

MEMORANDUM

March 22, 2019

TO: MEMBERS, PORT COMMISSION
Hon. Kimberly Brandon, President
Hon. Willie Adams, Vice President
Hon. Gail Gilman
Hon. Victor Makras
Hon. Doreen Woo Ho

FROM: Elaine Forbes
Executive Director

SUBJECT: Adopt a Port policy in support of San Francisco Board of Supervisors Resolution No. 107-18 establishing local biodiversity as a citywide priority and endorsing interagency collaboration to achieve biodiversity goals

DIRECTOR'S RECOMMENDATION: APPROVE ATTACHED RESOLUTION

EXECUTIVE SUMMARY

The variety of life on Earth, its biological diversity, is commonly referred to as "biodiversity". It is essential to healthy ecosystems that serve people and the environment in fundamental ways, including food, clean water, medicine, and ecosystem and social resilience. The City and County of San Francisco has resolved to work toward five goals related to protecting biodiversity within City departments, including the Port, and engaging the public in that effort.

The Port has embraced these goals in its Strategic Plan and has projects and programs underway that serve the City's biodiversity goals. This informational presentation provides a briefing on the City's Biodiversity Program, which is supported by several Port biodiversity projects and initiatives.

STRATEGIC PLAN

The Port's Strategic Plan includes goals to support biodiversity:

#5 SUSTAINABLE: *Enact measures to protect the Bay and its ecosystems.*

The Port's sustainable goal includes specific objectives to implement the City's

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Biodiversity goals and explore use of natural infrastructure in new construction and development.

#4 EQUITY: *Ensure Port activities advance equity and public benefit and attract a diversity of people to the Waterfront.*

Equitable access to nature is a vital public benefit that can impact the health and well-being of our City residents. Protecting diverse and resilient natural areas and supporting free programs to engage the public in stewardship of our natural areas attracts a diversity of visitors and promotes equitable access to nature.

BACKGROUND

Biodiversity is defined as the variability among living organisms and the ecosystems in which they live. It includes diversity in the type and number of different species in a particular area or ecosystem, as well as the type and number of different ecosystems within an area. Biodiversity is essential for thriving and resilient ecosystems, which we all depend on for food, health, clean air, and clean water. Biodiversity on earth is declining rapidly, as species are going extinct at the fastest rate since the dinosaurs did. Habitat loss is the primary cause of extinction.

Certain parts of the world are home to greater biodiversity and are at greater risk due to habitat loss than others. In these regions, conserving species can have an enormous impact on global biodiversity. Thirty-five such identified “biodiversity hotspots” cover only 2.3% of earth’s land surface but support nearly 43% percent of the earth’s plant and animal species¹. California is one of them.

More than 30% of San Francisco Bay’s historic surface area has been filled. In the City and County of San Francisco (City), 95% of our land area has been developed. Yet, San Francisco contains nine distinct ecosystem types, a rich diversity of animal species, and over 450 native plants. San Francisco is home to many rare, threatened or endangered species. Our City’s biodiversity is at risk of impact from invasive species, urbanization, pollutants, and the effects of climate change.

Biodiversity is essential to ecosystem services, the functions that natural systems perform that benefit people. Ecosystem services include soil formation, pollination, nutrient storage and recycling, maintaining water resources, and contributing to climate stability. Biodiversity ensures stable sustainable food productivity and provides the genetic diversity that creates all crops, livestock, and marine species harvested for food. Biodiversity is the source of the wide variety of natural compounds derived from plants, animals, and fungi that are used in pharmaceuticals; about 40% of the prescription drugs in use today come from compounds created by plants, which are then naturally extracted or copied in laboratory synthesis². Biodiversity also includes the genetic diversity in plants, animals, and ecosystems that enables adaptation to changing conditions.

1 Conservation International, accessed 3/10/19: <https://www.conservation.org/How/Pages/Hotspots.aspx>

2 Scientific American, accessed 3/11/19: <https://www.scientificamerican.com/article/mother-natures-medicine-c/>

Biodiversity, as manifested in natural areas, benefits physical and mental health of people. Scientific research supports the current understanding that time spent in nature improves mood, cognitive function, and memory, and reduces the risk of anxiety and depression in adults and children³. Studies indicate that children who experience nature in their daily lives are healthier, succeed at school, and have better social skills and self-image⁴. Research also suggests that access to nature can help prevent and treat chronic illnesses because it relieves stress, encourages social bonds, and supports physical activity. Recognizing access to nature as a health equity issue, UCSF Benioff Children's Hospital in Oakland partners with environmental organizations to prescribe free or low-cost opportunities to spend time connecting with nature to its young patients and their families⁵. In San Francisco, over 30 City departments, and environmental justice, youth serving, health, education and nature-focused organizations have launched the SF Children & Nature collaborative, which works to ensure all children have the opportunity to play, learn and grow in the outdoors.

SAN FRANCISCO'S BIODIVERSITY PROGRAM

In 2011, the City's Commission on the Environment adopted a resolution that acknowledged the importance of enhancing the City's biodiversity and directed the City's Department of Environment staff to seek funding for biodiversity programs. In 2017, the Commission on the Environment adopted a resolution that articulated a vision of San Francisco as a place where our local biodiversity thrives in climate-resilient ecosystems that support healthy native plant and wildlife, and where all San Franciscans have an opportunity to connect with nature. The Department of Environment began convening that City's Biodiversity Working Group, comprised of representatives of all City departments who are working to implement the City's biodiversity goals. In 2018, the San Francisco Board of Supervisors unanimously passed Resolution No. 107-18, which established biodiversity and as a Citywide priority and adopted five citywide goals:

1. **Biologically Rich Ecosystems:** Restore, maintain, and monitor robust and interconnected indigenous habitats, natural areas, open spaces, watersheds, marine ecosystems, and urban forests so that they support a diverse web of life, and mitigate climate change impacts to rare species and communities.
2. **Equitable Access, Awareness, and Experience of Nature:** Connect all residents, workers, and visitors with nature every day in neighborhood green spaces, parks, and natural habitats.
3. **Community and Ecological Stewardship:** Empower people and partnerships to promote cultivate, enjoy, and restore nature in every neighborhood.
4. **Ecological Planning and Design:** Incorporate biodiverse, purposeful greening into all building and open space development, with a priority on creating diverse habitats for many species of wildlife.

3 British Journal of Psychology, 11/14/17, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5663018/>

4 San Francisco Children and Nature, accessed 3/10/19, <http://dev.sfcandn.org/equity-urban-nature/>

5 UCSF, accessed 3/10/19: <https://campaign.ucsf.edu/stories/prescribing-nature-better-kids-health>

5. **Resilience in a Living City:** Leverage local natural ecosystems to sequester carbon, conserve water, manage flooding, control pests, and improve air quality to support San Francisco's adaptation into a climate-protected and ecological city.

The resolution also requires that within twelve months of its adoption, City agencies, including the Port, should each articulate a commitment to San Francisco's biodiversity vision by hearing a presentation about the City's and its own agency's biodiversity initiatives and/or adopting its own resolution to efforts to meet the City's biodiversity goals.

BIODIVERSITY AT THE PORT OF SAN FRANCISCO

Port land and water provide habitat for hundreds of species of native plants and animals, including at least four federally or state-listed endangered or threatened species. The Port, its tenants, development partners, visitors, and neighbors can protect and improve biodiversity in parks, open spaces, and the built environment through ecologically sound design and stewardship. The Port has and will continue to support equitable access to nature and engage the public in protecting habitat within its jurisdiction. Attachment A to this staff report summarizes the Port's initiatives to promote biodiversity and our progress toward meeting the Citywide biodiversity goals. Examples of those efforts are provided below.

1. Biologically Rich Ecosystems: The Port's Strategic Plan sets forth goals to protect Bay ecology and natural environments on Port land through sensitive development of open spaces, stormwater management and use of best management practices in Port operations. Within its industrialized southern waterfront, the Port maintains Heron's Head Park, a 22-acre microcosm of coastal habitat diversity, including tidal salt marsh, mudflats, coastal scrub, rocky intertidal and grassland habitat. It is home to two endangered species and offers habitat to over 100 species of birds. At Pier 94, the Golden Gate Audubon Society and the Port of San Francisco have worked together to improve wetland habitat and cultivate native plants in the adjacent upland.

2. Equitable Access, Awareness, and Experience of Nature: The EcoCenter at Heron's Head Park is a unique educational facility on the Port's southern waterfront that combines environmental education, experience-based learning, and participation in habitat restoration. It is a model for green building and sustainable resource use that demonstrates how buildings can be designed to promote healthy people and ecosystems. The EcoCenter offers elementary school through college educational programming, internships for youth and young adults, tours, seminars, workshops, and other activities, all free of charge.

3. Community and Ecological Stewardship: The Port partners with the San Francisco Recreation & Parks Department to support public programs at Heron's Head Park. The *Youth Stewardship Program* offers free environmental education and service-learning field trips to 2nd-12th graders and fosters an understanding of their important role in helping to build healthy social and natural communities. The *Greenagers* program engages 9th and 10th grade students who live in the southeast

sector of San Francisco or Chinatown and are interested in getting involved in their community. The Greenagers play an important role at Heron's Head Park through stewardship, engagement, and creating place-based projects.

4. Ecological Planning and Design: Bayview Gateway Park is just one example of the Port's implementation of ecological planning and design. The Park includes drought-tolerant plants and fruit-bearing trees, designed to reflect the natural and cultural history of the neighborhood. It completes a portion of the Blue-Greenway recreational trail along Islais Creek between the Third and Illinois St. Bridges. Sustainable design includes locally sourced construction and landscape materials and 100% on-site storm-water retention.

Port development partners also incorporate ecological planning and design. In Mission Rock, landscape is designed to achieve the project's sustainability goals and contribute to a healthy environment. It will include a diverse urban forest, stormwater gardens, and planted areas that create a resilient waterfront and urban habitat. Trees will be used to block and mitigate wind, provide shade, reduce urban heat island effect, and provide shelter for birds. Native or climate-appropriate grasses, shrubs, and ground cover will provide as much species diversity as feasible in Mission Rock's planting areas and stormwater treatment gardens. Landscape management over time will ensure that these open spaces adapt to a changing climate. Additionally, the Mission Rock development team is planning active programming to make the park a learning environment where visitors will engage not only with each other, but with the plants and animals present in the urban environment.

At Pier 70, the Port's partner, Brookfield Property Development is designing its open spaces to fit within the character of the historic industrial district while contributing to a sustainable and healthy environment. A collection of native and climate-appropriate tall grass and perennials will significantly increase the biodiversity of the former industrial site, providing habitat for birds, insects and pollinators.

5. Resilience in a Living City: The Port's Seawall Earthquake Safety Program and partnership with the U.S. Army Corps of Engineers, are part of a coordinated citywide effort led by the Port to strengthen the Embarcadero Seawall and create a more sustainable and resilient waterfront, where enhancing the bay environment is one of the primary goals. In addition, the Port is developing construction plans, and seeking permits and funding for a "living shoreline" at Heron's Head Park that will stabilize the shoreline, reduce erosion and subsidence, enhance biodiversity and ecological function, and create a resilient shoreline that can adapt to a moderate amount of sea level rise through 2050.

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Attachments:
Port of San Francisco Biodiversity Work Program

**PORT COMMISSION
CITY AND COUNTY OF SAN FRANCISCO**

RESOLUTION NO. 19-09

- WHEREAS, Biodiversity is defined as the variability among living organisms and the ecological systems that they comprise; and
- WHEREAS, Biodiversity is essential for thriving and resilient ecosystems, upon which we all depend for food, health, clean air, and clean water; and
- WHEREAS, Our planet's biodiversity is in steep decline, and California is the only one of the world's 35 biological diversity hotspots in the United States; and
- WHEREAS, 95% of San Francisco's land area has been developed and its remaining natural resources are challenged by invasive species, urbanization, pollution, the effects of climate change, and other human impacts; and
- WHEREAS, The Port of San Francisco property and adjacent San Francisco Bay harbor several distinct ecological communities comprised of hundreds of species of native plants and animals, including federally listed endangered or threatened species; and
- WHEREAS, The Port of San Francisco's Strategic Plan includes specific objectives to implement the City's Biodiversity goals, engage the public in stewardship of our natural areas, and promote equitable access to nature; and
- WHEREAS, the Board of Supervisors Resolution No. 107-18 established a citywide biodiversity policy with five specific goals: (1) Biologically Rich Ecosystems; (2) Equitable Access, Awareness, and Experience of Nature; (3) Community and Ecological Stewardship; (4) Ecological Planning and Design; and (5) Resilience in a Living City; and
- WHEREAS, the Board of Supervisors Resolution No. 107-18 requires that within 12 months of its adoption, City agencies, including the Port, should each articulate a commitment to San Francisco's biodiversity vision; now, therefore, be it
- RESOLVED, that the Port of San Francisco will support the citywide biodiversity policy and pursue existing and future actions that advance the five goals established by Resolution No. 107-18 in manner consistent with the Port's operations and unique environmental setting; and be it further

RESOLVED, Port staff will continue to collaborate with its partners, other departments of the City and County of San Francisco, and the public to implement the citywide policy as well as on-the-ground initiatives to support biodiversity in San Francisco.

I hereby certify that the foregoing resolution was adopted by the Port Commission at its March 26, 2019 meeting.

Secretary