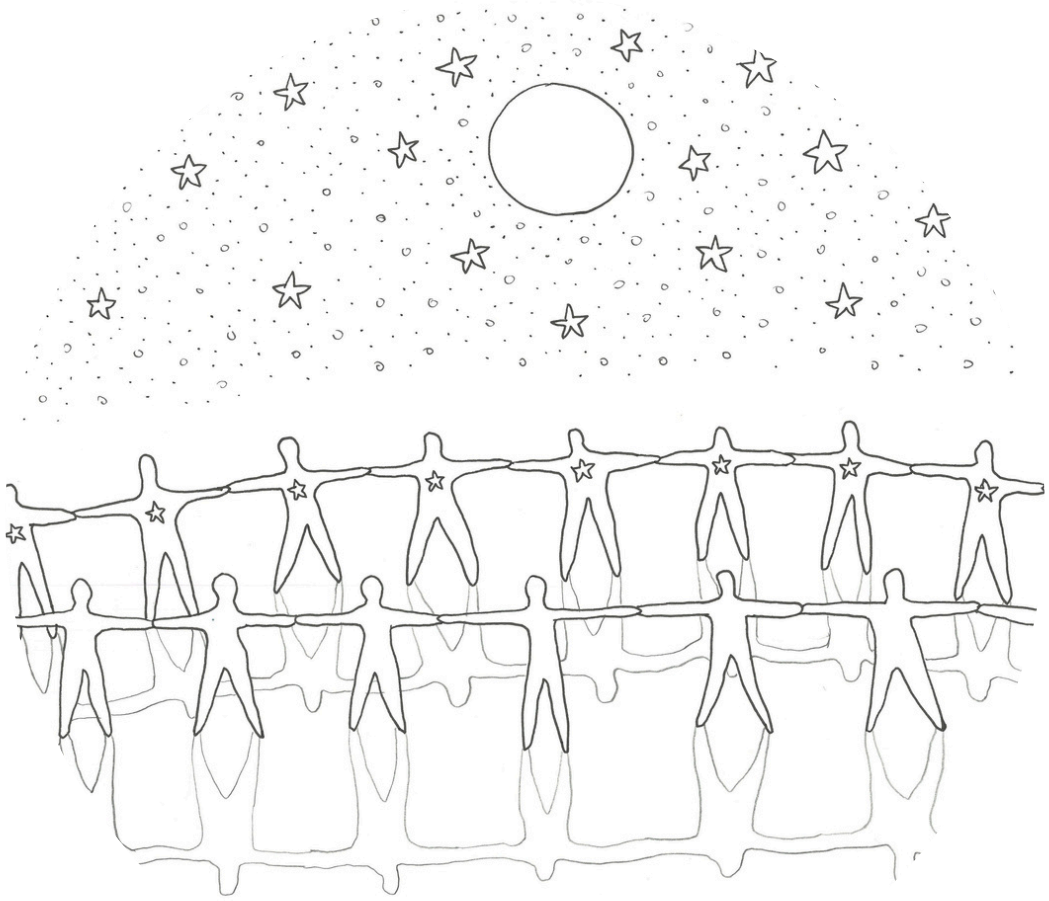
Association: President Dark Sky International | Australasian Dark Sky Alliance Board Member

Category: Astronomy

Abstract: Australia's Dark Sky Places are more than just breathtaking backdrops—they are sanctuaries of natural wonder and scientific potential. By earning this prestigious international certification, these areas are recognized for their commitment to reducing light pollution and preserving the pristine night sky for both residents and visitors alike. This status not only protects local ecosystems and cultural heritage but also boosts tourism, offering unique opportunities for astro-tourism and outdoor education. Furthermore, the international accolade brings global recognition, fostering collaborative research and conservation efforts, and reinforcing Australia's leadership in sustainable environmental management. Embracing Dark Sky Places status is a vital step toward a future where natural beauty and scientific discovery go hand in hand.

Bio: *Nalayini Brito-Davies is a Fellow and also Immediate Past President of the Royal Astronomical Society of New Zealand. In the area of "Dark Sky Protection' Nalayini has collaborative working relationships with Great Barrier Island Dark Sky Sanctuary in New Zealand, Elan Valley Dark Sky Park in the United Kingdom and Cosmic Campgrounds Dark Sky Sanctuary in the USA. She is the current President of DarkSky International, an Arizona-based, not-for-profit, international organisation that works to protect the darkness of the world's night skies. Nalayini is also Executive Director of an award-winning NZ-based economic advisory consultancy operating mainly in Asia and the Pacific.*

Community Engagement



Presentation Link: 

Title: Astrotourism Towns: Leveraging Dark Sky Tourism to Reduce Light Pollution

Author: Carol Redford

Association: Astrotourism WA - CEO

Contact Details: https://au.linkedin.com/in/carolredford

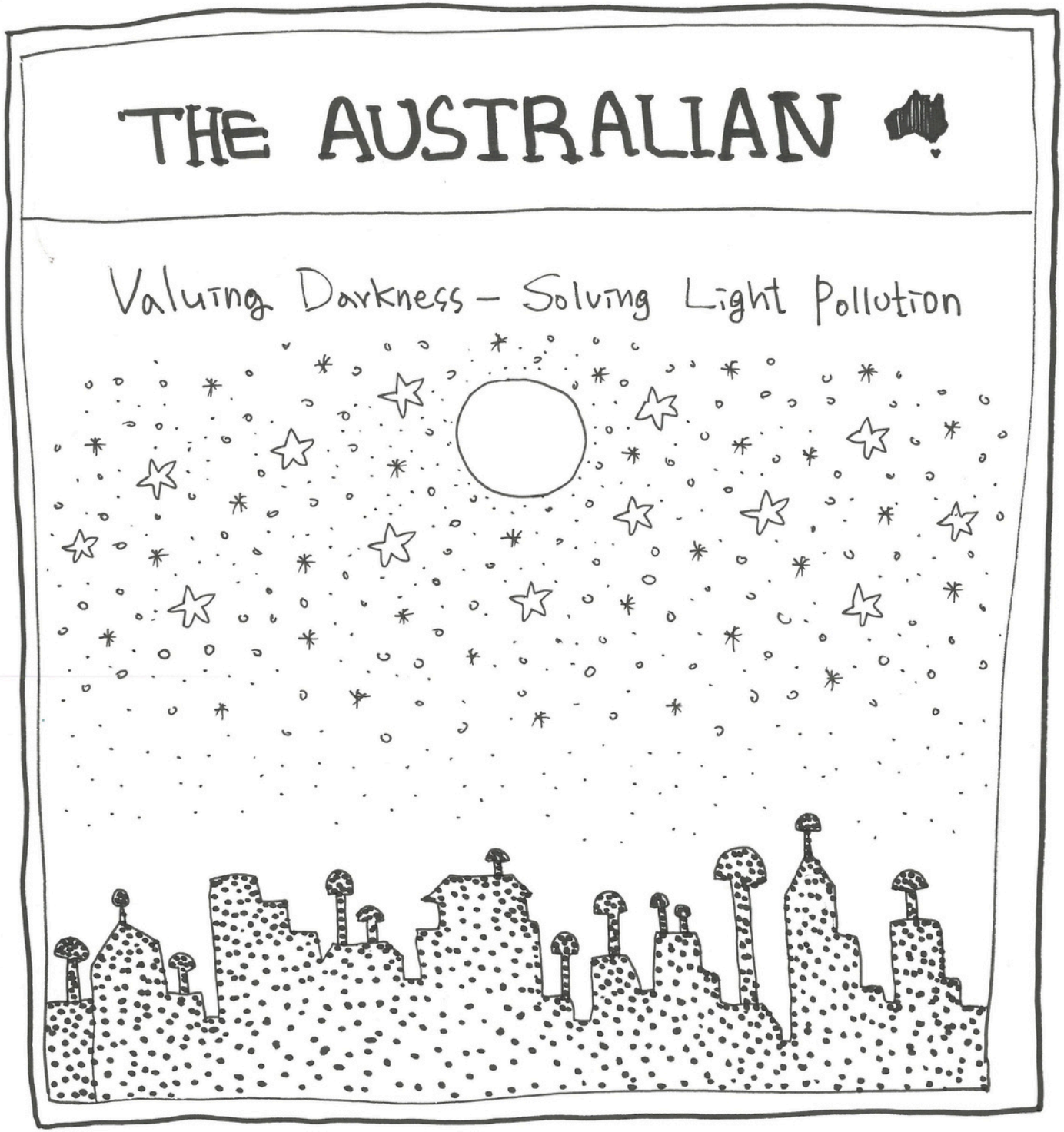
Category: Community Engagement

Abstract: A private and Local Government partnership is harnessing Western Australia's world-class dark night sky as an asset for economic, social and environmental outcomes.

The Astrotourism Towns Project is creating a stargazing trail through WA's remote, regional communities with the aim to increase overnight visitation, grow jobs, businesses and the local tourism economy. At the same time, the partnership is facilitating the protection of the dark night sky from light pollution by advocating for dark sky friendlier street lighting options for Local Government.

As WA transitions to LED street lighting, there is an opportune moment in time to protect the night sky. Three total solar eclipses are visible from WA over the next 15 years, more than anywhere else on the planet. The global spotlight this brings strengthens the promotion of dark sky tourism, improved lighting management and the reduction of light pollution.

Bio: *An accidental stargazer whose passion for Astronomy and Stargazing was ignited during the years Carol owned Gingin Observatory (2007 – 2012). In 2013, she established Stargazers Club WA where her team introduce beginners of all ages to the world of Astronomy, Telescopes, Stargazing and Astrophotography. As the Co-Chair of WA's Astronomy and Space Science community, Astronomy WA, and a member of the International Dark-Sky Association, she now combines her passion and marketing qualifications to develop an Astrotourism industry across regional Western Australia, where the State's dark night sky asset will be protected from artificial light pollution and shared with visitors from around the world.*


THE AUSTRALIAN
Valuing Darkness – Solving Light Pollution

Presentation Link: 

Title: Using the Media to Raise Public Awareness of Light Pollution and Support for Action

Author: Jaana Dielenberg

Association: Biodiversity Council Communication and Engagement Manager

Contact Details: https://www.linkedin.com/in/jaana-dielenberg/

Category: Community Engagement

Abstract: Imagine if most people in Australia were aware of the impacts of ALAN, took personal action to minimise their light pollution and demanded action of governments and businesses. That is what it will take to achieve the major reductions in ALAN that are necessary to curb harmful impacts on nature. To reach and influence the hearts and minds of the public we need as many voices as possible to be raising awareness of ALAN impacts and support for solutions, over and over again, so I want to help you reach the community effectively through the media and other methods. I'll focus on easy-to-apply strategies and steps to generate effective high-quality media coverage and other community engagement.

Bio: *Jaana Dielenberg is the Biodiversity Council's Communication and Engagement Manager. With one media campaign focused on light pollution in Dec 2023 she generated 111 radio stories, 29 TV News stories and online and print coverage that collectively reached over 1 million people. Jaana has 15 years of experience leading communication, media, engagement and science impact programs for national biodiversity-focused research initiatives. She has extensive experience supporting, training and coaching researchers and other experts to maximise their coverage and success in the media and in engaging with key stakeholders. Jaana has a BA (Geography) and M.Env from The University of Melbourne.*

Title: Integration of Technology and Citizen Science for Conservation

Presentation Link: 

Author: Kate Hofmeister

Association: Wildlife Conservation Lead - Sunshine Coast Council

Contact Details: https://www.linkedin.com/in/kate-hofmeister

Category: Community Engagement

Abstract: Light pollution is a well-established threatening process impacting species of marine turtle globally, the Sunshine Coast on the mainland coastline of southeast Queensland, home to a large citizen-science program TurtleCare, has been identified as a hotspot for light pollution impacting marine turtle nesting.

A benchmark artificial light at night survey was undertaken on the Sunshine Coast in 2017 across turtle nesting beaches and repeated in 2022 to indicate the level of increase in light pollution. The difference between the surveys indicated rates of increase in artificial light pollution higher than global average increases, consistent with the elevated rate of population growth and urban development. Concurrently, commercially available turtle sensitive luminaires were tested against loggerhead hatchling behaviour and suitable luminaires were installed and tested at nesting beaches with integrated smart devices. Community response to this campaign were evaluated and results demonstrated both awareness, and overwhelming support for the initiative, alongside no significant difference in the perception of safety. Further behaviour change social science has been undertaken at three local government areas and assessed through a social ecological model.

The investigations undertaken on the Sunshine Coast have provided a basis for policy development to reduce the impact of artificial light on locally nesting marine turtles, and other ecologically sensitive species such as shorebirds. Incorporation of scientific rigour into policy development is integral to supporting population recovery of threatened marine turtles.

Bio: *Kate Hofmeister is a Conservation Biologist and Citizen Science Practitioner delivering threatened species conservation planning and operations for Sunshine Coast Council. Kate has expertise in Marine Animal Ecology and Research, Citizen Science, Restorative Farming and Traditional Owner and Community Engagement. Kate is known for her careful diplomacy, persistence and dedication to informed and effective action. Kate was honoured by her community as a finalist for Citizen of the Year for the Sunshine Coast in 2023 in recognition of her contribution to community-based threatened species conservation.*

Presentation Link: 

Title: It Takes a Community to Turn the Tide on Light Pollution

Author: Tristan Simpson

Association: Senior Environmental Officer – Department of Biodiversity, Conservation and Attractions (DBCA, Western Australian Government).

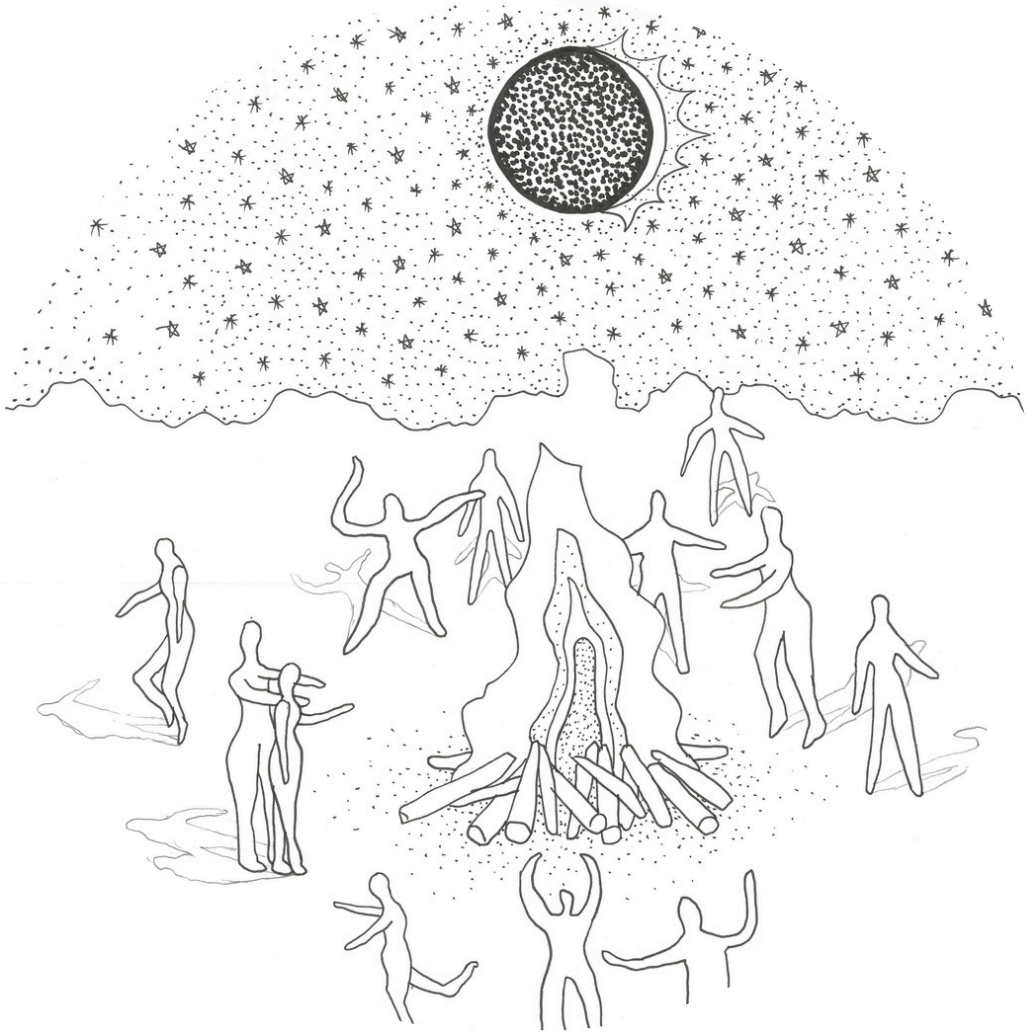
Contact Details: https://www.linkedin.com/in/tristan-simpson

Category: Community Engagement

Abstract: Artificial light at night has increasingly spread and brightened our night skies since it was first invented in the early 1800's. It has embedded itself as a staple to support human activities at night, advancing to become a visual feast and art form. However, with time comes knowledge and understanding; and we now know that artificial light is impacting many native and threatened species, including marine turtles. While new light sources can be managed to reduce the pollution's impact, challenges persist. To address this challenge takes an army of willing and dedicated people working together from multiple backgrounds, disciplines and responsibilities. I will be presenting a case study of the work that has been completed through the DBCA's Marine Science Program and its partners and stakeholders, and while there is a way to go it looks like the tide is turning towards a dimmer future.

Bio: *Tristan has almost 20 years' experience working in conservation management programs within Australia and internationally. Currently Tristan works within the Marine Science Program for the Western Australian Government's DBCA, primarily on marine turtle conservation management over the last four years. Tristan's role focuses on the mitigation of identified threats to marine turtles, with artificial light pollution ranked as a high priority threat. Tristan has engaged and collaborated with numerous partners and stakeholders to try and reduce the impact of artificial light across Western Australia to marine turtles and other sensitive species.*

Cultural Connection



Title: Whitening the Sky: Indigenous Astronomy, Light Pollution, and The Erasure of Culture

Author: Krystal De Napoli

Association: Monash University

Contact Details: https://www.linkedin.com/in/krystal-de-napoli/

Category: Cultural Connection

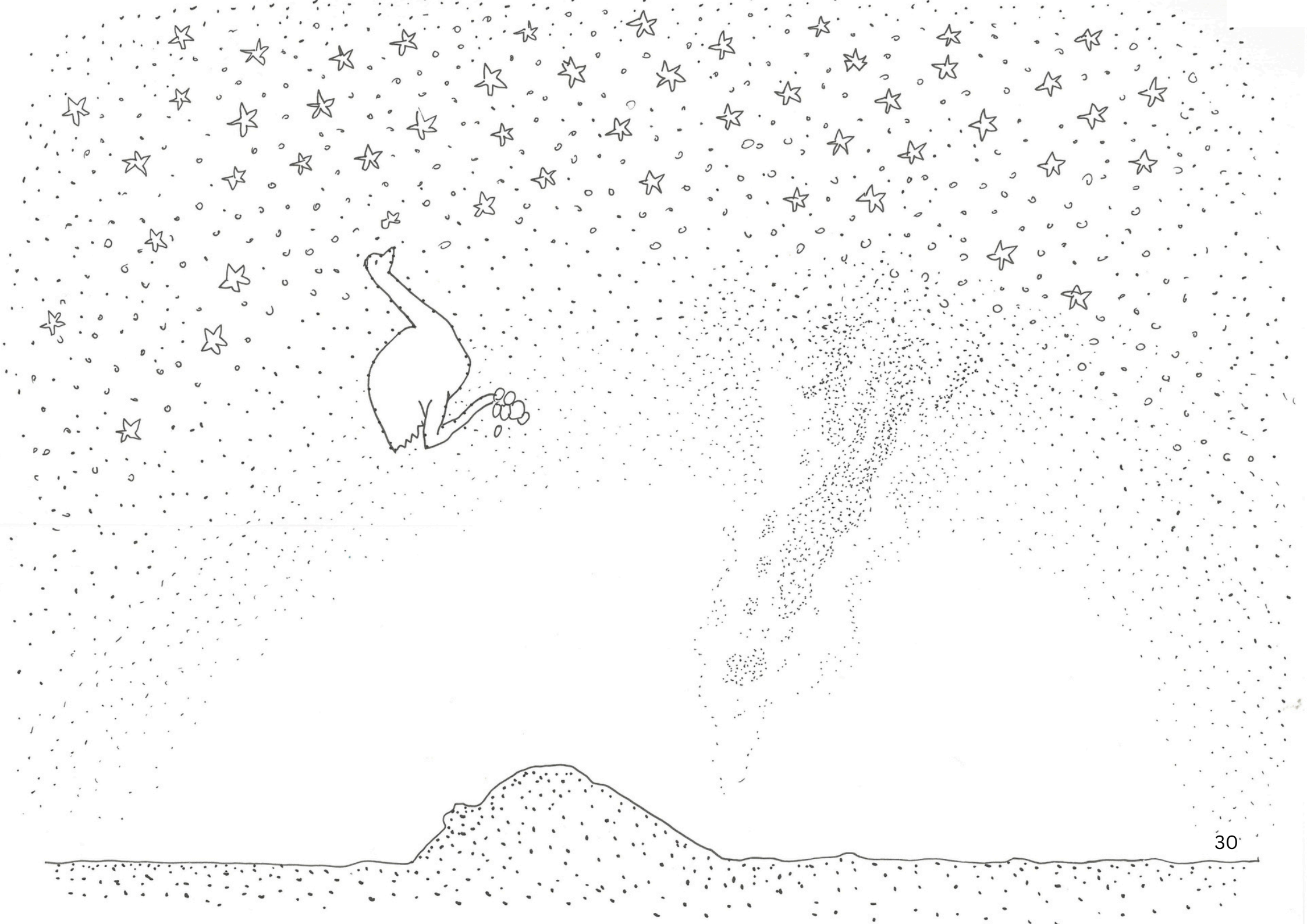
Abstract: In the cultural traditions and knowledge systems of Indigenous people, the sky is a reflection of the land. Everything that occurs on the Earth can be mapped out and encoded into the stars. The celestial realm serves as a map, a clock, a law book, a scientific textbook, and a memory space. A view of the stars is critical for survival, not some form of night-time entertainment. As increasing light pollution whitens the sky and artificial satellites clutter the stars, that embodiment of culture is gradually erased. But we can turn the tides if we understand and respect the value of dark skies.

Bio: *Growing up under dark rural skies surrounded by vibrant wildlife ignited Krystal's lifelong curiosity for the natural world. This wonder led her to pursue a career in Astrophysics, Education, and Science Communication.*

As a proud Gomeroi woman, she is guided by a deep responsibility to care for Country. She hosts the radio show Ingenuity on Triple R 102.7FM, celebrating the incredible work of Aboriginal and Torres Strait Islander professionals. She co-authored Astronomy: Sky Country (2022), which won the Victorian Premier's Literary Award - People's Choice Award (2023).

Currently, she is completing an Honours degree in Astrophysics at Monash University and lecturing on Indigenous Science. She also advocates for dark skies to protect ecological health and combat species extinction as an educator with Zoos Victoria.

With a background in innovative research at CSIRO Data61, She is passionate about connecting people to STEM and promoting sustainable practices to preserve our night skies and natural world.



Title: Australia's Cultural Night Sky: Culture, Creativity & Community at Lake Ballard, Western Australia

Presentation Link: 

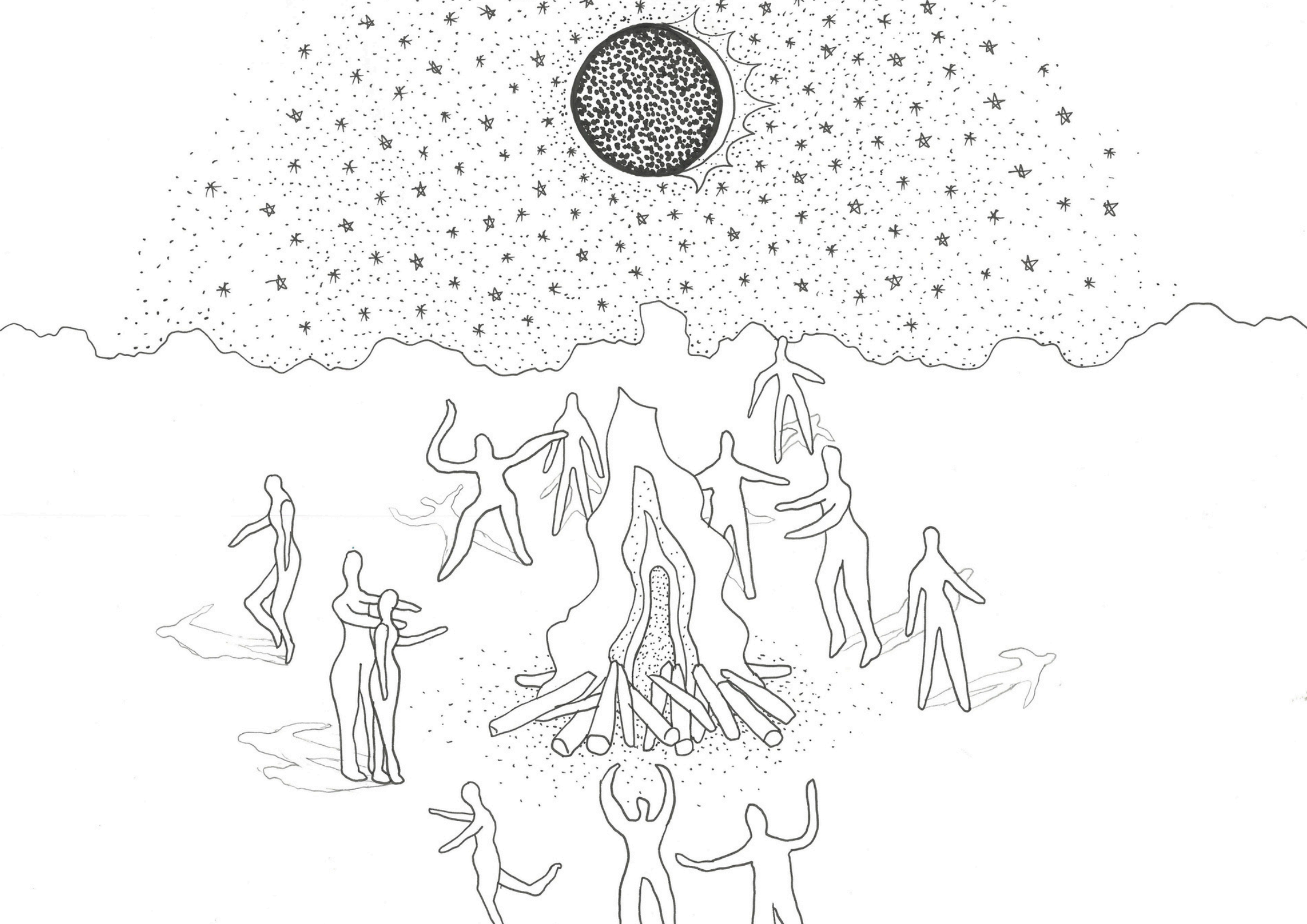
Author: Quinton Tucker & John Goldsmith

Association: Director - Koya Aboriginal Corporation, & Founder Celestialvisions.com.au

Contact Details: https://www.linkedin.com/in/quinton-tucker
https://www.linkedin.com/in/john-goldsmith-83922838/

Bio: *Quinton Tucker is the Director of Koya Aboriginal Corporation (Western Australia). Operating since 2004, Koya Aboriginal Corporation (Koya) is a 100% Aboriginal owned and led not-for-profit organisation in Western Australia. Koya Aboriginal Corporation's members are linked to the Whajuk and Balladong tribal groups of the Noongar Nation. Koya's Founding Elder, the late Mr. Allan Kickett, had the knowledge of the Noongar Boodja (land) as it was passed down to him through the generations. Koya Director and Chair Professor Kickett-Tucker AM is a highly respected Traditional Owner, research academic, community development practitioner and children's fiction author. She is a proud Wadjuk Noongar Aboriginal from Western Australia with traditional ties to Ballardong and Yued peoples.*

***Bio** John Goldsmith*
Dr John Goldsmith, Dr Goldsmith is an expert astrophotographer, member of The World at Night (www.twanight.org) and proponent of ethical astrophotography. Dr Goldsmith has delivered 40 astrophotography exhibitions and authored three astrophotography books, including the latest "Visions of the Cosmos: Landscape Astrophotography from Western Australia". He has substantial international astrophotography experience including Australia, Japan, Egypt, South Africa, Indonesia, France and United Kingdom. Dr Goldsmith worked with Vulcanologist Clive Oppenheimer and filmmaker Werner Herzog "Fireball: Visitors from Darker Worlds" and he featured in "The Borderless Sky, The Aboriginal Sky of Australia" (2017). His PhD research "Cosmos, Culture and Landscape" (2014) investigated Western Australian Aboriginal astronomical knowledge, with a focus on "Kandimalal", Wolfe Creek Meteorite Crater. Dr Goldsmith's primary astrophotography mentor was the late Akira Fujii (1941-2022). Dr Goldsmith is a member of The World at Night (www.twanight.org) and the Ethics Centre (www.ethics.org) Web sites: www.celestialvisions.com.au and www.visionsofthecosmos.com



Category: Cultural Connection

Abstract: Australia's Cultural Night Sky: Culture, Creativity and Community at Lake Ballard
Dark night skies are essential for preserving and passing on Australian Aboriginal sky knowledge. Several ancient sky patterns, especially the "dark nebulae" visible in the Milky Way, are best seen from truly dark environments. Urban light pollution severely limits their visibility and appreciation, especially in cities.

This presentation introduces a project focused on creating a cultural and astronomical learning experience for Aboriginal youth aged 12–15. Set at Lake Ballard in Western Australia—home to Sir Antony Gormley's "Inside Australia" sculptures—the initiative provides an intergenerational opportunity to connect with Country through storytelling under dark skies.

Led by Koya Aboriginal Corporation in partnership with Celestial Visions, the project is inspired by astrophotographic exhibitions, academic research, recent documentaries, and the 2023 Total Solar Eclipse in Exmouth. The goal is to enhance cultural astronomy understanding and foster community appreciation for dark sky preservation through first-hand experience.

Title: Cultural Connection - Panel discussion

Author: Peter Swanton, Krystal De Napoli, Quinton Tucker and John Goldsmith

Association: ANU - PhD Candidate | Australasian Dark Sky Alliance Board Member

Contact Details: https://www.linkedin.com/in/peter-swanton

Category: Cultural Connection

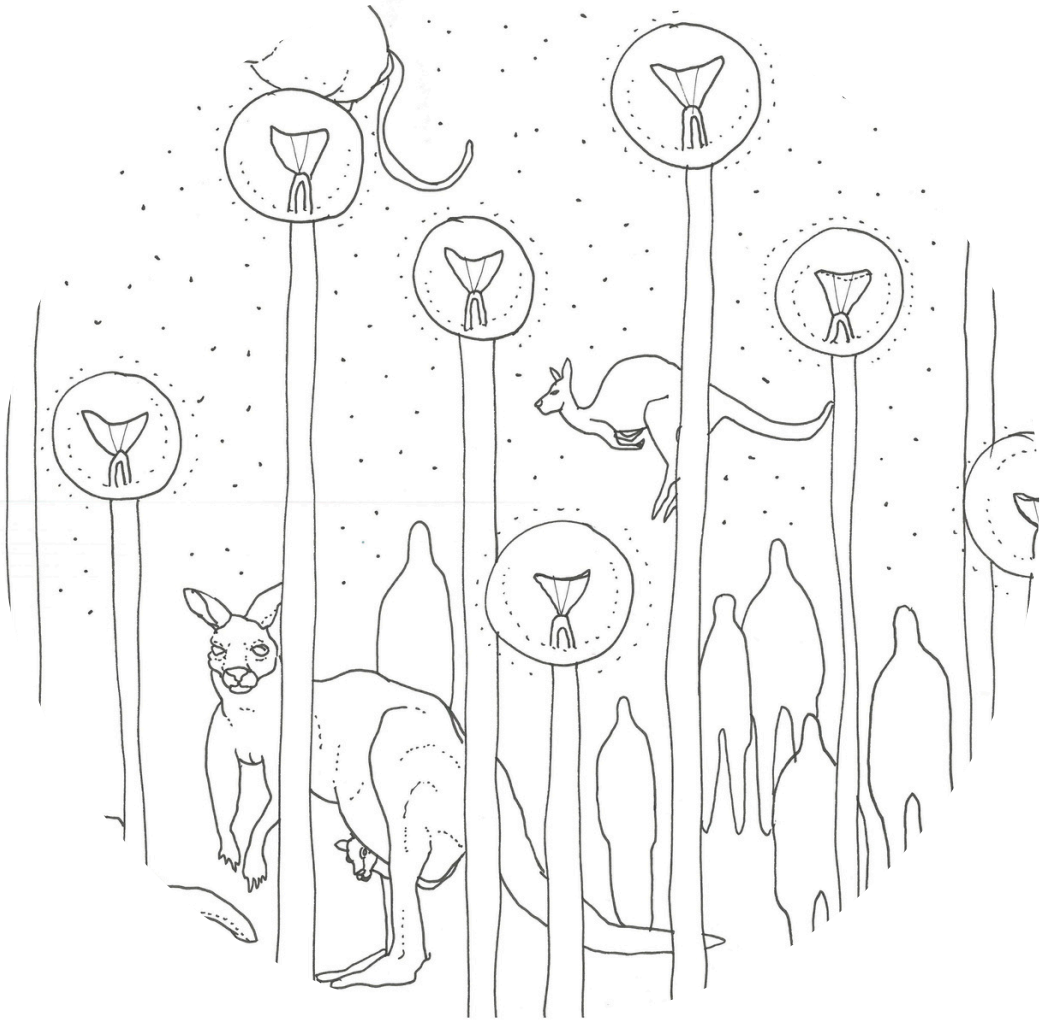
Abstract: Panel Discussion: Indigenous Astronomy and the Loss of Night for Cultural Connection

Featuring Pete Swanton, Krystal De Napoli, Quinton Tucker, and John Goldsmith

Join a thought-provoking discussion with Indigenous astronomers, including Pete Swanton, Krystal De Napoli, Quinton Tucker, and John Goldsmith, as they explore how night skies play a vital role in cultural traditions and spiritual connections. Together, they will share insights on how light pollution disrupts access to the stars and diminishes the night's essential role in storytelling, navigation, and heritage. This conversation invites us to rethink how we can preserve natural darkness and safeguard these timeless traditions for future generations.

Bio: *Peter Swanton is an Astrophysics graduate from ANU and Gamilaraay/Yuwaalaraay man from Mackay, Queensland. He has been working closely with Dr. Brad Tucker (ANU) and Prof. Brian Schmidt (ANU) at looking into Dark Sky Parks for their cultural and scientific significance. Peter and fellow ANU Astrophysics student Karlie Noon are also actively involved in Aboriginal astronomy outreach at local schools in Canberra and surrounding regions.*

Dark Sky Actions



Presentation Link: 

Title: Dark Sky So Shearwaters Fly

Author: Jessica McKelson

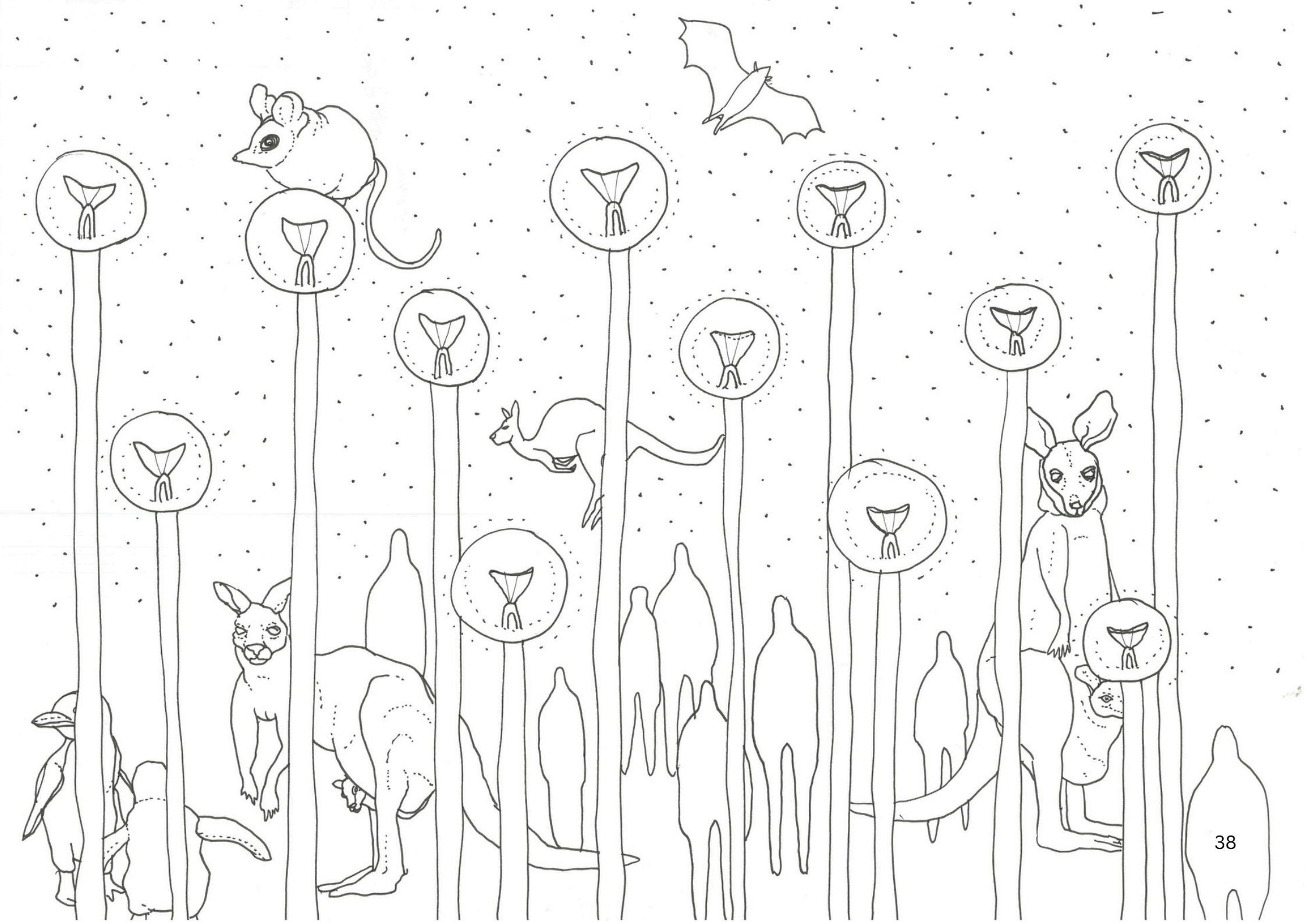
Association: General Manager Conservation Phillip Island Nature Parks

Contact Details: https://www.linkedin.com/in/jess-mckelson/

Category: Dark Sky Actions

Abstract: Phillip Island in Victoria is home to one of the largest breeding colonies of short-tailed shearwaters in the world, with an estimated 1.4 million birds. These migratory birds arrive in spring and spend the summer nurturing a single chick within a burrow in the sand dunes. As fledglings begin their flagship migration to the Northern Hemisphere during the night, they can become disorientated by artificial lighting, landing on roads resulting in bird fatalities and hazards for motorists. The Nature Parks launched the 'Dark Sky So Shearwaters Fly' campaign in 2022 to educate and encourage efforts to reduce light pollution during this critical shearwater fledging period. Since conception, strong local support has grown, evidenced by the number of businesses participating in the "turn-off for take-off" switch off program, highlighting the positive impact that collaboration has from all stakeholders involved.

Bio: *Jessica McKelson is the General Manager of Conservation at Phillip Island Nature Parks in Victoria, Australia, where she leads a diverse team of research scientists, park rangers, wildlife professionals, and community impact programs to advance conservation through an evidence-based approach. With over 22 years of global experience, Jessica has made significant contributions to conservation strategy, wildlife welfare, alternative livelihood programs, and natural resource management across a range of ecosystems. Jessica is passionate about inspiring people to connect with and care for the natural world, empowering them to take meaningful actions that make a positive impact.*



Presentation Link: 

Title: ADSA Approved for Outdoor Lighting

Author: Landon Bannister

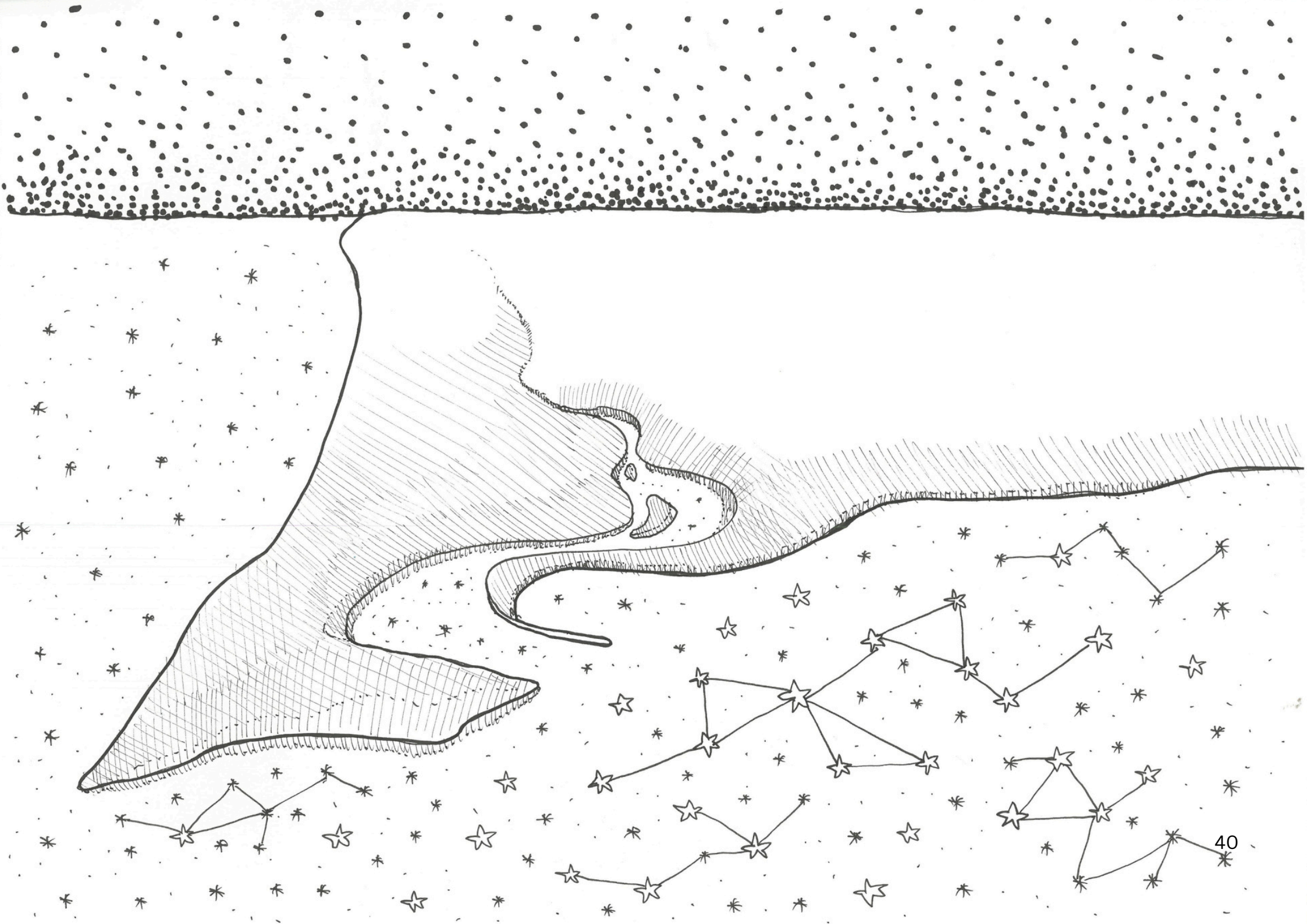
Association: Australasian Dark Sky Alliance Technical Committee Director

Contact Details: https://www.linkedin.com/in/landon-bannister

Category: Dark Sky Actions

Abstract: In 2020 The Australasian Dark Sky Alliance created a certification program for outdoor lighting, shining the way for councils wishing to install dark sky sensitive lighting. What is the criteria, where is it being used, and what are the advantages in using ADSA certified lighting?

Bio: *Landon Bannister has been working in the lighting industry for over 20 years and has a keen interest in the important role light plays in our experience of the built environment. Since returning to Tasmania in 2014, he has become a passionate advocate for restoring the stars to our urban skies, and reducing the environmental impacts of light pollution. He is Chair of the Technical Committee at the Australasian Dark Sky Alliance, and president of Dark Sky Tasmania Inc.*



Presentation Link: 

Title: Our Sunshine Coast Dark Sky Journey

Author: Simone Bright

Association: Senior Policy & Research Officer at Sunshine Coast Council

Contact Details: https://www.linkedin.com/in/simone-bright

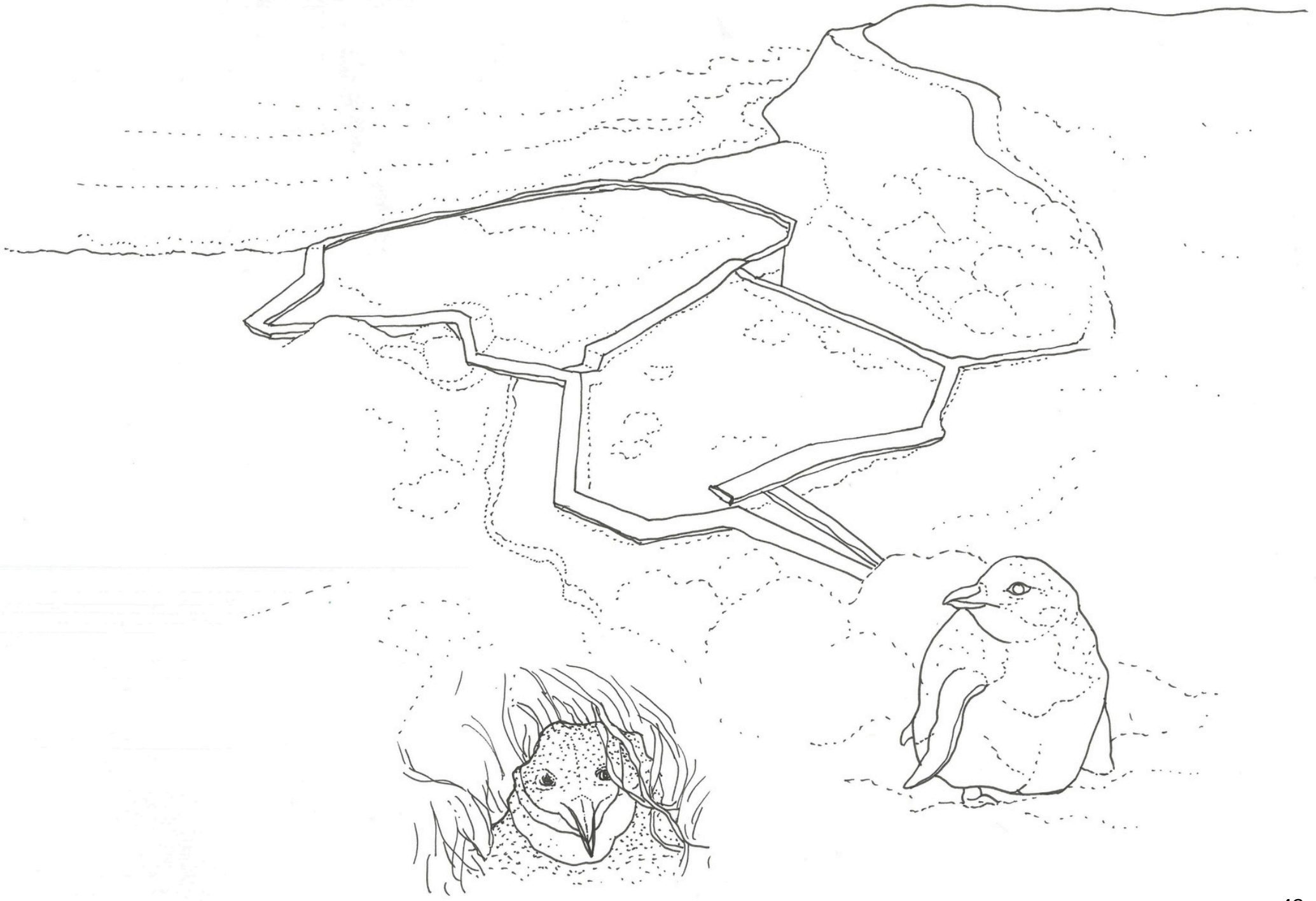
Category: Dark Sky Actions

Abstract: Located in South East Queensland, just north of Brisbane, the Sunshine Coast Council local government area is approximately 2,200 square kilometres and is considered a major urban and economic centre and an emerging city-region. As the region continues to grow this brings both challenges and opportunities for our future.

Sunshine Coast has a strong reputation as a lifestyle region defined by its subtropical climate, picturesque coastline and beaches, extensive waterways and wetlands, and the hinterland mountain ranges. Our community is passionate about their Sunshine Coast and want to see the distinct qualities retained and natural areas preserved including our dark skies.

Integrating 'good sustainability practices' to manage both present and future impacts is important. Council has a clear vision, strong policy and is planning ahead to ensure a sustainable Sunshine Coast. As part of our long-term planning, we are proposing to establish a Dark Sky Reserve across close to 40% of the local government.

Bio: *With over 20 years of experience in the Government Sector, Simone specialises in Project Management, Policy Development, Research, Strategic Advice and Advocacy. As a Senior Policy and Research Officer, Simone has led and managed a range of projects, particularly in the areas of Environment and Sustainability and is currently leading Sunshine Coast Council's proposal to establish a Dark Sky Reserve in the Sunshine Coast hinterland. Simone has lived on the Sunshine Coast for close to 40 years and is passionate about maintaining and enhancing the region's enviable lifestyle and environment for future generations.*



Presentation Link: 

Title: Landscaping & The Importance of Dark Skies

Author: Tim Hart

Association: Registered Landscape Architect FAILA

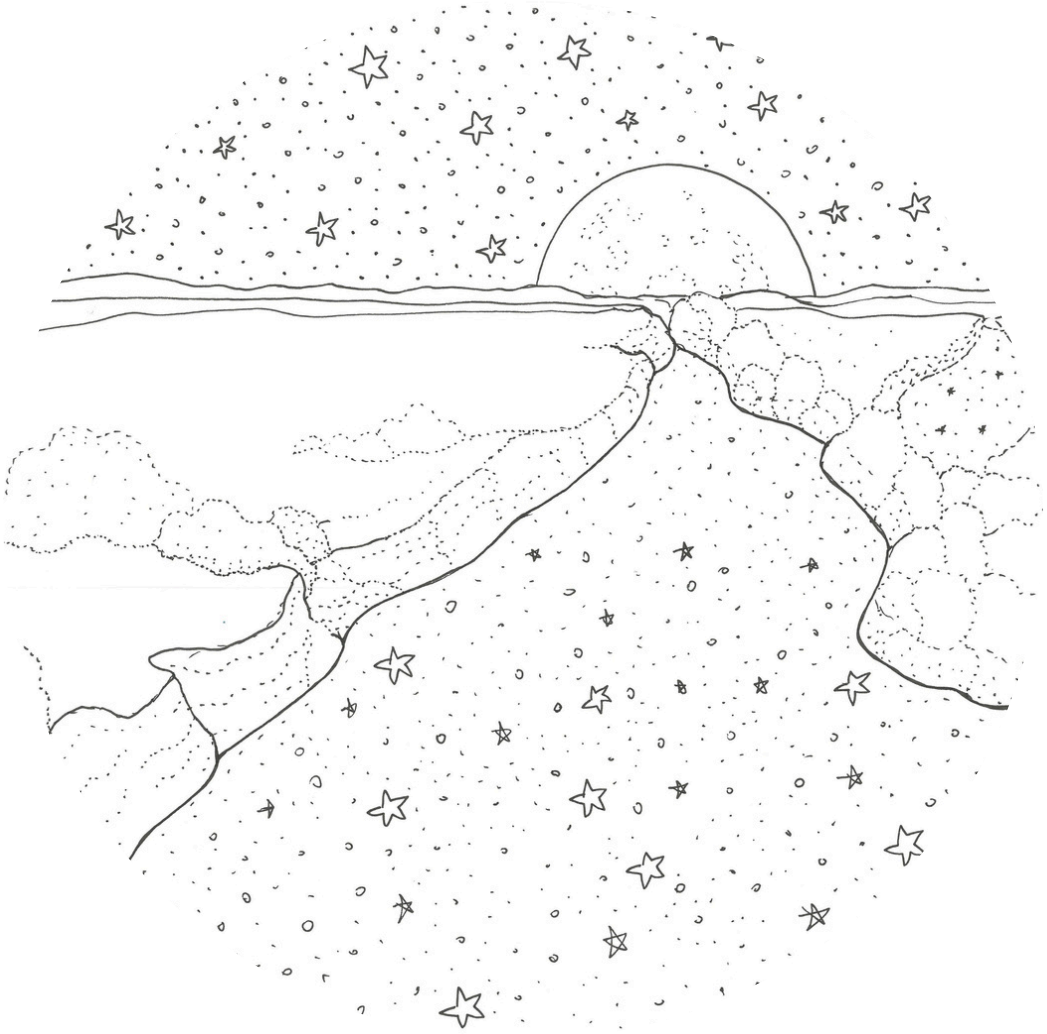
Contact Details: https://www.linkedin.com/in/tim-hart

Category: Dark Sky Actions

Abstract: Landscape Architects are becoming more aware light pollution and the importance of Dark Skies. Tim will discuss the concept that in a time of ecological and biodiversity crises, light pollution mitigation and fauna sensitive lighting is critical to the maintenance and restoration of urban ecosystems and needs to be considered in all projects undertaken by Landscape Architects. Further evidence-based research, case studies and inter-discipline collaboration is required to convince clients, policy makers and government bodies on the benefits, rather than the limitations or risks associated with light pollution mitigation.

Bio: *Tim Hart is the Managing Director of Urban Initiatives a Landscape Architecture and Urban Design practice with offices in Melbourne and Hobart. The practice has a long and rich history in the design of public realm projects. Over a 35-year career, Tim has led the practice on complex landscape, infrastructure projects and conservation projects. He has expertise in Park Master Planning, Zoo Exhibit and Biophilic Design, Water Sensitive Urban Design, and large-scale Environmental Planning projects. He has also has passion for Conservation, Sustainable Transport and Cycling projects. Tim is also the Co-Chair of the Australian Institute of Landscape Architects National Practice Committee and is currently working on a practice note to educate members about light pollution and the importance of fauna sensitive lighting in landscape architecture projects.*

Dark Sky Places



Title: Dark Skies and The Warrumbungle National Park **Presentation Link:**

Author: Chris Lidman

Association: Director, Siding Spring Observatory

Contact Details: https://rsaa.anu.edu.au/people/associate-professor-chris-lidman

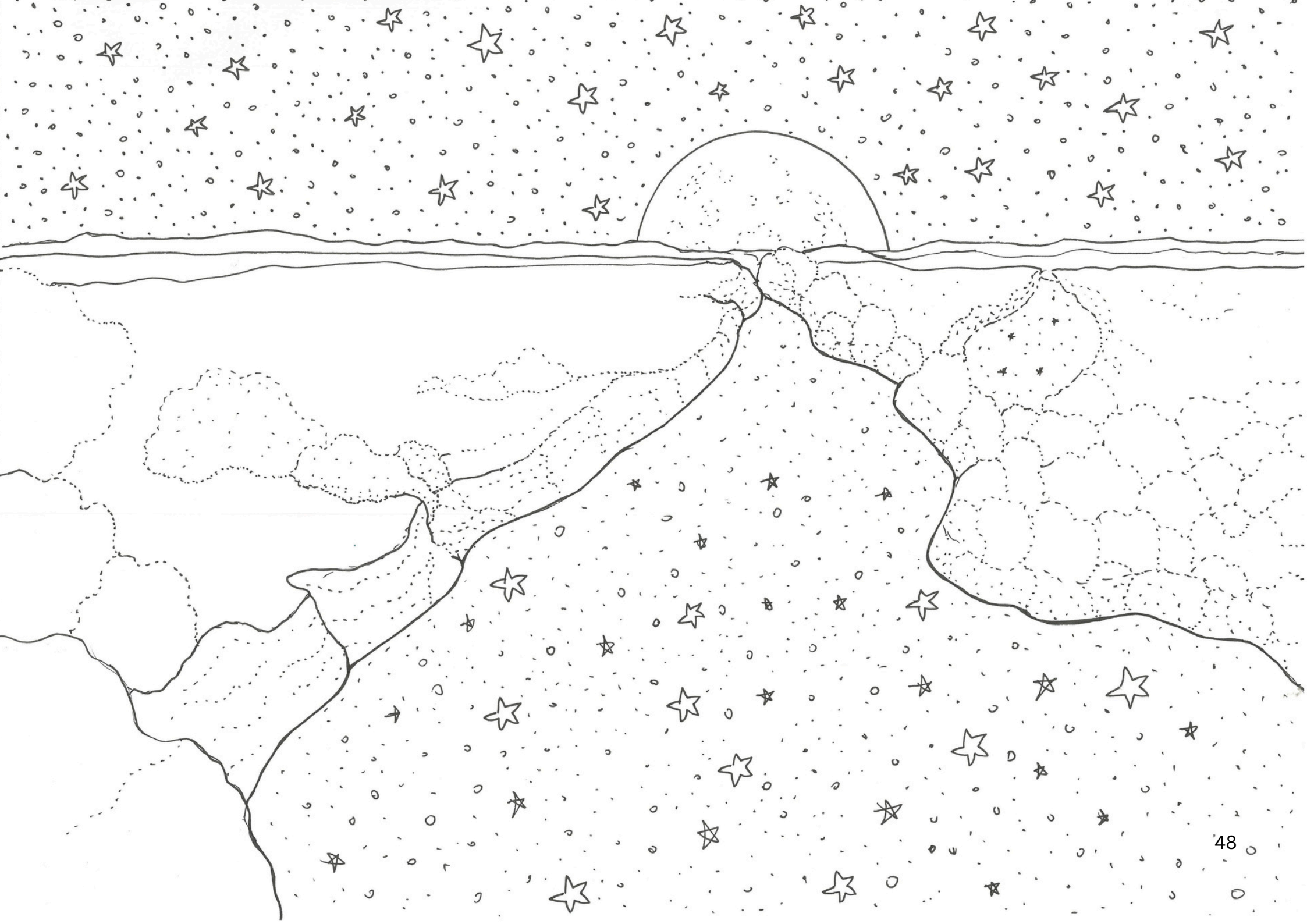
Category: Dark Sky Places

Abstract: Take a journey through Warrumbungle National Park, Australia's first International Dark Sky Park, and share what makes it a haven for stargazers and an essential part of our national dark sky heritage. Designated in 2016, Warrumbungle was recognised for its pristine skies, where low light pollution offers unmatched visibility of the cosmos.

We'll explore how the park's unique landscape, biodiversity, and community-driven conservation efforts contribute to its status, making it a model for dark sky preservation across the country. I'll discuss the environmental and educational benefits Warrumbungle brings to both visitors and local communities, and how it has paved the way for other dark sky initiatives. Join me to learn why places like Warrumbungle are so vital to science, tourism, and preserving our night sky for future generations.

Bio: *Professor Chris Lidman is the current Director of Siding Spring Observatory (SSO) and a leading advocate for dark sky preservation. With a career spanning over three decades, Chris has held key roles at some of the world's most prestigious observatories, including the European Southern Observatory (ESO) and the Australian National University (ANU).*

He played a vital role in the Supernova Cosmology Project, contributing to the discovery of the accelerating universe—work that was recognised with the 2011 Nobel Prize in Physics. Throughout his career, Chris has led ground-breaking observational programs focused on Dark Energy, Supernovae, and Adaptive Optics, and was instrumental in developing protocols for rapid follow-up of transient astronomical events.
Since returning to Australia, Chris has been at the forefront of efforts to preserve the natural night sky. As Director of SSO, he has actively worked to mitigate light pollution in the Warrumbungle region and chairs the Siding Spring Observatory Dark Sky Committee. Under his leadership, the observatory continues to balance cutting-edge science with environmental stewardship, ensuring that Australia's premier optical observatory remains protected for future generations.



Presentation Link: 

Title: The Unexpected Benefits of Dark Skies - River Murray

Author: Chris Tugwell

Association: Founder **-** River Murray International Dark Sky Reserve

Contact Details: https://www.linkedin.com/in/chris-tugwell

Category: Dark Sky Places

Abstract: Explores the surprising and far-reaching impacts of Dark Sky accreditation at the River Murray International Dark Sky Reserve. Beyond its primary goal of reducing light pollution, the accreditation has fostered stronger community connections, sparked important environmental conversations, and built valuable partnerships with local businesses and schools. Chris will also share how the Reserve has become a powerful tool in engaging with government departments and power companies, driving broader discussions on sustainability and policy change. Discover how protecting our night skies can lead to lasting benefits for both the environment and the community.

Bio: *Chris Tugwell became Chairman of Mid Murray Landcare SA in 2017. He was the driving force behind the 3,200 square kilometre River Murray International Dark Sky Reserve (Australia's first) working for four years with the Mid Murray Council, tourism specialists, local residents and experts from the Astronomical Society of SA to make the Reserve a reality. Chris was made the 2021 Mid Murray Citizen of the Year in recognition of his work to create the Reserve.*

Over the past 25 years, Chris and his partner have planted some 80,000 trees and bushes on their 350 acre sheep paddock at Big Bend, restoring habitat for local wildlife, including many resident wombats.

When not admiring the astonishing night sky, Chris is an award-winning Actor, Playwright and Film Maker with a career spanning more than forty years and some fifty productions; the best-known being X Ray, about Australian Guantanamo Bay inmate, David Hicks. Chris has served on many arts industry committees and boards, and was made a Life Member of the Australian Writers' Guild in 2012.

Title: Arkaroola Dark Sky Sanctuary

Presentation Link: 

Author: Doug Sprigg

Association: Arkaroola Dark Sky Sanctuary- Director

Contact Details: doug.sprigg@arkaroola.com.au

Category: Dark Sky Places

Abstract: Nestled in the rugged heart of the Flinders Ranges, Arkaroola is more than just a landscape of geological wonders—it is a celestial sanctuary. Doug Sprigg, custodian of this iconic reserve and a passionate advocate for dark skies, takes us on a journey through Arkaroola's extraordinary nightscape, where the Milky Way spills across the sky like a shimmering river of diamonds.

As one of Australia's first accredited Dark Sky Sanctuaries, Arkaroola offers an unparalleled window into the universe, free from the glow of artificial light. Doug shares the story of how his family's vision led to the protection of this pristine night environment, ensuring that generations to come can marvel at the same starlit skies that Indigenous Australians and early explorers once navigated by.

Through breathtaking imagery and firsthand experience, Doug will explore the science and significance of Arkaroola's celestial 'mine'—a treasure trove of cosmic wonders that inspires astronomers, adventurers, and dreamers alike.

Bio: *Doug Sprigg is the Director of Arkaroola Wilderness Sanctuary in South Australia—an internationally recognised destination for astronomy, ecology, and conservation. A passionate advocate for dark sky preservation, Doug has been running public observatory tours since 1986, sharing the majesty of the night sky with visitors from around the world.*

His fascination with the stars began in childhood, sparked by camping trips in remote Australia with his father, Reg Sprigg, a renowned Geologist and Founder of Arkaroola. At just seven years old, Doug accompanied his family on the first motorised crossing of the Simpson Desert, where he vividly remembers "sleeping under the wonder and majesty of the celestial canopy." That early connection to the night sky continues to inspire his mission to protect it.

Presentation Link: 

Title: Carrickalinga Dark Sky Community – An Unlikely Story

Author: Sheryn Pitman

Association: Project Lead Carrickalinga Dark Sky Community

Contact Details: https://www.linkedin.com/in/sherynpitman

Category: Dark Sky Places

Abstract: In May 2024 Carrickalinga, a small coastal town on the Fleurieu Peninsula in South Australia, achieved certification as an International Dark Sky Place. The journey by local residents and volunteers took three years and involved the hard work, support and contributions of many.

This is the unlikely story of how Carrickalinga became the first Dark Sky Community in Australia – from a twinkle in an eye to the emergence of a vision, through the bumps and hiccups along the way, the presentations, negotiations and consultations, to the frantic writing of media releases for the various announcements. While the achievement is significant, it is really just the beginning of a much longer and more critical journey to conserve and protect the natural night skies into the future.

Bio: *Sheryn has long worked in the field of bringing people and nature together. Currently leading the Adelaide National Park City project with Green Adelaide, she has previously led the state's Green Infrastructure and Sustainable Landscapes programs hosted by the Botanic Gardens of SA, the Inspiring South Australia program hosted by the SA Museum, and habitat restoration projects with Greening Australia. She has also worked as creative writer and as an educator in schools and universities.*

Sheryn's PhD in Ecological Literacy explored some of the complex relationships people have with the natural world along with ways to cultivate an informed population with the capacity to make effective and sustainable environmental decisions.

With a 30-year history of environmental volunteering in the Carrickalinga district of the Fleurieu Peninsula, she has recently worked closely with the Carrickalinga Community Association volunteers to co-lead and achieve certification for Carrickalinga Dark Sky Community, the first of its kind in Australia.

Title: Dark Sky Places Panel Discussion

Author: Marnie Ogg

Association: Outreach Director - Australasian Dark Sky Alliance

Contact Details: https://www.linkedin.com/in/marnie-ogg

Category: Dark Sky Places

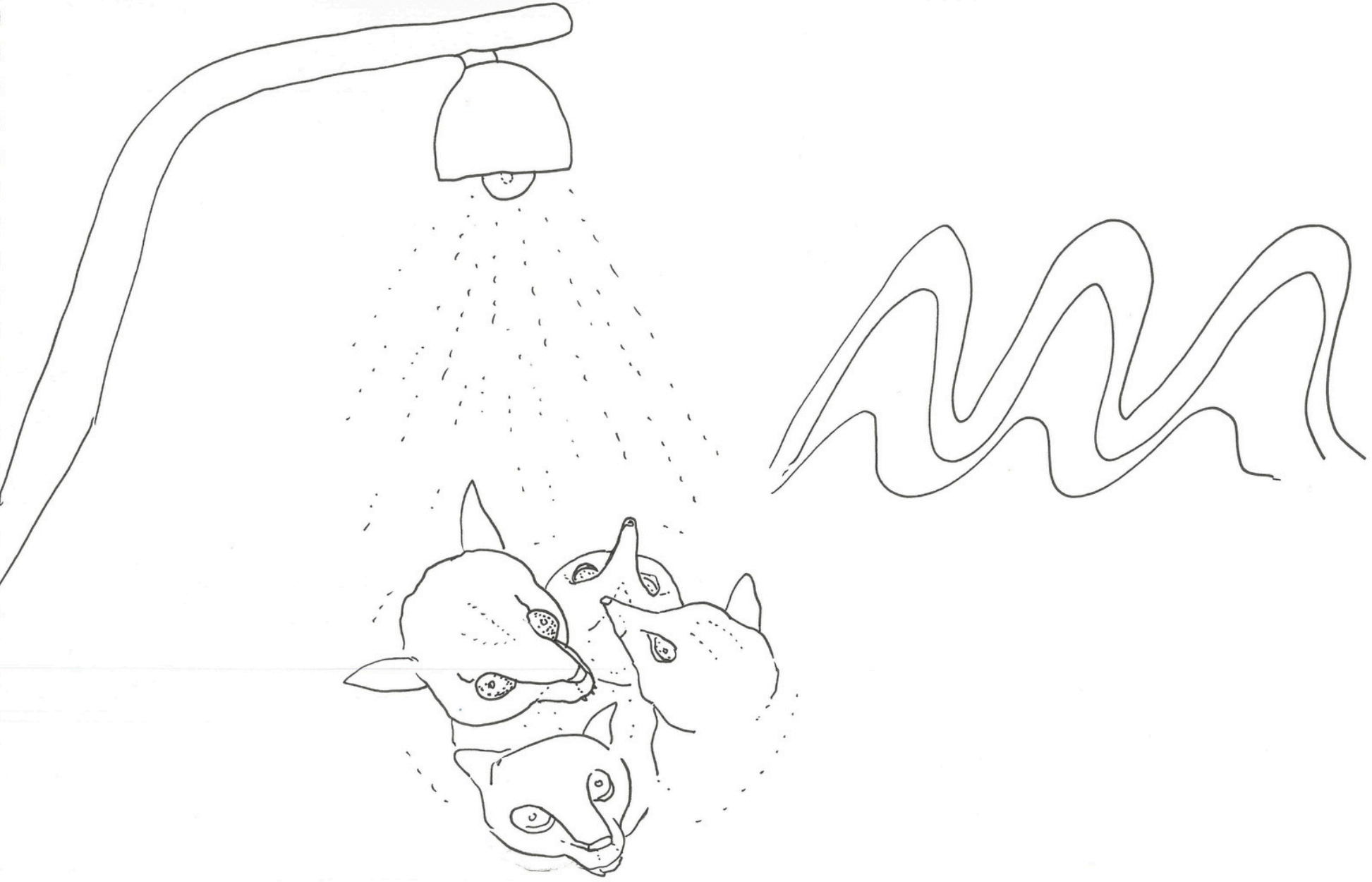
Abstract: Join us for an enlightening panel discussion featuring representatives from Australia's dark sky places, including Carrickalinga, Arkaroola, Palm Beach, Warrumbungle, River Murray, and Jump Up. Together, we will explore the importance of dark sky place-making and why more regions should consider embracing this initiative.

The panel will discuss the numerous benefits of becoming a designated dark sky location, from enhancing tourism and community pride to preserving natural nightscapes and promoting ecological health. They will also address the challenges involved, such as community engagement, regulatory hurdles, and balancing development with conservation.

Bio: *With over 17 years of experience as the Managing Director of Dark Sky Traveller, Marnie has successfully combined her passion for Astronomy, Tourism, and Conservation to create unique and memorable experiences for travellers and communities. As a two-time winner of the Dark Sky Defender Award, Principal Investigator for the Warrumbungle Dark Sky Park, and Principal Proponent for the Palm Beach Urban Night Sky Place, she has visited over 30 dark sky places around the world, with the view of sharing this majestic space for others to enjoy.*

Driven by a deep passion for the natural environment, she has leveraged her skills to promote and protect the night environment, educate and inspire audiences, and collaborate with diverse stakeholders. Her notable achievements include securing the designation of Australia's first Dark Sky Place and First Urban Dark Sky Place in the Southern Hemisphere, founding and leading the Australasian Dark Sky Alliance, orchestrating a successful Guinness World Record attempt on light pollution, and managing a pivotal report for the Commonwealth Government on light pollution. Her mission is to make a positive and lasting impact on our world.

Ecology and Research



Title: Energy-Efficient Lighting: Physiological Consequences of LED Lighting on Australian Wildlife

Presentation Link: 

Author: Alicia Dimovski

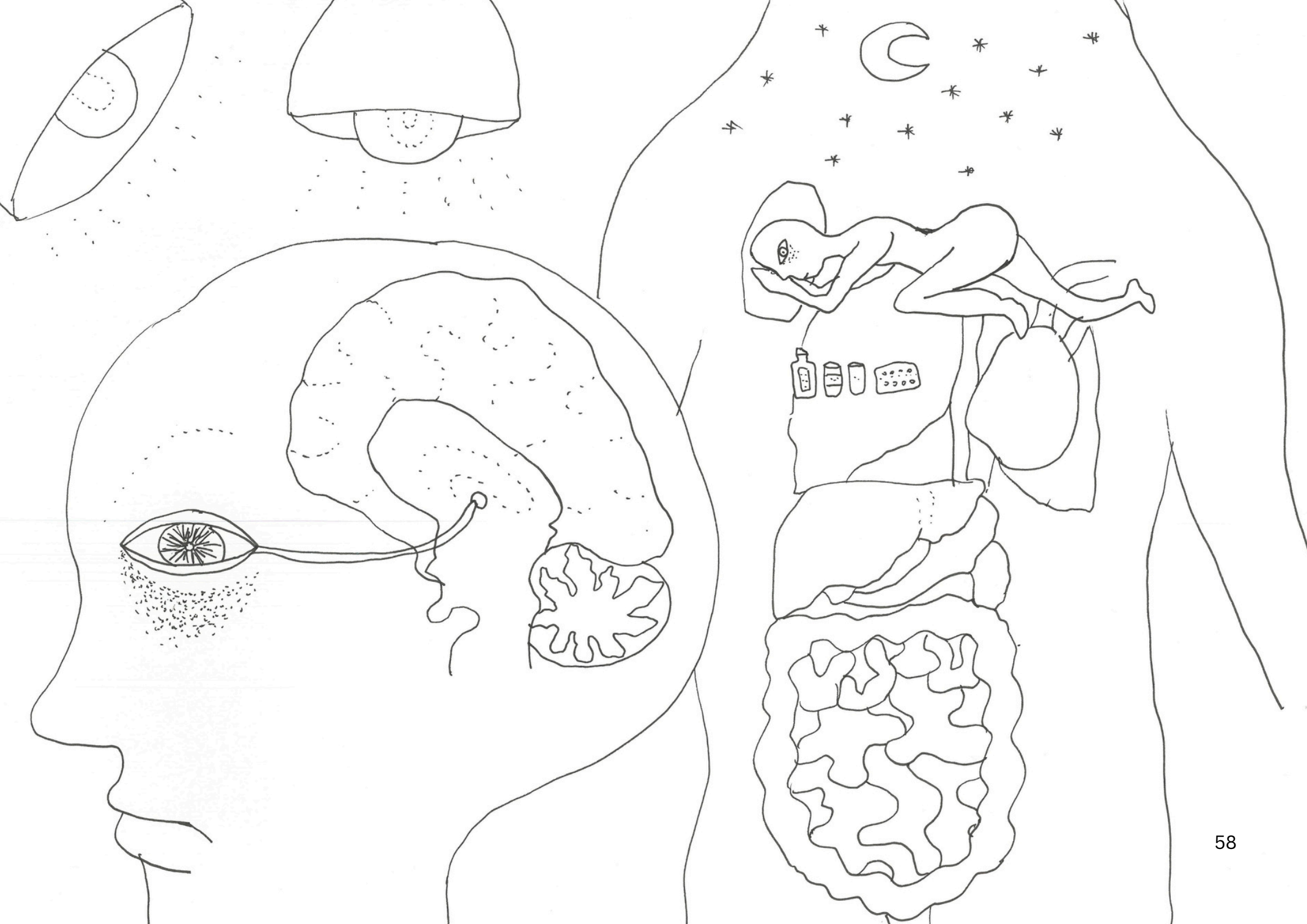
Association: Research Associate, Wildlife Conservation & Reproductive Endocrinology Lab (WiCRE)

Contact Details: https://au.linkedin.com/in/alicia-dimovski

Category: Ecology and Research

Abstract: Natural light-dark cycles synchronise an animal's circadian clock with environmental conditions. Artificial light at night drastically changes the nighttime environment by masking natural light cycles and disrupting well established biological rhythms. Over 80% of marsupials are nocturnal and are likely to be among the most vulnerable to the impacts of light pollution. The introduction of blue-rich lighting, such as white LEDs, may increase the biological effects of light at night on wildlife. This is because white LEDs consist primarily of short (blue) wavelengths, and these wavelengths play a greater role in regulating circadian rhythms. However, one advantage of LED light sources compared to traditional lighting is the flexibility to change the wavelength composition. I investigated the effect of light spectra on the physiology and activity of nocturnal Australian marsupials. I examined the effect of short-wavelength white LED lighting (standard urban lighting) and long-wavelength amber LEDs (proposed wildlife sensitive lighting) on biological rhythms in fat-tailed dunnarts (Sminthopsis crassicaudata) and Krefft's glider (Petaurus notatus). Exposure to white and amber LEDs disrupted activity and induced seasonal oestrous in fat-tailed dunnarts. In Krefft's gliders, melatonin and glucocorticoid expression were disrupted following exposure to white LEDs. In contrast to previous studies this disturbance was also observed in animals exposed to amber LEDs. I provide evidence that long-wavelength LEDs can disrupt physiology and may not be a wildlife sensitive lighting option for all species. My findings highlight the importance of developing species-specific knowledge of the effects of artificial light at night on wildlife physiology.

Bio: *Dr. Alicia Dimovski is a Postdoctoral Research Associate in the Wildlife Conservation and Reproductive Endocrinology Group at La Trobe University. Alicia completed her PhD in early 2024, investigating the impact of artificial light at night on Australian nocturnal mammals. Her PhD research showed mammal species' behaviour and physiology is altered by light and highlighted both the need, and solutions for, "wildlife sensitive" lighting. Alicia's post-doctoral research uses non-invasive hormone monitoring techniques to assess and improve animal conservation and welfare. She is currently examining the reproductive physiology of threatened mammals to improve the success of conservation breeding programs.*



Title: Body Clocks and the Impact of Light Pollution

Author: Ashleigh Anderson

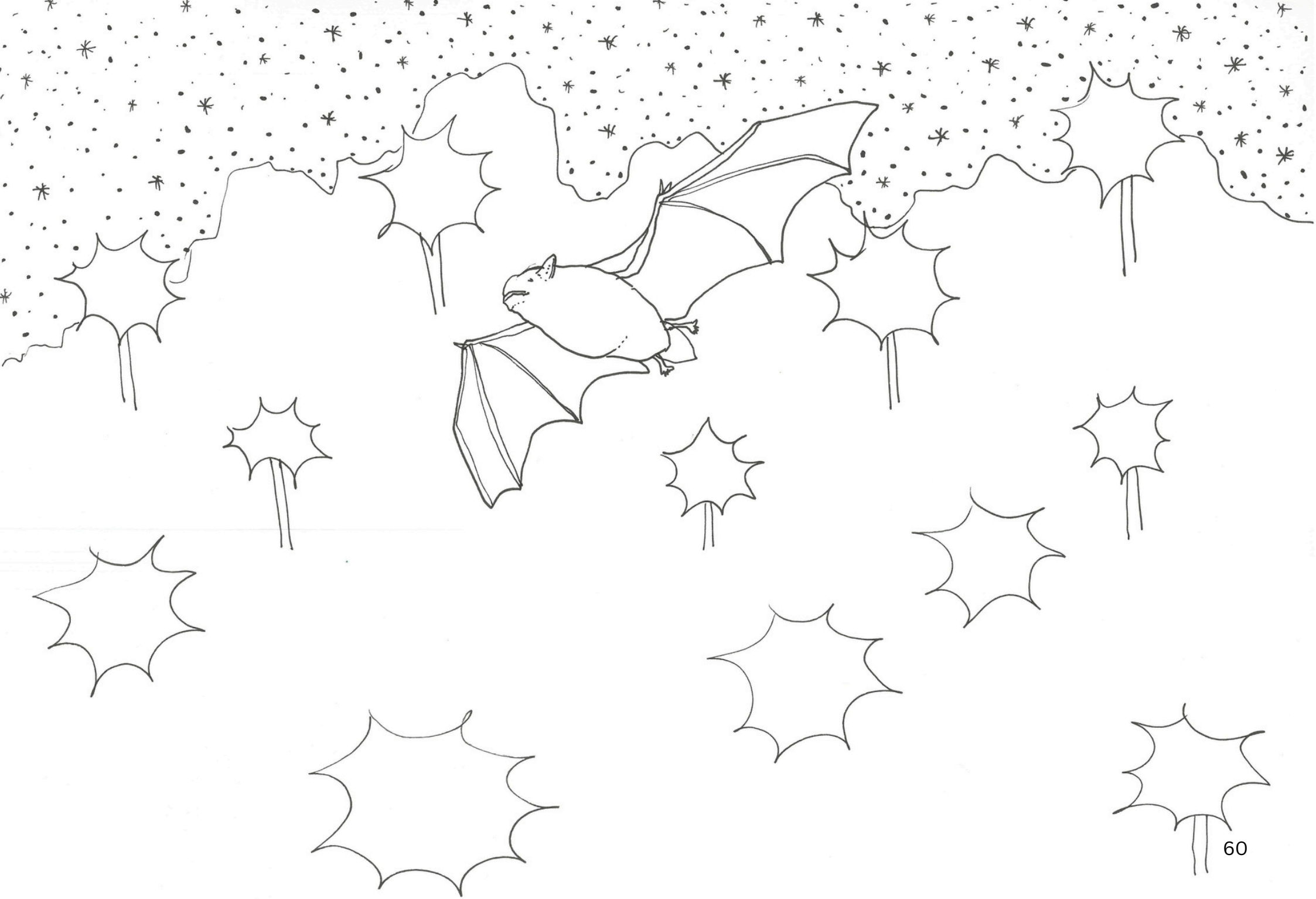
Association: PhD candidate School of Biosciences UniMelb

Contact Details: https://www.linkedin.com/in/ashleigh-anderson

Category: Ecology and Research

Abstract: Artificial light at night (ALAN) is a widespread pollutant known to be a powerful disruptor of ecological processes. The role of ALAN as a circadian disruptor and the potential for different impacts of ALAN due to genetic differences within a population are less known. The ability of ALAN to mask light cues can result in a misalignment of the internal circadian clock and the natural 24-hour light cycle leading to ongoing fitness consequences. Here, I examined the effect of ALAN and circadian rhythmicity on key life history traits in Drosophila melanogaster. ALAN is known to desynchronise the timing of key life history traits in D. melanogaster – such as eclosion time, activity patterns and fecundity. I used ten established genetic populations of Drosophila with either consistent or inconstant circadian rhythmicity to determine whether the impact of ALAN can be influenced by genetic differences within a species. I reared individuals under comparable daytime conditions but either ALAN or natural darkness during the night. I found that individuals with a more consistent circadian rhythmicity reared under ALAN took longer to develop than when they were under relative darkness. In contrast, individuals with a less consistent circadian rhythmicity had similar development times under both lighting conditions and had a comparable development time to individuals with consistent rhythmicity reared under relative darkness. This evidence suggests that some individuals in a population may have a higher vulnerability to the impacts of light pollution due to their circadian rhythmicity. This is an important knowledge gap as understanding how different genotypes respond to the presence of light at night may influence how populations (particularly small vulnerable ones) survive in the face of increasing nocturnal brightness.

Bio: *A current first year of PhD candidate working with Prof. Therésa Jones and Dr Kathryn McNamara. She is exploring the impact of artificial light at night on the circadian rhythm and individual fitness of Drosophila Melanogaster. With she research, she hopes to specifically explore intraspecific circadian variation and how this variation alters individuals' responses to artificial light at night.*



Presentation Link: 

Title: Is Turning the Light Off Enough? Impacts of Intense Temporary Lighting on Insectivorous Bats

Author: Kaori Yokochi

Association: Deakin University - Lecturer in Ecology and Conservation Biology

Contact Details: https://www.linkedin.com/in/kaoriyokochi/

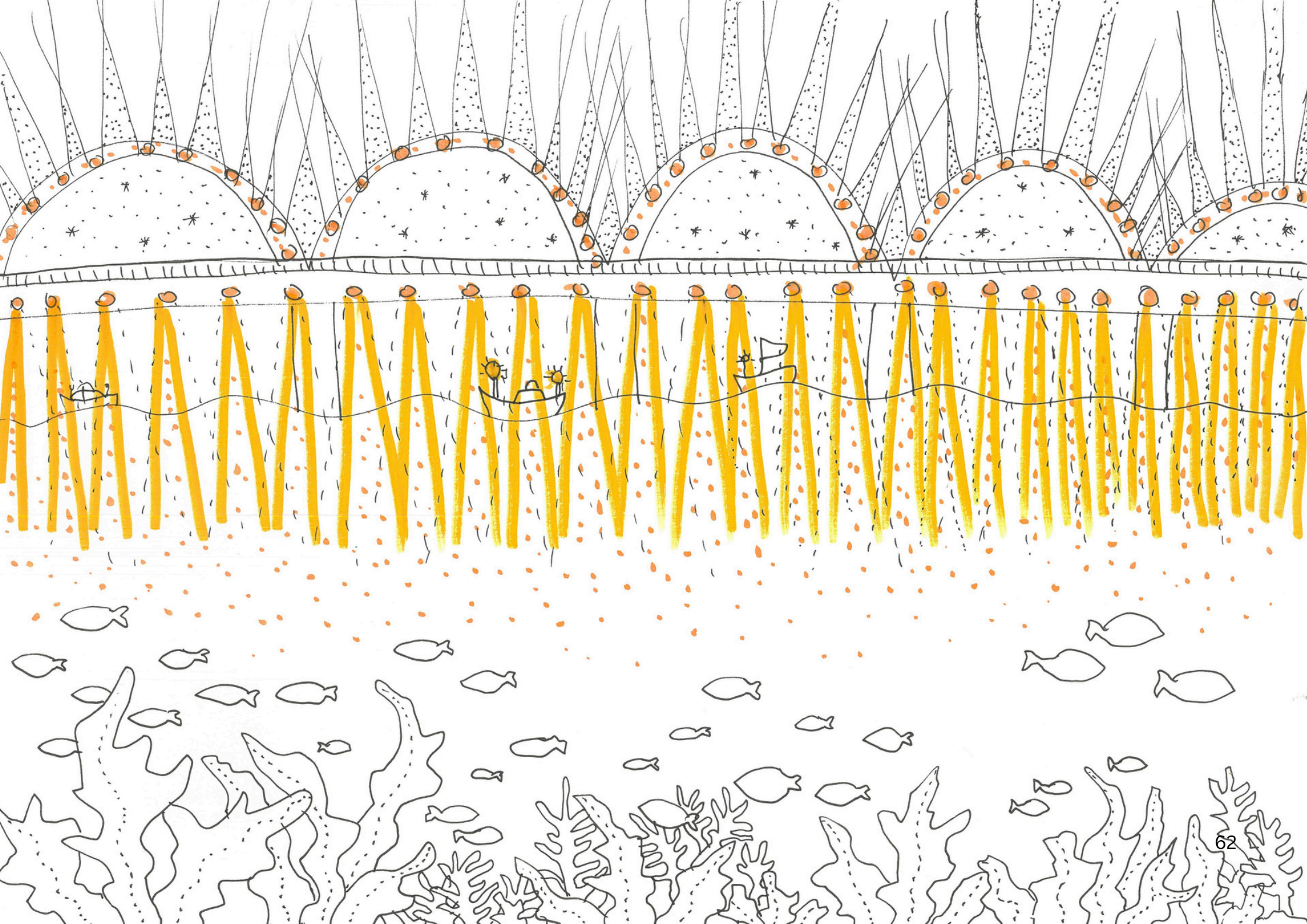
Category: Ecology and Research

Abstract: Intense, temporary lighting is a common feature of our cities (e.g. sporting fields), but their ecological impacts are not well understood. Small insectivorous bats, a.k.a. microbats, are a group of understudied mammals that persists in urban settings. They play an important role for ecosystems and human society by consuming a large number of flying insects, many of which are considered harmful to agriculture and human health.

Permanent light (e.g. streetlight) are known to impact microbats by reducing their diversity and activity levels; however, impacts of intense temporary lighting is unknown. We surveyed microbat activity at tennis courts in greater Melbourne when the light is in use and when the light is not in use, with unlit control sites also surveyed for comparison.

Our results indicated that light sites had a lower diversity of microbats in general compared to control sites, with slower-flying, clutter-adapted species tending to avoid the light sites even when the lights were turned off. Greater light intensity also saw reduced diversity and activity of nearly all species surveyed. This suggests that simply turning off lights may not be enough to mitigate the impacts for some species, and wildlife-sensitive placement of lighting should be considered at the planning stage.

Bio: *Kaori is a Lecturer and Wildlife Ecologist at Deakin University who focuses on conservation of Australian mammals, with a particular interest in Urban Ecology and impacts of human infrastructure on wildlife. Working with stakeholders such as local councils, she aspires to find better ways for humans and wildlife to coexist in our cities. Kaori joined NERAL (Network for Ecological Research on Artificial Light) in 2020 when she started the research on the impacts of temporary lighting on microbat communities.*



Title: Effects of ALAN on the Marine Environment

Presentation Link: 

Author: Mariana Mayer Pinto

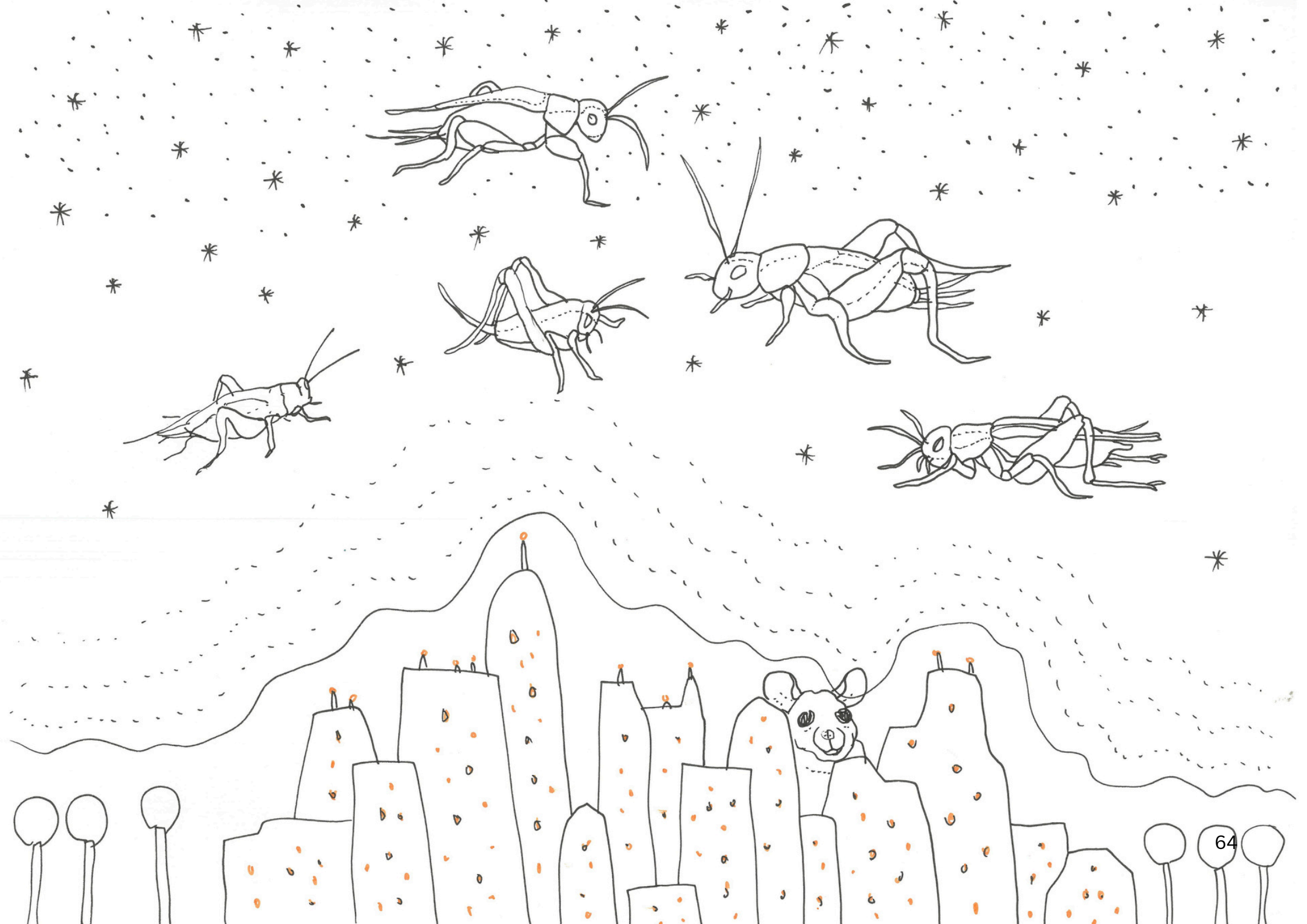
Association: Associate Professor UNSW

Contact Details: https://www.linkedin.com/in/mariana-mayer-pinto/

Category: Ecology and Research

Abstract: More than 20% of the world's coastlines are experiencing high levels of artificial light at night (ALAN), with consequences for the physiology, behaviour and/or survival of organisms. Even at 10 m depth, 1.6 million km2 of the coastlines across the globe are exposed to biologically important ALAN from coastal urban centres. Yet, we have limited knowledge on the effects of light pollution on the marine environment, including impacts on key habitat-forming organisms. In this talk, I'll give an overall summary of the observed and predicted effects of ALAN on the marine environment and will present results from a series of manipulative experiments done in the field and in the lab, showing clear effects of ALAN – either by itself or in combination with warming – on habitat-forming seaweeds and associated biotic interactions. Underwater forests often comprise multiple habitat-forming seaweed species, including the kelp Ecklonia radiata and the fucoid Sargassum spp. These species support high biodiversity, including endemic and commercially significant species and contributes $10 billion per year to fisheries, tourism and recreation industries. Impacts of light pollution on these species, either in isolation or in combination with other stressors, are therefore expected to have profound impacts on urbanised temperate reef systems, specially. Understanding ALAN impacts can help us devise efficient conservation and management strategies to improve quality of habitat for key species and habitats in and around cities.

Bio: *Mariana Mayer Pinto is a marine ecologist and a Scientia Associate Professor at the School of Biological, Earth and Environmental Science at UNSW. She is also the co-founder of the Living Seawalls, an international award-winning project that aims to mitigate biodiversity loss in our oceans due to marine construction. Mariana has more than 15 years' experience working in the marine environment. She obtained her PhD in Marine Sciences from the University of Sydney and holds a MSc in Zoology from Federal University of Rio de Janeiro.*
Her research focuses on how human activities, such as light pollution and urbanisation, affect the marine environment with the ultimate goal of developing evidence-based solutions for not only mitigating their impacts, but also restoring and rehabilitating marine ecosystems.



Title: Artificial Light at Night and the Gut Microbiome

Author: Nicola-Anne Rutkowski

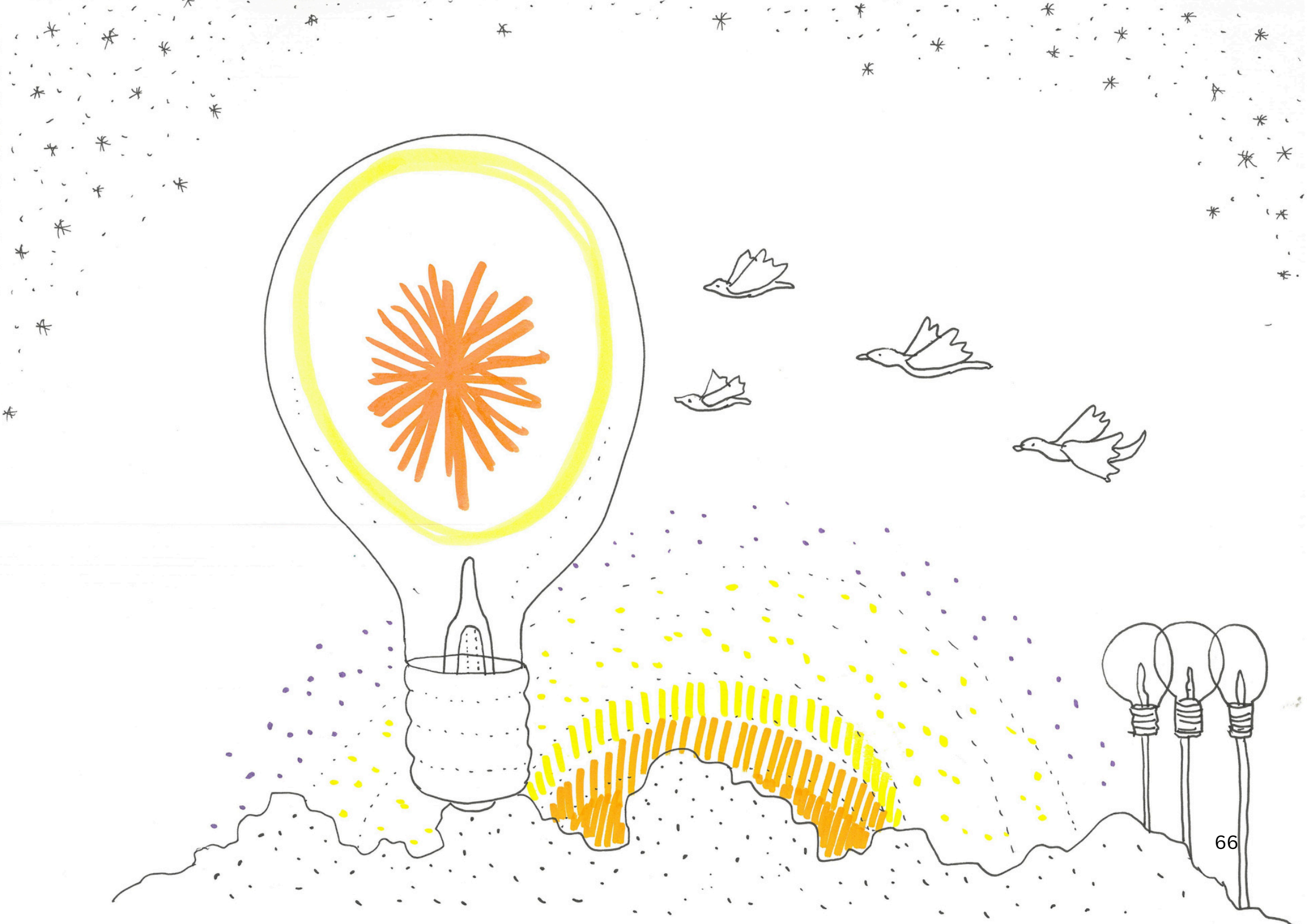
Association: UniMelb - PhD Candidate

Contact Details: https://www.linkedin.com/in/nicolautkowski/

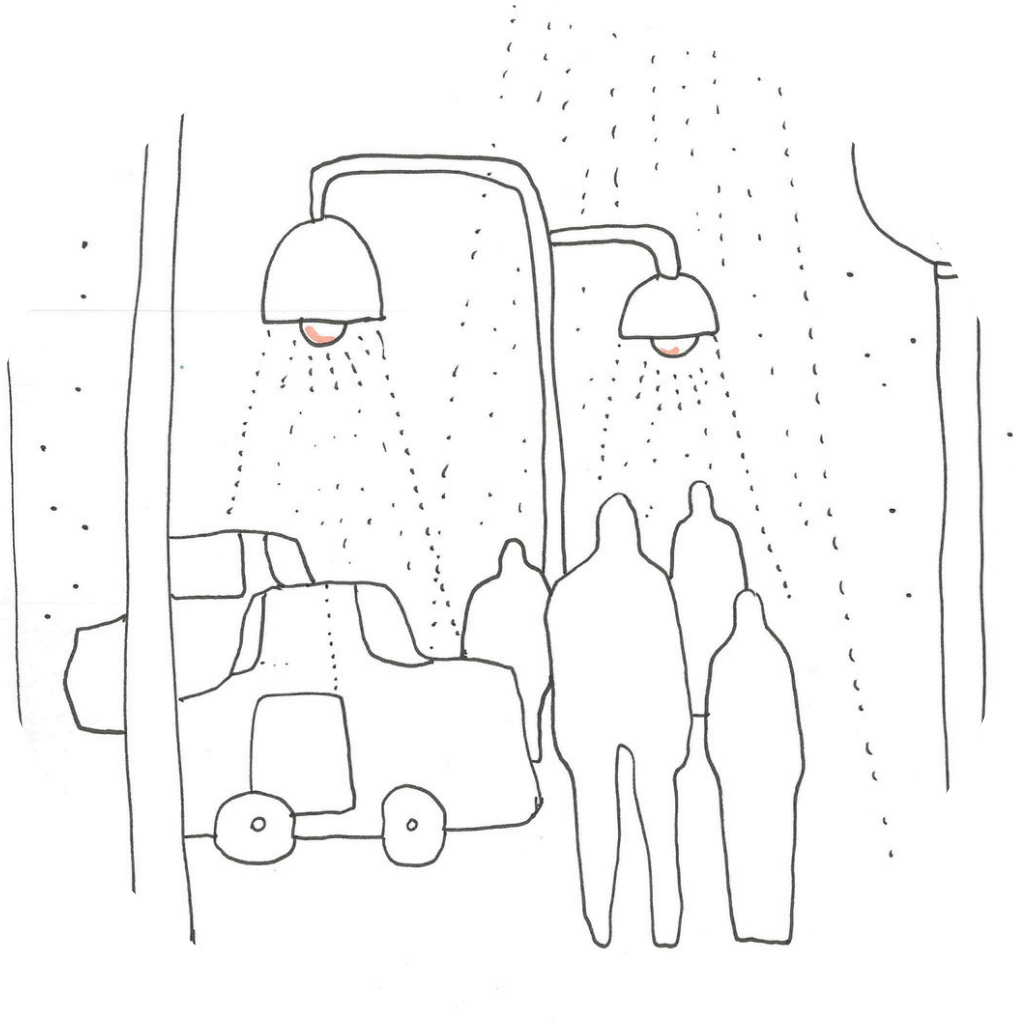
Category: Ecology and Research

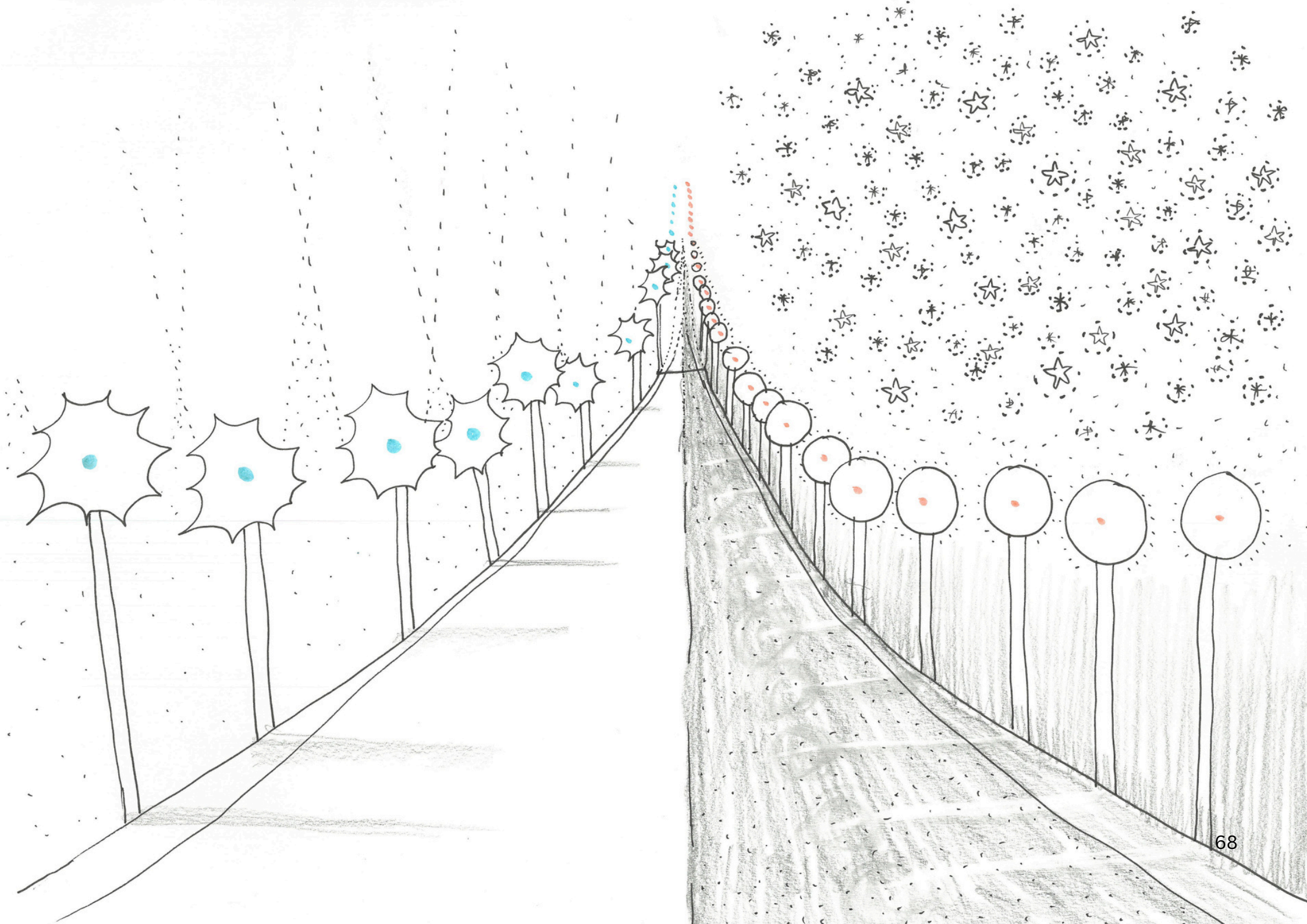
Abstract: Artificial light at night (ALAN) is a widespread global pollutant that negatively affects the physiology and behavior of animals. ALAN masks natural light cycles and affects nocturnal melatonin synthesis, a chemical involved in circadian function and a powerful antioxidant. Supplementation with dietary melatonin has been shown to alleviate light-related fitness impacts when following exposure to constant 24hr light. It is unclear however, if the same improvements can be seen (i) after exposure to more biologically relevant levels of ALAN (10 lux); or (ii) if improvements are comparable with different durations of light exposure. To address this knowledge gap, we experimentally manipulated the presence of light at night and explored whether dietary supplementation with melatonin can alleviate the negative consequences of ALAN exposure. We reared juveniles of the Pacific field cricket, Teleogryllus oceanicus, under one of three different lighting regimes and then allocated them to one of two dietary melatonin treatments as subadults. We explored responses across a range of physiological traits including, immune function, gut microbial diversity, fecundity, sperm viability and survival. Critically, we show that sperm viability is reduced following long-term ALAN exposure, but that melatonin supplementation can improve outcomes.

Bio: *A second year PhD candidate at the University of Melbourne working with Dr. Kathryn McNamara and Prof. Theresa Jones, Nicola-Anne is exploring the role of light at night on physiological, behavioural and fitness traits, using two species of field cricket, Teleogryllus oceanicus and the sister species T. commodus. With her research, she hopes to answer questions surrounding the mechanisms underpinning the negative impacts of light at night and test whether melatonin, the chemical of darkness might aid in mitigating fitness declines.*



Industry Insights





Title: Canberra - Reducing Light Pollution

Author: Danny Bettay

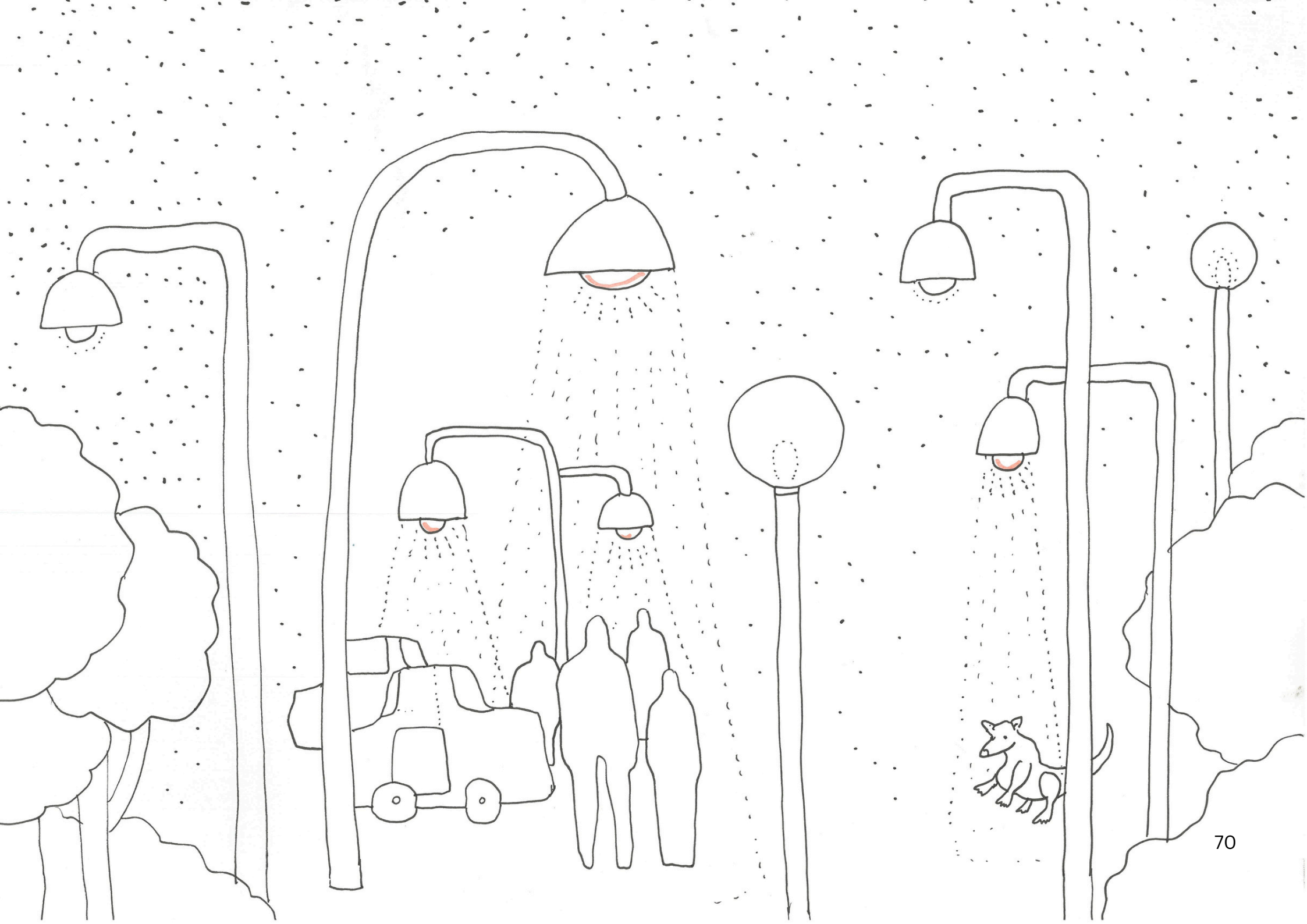
Association: Assistant Director at Department of Infrastructure, Transport, Cities and Regional Development

Contact Details: https://www.linkedin.com/in/dannybettay

Category: Industry Insights

Abstract: Since its establishment, Mt Stromlo has had policies around both the environment and lighting to allow us to do our work and keep the skies as relatively dark as possible. While the necessity of this may have stopped or been reduced with the 2003 fires, in the past 5 years, Omexom, who manages and operates the lighting infrastructure in Canberra, have been aiming to reduce light spill and the carbon footprint of the city. The ACT lighting network is being upgraded to both better and more efficient lights (LEDs) with 60% of luminaire now upgraded. The new luminaire are able to be individually controlled and have a custom power/wattage output. We have been trialing reducing the overall lighting of Canberra at various levels, and measuring the impacts on sky glow, sky brightness, as well as the energy and subsequent CO2 emission savings. We will present the system, experiment, and results from this as well as where to next - both in Canberra and as a model for other cities across the world.

Bio: *Danny is a PhD candidate at the School of Cybernetics. Danny has 10+ years in architecture, design and construction. He has been involved in a number of high-profile projects of national and international economic significance, including the Western Sydney International Airport Program and the Western Sydney City Deals, as an Assistant Director at the Department of Infrastructure, Transport, Cities and Regional Development. Danny is a passionate designer who also volunteers his time as an Assistant Lecturer at the Canberra Institute of Technology guiding students to transform their ideas from an intangible concept to a tangible reality, using computer-aided programs such as Autodesk Revit. During the 3Ai Masters, when we challenged the students to ask new questions, Danny approached sensing from the perspective of sensory deprivation, opening us up to an entirely different way of experiencing the world.*



Presentation Link: 

Title: Intelligent Dimming and Examples of LGA's Dynamically Reducing Light Pollution

Author: Claus Oustrup

Association: Director of Felicity Smart Infrastructure & Oustrup Pty Ltd

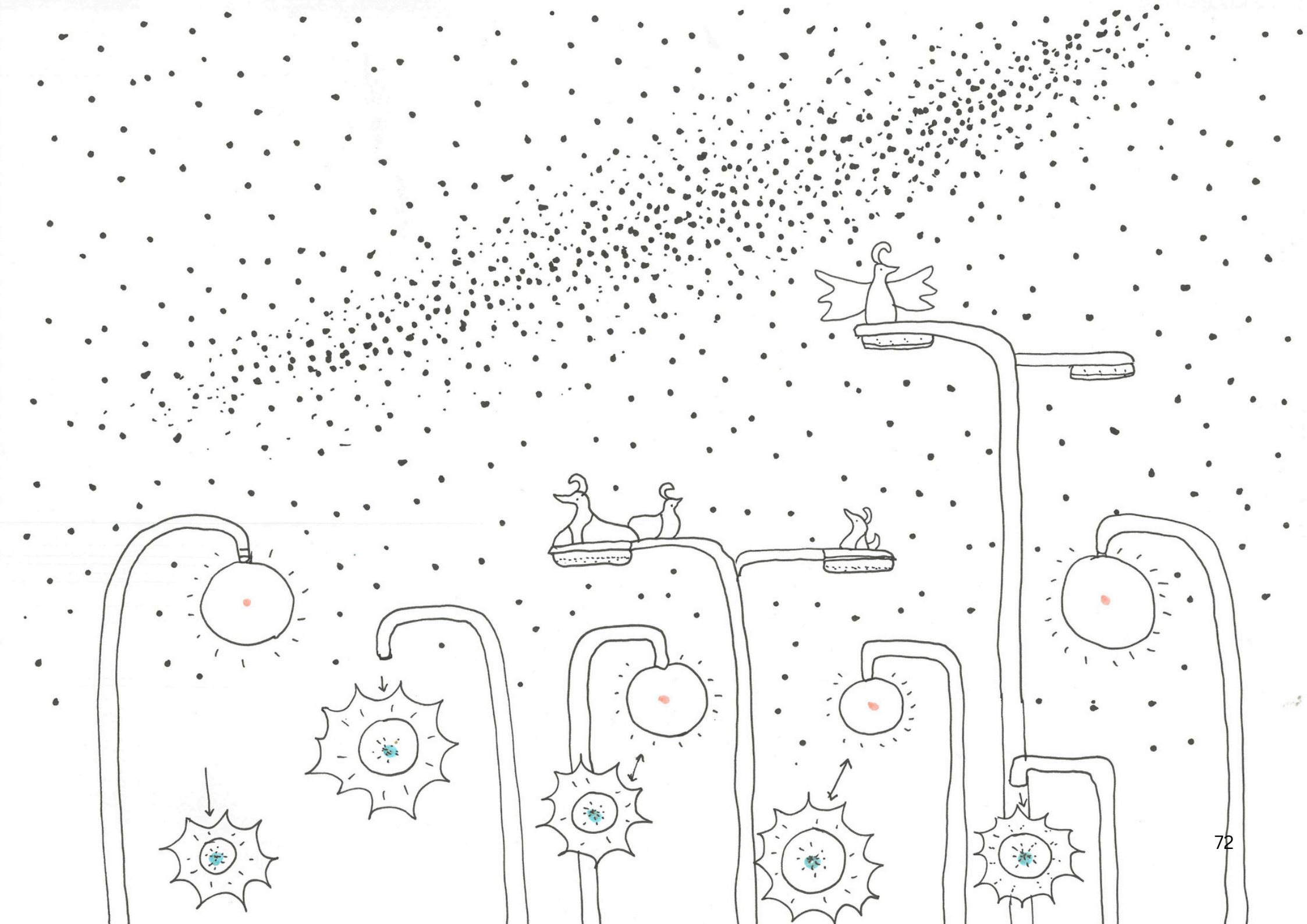
Contact Details: https://www.linkedin.com/in/claus-oustrup

Category: Industry Insights

Abstract: This is an introduction to Intelligent Dimming and examples of LGA's dynamically reducing light pollution through the use of AI.

Felicity Smart Infrastructure is the inventor and patent holder of PowerAID, which is designed to match main road streetlighting with real-time traffic intensity. The clever application considers safety first, but dynamically adjusts the lighting levels when it is safe to do so. As a result, local councils and road authorities harness an average of 40% in power reductions, CO2 emissions and light pollution.

Bio: *As the COO and Co-Founder of Felicity Smart Infrastructure, Felicity's purpose is to minimize CO2, light pollution and drive safer roads. She is proud to be working in a great team on technology and services which deliver tangible results across geographies. Delivering outcomes which have immediate impact is a great motivator that accelerates our environmentally friendly AI technologies.*



Title: How Can Smart Lighting Support a Dark (er) Sky Future

Presentation Link: 

Author: Paul Brown

Association: Managing Director - Opticity

Contact Details: https://www.linkedin.com/in/paul-brown

Category: Industry Insights

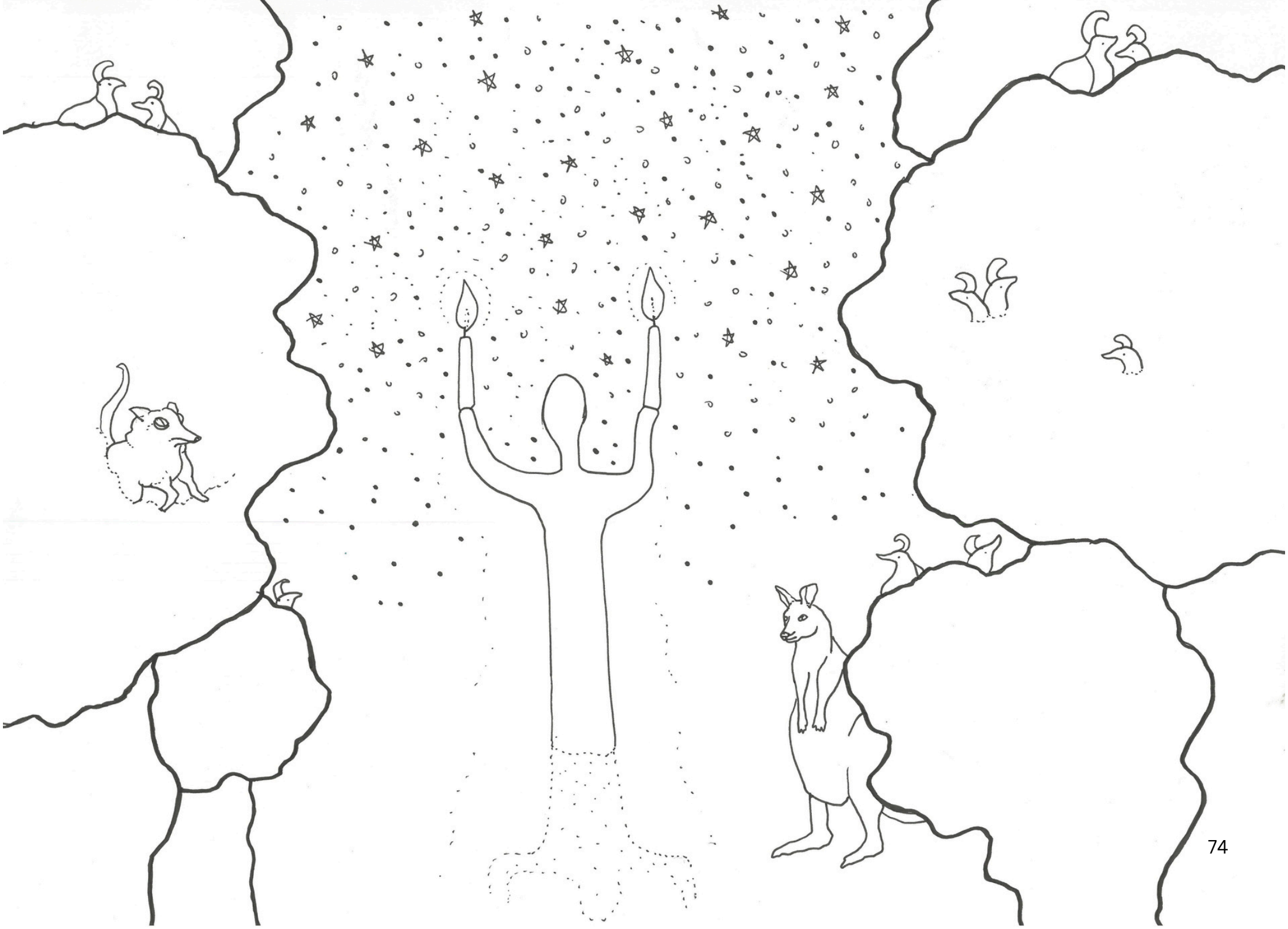
Abstract: Local governments are responsible for 80% of street lighting and much of the path and sports lighting in Australia. Ironbark works with over 200 councils each year grappling with all the challenges and opportunities around public lighting – from understanding relevant standards, working with stakeholders like distribution businesses and main road authorities, community safety, emissions reduction, energy costs and light pollution. Ironbark's Paul Brown will answer the following key questions:
How do local governments balance safety and the need for lighting with sustainability?
How is it possible to reduce lighting levels by 40% and still be compliant with Australian Standards?
What does best practice look like?
And ultimately why is smart lighting the key to unlocking the end game of sustainable lighting and Dark Skies!

Bio: *Managing Director of Ironbark Sustainability, with over 20 years of experience in helping organisations respond to the challenges of climate change, technology and smart cities.*

After working in local government, Paul founded Ironbark Sustainability in 2004 to help councils and their communities deliver sustainable street lighting and climate management programs. At Ironbark, Paul has helped to install over half a million low energy streetlights and works with around 200 local governments every year.

Ironbark has steadily expanded since its formation and now serves around 200 local governments each year. Ironbark has helped clients deliver projects that will save over 3 million tonnes of greenhouse emissions and $500m of operating costs. Recently Ironbark has developed carbon emission data for all of Australia's more than 500 local governments.

Paul is an experienced speaker and facilitator and provides strategic direction to smart lighting, big data and smart city projects nationally.



Title: Protecting Species and Prioritising Fauna Locally and International: A Case Study Sharing Session

Author: Victor de Lange

Association: Signify - Product Marketeer, Outdoor

Contact Details: https://www.linkedin.com/in/victordelange/

Category: Industry Insights

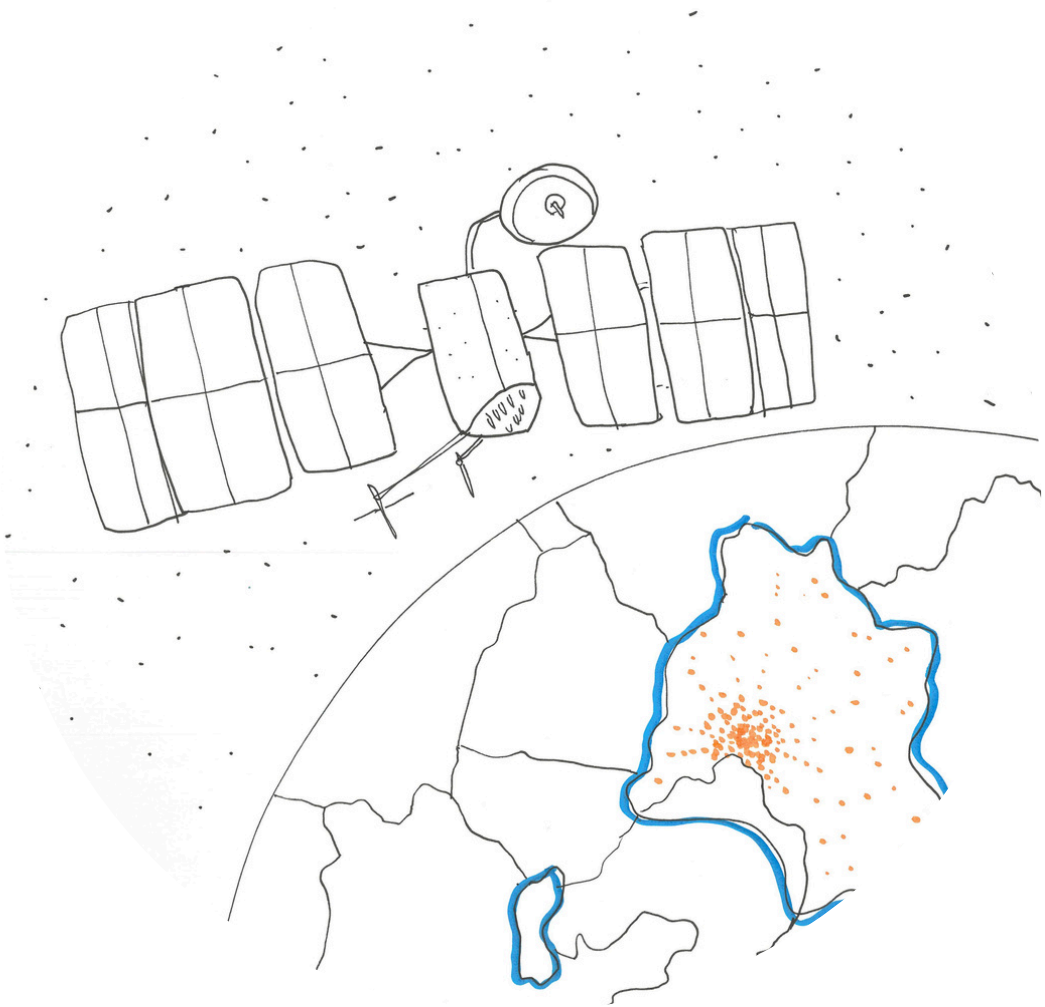
Abstracts: This session will discuss Signify's project case studies in the Town of Pepperell in Massachusetts, USA where the town's 409 high-pressure sodium light fixtures were replaced with LED light fixtures with warmer CCT's that minimizes light pollution, reducing effects known as 'glare', 'skyglow' and 'trespass'.

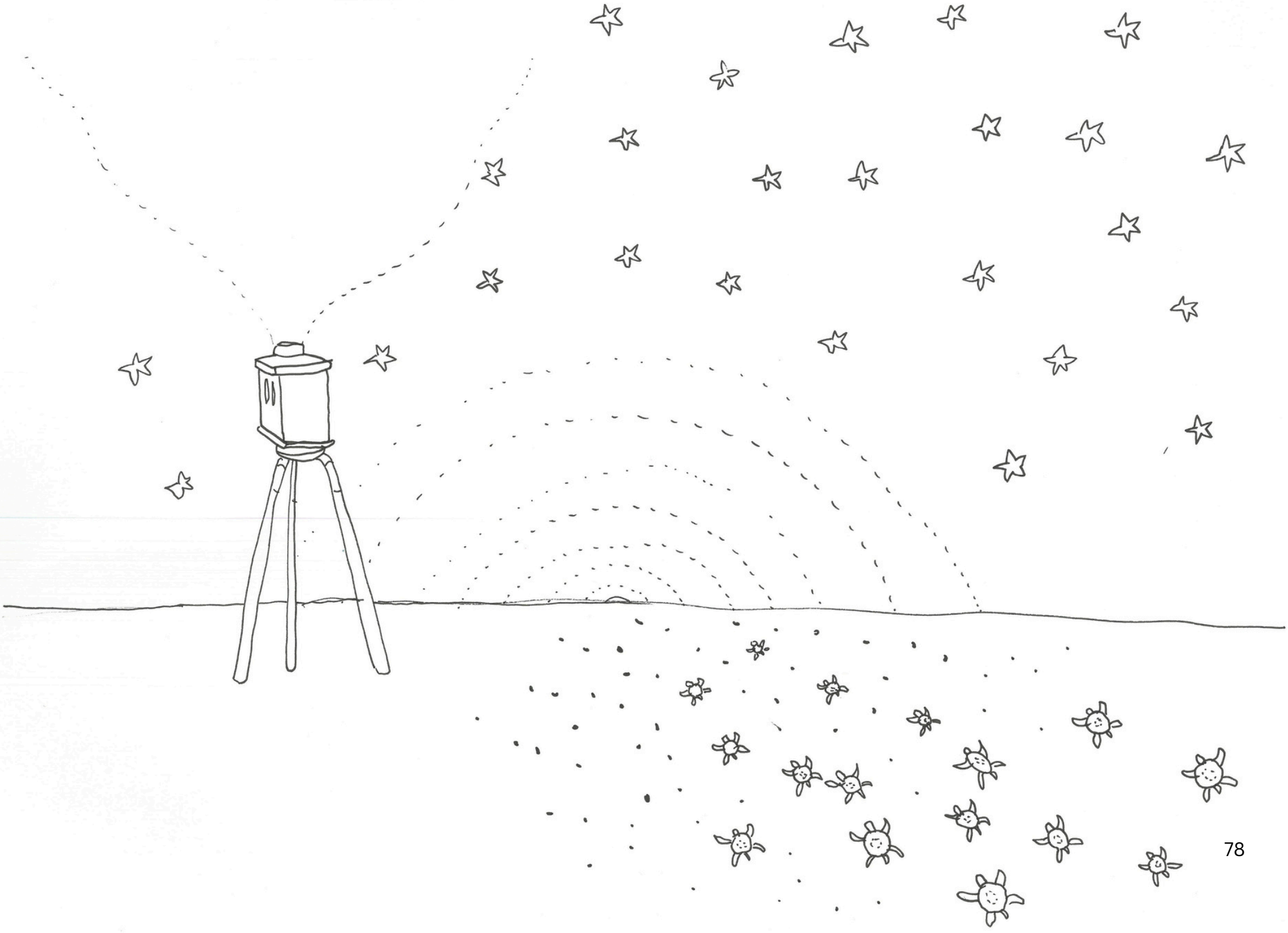
Closer to home in the City of Canberra, a test has been done with Tunable White luminaires to understand the impact on the neighbourhood and the wider environment. What did we learn, and how can these innovative solutions transform the future of street lighting?

Bio: *Victor has always been amazed by how lighting design can affect our mood, the first impression of a space we walk in, a building we pass by. What's more, lighting isn't just a feature anymore that you simply switch off and on. In today's connected world, you can use data from intelligent lighting to impact your decisions and drive innovation to improve operations and reduce costs. LED lighting lowers your carbon footprint, or can even help to create net-zero workspaces or buildings.*

We all see how climate change is increasingly affecting our life. As lighting can consume up to 40% of energy in commercial buildings, there is still a lot to win in that area. Recognising these trends and after representing Philips and Osram in China where he helped MNC's in the APAC, Middle East and Africa lower their carbon footprint through sustainable and innovative lighting solutions. In 2016 he relocated with Osram to Australia and after working for Delta Light he wanted to realise my dream of helping organisations reducing carbon footprint, one floor and one building after another.

Measuring Light





Title: Predicting Impacts on Wildlife Before It's Too Late: Modelling Light Pollution

Author: Adam Mitchell

Association: Nocterra

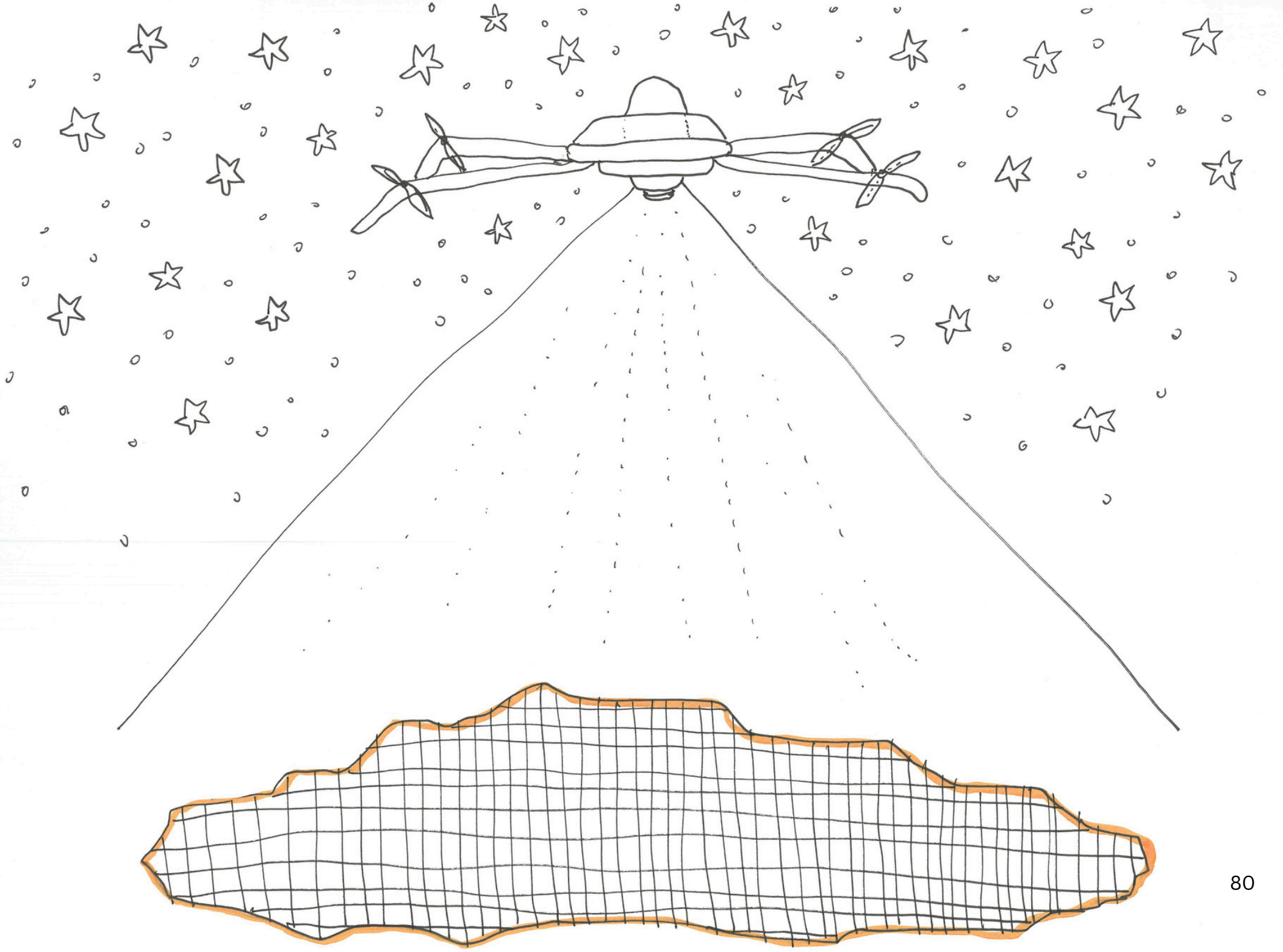
Contact Details: https://www.linkedin.com/in/adam-mitchell-6b6053b/

Category: Measuring Light

Abstract: Finding ways to measure biologically meaningful light has become increasingly important as awareness of light pollution and its impact on wildlife has grown. Equally, the need for predicting impacts before they occur has increased.

In this presentation, we outline how we model light from new developments and combine the outputs with monitoring data. This allows us to understand potential behavioural impacts on wildlife and mitigate them before they occur.

Bio: *Adam is a Principal Ecologist at Nocterra, specialising in assessing the impacts of artificial light on wildlife with a key focus on marine turtles, migratory birds and bats. He has dedicated his career to finding and developing new technology to more appropriately measure light that is biologically meaningful, mitigating impacts on vulnerable species, and educating stakeholders to raise awareness of the ever-evolving science emerging in this space.*



Presentation Link: 

Title: Recording Light at Night and Measuring Its Impacts

Author: Dipendra Bhattarai

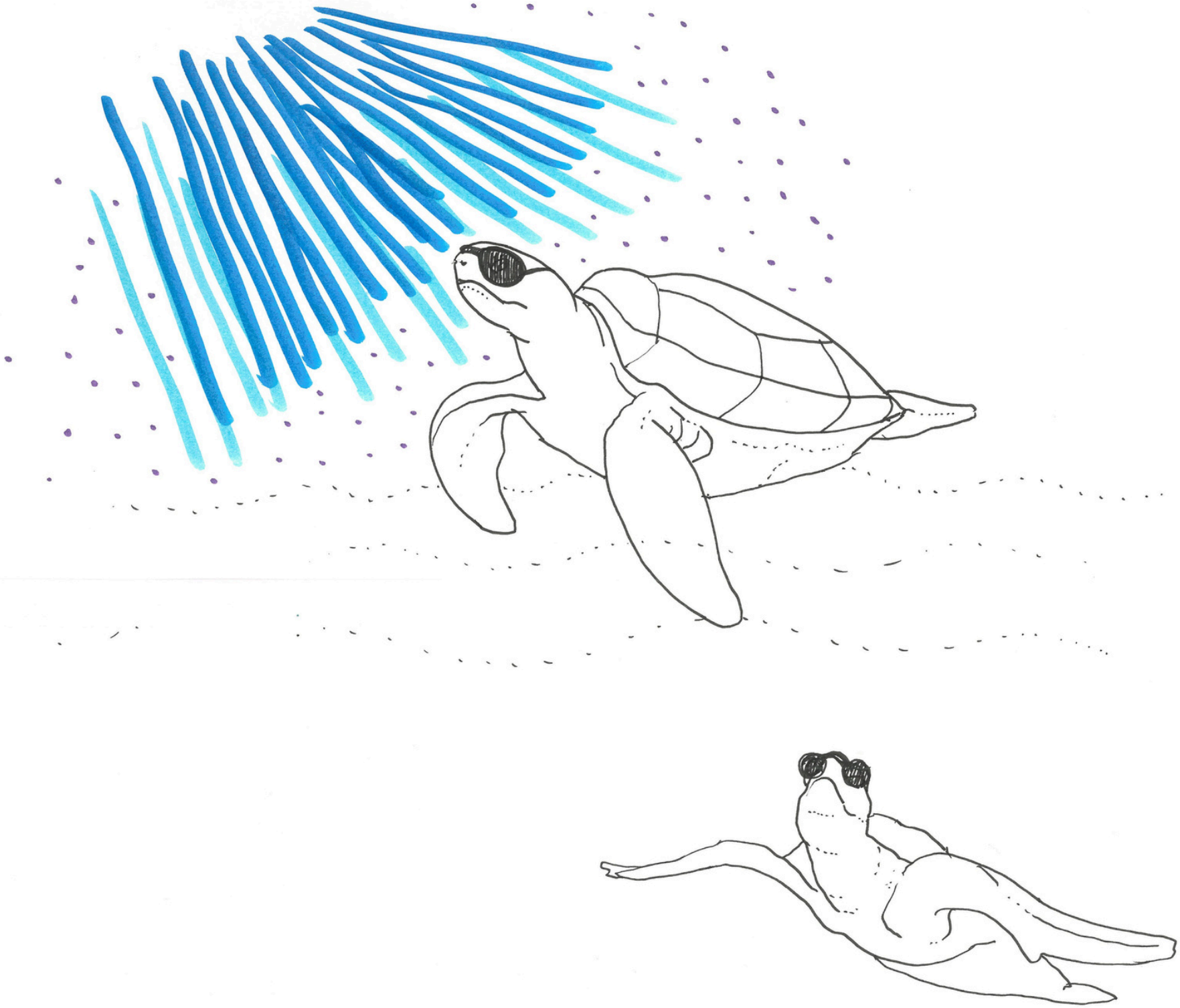
Association: Researcher Artificial Nighttime lights

Contact Details: https://www.linkedin.com/in/bdipen/

Category: Measuring Light

Abstract: Dr. Dipendra has examined the spatial granularity of artificial nighttime lights using satellite and drone images. He also has years of experience in research and project management and is currently working in the field of remote sensing for environmental monitoring.

Bio: *Measuring light at night using satellite images has been practiced for a long time; however, both the spectral range and spatial resolution have always limited the ability to identify and pinpoint the sources of lights in urban areas. As part of his PhD, Dipendra utilised drones to identify these lights and demonstrate how we can calibrate camera settings for regular night time light captures and monitoring. As part of his PhD, in this talk, he will discuss how we can use drones to map night time lights and identify their sources.*



Title: Blue Light is Bad Light

Author: Lauren Peel

Association: Worley - Senior Technical Consultant

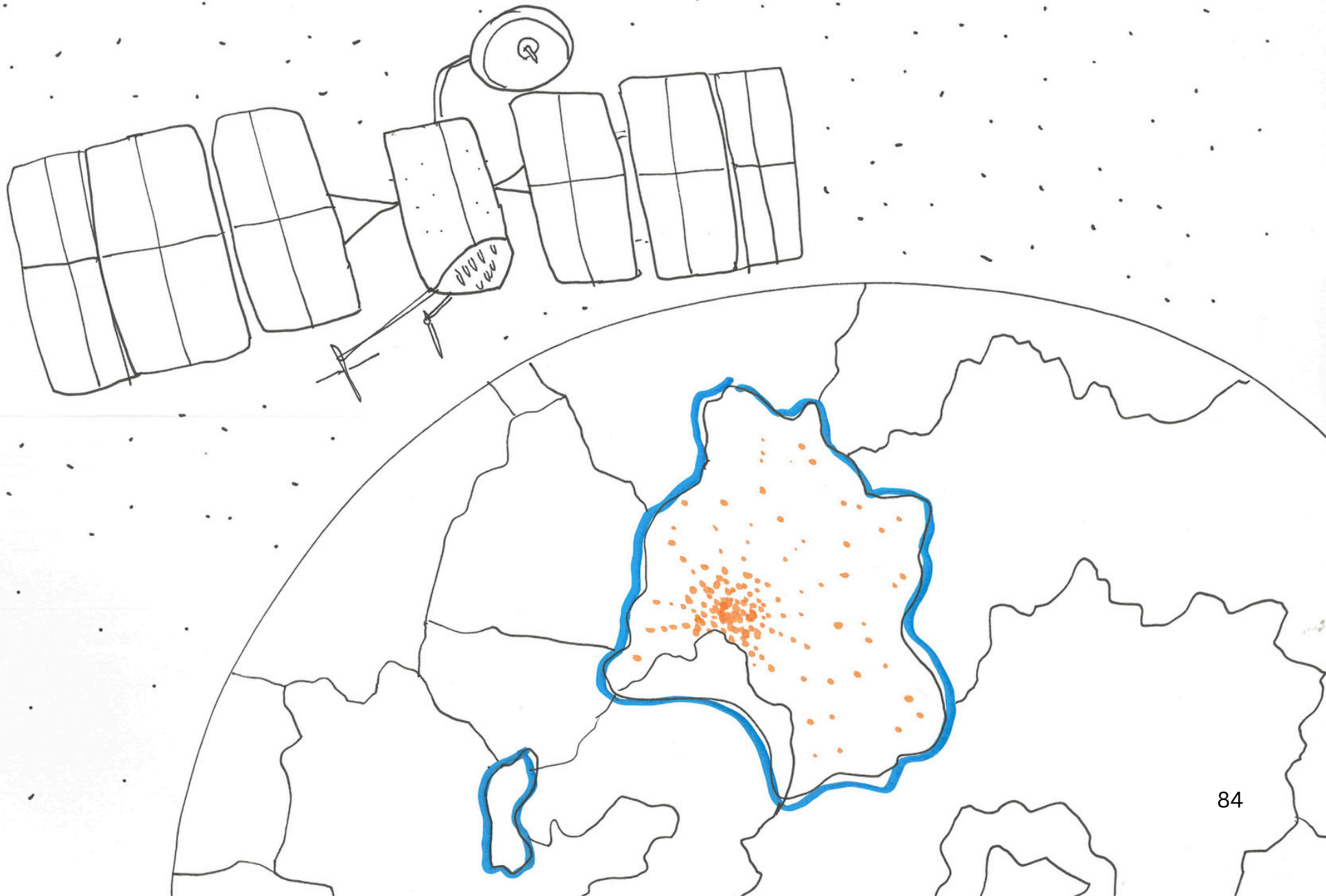
Contact Details: https://www.linkedin.com/in/laurenpeel1/

Category: Measuring Light

Abstract: Join turtle researcher Kellie Pendoley for an insightful talk titled "Blue Light is Bad Light," exploring the harmful effects of blue light on wildlife. Pendoley will delve into the scientific details of light spectra, particularly focusing on how blue light disrupts ecosystems and the behaviour of nocturnal species, including turtles. This talk highlights the broader environmental implications of artificial lighting, emphasizing the need for informed lighting choices to protect wildlife and preserve natural habitats.

Bio: *Lauren is a Marine Scientist experienced in quantifying the movement patterns, distribution, and behaviour of marine megafauna relative to both management plans and potential impacts. She completed her PhD in Marine Ecology at The University of Western Australia in 2019, where she studied the movement patterns and feeding ecology of reef manta rays in Seychelles. Since then, Lauren overseen the development and continued expansion of international research projects that incorporate both acoustic and satellite telemetry, and long-term photo-identification components, and has gained extensive experience analysing spatial datasets using both modelling and GIS approaches.*

Lauren's main role at Worley Consulting is to manage long-term marine turtle, seabird, and artificial light monitoring programs for proponents in the resource industry. She enjoys the challenge of designing and executing novel monitoring plans in remote locations and working with proponents to solve the problems that inherently arise at the intersection of conservation and development. The opportunity to contribute to efforts to better understand and manage the impacts of artificial light at night was a large motivator for her entry into the consulting field.



Presentation Link: 

Title: Current Challenges in Remote Sensing of Night Lights

Author: Noam Levin

Association: The Hebrew University of Jerusalem, The University of Queensland

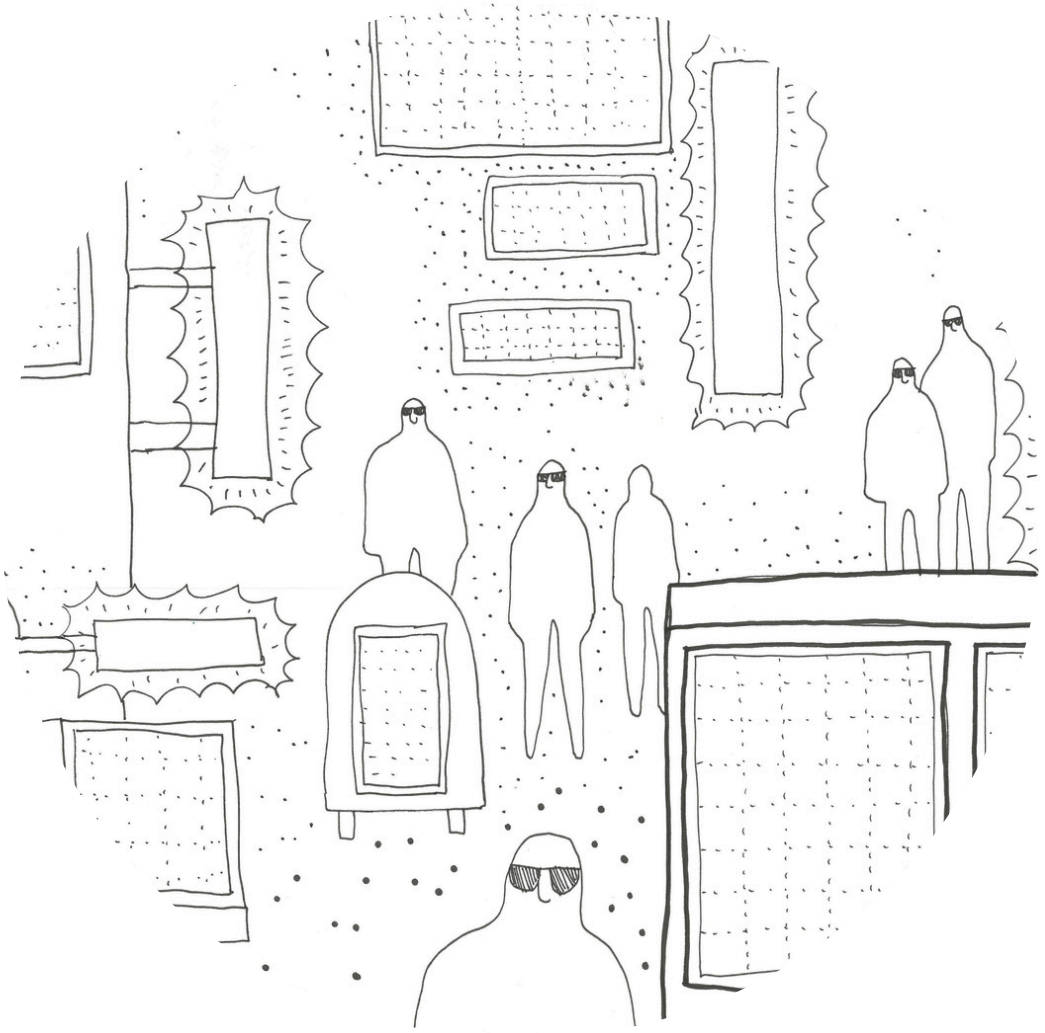
Contact Details: https://www.linkedin.com/in/noam-levin

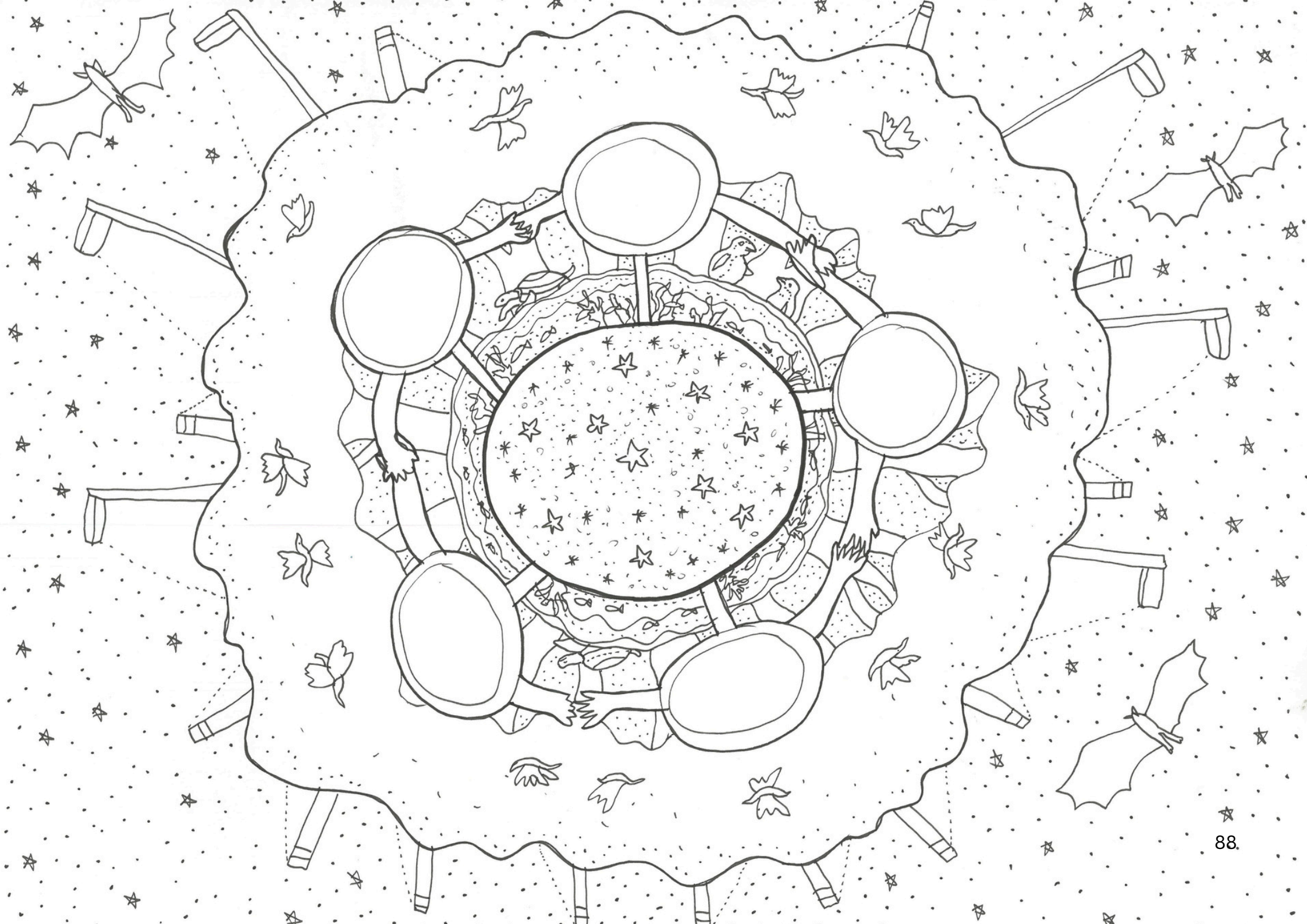
Category: Measuring Light

Abstract: Remote sensing of night lights in the visible band allows us to directly observe humans from space, serving as a proxy for monitoring the dynamics of population and economic activities. Historically, the development of sensors for monitoring night lights has lagged behind 'traditional' optical day-time remote sensing and night-time thermal remote sensing. In my talk I will present the current state of the major space-borne and ground-based sensors used for remote sensing of night lights. In addition, I will review some of the challenges which are unique to remote sensing of night lights, which include anisotropic properties of light emission, high temporal variability, and the transition to LED lighting technologies – all of which highlight the need for a new generation of space borne night lights instruments.

Bio: *Noam Levin is a Professor in the Department of Geography at the Hebrew University of Jerusalem heading the Remote Sensing Laboratory, and is also affiliated with the Earth Observation Research Center at the School of the Environment at the University of Queensland. His main areas of interest are light pollution, wildfires, human-environment relations, landscape changes. nature conservation planning and aeolian geomorphology, and he investigates them using remote sensing and geographic information systems (GIS) tools. He specializes in applying tools of spatial analysis to understand the effects of climate change and changes in human activity on natural systems at different scales. His current research topics include, among other things, remote sensing of night lights as a tool for studying human activity and light pollution, studying landscape changes in Israel using historical maps and satellite images, studies on the wildfires in Israel, and nature conservation planning. These works appeared in more than 120 articles in international peer-reviewed journals.*

Policy and Planning





Title: Commonwealth Government's Approach to Reducing Light Pollution

Author: Caesar San Miguel

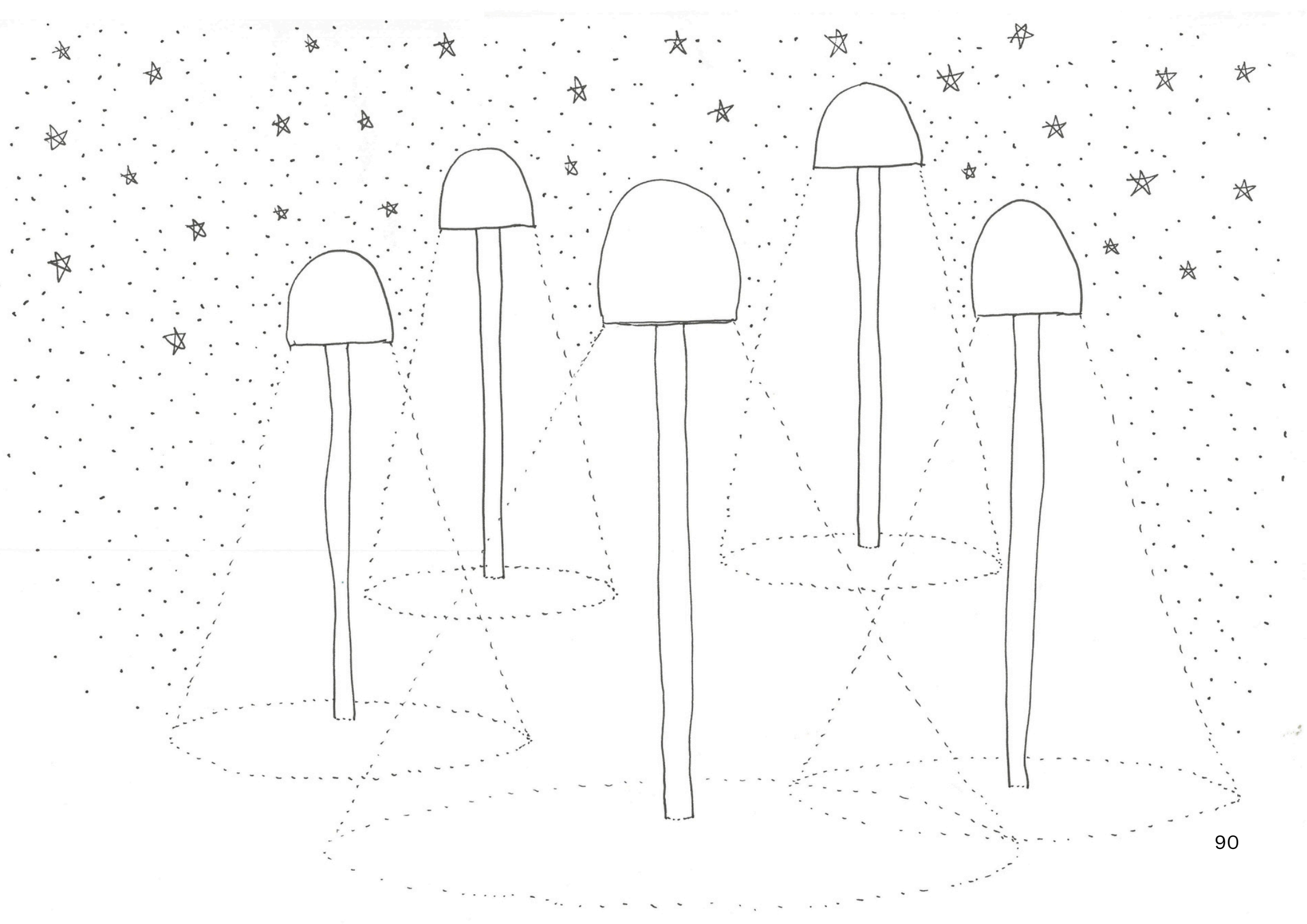
Association: Lead on Light Pollution Department of Climate Change, Energy, the Environment and Water

Contact Details: http://www.linkedin.com/in/caesar-san-miguel

Category: Policy and Planning

Abstract: In this presentation from the Department of Climate Change, Energy, the Environment and Water (DCCEEW), explore the growing issue of light pollution and its harmful effects on wildlife. The session will cover the federal government's efforts to combat this problem, including the development of the National Light Pollution Guidelines for Wildlife and awareness-raising initiatives. It will also address ongoing challenges in reducing light pollution and outline future steps towards mitigation across Australia, ensuring the protection of both biodiversity and night skies.

Bio: Caesar San Miguel is the Australian Department of Climate Change, Energy, the Environment and Water lead on light pollution policy for wildlife within the Migratory Species Section. He has been working on light pollution within the Commonwealth since 2020. He also participated in LG010, the Standards Australia committee for AS/NZS4282:2019 Control of the obtrusive effects of outdoor lighting. Most recently he led on the development of v2.0 of Australia's National Light Pollution Guidelines for Wildlife.



Title: International Dark Sky Policies and The Benefits for Urban Night Environments

Author: Jean Cecil-Gaillot

Association: We-ef Group

Contact Details: https://www.linkedin.com/in/jean-c

Category: Policy and Planning

Abstract: Discover how France is leading the way in urban night environment preservation through its comprehensive dark sky policies. This session explores the French decree mandating strict limits on artificial light, setting standards on brightness and colour temperatures, and implementing "black flight paths" to protect migratory birds from disorienting light. These regulations were developed to address light pollution in urban areas, conserve biodiversity, and restore natural nightscapes.

Learn how these changes have impacted stakeholders—from manufacturers and policymakers to city councils and local communities—and discuss the challenges and successes in adopting these new standards. Are communities and industries embracing the benefits? Has there been resistance? This session will present data on environmental improvements, explore real-world applications of these policies, and share lessons that could inspire similar approaches globally.

Bio: Jean-Cecil Gaillot, WE-EF's Global Lighting Solutions Department Manager and Lecturer in Lighting Design at the University of Lyon, who has been with WE-EF for more than 25 years. His session, "International Dark Sky Policies and the Benefits for Urban Night Environments," brought forward global insight and practical examples that challenge the way we think about lighting in our cities.

Presentation Link: 

Title: Who's Looking at Them Anyway? Managing the Impacts of Illuminated Signage at Night

Author: Leanne Hodyl

Association: Managing Director at Hodyl & Co

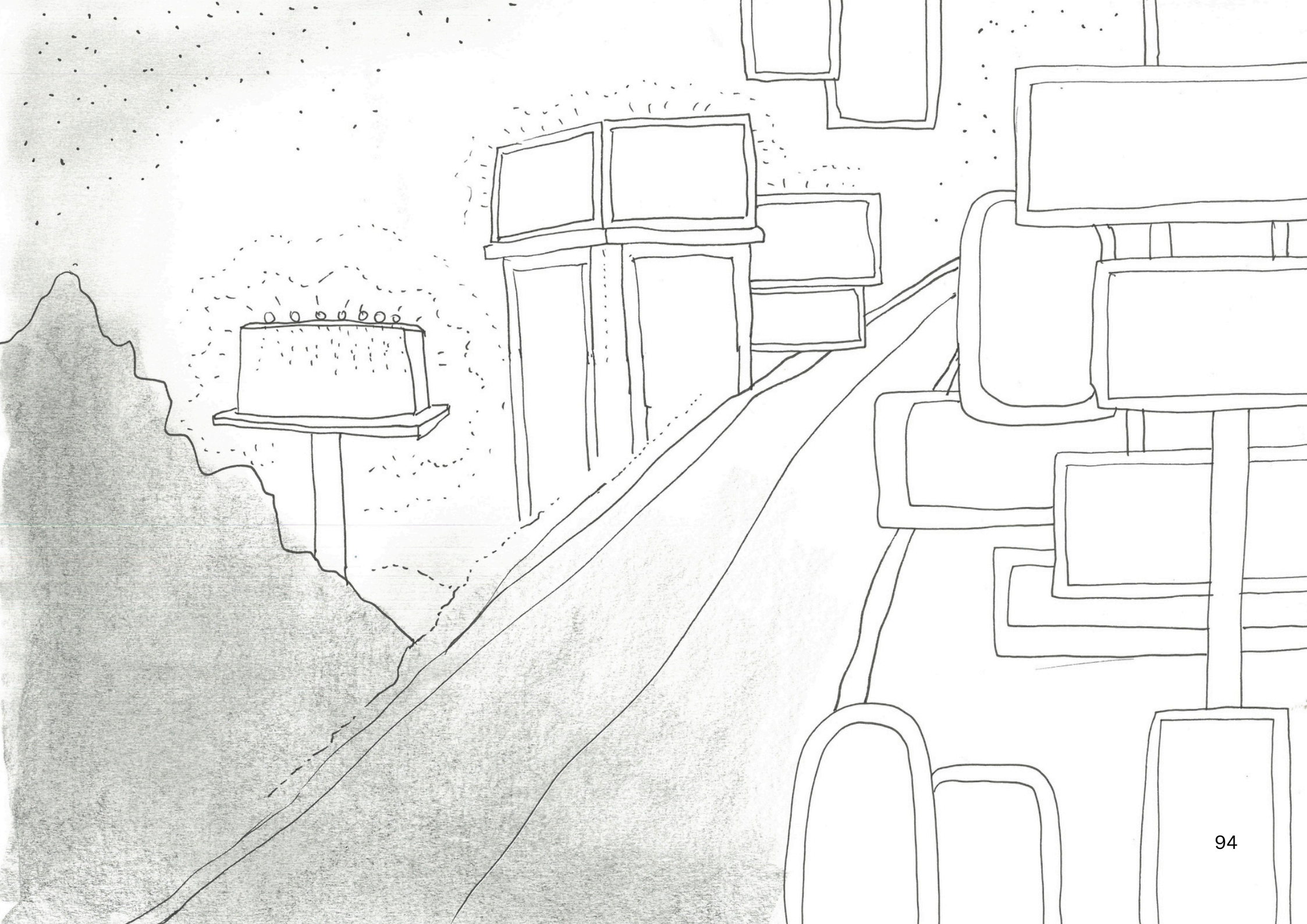
Contact Details: https://www.linkedin.com/in/leanne-hodyl

Category: Policy and Planning

Abstract: The City of Melbourne recently announced a new policy initiative to change the way that they manage illuminated signage. Leanne will present an overview of this fresh approach which balances activation of the city with protection of environmental and health outcomes.

Bio: *Leanne is a recognised leader in Design and Planning in Australia. She is a Churchill Fellow, the Founder of Hodyl & Co and the immediate past president of the Urban Design Forum Australia. Leanne founded Hodyl & Co in 2016 and has grown the practice into a nationally award-winning company that brings globally leading solutions to those who govern, plan, design and develop our cities. Her 2015 Churchill Fellowship report was pivotal in reforming planning practices in Melbourne and received Victoria's highest planning prize.*

She has continued to innovate the profession, in 2020 launching the research and practice collaboration, Cities People Love, a unique platform that connects leading thinking and research to industry and government decision-makers. In 2021, she co-led the revival of the Urban Design Forum Australia, which advocates for public interest outcomes in our cities. Leanne is engaged by both the public and private sector to provide strategic advice and expertise regarding the development of our cities.



Title: Outdoor Illuminated Signage and Digital Billboards - Current and Future Developments

Presentation Link: 

Author: Ryan Shamier

Association: Senior Lighting Designer, Electrolight

Contact Details: https://www.linkedin.com/in/ryan-shamier

Category: Policy and Planning

Abstract: This presentation will discuss the recent updates to standards and guidelines governing the night time operation of outdoor Illuminated signage and digital billboards, and discuss current and future innovations that aim to align signage with dark sky design principles.

Bio: Ryan is a lighting designer and expert in assessing the impacts of lighting installations in the external environment. Over the course of his 20 year career, Ryan has undertaken over 500 Lighting Impact Assessments for outdoor lighting installations across Australia and New Zealand.

Ryan has used his extensive knowledge and experience to assist Australian Standard Committees, councils and state road authorities (such as Victoria's DTP) on how best to frame and apply their new guidelines for illuminated signage in the outdoor environment. He has also provided independent expert evidence in numerous proceedings before courts and tribunals across the country.

Ryan has a Masters of Design Science in Illumination Design from the University of Sydney and an Honours Bachelor Degree in Electrical Engineering from University of Queensland. He is also a Member of the Illuminating Engineering Society of Australia and New Zealand, where he sat on the NSW Chapter Committee for 5 years.

In addition to the above, Ryan has provided architectural lighting design services to hundreds of commercial, government and external lighting design projects across his career. He has won numerous design accolades, including an IES International Lighting Award of Excellence in 2018 and the IES Australian & New Zealand Lighting Project of the Year (Award of Supreme Brilliance) in 2014.

Presentation Link: 

Title: The Ecological Economics of Light Pollution: Impacts on Ecosystem Service Value

Author: Sharolyn Anderson

Association: National Parks Services - Physical Scientist

Contact Details: https://www.linkedin.com/in/sharolyn-anderson

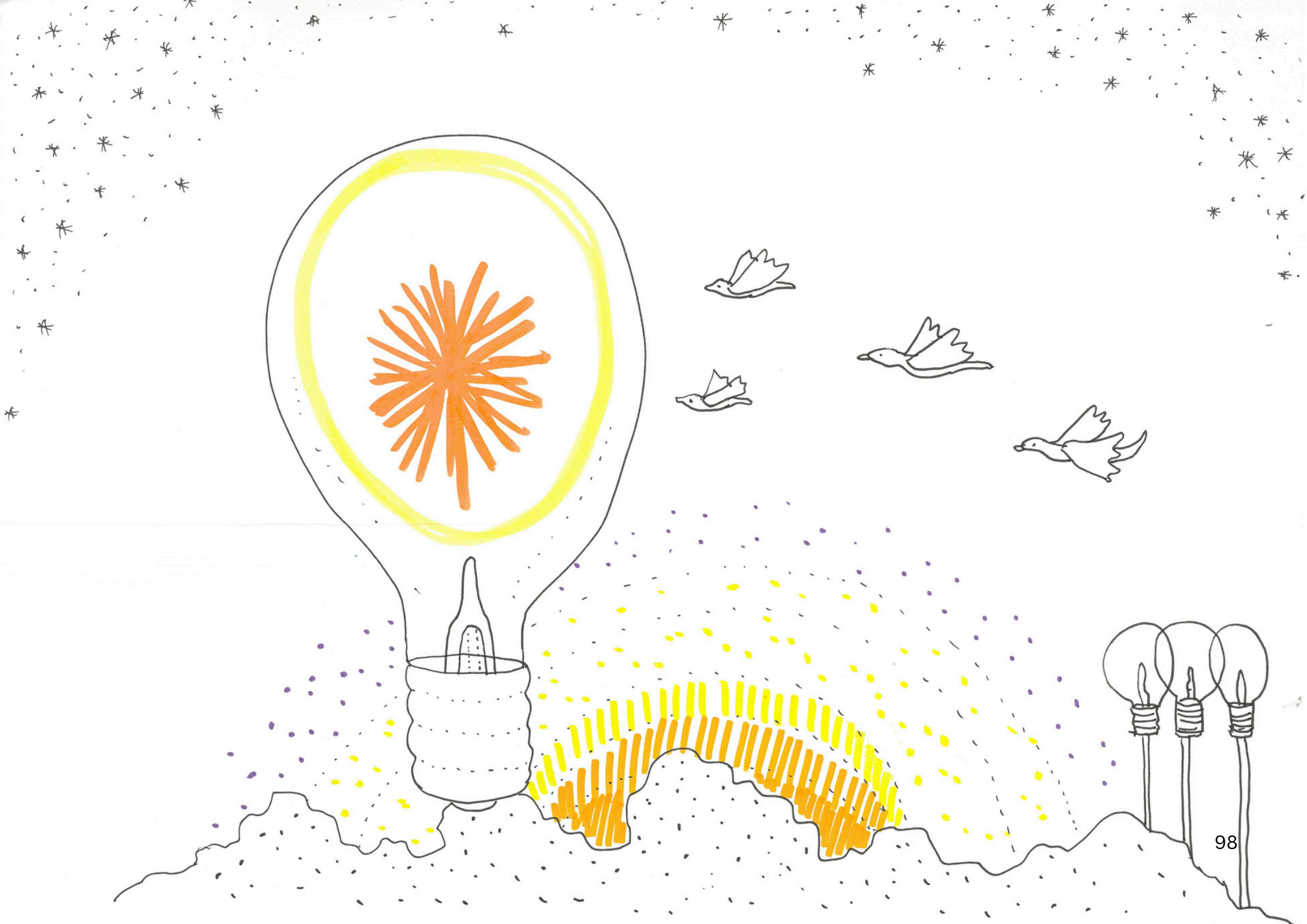
Category: Policy and Planning

Abstract: Light pollution has significant detrimental effects on wildlife, human health, and ecosystem functions. This presentation delves into the economic implications of light pollution by examining its impact on the value of global ecosystem services. Using the Simplified All-Sky Light Pollution Ratio (sALR) as a measure of light pollution's negative impact, and the Copernicus PROBA-V Global Landcover Database to estimate ecosystem service value, we assess how light pollution degrades ecosystem functions.

Our findings reveal that in areas with maximum light pollution, ecosystem service values are reduced by 40%, resulting in an annual global loss of USD 3.4 trillion—approximately 3% of the total global value of ecosystem services and 3% of the global GDP. This talk will also present the distribution of these losses across countries and landcover types, highlighting the urgent need for light pollution mitigation.

Bio: *Dr. Sharolyn Anderson is a physical scientist with the National Park Service, Natural Sounds and Night Skies Division (NSNSD). Her current responsibilities are mainly focus on collaborating with partners to research the effects of noise and light on wildlife and visitor experience and assisting parks throughout the country with management of sound and lighting resources. These projects include spatial modeling of soundscapes and light pollution, aircraft monitor over NPS units, and using experimental design understanding the impacts of lighting on park resources and visitors experience. Sharolyn works with parks and partners to use scenarios to better understand the impacts of different decisions in regard to sound and lighting which affect the natural capital of the parks. This includes using ecosystems services to value the natural capital.*

Before joining NSNSD in January 2017, she was faculty at Texas State University, University of Denver, and University of South Australia. Her research areas include light pollution, ecosystem services valuation, green infrastructure, spatial analysis, and modeling. Examples of her work related to the protection of night skies is using satellite night skies data (DMSP or VIIRS) as a proxy with other datasets to map impervious surfaces, human well-being, economic distributions, ecological footprints, characterizing landscape relationships, proxy measures of emergy, and monitoring the effectiveness of environmental policies. She has also been a member of national and international data working groups, e.g. GEO Human Planet Initiative (Global Human Settlement Layer), Adelaide International Bird Sanctuary, and Economics of Land Degradation. Sharolyn Anderson has a PhD in Geography with a specialization in Geographic Information Science. She has her BS in Computer Science and MA in Geography from the University of New Mexico. She is a DarkSky Advocate in her spare time.



Title: Illuminating Solutions for Councils - Panel

Author: Fiona Venn, Kate Hofmeister, Tristan Simpson and Caesar San Miguel

Association: WSP - Director of Specialist Planning

Category: Policy and Planning

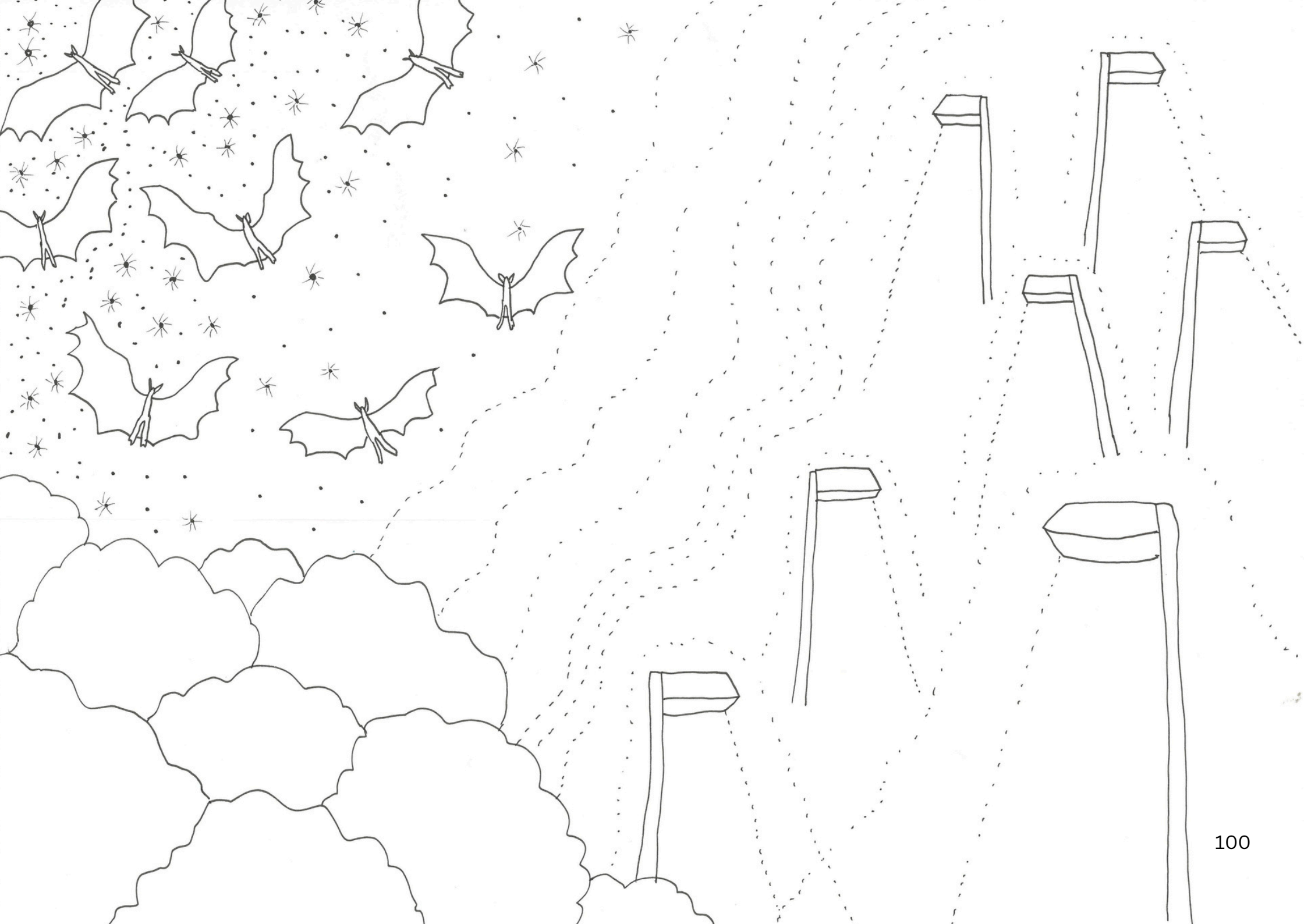
Abstract: Join experts from industry, ecology, and local councils in a multidisciplinary discussion on actionable ways to tackle light pollution at the community level.

This panel will highlight innovative strategies, including the latest in dimming technology, light zoning, and ecological considerations that can help councils effectively balance safety and environmental impact. Learn how coordinated policies and smart lighting solutions can minimise urban light spill, protect biodiversity, and support healthier nighttime environments for both wildlife and residents. This essential session provides tools and insights for councils committed to creating more sustainable and dark-sky-friendly urban spaces.

Bio: Leading the Specialist Lighting Team for WSP and having extensive creative and technical expertise across a diverse range of projects in the construction sector, Fiona brings a depth of experience and excellent communication and influencing skills from working internationally in consultancies across Japan, the USA, the UK and Australia.

With a background in international relations, marketing and economics combined with engineering design, she has led the successful delivery of a wide range of architectural lighting design projects in the cultural, transport, commercial and hospitality sectors.

Fiona is the Education Sector Leader for WSP in NSW and enjoy collaborating with our engineering and science team at WSP to deliver innovative outcomes for schools and tertiary institutions.



Presentation Link: 

Title: The Challenges of Implementing More Environmentally Sensitive Exterior Lighting

Author: Toby Murdoch

Association: Director | Ashburner Francis Consulting Engineers

Contact Details: https://www.linkedin.com/in/toby-m

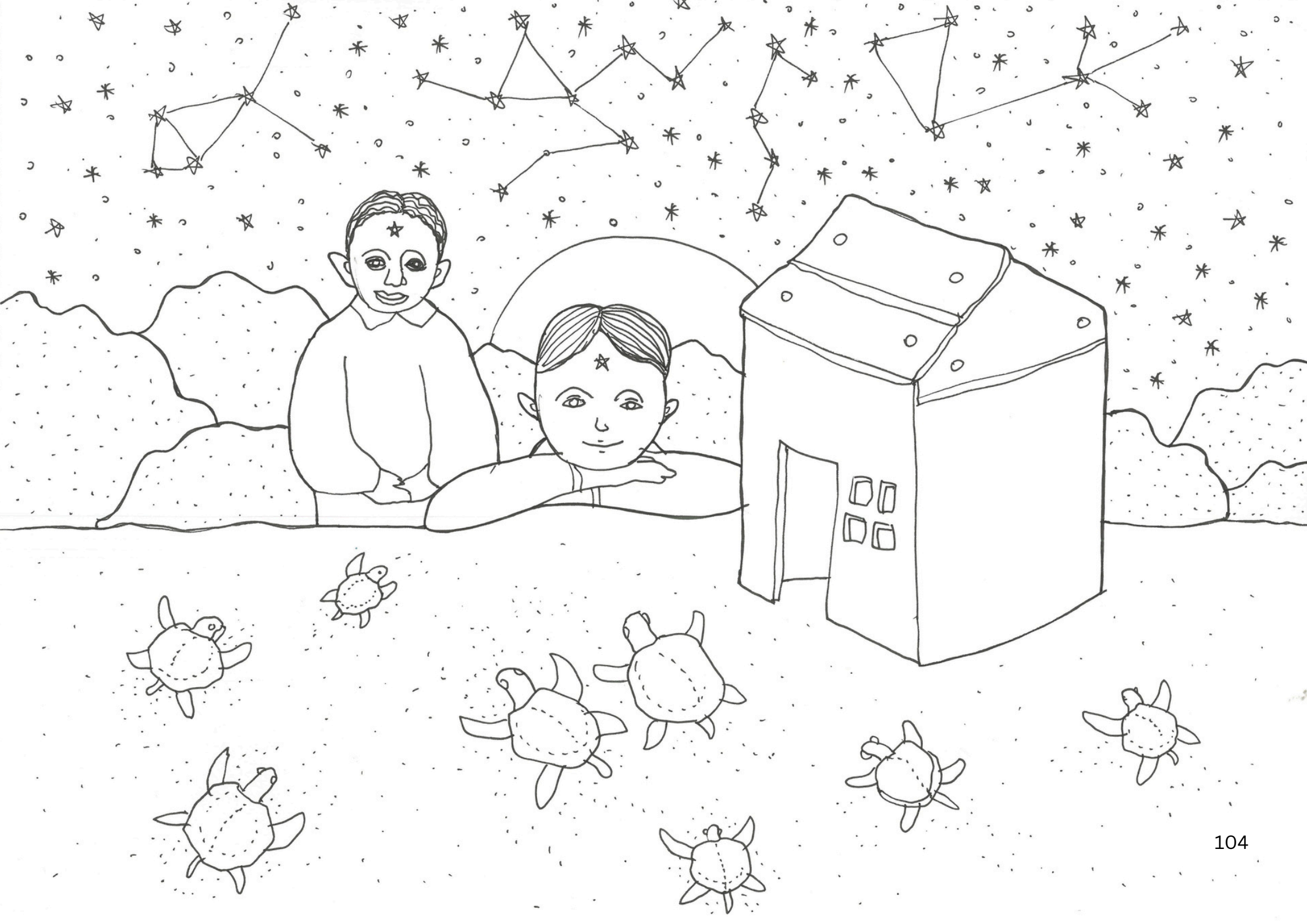
Category: Policy and Planning

Abstract: Toby is a director at Ashburner Francis, a national building services engineering consultancy headquartered in Brisbane. He has been in the electrical industry for 20 years, and over that time has taken a particular interest in lighting, and how it can positively impact the built environment whilst minimising negative impacts on the natural environment. In his role in consulting he has a bird's eye view of the various challenges that are faced when trying to implement more environmentally sensitive exterior lighting, and has seen the positive improvement made by increased awareness and improved regulations for reducing light pollution. He will be discussing the ways in which he believes is required to steer change in the right direction to reduce light pollution and increase the quality of artificial lighting outcomes.

Bio: *Toby Murdoch is a Director and part-owner of Ashburner Francis, a specialist Australian building services engineering firm with nearly 50 years of experience. With offices in Brisbane, Toowoomba, Townsville, and Darwin, the firm delivers expert engineering design, consultancy, and asset management services across Australia and the Asia-Pacific region. Toby co-leads the Brisbane head office alongside Lara Harris (née Bailey) and brings over two decades of industry experience, including hands-on work in electrical contracting, project management, and design leadership. Ashburner Francis provides fully independent services across electrical, mechanical, hydraulic, fire protection, energy efficiency, and renewable energy systems—ensuring practical, cost-effective, and sustainable outcomes for their clients.*

What sets Ashburner Francis apart is its unwavering commitment to quality, collaboration, and local expertise. All work is carried out by in-house staff in Australian offices, without outsourcing or offshoring. Toby is particularly passionate about responsible lighting design and the role engineers play in reducing light pollution. Drawing on years in the construction sector, he advocates for early design engagement and adherence to best-practice lighting standards to protect our natural night skies.

Social and Human Interactions



Title: Bright Sparks: Engaging Young Students to Make a Difference

Author: Braden Hammond

Association: Educator

Contact Details: bhammond@sjlangwarrin.catholic.edu.au

Category: Social and Human Interactions

Abstract: In 2024, the lower and middle primary-aged students at St Jude's Primary School in Langwarrin took part in an exciting project to tackle the issue of light pollution.

The primary aim of the project was to design a preferred future that would make a difference in the lives of turtle hatchlings. Using the design process, students were engaged in provocative, hands-on, and collaborative activities. This process facilitated discussions about complex concepts, like the impact of artificial light on wildlife, making these concepts accessible for young minds. The students were guided through each step of the design process — from identifying the problem, through to developing and testing innovative solutions. As part of this process, the students engaged with outside agencies, including the Biodiversity Council and R&D teams at Swann Security, to help answer questions and inspire new ideas.

Of equal importance, the students learned to build empathy, refine problem-solving skills and develop a sense of ownership. Through the lens of Science, Technology, Engineering, and Mathematics (STEM), this project sparked curiosity, fostered confidence, and empowered students to be part of designing a solution to ensure the survival of this precious wildlife.

Bio: *Braden Hammond is an Innovative Educator at St Jude's Primary School in Langwarrin. With 15 years of experience in primary education, Braden holds a Master of Education, specialising in Mathematics, which steered him towards teaching STEM subjects. Braden is focused on providing creative problem-solving opportunities and fosters a hands-on, technology-integrated learning environment. He will be joined by some of his students to share their perspectives on what inspires them to be solutions-focused.*

Title: Understanding New Zealanders' Perceptions of Light Pollution

Author: Ellen Cieraad

Association: NMIT - Research Professor

Contact Details: https://www.linkedin.com/in/ellencieraad/

Category: Social and Human Interactions

Abstract: Stemming the rapid increase in light pollution in Aotearoa New Zealand (Cieraad & Farnworth, 2023) is hindered by a lack of awareness and implementation of mitigation measures. Quick changes in public awareness and engagement are needed to preserve humanity's access to the night sky and reduce negative impacts. However, current public perceptions of light at night in New Zealand are not well understood. When do people feel it is important to have their surroundings lit, and when would they prefer darkness?
This talk presents findings from New Zealand's first national survey on attitudes towards light and darkness at night. It addresses two key questions: (1) Is there evidence of a shifting baseline in the value placed on night sky darkness? Do people in light-polluted areas value natural darkness differently than people living in darker areas? (2) Do people value light and dark at night differently based on context? Specifically, can we quantify the importance of various uses of light (e.g., for traffic safety, personal security, decoration, advertising) and darkness (e.g., for celestial observation, a sense of peace, natural rhythms, spiritual connection) in different settings such as cities versus natural environments?

Bio: *Dr Ellen Cieraad is a Quantitative Ecologist based at the Nelson-Marlborough Institute of Technology. Much of her research focusses on environmental effects and mitigation of anthropogenic light at night. She often combines Eco-physiological, observational, and remote sensing data to assess the effects on species, species' interactions, and the services that nature provides to people. In addition to national and international academic collaborations aiming to increase our understanding of the impacts, Dr Cieraad works with social scientists and artists to increase awareness of these impacts and to develop acceptable and effective mitigation measures.*

Title: Engaging Young People: Dark Skies and School STEM

Author: Grant Salmond

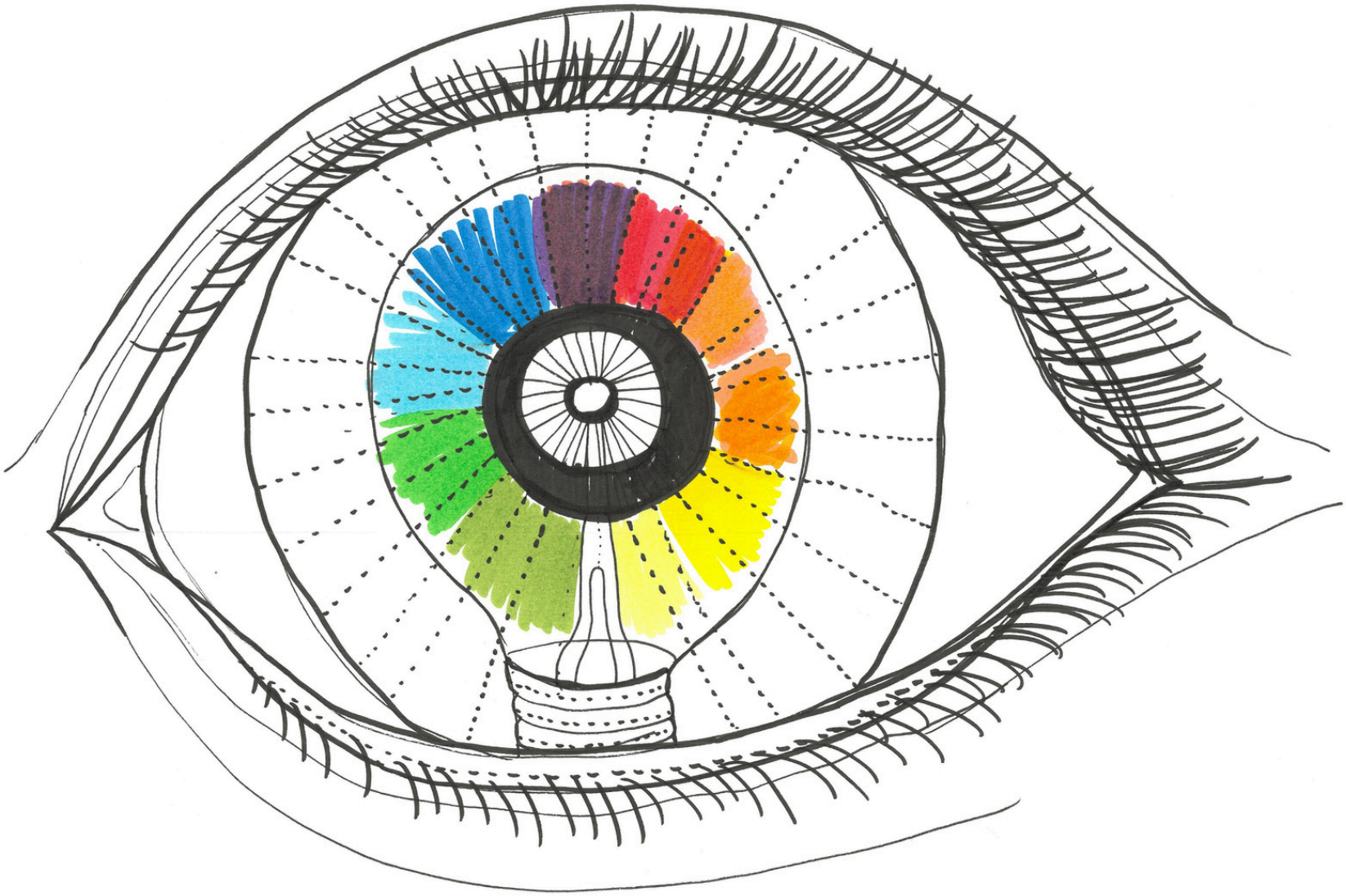
Association: Education & Astronomy Manager, Australian Age of Dinosaurs Museum of Natural History

Contact Details: https://www.linkedin.com/in/grant-salmond

Category: Social and Human Interactions

Abstract: One way to advocate for change is via the people who will become the decision-makers of the future. When it comes to protecting dark skies, engaging school students is vital. This presentation outlines the beginning of a STEM relationship in a Brisbane school with that endeavour in mind. We will outline a sample student task matching the Australian curriculum for junior through senior mathematics classes based on collection and analysis of real-time data by the students, bringing genuine ownership to the learning involved.

Bio: *Astronomer, Physics, Mathematics and Chemistry Teacher (secondary), BEd, MSc. Grant developed a fascination with science and the natural world from a young age. He says, "From asking why birds don't get electrocuted when they land on powerlines, to first seeing Saturn in a telescope, I have always enjoyed learning about the world. I am looking forwarding to helping the Museum develop its education and astronomy programs."*



Title: The Human Eye at Night

Author: Kenneth Wishaw

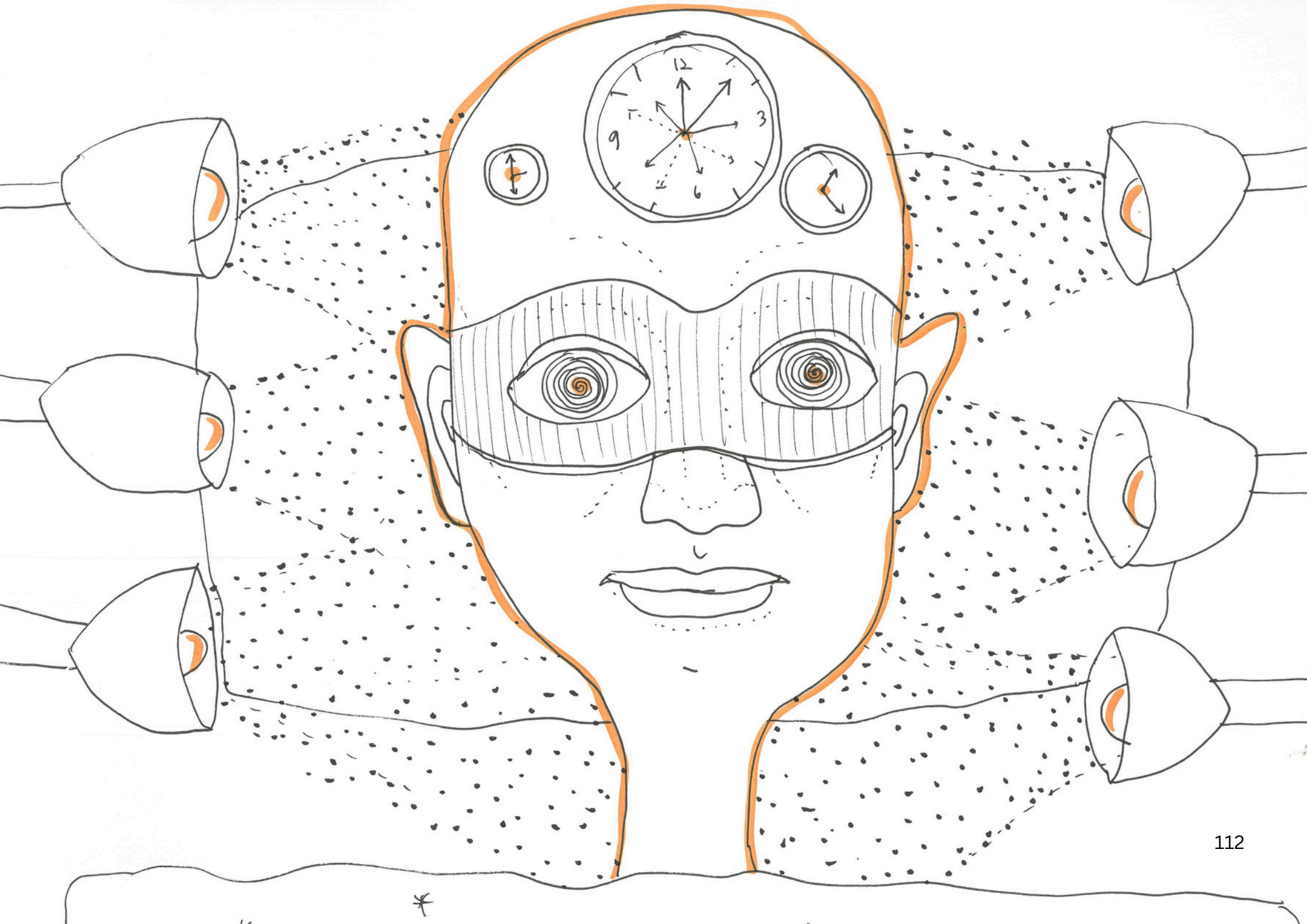
Association: Doctor - Australasian Dark Sky Alliance Board Member

Contact Details: https://www.linkedin.com/in/kenneth-wishaw

Category: Social and Human Interactions

Abstract: This talk will look at the physiology of the human eye, and in particular some of its adaptations to allow it to work effectively even in very low light levels. Some of the lesser known physiology gives us guides as to what light at night is likely to optimally stimulate the human eye.

Bio: F*ollowing medical school Ken studied Visual Physiology for two years and again at the University of Southern Queensland in 2018 as part of his astronomy qualifications, where his original research centred on lighting physics and how different colours of light impact our vision at night. He has been a technical advisor to Sunshine Coast Council Queensland on outdoor lighting for the last 6 years.*


12
3
6
9

Title: Light and Human Health: The Role of Circadian Timing

Author: Shantha Wilson Rajaratnam

Association: Head of the School of Psychological Sciences

Contact Details: https://www.linkedin.com/in/shantha-wilson-rajaratnam

Category: Social and Human Interactions

Abstract: This talk will explore the effects of light on circadian timing and sleep, and how light exposure affects health through this system. This will include latest research on the properties of light and how the circadian clock in the brain perceives light. We will also review the research demonstrating the effects of light pollution on human health, and discuss the recent UK House of Lords Inquiry into the effects of artificial light and noise on human health.

Bio: *Professor and Head of the Monash School of Psychological Sciences and Chair, Sleep Health Foundation, he was previously Deputy Director of the Turner Institute for Brain and Mental Health. Shantha Rajaratnam was awarded his PhD degree from Monash University in 1998, and completed a Bachelor of Laws degree in 2000. He undertook postdoctoral training at the Centre for Chronobiology at the University of Surrey, UK from 2000-2002, where he investigated human sleep-wake regulation, in particular the role of melatonin. In 2004 he took up a visiting academic position at Harvard Medical School and Brigham and Women's Hospital, Boston, USA, investigating the impact of melatonin agonists and light, on sleep and circadian rhythms, and fatigue management programs in occupational settings. Since 2006 he has served as Chair of the Monash Sleep Network. He is a Lecturer in Medicine in the Division of Sleep Medicine at Harvard Medical School and an Associate Neuroscientist in the Division of Sleep Medicine at Bingham and Women's Hospital in Boston. He is a Chartered Psychologist in the UK and Associate Fellow of the British Psychological Society. He is past President of the Australasian Sleep Association, Program Leader in the Alertness CRC and serves on the Board of the Sleep Health Foundation.*

His research interests include circadian regulation of sleep, effects of melatonin and melatonin agonists on sleep and circadian rhythms, effects of light on the human circadian system, evaluation of fatigue management programs for shift workers, consequences of sleep loss and sleep disruption, and regulation of working time and legal issues relating to sleep loss and fatigue.

Presentation Link: 

Title: Creating Safe and Inclusive Urban Spaces Through Evidence-Based Lighting Design

Author: Tim Hunt

Association: Lighting Leader, VIC @ Arup

Contact Details: https://www.linkedin.com/in/timhuntarup/

Category: Social and Human Interactions

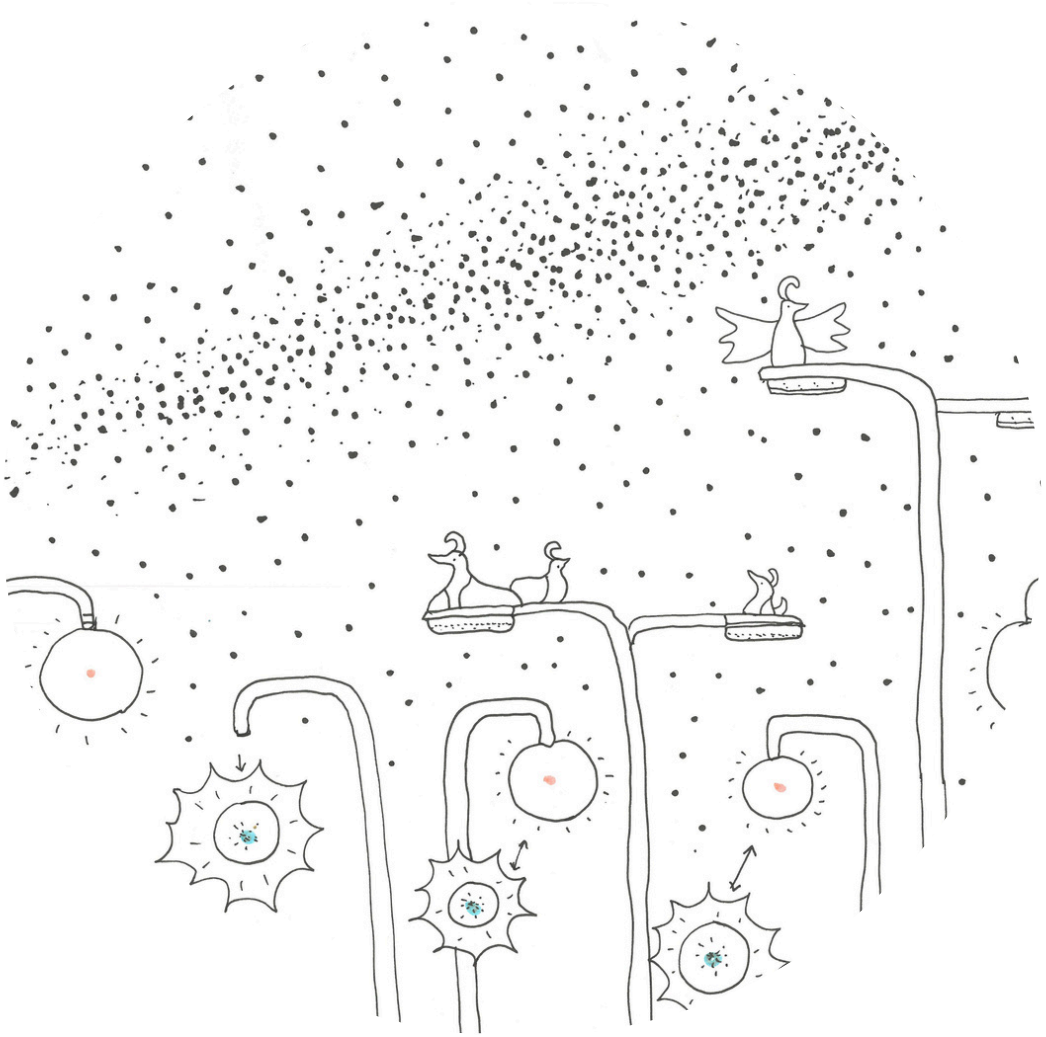
Abstract: Night-time design is a multidisciplinary approach we use to create safe, inviting and ecologically sensitive spaces within the built environment, after dark.

It considers lighting, safety, urban planning, ecology, and economic factors, founded upon evidence-based design by including voices of the community.

Join Tim Hunt as he tells the story of transforming collaborative research into an industry leading evidence-based design process, that with your help, can enable positive social change after dark.

Bio: Using design thinking, Tim has a desire to put people and at the centre of every strategic decision, continuously improving how humans interact with light. With a background in Industrial Design, Tim Hunt leads Arup's lighting team in Melbourne. He likes to innovate and challenge convention to find new ways of approaching problems through creativity, research, testing and embracing new technologies. Tim has worked across Arup's Sydney, London and Melbourne offices. This has given him both local and international experience across a diverse range of lighting projects, including concept design and masterplan strategy for education, detailed design for award-winning sustainable workplaces, international retail lighting experience, and the design, fabrication and commissioning of light art installations. This diverse, international portfolio has provided him with the ability to develop strong relationships and build trust with his clients, allowing him challenge briefs and push boundaries, working with them to solve challenges and create inspiring spaces after dark.

Workshops



Title: Dark Sky Place - Making

Author: Grant Salmond

Association: Education & Astronomy Manager, Australian Age of Dinosaurs Museum of Natural History

Contact Details: https://www.linkedin.com/in/grant-salmond

Bio: : *Astronomer, Physics, Mathematics and Chemistry Teacher (Secondary), BEd, MSc.*

Grant developed a fascination with science and the natural world from a young age. He says, "From asking why birds don't get electrocuted when they land on powerlines, to first seeing Saturn in a telescope, I have always enjoyed learning about the world. I am looking forwarding to helping the Museum develop its education and astronomy programs."

Author: Gareth Davies

Association: Dark Sky International DSP Committee

Bio: *Gareth Davies has been an active member of the DarkSky International Dark Sky Places Committee for three years, gaining extensive expertise in dark sky preservation. As DarkSky International's Regional Coordinator for Oceania, he has provided hands-on support to dark sky places across New Zealand, Australia, and the Pacific, overseeing the full cycle of certification and post-certification monitoring.*

A dynamic speaker, Gareth will deliver "Effective Path to Dark Sky Place Certification" in this hands on Dark Sky Workshop with Grant Salmond.

His workshop presentation will outline the certification process, highlighting the significance of community involvement and sustainable practices in preserving the night sky, and it generated substantial post-talk engagement.

Description:

Dark sky places are recognised areas noted for their exceptional night sky quality, free from light pollution. These sites not only offer unique astronomical observation opportunities but also promote environmental conservation. DarkSky International is dedicated to protecting the night sky globally, advocating for responsible outdoor lighting, and supporting the establishment of dark sky places worldwide.

This engaging session to explored the steps through a series of structured activities. It guided participants to generate an action plan to initiate conversations with your council and community groups to help make your community dark sky friendly.

Workshop Summary
A two hour workshop on creating new Dark-Sky places, hosted by Grant Salmond and Gareth Davies.

The workshop brought together over 30 attendees keen to help develop new Dark-Sky places across Australia. Participants were first introduced to some of the tools and resources that were available to help develop the applications. Then they were taken through some practical real world steps to simplify the process.

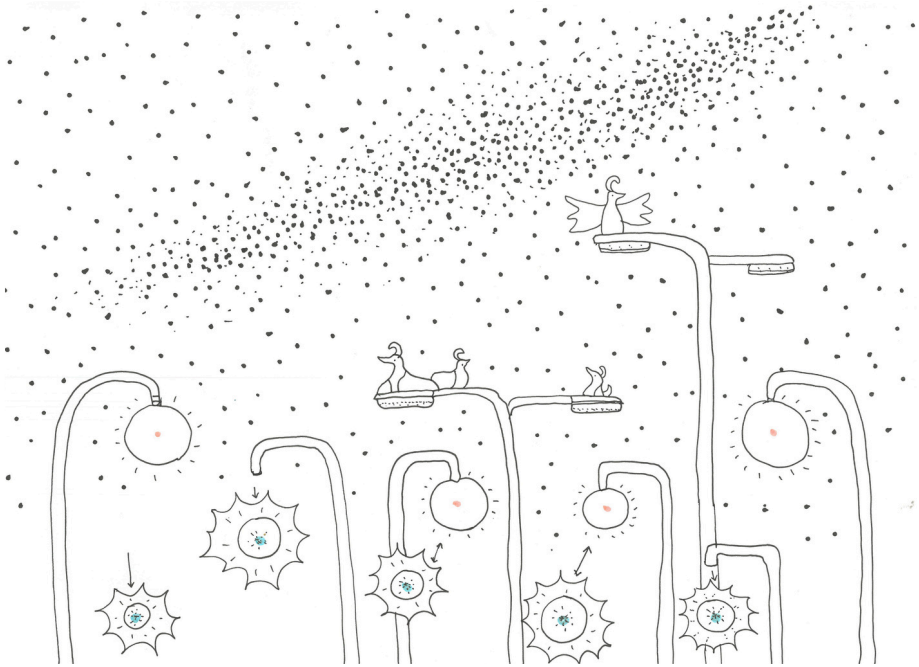
The participants worked together on eight key topics that that they would all need to address at various stages of their Dark-Sky application.

- Building an effective Dark Sky Team
- Determining the appropriate Dark Sky Designation
- Developing a bespoke Dark Sky Message
- Gaining strong Stakeholder Support
- Completing a complying Darkness Measurement
- Completing a complying Lighting Inventory
- Completing a complying Lighting Management Plan
- Delivering an effective Community Outreach Program

Participants were then able to take on board the different approaches and ideas that various groups presented to help improve their personal toolbox and strategies for achieving Dark-Sky place accreditation.

Title: Dark Sky Hacks for Local Government

Abstract: A hands-on workshop focused on reducing light pollution and promoting sustainable lighting in your community. Discover the impact of wasted light, explore easy and effective hacks for change, and learn best practices for sports grounds, street lighting, and more. Gain insights from case studies and early adopters, and learn how to implement strategies and pass bylaws for a smarter future. Network with other sustainability officers and bring actionable solutions back to your council. Be a leader in the fight against light pollution!



Paul Brown - Ironbark, Opticity
Landon Bannister - ADSA,
Simone Bright - Sunshine Coast Council
Marty Lockett - University of Melbourne

Dark Sky Hacks for Local Government
Prepared and Presented by Paul Brown Opticity, Landon Bannister ADSA Technical Committee, Dr Marty Lockett Urban Light Lab, School of Biosciences

This 120-minute workshop brought together over 30 delegates, including representatives from local councils, urban planners, environmental officers, and sustainability advocates, to explore practical strategies for reducing light pollution and applying wildlife-sensitive lighting in planning.

The session emphasised that:

- change within local government is most effective when driven by specific, outcome-focused projects.
- these provide clarity, align stakeholders, and integrate lighting considerations into broader environmental goals.
- ecological mapping that identifies species habitats, movement corridors, and sensitive areas was critical in guiding where lighting is needed — and where it should be avoided.
- designating trafficable corridors for vehicles, cyclists, and pedestrians helped determine areas where lighting supports safety and where darkness benefits biodiversity.

Key resources introduced included:
Wildlife-Sensitive Lighting for Local and State Government
ADSA Approved Lighting
ADSA Best Practice Lighting Framework
These tools offer councils and planners practical pathways to reduce light pollution, support biodiversity, and align urban development with ecological sustainability.

Title: Cosmic Nights and Light Insights

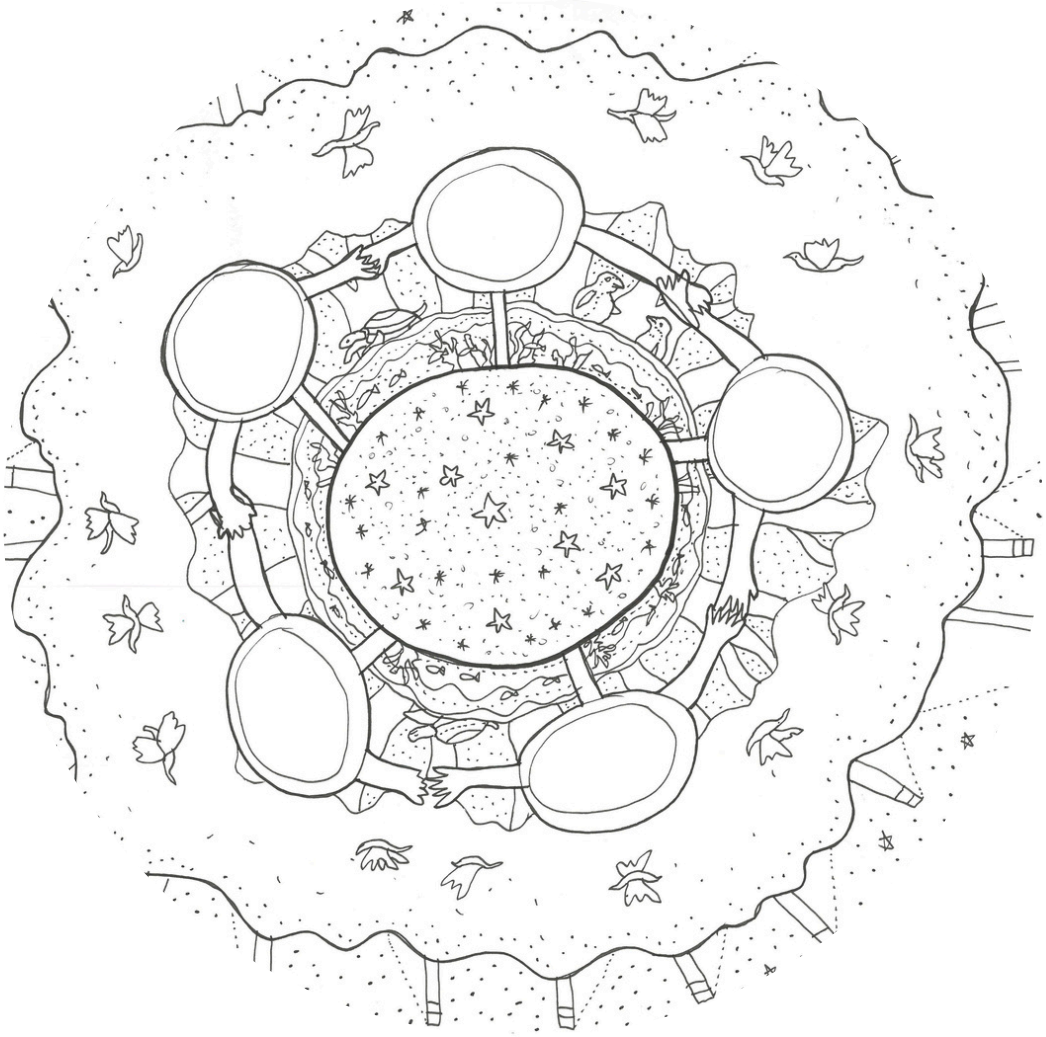
Facilitated by: David Bird and Tim Hunt

Association: Lighting Leader, VIC @ Arup

Contact Details: https://www.linkedin.com/in/timhuntarup/

Abstract: A 90-minute walking tour through the city led by lighting experts David Bird, Tim Hunt, and Landon Bannister. This tour, based on research led by ARUP, delves into how specific lighting elements affect the perception of safety in Melbourne's urban spaces. The talk has led to feedback from the general public, policy makers, and designers shaping lighting design in public spaces like Port Philip. Discover how these insights have established a practical framework for enhancing safety in cities after dark.

Roundtable



Roundtable : Introduction

Presentation Link: 

Title: Valuing Darkness Roundtable

Facilitators: Selena Griffith and Cesar San Miguel
Association: ADSA and DCCEEW
Contact Details:
https://www.linkedin.com/in/selena-griffith/
https://www.linkedin.com/in/cesar-san-miguel-9a12461b/

Abstract: A full-day roundtable using a systems-based methodology working with dark sky interested people from industry, academia, government and community to surface existing dark skies work, synergies, and gaps, then identify opportunities to further dark skies work and set a path forward to achieve it. Culminated in a list of actions for us to consider.

Participants

Adam Mitchell Nocterra
Cesar San Miguel DCCEEW
Clancie Shorter GHD
Claus Oustrup Felicity
Danny Bettay ANU
David Bird 2 B Designed
Ed Riley Planning Australia
Ellen Cieraad RMIT NZ
Fred Watson MQU
Gareth Davies Dark Sky International
George Sfinas Standards Australia
Graham Mawer IPWEA
Jaana Dielenberg Climate Change Council
Justin Meager GHD
Kate Hofmeister Sunshine Coast Council
Lauren Peel Worley
Lee Campbell University Melbourne
Lisa Nicholson Ecology Consultant
Marnie Ogg ADSA
Matt Rosworth LiteSource
Matthew Tait Selux
Nalayini Davies Dark Sky International
Paul Brown Opticity
Peter Swanton ANU
Selena Griffith ADSA
Shania-lea Channon DCCEEW
Shantha Wilson - Rajaratnam Monash
Sheryn Pitman Carrickalinga Dark Sky Community
Stephen Butler NZ
Tabatha Badger Greens - Parliament Tasmania
Theresa Jones NERAL
Tristan Simpson DBCA
Venus Palmer Bock DCCEEW
Victor de Lange Signify

Roundtable : People

•Individuals •Communities •Research •Recreation •Education

Barriers to people working toward Dark Skies:

- Local, State, and Federal legislation needs significant review towards alignment
- Australian Standards out of date - need to align with legislation to support better outcomes
- Education - decision makers need better understanding of impacts of light pollution
- Research - need funding and a priority list for research needed - a research prospectus
- Valuing work - neecd an index to the cost / value of light pollution
- Knowledge Systems - understanding both First Nations and Western dark skies knowledge
- Understanding systems priorities and cumulative
- Map a Light Pollution curriculum to bring everyone up to the same knowledge level.

Roundtable : Place

•Built Environment •Natural Environments •Dark Sky Places •Public v Private •Research •Communities •Education

Place, Light Pollution, and Dark Skies:

- RACI - who is responsible, accountable, consulted, informed
- Communication - how do we get the message across to more people from a broader range of society
- How do we share research and what research is being done, or is needed - how do we deal with the challenges of IP and industry hindering sharing
- Incentives for change to better lighting of place - evidence based - scalability
- Ecosystems in decline with only a minority acting - need better knowledge, education and supporting legislation or guidelines
- Need to debunk myths that bright light = safety at night
- How do we get more Dark Skies places and create Dark corridors, black bets, dark wetlands and protect these.
- Legislation, Regulation, Legislation
- Need new minimum lighting standards and capacity
- Need Planning lighting guides for local, regional, urban - perhaps incorporate into local gov policy
- Eco lighting leaders case studies
- Fund research into best practice
- Engage community in citizen science projects

Roundtable : Policy

Discussing future directions for policy development and innovation.

Policy, Light Pollution, and Dark Skies:

- Establish a baseline and a library of best practice examples and case studies for reference and continual improvement
- Road standards need to be updated to reflect contemporary research
- Identify ALAN as a pollutant in all state legislation
- Develop a framework of Local Lighting Ordinances for LGAs
- Identify ALAN as a key threatening process at the commonwealth level. - Start with a parliamentary petition.
- Few policies mean little incentives for change, some technical standards are needed
- Recognise ecosystem impacts and stop using nature to mitigate

Roundtable : Planet and Product

•Built Environment •Natural Environments •Dark Sky Places •Public v Private •Research •Communities •Education

How do we make products work for the planet?

- Access to more smart lighting options with detection, sensors, and adaptive protocols is needed
- Create and distribute a control spectrum where total light load (dose) is understood, and a virtual midnight is established
- Need to be long life, built for application, ie marine salt, high impact, low corrosion
- Consider power source - CBA or Solar
- Keep lights out of dark places
- Translational information that is public-friendly to help them understand the need to shift away from / minimise ALAN

Roundtable : Next!

Actions to take.

- More research into the impacts of light pollution on ecosystems, species, and humans
- Celebrate and broadcast success stories
- Education for everyone on light pollution
- Increase collaboration and knowledge sharing between groups across the ecosystem
- Alignment between groups to navigate the conflicting requirements of lighting standards
- Minimum requirements for lighting Fixtures - eg NATA-accredited testing
- Light pollution on the agenda for politics/standards/codes
- Light pollution policies and lighting standards aligned federally, state, and LGA
- Better range of commercially available relevant products
- More Dark Sky places and communities
- Seek funding for research in the knowledge gaps
- Advice templates for local gov, developers, and architects
- More opportunities for events that bring the light community together
- Identify existing standards, policies, guides, and codes. Review and work to align them and provide best practice guides for LGAs, engineers, designers

Conference Speakers

ISBN 978-9-69-719249-6