



Society *for* Freshwater Science

Five-year Strategic Plan

2020 - 2025

Assembled by the 2018-2020 Long-Range Planning Committee

Amy Marcarelli, Steven Thomas (co-chairs), Fred Benfield, Ayesha Burdett, Andrea Encalada, Timothy Hoellein, Erin Hotchkiss, Corey Krabbenhoft, Petra Kranzfelder, Meryl Mims, Pam Silver, Angus Webb, Andy Leidolf (ex-officio), Alonso Ramirez (ex-officio), Amy Rosemond (ex-officio)

Contents

Preface	3
Introduction.....	4
A Vision and Set of Core Values for SFS	5
Membership	6
Committees	6
Progress toward Prior Strategic Goals	7
Investments in Strategic Activities	11
Funding for Strategic Planning Initiatives: 2015 to 2019.....	11
Source of Funding for Future Strategic Plan Initiatives	12
2018 LRPC Survey and 2019 Questionnaire Results	13
2018 Survey	13
2019 Annual Meeting Questionnaire.....	14
2020 Goals and Proposed Actions.....	15
1. Elevate the Society by maintaining and improving the annual meeting, the flagship publication <i>Freshwater Science</i> , and the communication tools used for in-reach and outreach.....	15
2. Translate and communicate freshwater science to policy makers, managers, and the general public.	15
3. Improve equity, inclusivity, representation and a sense of belonging at SFS meetings, welcoming all freshwater scientists.....	16
4. Increase the diversity of the community of practitioners of freshwater science.	17
5. Increase membership, including regional and international participation, and promote the field of freshwater science globally.....	17
6. Support the professional development of all members across all career stages through specific programs and actions.	17
7. Increase efforts to train the next generation of freshwater scientists by supporting graduate and undergraduate students and early career scientists.	18
8. Continually seek new and innovative ways to improve communication among and services to our members.....	18
Acknowledgments	19
Appendix - SFS statements on Diversity and Ethics	19

Preface

The earliest strategic planning for the Society for Freshwater Science (SFS, at that time named the North American Benthological Society or NABS), was initiated in 1999. President Nancy Grimm charged a Strategic Planning Committee to consider the current and future state of the society and develop a 10-year strategic plan. That effort was led by Amy Rosemond (Chair) and included committee members Claudia Cressa, David Lenat, Irwin Polls, Jan Stevenson, Bobbi Peckarsky, David Allan, Jill Lancaster, Donna D'Angelo, Romi Burks, Jack Webster, and Stuart Bunn. The [2000-2001 strategic plan](#) identified seven areas for further action: membership, graduate education, water resources policy, public education and outreach, fund-raising and spending, technical support and training, and governance structure. In 2000-2001, the Long-Range Planning Committee (LRPC) was formed and charged with the Society's Strategic Planning process guided by the Society's stated mission and taking into account its financial capabilities.

During 2008 and 2009, the LRPC, then composed of Michael Barbour, Bryan Brown, Ann Hershey, Joseph Holomuzki (Chair), Paula Furey, Seth Reice, and Len Smock, developed the 2009 [5-year Strategic Plan](#). The 2009 strategic plan established four goals to help guide society decision making. The Society should:

- 1) Better position itself as a key source for science-based management decisions and to influence public policy and perceptions.
- 2) Better interact with educators to improve aquatic science education.
- 3) Grow and diversify.
- 4) Increase the number of individuals with taxonomic certification.

The progress made towards the 2009 goals was summarized in the subsequent [2014 5-year Strategic Plan](#), developed by the LRPC, then composed of Mark Luttenton (Chair), Tom Arsuffi, Steve Francoeur, Nick Aumen, Judy Li, Melissa Martin, and Brian Shelley. The 2014 Strategic Plan reviewed the 2009 Strategic Plan, confirmed or revised existing strategic goals, and conceived new goals to advance the mission and purpose of SFS. Goals identified in the 2014 Strategic Plan were:

- 1) SFS should be viewed as a key source of information for science-based management and policy decisions. SFS shall provide a collective expertise to deliver information that can be used to help identify workable, sustainable solutions to regional and global water issues.
- 2) SFS will attract and retain undergraduate, graduate, and early career professional members, and support quality aquatic science education from elementary and secondary levels to post-graduate.
- 3) SFS will grow and diversify the Society over the next 5 years.
- 4) SFS will continue growing the number of individuals with technical and taxonomic training and certification.

In 2018, the current LRPC initiated development of a new Strategic Plan. Due to the evolution of the society following the prior strategic plans, the LRPC approached the Board of Directors (BoD) to modify the strategic planning process to start with a reevaluation of who we are as a society and where our members want to see SFS develop in the future. The LRPC proposed developing a Vision for the Society and a set of guiding Core Values before assessing existing strategic goals and developing new ones. In this document, we present the new Vision and Core Value statements for the Society, review progress following the 2014 Strategic Plan, use those to establish new strategic goals for guiding society decision-making, and identify potential actions the society could take to further those goals in the next 5 years and beyond.

Introduction

Since its inception, SFS has been dedicated to promoting a better understanding of freshwater ecosystems. Changes in the name of the Society reflect its evolving focus. NABS focused on “understanding the role of biological and physical processes in stream and lake bottoms”. The society changed its name to SFS in 2011 to better reflect the full interests and diversity of its growing membership and broadened its focus to include all “freshwater ecosystems (rivers, streams, lakes, reservoirs, and estuaries) and ecosystems at the interface between aquatic and terrestrial habitats (wetlands, bogs, fens, riparian forests and grasslands)”. The removal of “North American” from the name also reflected interest in becoming a more international society. The publications of the Society reflect the broad interests of its members and strive to be leading global sources of scientific information and ideas across freshwater science disciplines.

SFS provides numerous services to its members and the broader freshwater sciences community. These include publications such as the Society journal (*Freshwater Science*, published 4 times annually, 2018/19 impact factor = 2.15), newsletters and podcasts (*In the Drift*, *Monthly Splash*, and *Making Waves*), and a Current and Selected Bibliography, available on the Society’s web page. SFS hosts annual meetings to foster dissemination of current information, open exchange of ideas, training opportunities, and professional networking. The meeting includes educational workshops, professional development activities, and a taxonomic fair. Other services include access to SFS educational materials and photographs, and the opportunity to earn professional certification for taxonomic proficiency with freshwater organisms.

SFS framed the goals of its 2009 and 2014 Strategic Plans within the overarching goal of positioning the Society as a leader regarding current and future water issues. In the eleven years since the 2009 Strategic Plan, threats to aquatic ecosystems and the services they provide have grown and the need for science-based decision-making has never been greater. SFS is prepared to meet these challenges, but achieving our potential requires a clear and innovative vision and plan for coordinating our activities in the coming years.

The intention of the strategic plan that follows is to assist the Society in establishing priorities in the form of goals and proposed actions that will direct strategic change in the coming years. The plan represents: 1) a blueprint outlining specific society activities, and 2) a guiding document that articulates how our members would like to see the Society develop. Though drafted by the Long-Range Planning Committee and members of the Society’s leadership team, the actions of SFS members and Standing Committees will ultimately determine the success of this plan. Enacting the plan must be a collaborative process whereby individual members and/or Standing Committees propose activities designed to achieve specific goals or objectives, and the BoD or LRPC assists in implementing a proposed activity with financial and logistical resources as needed. Lastly, this Strategic Plan is a comprehensive, but not exclusive, guide for SFS leaders and members to use when making decisions that could affect the Society’s future success, vitality and growth.

A Vision and Set of Core Values for SFS

As of 2019, SFS had neither a clear Vision nor a set of Core Values for guiding its strategic planning process. Therefore, the LRPC worked with the BoD to engage society members in a wide variety of ways to develop a Vision statement and a set of Core Values to guide strategic planning and future Society decisions.

The resulting 2020 Strategic Plan reflects the contributions of all SFS standing committees and members at large via surveys, a questionnaire at the 2019 Annual Meeting (see **2018 LRPC Survey and 2019 Questionnaire Results** below), and other lines of communication with LRPC members.

***VISION:* The Society for Freshwater Science will be a vibrant, inclusive, and diverse community dedicated to advancing, applying and translating science for the health and vitality of freshwater ecosystems and the services they provide.**

CORE VALUES:

Promoting excellence in freshwater science

SFS is dedicated to advancing freshwater science to understand fundamental properties of aquatic ecosystems, promoting interaction across the disciplinary breadth of freshwater science, and applying our science to improve freshwater policy and management.

Sustaining a supportive, cooperative, and open scientific community

SFS is rooted in a welcoming and collaborative community and is committed to maintaining and growing that community through its publications, annual meetings, mentoring and training programs and associated activities.

Advancing diversity, inclusivity and equity in freshwater science

SFS recognizes the inherent value of diversity, inclusivity, and equity in freshwater science. SFS is dedicated to becoming a more diverse and equitable society through inclusion, where all scientists are welcomed and their voices heard, thus promoting diverse perspectives and representation in freshwater science.

Developing and supporting freshwater scientists

SFS is dedicated to the development of students and early career freshwater scientists and practitioners, and to supporting the continued development of all freshwater scientists throughout their careers.

Membership

In 2018, SFS formed an ad hoc committee to consolidate and quality check the Society's membership database and tracking system. The report produced by that committee can be found [here](#). Briefly, the ad hoc Committee on Membership and Data (Dave Costello (Chair), Sally Entrekina, Bob Hall, Ryan Hill, Amy Rosemond, and Mike Swift) compiled data from monthly dues reports, membership management services providers (MMSP), and annual Society Secretary Reports. These data were used to: 1) examine temporal trends in specific membership categories, 2) consider additional and creative ways to grow, retain, and diversify the Society's membership, 3) reexamine the current types of data the Society collects and maintains on its membership, and 4) explore issues surrounding data sharing and whether SFS should develop a data sharing policy.

Analysis of the data described above led the ad hoc committee to the following conclusions:

- Overall membership in SFS has been stable for the last 15 years
- SFS has a high proportion of transient members
- SFS attracts and recruits enough new members annually to offset a high drop rate (~50%)
- The data suggest 3 categories of SFS members
 - Core members – members who consider SFS their home society (~50% of membership)
 - Ephemeral members – members who see value in SFS but only renew periodically (~15-20% of membership in any given year)
 - Transactional members – members whose sole reason for joining was attending the annual meeting (~30-35% of membership in a given year)

The ad hoc Membership Committee also suggested specific approaches SFS might take to retain each of these member categories. Lastly, the committee developed a series of recommendations about how SFS should collect and maintain membership information in the future to better inform society planning and decision-making. For more information, please follow the link above to the complete Membership and Data Report.

Committees

In addition to the Board of Directors (BoD) and Executive Committee, SFS had 17 standing committees who help conduct society business: the Finance (FC), Board of Trustees of the Society for Freshwater Science Endowment Fund for Scientific Research and Education, Development, Elections and Place (EPC), Awards Selection (ASC), Long-Range Planning (LRPC), Annual Meeting (AMC), Publications, Public Information and Publicity (PIPC), Constitutional Revision (CRC), Student Resources (SRC), Taxonomic Certification (TCC), Technical Issues (TIC), Science and Policy (SPC), International Coordination (ICC), Conservation and Environmental Issues (CEIC), and Education and Diversity (EDC). Two new committees were formed since 2014: Early Career Development (ECDC), and Journal Endowment. In addition, the SFS leadership formed several ad hoc committees over the last five years including the Code of Conduct Committee, Early Career Committee (prior to becoming a standing committee), Primary Undergraduate Institution committee, Inclusivity Committee, Website Update Committee, and the Membership committee mentioned above. SFS continues to review all committees to ensure they are serving the society's needs, and suggesting changes necessary to meet its future needs.

Progress toward Prior Strategic Goals

The 2020 Strategic Plan builds on the efforts of SFS to meet the goals established in the prior Strategic Plans. One of the most significant accomplishments is the Society's long-term commitment to the Instars program, the purpose of which is to increase the diversity of SFS and to improve its inclusivity and equity. Another notable accomplishment is the establishment and hiring of a part-time Executive Director in 2017. Furthermore, the PIPC made several advances in promoting SFS through social media in the last 5 years, the SFS website was successfully re-designed, and the Society accepted a new logo developed through that project.

A brief summary of other accomplishments that further the [2014 Strategic Plan](#) is included below. This list provides an overview of the highlights and is by no means comprehensive. Some of the activities listed below meet several strategic goals, but are listed here with the most relevant goal for brevity. Moreover, some significant Society accomplishments were not explicitly forecasted in the 2014 strategic plan. For example, an ad hoc Code of Conduct committee was established in 2017 to develop a policy for identifying, reporting, and addressing unacceptable behavior at our annual meeting. SFS also made progress toward improving its inclusivity and equitability, which is reflected in the new goals presented later in this strategic plan.

2014 Goal 1: Given that water resource issues are more important than ever, SFS should be viewed as a key source of information for science-based management and policy decisions. SFS shall provide a collective expertise to deliver information that can be used to help identify workable, sustainable solutions to regional and global water issues.

SFS has made significant improvements to its website and social media presence.

- A completely overhauled Society website was launched in February 2018.
- The web editor position was replaced with the Media Officer in 2019 to help guide a comprehensive web presence.
- The PIPC has a team dedicated to social media posts and engagements, with a focus on Twitter. PIPC also developed social media usage guidelines to ensure that the posts are relevant and unbiased.
- In 2019, the ECDC and PIP committees were awarded funds for their proposal, "Leveraging 'Travel Engagement Awards' to facilitate early career membership involvement and public outreach: a joint program developed by the ECDC and PIP committees." Travel Engagement Award (TEA) stipends will support six early career members who will be charged with facilitating further society engagement through both individual and joint projects.
- The SRC also actively engages members and the public through Facebook and Twitter.

SFS has maintained and expanded its mechanisms for in-reach and outreach.

- The "*Making Waves*" podcast continues to be an effective means of reaching members as well as non-members, with 43 episodes available as of January 2020 and over 7600 views for all episodes on YouTube.
- The society newsletter "*In the Drift*" has moved from pdf to Mailchimp newsletters, enabling usage tracking. The newsletter includes articles and news from society members and leadership, such as the regular feature article "*Dear Dr. Nick*" that provides a way for new society members to ask questions about the meeting, presentation preparation, and other common concerns.
- The *Monthly Splash* was started in 2018 to provide monthly updates to the entire society via email.

- The “*Stay Fresh!*” blog, which was launched in 2015 is now hosted directly on the Society’s website. It serves as a bibliographic hub of links to early view articles on journal websites in the field of freshwater sciences. It is posted weekly and has seen continued growth in followers.

SFS leadership and committees have maintained and expanded connections to other societies to promote SFS

- SFS continues as an active member of the Consortium of Aquatic Science Societies (CASS)
- With CASS, SFS has conducted outreach about aquatic sciences, including annual attendance at the Society for Advancement of Chicanos/Hispanics and Native Americans in Science conference (SACNAS) and at the USA Science and Engineering Festival in 2014, 2016 and 2018.
- SFS is planning two upcoming meetings located in the US in partnership with others societies - a joint summer meeting with ASLO in June 2020, and a second Joint Aquatic Sciences Meeting with CASS members in May 2022.

SFS has provided leadership and input on threats to freshwaters and federal policies for protecting and managing these resources

- In collaboration with CASS, SFS submitted a series of letters and comments on the Waters of the United States (WOTUS) rule, starting with the initial definition in 2014, and again when revisions were proposed in 2017 that excluded thousands of miles of streams and millions of acres of wetlands that are critical to freshwater resources, and finally when the final revisions were announced and finalized in 2019 and 2020.
- In Spring 2019, SFS developed a [WOTUS Resource Page](#) that collated resources materials for policy use. SFS also organized and hosted a webinar (4/1/19) for an informative and timely overview of the proposed WOTUS rule, the science that contradicts it, and how SFS members could submit an effective regulatory comment.
- SFS provided a series of letters on federal rules and policies, including:
 - 2016 - Draft EPA-USGS Technical Report: Protecting Aquatic Life from Effects of Hydrologic Alteration
 - 2019 - approve FY 2019 appropriations to end the partial government shutdown and allow natural resource agencies to resume operations
 - 2019 - comments encouraging the use of the best available science for decision-making related to H.R. 6668 that proposed to remove all freshwater mussels from the protection of the Endangered Species Act.

2014 Goal 2: Attract and retain undergraduate, graduate, and early career professional members, and support quality aquatic science education from elementary and secondary levels to post-graduate.

SFS has implemented membership guidelines and empowered committees that are dedicated to reaching and retaining student and early career members

- The society implemented income-adjusted dues for society membership, with the goal of making membership for accessible for everyone, including K-12 teachers, early career professionals, and anyone else for whom cost of membership could be a barrier.
- The SRC has maintained an active presence and has increased its activities at annual meetings to better meet student needs.

- Annual SRC activities at the annual meeting include the SRC workshop, student-mentor mixer, live auction, silent auction, merchandise sales, the SRC business luncheon, undergraduate travel awards, and the undergraduate presentation award.
- The ECDC was established first as an ad-hoc committee, then as a formal committee with international representation in 2017-2018.
 - ECDC activities included off-site mixers for early career participants at the annual society meetings as well as luncheon workshops in 2017 (Grants & Proposals), 2018 (Mentoring), and 2019 (NSF Panel).
 - The ECDC developed and awarded early career and travel engagement awards to support attendance and participation of early career members at the annual meeting.
 - ECDC members engaged the California SFS Chapter to host an Early Career Panel Webinar and Student Poster Contest at the 26th annual California Bioassessment Workgroup Meeting at UC Davis.

SFS has continued to foster a robust series of awards and programs to support graduate and undergraduate student members

- SFS has committed to fully fund student presentation awards every year regardless of sponsor donations.
- The ECDC led development and implementation of a web-based judging system for student presentations at the annual meetings was launched in 2019.
- There has been a substantial increase in the number of applicants for student endowment awards (up to 145 in 2019 from 90 in 2018).
- The CEIC initiated an additional award for undergraduate research in 2018; this was in addition to the annual graduate student award, which has had an increase in applicants since 2015.
- The revised SFS website includes a "Classified Ads" section to share opportunities for current and future members. The page info can be sorted according to category (e.g., events, scholarships, workshops, jobs), and contains clear directions on ad submissions. <https://freshwater-science.org/classifieds>.

SFS has committed to fostering undergraduate members along with regular members who primarily work with undergraduate students.

- The Instars mentoring program, run by the EDC, continues to be a successful pathway for nurturing participation in the annual meeting for traditionally under-represented students, and has now become a permanent program.
 - This program had its 9th installment in 2019 with 16 fellows and 9 mentors.
 - As part of Instars, special sessions aimed at undergraduates were presented at annual meetings (2014: career options, 2015: undergrad research opportunities, 2016: elevator pitch).
- In 2017, 2018, and 2019, the EDC organized a special session at the annual meeting, "Scholarship of Teaching and Learning in Freshwater Science".
- The Primarily Undergraduate Institutions (PUI) Committee was started as an ad-hoc committee, then moved to a permanent subcommittee of the Education and Diversity Committee in 2018-2019. This committee supports organization of mixers and special sessions at annual meetings, with the objective of maintaining, supporting, and encouraging the activity of this critical group among the SFS membership.

SFS continued to offer user-friendly educational materials through the SFS website and in-person workshops.

- The SFS website now contains a link to the SFS Flickr page, with an archive of photos on plants and algae, vertebrates, and invertebrates. (<https://www.flickr.com/photos/154118874@N06/albums/with/72157691961755374>).
- The TIC regularly held workshops at the annual meeting. These are designed to attract early career members and included workshops on various aspects of the R computing environment, basics of hydrology, meta-barcoding approaches to taxonomy, and more.
- SFS funded four leaf pack workshops with local K-12 educators on the day before the annual meeting each year in 2015 - 2019

2014 Goal 3: Grow and diversify the Society over the next 5 years.

SFS has enhanced its commitment to diversity and inclusion in our community

- A statement on diversity was approved by membership in May 2016 (see full statement in the **Appendix**) and is available on the [Diversity and Inclusivity page on the SFS website](#).
- The society developed and implemented a Code of Conduct in 2017 that is now displayed on the website [here](#) and acceptance of which is now part of registration for annual meetings.
- SFS acknowledged the importance of the EDC to the long-range objectives and the need to reorganize the committee. Toward that end, the EDC was categorized in 2018-2019 as a super-committee' that includes two former ad hoc committees (Primarily Undergraduate Institutions (PUI) and Diversity and Inclusivity). The EDC has a member representative that is a member of the Board of Directors.
- Members of the EDC, along with other society members, wrote a manuscript describing diversity and inclusivity in scientific societies. The manuscript is near submission to *Freshwater Science* as a perspective paper for a *Bridges* issue.

SFS has continued to explore our membership recruiting and retention strengths and weaknesses.

- The BoD established an ad hoc committee in 2018 to examine and report on membership trends and to recommend options for membership recruiting and retention. That report can be found [here](#).
- SFS restructured the membership payment system, including streamlining payments and initiating automatic renewals for membership.

SFS has enhanced networking opportunities at the annual meeting and throughout the year.

- The Society has hosted a variety of mixers aimed to enhance networking opportunities at the annual meeting. These include the Student-Mentor mixer (every year), the Early Career Mixer (each year since 2017), and the PUI Mixer (since 2019).

SFS had continued to strive to be an international community of freshwater scientists.

- SFS has partnered with international science societies to sponsor or co-sponsor two meetings outside of the USA - Congreso Aquatrop held in Quito, Ecuador in 2018, and the upcoming SFS Annual Meeting to be held in Brisbane, Australia in 2021. SFS also provided financial support for members to attend and represent the Society at Aquatrop and is actively planning to support travel for students and others to the 2021 meeting.
- SFS leadership and committee chairs have actively recruited non-North American members to promote diversity in membership of all standing committees.
- The ICC supported development of the Latin American and South Asia chapters.

- SFS began offering discounted fees to members from developing countries in 2014.
- In 2015, the Publications Committee developed the Endowed Publication Fund to provide a source of funding for authors to publish in *Freshwater Science*. It is open to all and can be used for editorial assistance for authors whose primary language is not English.
- ICC has organized several special sessions, including “Asian Freshwater Futures” (2015), “Challenges in Freshwater Conservation” (2016) and “The importance of environmental gradients for the advance of tropical stream ecology” (2017). ICC aimed to attract presenters from across the globe in each of these sessions.

2014 Goal 4: Continue growing the number of individuals with technical and taxonomic training and certification.

SFS has offered taxonomy workshops for additional groups of aquatic organisms.

- Gastropods & Mollusks-Sampling and ID workshops
- Identification of Odonate Nymphs
- Diatom Certification preparation
- Workshop Taxonomy and Systematics of Plecoptera
- Larvae of North American Trichoptera

SFS offers workshops and special sessions at the annual meeting related to biodiversity, molecular methods, and connections between basic and applied research.

- Taxonomic Certification (2014, 2016, 2018), including EPT image testing
- Taxonomy Fair
- ID of Ephemeroptera larvae from western North America, north of Mexico
- Taxonomic field trip to collect western species
- Bioassessment and analytical methods for soft-bodied algae
- Special session on taxonomy and Identification of Annelida
- Metabarcoding Workshop
- Fundamentals of special data access and analysis in R
- Hosted special sessions:
 - Invertebrate systematics and faunistics
 - Quantifying ecological traits to predict species, community and ecosystem responses to changing environments.
 - Stream macroinvertebrates responses to disturbance in neotropical streams

Investments in Strategic Activities

Funding for Strategic Planning Initiatives: 2015 to 2019

In 2011, the Finance Committee, in response to a request from the President, and with input from members of the BoD, recommended that the Presidential Discretionary Fund (funded by 1/2 the meeting surplus to a maximum of \$50,000) be split in half to help implement high-priority initiatives listed in the 2009 Strategic Plan. Strategic Funding was authorized from 1/2 the meeting surplus, up to a maximum of \$25,000. This recommendation was approved and chairpersons of standing committees were informed of the availability of funding to implement initiatives. This funding stream varied in size up to the \$25,000 limit and continued until 2018, when the BoD approved \$25,000 per year for three years (2018, 2019, 2020) to be made available for strategic initiatives from

the reserve fund, independent of the meeting surplus. The LRPC now has a specific [Request For Proposals](#) (RFP) with two submission deadlines per year (August 15th and January 31st). Initiatives funded by the LRPC since 2014 include the Instars program (now a permanent program), a series of Leaf Pack Network stream monitoring workshops for 6-12 grade teachers held in association with annual meetings since 2015, a citizen scientist taxonomic certification test, a special session at the 2019 annual meeting on Neglected African Freshwaters, the Diatom Taxonomic Certification program, and an improv-based communication workshop at the annual meeting in 2019.

Source of Funding for Future Strategic Plan Initiatives

The goals outlined below for the 2020 Strategic Plan are ambitious, and progress toward the goals is more likely to depend on the ability of our society to fund specific activities than on the willingness of our members to propose activities and programs. Hence the LRPC recommends that the Finance Committee work with the BoD to establish annual funding levels available for strategic initiatives at levels similar to the past 5 years. The LRPC also recommends that funds for strategic activities be: 1) made available through competitive grants awarded through the current LRPC competition and 2) allocated by the BoD directly to standing committees for specific strategic actions. Finally, the LRPC encourages the Finance Committee, Development Committee and the BoD to work together to develop a sustainable plan for generating a source of revenue on an annual basis to be used to fund strategic plan initiatives.

2018 LRPC Survey and 2019 Questionnaire Results

The LRPC developed a subcommittee (Petra Kranzfelder, Meryl Mims, Pam Silver, and Steve Thomas) in 2018 tasked with conducting a membership survey to identify priorities of the SFS membership to guide the development of the 2020 strategic plan. In addition, the LRPC also conducted an on-site questionnaire at the 2019 Salt Lake City annual meeting with the specific goal of developing the SFS vision and values statements outlined earlier in this plan.

2018 Survey

In 2018, the LRPC survey subcommittee asked SFS members to take a survey designed to assess members' perspectives on the following topics: 1) the four goals from the 2014 Strategic Plan and 2) potential goals for the 2020 Strategic Plan. The survey also collected information about the demographics of SFS members who responded to the survey and their interactions with the Society. The complete presentation of the 2018 survey and its results can be found [here](#). A brief summary of those findings is presented below

Demographics of survey respondents

Three hundred forty members (about 23.5% of 2018 members) responded to some questions in the survey, 269 members (18.5% of members) responded to all questions, including the demographic questions. Of these 269 respondents, 48.7% were regular members ($n = 131$), 20.4% were student members ($n = 55$), 19.3% were early career members ($n = 52$), 8.6% were emeritus members ($n = 23$), and 3.0% were associate editors ($n = 8$). These respondents identified employment in the following areas: 49.4% academia ($n = 133$), 16.4% students ($n = 44$), 11.2% federal or national government ($n = 30$), 7.1% state/provincial/regional government ($n = 19$), 6.7% consulting ($n = 18$), 5.6% retired ($n = 15$), 3.3% nonprofit/nongovernmental organization ($n = 9$), and 0.4% private industry ($n = 1$). Most respondents were from North America (91.8%) with Europe (4.1%), Australia/Oceania (1.9%), South America (1.1%), Central America (0.7%), and Asia (0.4%) accounting for the rest. These respondents were members of seven regional or international SFS chapters, including 29.9% Pacific Northwest, 19.7% Latin America, 19.7% Mid-Atlantic, 18.3% California, 9.9% South-Central U.S., 2.8% South Asia, and 2.8% Taiga.

Interaction with the Society

Most respondents attended the annual meetings within the last five years: Detroit in 2018 (73.4%), Raleigh in 2017 (55.9%), Sacramento in 2016 (53.3%), Milwaukee in 2015 (49.3%), and Portland in 2014 (63.3%). For those respondents who attended the 2018 Detroit meeting, the following five events/activities had the highest participation: business or committee luncheons (62.9%), Student Resources Committee (SRC) Student/Mentor Mixer (49.7%), Early Career Mixer (36.4%), Inclusivity Mixer (30.5%), and Annual SFS Taxonomy Fair (14.6%). SFS members found the following five membership benefits the most important to them: networking, mentorship, or camaraderie with other freshwater scientists (87.6%), support of science and policy outreach on issues related to freshwater science (72.7%), an online subscription to Freshwater Science (64.0%), discounted meeting registration (62.5%), and access to education and outreach products (46.8%).

Perspectives of the four goals from the 2014 Strategic Plan

The respondents ranked the goals from the 2014 Strategic Plan in the order: 1) inform policy makers on water resource decisions (53.1%), 2) increase taxonomic training (46.4%), 3) improve quality of science education (43.6%), and 4) increase diversity (33.2%).

Perspectives of the potential goals for the 2020 Strategic Plan

Five potential goals for the 2019 Strategic Plan were selected the most often by all respondents: 1) inform public and policymakers (59.0%), 2) interact with other societies (40.7%), 3) promote diversity and inclusivity (38.4%), 4) support students and early career members (37.7%), and 5) provide professional development (34.0%). Three goals were selected as ***extremely important*** when respondents were asked to indicate the relative importance of ten potential goals for the 2019 Strategic Plan: 1) position the Society to be a key source of information for the public and policymakers (67.4%), 2) promote diversity and inclusivity among its members and encourage participation from all (64.8%), and 3) provide professional development opportunities for members (56.7%).



Figure 1. Word clouds generated from questionnaire responses during the 2019 SFS annual meeting in Salt Lake City.

2019 Annual Meeting Questionnaire

At the 2019 Annual Meeting in Salt Lake City, the LRPC solicited answers to a brief questionnaire. The first two questions requested one-word answers to the following: “Why do you love SFS?” and “What makes SFS Unique?”. We received 345 responses (~1/3rd of all attendees) and the results are captured in the word clouds presented in Figure 1.

Respondents loved SFS for its science and its community first and foremost. What makes SFS unique includes its focus on ‘freshwater’, but respondents identified aspects of ‘community’ as SFS’s most unique feature (community, people, friendly, welcoming, etc.).

The third question asked members to complete the following: “In 10 years, SFS should be _____.” The LRPC received 124 responses to this question and assigned each response to one of the following categories (# of responses): scientifically strong and interdisciplinary (76), active in policy/outreach (39), the same (6), taxonomically strong (3).

2020 Goals and Proposed Actions

The following strategic goals are based on all the information discussed above and iterative comments from the SFS Executive Committee, BoD, and each Standing Committee. The goals presented here are intentionally ambitious, but the LRPC strongly believes they are both realistic and necessary and are designed to promote the future success of our Society. However, changes in society leadership and unforeseen events are likely to change the relative importance of these and/or necessitate the need for new goals and actions. It is our hope that clearly articulating a Vision for SFS and our Core Values will help the SFS leadership navigate a future in which the value of Freshwater Science becomes increasingly important

1. Elevate the Society by maintaining and improving the annual meeting, the flagship publication *Freshwater Science*, and the communication tools used for in-reach and outreach.

Proposed actions:

- SFS will complete a 3-yr review of the Executive Director position and develop an explicit employment plan for how the society would like this position to evolve, including an assessment of whether this position should shift from half-time to full-time and how it best helps meet the growing needs of the Society.
- SFS will provide support for the Society's Media Officer to develop, manage, and organize content for the SFS website, social media platforms and other communications.
- The SFS Publications Committee will coordinate with the journal's publisher, editor, and editorial staff to ensure maintenance and improvement in all journal functions (e.g., oversight of financial matters, the journal endowment, the journal budget, contract negotiations with UCP, etc.).
- SFS will develop new, innovative, and evidence-based ways to use our annual meeting and other channels to communicate freshwater science and to improve diversity, equity, inclusivity and international prominence in our society.

2. Translate and communicate freshwater science to policy makers, managers, and the general public.

Proposed actions:

- SFS will continue initiatives that improve the use of science to inform evidence-based policies affecting freshwater systems (see [Norton et al. 2018](#) for an example).
- SFS will continue to produce regular position statements and formal comments on proposed and existing policies affecting freshwater ecosystems and disseminate policy statements and comments to our membership through freshwater-science.org, online publications, social media, podcasts, and CASS.
- SFS will maintain and regularly update the Science and Policy section of freshwater-science.org with news briefs about important fundamental and applied scientific findings written for non-scientists engaged in freshwater policy and management.
- SFS will expand its use of social media (and other emerging mechanisms) to communicate freshwater science and policy to the public and scientific non-members by continuing to support the media officer and providing additional funding as needed.

- SFS will increase its support of members and society leaders to engage with legislators, federal agency administrators, and other decision makers by partnering with AIBS, CASS, the Council of Scientific Society Presidents (CSSP), and other societies on existing and new programs.
- SFS will encourage workshops, panels, and sessions on scientific communication and the interface between science and advocacy at our annual meeting.
- SFS will encourage large research and collaboration networks (e.g., NSF Research Coordination Networks and Macrosystems projects, international collaboration groups) to plan project meetings and workshops in association with SFS's annual meeting.

3. Improve equity, inclusivity, representation and a sense of belonging at SFS meetings, welcoming all freshwater scientists.

Proposed actions:

- SFS will continue to plan meetings in a wide range of locations inside and outside of North America while balancing considerations about travel/meeting costs, sustainability, and travel restrictions.
- Meeting locations will be chosen in part based on their ability to foster an inclusive environment for all freshwater scientists. Meeting contracts should be negotiated that include cancellation clauses in the event that features of a venue or location emerge that would violate our commitment to equity and diversity.
- SFS will consider accessibility when selecting meeting venues (e.g., accessibility for those with motility challenges, hearing and visual impairment, availability of all gender bathrooms, access to parental care areas).
- SFS will explore ways to make their annual meeting more flexible and inclusive of those who cannot or choose not to attend in person by taking advantage of virtual platforms.
- SFS will continue to support and increase travel awards to the annual meeting for members, and will continue to explore ways to decrease the cost of attending the annual meeting for those with financial constraints.
- SFS will sponsor activities at meetings that promote a more inclusive and welcoming society. Activities might include workshops that leverage the value of a diverse membership, workshops that train members to recognize and overcome implicit bias, and other timely topics.
- SFS will continually review and improve a comprehensive 'Code of Conduct' for participants at SFS sponsored events. The code of conduct should include a statement describing the Society's receptiveness to hearing violations, include a clear but flexible policy for reporting incidents of inappropriate behavior, establish a protocol for how reports will be handled by the SFS leadership, and communicate the scope of actions that the SFS leadership can take to address complaints.
- SFS will implement best practices for special sessions leaders to ensure that the composition of speakers is aligned with the diversity goals of the society.
- SFS will create a platform where underrepresented and marginalized members can make their voices heard on topics including barriers to participating in freshwater science and ways SFS can improve the inclusivity and equity of its annual meetings.
- SFS will use best practices when holding outreach events with members of communities affected by freshwater issues.

4. Increase the diversity of the community of practitioners of freshwater science.

Proposed actions:

- SFS will sustain its support of Instars and work to establish permanent funding for this flagship program.
- SFS will develop new programs and activities that enhance existing programs to increase the recruitment of underrepresented scientists into graduate training programs and careers.
- SFS will strive to ensure that the diverse components of our membership are equitably represented in scientific and research related media.
- SFS will task an ad hoc committee and the ECDC to quantitatively assess how our demographics compare to our peer societies and to the demographics of earned doctorates in freshwater science.
- SFS will task appropriate committees (e.g., ECDC, EDC, SRC) to develop ways to recruit and retain scientists from underrepresented groups in our membership.
- SFS will promote diversity in leadership and participation in its executive and planning committees to ensure that multiple perspectives are heard.
- SFS will encourage enhanced communication and collaboration between committees working to increase the diversity of our society, to reduce redundancy of effort and promote synergistic outcomes.

5. Increase membership, including regional and international participation, and promote the field of freshwater science globally.

Proposed actions:

- SFS will continue to expand its international footprint via international meetings and incorporation of international scientists into the SFS leadership and administrative structure.
- SFS will host a special session focused on a particular freshwater issue/challenge encountered in multiple different international regions at each annual meeting, focusing on a different issue/challenge each year, and will provide travel funding for the international scientists who present at the session.
- SFS will foster the growth of established chapters, and encourage the development of new chapters, especially outside the United States. Specific goals are:
 - Capitalize on the success of existing chapters (e.g. Pacific Northwest and California) by providing support for chapter leaders to mentor new chapters or chapters that have been less successful.
 - Convene a local meeting of each chapter in the next 5 years.
 - Update the SFS website to improve the profile of chapters and their activities.
 - Increase membership in all chapters by 50% in 5 years.
 - Add three to five chapters over the next 5 years.
- SFS will strive to increase society membership to 2000 or above in 5 years by concerted efforts to retain members and recruit new members. This would return the Society to membership levels occurring from 1993-2003.

6. Support the professional development of all members across all career stages through specific programs and actions.

Proposed actions:

- SFS will support technical, teaching, and skills-based workshops, both at the annual meeting and virtually through webinars and on-line resources, available to members of all career stages and selectively to the public.
- SFS will continue to support talks and workshops providing members with information on evidence-based teaching practices to improve teaching and learning of freshwater science.
- SFS will explore ways to engage the Society Fellows as mentors, advisors, and resources to help with fundraising and other priorities.
- SFS will continue supporting taxonomic training through the organization and administration of the Taxonomic Certification Program online and in person at the annual meeting, and will continue to support taxonomic workshops at the annual meeting.
- SFS will provide career development opportunities for graduate students, early career researchers and practitioners, including virtual and in-person professional development workshops featured annually. Virtual workshops allow for participation of members unable to attend the annual meeting and will be recorded and made available through the SFS website.
- SFS will establish an award for mid-career researchers that recognizes excellence in freshwater science and leadership (intermediate to Hynes and Award of Excellence).
- SFS will host annual one-time training workshops (“boot camps”) focused on elements of professional development. Examples of specific topics might include strategic and technical aspects of scientific writing, reviewing, and publishing; strategies for navigating personnel management, mentoring, recruiting, budgeting, and starting a new research program; finding a job in freshwater science outside academia; or writing your first proposal.

7. Increase efforts to train the next generation of freshwater scientists by supporting graduate and undergraduate students and early career scientists.

Proposed actions:

- SFS will expand travel funds supporting student, early career, and regular members from primarily undergraduate-serving institutions (PUIs).
- SFS and SRC will develop and expand specific workshops and programs at our annual meeting aimed at graduate and undergraduate participants, such as providing on-site mentoring, identifying undergraduate presenters of oral and poster papers, organizing graduate school and career meet-and-greets, and offering career workshops.

8. Continually seek new and innovative ways to improve communication among and services to our members.

Proposed actions:

- SFS will conduct an annual survey of membership after each annual meeting and request suggestions for improvements to meetings and society functions.
- SFS will continue to find new ways to serve members with a wide variety of career foci and institutional strengths including employees of state and federal agencies, municipal governments, nongovernmental organizations, consulting and technical firms, primarily undergraduate-serving institutions, and other colleges and universities.
- SFS will identify ways to best serve members in a variety of career stages including pre-college, undergraduate student, graduate student, early career, regular and emeritus members.

Acknowledgments

The Society extends a special thank you to all SFS members who have provided input through the member survey, the Vision and Values questionnaire, or in written comments on earlier drafts of this strategic plan. We also thank the following members for their significant contributions to the Strategic Plan: Amy Rosemond, Bob Hall, Jennifer Tank, Todd Royer, Alonso Ramirez, all SFS committee members and chairs, and all present and past members of the Long Range Planning Committee.

Appendix - SFS statements on Diversity and Ethics

Also available at <https://freshwater-science.org/about/society-governance/society-statements>

Diversity

The Society for Freshwater Science is dedicated to promoting diversity among its members and welcomes and encourages participation from all, regardless of ethnicity, sexual orientation, gender identity, socioeconomic status, physical or mental difference, religion, age, or national origin. The SFS is inclusive and accepting of all people and built on tolerance, respect, and a welcoming spirit at all of our activities. We strive to actively promote diversity across all levels of our society including members, leaders, committees, and staff. We value a diverse community and believe it fosters a richer understanding of freshwater ecosystems and conservation of global freshwater resources. Members with questions, comments or concerns about SFS diversity issues are encouraged to raise them with a member of the SFS Education and Diversity Committee.

Approved by the SFS Board of Directors in December 2015, and by the membership on 23 May 2016

Ethics

As professionals of aquatic sciences, we are obligated to provide clear, accurate, and timely information; to encourage open discourse, both professional and public; and to participate in the debate that contributes to informed choices by the public. We are also obligated to select for ourselves and to recommend to others courses of action we believe will protect and rehabilitate the biological diversity and integrity of aquatic ecosystems.

Passed by the Executive Committee on 6 June 2004, and the membership on 7 June 2004