



One Health: Concept to Application



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Question for the Viewers



What field do you currently work in?

- A. Public Health
- B. Animal Health
- C. Medical/Clinical Services
- D. Other (please type in chat)

The Case for One Health



Global and Regional One Health Activities



One Health at Benton- Franklin Health District





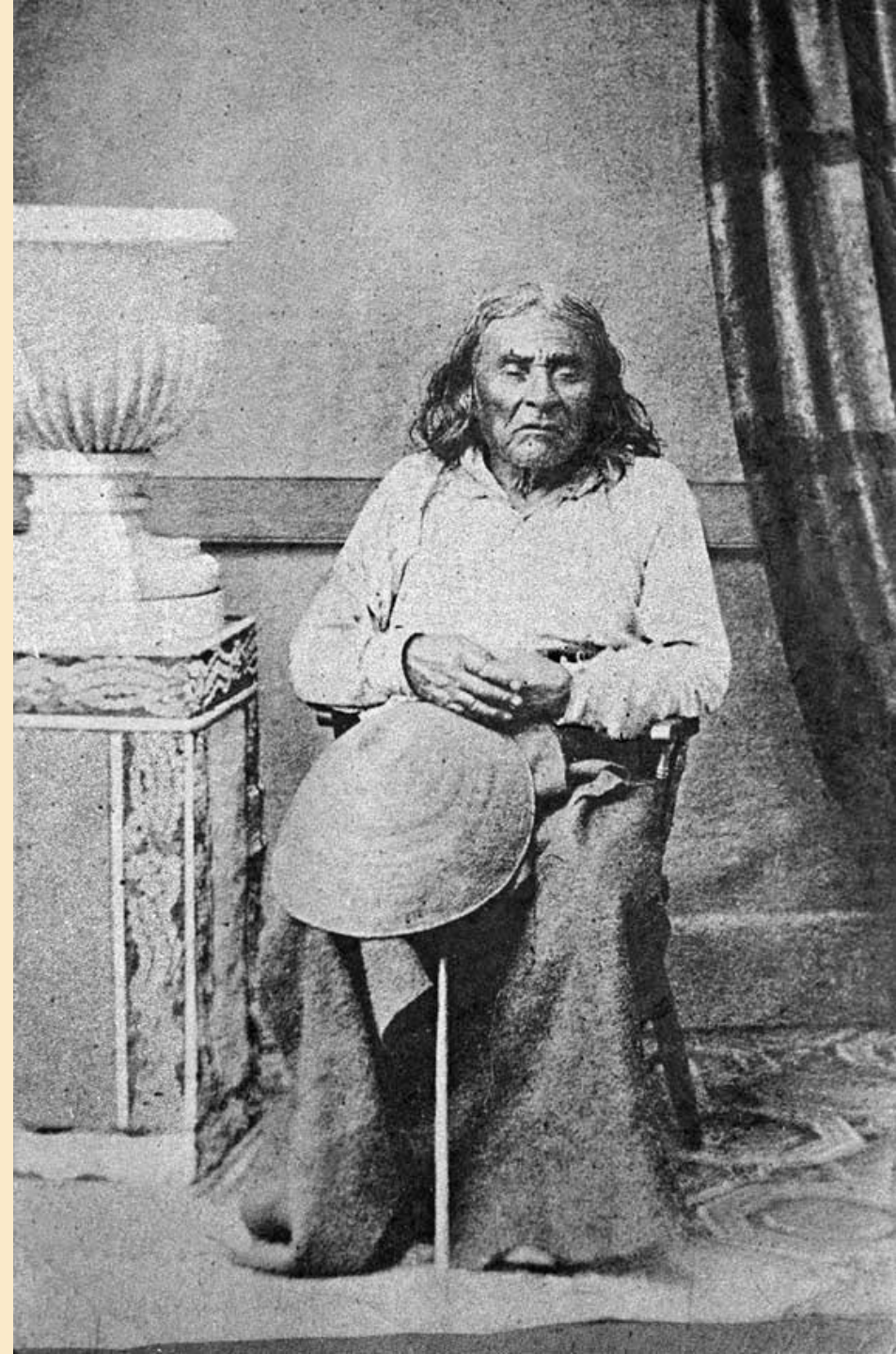
The Case for One Health



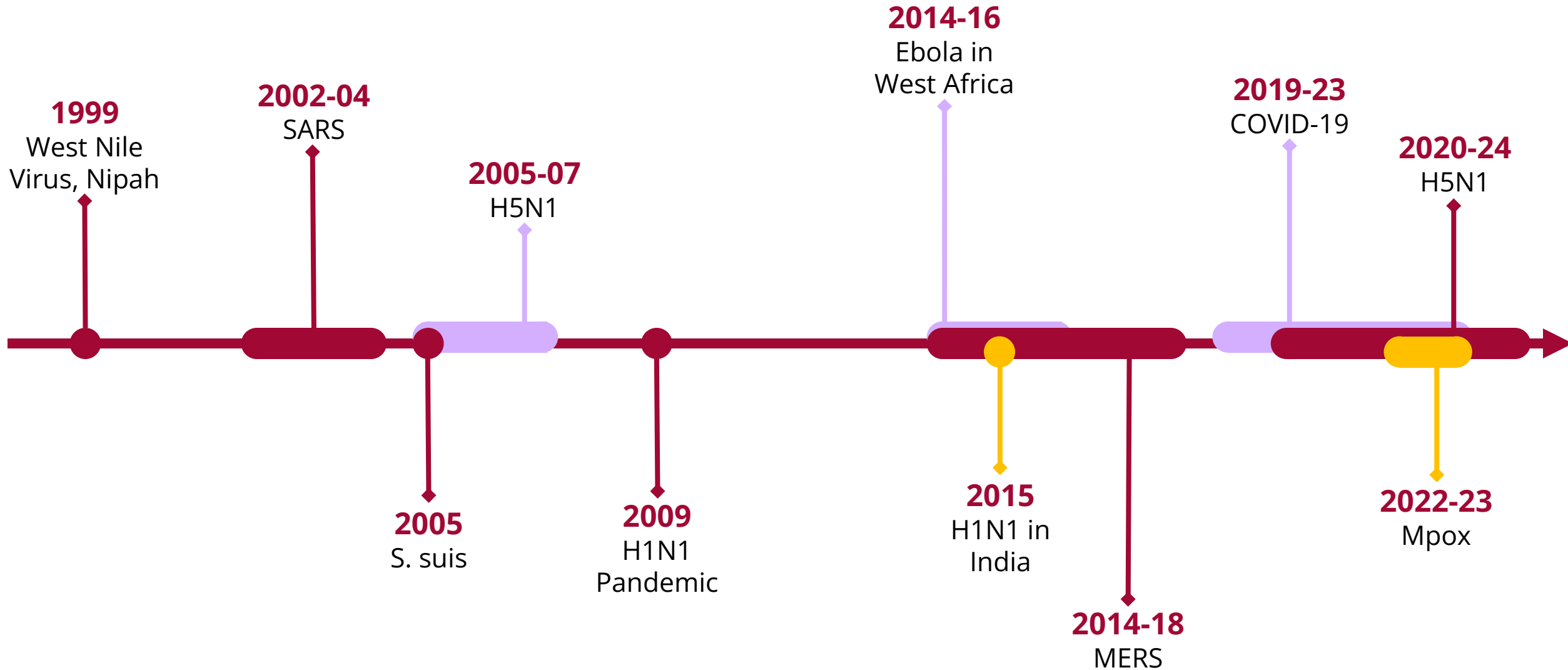
“

What is man without the beasts? If all the beasts were gone, men would die from great loneliness of spirit, for *whatever happens to the beasts also happens to man*. All things are connected. *Whatever befalls the earth befalls the children of the earth.*”

- Chief Seattle, Suquwamish & Duwamish Tribes



Zoonotic Disease Events



SARS CoV2-Zoonotic



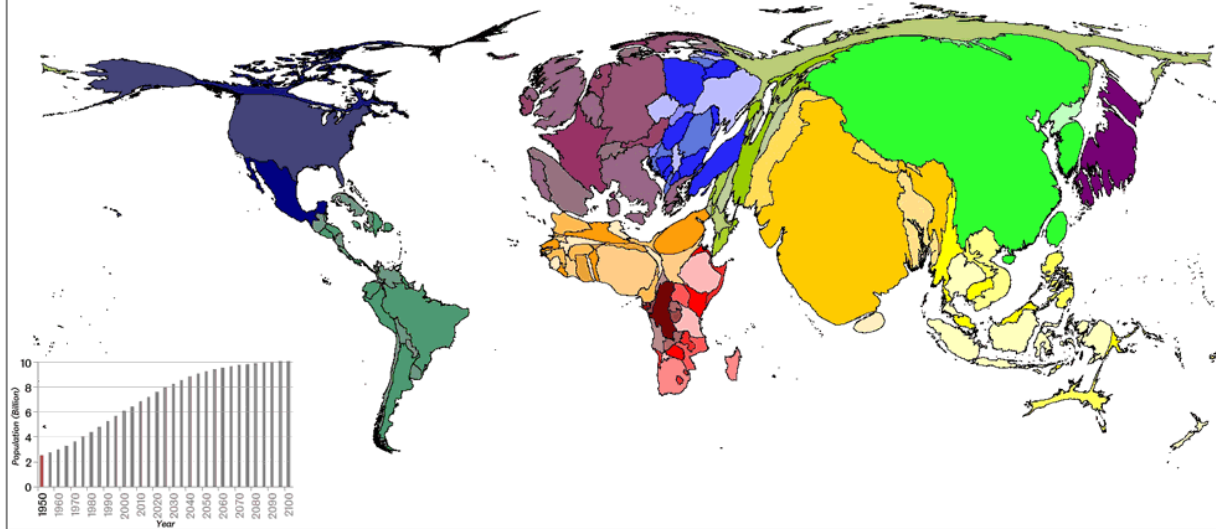
- Many early cases associated with animal markets
- Thought to have jumped to humans from a mammalian source; true origins remain unknown
- Transmission from humans to dogs and cats, others
- Bidirectional transmission on mink farms



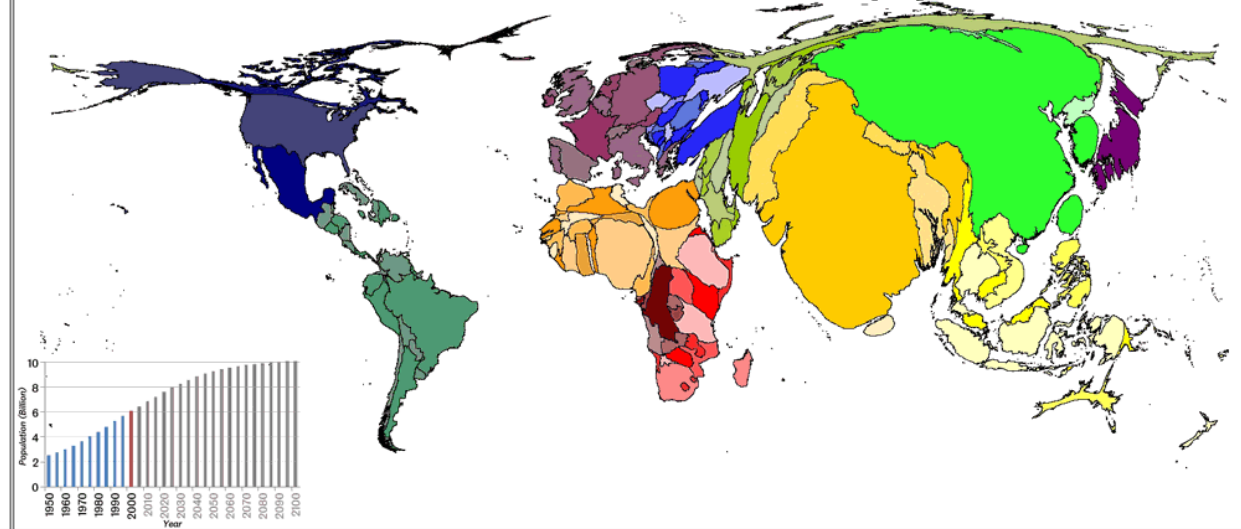
**“Drivers” of the Need for the
One Health Concept**

Population Growth

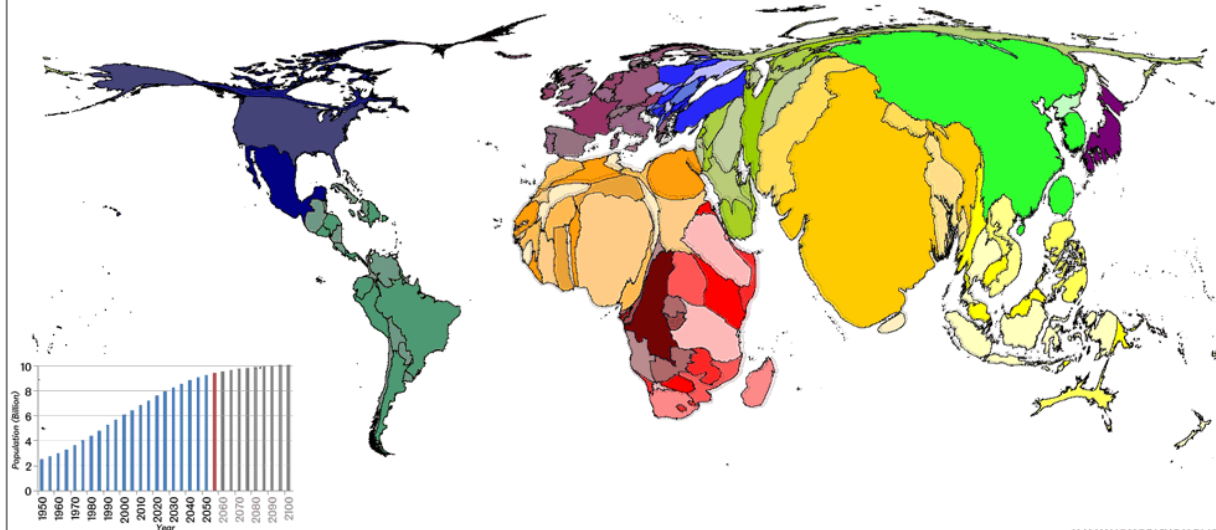
World Population 1950



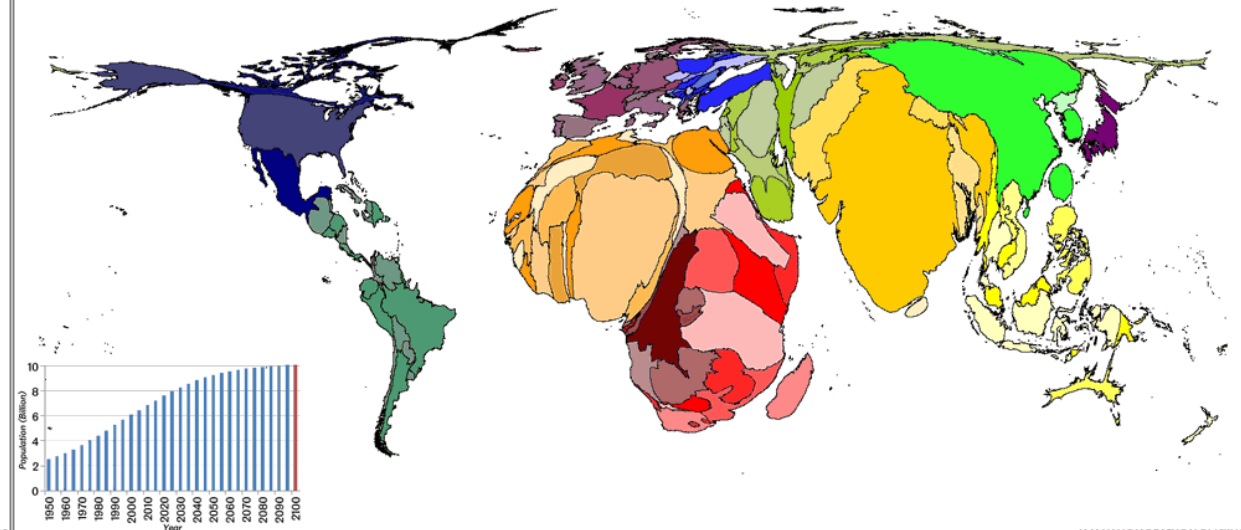
World Population 2000



World Population 2050



World Population 2100



World Urbanization: 1970

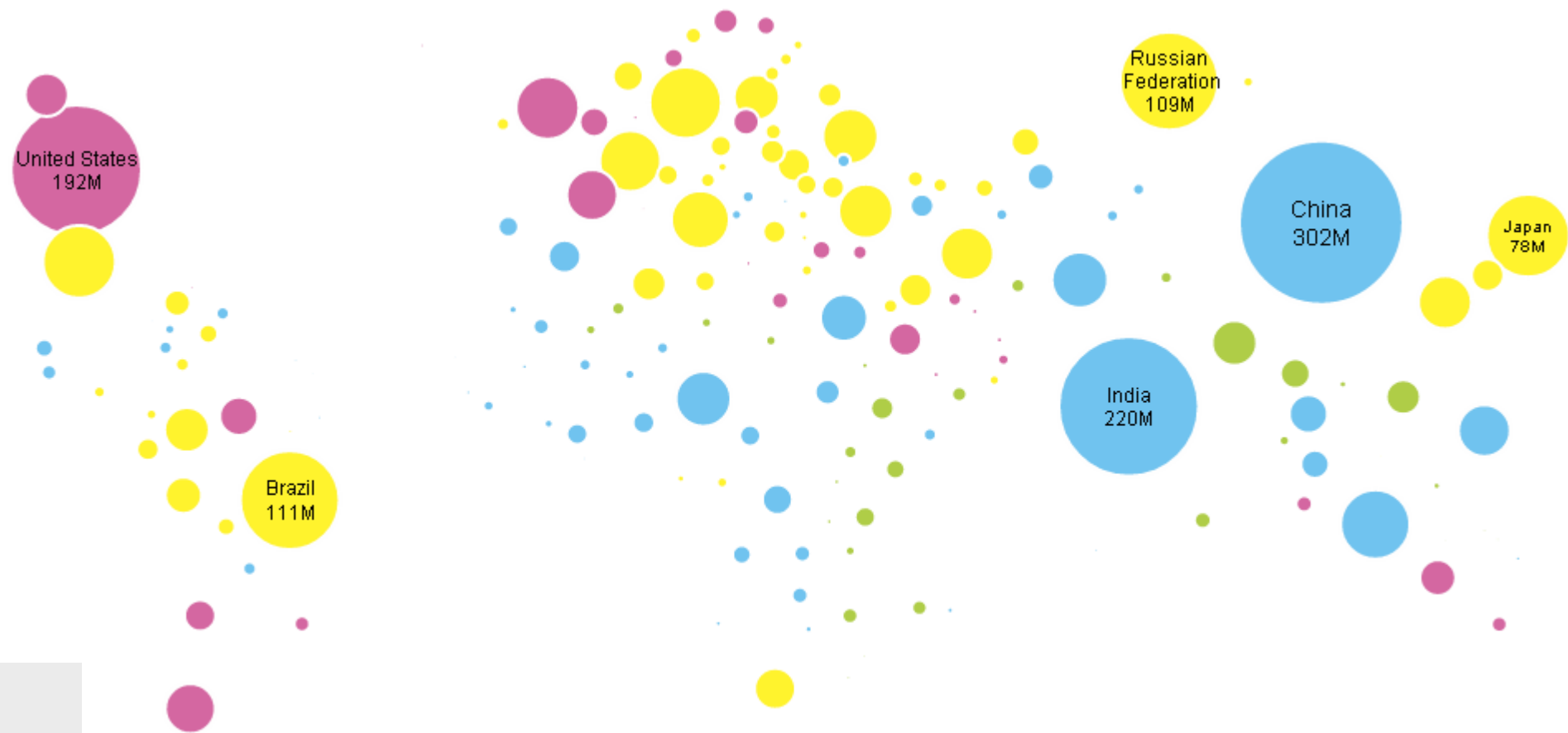


Urban Population:

- Greater than 75%
- 50-75%
- 25-50%
- Less than 25%

Source: Unicef "An Urban World" Data Visualization

World Urbanization: 1990

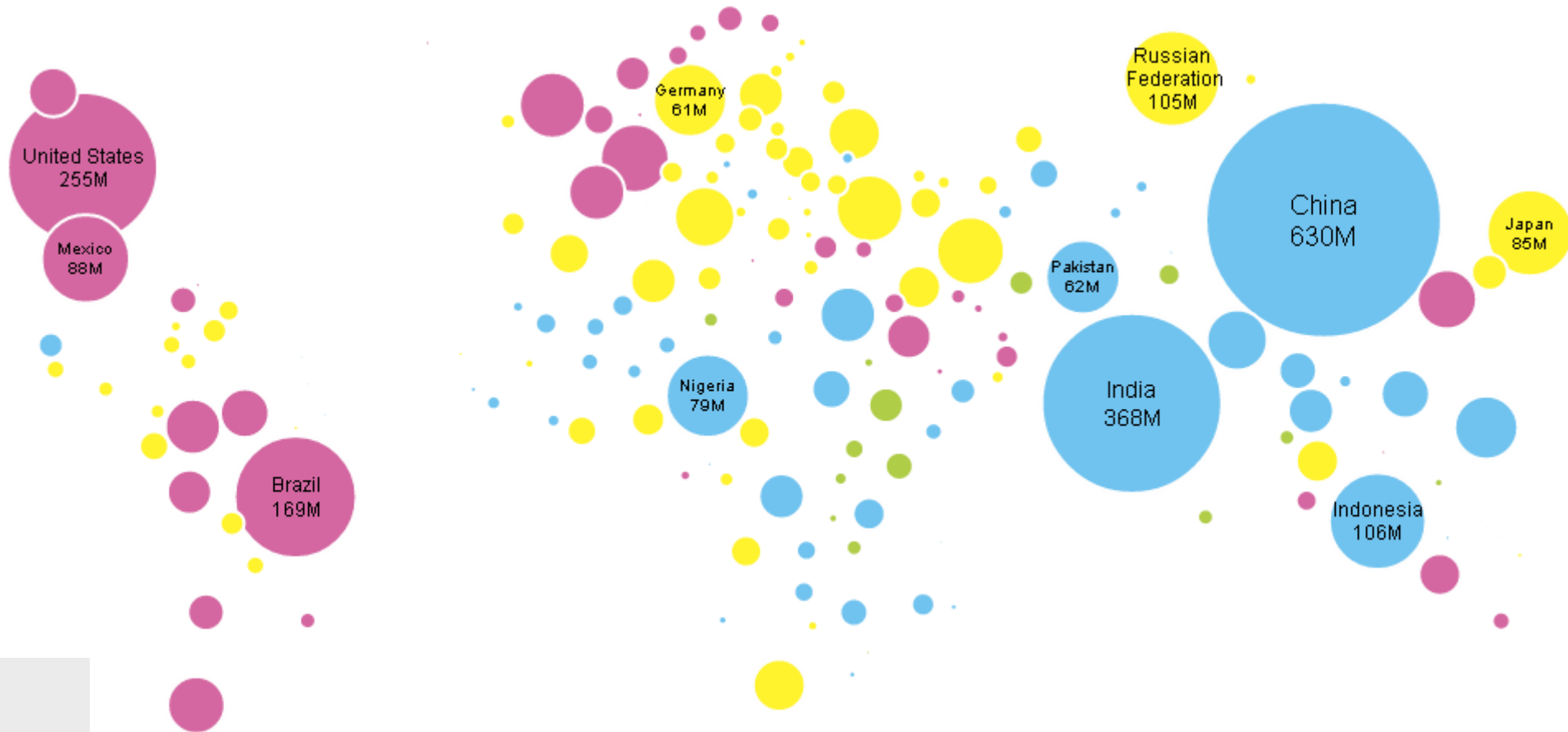


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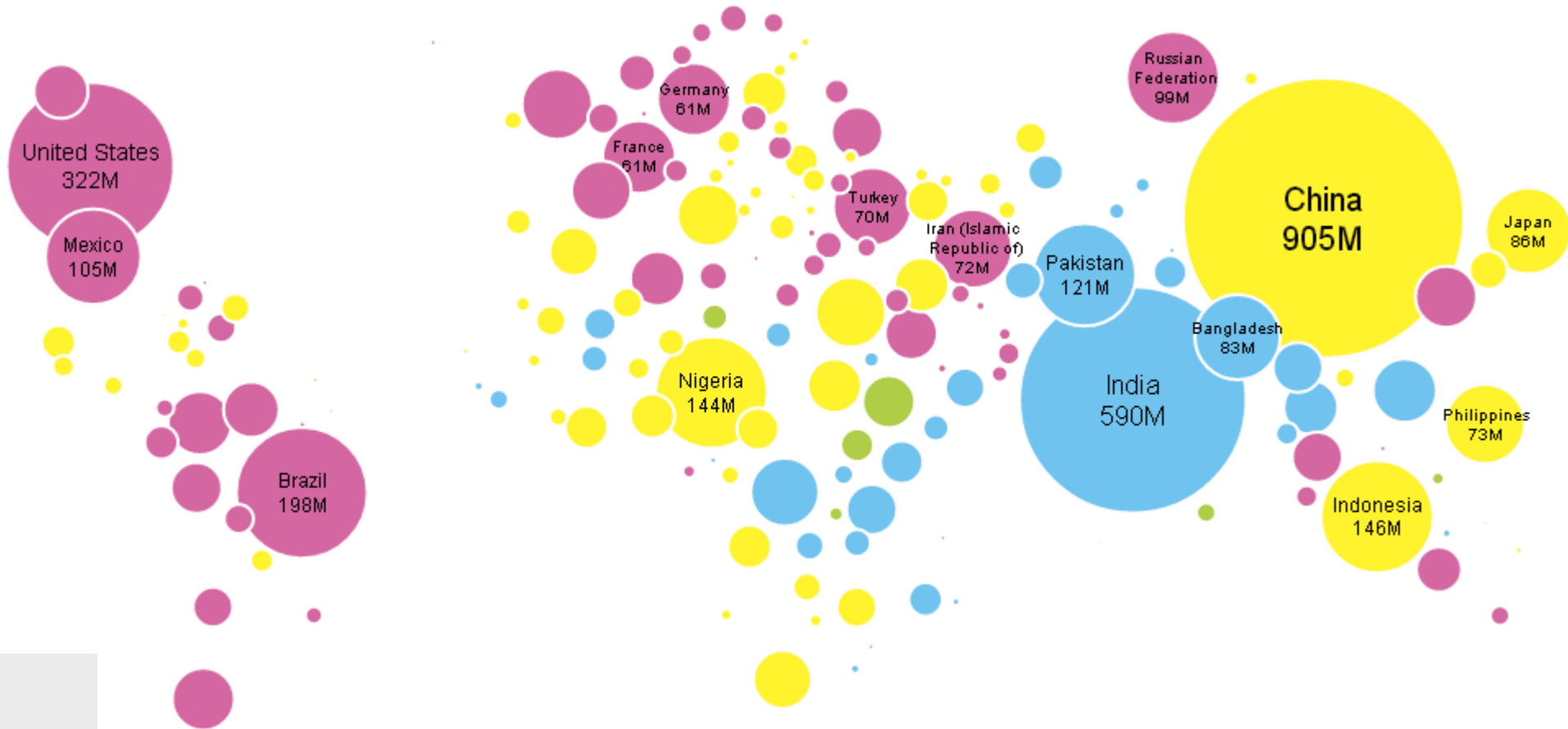
World Urbanization: 2010



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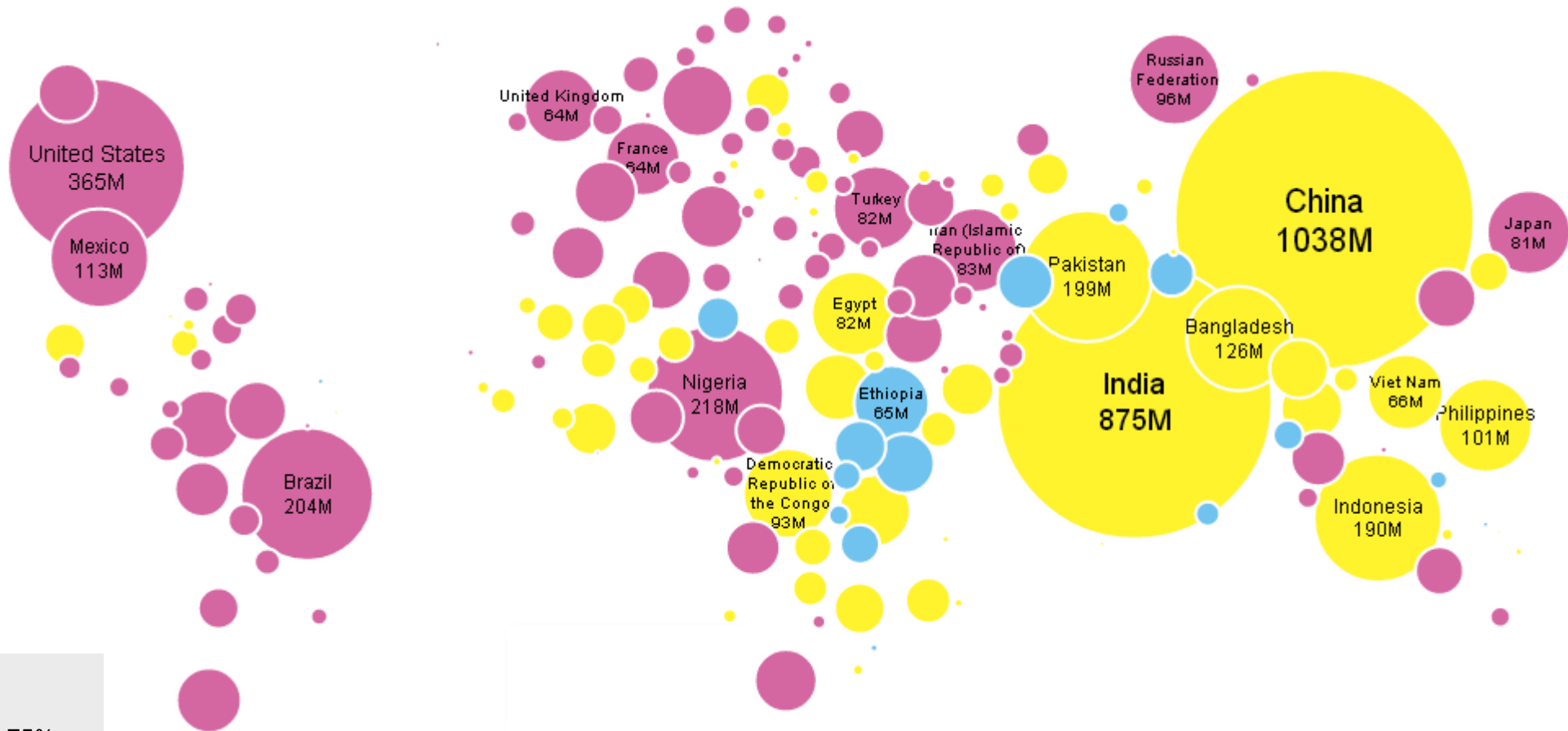
World Urbanization: 2030



Urban Population:

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World Urbanization: 2050



Urban Population:

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- 50-75%
- 25-50%
- Less than 25%

Urbanization and Animals



Intensification of Agriculture



Human-Wildlife Contact



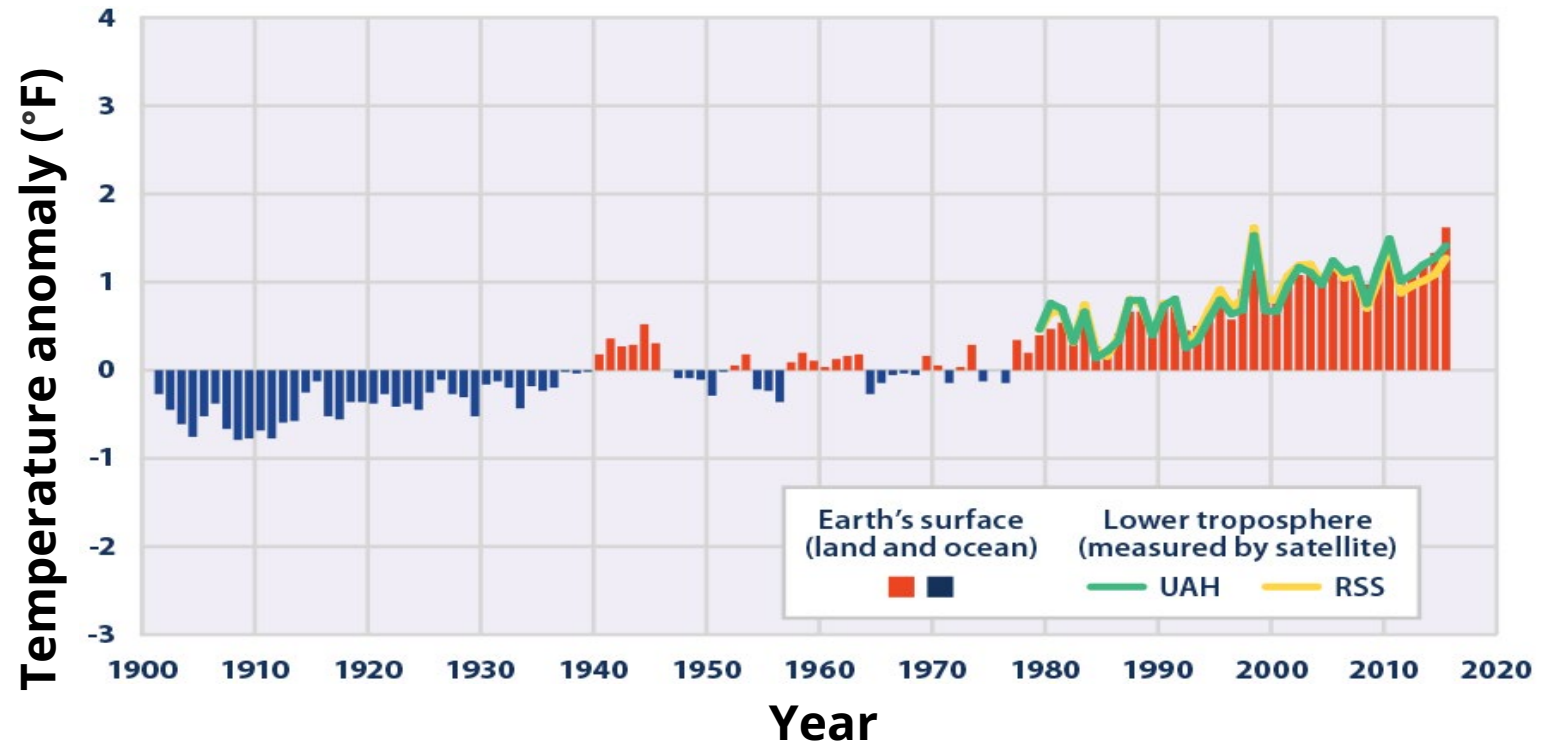
Photo courtesy Gemina Garland Lewis



Climate Change and Vectors

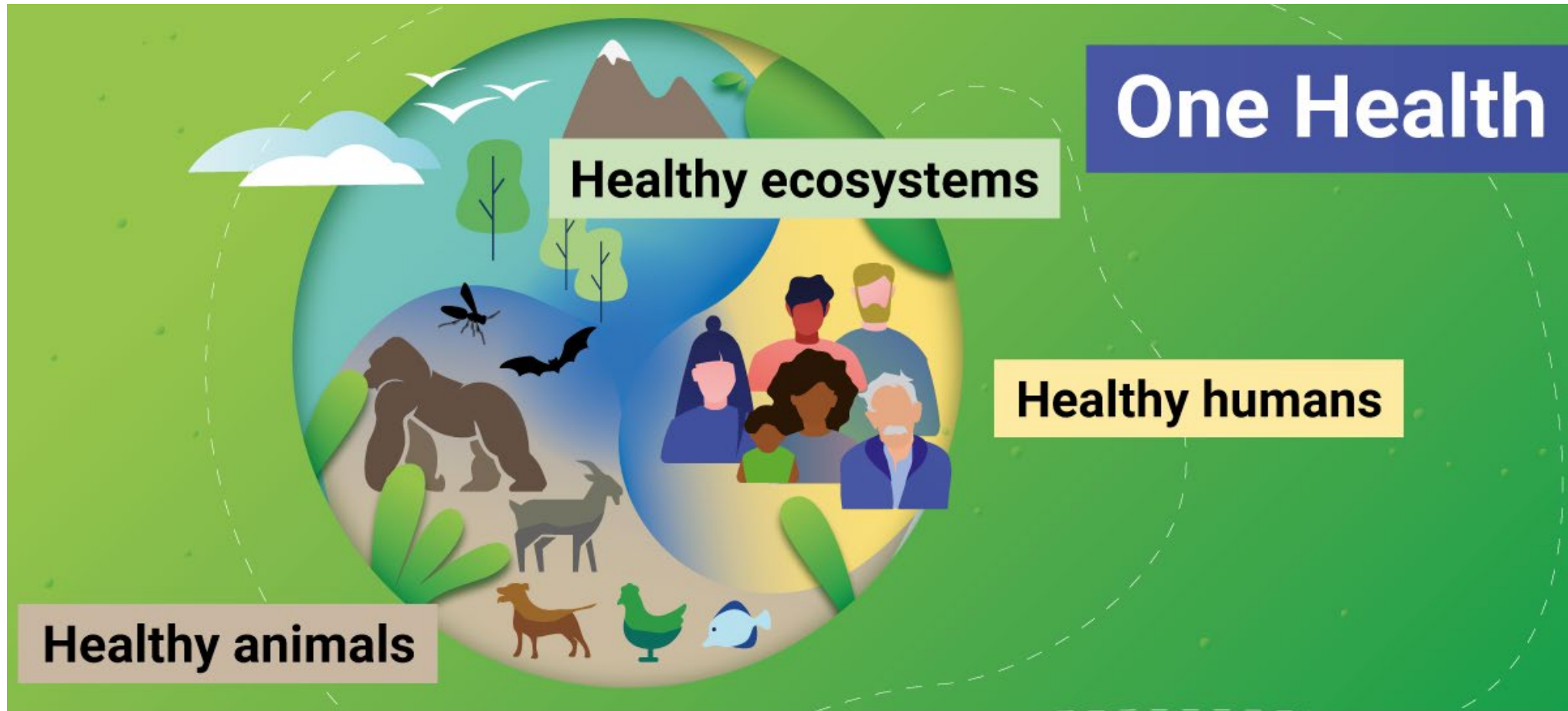


Temperatures Worldwide, 1901-2015



Data source: NOAA (National Oceanic and Atmospheric Administration). 2016. www.ncei.noaa.gov
For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators

Quadripartite Agreement



Food and Agriculture
Organization of the
United Nations



World Health
Organization



One Health Joint Plan of Action (2022-2026)

WHO
WOAH
FAO
UNEP

Action Track 1. Enhancing One Health capacities to strengthen health systems

Action Track 6. Integrating the Environment into One Health

Action Track 5. Curbing the silent pandemic of Antimicrobial Resistance (AMR)

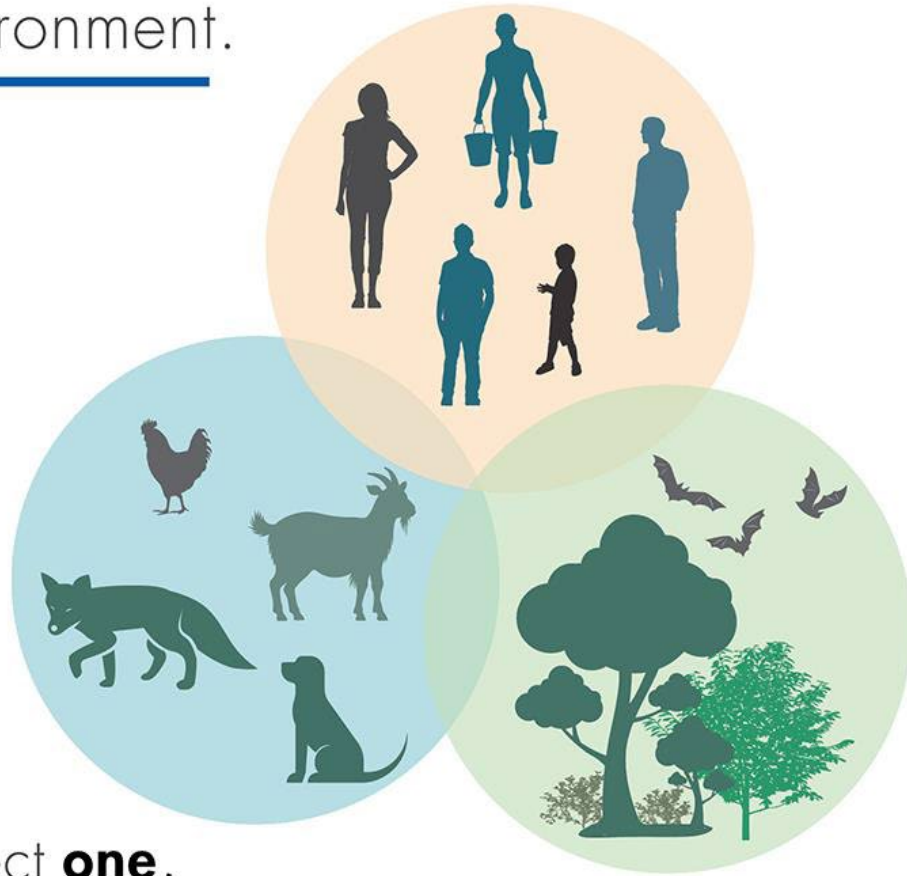


Action Track 2. Reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics

Action Track 3. Controlling and eliminating endemic zoonotic, neglected tropical and vector-borne diseases

Action Track 4. Strengthening the assessment and management of food safety risks

One Health is the idea that the health of people is connected to the health of animals and our shared environment.



When we protect **one**,
we help protect **all**.

Global and Regional One Health Activities



Washington State One Health Efforts

- One of 5 Statewide Health priorities: “Global and One Health”
- Antimicrobial resistance
- Zoonotic disease surveillance
- One Health data sharing- animal and human health
 - Digitization of animal disease surveillance reports
 - Efforts leading to a Washington Administrative Code for sharing data between human and animal health
- Can we create a One Health surveillance system?

Vision

All Washingtonians live in ever-connected environments that recognize and leverage the intersection of both global and domestic health as well as the connections of humans, animals, and the environment.

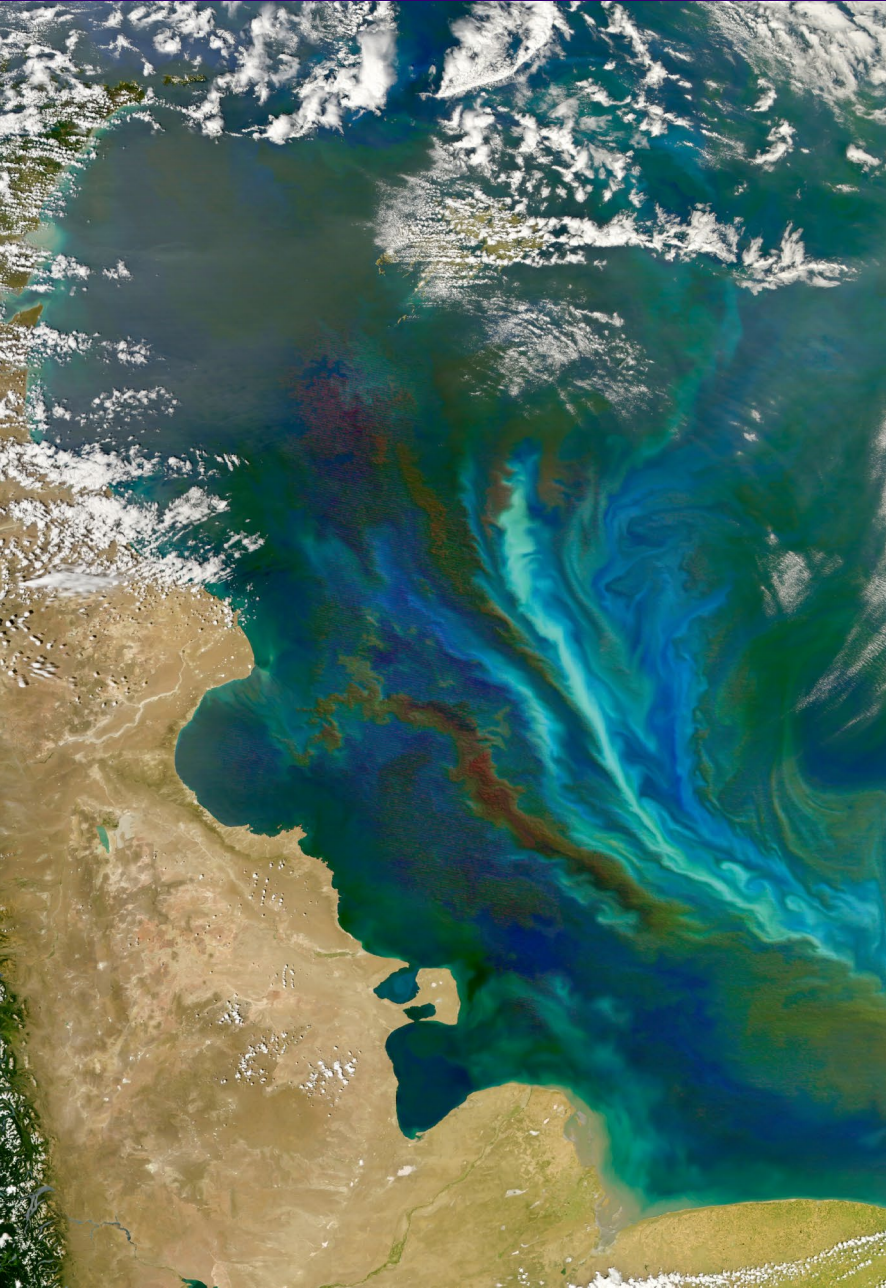
Commitment

We will lead the development and implementation of creative solutions to improve the health and well-being of Washingtonians emphasizing the connectedness of a strong bidirectional global domestic health ecosystem. It will simultaneously underscore the importance of One Health recognizing the relationships of human health as they intertwine with that of animals and the environment.

One Health Surveillance?

- We know **the environment is changing**, affecting both human and animal health
- **International calls for One Health approach** to disease surveillance and control: WHO, Lancet Commission, UNEP, FAO, WOAHA, CDC, USDA, etc.
- But: **complexity in integrating data** and getting a timely picture of critical interactions
- Lack of such integrated information **getting to the “front lines”**: clinicians, etc.
- WA One Health Initiative working on **Integrated Surveillance**

Examples of Health Threats



- Avian influenza
- Heat
- Wildfire smoke
- Vector borne disease
- Fungal disease—coccidioidomycosis
- Other zoonotic diseases
- Harmful algae blooms
- Ecoanxiety

Global One Health Group at the University of Washington

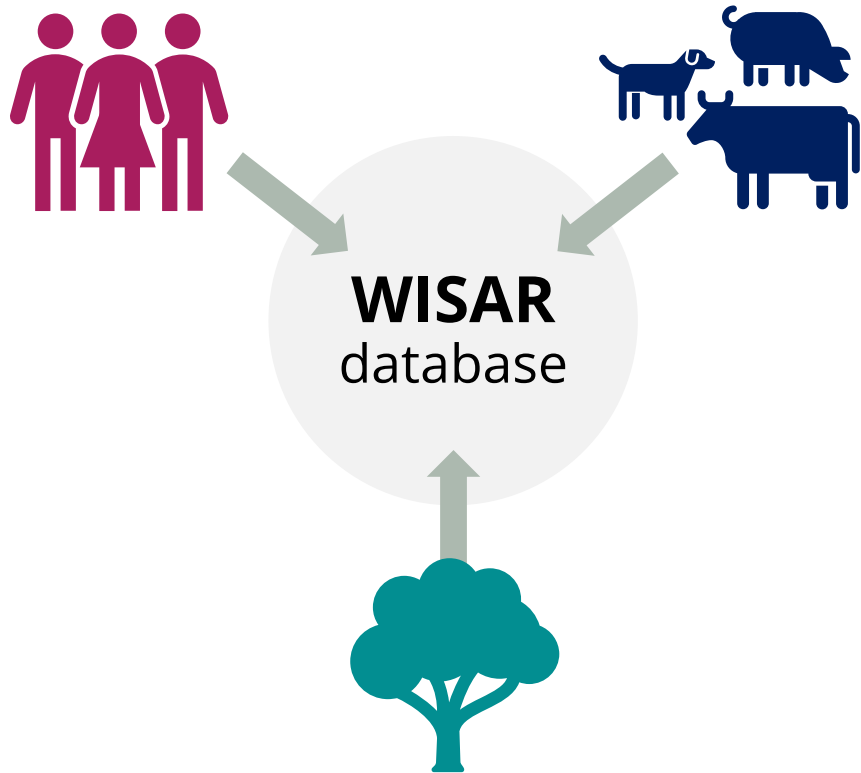


Center for
One Health Research

- Since 2014
- Local and global health projects
- Zoonotic diseases
- AMR
- Surveillance
- Health of animal workers



The Washington Integrated Surveillance for AMR (WISAR) Approach



- Assemble existing clinical isolate data from:
 - State NARMS surveillance
 - Hospitals
 - Human and veterinary clinical labs
 - Washington Animal Disease Diagnostic Lab (WADDL)
- Voluntary participation
- De-identification of patient and facility information
- Oversight by statewide One Health Combating AMR Workgroup

The COVID and Pets Study (CAPS)



Photo courtesy Gemina Garland Lewis

One Health Clinics: Integrated Human and Veterinary Care



Photo courtesy Gemina Garland Lewis

Occupational Health at the Human Animal Interface (OHHAI) Program

- Graduate research training program for the occupational health of workers
- Farms, veterinary care, shelters, zoos, aquaria, laboratories, meat processing, fisheries, etc.
- Working on dairy worker infection control



Highly Pathogenic Avian Influenza (HPAI) H5N1: Challenge



- Can we approach in a One Health way?
- Surveillance in animals
- Surveillance in humans
- Environmental surveillance
- Use of genomic data to trace spread
- Challenges for farms to institute infection prevention and biosecurity
- Build trust across sectors

Question for the Viewers



Based on what you know about the One Health approach, how applicable do you think it could be to your work?

- A. Very applicable
- B. Somewhat applicable
- C. Not applicable
- D. Other (please type in chat)

A photograph of a group of goats in a barn. The goats are of various colors, including white, brown, and black. They are standing on a bed of straw. The image is split into two halves by a diagonal line. The left half is covered by a semi-transparent blue overlay. The right half shows the goats in their natural environment.

One Health at the Benton-Franklin Health District (BFHD)

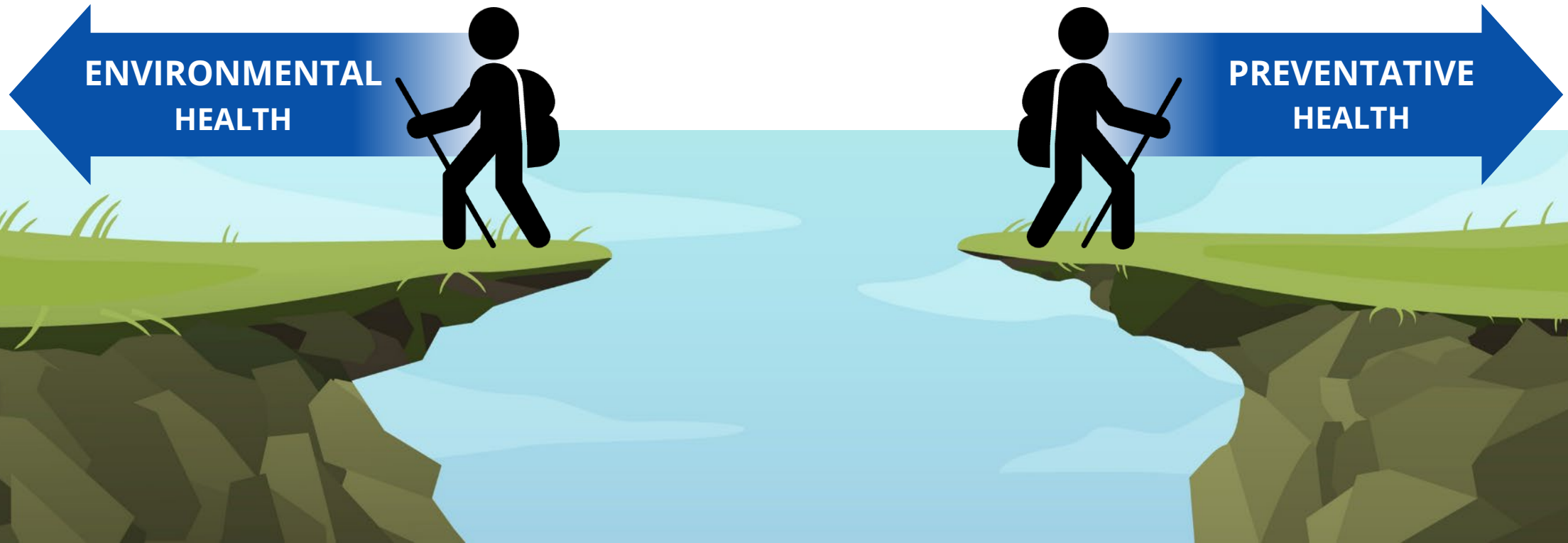


Historical Perspective: Classic LHJ Divisions

Work was done in **silos**

Internal LHJ experts **rarely collaborated**

External communication with partnerships, experts & stakeholders **rarely occurred**





ONE HEALTH
WHERE
HUMANS
ANIMALS
AND THE
ENVIRONMENT
COLLIDE.

In 2010 Some Factors Changed the Map of Valley Fever

- 2+ adolescents in Benton/Franklin County
- Adult excavator in Walla Walla
- Adult vineyard worker in Benton County
- H.O. requested soil testing
- Historical animal (dog & horse)
- Picture worth 1000 words
- Soil collected
- PCR developed
- Soil tested & found & culture
- 2 more collection events confirmed—it's in other locations

A Picture is Worth a Thousand Words



Testing Events

- More digs resulted in more positives
- Coordinated efforts with local veterinarians to conduct blind seroprevalence testing in dogs
- Currently, there is more interest in how climate change and wildfires affect exposure and transmission

Q-FEVER...It Isn't Just About the Goats!

**Goat
cases/testing**



**Potential human
exposure/testing**



**Environmental
education**



Testing Events



- Joined the CDC team to assist with collecting samples on goats and humans.
- BFHD staff collected the human samples.
- CDC veterinarian staff collected goat samples with our assistance.
- No positives in our jurisdiction.
- Educated on Environmental risks.

Highly Pathogenic Avian Influenza (HPAI) in an Egg Production Facility 2022



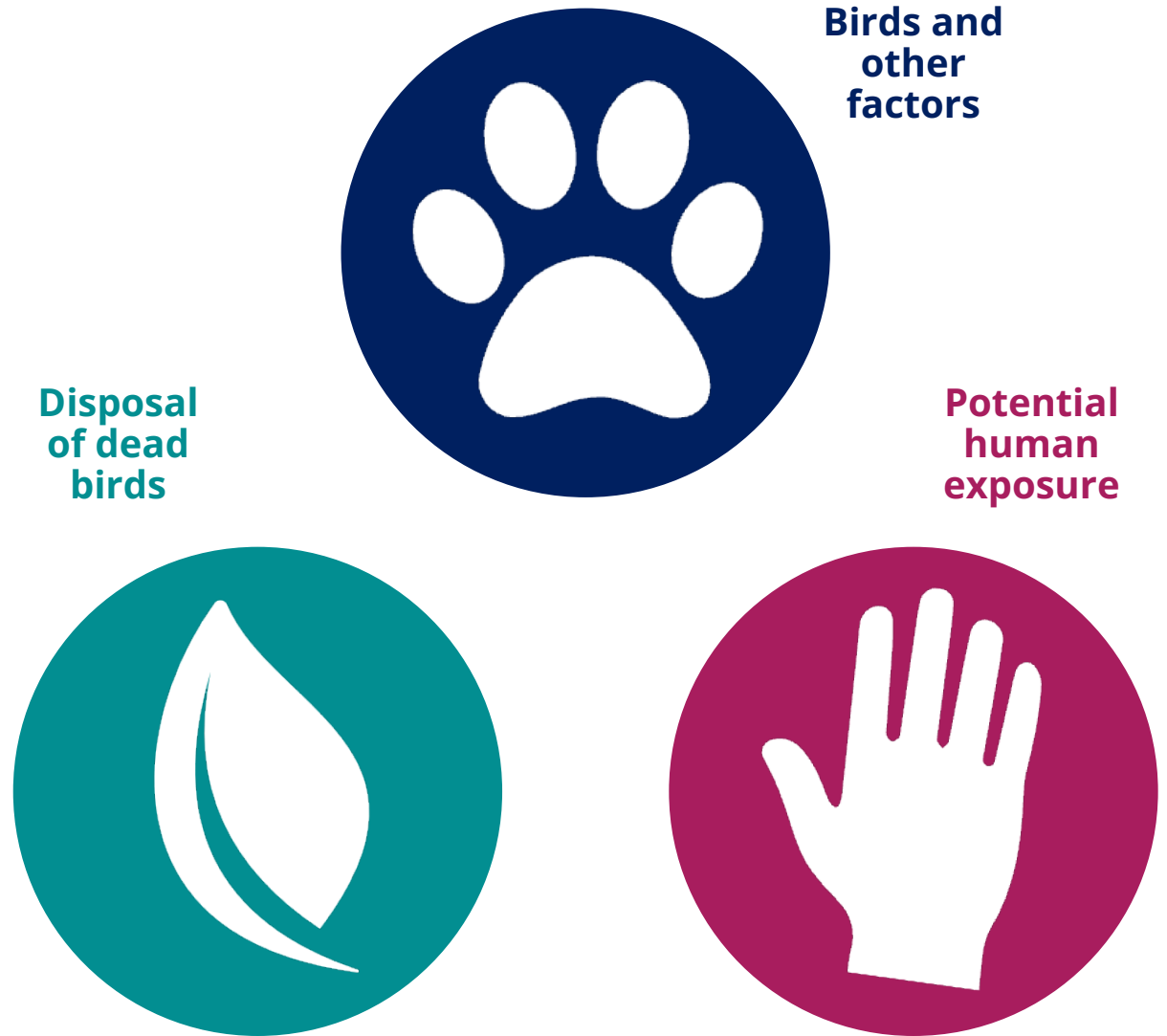
HPAI in an Egg Production Facility: BFHD's Role

DOH, WSDA, USDA, DOE, BFHD

Coordination between Federal, State,
& local entities

BFHD assisted with:

- Disposal of the dead birds
- PPE and messaging for the workers
- Provided Tamiflu to all the workers
- More than 1 mil birds lost



Snow Geese Die-off 2022



Toxic Algae

**Algae testing in
Columbia river**



**Dogs exposed
to algae**



**Human exposed
to water**



One Health Multidisciplinary Team

1

**Variety of
Disciplines**

2

**Early
Adapters**

3

**Monthly
Meetings**

One Health Blueprint

The One Health workgroup addresses complex health challenges by recognizing the interconnectedness of people, animals, plants, and the environment. It is a collaborative effort that brings together SME's representing a cross section of programs within BFHD.

The purpose is to educate BFHD staff on One Health concepts and how it relates to their work within the agency as well as with community partners.

One Health Blueprint

Responsibilities:

- ✓ Collaborate with supervisors and management staff to explore opportunities to integrate One Health concepts into agency work
- ✓ Provide educational opportunities to staff
- ✓ Assist supervisors, managers, and staff in implementing One Health concepts into their daily program work
- ✓ Provide a framework for incorporating One Health concepts into individual program and division work
- ✓ Prepare for One Health emergencies
- ✓ Ensure equity is an overarching theme for all One Health work
- ✓ Identify data sources to support our One Health work

One Health Members

TEAM LEAD
Heather Hill

COMMUNITY HEALTH
Kelly Harnish

EQUITY
Daisy Para-Padilla

COMMUNICABLE DISEASE
Angeles Ize

ENVIRONMENTAL HEALTH
Tressa Johnson
Erin Hockaday

CLINIC SERVICES
Juan Gutierrez

CLIMATE CHANGE
Jim Coleman

COMMUNICATIONS
Amanda Mason

DATA
Amy Person

HEALTH OFFICER
Steven Krager, MD

One Health Duties/Roles

Members:

- Attend and participate in regularly scheduled meetings
- Act as a One Health champion by bringing content from, and pushing content to, your area of work
- Develop and Manage the BFHD One Health webpage

Team Leads:

- Maintain and update the group work plan
- Schedule meetings, develop meeting agendas
- Maintains a Teams site

BFHD One Health Team: Benefits/Purpose



Training

- Team Training
- All Staff Meeting

Guidance

- Internal and External

Implementation

- Internal
 - Incident Response Team (IRT)
- External
 - Identify Stakeholders
 - Create a Conduit for Communication

Create a One Health Coalition

One Health in the Community: Ducks Unlimited



Future Plans

- Continue in-house education
- Create email and contact lists
- Create more educational materials
 - One Health & Hunters
 - One Health & AG workers
 - etc.
- One Health Coalition—Multi Stakeholders



Key Takeaways

- ✓ Creating a One Health Team or approach is reframing the work we already do.
- ✓ Creating a One Health Team and Blueprint formalizes the agency commitment to approaching all our work through a One Health lens.
- ✓ Applying One Health approaches will involve overcoming barriers to sharing data and working across sectors.
- ✓ One Health provides a platform to anticipate and prevent health problems related to a changing environment, including climate change.

A Chat with Heather and Peter



Sue Grinnell



Heather Hill



Peter Rabinowitz

QUESTIONS?

To ask a question, please click the



icon in the Zoom toolbar to open your Q&A Pod.

UW Center for One Health Research

<https://deohs.washington.edu/cohr/>

Washington One Health

<https://doh.wa.gov/community-and-environment/one-health>

CDC One Health Office

<https://www.cdc.gov/one-health/index.html>

WHO One Health

https://www.who.int/health-topics/one-health#tab=tab_1