Samuel M. Safran

20 Skok Hall, 2003 Upper Buford Circle, Saint Paul, MN 55108
safra023@umn.edu
smsfrn.github.io
0000-0003-0742-2321

EDUCATION

University of Minnesota - Saint Paul, MN 2020 - present
PhD Candidate, Conservation Sciences Program, Dept. of Fisheries, Wildlife, & Conservation Biology

Middlebury College - Middlebury, VT 2008 - 2012
Bachelor of Arts, Joint Degree in Biology and Environmental Studies

WORK EXPERIENCE

University of Minnesota - Saint Paul, MN 2020 - present
Graduate Research Assistant (September 2020 – present)

- Dissertation research on long-term ecological change in cities, including the effects of urban greening on bird communities.
- Assist wildlife program managers at the Three Rivers Park District with species monitoring, data analysis, and survey design. Apply statistical models to assess trends in bird occupancy & abundance within the parks and to assess the efficacy of habitat restoration/management.
- Designed a formal survey of restored woodlands to determine factors affecting the rate of avian community reassembly. Coordinated a team of 4 surveyors and volunteers to survey ~70 sites.
- Built a dashboard for park managers to monitor and summarize bird watching activity by visitors across 30+ parks, which is being used to coordinate volunteer efforts and plan programming.

Graduate Teaching Assistant (September 2021 – December 2021)

- Assisted Dr. Joseph Bump with Principles of Wildlife Management course (60 students), grading weekly student reflections, reviewing course readings and assignments.
- Led units and lectured on (1) landscape-level management and (2) species reintroductions and rewilding.

San Francisco Estuary Institute - Richmond, CA (remote since 9/2019) 2012 - present
Environmental Scientist (July 2019 – present)
Associate Environmental Scientist (April 2016 – June 2019)
Environmental Analyst (September 2012 - March 2016)

- Led a 10-person team of scientists, developers, and designers to create the Delta Landscape Scenario Planning Tool, an ArcPy Toolbox for state agencies and others to develop and evaluate alternative land use scenarios in the Sacramento-San Joaquin River Delta.
- Contributed scientific expertise and geospatial analysis to numerous landscape restoration planning processes (including the development of the Proposed Voluntary Agreements for updating the Bay-Delta Plan, the Delta Public Lands Strategy, the Resilient Landscape Vision for the Northeast Delta, the Franks Tract Restoration Feasibility Study, the Cache Slough Complex Conservation Assessment, and the Resilient by Design Bay Area Challenge).
- Contributed to the development of a state-wide dynamic occupancy model of California Quail using eBird data to determine the factors associated with colonization/extinction in urban parks (used to inform the potential reintroduction of quail to the Presidio in San Francisco). Published in J. Applied Ecology.
- Co-authored the San Francisco Bay Shoreline Adaptation Atlas, which identifies landscape units around SF Bay that should be managed together for sea-level rise adaptation and pairs these units with suitable natural and nature-based adaptation measures (e.g., marsh restoration, beach creation). Led the development of most of the underlying geospatial analyses and associated maps.

- As part of the Delta Landscapes Project, developed process-based restoration strategies for recovering desired ecological functions in the Sacramento-San Joaquin Delta (published in "A Delta Renewed"). Led the development of maps to help identify opportunity areas for implementing these strategies, as well as associated guidelines around the optimal configuration/scale of landscape elements.
- Developed and applied GIS-based landscape-scale metrics to quantify ecological functions provided by both the historical and contemporary Delta ecosystem (published in "A Delta Transformed").
- Technical lead on analyses of long-term change in Delta primary production (published in Science of the Total Environment).
- Led SFEI's contributions to the development of a digital elevation and hydrodynamic model of the pre-development upper San Francisco Estuary. Authored report on the ecological implications of modeled changes in the system's hydrodynamics.
- Contributed to the development of photorealistic animations of the pre-development Delta using a detailed understanding of the system's historical ecology.
- Led a significant international study on the historical ecology of the Tijuana RIver Valley, which synthesized thousands of historical documents to understand conditions in the valley prior to European colonization. Also led a smaller historical ecology study of Mission Bay in San Diego.
- Authored chapters on tidal marsh and woody riparian habitat indicators for the 2015 State of the Estuary Report. Developed new indicators and co-authored associated sections on elevation, nature-based shorelines,urban green space, and tidal marsh extent for the 2019 State of the Estuary Report.
- Provided science research and writing for exhibits at the Oakland Museum of California and the Exploratorium.

Biodrawversity - Amherst, MA 2012

Field Technician

- Carried out field work collecting, tagging, and relocating state-listed freshwater mussels as part of the Great Works Dam Removal project in Old Towne, Maine. Conducted quantitative surveys of the federally endangered Dwarf Wedgemussel for the Army Corps of Engineers in Ashuelot, New Hampshire and of stream salamanders in Lowell, Vermont.

Harvard University - Petersham, MA 2011

Research Technician, Harvard Forest Summer Research Program in Ecology

- Studied ragweed distribution under Drs. Kristina Stinson and Sydne Record on an EPA-funded grant "Predicting Ragweed Allergy Hotspots in Future Climate Scenarios." Carried out a regional presence-absence field survey of the plant and modeled its distribution under current environmental conditions.

Middlebury College - Middlebury, VT 2010 - 2012

Teaching Assistant, Biology Department

- Assisted Dr. Alison Seigel Nurok with running weekly 16-student labs (BIO140- Ecology and Evolution).
- Assisted Dr. Sallie Sheldon with 30-student labs focusing on experimental design, data analysis, and statistics (BIO211- Experimental Design and Data Analysis).

Middlebury College, Marine Biological Laboratory at Woods Hole (MBL) - Rowley, MA 2010

Research Technician

- Conducted TIDE Project PI Dr. Sallie Sheldon's summer data collection and research on salt marsh algae as part of MBL's whole-ecosystem study of marsh response to nutrient loading.

PEER-REVIEWED MANUSCRIPTS

1. Boyer KE, **Safran SM**, Khanna S, and Patten MV. 2023. *Landscape transformation and variation in invasive species abundance drive change in primary production of aquatic vegetation in the*

Sacramento–San Joaquin Delta. San Francisco Estuary and Watershed Science: 20(4). https://doi.org/10.15447/sfews.2023v20iss4art2

2. Iknayan KJ, Wheeler MM, **Safran SM**, Young JS, and Spotswood EN. 2021. *What makes urban parks good for California quail? Evaluating park suitability, species persistence, and the potential for reintroduction into a large urban national park*. Journal of Applied Ecology. https://doi.org/10.1111/1365-2664.14045
3. Cloern JE, **Safran SM**, Vaughn LS, Robinson, A, Whipple AA, Boyer KE, Drexler JZ, Naiman RJ, Pinckney JL, Howe ER, and Canuel EA. 2021. *On the human appropriation of wetland primary production*. Science of The Total Environment: 147097. https://doi.org/10.1016/j.scitotenv.2021.147097
4. Cloern JE, Robinson A, Richey A, Grenier JL, Grossinger RM, Boyer KE, Burau J, Canuel E, DeGeorge JF, Drexler JZ, Enright C, Howe ER, Kneib R, Mueller-Solger A, Naiman RJ, Pinckney JL, **Safran SM**, Schoellhamer D, and Simenstad C. 2016. *Primary Production in the Delta: Then and Now.* San Francisco Estuary and Watershed Science: 14(3). https://doi.org/10.15447/sfews.2016v14iss3art1

SCIENTIFIC REPORTS

1. Robinson A, Harris K, Morris J, Drexler J, Vaughn L, **Safran SM**, Panlasigui S, Grenier JL, and Ball D. 2022. *Delta Wetland Futures: Tidal Marsh Resilience to Sea Level Rise*. SFEI Publication #1106. San Francisco Estuary Institute, Richmond, CA. [link]
2. Whipple A, **Safran SM**, Zeleke D, Wells E, Deverel S, Olds M, Cole S, Rodríguez-Flores J, Guzman A, Medellín-Azuara J, and Grenier JL. 2022. *Resilient Staten Island: Landscape Scenario Analysis Pilot Application*. SFEI Publication #1083. San Francisco Estuary Institute, Richmond, CA. [link]
3. Whipple A, Robinson A, and **Safran SM**. 2022. *Elevation and Opportunity in the Delta: Restoring the right thing in the right place.* SFEI Publication #1082. San Francisco Estuary Institute, Richmond, CA. [link]
4. **Safran SM**, Sim L, Shusterman G, Hagerty S, Desanker G, Robinson A, Iknayan K, Smith Vaughn L, Grenier JL. 2020. *Delta Landscapes Scenario Planning Tool User Guide*. Prepared for the Delta Stewardship Council. SFEI Publication #989, San Francisco Estuary Institute, Richmond, CA. [link]
5. Smith Vaughn L, **Safran SM**, Robinson A, Whipple A, Richey A, Grenier JL, Cloern J, Andrews S, Boyer K, Drexler J, Howe E, Naiman R, Patten M, Pinckney J. 2020. *Delta Landscapes Primary Production: Past, Present, Future*. Prepared for the Delta Stewardship Council. A Report of SFEI-ASC's Resilient Landscapes Program, Publication #988, San Francisco Estuary Institute-Aquatic Science Center, Richmond, CA. [link]
6. Robinson AH, Desanker G, **Safran SM**, Solomon M, Whipple A, Grenier JL. 2020. *Identifying Suitable Rearing Habitat for Chinook Salmon in the Sacramento-San Joaquin Delta*. Publication #972, San Francisco Estuary Institute, Richmond, CA. [link]
7. San Francisco Estuary Partnership. 2019. *The State of the Estuary 2019*. **[Contributing author]** [link]
8. Point Blue Conservation Science, San Francisco Estuary Institute, and County of Marin. 2019. *Sea Level Rise Adaptation Framework: A User Guide to Planning with Nature as Demonstrated in Marin County*. Point Blue Conservation Science, Contribution #2239, Petaluma, CA. San Francisco Estuary Institute, Publication #946, Richmond, CA. **[Contributing author]** [link]
9. Beagle J, Lowe J, McKnight KM, **Safran SM**, Tam L, Szambelan SJ. 2019. *San Francisco Bay Shoreline Adaptation Atlas: Working with Nature to Plan for Sea Level Rise Using Operational Landscape Units*. Publication #915, San Francisco Estuary Institute, Richmond, CA. [link]
10. Sacramento-San Joaquin Delta Conservancy. 2019. *Delta Public Lands Strategy: Guidance for Conservation and Sustainability Across the West, Central, and Northeast Delta.* **[Contributing author]** [link]
11. **Safran SM**, Hagerty S, Robinson A, Grenier JL. 2018. *Resilient Landscape Vision for the Northeast Delta Including the McCormack-Williamson Tract and Surroundings* (prepared for the Nature Conservancy

and California Department of Fish and Wildlife). A Report of SFEI-ASC's Resilient Landscapes Program, Publication #917, San Francisco Estuary Institute-Aquatic Science Center, Richmond, CA.

12. Robinson AH, Hagerty SH, Spotswood EN, **Safran SM**, Grenier JL. 2018. *Resources for Monitoring, Research, and Adaptive Management at the McCormack-Williamson Tract* (prepared for the Nature Conservancy and California Department of Fish and Wildlife). A Report of SFEI-ASC's Resilient Landscapes Program, Publication #923, San Francisco Estuary Institute-Aquatic Science Center, Richmond, CA.
13. **Safran SM**, Hagerty S, Robinson A, Grenier JL. 2018. *Identifying, Mapping, and Quantifying Opportunities for Landscape-scale Restoration in the Sacramento-San Joaquin Delta* (prepared for the Delta Science Program). A Report of SFEI-ASC's Resilient Landscapes Program, San Francisco Estuary Institute-Aquatic Science Center, Richmond, CA.
14. Robinson A, Beagle J, **Safran SM**, McKnight K, Grenier JL, Askevold RA. 2017. *Delta Landscapes: A Delta Renewed User Guide.* (Prepared for the Delta Science Program and Delta Conservancy). SFEI Publication #854. [link]
15. Robinson A, Beagle J, **Safran SM**, McKnight K, Grenier JL, Askevold RA. 2017. *Delta Landscapes Executive Summary* (Prepared for the Delta Science Program and Delta Conservancy). SFEI Publication #853.
16. Resilient By Design. 2017. *Resilient by Design Bay Area Challenge Briefing Book: Resources & Context for Building Resilience in the Bay Area.* **[Contributing author]** [link]
17. **Safran SM**, Baumgarten SA, Beller EE, Crooks JA, Grossinger RM, Lorda J, Longcore TR, Bram D, Dark SJ, Stein ED, McIntosh TL. 2017. *Tijuana River Valley Historical Ecology Investigation* (prepared for the State Coastal Conservancy). A Report of SFEI-ASC's Resilient Landscapes Program, Publication #760, San Francisco Estuary Institute-Aquatic Science Center, Richmond, CA. [link]
18. San Francisco Estuary Institute-Aquatic Science Center (SFEI-ASC). 2016. *A Delta Renewed: A Guide to Science-Based Ecological Restoration in the Sacramento-San Joaquin Delta* (prepared for the California Department of Fish and Wildlife and Ecosystem Restoration Program). A Report of SFEI-ASC's Resilient Landscapes Program, Publication #799, San Francisco Estuary Institute-Aquatic Science Center, Richmond, CA. [**Primary author**] [link]
19. **Safran SM**, Grossinger RM, Grenier JL. 2016. *Ecological implications of modeled hydrodynamic changes in the upper San Francisco Estuary* (prepared for the Metropolitan Water District of Southern California). SFEI Publication #786. [link]
20. Department of Water Resources and Department of Fish and Wildlife. 2016. *Fish Restoration Program Cache Slough Complex Conservation Assessment. Volume 1: Characterization Report*. Davis, CA. [**Contributing author**]
21. **Safran SM**, Clark E, Beller E, Grossinger RM. 2016. M*ission Bay Historical Ecology Reconnaissance Study: Data Collection Summary* (prepared for the San Diego Audubon Society). SFEI Publication #777. [link]
22. **Safran SM**. 2015. *The State of the Estuary 2015, Technical Appendix on Tidal Marsh Habitat Indicator.* San Francisco Estuary Partnership. [link]
23. **Safran SM**. 2015. *The State of the Estuary 2015, Technical Appendix on Woody Riparian Habitat Indicator.* San Francisco Estuary Partnership. [link]
24. San Francisco Estuary Institute-Aquatic Science Center (SFEI-ASC). 2014. *A Delta Transformed: Ecological Functions, Spatial Metrics, and Landscape Change in the Sacramento-San Joaquin Delta* (prepared for the California Department of Fish and Wildlife and Ecosystem Restoration Program). A Report of SFEI-ASC's Resilient Landscapes Program, Publication #729, San Francisco Estuary Institute-Aquatic Science Center, Richmond, CA. [**Primary author**] [link]
25. **Safran SM**. 2014. *Natural Flow Hydrodynamic Modeling Technology Support: Phase 1 Technical Memorandum* (prepared for the Metropolitan Water District of Southern California).

CONFERENCE PRESENTATIONS

1. **Safran SM**, Lyon SC, and Wood EM. *Extinction next-door: Evaluating long-term changes in the occupancy of cities by birds.* American Ornithological Society and BirdsCaribbean Joint Conference (San Juan, Puerto Rico, June 27-July 2, 2022). https://doi.org/10.5281/zenodo.7059491 [Recording]
2. Whipple A, **Safran SM**, Zeleke D, Wells E, Deverel S, Olds M, Medellín-Azuara J, Cole S, Guzman A, Rodríguez-Flores J, Grenier JL. *Resilient Staten Island: Pilot Application for Landscape Scenario Analysis.* 11th Biennial Bay-Delta Science Conference (Virtual conference, April 9, 2021).
3. Cloern JE, **Safran SM**, Vaughn LS, Robinson, A, Whipple AA, Boyer KE, Drexler JZ, Naiman RJ, Pinckney JL, Howe ER, and Canuel EA. *Loss, and Potential Recovery of Primary Production from the Sacramento-San Joaquin Delta.* 11th Biennial Bay-Delta Science Conference (Virtual conference, April 6, 2021).
4. Hayden M, Veloz S, Salas L, Elliott N, Jongsomjit D, Nur N, Wood J, Beagle J, Lowe J, McKnight K, **Safran SM**, Papendick H, Malinowski K, Liebster J, Choo C, Westhoff A, Lacko L, Williams L. *Informing Development and Evaluation of Nature-based Shoreline Adaptation Strategies in a Changing Climate*. 14th Biennial State of the Estuary Conference (Oakland, California, October 21-22, 2019).
5. Spotswood E, Wheeler M, **Safran SM**, Benjamin M. *What makes an urban park good for quail?* 9th San Francisco Bay Area National Parks Science and Natural Resources Symposium (San Francisco, California, September 5, 2019).
6. **Safran SM**, Baumgarten SA, Beller EE, Bram DL, Crooks JA, Dark SJ, Grossinger RM, Longcore TR, Lorda J, Stein ED. *The Historical Ecology of the Tijuana Estuary & River Valley*. Restore America's Estuaries Conference (Long Beach, California, December 12, 2018). [Recording]
7. Beagle J, Lowe J, McKnight K, **Safran SM**, Tam L. *Adaptation Planning Using Nature's Boundaries*. Restore America's Estuaries Conference (Long Beach, California, December 12, 2018).
8. **Safran SM**, Hagerty S, Robinson A, Grenier JL. *Translating Science-Based Restoration Strategies into Spatially-Explicit Restoration Opportunities in the Delta.* 10th Biennial Bay-Delta Science Conference (Sacramento, California, September 10, 2018). [Recording]
9. Boyer K, Beagle J, Baye P, Leventhal R, Patten M, **Safran SM**, Takekawa J. *Adapting Tidal Marshes for Climate Change: Coarse Sediment Placement and High Tide Refuge Enhancement for Wildlife.* 13th Biennial State of the Estuary Conference (Oakland, California, October 10-11, 2017).
10. Beagle J, Tam L, Lowe J, McKnight K, **Safran SM**, Grenier JL, Grossinger R, Szambelan SJ. *Natural Breaks: Operational Landscape Units for SF Bay.* 13th Biennial State of the Estuary Conference (Oakland, California, October 10-11, 2017).
11. Klochak J, **Safran SM**, Hagerty S, Beagle J, Robinson R, Dusterhoff S, Grossinger R. *An Assessment of Process-Based Concepts for Channel-Floodplain Reconnection in the Sacramento-San Joaquin Delta*. Poster. 13th Biennial State of the Estuary Conference (Oakland, California, October 10-11, 2017).
12. **Safran SM**. *The Historical Ecology of the Tijuana River Valley: Using Knowledge of the Past to Improve Ecosystem Functioning*. Headwaters to Ocean (H2O) Conference (UC Irvine, California, May 23-24, 2017).
13. Beagle J, Robinson A, **Safran SM**, Grenier JL, Grossinger RM. *Science-based strategies to restore key ecosystem processes in the Delta.* 9th Biennial Bay-Delta Science Conference (Sacramento, California, November 15-17, 2016).
14. Robinson A, **Safran SM**, Beagle J, Grenier JL, Grossinger RM, Askevold R, Spotswood E, Richey A, Dusterhoff S. *Landscape-Scale Integration of Process-Based Restoration Strategies to Support Desired Ecological Functions in the Sacramento-San Joaquin Delta.* 9th Biennial Bay-Delta Science Conference (Sacramento, California, November 15-17, 2016).
15. **Safran SM**, Andrews S, Grossinger RM, Grenier JL. *A new dimension to historical ecology: Insights from a 3D hydrodynamic model of the pre-development estuary.* 9th Biennial Bay-Delta Science Conference (Sacramento, California, November 15-17, 2016).

16. Spotswood E, Osti D, Robinson A, **Safran SM**, Grossinger RM. *Time travel in the Sacramento-San Joaquin Delta: Developing Photorealistic Images of the Historical Landscape to Inspire Restoration.* 9th Biennial Bay-Delta Science Conference (Sacramento, California, November 15-17, 2016).
17. Grenier JL, Grossinger R, Beller E, Robinson A, **Safran SM**, Spotswood E, Askevold A, Dusterhoff S, Lowe J, Doehring C, Solomon M. *Resilient Landscapes: A Science-based Approach to Creating Recommendations for How to Return Desired Functions to Highly Altered Systems.* 9th Biennial Bay-Delta Science Conference (Sacramento, California, November 15-17, 2016).
18. Beller EB, Grossinger RM, Askevold R, Beagle J, Grenier JL, Robinson A, **Safran SM**, Spotswood E. *Envisioning resilient hybrid landscapes: Using the past to envision a more resilient future for California's ecosystems.* Ecological Society of America (Fort Lauderdale, Florida, August 8, 2016).
19. Grenier JL, Beagle J, Robinson A, **Safran SM**, Grossinger, G. *Taking Some Pointers from Eden: How Analyzing the Past Can Help Us Envision a More Resilient Future.* National Conference on Ecosystem Restoration (Coral Springs, Florida, April 19, 2016).
20. Beller EB, **Safran SM**, Grossinger RM, Baumgarten S. *Upside-down rivers and part-time estuaries: a historical reconstruction of dynamic aquatic ecosystems in coastal California*. Annual Meeting of the American Association of Geographers (San Francisco, California, April 2, 2016).
21. Robinson A, Beagle J, **Safran SM**, Grenier JL, Grossinger R. *A Delta Transformed; Landscape change in the Sacramento-San Joaquin Delta*. 23rd Biennial Coastal & Estuarine Research Federation Conference (Portland, Oregon, November 8-12, 2015).
22. **Safran SM**, Collins J. *Three simple indicators of estuarine habitat health*. 12th Biennial State of the Estuary Conference (Oakland, California, September 17-18, 2015).
23. **Safran SM**. *Reconstructing the Historical Ecology of the Lower Tijuana River Valley.* 108th Annual Meeting of the Southern California Academy of Sciences (Los Angeles, California, May 15-16, 2015).
24. Baumgarten S, Beller E, **Safran SM**, Grossinger R, Lorda J, Crooks J, Stein E, Longcore T, Dark S. *Reconstructing the Historical Ecology of the Lower Tijuana River Valley.* Annual Conference of the California Society for Ecological Restoration (San Diego, California, May 13, 2015).
25. **Safran SM**, Grossinger RM. *Hydrodynamic changes in the Delta and some of the possible ecological implications.* 2015 Annual Meeting of the California Water and Environmental Modeling Forum (Folsom, California, March 9-11, 2015).
26. Grossinger RM, Askevold R, Beagle J, Grenier L, Robinson A, **Safran SM**. *Delta Landscape Metrics: Creating a Spatial Framework to Inform Restoration Planning.* 8th Biennial Bay-Delta Science Conference (Sacramento, California, October 29, 2014).
27. Grossinger RM, Fleenor W, Whipple A, Beagle J, **Safran SM**, Bell A, Lay M. *Generating a Historical Bathymetric-Topographic Digital Elevation Model.* Annual Meeting of the California Water and Environmental Modeling Forum (Folsom, California, February 25, 2014).
28. **Safran SM**, Robinson A, Beagle J, Klatt M, Cayce K, Grossinger RM. *A landscape ecology analysis of San Francisco Bay-Delta marsh then (1850) and now*. Poster. 11th Biennial State of the Estuary Conference (Oakland, California, October 29-30, 2013).
29. Beller E, **Safran SM**, Grossinger R, Grenier JL, Whipple AW, Beagle J, Robinson A, Askevold RA. 2012. *Developing tools for landscape-scale restoration in the delta.* Poster. 7th Biennial Bay-Delta Science Conference (Sacramento, California, October 16-18, 2012).

OTHER PRESENTATIONS (NON-CONFERENCE)

1. **Safran, SM.** *Effects on birds of 50 years of habitat restoration in Three Rivers parks.* Invited public presentation for Three Rivers Park District programming (The Landing—Minnesota River Heritage Park, Shakopee, Minnesota, 18, 2022).
2. **Safran SM**. *Wildlife translocations with an emphasis on urban animal reintroductions.* Lecture to University of Minnesota, Principles of Wildlife Management course (Saint Paul, Minnesota, November 11, 2021).

3. **Safran SM**. *Managing (beyond) populations.* Lecture to University of Minnesota, Principles of Wildlife Management course (Saint Paul, Minnesota, October 21, 2021).
4. Stoneburner L, Brastow P, Schwartzenburg S, Baumgarten S, Grossinger RM, **Safran SM**. *Hidden Nature San Francisco: A conversation about the past, present, and future of nature in San Francisco.* Panel member. The Exploratorium, Conversations About Landscapes Series (Online, February 24, 2021).
5. Beagle J, Tam L, Lowe J, McKnight K, **Safran SM,** Grenier L. *Adaptation Planning Using Nature's Boundaries: San Francisco Bay Shoreline Adaptation Atlas*. Presentation to NYC Mayor's Office of Climate Resiliency (July 29, 2020).
6. McKnight K, Beagle J, Lowe J, **Safran SM,** Grenier L, Tam L. *Adaptation Planning Using Nature's Boundaries: San Francisco Bay Shoreline Adaptation Atlas*. Oakland Rotary Club. (Oakland, California, May 14, 2020).
7. Beagle J, Tam L, Lowe J, McKnight K, **Safran SM,** Grenier L. *Adaptation Planning Using Nature's Boundaries: San Francisco Bay Shoreline Adaptation Atlas*. Report release webinar. (May 2, 2019).
8. **Safran SM**. *Designing Resilient Landscapes: From Past Patterns to Future Potential.* Invited lecture to University of San Francisco Sustainable Design (ARCD 320/ENVM 680/UPA 690) course (San Francisco, California, September 17, 2018).
9. **Safran SM**. *Central Delta Corridor Conservation Strategy Planning Charrette.* Helped organize and served as science consultant for the Delta Conservancy during 2-day public workshop on conservation planning for publicly-owned lands in the Sacramento Delta. Developed and delivered presentations on maps of landscape restoration opportunities (Jean Harvie Community Center, Walnut Grove, California, August 8-9, 2018).
10. **Safran SM**, Beagle JB. *A Delta Renewed: Lessons from the Delta Landscapes Project.* Invited presentation to the California Department of Water Resources Flood Strategic Planning and Policy Services Team (Sacramento, California, February 8, 2018).
11. **Safran SM**. *Designing Resilient Landscapes: From Past Patterns to Future Potential.* Invited lecture to University of San Francisco Sustainable Design (ARCD 320/ENVM 680) course (San Francisco, California, November 6, 2017).
12. **Safran SM**. *The Historical Ecology of the Tijuana River Valley.* Invited presentation to a joint meeting of the U.S.-Mexico Border Environmental Program (Border 2020) Tijuana River Watershed Task Force and Tijuana River Valley Recovery Team (Imperial Beach, California, January 30, 2017).
13. Grenier JL, **Safran SM**, Beagle J. *Delta Corridor: Perspectives from the Delta Landscapes Project.* Invited presentation to meeting of Delta public agencies (TNC, MWD, CDWR, CDPR, CDFW) on seeking a functional approach for managing Delta public lands for sustainable agriculture and conservation (Staten Island, California, October 28, 2016).
14. **Safran SM**, Beagle JB. *A Delta Renewed: A Guide to Science-Based Ecological Restoration in the Delta.* Invited presentation to the Delta Conservation Framework Workshop (Walnut Grove, California, October 20, 2016).
15. **Safran SM**, Clark E, Beller EE, Grossinger RM. *Mission Bay Historical Ecology Reconnaissance Study: Data collection summary and initial findings*. Presentation to The San Diego Audubon Society, ReWild Mission Bay Wetlands Working Group and Science & Technical Advisory Committee (Remote presentation, March 17, 2016).
16. **Safran SM**. *The Tijuana River Valley: An Ecological Look into the Past.* Tijuana River National Estuarine Research Reserve Saturday Speaker Series (Imperial Beach, California, October 17, 2015).
17. **Safran SM**. *Delta Landscape Metrics: Creating a Spatial Framework to Inform Restoration Planning.* Lecture to University of San Francisco Conservation Biology (BIOL 379) class (Richmond, California, October 10, 2014).
18. Grossinger RM, **Safran SM**. *Delta Landscape Metrics: Creating a Spatial Framework to Inform Restoration Planning.* Delta Science Program Brown Bag Seminar (Sacramento, California, July 28, 2014).

19. **Safran SM**, Goeke E, Boyles M, Davis E, Weeks F. *Assessing Historical Flooding and Repeat Flood Damage to Vermont Infrastructure.* Middlebury College Woodin Colloquium Series (Middlebury, Vermont, May 2012).
20. **Safran SM**. *A Regional Ragweed Survey: Modeling Current Distribution in the Northeast at Two Different Spatial Resolutions.* Middlebury College Biology Department Seminar (Middlebury, Vermont, 2012).
21. **Safran SM**. *A Regional Ragweed Distribution Survey: Identifying Factors that Predict Ragweed Presence.* Harvard Forest Summer Research Symposium (Petersham, Massachusetts, August 2011).

DATASETS & SOFTWARE

1. **Safran SM**, Boyer KE, Khanna S, and Patten MV. *Code and data from Boyer et al. "Landscape transformation and variation in invasive species abundance drive change in primary production of aquatic vegetation in the Sacramento–San Joaquin Delta."* https://doi.org/10.5281/zenodo.6452987
2. **Safran SM**, Sim L, Shusterman G, Hagerty S, Desanker G, Robinson A, Iknayan K, Smith Vaughn L, Grenier JL. 2020. *Delta Landscape Scenario Planning Tool.* https://www.sfei.org/projects/landscape-scenario-planning-tool

SERVICE

University of Minnesota

2023	Instructor & co-organizer, Conservation Sciences Association of Graduate Students, Professional Skills Workshop Series
2022–present	Instructor, Migratory and Urban Bird Institute (teacher education program)
2021–2022	Undergraduate student mentor, Field Guides Program
2020–present	Member, Conservation Sciences Association of Graduate Students

Professional

Ad hoc	Journal peer-reviewer: *San Francisco Estuary and Watershed Science*
2016	Symposium co-organizer, Bay-Delta Science Conference, "Re-Envisioning the Delta with New Knowledge from the Past"
2016	Invited participant, National Alliance for Media Arts and Culture Climate Storytelling HatchLab.
2015	Advisor, U.S. Consul for Political & Economic Affairs. I briefed U.S. Consulate General staff on landscape change in the Tijuana River Valley and the implications for the International Boundary and Water Commission Minute 320- "General Framework for Binational Cooperation on Transboundary Issues in the Tijuana River Basin."
2015	Reviewer, UC Berkeley Landscape Architecture and Environmental Planning studio, "Ecological Factors in Urban Landscape Design," final projects.

Community

2022–present	Co-organizer, Three River Park District, public birding and engagement events.
2014	Advisor, "Chinese Whispers: Bay Chronicles," a public education and art project by Rene Yung exploring changes and dislocations in the cultural and ecological environment of SF Bay by sailing a replica 19th-century shrimping junk between sites significant to the historical Chinese shrimping industry and community.
2012–2014	Advisor, Oakland Museum of California. Contributed research and design to the development of the exhibit "Above and Below: Stories From Our Changing Bay."

MEDIA APPEARANCES, COVERAGE, & CONTRIBUTIONS

Campbell-Jensen, A. "Visiting the past to inform the future: Collections reveal samples of bird life — and a trove of student bird reports — from the mid-20th century on," **continuum magazine**, January 4, 2023. [Coverage] [link]

Johnson, J. "Those wily coyotes may help bring California quail back to San Francisco," ***San Francsico Chronicle***, November 4, 2021. [Coverage] [link]
Wolfram, J. "San Francisco's quest to bring back the California quail," ***San Francisco Examiner***, November 3, 2021. [Coverage] [link]
Segment on Presidio quail study, KQED-FM, ***KQED News***, November 1, 2021. Est. reach: 485,000. [Coverage] [link]
Segment on Presidio quail study**,** KGO-SF (ABC), ***ABC7 News***, November 1, 2021. Est. reach: 97,000. [Coverage] [link]
Gonzalez V. "How Have People Affected the Delta?" CapRadio, ***Insight With Vicki Gonzalez***, August 11, 2021. [Coverage] [link]
Bardeen S. "Why Is the Delta Starving?" *Public Policy Institute of California*, August 9, 2021. [Coverage] [link]
Wright D. "How an Atlas of San Francisco Bay is Helping Deal with Sea Level Rise," ***ESRI Blog***, February 16, 2021. [Coverage] [link]
Houston W. "San Francisco Estuary health report offers mixed review," ***Marin Independent Journal***, October 21, 2019. [Coverage] [link]
Purchia R. "Researchers set out to map San Francisco's past," ***San Francisco Examiner***, July 30, 2019.
Gies, E. "Ecological Detectives Hunt for San Francisco's Vanished Waterways," ***Scientific American***, June 13, 2019. [Coverage] [link]
Houston W. "Marin aids in creation of San Francisco Bay sea-level rise defense 'cookbook'," ***Marin Independent Journal***, May 2, 2019. Developed featured sea-level rise animation. [Coverage & Contribution] [link]
Rodgers P. "San Francisco Bay: New plan to combat sea level rise," ***The Mercury News***, May 2, 2019. Developed featured sea-level rise animation. [Coverage] [link]
Kahn D. "New report offers ways to deal with Bay Area sea level rise," *Politico,* May 2, 2019. [Coverage]
Fimrite P. "Blueprint to battle Bay Area sea-level rise focuses on natural solutions," ***San Francisco Chronicle***, May 2, 2019. [Coverage] [link]
Rubissow-Okamoto A. "North South Lessons from Two Estuaries," ***Estuary News***, June 2017. [Appearance]
Rubissow-Okamoto A. "Back to the Bones of the Delta," ***Estuary News***, March 2017. [Coverage] [link]
Pitzer G. "Delta report highlights need to restore legacy processes," ***Western Water***, November 16, 2016. [Coverage] [link]
Lohan T. "New Report Offers Framework for California Delta Restoration," ***Water Deeply***, November 14, 2016. [Coverage] [link]
Breitler A. "Future look for the Delta?," *Stockton Record,* November 14, 2016. [Coverage]
Kahn E. "Report finds 'cause for hope' in healing Calif. Estuary," ***Greenwire***, November 14, 2016. [Coverage] [link]
Kay J. "Delta Smelt, Icon of California Water Wars, Is Almost Extinct," ***National Geographic***, April 3, 2015. Consulted with author and designers on content and graphics, provided map data. [Contributions] [link]

AWARDS/GRANTS/ACCEPTED PROPOSALS

American Ornithological Society, Travel Award, 2022, **$580**.
University of Minnesota, Conservation Sciences Travel Grant Award, 2022, **$400.**
Estimating Past, Present, and Future Aquatic Plant Primary Production: 2022 State of Bay-Delta Science Co-Authorship. (The Delta Stewardship Council to the San Francisco Estuary Institute, **$8,882**). *[Lead proposal author]*
University of Minnesota, Provost PhD Recruitment Fund, 2020, **$4,000**.
What Makes an Urban Park Good for Quail? Using eBird Citizen Science Data to Track the Success of Quail in Urban Parks Across California. (The Presidio Trust to the San Francisco Estuary Institute, **$20,000**). *[Contributing proposal author]*
Delta Wetlands and Resilience: Blue Carbon and Marsh Accretion Tools (California Department of Fish and Wildlife to the San Francisco Estuary Institute, **$819,998**). *[Contributing proposal author]*

Delta Landscape Scenario Planning Pilot Tools (Delta Stewardship Council to the San Francisco Estuary Institute, **$338,030**). *[Lead proposal author]*

Defining Juvenile Salmon Habitat Criteria in the Delta to Inform Habitat Restoration Opportunities (Delta Conservancy to the San Francisco Estuary Institute, **$235,000**) *[Contributing proposal author]*

Central Delta Corridor Strategic Plan Development (Metropolitan Water District of California to the San Francisco Estuary Institute, **$15,000**) *[Lead proposal author]*

Science Support for the Delta Renewed Implementation Plan and for Delta Tributary Voluntary Agreements, Phase II (Metropolitan Water District of California to the San Francisco Estuary Institute, **$20,000**) *[Lead proposal author]*

Delta Landscape Scenario Planning Pilot Tools (Delta Stewardship Council to the San Francisco Estuary Institute, **$92,214**) *[Lead proposal author]*

Science Support for the Delta Renewed Implementation Plan and for Delta Tributary Voluntary Agreements (Metropolitan Water District of California to the San Francisco Estuary Institute, **$47,325**) *[Lead proposal author]*

Sacramento- San Joaquin Delta Channel Incision/Floodplain Disconnection Assessment and Restoration Concept Development Project (U.S. Fish and Wildlife Service to the San Francisco EStuary Institute, **$150,000**) *[Contributing proposal author]*

Historical Delta DEM and Hydrodynamic Applications Phase II (Metropolitan Water District of California to the San Francisco Estuary Institute, **$41,000**) *[Lead proposal author]*

Historical Delta DEM and Hydrodynamic Applications Phase I (Metropolitan Water District of California to the San Francisco Estuary Institute, **$42,000**) *[Contributing proposal author]*

Historical Delta Visualization Phase II (Metropolitan Water District of California to the San Francisco Estuary Institute, **$137,628**) *[Lead proposal author]*

Historical Delta Visualization Phase I (Metropolitan Water District of California to the San Francisco Estuary Institute, **$22,000**) *[Contributing proposal author]*

Middlebury College, Beck Botanical Research Funds & Fellowship, 2011, **$1,500.**

TECHNICAL PROFICIENCIES

Statistics & geospatial analysis: R, ArcGIS/ArcPro, QGIS

Design: R, Adobe InDesign, Illustrator, and Photoshop

Wildlife monitoring & field work: bird mistnetting, banding, surveying, and identification; fish electrofishing, seine and flume netting, minnow traps, subcutaneous paint marking; small mammal live Sherman and Tomahawk trapping; aquatic invertebrate snorkel surveys, D-frame, Surber, and artificial substrate sampling; plant line transects, point-quarter sampling, and dichotomous key use; Class C driver's license, small outboard motor and non-motorized watercraft operation.

[Updated 2023-03-17]