

Including Animals: Co-design with more than human collaborators

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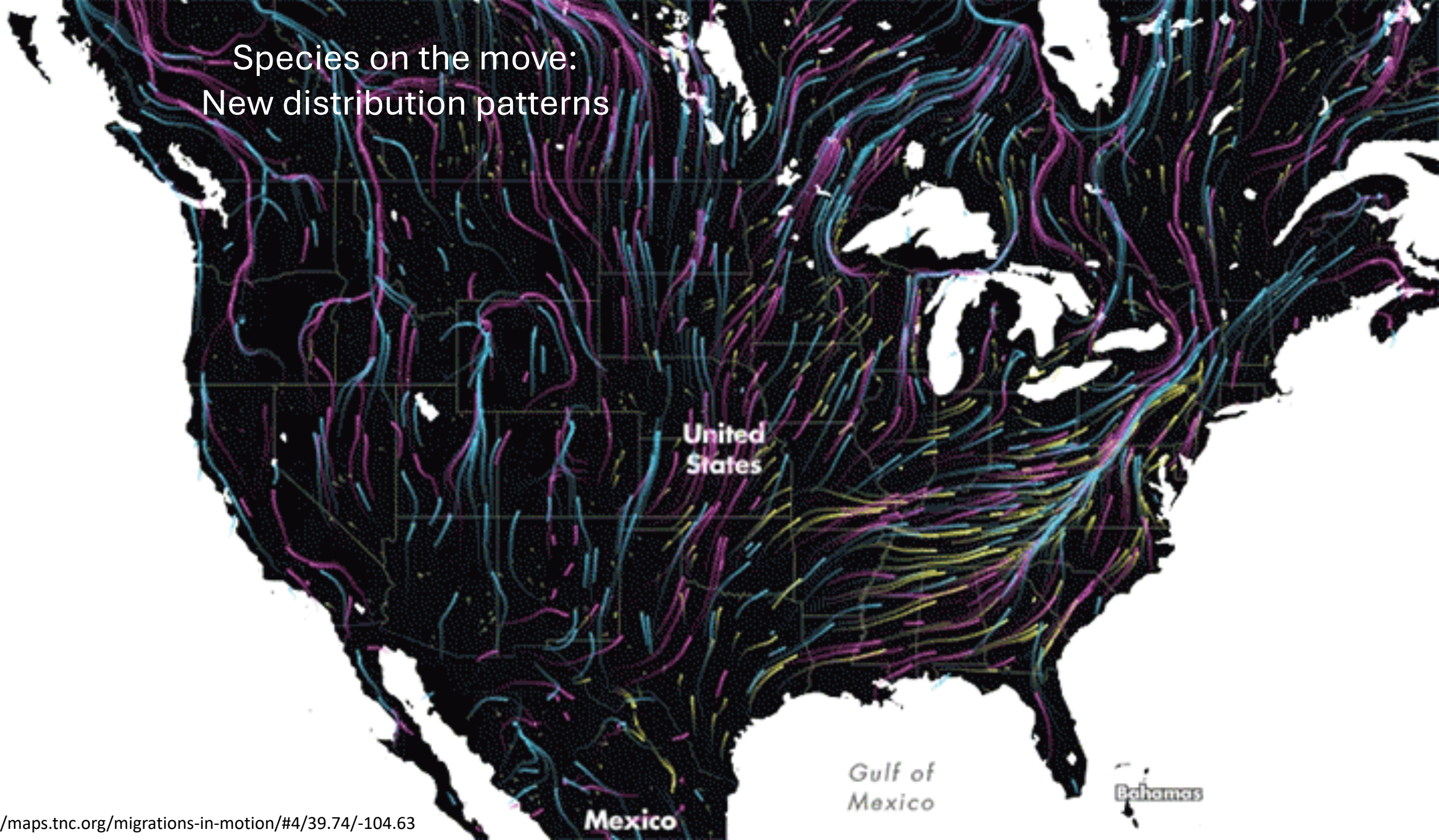


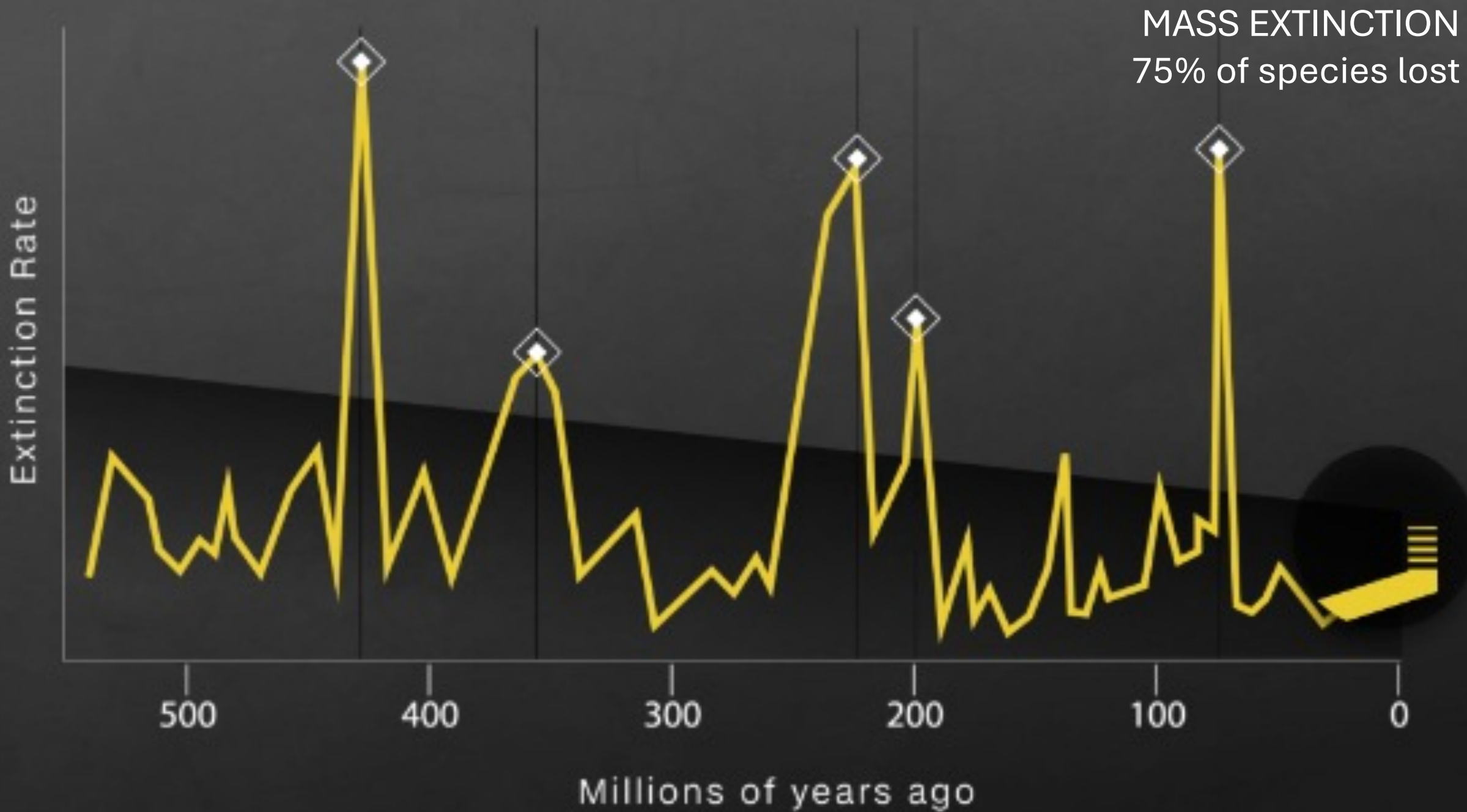
ON WHERE WE ARE

CLIMATE CHANGE
Non-evolutionary conditions



Species on the move:
New distribution patterns

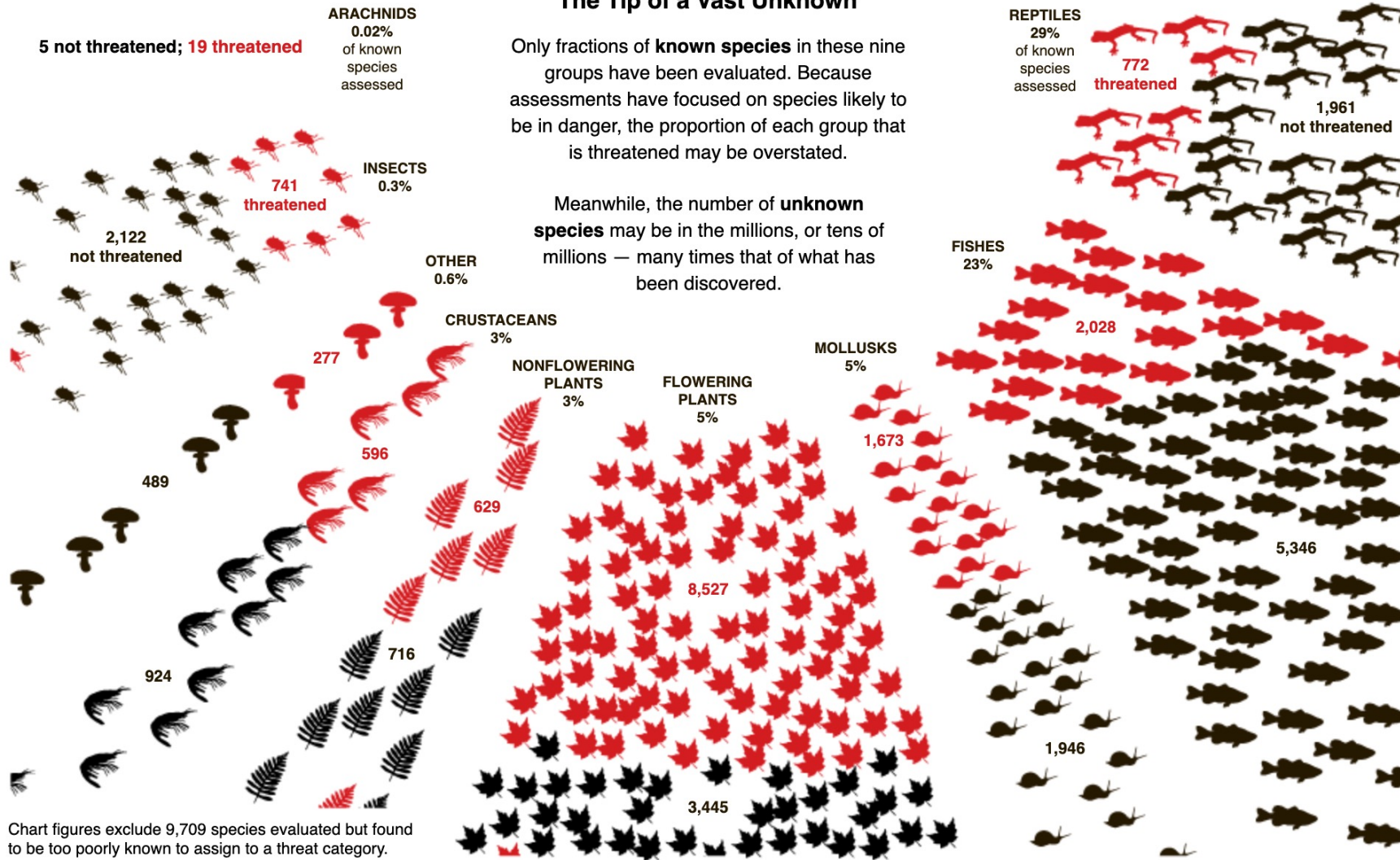




Other Threatened Life: The Tip of a Vast Unknown

Only fractions of **known species** in these nine groups have been evaluated. Because assessments have focused on species likely to be in danger, the proportion of each group that is threatened may be overstated.

Meanwhile, the number of **unknown species** may be in the millions, or tens of millions — many times that of what has been discovered.



Already Gone

Species known to be extinct, or extinct in the wild, since 1500:

Group	Count
Mollusks	327
Birds	136
Flowering plants	110
Mammals	79
Fishes	68
Insects	60
Amphibians	39
Reptiles	22
Crustaceans	12
Nonflowering plants	10
Others	2
No known arachnid extinctions.	-

What if we practiced the fact
that we don't have to solve this alone?

ON SOLITUDE

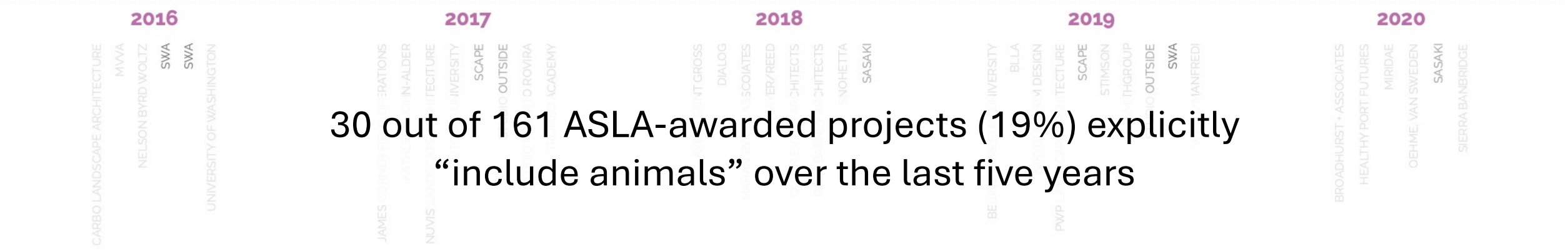
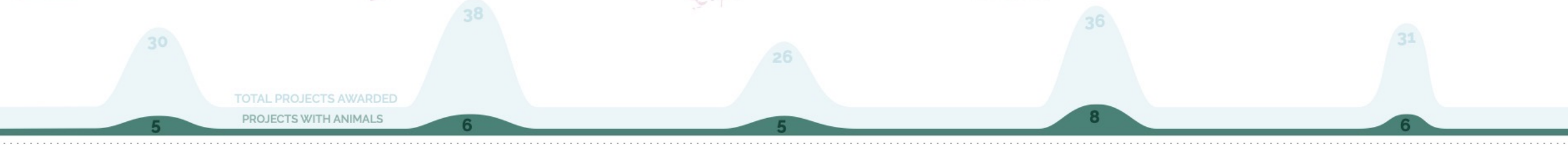
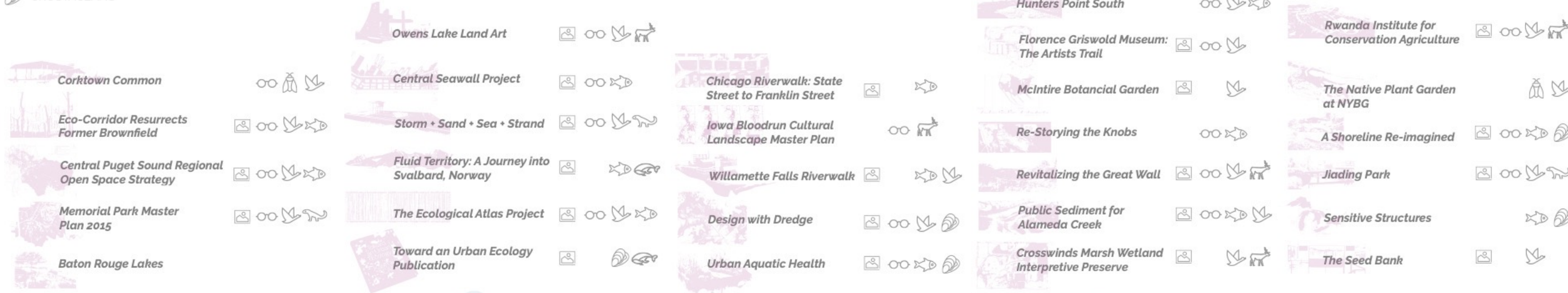
ASLA Awards of Excellence
2016 – 2020



Normative landscape architectural practice focuses on humans

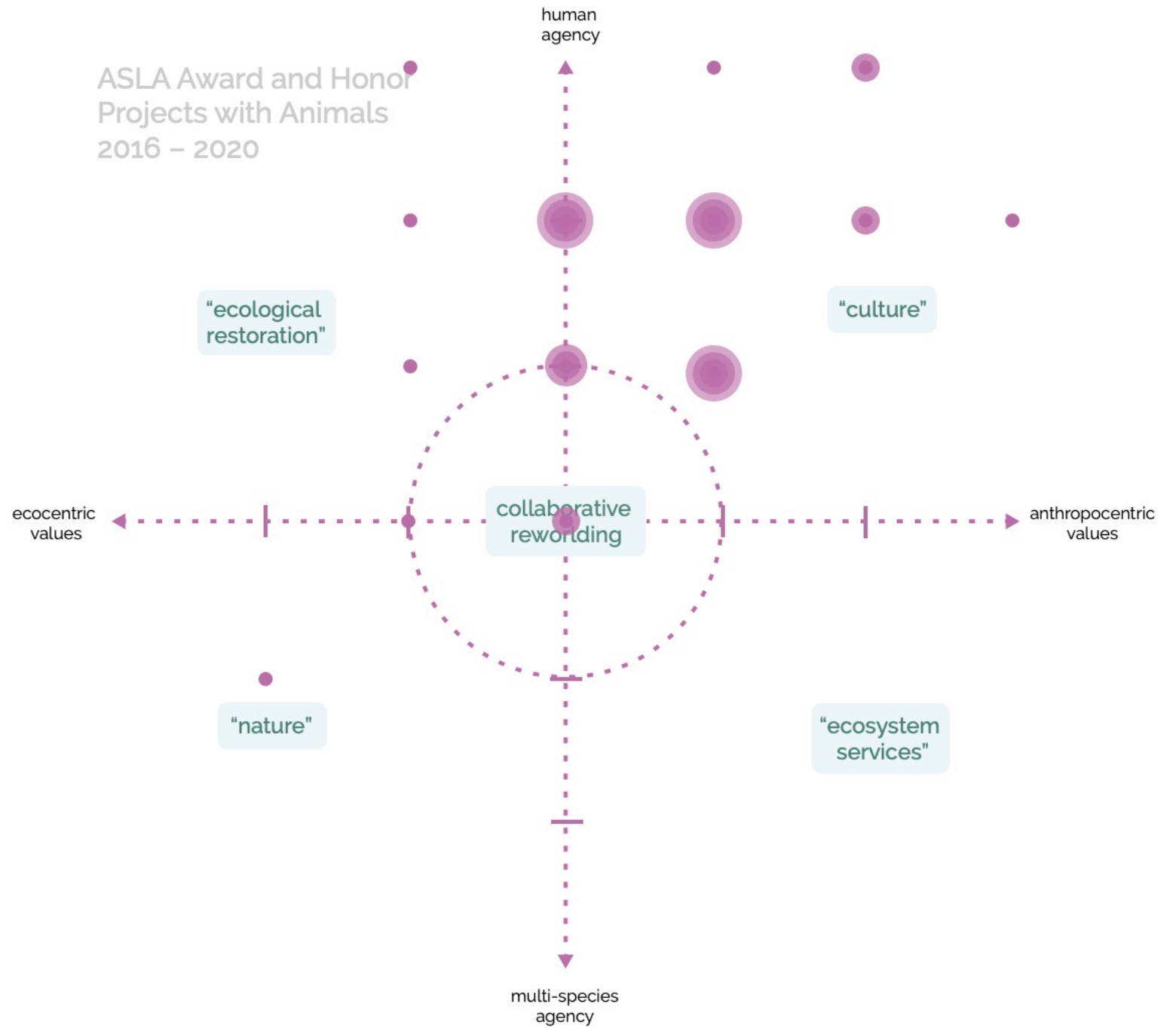
ANIMAL REPRESENTATION IN ASLA AWARDS (2016-2020)

- ANIMALS IN GRAPHICS BIOLOGIST ON TEAM
- BIRDS INSECTS FISH AMPHIBIANS
- LAND MAMMALS AQUATIC MAMMALS
- CRUSTACEANS



30 out of 161 ASLA-awarded projects (19%) explicitly “include animals” over the last five years

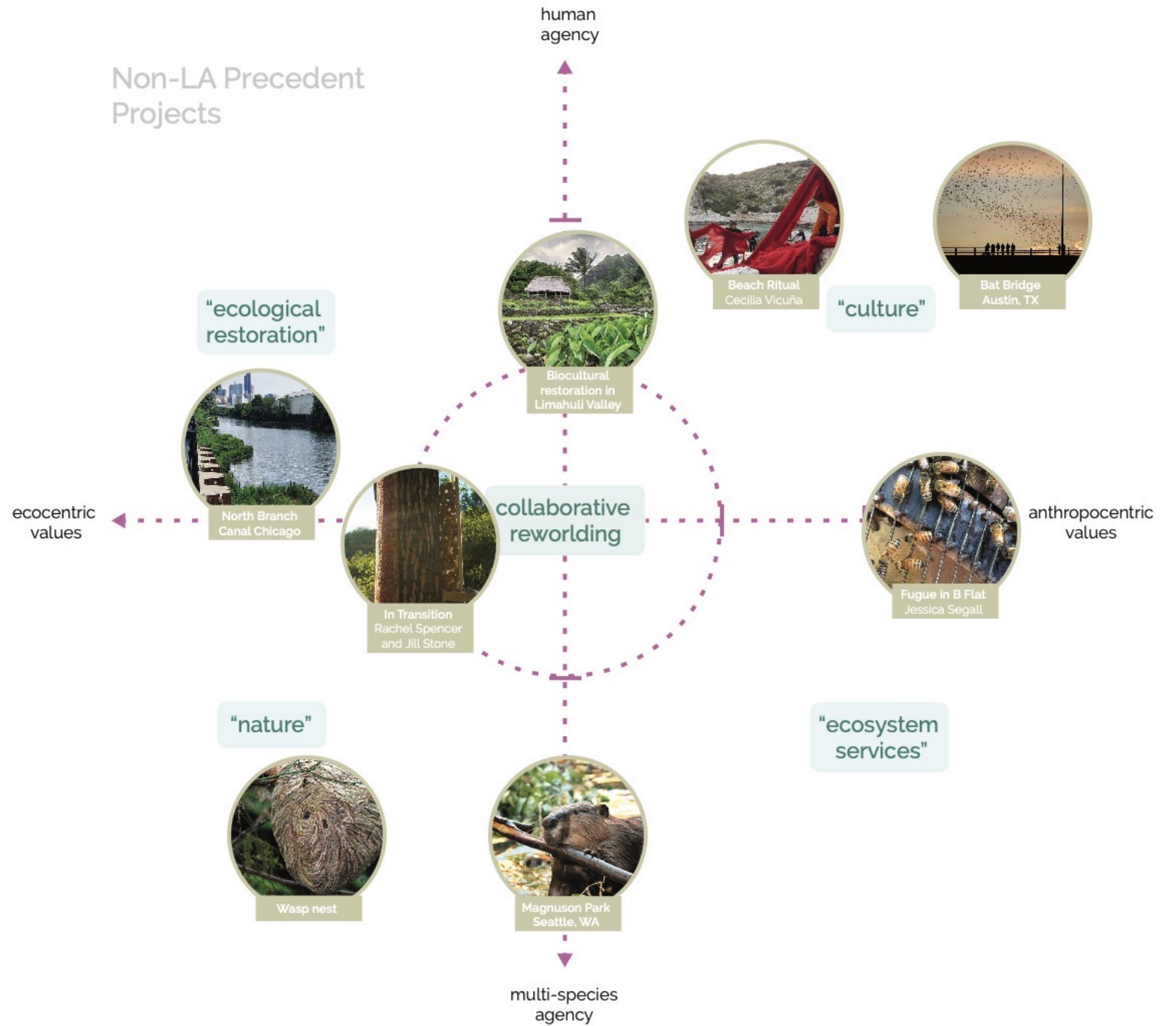
ASLA Award and Honor
Projects with Animals
2016 – 2020



When we include
animals our focus shifts

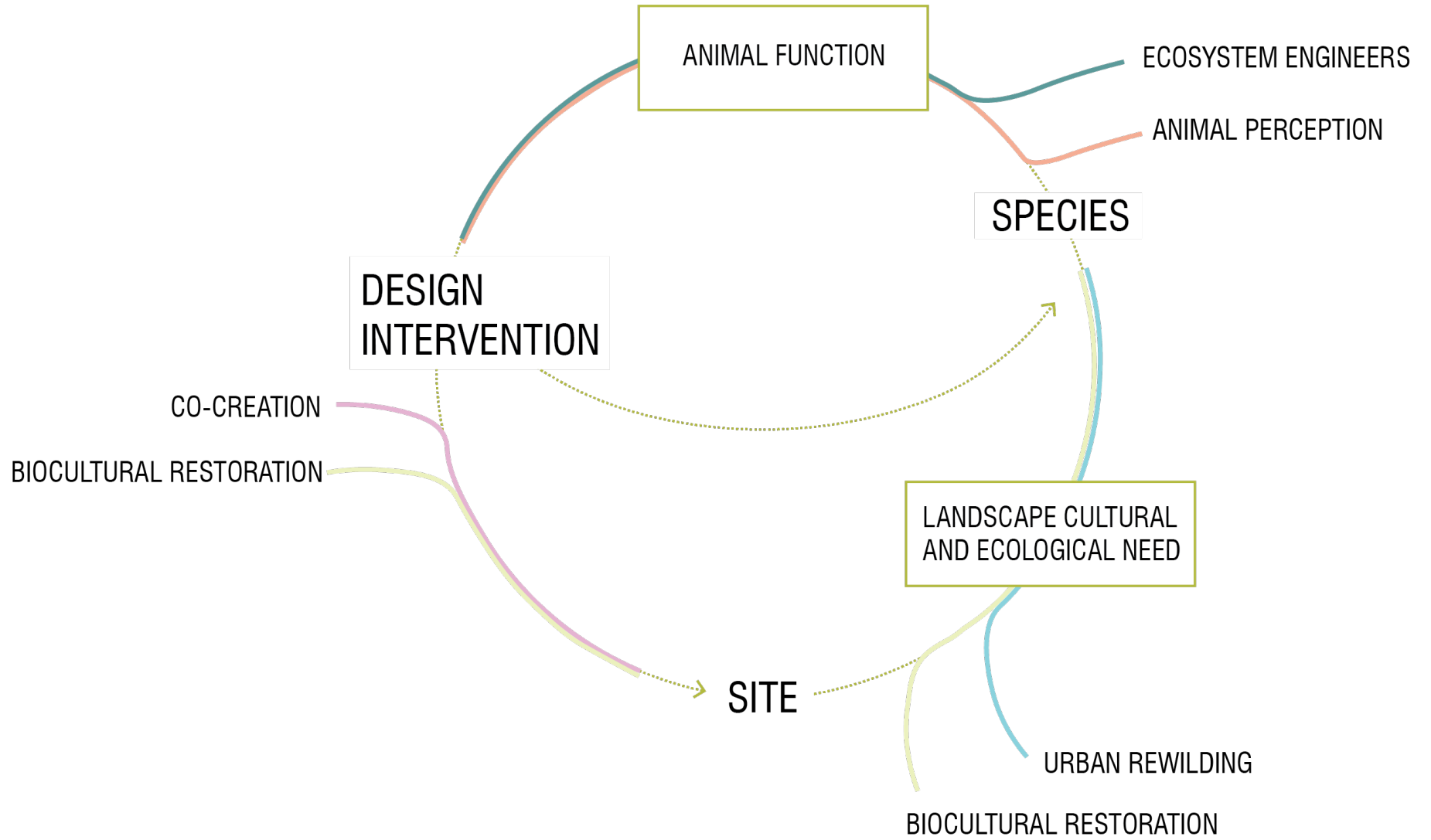
Non-LA Precedent Projects

But we have much to learn



Including Animals

A syllabus
A design process
A practice



ON COLLABORATION

Perceive the world
as occupied by
non-human
neighbors



NATURE'S CLEANER

All hail the mighty opossum!

The Virginia Opossum (*Didelphis virginiana*), North America's only marsupial, is a much maligned but fantastically interesting and beneficial animal. Opossums are solitary and nomadic, they have large ranges and spend only a few days in a particular location at a time. They do not dig their own burrows but rather utilize small, dark, dry spaces that they find. In urban settings up to one-fifth of their diet may consist of pet food and human food waste. They are extremely unlikely to be carriers of disease (8 times less likely than wild dogs to carry rabies for example), and they reduce prevalence of Lyme disease by eating large amounts of disease-carrying ticks. They have sensitive night vision and whiskers similar to a cat, but locate food and communicate extensively through a keen sense of smell.



Ali Pugiales + Sierra Nevada red fox





prairie dogs



red-breasted sapsucker



American beaver

Understand the collaborative potential of our non-human neighbors



In Translation
Rachel Spencer + Jill Stone + emerald ash borer + eastern gray squirrel

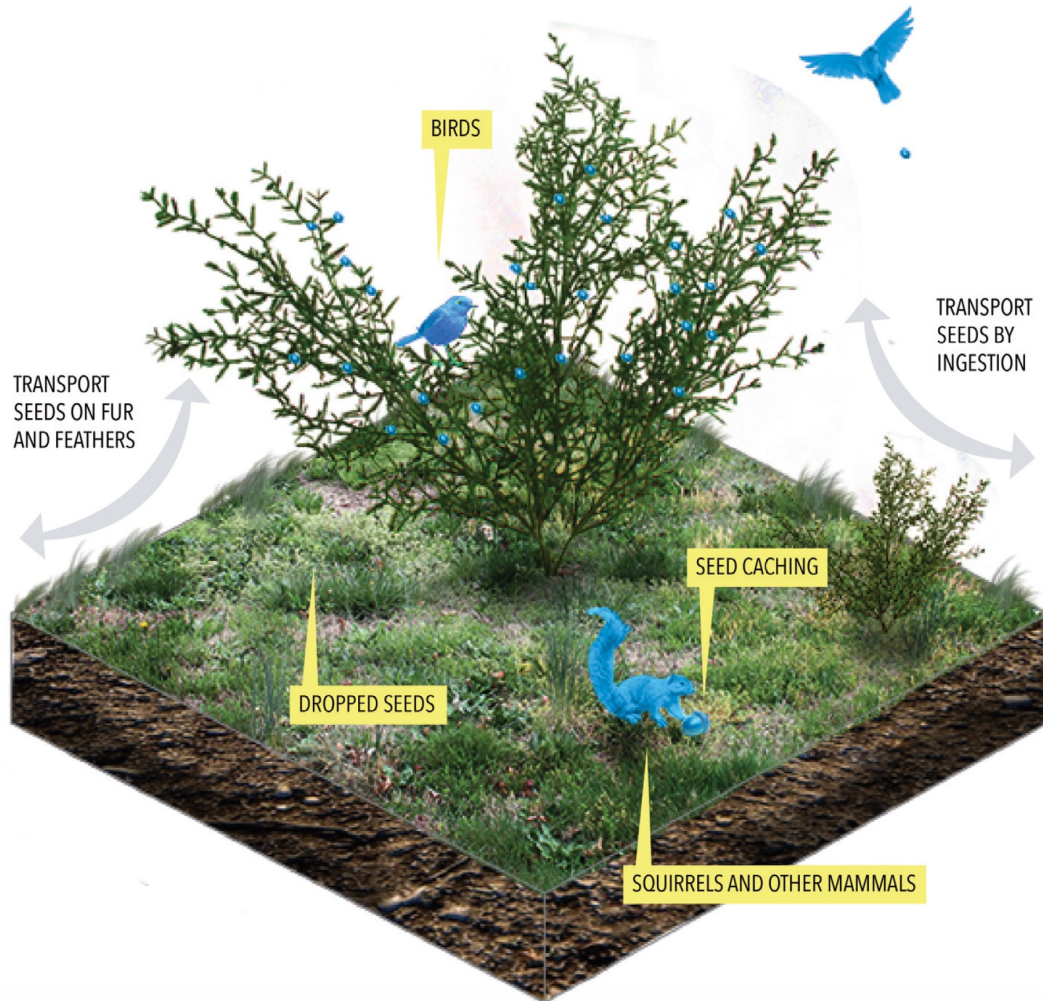
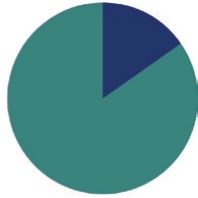


What Lies Beneath
Jamie Willeke + earthworms

Animal Agency

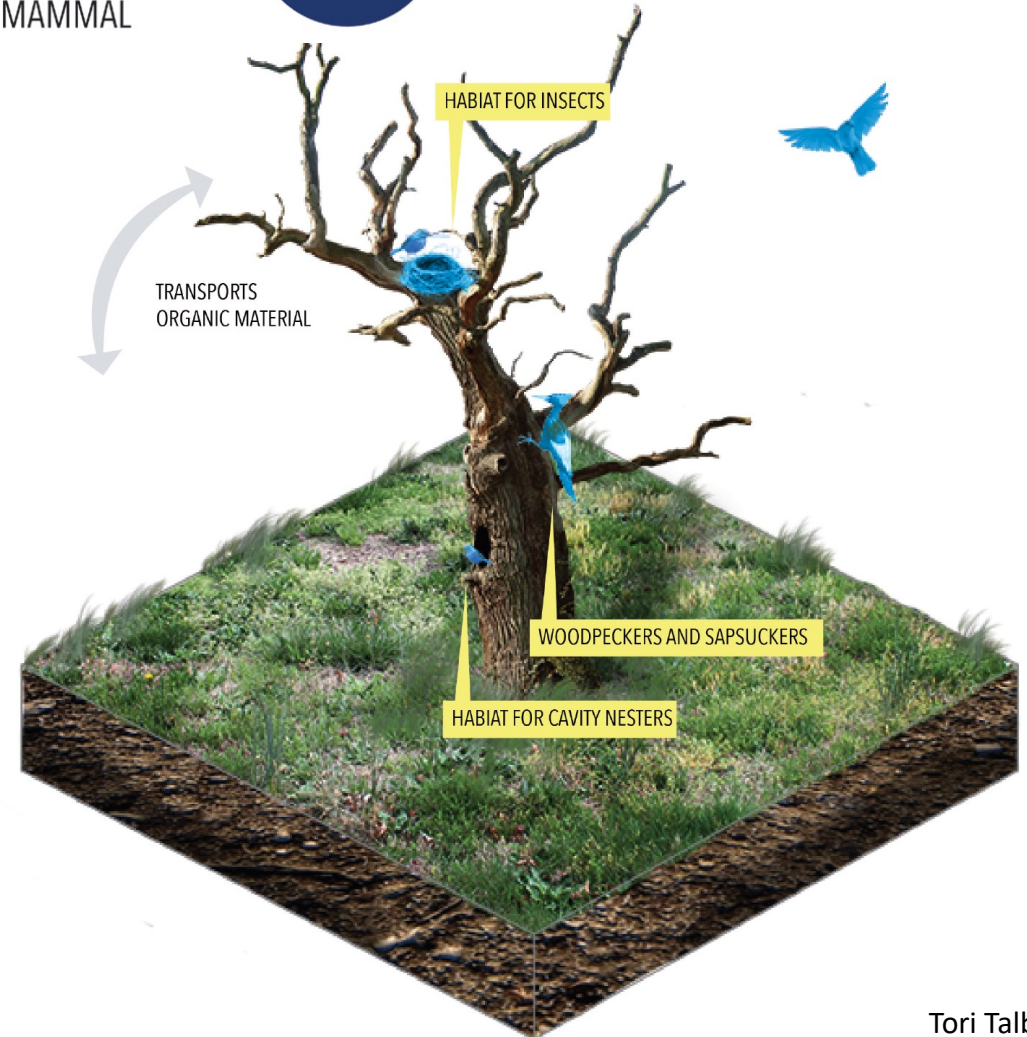
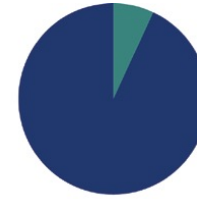
Seed dispersal

- BIRD
- MAMMAL



Cavities and structures

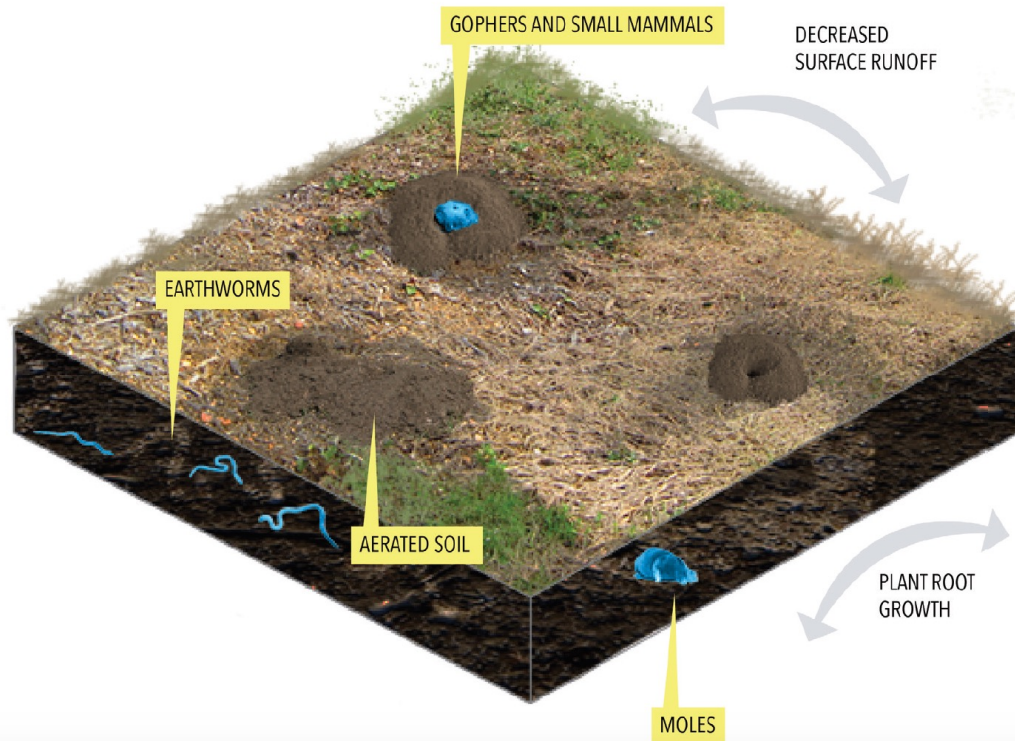
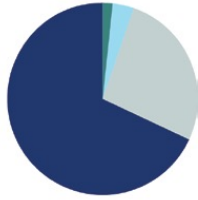
- BIRD
- MAMMAL



Animal Agency

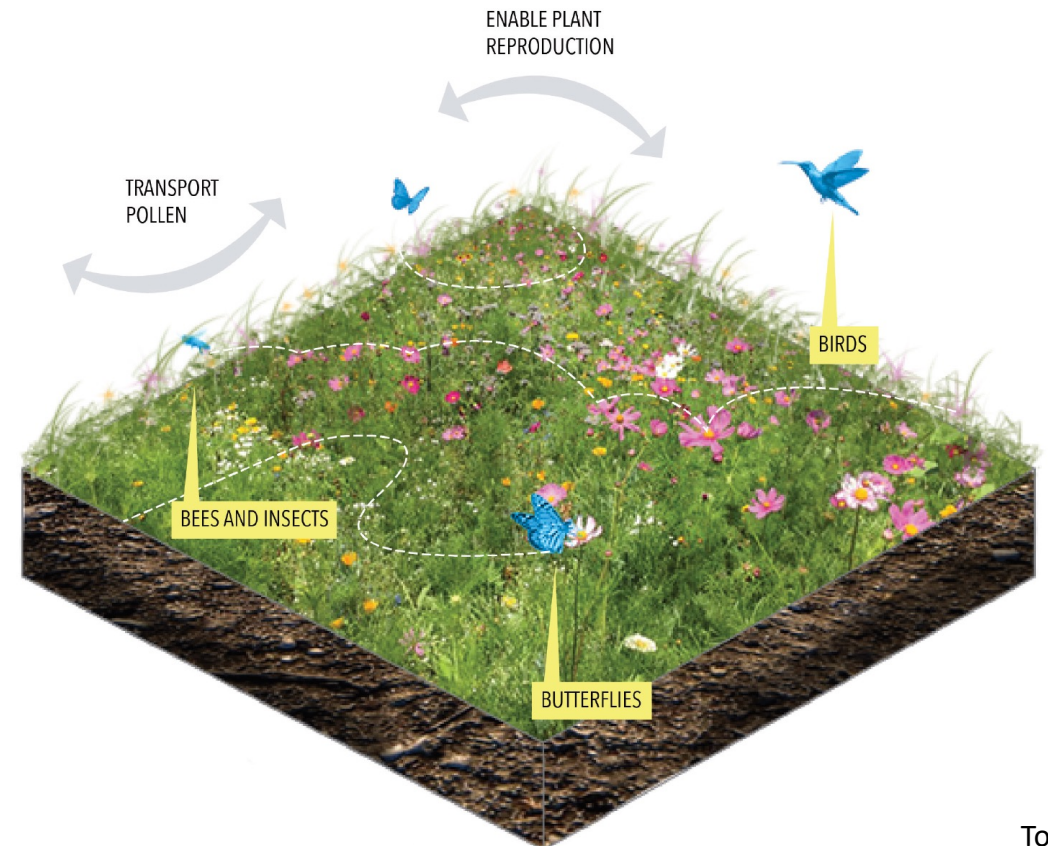
Aeration

- INSECT
- BIRD
- MAMMAL
- AMPHIBIAN



Pollination

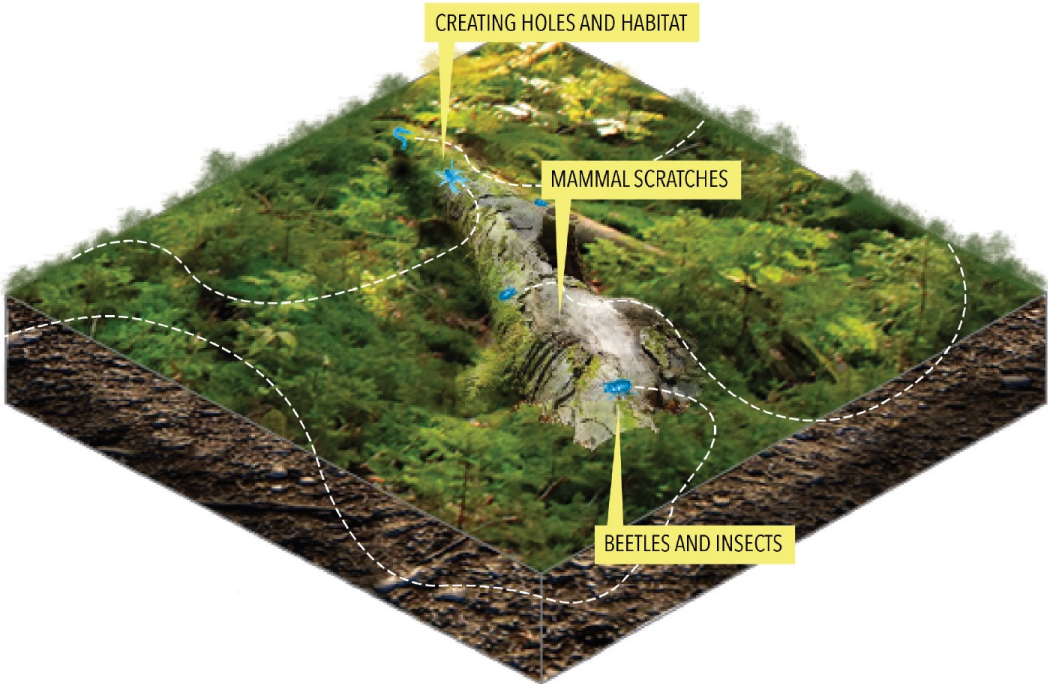
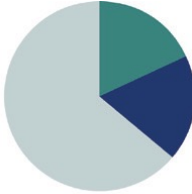
- INSECT
- BIRD



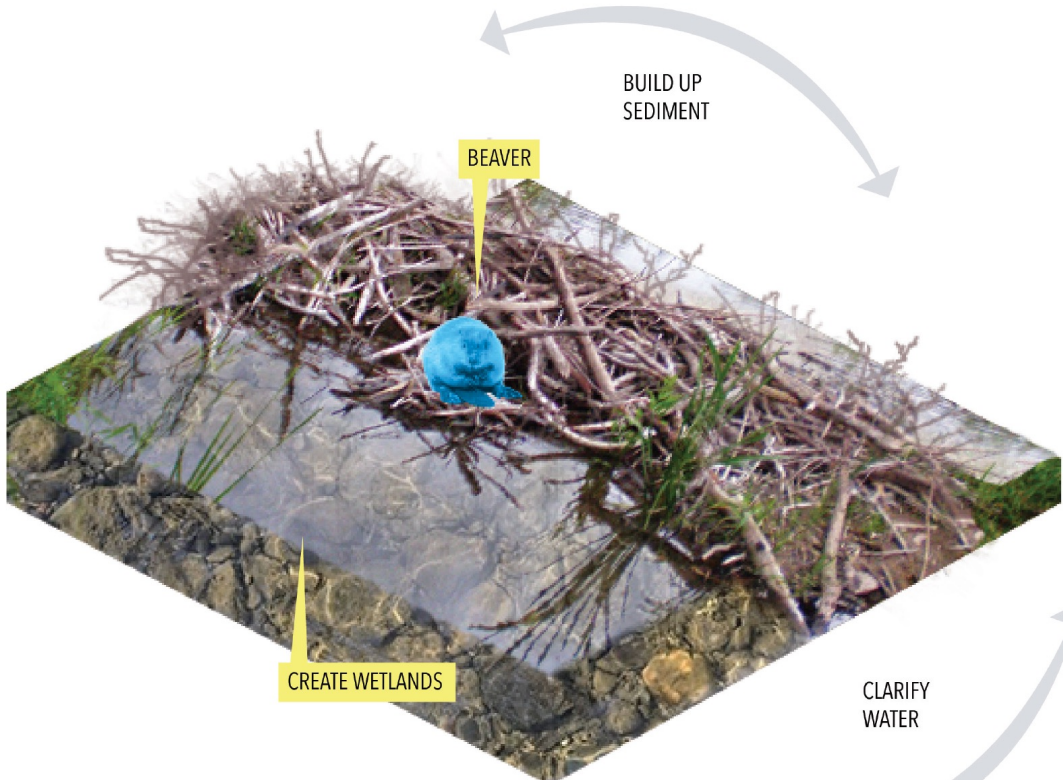
Animal Agency

Wood fragmentation

- INSECT
- BIRD
- MAMMAL



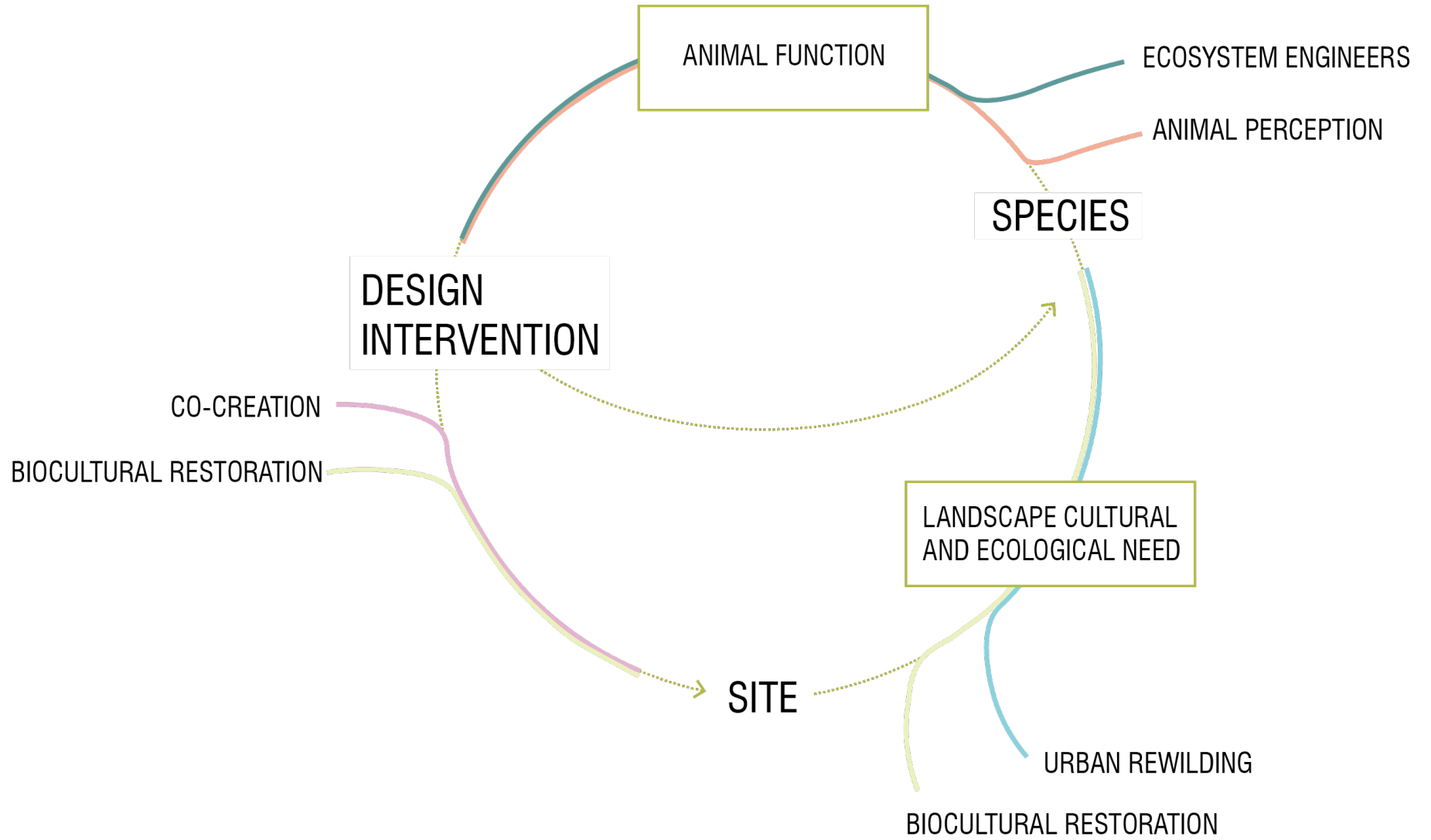
Damming



ON EDUCATION

Including Animals

A syllabus
A design process
A practice



co-creation

ecosystem engineers

animal perception

adaptive management

biocultural restoration

urban rewilding



3 Newts : 120 Minutes
Photo: Justin Kau

Ivory Billed Woodpecker
Photo: Cornell Ornithology Lab

Red fox
Photo: Maggie Bruce

Wetland Monitoring
Photo: Environment Canada

Biocultural Restoration of
an Ahupua'a

North Branch Canal, Chicago
Photo: Urban Rivers

themes and theories

Readings

precedents and praxis

Precedent studies

landscape architecture lens

Designs + fieldwork

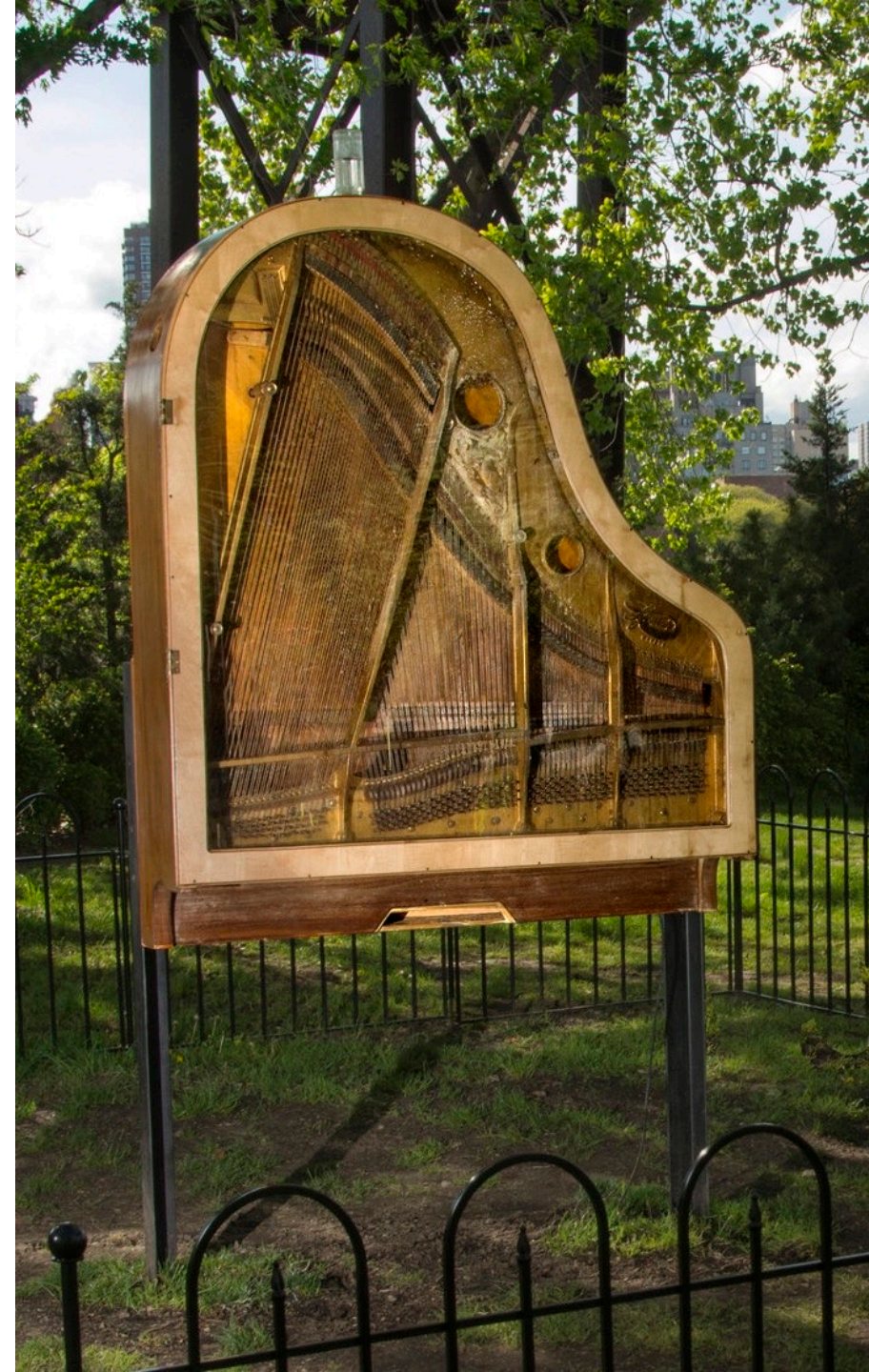
develop a verbal and visual language for landscape architects

Co-Creation



Jessica Segall | Fugue in B Flat

What is an animals' aesthetic?
(Can we problematize notions of good design?)
What can humans do to facilitate animal activity?

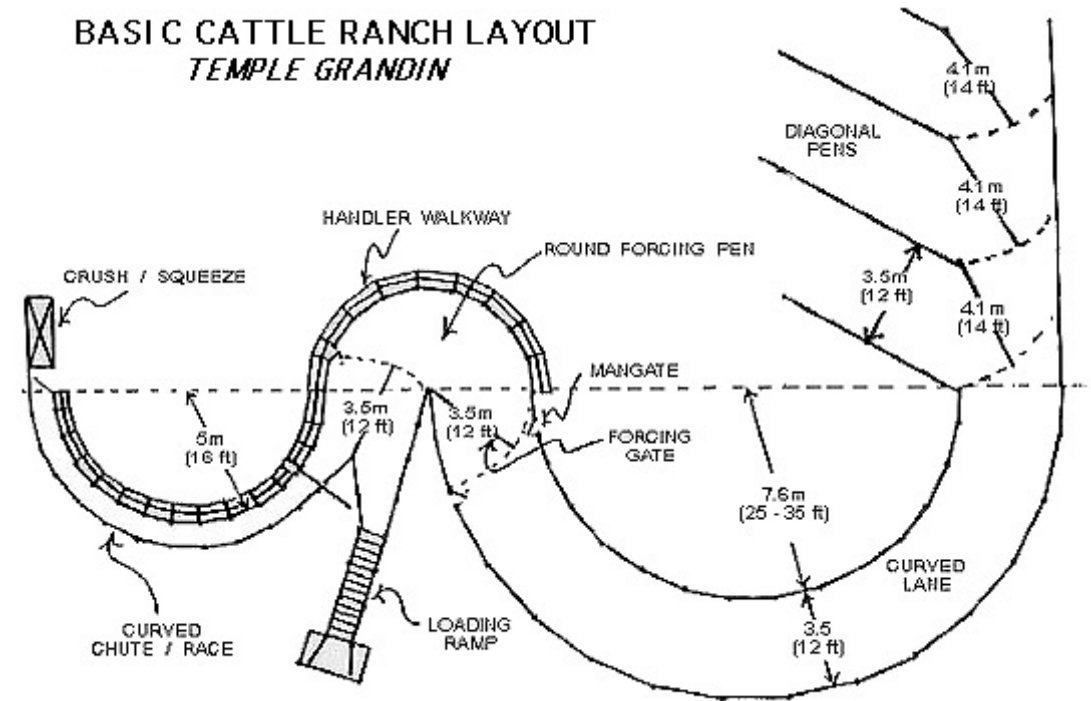


Ecosystem Engineers



How do animals construct their worlds?
What functions do animals provide in the creation and maintenance of ecosystems?
Are some animal ecological functions more suited to urban environments than others?

Animal Perception



Temple Grandin, Curved cattle chute

How do animals perceive their worlds?
What do humans provide in an (urban) environment to foster animal comfort, health and pleasure?
What aspects of urban environments are appealing or unappealing to animals?

Biocultural Restoration | Traditional Ecological Knowledge



Cecilia Vicuña | *Beach Ritual (near Athens)* | 2017

How can we integrate human values in ecological restoration?

What processes engender nonlinear, holistic relationships between humans and animals?

What practiced knowledge of animals, plants, and ecological relationships exist from long stewardship with lands?

Rewilding

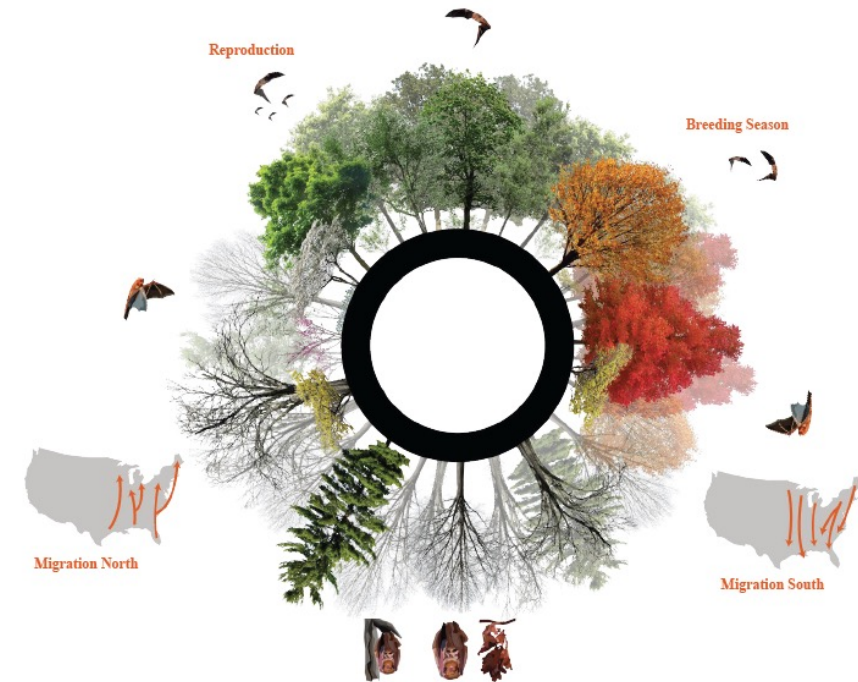
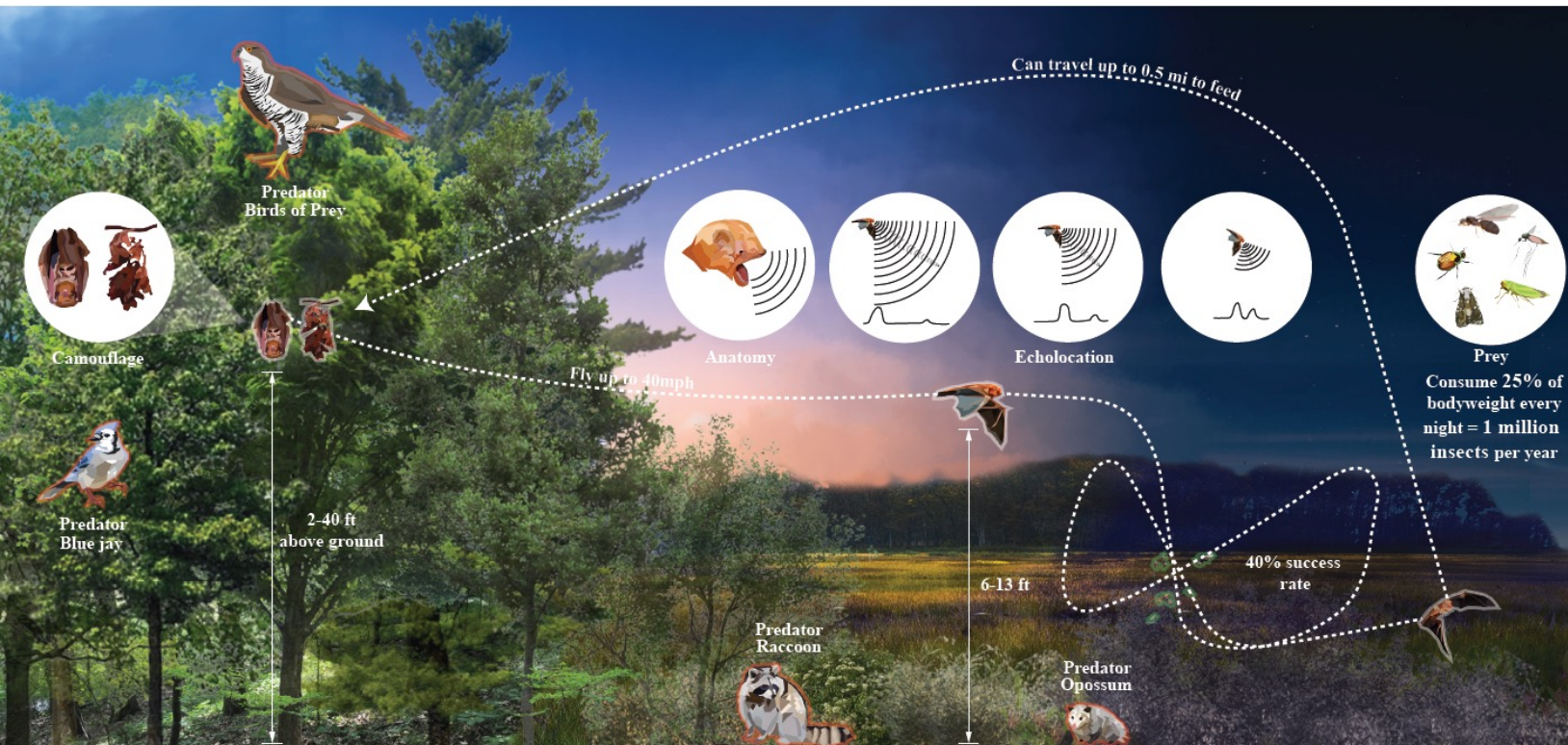


What is missing in robust urban habitat?
Can we model urban habitats on regional ecosystems?
What animals are necessary for regional environmental self-regulation?
What conflicts exist between humans and animals in urban contexts?

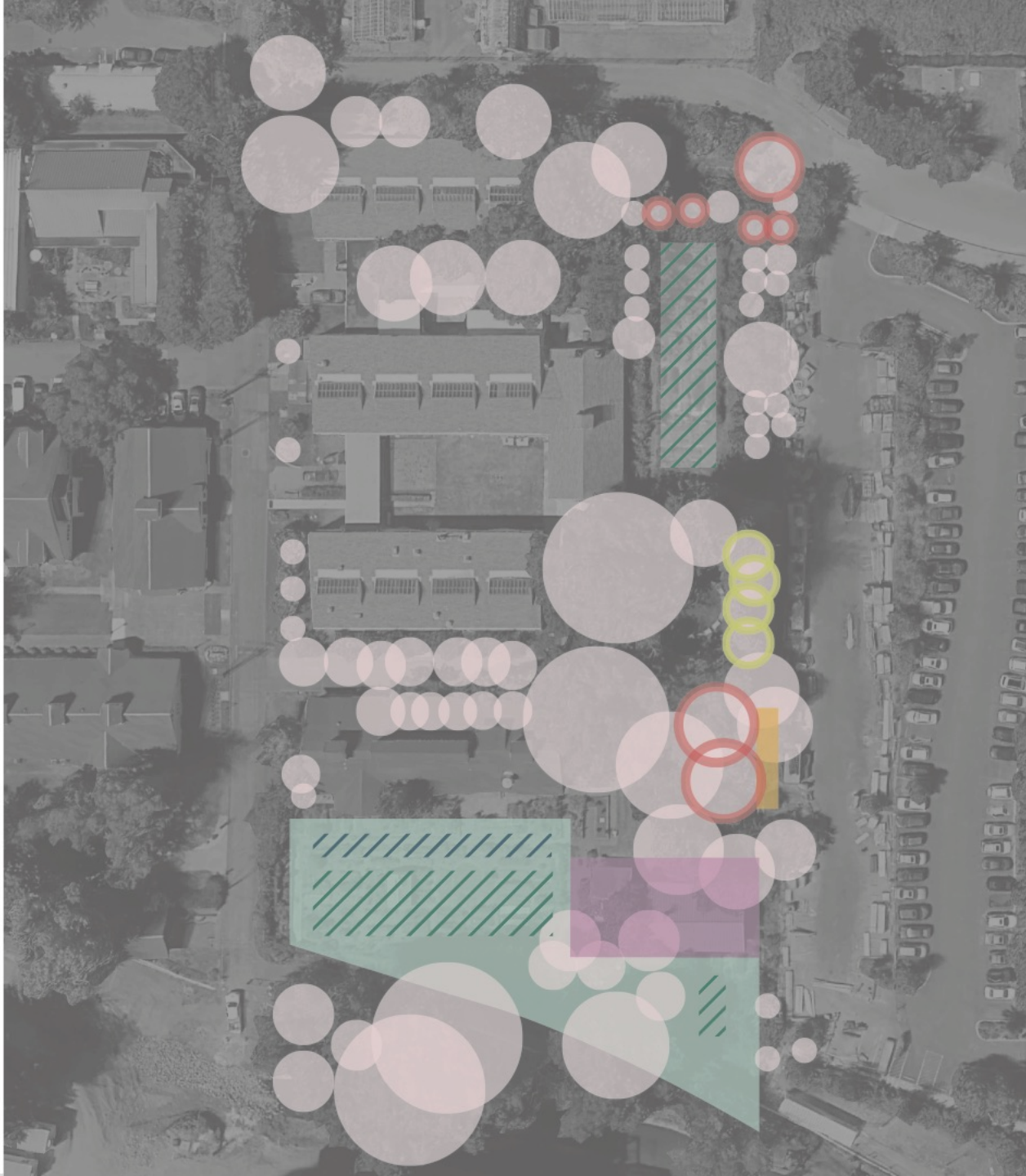
South Congress Bridge | Austin, TX

Understanding design partner species

Example | Eastern red bat
Kyle Skrapits



CONFLICT SPECIES AT UO URBAN FARM



BLACKBIRDS

Conflict species at UO Urban Farm
In the cherry and fig trees
Jenna Witzleben



CABBAGE MOTHS

Sitewide



GOPHERS

Sitewide



HUMANS

Around structures



MOLES

Sitewide



NUTRIA

Beds by the Mill Race



RACCOONS

Nest in Cedar trees



RATS

In the compost bins



SLUGS

Sitewide



SQUIRRELS

In all of the trees



SQUASH BUGS

Near squash (varies in location)



STINK BUGS

Sitewide



SYMPHYLA

In the beds, eat the roots

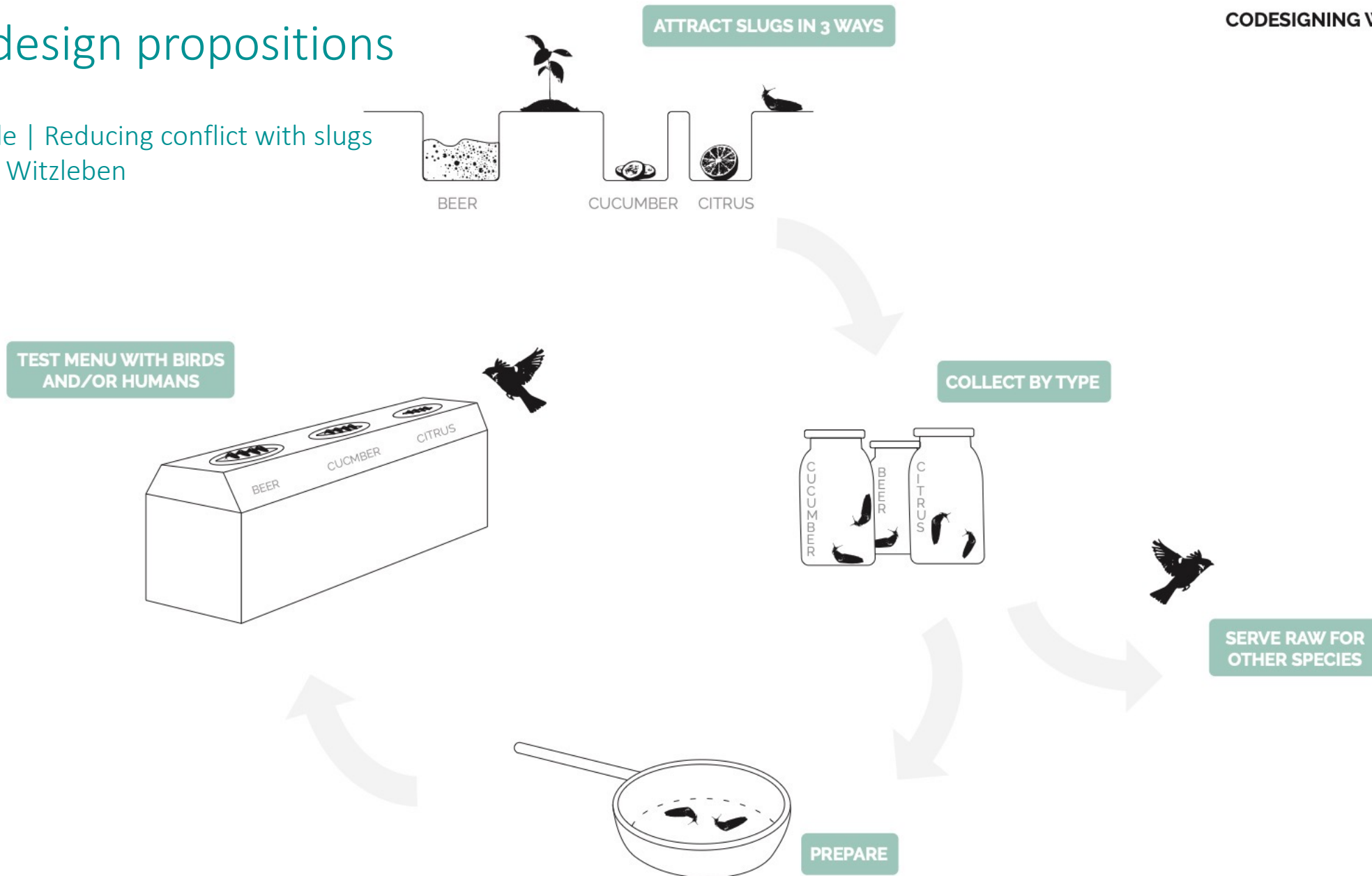


YELLOW JACKETS

Sitewide

Co-design propositions

Example | Reducing conflict with slugs
Jenna Witzleben



Designing design processes

Example | Animal + Urbanism workshop cards
 Jenna Witzleben


03/ DESIGN WORKSHOP

Challenge/Species Mix-and-Match:

Groups provided set of (virtual) cards that have urban challenges and non-human animals. Pick 1 challenge and 1-2 non-human species. The cards describe the needs/preferences of those species, and their special talents. Goal is to sketch ways to collaborate with that species on that challenge.

COLLABORATOR SPECIES

BUSHY-TAILED WOODRAT



FUNCTIONS

- Seed dispersal
- Nutrient Cycling

NEEDS

- Food: Green shoots, twigs, fruits, seeds, nuts, and mushrooms to eat
- Shelter: Prefer to live in rocky areas
- Reproduction: Rock crevices or stick piles to build nests and food cache

OTHER NOTES

- Can adapt to many habitat types, including abandoned buildings and mines
- Frequently territorial and use scent markings and confrontational defense
- Make nests from plant material and feces
- Like to steal shiny objects
- Nocturnal

COLLABORATOR SPECIES

OREGON FLOATER



FUNCTIONS

- Filtering
- Nutrient Cycling

NEEDS


- Food: Plankton and particulate matter to eat
- Shelter: Freshwater lakes, slow rivers, and muddy reservoirs
- Reproduction: Native fish to help spread their larvae

OTHER NOTES

- Filter bacteria, algae, and zooplankton from water
- Can filter pollutants but are vulnerable to habitat degradation and water quality changes

URBAN CHALLENGES

REDUCE URBAN HEAT ISLAND



OVERVIEW

Cities in the Pacific Northwest are facing hotter, drier summers with more heat waves due to climate change. The amount of dark, hardscaped, and impervious surfaces in cities create micro-climates that are even hotter. This threatens the well-being of many species and causes humans to use more energy in active cooling systems.

CURRENT APPROACHES

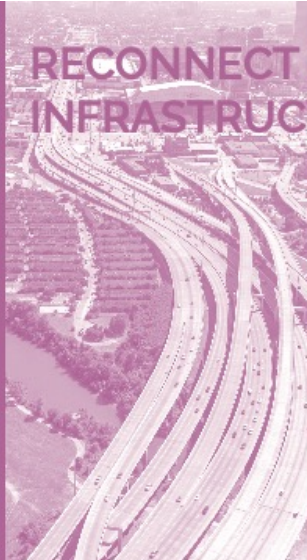
- Green infrastructure, urban forest cover, and wetland restoration to sequester carbon and cool the city
- Cooling shelters, as a band-aid for preventing heat stroke
- Designing buildings with passive cooling systems
- Lightening street colors and using permeable surfaces

BARRIERS

- Development pressures that limit urban forest cover
- Slow change in construction materials and standards
- Ongoing maintenance of green infrastructure to ensure longevity

URBAN CHALLENGES

RECONNECT ACROSS INFRASTRUCTURE



OVERVIEW

Across the US in the early to mid-1980's, highways and car-centric infrastructure was used to displace and segregate communities of color, low income communities, and immigrants. This impasse have blocked access to transit and green space. They also create divides in habitat for other animal and plant species.

CURRENT APPROACHES

- Highway removal and investment in public multi-modal transit networks
- New community street grids to bridge neighborhoods
- Putting highways underground
- Using former highway space for affordable housing

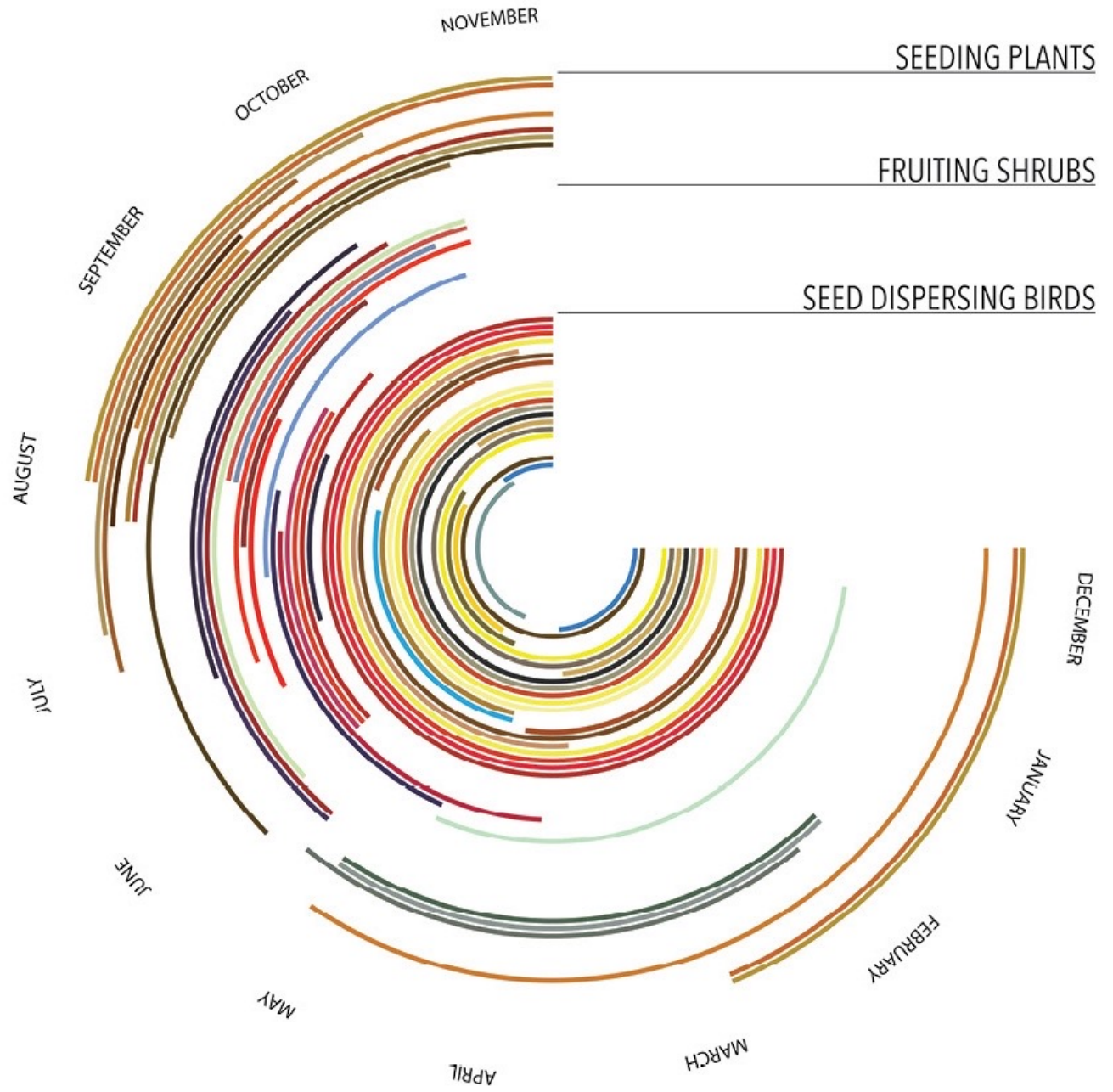
BARRIERS

- Preventing gentrification and displacement following increased access across neighborhoods

Regional and temporal considerations

Example | Seed dispersal in the Pacific Northwest
Tori Talbot

- SEEDING PLANTS**
- RED ALDER
- WHITE ALDER
- OREGON ASH
- CATTAILS
- CHINKAPIN
- DOUGLAS-FIR
- HAZELNUT
- PACIFIC MADRONE
- BIGLEAF MAPLE
- CALIFORNIA BLACK OAK
- OREGON WHITE OAK
- SHORT-STYLED THISTLE
- MOUNTAIN THISTLE
- EDIBLE THISTLE
- FRUITING SHRUBS**
- BLUE RASBERRY
- CASCARA
- PACIFIC CRABAPPLE
- PACIFIC DOGWOOD
- BLUE ELDERBERRY
- RED ELDERBERRY
- SUKSDORF'S HAWTHORN
- RED HUCKLEBERRY
- OAK MISTLETOE
- TALL OREGONGRAPE
- OSOBERRY
- SALMONBERRY
- PACIFIC SERVICEBERRY
- BROADPETAL STRAWBERRY
- WOODS STRAWBERRY
- BLACK TWINBERRY
- SEED DISPERSING BIRDS**
- NORTHERN FLICKER
- DOWNY WOODPECKER
- RED-WINGED BLACKBIRD
- CEJAR WAXWING
- SAVANNAH SPARROW
- HOUSE SPARROW
- FOX SPARROW
- LAZULI BUNTING
- BLACK-HEADED GROSBEAK
- PINE SISKIN
- LESSER GOLDFINCH
- AMERICAN ROBIN
- BLACK-CAPPED CHICKADEE
- AMERICAN CROW
- LINCOLN'S SPARROW
- WHITE-CROWNED SPARROW
- AMERICAN GOLDFINCH
- SWAINSON'S THRUSH
- YELLOW-BREASTED CHAT
- SONG SPARROW
- STELLER'S JAY
- BAND-TAILED PIGEON

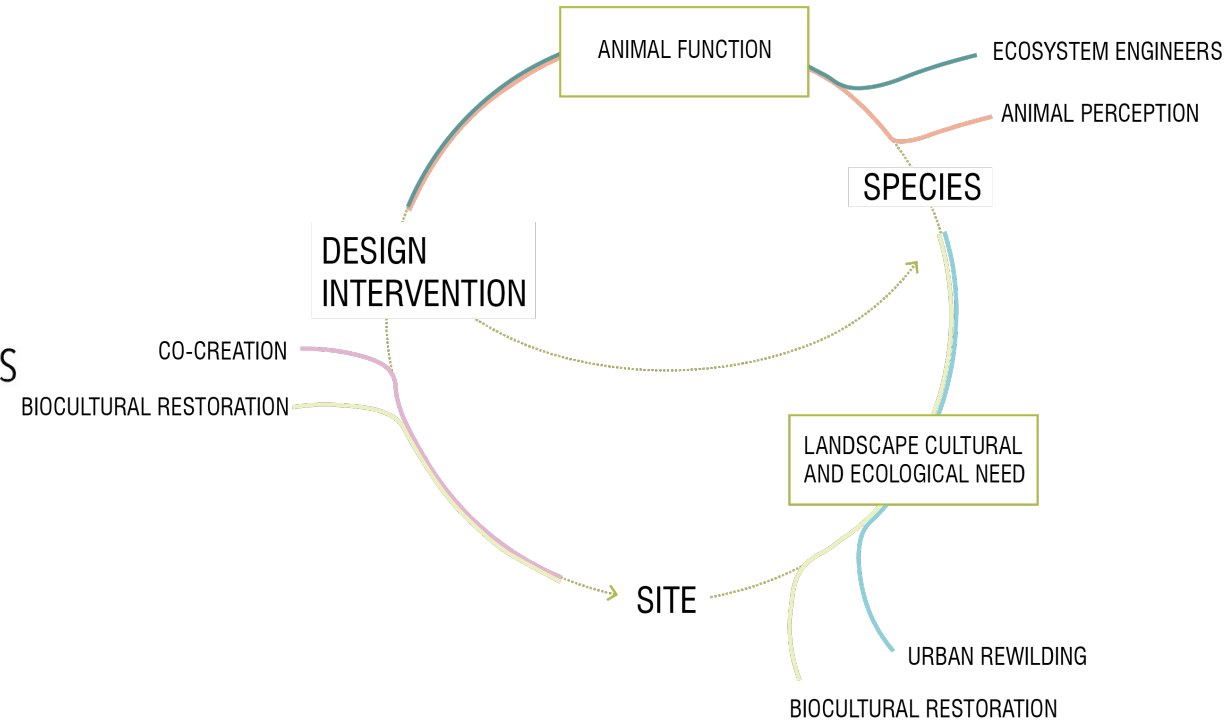
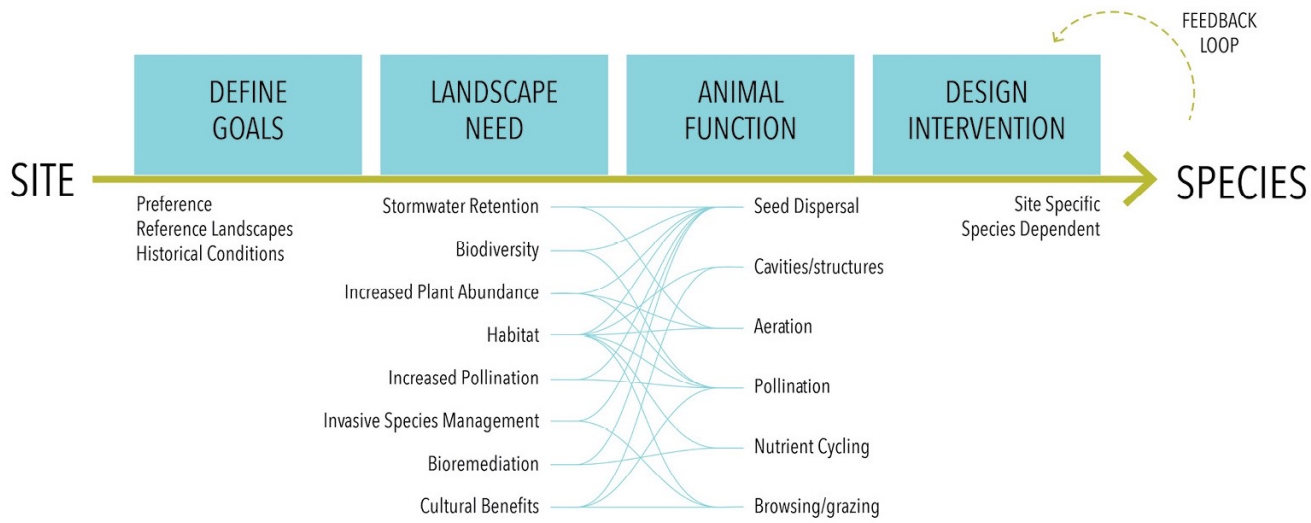


Field testing

Feedback loops

Tori Talbot

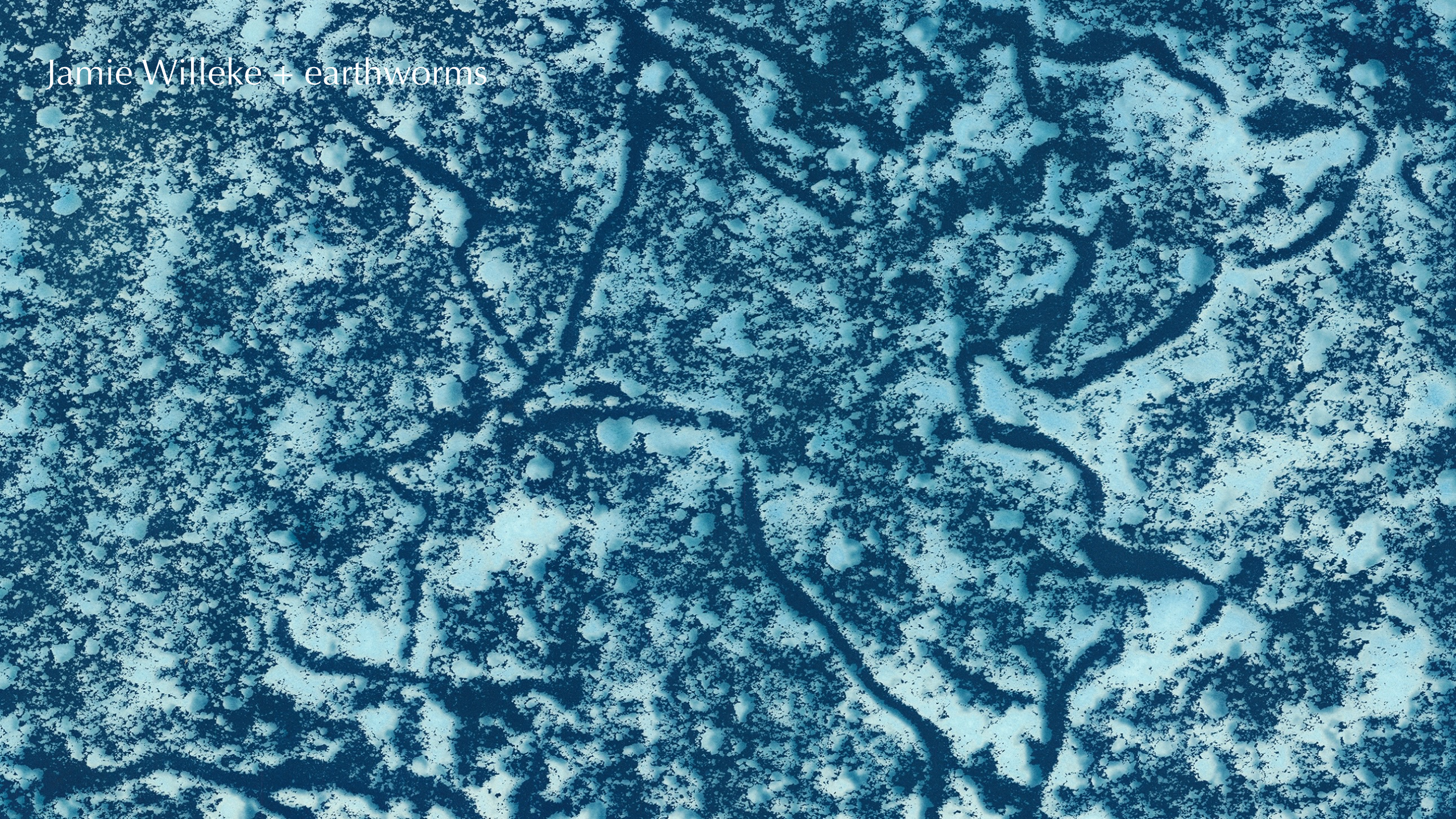
Caroline Fitzpatrick



Margo Barajas + marmot (Larry)



Jamie Willeke + earthworms



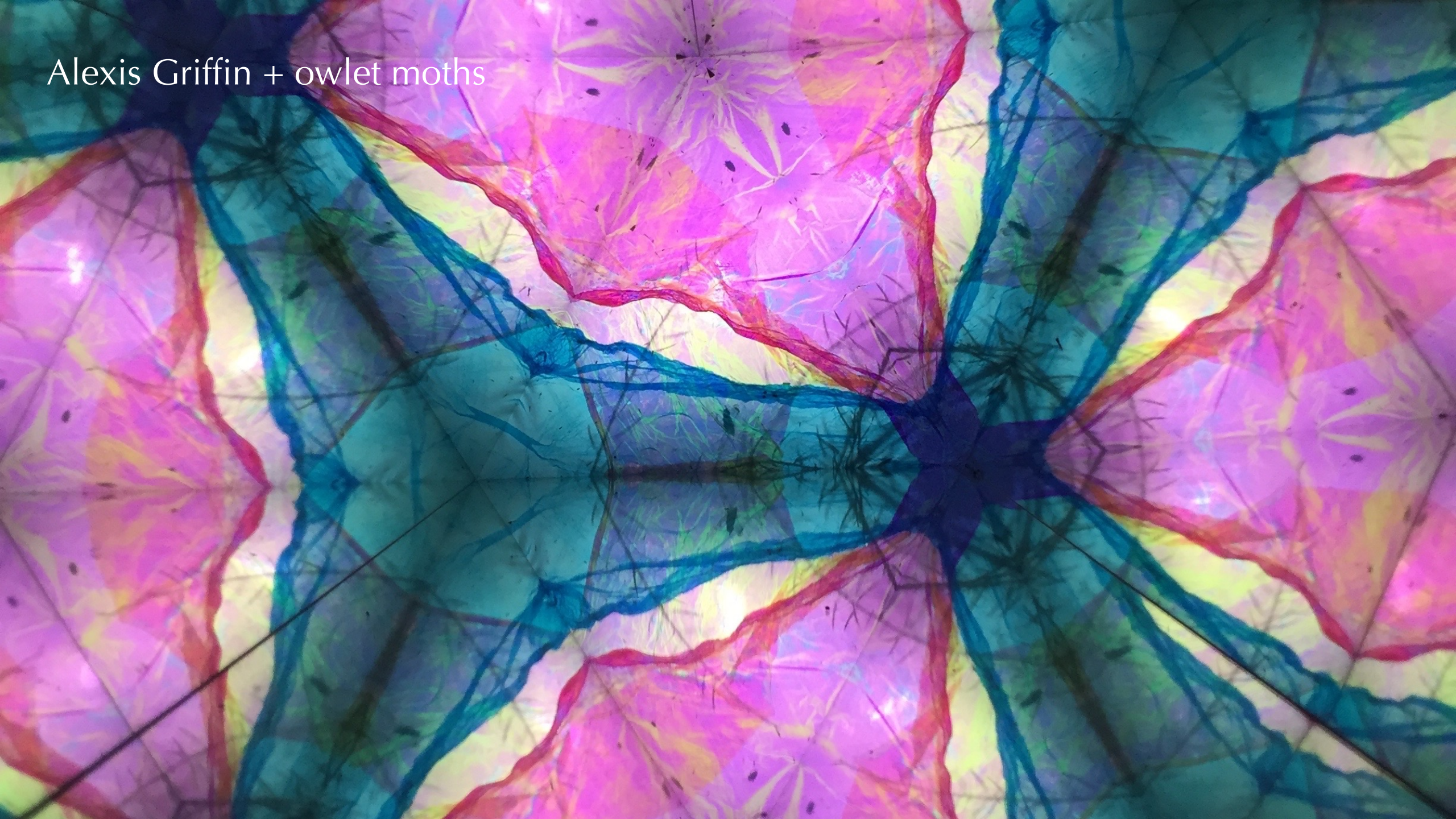
Petar Iliev + deer tick



Alexis Griffin + owlet moths



Alexis Griffin + owlet moths



Jutsin Kau + red eft



Rachel Spencer + Jill Stone + emerald
ash borer + eastern gray squirrel



Jenna Witzleben + western gray squirrel



CO-CREATING WITH ANIMALS

Awareness

To see the world as full of others, with robust lives, agency and purpose

Mutual respect

To engage those others in “multispecies getting on together”

Decentering design(ers)

To understand design as a limited spatial and temporal event in the evolution of a community-place

Resilient and Healthy

To engage all community members in stewarding the health of communities-in-place